



BURNSIDE

**Scugog Edgerton Road Bridge
Replacement, Schedule B MCEA**

Project File Report

**The Township of Scugog
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Port Perry, ON L9L 1A7**

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**January 2026
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R.J. Burnside & Associates Limited

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Executive Summary

R.J. Burnside & Associates Limited (Burnside) was retained by the Township of Scugog (Township) to complete a Municipal Class Environmental Assessment (MCEA) for Bridge No. 11 (Edgerton Bridge), located on Edgerton Road, in the Village of Cadmus.

The existing bridge, a Concrete Through-Girder structure constructed in 1925, is currently nearing the end of its intended service life. The bridge is in poor condition with a Bridge Condition Index (BCI) of 59.8, and exhibits significant defects impacting its load carrying capacity, resulting in it currently being load-limited to 8/14/19 tonnes. The existing structure is considered deficient in width, offering only a 5.7 m driving platform between concrete barriers.

The planning for improvements was conducted in accordance with the Schedule B requirements of the MCEA process (MEA, February 2024), which is an approved process under the *Ontario Environmental Assessment Act*.

Four Alternative Solutions were considered:

Alternative 1 – Do Nothing (Maintain the existing bridge); The existing bridge would remain the same, with regular maintenance performed. This Alternative is mandatory for consideration in the MCEA process.

Alternative 2 – Remove Bridge Structure; The existing bridge and abutments would be removed, turnarounds would be constructed, and naturalization of the watercourse channel.

Alternative 3 – Bridge Rehabilitation; The existing bridge structure would be improved to address its deteriorating condition and repair defects.

Alternative 4 – Two-lane Bridge Replacement; The existing bridge would be replaced with a new bridge designed for two-lane traffic.

Based on a comparative evaluation of the alternatives against the natural, social, cultural, technical, and economic environments, Alternative 4 – Two-lane Bridge Replacement was selected as the Preferred Solution.

The Preferred Solution involves constructing a new two-lane structure with a minimum driving platform width of 8.5 m between concrete barriers. The replacement structure is proposed as a 23.0 m (+ / -) span, designed for a service life exceeding 75 years. This alternative addresses all structural defects, removes load restrictions, and improves the road approach profile to meet a design speed of 40 km/h. The larger span and improved vertical profile will also enhance hydraulic performance and resilience against flood conditions. To mitigate the loss of cultural heritage value associated with the existing structure, the new barriers can be designed to match the aesthetics and art deco-style of the original barriers.

A key component of the study included consultation and engagement with the public, Indigenous communities, and agencies that may have an interest in the project. Consultation and engagement efforts included a Notice of Commencement and Notice of Completion. Project information was also provided on the Township webpage for public review and comment.

A Notice of Completion for this Project File Report (PFR) will be published on the Township's website and in the local newspaper and distributed to interested parties. As per the requirements of the MCEA, this PFR is available for public review and comment for a period of 30 calendar days following the publication of the Notice of Completion. The Notice of Completion provides a link to the electronic copy of the PFR and the names and contact information of people to whom comments can be sent. Written comments can be provided to the project team within the 30-day comment period.

If there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights resulting from this project that cannot be resolved, a request for an order requiring a higher level of study or conditions on those matters should be addressed in writing to the Minister of the Environment, Conservation and Parks (MECP), the Director of the Environmental Assessment Branch, and the project team. Requests on other grounds will not be considered. Requests must be received by the Minister within 30 calendar days of the publication of the Notice of Completion and should include the requester's contact information and full name for the Ministry.

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1.0 Introduction

R.J. Burnside & Associates Limited (Burnside) was retained by the Township of Scugog (Township) to complete a Municipal Class Environmental Assessment (MCEA) to consider options for the improvement of Bridge No. 11 (Edgerton Bridge). This structure is located on Edgerton Road, in the Village of Cadmus, and crosses East Cross Creek.

The purpose of this MCEA is to analyze the existing conditions of the aging bridge structure to inform a Preferred Solution regarding its removal, rehabilitation, or reconstruction. The need for improvements was identified by the Township to address operational issues, particularly the structure's deteriorating condition, and load restriction.

The existing Edgerton Bridge is a Concrete Through-Girder Bridge, constructed in 1925, making it approximately 100 years old. The bridge is in poor condition with a Bridge Condition Index (BCI) of 59.8. The structure is generally regarded as being at the end of its service life, and structural elements exhibit severe deterioration, including severe spalling and exposed corroded reinforcing steel on the concrete deck soffit. Due to these deficiencies, the bridge is currently load-limited to 8/14/19 tonnes. The structure is deficient in width, providing a narrow driving platform of 5.7 m, which is substandard compared to the MTO Design and Supplement guidelines for local roads that require a minimum total width of 8.5 m between barriers. Given that the bridge uses its through-girder barriers as primary load-carrying elements, widening the existing structure during rehabilitation is not possible.

The existing conditions, proposed alternatives, evaluation of alternatives, impact assessment, and consultation process are documented within this Project File Report (PFR).

2.0 Study Area

The study area includes approximately 120 m of public right-of-way (ROW) on either side of the Edgerton Bridge over East Cross Creek and immediately adjacent private land to the north and south. Brown Lake is located approximately 30 m upstream of the structure. Land use includes rural residences and associated landscaped turf and open grown tree plantings on the north side, and natural features associated with the watercourse (forests, hedgerows, swamps, and marshes) on the south side. These areas are designated as Natural Core Areas and Linkages according to the Township of Scugog Official Plan – Schedule A, in addition to lands regulated by Kawartha Region Conservation Authority (KRCA).

The study area map is provided in Figure 1 on the following page.

Figure 1: Scugog Edgerton Road Bridge Replacement Study Area



3.0 Municipal Class Environmental Assessment Process

The planning of public sector projects or activities that have the potential for environmental effect is subject to an MCEA as required by *Ontario's Environmental Assessment Act*, R.S.O. 1990.

The MCEA process was developed by the Municipal Engineers Association (MEA), in consultation with the Ministry of the Environment, Conservation and Parks (MECP), as an alternative method to Individual Environmental Assessments for recurring municipal projects that were similar in nature, usually limited in scale and with a predictable range of environmental impacts, which were responsive to mitigating measures.

The MCEA solicits input from regulatory agencies, the municipality, Indigenous Nations, and the public at the local level. This process leads to an evaluation of the alternatives in view of the significance of the environmental effects, including the technical, natural, social / cultural, and economic impact of a project, and the choice of effective mitigation measures.

The planning of the bridge improvements was completed as a Schedule B MCEA (Phases 1 and 2) of the Municipal Engineers Association Municipal Class Environmental Assessment Guide for Municipal Class EAs (February 2025), which is approved under the Ontario *Environmental Assessment Act*.

Based on the project description and classification criteria outlined in the Municipal Class Environmental Assessment (2024), for municipal road project activities, and considering the nature of the Alternative Solutions and the estimated project cost, it was determined that the undertaking qualifies as a Schedule B project.

As a Schedule B project, the project planning proceeds under the planning and documentation procedures of Phases 1 and 2 of the MCEA process. Through this process, reasonable Alternative Solutions identified are evaluated with input from agencies, Indigenous communities, and stakeholders toward a recommendation for a Preferred Solution. As a minimum, two points of public consultation are required under a Schedule B project. At the conclusion of Phase 2, the appropriate MCEA planning schedule is confirmed and, if there are no outstanding concerns, the proponent may proceed to design and implementation.

The phases of the MCEA process are illustrated in Figure 2 and summarized as follows:

- Phase 1 – Identify the problem (deficiency) or opportunity.
- Phase 2 – Identify alternative solutions to address the problem or opportunity by taking into consideration the existing environment and establish the preferred solution, including public input. At this point, determine the appropriate schedule for the undertaking and document decisions in a PFR for Schedule B projects.

Proceed through the following phases for Schedule C projects:

- Phase 3 – Examine alternative methods of implementing the preferred solution, based upon the existing environment, public and review agency input, anticipated environmental effects, and methods of minimizing negative effects and maximizing positive effects.
- Phase 4 – Document, in an Environment Study Report (ESR), a summary of the rationale and the planning, design, and consultation process of the project as established through the above phases and make such documentation available for scrutiny by review agencies and the public.

- Phase 5 – Complete contract drawings and documents, proceed to construction and operation, and monitor construction for adherence to environmental provisions and commitments. Where special conditions dictate, also monitor the operation of the completed facilities.

3.1 Class Environmental Assessment Section 16(6) Order

The MECP has the authority and discretion to make an Order under Section 16 of the *Environmental Assessment Act*. Section 16 Order requests may require that the proponent of a project going through an MCEA process:

- Submit an application for approval of the project before they proceed. This is generally referred to as an Individual Environmental Assessment.
- Meet further conditions in addition to the conditions in the MCEA. This could include conditions for:
 - Further study.
 - Monitoring.
 - Consultation.

The Minister can also refer a matter in relation to a Section 16(6) Order request to mediation.

A Section 16(6) Order can be requested if:

- You have outstanding concerns that a project going through an MCEA process may have a potential adverse impact on constitutionally protected Aboriginal and treaty rights.
- You believe that an Order may prevent, mitigate, or remedy this impact.

In accordance with the requirements of the MCEA, this PFR is available for public review and comment for a period of 30 calendar days following the publication of the Notice of Completion.

Interested persons may provide written comments to our project team within the 30-day comment period. All comments and concerns should be sent directly to the project team at:

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Port Perry, ON L9L 1A7
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Additionally, a request may be made to the MECP for an order requiring a higher level of study (i.e., requiring an individual / comprehensive MCEA approval before being able to proceed), or that conditions be imposed (e.g., require further studies), only on the grounds that the requested order may prevent, mitigate, or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the MECP.

Requests should specify what kind of order is being requested (request for additional conditions or a request for an individual / comprehensive environmental assessment), how an order may prevent, mitigate, or remedy those potential adverse impacts, and any information in support of the statements in the request. This will ensure that the MECP is able to efficiently begin reviewing the request.

The request should be sent in writing or by email to:

Minister of Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
Minister.MECP@ontario.ca

and

Director, Environmental Assessment Branch
Ministry of the Environment, Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto ON M4V 1P5
EABDirector@ontario.ca

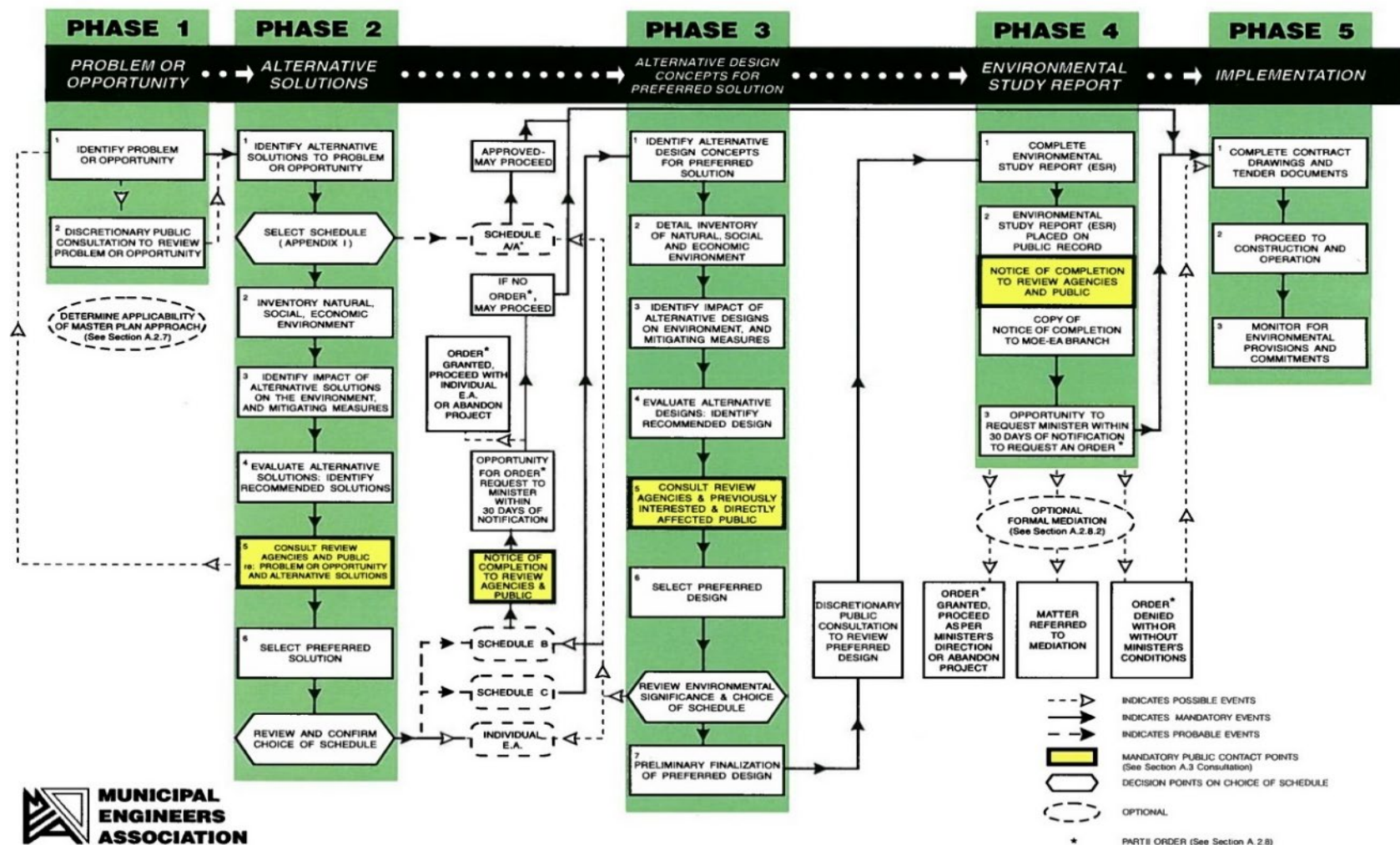
Requests must also be sent to the project team.

If the Minister does not receive a request for a Section 16 Order within 30 calendar days, then the project will move forward to detailed design, approvals process, and subsequent implementation of the Preferred Design Concept.

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Figure 2: Municipal Class Environmental Assessment Process Flow Chart

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA



4.0 Problem Identification

In Phase 1 of the MCEA process, the objective is to identify the challenge or opportunity that the process is meant to resolve. This statement assists in defining the scope of the project and serves as its central theme and integrating element that sets a benchmark for the final output of the project.

The Problem / Opportunity Statement has been defined as follows:

“The Township of Scugog has identified the need to consider options for improvements to the Edgerton Road Bridge to address operational issues including its deteriorating condition and load restriction.”

In accordance with the requirements of the MCEA planning process for Schedule B projects, the Township initiated this MCEA to identify and evaluate Alternative Solutions to address this Problem / Opportunity Statement.

5.0 Existing Conditions

5.1 Socio-Economic Environment

A review of existing planning and policy information was conducted to obtain secondary source information relating to the natural and social environment within the study area and to provide an overview of the existing policy framework in the study area.

5.1.1 Federal Planning Context

5.1.1.1 Fisheries Act

The federal *Fisheries Act* prohibits causing the “death of fish by means other than fishing”, and the “harmful alteration, disruption, or destruction (HADD) of fish habitat”. If construction activities have the potential to cause the death of fish, or HADD of fish habitat, then the project must be submitted to the Department of Fisheries and Oceans Canada (DFO) as a Request for Review. The proponent responsible for the activities is required to obtain an Authorization from DFO as per Paragraph 34.4(2) and 35(2)(b) of the *Fisheries Act*.

Fish habitat is present within the study area. Should project activities occur below the highwater mark of any identified watercourses or headwater drainage features, an assessment of potential impacts to fish and fish habitat is required. DFO has provided standardized Codes of Practice and Measures to Protect Fish and Fish Habitat to mitigate contraventions of the *Fisheries Act*.

Proponents are required to ensure that activities meet the criteria outlined on the Fish and Fish Habitat Protection Program website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) and are responsible for the implementation of best management practices (i.e., Codes of Practice) into the project design.

If it is determined that impacts of the proposed works can be avoided and a HADD is unlikely to occur, then the project does not require a review by the DFO. If HADD is anticipated because of the project, even following the application of feasible avoidance and mitigation strategies, then DFO review is recommended, and authorization may be required.

The project involves near, and in-water work related to East Cross Creek, which is considered to provide and contribute to cold water habitat, utilized by a variety of fish species, including sensitive trout species. The preferred alternative has the potential for direct impacts to fish and fish habitat with the removal of abutments and in-water work. Improvements have the potential to reduce indirect impacts of scour and erosion and improve aquatic habitat. Given the presence of sensitive species, the design process for the bridge replacement must include avoidance and mitigation measures that will minimize the potential for HADD of fish habitat. Permits and approvals from DFO will likely be required.

5.1.1.2 Migratory Birds Convention Act and Migratory Birds Regulations

The *Migratory Birds Convention Act*, 1994 (MBCA) and the Migratory Bird Regulations, 2022 (MBR) are federal legislative requirements that are binding on members of the public and all levels of government, including federal and provincial governments. The legislation protects certain species, controls the harvest of others, and prohibits commercial sale of all species.

One key responsibility under the MBCA is described in Section 6 of the associated MBR:

“Subject to subsection 5(9), no person shall disturb, destroy or take a nest, egg, nest shelter, eider duck shelter, or duck box of a migratory bird, or have in his possession a live migratory bird, or a carcass, skin, nest, or egg of a migratory bird except under authority of a permit therefor.”

The “incidental take” of migratory bird nests or the disturbance destruction or taking of the nest of a migratory bird are prohibited under Section 6 of the MBR under the authority of the MBCA. Nests’ contents (eggs and young) are protected by virtue of the MBCA, which has implications on development and construction activities that might occur during the breeding season (Canadian Wildlife Service, July 2012).

The nests of all migratory bird species are protected when they contain a live bird or a viable egg. The nests of 18 species (listed in Schedule 1 of the regulations), whose nests are reused by migratory birds, continue to have year-round nest protection, unless they have been shown to be abandoned.

The MBCA has recently updated and modernized the MBR. The new MBR came into force on July 30, 2022. Further regulatory amendments are planned.

The natural features assessment undertaken for the project included incidental wildlife observations and characterization of wildlife habitats, including potential habitat for birds. Implementation of the preferred solution will consider potential impacts to terrestrial habitat, including habitat for migratory birds and mitigation measures such as seasonal timing of tree and vegetation to avoid or minimize potential impacts to terrestrial habitat.

5.1.2 Provincial Planning Context

5.1.2.1 Provincial Planning Statement

The Provincial Planning Statement, 2024 (PPS) came into effect on October 20, 2024, and was issued under Section 3 of the *Planning Act*. The PPS 2024 effectively replaces both the Provincial Policy Statement, 2020, and A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019. Provincial policies are implemented through municipal official plans and planning decisions and set the foundation for the efficient use of land, resources, and public investment in infrastructure. Land use planning decisions made by municipalities must be consistent with the PPS.

The PPS provides directions to guide land use planning and optimize land resources and public investments for the next 30 years. It promotes efficient development patterns through transit-oriented development and active transportation, prioritizing intensification near transit corridors, while integrating diverse housing options, including affordable units, employment, recreation, parks, and open spaces to align development with infrastructure.

The PPS focuses growth and development within settlement areas. Development in natural heritage areas is not permitted unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. In general, projects should have consideration for energy conservation, air quality, climate change, management of resources and protecting public health and safety. Relevant policies are to be applied to each situation.

Chapter 3 of the PPS provides specific direction for the planning and development of infrastructure and facilities, including: transportation related policies, land use compatibility, servicing, and public spaces. Chapter 4 of the PPS provides guidance on

the wise use and management of resources, including protection of natural heritage features, water, agriculture, cultural heritage and archaeology. Chapter 5 of the PPS provides guidance on protecting public health and safety from natural and humanmade hazards.

The evaluation of the bridge within the study area considers the direction and guidance for transportation, protection of natural and cultural heritage features, and efficient traffic flow.

5.1.2.2 Greenbelt Plan

The Greenbelt Plan (Government of Ontario, 2017) includes agriculturally and environmentally protected lands within the Niagara Escarpment Plan (NEP) and the Oak Ridges Moraine Conservation Plan (ORMCP) as well as lands established as the Protected Countryside designation of the Greenbelt Plan, while enhancing the linkages between these areas and the surrounding major lake systems and watersheds.

Along with NEP and ORMCP lands, the Greenbelt Plan sets out three geographic specific policies that apply within the Protected Countryside designation: the Agricultural System, the Natural System, and Settlement Areas, as well as general policies that apply throughout the Protected Countryside.

The entirety of the study area is within the Greenbelt, under the Protected Countryside designation. Specifically, the site is located within the Natural Heritage System (NHS) of the Protected Countryside. The NHS is intended to protect and enhance biodiversity, ecological connectivity, and hydrologic functions across the Greenbelt. It includes key natural heritage features (e.g., wetlands, woodlands, valleylands, significant wildlife habitat) and key hydrologic features (streams, lakes, recharge areas), along with their associated vegetation protection zones. Infrastructure projects, including bridge replacements, are permitted within the NHS.

Section 4.2.1 General Infrastructure Policies, states that new or expanded infrastructure is permitted within the Protected Countryside if it follows the requirements of the *Environmental Assessment Act* or *Planning Act* and demonstrates that there are no negative impacts on key natural heritage or hydrologic features or their functions.

5.1.2.3 Endangered Species Act

The Endangered Species Act, 2007 (ESA) provides protection for Species At Risk (SAR) and their habitat. The ESA is administered by the MECP and provides policies for the protection of Extirpated, Endangered, and Threatened species. Species listed as provincially rare or special concern do not receive legal protection under the provincial ESA; however, a species management plan is to be prepared and they may receive

protection from some agencies, such as provincial and national parks, or other Acts, such as the *Ontario Fish and Wildlife Conservation Act*, which prohibits the killing, capturing, injuring, harassment, and trapping of specifically protected species. These four categories of species form the Species at Risk in Ontario (SARO) List, which are classified by the Committee on the Status of Species at Risk in Ontario (COSSARO). COSSARO is also responsible for maintaining criteria for assessing and classifying SAR.

The ESA helps protect species (Section 9) and their habitat (Section 10). Section 9(1)(a) of the ESA states:

“...no person shall kill, harm, harass, capture or take a living member of a species that is listed on the Species at Risk in Ontario List as an extirpated, endangered or threatened species”.

Section 10(1)(a) of the ESA states:

“...no person shall damage or destroy the habitat of a species that is listed on the Species at Risk in Ontario List as an endangered or threatened species”.

The ESA includes general habitat regulations, as well as species-specific habitat regulations. Species uplisted to Endangered or Threatened automatically receive general habitat protection under the ESA. The province is then required to prepare a species recovery strategy and establish a habitat regulation according to requirements of the ESA.

Regulatory amendments under the ESA were issued by the province in 2022 which streamlines ESA Authorizations for activities that have “predictable effects and common and routine mitigation actions with well understood requirements to minimize adverse impacts”. Proponents are still required to avoid and minimize impacts on SAR and their habitats.

The use of a SAR Conservation Fund was enabled for five designated conservation fund species when seeking permits and agreements related to these species (Eastern Whip-poor-will (*Antrostomus vociferus*), Blanding’s Turtle (*Emydoidea blandingii*), or to register for conditional exemptions (Eastern Meadowlark (*Sturnella magna*), Bobolink (*Dolichonyx oryzivorus*), Butternut (*Juglans cinerea*)).

In 2024, the Province of Ontario repealed the ESA and replaced it with the new *Species Conservation Act* (SCA). The SCA will eventually come into force when new regulations are developed and public consultation is complete.

While the new SCA is not fully enacted, several changes to the existing ESA have been made, including, but not limited to:

1. ESA authorizations for aquatic and migratory birds that are protected under the federal *Species at Risk Act* (SARA) continue to be required until the new SCA is enacted.
2. A new “habitat” definition replaced the definition of “habitat” that was in the ESA, and “harass” has been removed from the prohibitions regarding harm to species.
3. The requirement for the government to develop recovery strategies for species has been removed.
4. The Species Conservation Program has been created.
5. The Species at Risk Conservation Fund will no longer accept funds, and there is no longer an option for proponents to pay a charge.
6. New permits and amendments to existing permits are available; however, agreements are no longer available.
7. There are no longer specific permit types or specific preconditions to the issuance of a permit.

The SARO list is updated from time to time; therefore, it is the proponent’s responsibility to be apprised of any updates to the SARO list and amendments to *The Act* that may come into force for the duration of this project. If potential Species at Risk or associated habitat is present within the study area, it is the proponent’s responsibility to consider potential impacts and practice due diligence to ensure that the ESA and its regulations are not violated.

5.1.2.4 Clean Water Act – Source Water Protection

As a result of the *Clean Water Act*, (O. Reg. 287/07), communities in Ontario are required to develop Source Protection Plans to protect their municipal sources and develop strategies to reduce or eliminate these risks.

Ontario’s Source Water Protection initiative is focused on protecting municipal drinking water sources. Key areas include wellhead protection areas (areas that drain down towards municipal wells), highly vulnerable aquifers (where groundwater lies close to ground surface), and significant groundwater recharge areas (areas that feed aquifers).

Two municipal well sites and associated wellhead protection areas are located in Blackstock, within the Township of Scugog (approximately 6 km west of the study area).

The size of a wellhead protection area is determined by how quickly water travels underground to the well, measured in years. The study area is not located within a wellhead protection area¹.

The study area is located within a significant groundwater recharge areas (ranging from a Value of 2 to 6). A recharge area is considered significant in areas where the highest volumes of groundwater infiltrate to help maintain the water level in an aquifer that supplies a drinking water system, including private wells¹.

The study area is located within the boundary of a highly vulnerable aquifer (on the east of the study area). The vulnerability of an aquifer is dependent on the overlying geological materials. The vulnerability increases as the amount of protection provided by the overlying geological materials decreases.

The *Clean Water Act* defines a “prescribed threat” as “an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of drinking water and includes an activity or condition that is prescribed by source protection regulation as a drinking water threat”. The Province has identified 22 activities that could pose a threat if they are present in vulnerable areas, (listed in Section 1.1 of O. Reg. 287/07, under the *Clean Water Act*, 2006)². Project activities associated with the bridge improvements are not identified as prescribed drinking water threats. The application of road salt is identified as a prescribed drinking water threat.

The improvements to Edgerton Bridge may represent an indirect potential to impact the quality of water that is or may be used as a source of drinking water as it relates to the application of road salt with winter maintenance; however, the potential impact is not anticipated to be greater than under existing conditions. As such, project activities are not anticipated to pose an increased risk to drinking water.

5.1.2.5 KRCA Ontario Regulation 41/24 Regulated Area

The study area is located within the regulated area of the Kawartha Region Conservation Authority (KRCA). O. Reg. 41/24, Prohibited Activities, Exemptions, and Permits, under the *Conservation Authorities Act*, requires written permission for some works within an area which is regulated by the Conservation Authorities, including but not limited to site grading, changing or interference with a wetland or watercourse.

¹ Ministry of the Environment, Conservation and Parks. (n.d.). Source Protection Information Atlas.
<https://www.liaapplications.lrc.gov.on.ca/SourceWaterProtection/index.html?viewer=SourceWaterProtection.SWPViewer&locale=en-CA>

² Government of Ontario. (2025, September 1). O. Reg. 287/07: General. *Clean Water Act*, 2006 O. Reg. 287/07 General. <https://www.ontario.ca/laws/regulation/070287#BK3>

Construction activities within the regulated limit of KRCA will require a permit from the Conservation Authority.

5.1.3 Local Planning Context

5.1.3.1 Region of Durham Official Plan

The Region of Durham's Official Plan, titled Envision Durham, provides a comprehensive and integrated policy framework to guide long-term growth, infrastructure planning, and environmental stewardship across the Region to the year 2051. The plan envisions Durham as a complete, healthy, sustainable, and connected community.

Envision Durham was adopted by Regional Council on May 17, 2023, and approved in part by the Province of Ontario on September 3, 2024, with remaining portions approved on December 13, 2024. As of January 1, 2025, pursuant to Bill 23, the Region of Durham is defined as an upper-tier municipality without planning responsibilities. The Official Plan has since been incorporated into the Official Plans of Durham's eight area municipalities which now hold approval authority for *Planning Act* decisions.

Relevant to bridge replacement projects, Envision Durham includes policies under Chapter 4: Supportive Infrastructure & Services, and Chapter 8: Connected Transportation System, which emphasize the importance of maintaining and enhancing infrastructure to support safe, efficient, and sustainable movement of people and goods.

Key policy directions applicable to the bridge improvements include:

Transportation Infrastructure Planning:

- Section 4.1 – Municipal Servicing: supports infrastructure renewal and replacement to meet current and future needs while minimizing environmental impacts. Infrastructure planning is to be coordinated with land use to ensure efficient service delivery and support growth management objectives.
- Section 4.4 – Financial Management: encourages long-term financial planning for infrastructure investments, including lifecycle costing and asset management strategies.

Road Network and Design:

- Section 8.4 – Road Network & Design: promotes the design and maintenance of regional roads and associated structures, such as bridges, to support complete streets principles, accommodate all users, and ensure safety and accessibility. It also outlines criteria for arterial roads and ROW requirements.

Environmental and Community Impacts:

- Section 8.6 – Environmental & Community Impacts: requires infrastructure projects, including bridge replacements, to consider and mitigate impacts on natural heritage features, water resources, and surrounding communities, aligning with the Region's broader goals of climate resilience and environmental protection.

Active Transportation and Transit Integration:

- Section 8.1 – Transit Priority Network and Section 8.2 – Active Transportation: encourage integration of active transportation and transit-supportive infrastructure into road and bridge projects to support multi-modal connectivity.

Bridge replacement projects within Durham Region must align with these policies to ensure consistency with regional planning objectives, environmental protection, and community well-being. As planning responsibilities now rest with the area municipalities, coordination with the applicable local Official Plan is also required.

5.1.3.2 Township of Scugog Official Plan

The Township of Scugog Official Plan provides a strategic framework for guiding land use, infrastructure development, and environmental stewardship within the Municipality. Originally adopted by Council on June 22, 2009, and approved by the Ontario Municipal Board on March 2, 2011, the plan was consolidated in September 2017 to reflect all approved amendments to date.

The plan outlines long-term goals to manage growth and maintain Scugog as a livable, sustainable, and resilient community. It supports infrastructure renewal and transportation improvements, including bridge replacements, through coordinated planning and environmental consideration.

Key policy directions applicable to the bridge improvements include:

Transportation Infrastructure Planning

- Section 8.1 – Objectives: promotes the development of a safe, efficient, and integrated transportation system that supports all modes of travel and accommodates future growth.
- Section 8.2 – General Development Policies: requires that transportation infrastructure projects, including bridges, be planned to minimize environmental impacts, support active transportation, and align with land use designations.

Road Network and Design

- Section 8.3 – Road Network: identifies the hierarchy of roads and outlines standards for arterial, collector, and local roads. Bridge replacements must conform to these standards and support the safe movement of people and goods.
- Table 8-1 – Arterial Road Access Standards: provides technical criteria for access and design that may apply to bridge approaches and connections.

Active Transportation and Connectivity

- Section 8.4 – Pedestrian and Cycling Routes and Facilities: encourages the integration of pedestrian and cycling infrastructure into road and bridge projects to promote multi-modal connectivity.
- Section 8.5 – Public Transit: supports infrastructure that accommodates future transit needs, where applicable.

Environmental and Community Impacts

- Section 3.7 – Environmental Impact Studies: requires that infrastructure projects assess and mitigate impacts on natural heritage features, watercourses, and surrounding land uses.
- Section 3.20 – Water Resource Management and Section 3.21 – Watershed Planning: ensure that bridge projects protect water quality and hydrological functions, particularly where water crossings are involved.

Municipal Servicing and Utilities

- Section 8.9 – Water and Wastewater Services and Section 8.10 – Utilities: infrastructure projects must coordinate with servicing plans and utility corridors to ensure efficient delivery and avoid conflicts.

Bridge replacement projects in Scugog must align with these policies to ensure consistency with the Township's planning objectives, environmental protection goals, and community needs.

5.2 Cultural Heritage Resources

Cultural heritage resources include archaeological resources, Built Heritage Resources and Cultural Heritage Landscapes.

Archaeological Resources include artifacts, archaeological sites and marine archaeological sites, as defined under the *Ontario heritage Act*. "(Ministry of Municipal Affairs and Housing, 2024, p. 41).

Built Heritage Resources consist of a building, structure, monument, installation or any manufactured or constructed part or remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community" (Ministry of Municipal Affairs and Housing, 2024, p. 40).

Cultural Heritage Landscapes are a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association (Ministry of Municipal Affairs and Housing, 2024, p. 41).

The Cultural Heritage Evaluation Report, Heritage Impact Assessment and Stage 1 Archaeological Assessment are provided in Appendix A.

5.2.1 Built Heritage Resources and Cultural Heritage Landscape

A Cultural Heritage Evaluation Report (CHER) was completed for Bridge No. 11 (Edgerton Bridge) by MHBC in October 2024. The assessment identified the existing structure as having Cultural Heritage Value or Interest (CHVI) based on its physical structure and its historical and contextual setting.

The key heritage attributes related to the physical structure are:

- Location over East Cross Creek along Edgerton Road and east-west orientation.
- Narrow two-lane solid slab (through girder) construction.
- Concrete abutments.
- Paneled parapet walls with simple art deco-elements.
- Structure surface texture indicative of the original concrete moulds, indicating the bridge's cast-in-place construction.

The bridge is situated in the Village of Cadmus along Edgerton Road, crossing East Cross Creek. The structure holds contextual value by being important in supporting the rural character of the area and enhancing the scenic quality of this rural settlement area. A core heritage attribute is the bridge's physical and functional link to its surroundings, as it provides a historic crossing over East Cross Creek along the old concession road between Concessions 4 and 5. Historical documentation suggests a bridge was likely present in this location as early as 1857, serving as a high-traffic area adjacent to the grist mill at the heart of Cadmus.

The CHER recommended a Heritage Impact Assessment (HIA) to evaluate potential impacts to the bridge should the existing bridge be replaced.

5.2.2 Heritage Impact Assessment

The Heritage Impact Assessment for the Edgerton Bridge was completed by MHBC in October 2025. The HIA completed an analysis of impacts on heritage resources that may result from the potential replacement of the Edgerton Bridge. The report identified the potential for major adverse impacts from demolition related to the removal of the existing bridge with CHVI.

The recreation of the look of the parapet walls based on the original architectural drawings is anticipated to visually mitigate the loss of the original structure to the streetscape and scenic rural views.

Additionally, the following mitigation measures are recommended to mitigate the loss of the original historic fabric of the existing bridge:

- Replacement bridge be constructed at the current location over East Cross Creek along Edgerton Road with an east-west orientation, which is considered to be a heritage attribute.
- Photographic documentation of all elevations of the existing bridge be conducted to supplement the historic record prior to its removal.

Additionally, the report determined that the design, location, and materials of the proposed replacement bridge are compatible with the rural character and existing context of the area.

5.2.3 Archaeological Resources

A Stage 1 Archaeological Assessment was conducted Parslow Heritage Consultancy Inc. (PHC) in August 2025.

Based on the findings of the Stage 1 Archaeological Assessment, the following recommendations were provided:

- The entirety of the study area was determined to have low archaeological potential comprising slopes, watercourse, and previous disturbance; these areas were photo documented, and no further assessment is recommended.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the Site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c. 33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with O. Reg. 30/11 the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites³. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

Archaeological assessments are required to be undertaken by an archaeologist licensed under the *Ontario Heritage Act*, who is responsible for submitting the report directly to Ministry of Citizenship and Multiculturalism (MCM) for review.

5.3 Technical Environment

Below is a review and summary of the technical environment for Bridge No. 11 (Edgerton Bridge), with regards to physical condition, geometry (width and profile), hydraulic capacity, and geotechnical conditions. All supporting reports are provided in Appendix A.

5.3.1 Physical Condition

The Edgerton Bridge was originally constructed in 1925 and is identified as a Concrete Through-Girder Bridge. Based on site investigations and background reports, the structure is approximately 100 years old and is generally considered to be at the end of its service life. The condition reviews, including a 2023 and 2025 OSIM inspection, resulted in a Bridge Condition Index (BCI) of 59.8, which is generally regarded as Fair to Poor. A rating less than 50 indicates a structure is in poor condition and nearing the end of its service life.

Structural elements exhibit severe deterioration, significantly impacting the load-carrying capacity. The concrete deck soffit is in poor condition with severe spalling and exposed corroded reinforcing steel. The governing member based on condition was the interior soffit, which had an element BCI of 43.4. Furthermore, a wide crack was noted in the west abutment wall extending into the northwest wingwall, suggesting potential substructure movement that could induce additional stresses. The north concrete barrier wall displays a wide horizontal crack along its entire length, and the northeast quadrant of this barrier appears to be rotating inwards.

³ Government of Ontario. (2022, March 1). *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, Chapter 33. *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c. 33. <https://www.ontario.ca/laws/statute/02f33>

The structure currently remains open but is load-limited to 8/14/19 tonnes, based on a 2021 Load Evaluation Report. Based on the current degree of deterioration, the bridge warrants prioritization for replacement or rehabilitation. Considering the structure's advanced age and the fact it was not designed to carry current vehicular live loads, rehabilitation efforts are expected to have limited effectiveness and would not allow for the removal of the current load restriction.

5.3.2 Geometry – Width

The bridge has an overall structure width of 6.7 m and provides a narrow driving platform of 5.7 m between the concrete barriers. Edgerton Road is classified as a local road with an approach roadway consisting of two 3.3 m lanes and 0.8 m granular / vegetated shoulders, totaling 8.2 m in width between the top of the slopes.

The existing bridge width is considered substandard as it does not meet the minimum requirements established by the MTO Design Supplement to TAC. For this classification of roadway, the MTO Design Supplement requires a minimum cross-section consisting of 3.0 m lanes with 1.25 m side clearance at the bridge, resulting in a minimum total width of 8.5 m between barriers.

Since the bridge uses the through-girder barriers on the exterior edge as the main load carrying elements, the existing structure cannot be widened during rehabilitation. Therefore, replacement of the structure is required to achieve the minimum prescribed cross-section width.

5.3.3 Geometry – Profile

Edgerton Road is classified as a local road with a posted speed limit of 40 km/h. The existing road profile locates the structure near the low point of a vertical sag curve. The rate of vertical curvature (K-value of approximately 6) indicates an approximate design speed of only 30 km/h.

MTO established practice suggests that the design speed for a local road should desirably be 20 km/h greater than the posted limit (60 km/h) or, at minimum, equal to the maximum posted speed limit (40 km/h). As the current design speed is 30 km/h, the road profile is substandard and does not meet the posted speed limit or current MTO guidelines. To achieve a minimum design speed of 40 km/h for a non-illuminated roadway, a K-value of 9 is required for vertical sag.

Replacement of the structure would allow for the improvement of the road profile to meet a design speed equal to, or greater than the posted speed of 40 km/h. This improvement would likely require increasing the roadway elevation from 0.4 m to 0.7 m at the bridge location.

5.3.4 Hydraulic Capacity

The Edgerton Bridge conveys flows of the East Cross Creek. Hydraulic analysis using HEC-RAS modelling indicated that the existing bridge is capable of conveying the 100-year storm event. For the 25-year design storm, the existing structure provides 0.48 m of clearance to the soffit and 1.10 m of freeboard. This performance exceeds the minimum desired clearance and freeboard criteria (> 0.3 m) mandated by the MTO Highway Drainage Design Standards for bridges with a span greater than 6.0 m on a local roadway.

However, the analysis revealed that the Regional Storm event would cause the roadway to be overtopped by 1.66 m. A replacement bridge would involve improving the road profile by raising the elevation (to meet geometric standards), a larger span structure is required to increase conveyance through the crossing and maintain the existing backwater flood elevation during the Regional Storm.

A proposed replacement structure (a 23.0 m span bridge) would further improve hydraulic performance during the 2-year through 100-year storm events. This proposed design reduces headwater elevations for storms up to the 100-year event (a 0.19 m reduction for the 100-year storm).

5.3.5 Utilities

Utility observations in the project area identified the following potential conflicts with reconstruction works:

Gas

No gas utilities were observed in the project area.

Hydro

Overhead hydro lines are present on the north side of Edgerton Road. Any reconstruction requiring the installation of girders or precast sections will require these lines to be temporarily de-energized. Buried hydro lines were observed crossing Edgerton Road approximately 80 m west of the bridge. Since the hydro duct is partially exposed within the existing roadside ditch / swale, any proposed drainage works in this area will conflict and necessitate the utility being lowered.

Telecommunications

Overhead telecommunication lines are located on the south side of the road but are not anticipated to conflict with reconstruction works. However, buried telecommunication lines observed on the south side of Edgerton Road, west of the bridge, may be in conflict with proposed driveway culverts and roadside ditches.

5.4 Natural Environment

A review of existing natural heritage conditions and secondary source information was conducted to characterize vegetation and aquatic communities, and assess the potential for wildlife habitat and habitat of Species at Risk (SAR) in the study area, including breeding bird, bat, and reptile habitat, and incidental wildlife observations.

A summary of findings is provided in the sections below. The Natural Heritage Report is provided in Appendix A.

5.4.1 Physiography and Topography

A review of available mapping by Geology Ontario was undertaken to characterize the general topography, and surficial and bedrock geology of the study area.

The study area is relatively flat with an elevation of approximately 265 m to 275 m above sea level and is located within the Peterborough Drumlin Field physiographic region of Southern Ontario⁴. More specifically, the area is situated within the Drumlinized Till Plains, which is characterized regionally as a rolling till plain with long gentle slopes. While the general area is relatively flat, the immediate study area includes steeply sloped river banks (greater than 20 degrees).

Surficial geology mapping illustrates the study area is primarily located within massive-well laminated (consisting of silt and clay, and minor sand and gravel), foreshore-basinal deposits (consisting of sand, gravel, minor silt, and clay), older alluvial deposits (consisting of clay, silt, sand, gravel, and may contain organic remains), and modern alluvial deposits (consisting of clay, silt, sand, gravel, and may contain organic remains)⁵. Local soils are classified as Bondhead Fine Sandy Loam, a gray-brown podzolic soil known for its good drainage, overlying highly calcareous till.

⁴ GeologyOntario. (n.d.). Physiography of Southern Ontario (MRD228).
<https://mndm.maps.arcgis.com/apps/mapviewer/index.html?webmap=651b93b051a549c490a7772fc0f8e760>

⁵ GeologyOntario. (n.d.). GeologyOntario Spatial Search.
<https://mndm.maps.arcgis.com/apps/webappviewer/index.html?id=66ee0efe4d3c4816963737dbdb890708>

5.4.2 Climate

Local climate conditions were obtained from Canada's Environment and Climate Change Burketon McLaughlin meteorological station (ID 6151042). The Burketon McLaughlin station is located approximately 11 km southwest of the study area.

According to the Canadian Climate Normals (calendar years 1981 to 2010) for this station, the daily average annual temperature is 6.8 C. The warmest month of the year is July with an average temperature of 20.0 C, and the coldest month is January with an average temperature of -7.4 C. Additionally, the meteorological station recorded a total annual precipitation (snow and rain) of 920.6 mm, 787.9 mm of which was rain. The maximum mean monthly precipitation is 100.2 mm and occurs in September⁶.

5.4.3 Terrestrial Environment

The Edgerton Road bridge is located within the Protected Countryside and Greenbelt Natural Heritage System. These areas also represent Core Natural Areas of the Township of Scugog Greenlands System. Components of the Natural Heritage System present in the general area include watercourses and associated valleylands, significant woodlands, and other wetlands. While unmapped, Significant Wildlife Habitat (SWH) features and Significant Habitat of Endangered and Threatened species may also be supported within the general area.

A total of seven Ecological Land Classification (ELC) communities are present within the study area. No provincially rare plants were incidentally encountered during the field investigation. The identified ELC communities are:

- Residential (CVR).
- Fencerow (TAGM5).
- Fresh – Moist White Cedar Coniferous Forest (FOCM4).
- Fresh – Moist White Cedar – Hardwood Mixed Forest Ecosite (FOMM7).
- Mixed Swamp (SWM).
- Graminoid Mineral Shallow Marsh (MASM1).
- Open Water (OAO).

A tree inventory completed on July 23, 2025, identified a total of 67 individual trees and one tree group (TG1) within the assessment area. The majority of the individual trees assessed (42) were located within the ROW, while the remaining 25 trees were located on immediately adjacent private land. TG1 is located on the south side of the ROW, east

⁶ Government of Canada. (2025, June 10). Canadian Climate Normals 1981-2010 Station Data. https://climate.weather.gc.ca/climate_normals/results_1981_2010_e.html?searchType=stnName&txtStationName=burketon&searchMethod=contains&txtCentralLatMin=0&txtCentralLatSec=0&txtCentralLongMin=0&txtCentralLongSec=0&stnID=4881&dispBack=1

of 4154 Edgerton Road and west of Edgerton Bridge, straddling the property line. TG1 consists of 109 Eastern White Cedar trees, with 90 trees less than 10 cm in diameter at breast height (DBH) and 19 trees ranging from 10 to 15 cm DBH.

5.4.4 Aquatic Habitat

The Edgerton Road Bridge crosses East Cross Creek, which provides a cold water thermal regime. Brown Lake is located approximately 30 m upstream of the structure. Historically, recorded fish species in East Cross Creek and Brown Lake include Brook Trout, Blacknose Dace, Largemouth Bass, and Common Shiner, among others.

Upstream Conditions

The watercourse flows from the outlet of Brown Lake and bends approximately 30 m upstream of the bridge inlet, subsequently flowing in an east-to-west direction. The morphology upstream of the bridge within the ROW is characterized as flat. The measured wetted width was 5.2 m and the depth was 0.45 m. The substrate primarily consists of silts and muck with trace granular materials. The banks are stable, vegetated with cedars, grasses, and forbs, providing shading and overhead cover. A pipe serving as the outlet from Brown Lake, is present upstream and may represent a barrier to upstream fish movement.

Downstream Conditions

Downstream of the bridge, the watercourse flows in a south-to-north direction through lands characterized by manicured lawns with some trees present on the west bank. The morphology downstream is classified as flat. The measured wetted width and depth were 3.95 m and 0.3 m, respectively. The substrate is composed of a combination of silt, sand, and cobbles. The banks exhibit minor erosion, and the vegetation is sparser than upstream, resulting in less shading.

Fish Habitat

Fish were observed upstream, within, and downstream of the bridge. The watercourse is considered fish habitat as defined by the federal *Fisheries Act*.

5.4.5 Species at Risk (SAR)

Based on a review of background database information and field observations of existing habitat conditions, the following SAR (provincial / federal status) were identified as potentially being present within or adjacent to the study area:

Birds

- Barn Swallow (*Hirundo rustica*) (Special Concern / Threatened).
- Canada Warbler (*Cardellina canadensis*) (Special Concern / Threatened).
- Chimney Swift (*Chaetura pelagica*) (Threatened / Threatened).
- Eastern Wood-pewee (*Contopus virens*) (Special Concern / Special Concern).
- Red-headed Woodpecker (*Melanerpes erythrocephalus*) (Endangered / Endangered).
- Wood Thrush (*Hylocichla mustelina*) (Special Concern / Threatened).

Plants

- Black Ash (*Fraxinus nigra*) (Endangered / Not at Risk).
- Butternut (*Juglans cinerea*) (Endangered / Endangered).
- Hill's Pondweed (*Potamogeton hillii*) (Special Concern / Special Concern).

Mammals

- Eastern Red Bat (*Lasiurus borealis*) (Endangered / Not at Risk).
- Hoary Bat (*Lasiurus cinereus*) (Endangered / Not at Risk).
- Little Brown Myotis (*Myotis lucifugus*) (Endangered / Endangered).
- Northern Myotis (*Myotis septentrionalis*) (Endangered / Endangered).
- Silver-haired Bat (*Lasionycteris noctivagans*) (Endangered / Not at Risk).
- Tri-coloured Bat (*Perimyotis subflavus*) (Endangered / Endangered).

Reptiles / Amphibians

- Midland Painted Turtle (*Chrysemys picta marginata*) (No Status / Special Concern).
- Snapping Turtle (*Chelydra serpentina*) (Special Concern / Special Concern).
- Western Chorus Frog (*Pseudacris maculata*) (No Status / Threatened).

5.4.6 Wildlife Observations

Incidental wildlife observations recorded during the field assessment included the Baltimore Oriole (*Icterus galbula*) and the Song Sparrow (*Melospiza meodia*). Evidence of wildlife activity included Raccoon (*Procyon lotor*) prints. The Song Sparrow and Raccoon are provincially common species.

6.0 Identification of Alternative Solutions

Alternative Solutions considered for Bridge No. 11 (Edgerton Bridge) include:

1. Do Nothing (Maintain Existing Bridge).
2. Remove Bridge Structure.
3. Bridge Rehabilitation.
4. Two-Lane Bridge Replacement.

The Alternative Solution of Do Nothing is a mandatory consideration within the MCEA process.

6.1 Alternative Solutions for Bridge No. 11 (Edgerton Bridge)

6.1.1 Alternative 1 – Do Nothing

For this alternative solution, the existing structure would be left in place and no improvements to the bridge would be completed. This option allows for the structure to live out its remaining service life.

6.1.2 Alternative 2 – Remove Bridge Structure

In this alternative the bridge would be removed, the channel naturalized, and water would flow through an open section. Turnaround areas would be constructed beyond the last driveway to ensure snow removal and garbage collection.

6.1.3 Alternative 3 – Bridge Rehabilitation

This alternative solution involves repairing noted defects, including concrete repairs to the deck, barriers, soffit, abutments, and wingwalls, installing erosion protection, replacing guide rails, and waterproofing and paving the deck. Heritage attributes of the original barriers would be preserved.

6.1.4 Alternative 4 – Two-Lane Bridge Replacement

This alternative involves replacing the existing bridge with a new structure designed to meet current design criteria. The proposed structure would be a 23.0 m span, cast-in-place concrete deck on prestressed concrete girder bridge. The structure would be widened to an 8.5 m driving platform and the roadway elevation increased by 0.4 m to 0.7 m to achieve a minimum 40 km/h design speed.

7.0 Evaluation of Alternative Solutions

The evaluation of alternatives is a step-by-step process that compares alternatives that are feasible within the project environment and meet the project objectives outlined in the Problem / Opportunity Statement.

The impacts of the alternatives are evaluated relative to each other, against a set of equally weighted criteria, including possible mitigating measures. The criteria are developed based on the inventory of the natural, social / cultural, financial, and technical environment of the study area, and identification of key considerations, including:

- Potential impact to existing natural features.
- Minimizing encroachment onto private property and the potential for land acquisition.
- Maintaining property access.
- Consideration of active transportation along the corridor.
- Working within existing planning policy and regulations.
- Maintaining traffic flow and connection, as well as providing capacity for future growth and traffic.
- Maintaining effective storm drainage.
- Financial costs.
- Potential impact to utilities.
- Consideration of community and agency input.

A table showing the Evaluation of Alternative Solutions for each of the criteria is presented in Appendix B. The results of the evaluation are discussed in the following sections.

7.1 Alternative 1 – Do Nothing

The Do Nothing alternative is characterized by maintaining the current operational status of the structure, resulting in no new impacts to the designated natural heritage features, vegetation / trees, or terrestrial habitat compared to existing conditions. However, existing issues such as erosion and scour along the road embankment and abutment may continue or worsen, particularly with the increased frequency of storm events. The vertical profile of the existing bridge is vulnerable to potential flood conditions during periods of very high flow (Regional Storm), overtopping the roadway. From a socio-cultural standpoint, this option maintains the heritage value of the structure until it reaches the end of its estimated service life of five years.

The existing bridge does not conform to municipal minimum standards for local residential road width or load capacity, and the structure is currently subject to load restrictions that may be further reduced due to continued deterioration. Although there are no associated upfront capital costs, continued operation and maintenance costs are

anticipated, potentially increasing due to the deteriorating conditions. This alternative does not address the deteriorating condition, or the current load restrictions on the bridge and does not address the Problem / Opportunity Statement.

7.2 Alternative 2 – Remove Bridge Structure

Alternative 2, the removal of the bridge structure, is associated with low capital costs, estimated at approximately \$235,000.00 (excluding HST), and low costs for continued maintenance. This option addresses the continued deterioration of the bridge structure and allows for improved conveyance capacity during periods of high flow, with the channel being naturalized and returned to free-flowing conditions, accommodating the Regional Storm event.

However, this alternative has moderate impacts on the natural environment, specifically requiring the removal of existing trees and vegetation. There is potential for direct temporary impacts to fish habitat during the removal of abutments and in-water work. The removal of the bridge structure requires temporary changes to driveway access and permanent bridge closure resulting in a longer travel route to access adjacent properties. Furthermore, removal of the bridge does not conform to transportation planning, as it eliminates the connectivity of Edgerton Road and separates the community of Cadmus. Alternate routes for emergency vehicles would be required, potentially resulting in circuitous travel. Property acquisition is required for the construction of turnaround areas. The heritage attributes of the bridge would be removed under this option.

This alternative would limit the connectivity of the road network by eliminating a through road connection. This alternative does not accommodate local vehicles or emergency vehicles across the water course. This alternative does not address the Problem / Opportunity statement.

7.3 Alternative 3 – Bridge Rehabilitation

Bridge Rehabilitation is the moderately expensive alternative, with estimated construction costs of approximately \$430,000.00 (excluding HST). Construction works would largely be within the existing bridge footprint and ROW, resulting in minimal impacts to vegetation / trees and terrestrial habitat. The rehabilitation work requires conventional concrete repairs and is anticipated to be completed with a full road closure lasting approximately 10 to 12 weeks.

Following the rehabilitation work, the bridge is estimated to have a service life of approximately 20 years. However, despite improving the structural condition, rehabilitation does not improve load capacity, meaning load restrictions would continue to apply. The existing bridge has a narrow 5.7 m wide driving platform that does not meet the Township requirements for minimum pavement width for a local residential

road, a deficiency that would be maintained under this option. Furthermore, existing issues like erosion and scour along the road embankment and abutment may continue or worsen. No property acquisition is anticipated for this alternative.

This alternative partially addresses the Problem / Opportunity Statement by addressing the deteriorating condition of the structure; however, load restrictions would still apply, and the structure would remain deficient regarding platform width.

7.4 Alternative 4 – Two-Lane Bridge Replacement

Alternative 4, Two-Lane Bridge Replacement, is the highest capital cost option, estimated at approximately \$1,950,000.00 (excluding HST). While this option entails moderate impacts to vegetation / trees due to a wider area of disturbance, it provides significant technical improvements.

The new structure would address all structural defects without load restrictions, providing an expected service life of 75+ years. The replacement includes widening the bridge and approach roadway to an 8.5 m wide driving platform, which is beyond the minimum pavement width requirements for a local residential road. This widening improves operational safety, accommodates two-lanes of traffic, and enhances pedestrian and cyclist safety. From an environmental resilience standpoint, the new vertical profile and larger span structure would improve hydraulic performance – addressing existing scour and erosion issues and improving conveyance capacity to accommodate the Regional Storm.

To mitigate impact to CHVI, the new barriers can be designed to match the aesthetics and art deco-style of the existing bridge barriers.

This alternative fully conforms to the connectivity of the road network as identified in the Region of Durham and Township of Scugog Official Plans and broader transportation planning objectives. By providing a full two-lane structure with an 8.5 m wide driving platform, the design supports safe and efficient movement of people and goods, consistent with policies promoting integrated and complete transportation systems. Furthermore, the widened platform enhances operational safety and accommodates active transportation, and the improved hydraulic performance and structural resilience address environmental protection goals outlined in both plans, ensuring infrastructure renewal minimizes ecological impacts and supports climate adaptation. These features collectively advance long-term growth management and connectivity objectives while meeting current engineering standards without imposing load restrictions.

8.0 Consultation Summary

Consultation is an important part of the MCEA process to ensure that anyone with an interest in the project has an opportunity to provide input into the Township's decision-making process before a project is implemented. Comments received throughout the MCEA process are incorporated into the evaluation of Alternatives.

The Schedule B MCEA requirements include two mandatory public points of contact during the MCEA process. The mandatory points of contact for this project included a Notice of Commencement and a Notice of Completion.

Project information was made available on the Township's website at <https://my.scugog.ca/edgerton-bridge-municipal-class-environmental-assessment>. Opportunity to provide input into the planning and design of the project included an opportunity to submit comments / questions, and to connect directly with the project team members with comments or questions.

A Project Contact List was developed as a mailing list to distribute project notices. The Project Contact List consisted of technical and provincial agencies, utilities, and Indigenous Nations that may have an interest in the project, as well as residents within the study area. Throughout the MCEA process, the Project Contact List was used to maintain contact information for those interested in the project, and to summarize comments received about the project and responses from the project team. A copy of the Project Contact List is provided in Appendix C. Copies of correspondence received during the MCEA are also provided in Appendix C.

8.1 Notices

Project Notices were published in The Standard and posted on the Township's website. Project Notices were emailed or mailed to those on the Project Contact List. Copies of Notices are provided in Appendix C.

The Notice of Commencement, inviting public input on the project, was published in The Standard on September 11, 2025, and posted on the Township's website.

A Notice of Completion will be published in The Standard at the conclusion of the MCEA process for the project and mailed / emailed to all on the Project Contact List. The Notice of Completion will provide members of the public with the dates and location where the Project File Report can be reviewed as well as names and addresses of people to whom they can send their comments.

8.2 Project Information Boards

Project Information Boards were developed and posted on the Township's project webpage for the public to view and provide feedback. The boards introduced the project, outlined the Proposed Alternative Solutions, identified the Preferred Alternative, and highlighted the next steps in the process. Opportunity for public feedback was made available through an online digital comment form or by contacting the project team with written comments. The Project Information Boards are available in Appendix C.

8.3 Indigenous Nations

MECP has developed guidance on the steps to rights-based consultation with Indigenous communities. Indigenous communities with a potential interest in the project were identified through correspondence and direction provided by the MECP (correspondence: Chunmei Liu, Regional Environmental Assessment Coordinator, MECP, dated June 6, 2025). A copy of this correspondence with MECP is provided in Appendix C.

Individual correspondence, along with project notices were sent by email / mail to the Indigenous communities identified as having a potential interest in the MCEA. Follow-up phone calls were made following the Notice of Commencement to confirm receipt of notice, inquire about interest in the project, and any concerns or questions about the project.

Alderville First Nation (AFN) requested a Notice of Request to Consult, which was provided, as well as the involvement of at least one of their trained Archaeological Liaisons in all Stage 2 to 4 Assessments, including participation in test pitting, surveys, and excavation activities. Additionally, it was requested that without delay, should any native burial site remains or other archaeological findings be unearthed, they must be notified. AFN also requested to be kept informed throughout all phases of the project. AFN reviewed the Stage 1 Archaeological Assessment and provided comments and concerns. The Stage 1 Archaeological Assessment was updated to reflect AFN's comments and concerns and confirmed no Stage 2 assessment is required.

Chippewas of Georgina Island requested a copy of the finalized PFR once it has been completed.

Mississaugas of Scugog Island First Nation requested to receive the PFR once the draft version becomes available.

At the time of this report, comments have not been received from AFN.

Scugog Edgerton Road Bridge Replacement, Schedule B MCEA
January 2026

A summary of comments received from Indigenous Nations throughout the project is provided in the Project Contact List in Appendix C and summarized in the table below.

Table 1: Indigenous Nations Correspondence

Community	Notices	Comments Received	Response Provided
Alderville First Nation	Yes	251015_Email. Dr. Julie Kapyrka confirmed receipt of NOCm. Alderville First Nation (AFN) requires a request to consult per the AFN protocol along with a filing fee to cover initial administration and review. AFN may require a mutual agreement to establish a special consultation process for this project. AFN notes that although they have not conducted exhaustive research, there may be the presence of burial or archaeological sites in the proposed project area. AFN must be notified immediately if any native burial sites or archaeological findings are unearthed. Furthermore, AFN insists on the involvement of at least one of their trained Archaeological Liaisons in all Stage 2 to 4 Assessments (including test pitting, surveys, and excavation), with the proponent bearing this cost. AFN also wishes to be kept informed throughout all project phases. 251203_Email. Sent Township copy of Notice of Request to Consult. 251205_Email. Acknowledged receipt of Notice of Request to Consult. AFN provided instructions for file fee payment, and requested any environmental studies completed for this project as part of their review. 260121_Email. Dr. Julie Kapyrka confirmed receipt of filing fee. With regard to the Stage 1 archaeological assessment report AFN had several comments and concerns. AFN noted that while the report discusses the loss of Indigenous oral histories, it does not	250911_Email. Circulated NOCm. 250919_Follow-up call. Left message. 250925_Follow-up call. Left message. 251003_Follow-up call. Left message. 251105_Follow-up call. Left message regarding Notice for Request to Consult process. 251106_Follow-up call. Left message regarding Notice for Request to Consult process. 251105_Follow-up call. Left message regarding Notice for Request to Consult process. 251106_Follow-up call. Left message regarding Notice for Request to Consult process. 251121_Email. Provided a Letter of Request to Consult to initiate consultation process with Alderville First Nation. 251205_Email. Follow-up regarding Notice of Request to Consult, file fee payment instructions, and background documents required for Stage 1 archaeological assessment review. 251210_Email. Confirmed file fee payment was sent, provided requested background documents, and requested feedback by January 15, 2026. 260108_Email. Follow-up regarding receipt of file fee payment and checking in on review of Stage 1 archaeological assessment. Confirming if the deadline of January 15, 2026 was on track for review.

Community	Notices	Comments Received	Response Provided
		incorporate the Michi Saagiig oral history, which was requested to be included. AFN also advised that the historical and treaty context is insufficient; although Treaty 20 is mentioned, the report should include a more complete overview of the treaties that shaped settlement in the region – particularly the Williams Treaties and the Williams Treaties Settlement Agreement. Additionally, AFN expressed concern about outdated and culturally biased terminology used in the report, particularly references to the Ontario Iroquois Tradition and related classifications. AFN requested that terminology be updated to align with current archaeological practice, which uses neutral descriptors such as the Woodland Tradition and Late Woodland horizons. AFN also asked that statements minimizing Anishinaabeg history be removed, noting that the Anishinaabeg have longstanding, continuous presence in the region before, during, and after the Huron-Wendat and Haudenosaunee, and continue to reside in their homelands today.	260119_Follow-up call. Left message regarding confirmation of receipt of file fee and deadline for Stage 1 archaeological assessment comments. 260121_Email. Follow-up regarding receipt of file fee payment and checking in on review of Stage 1 archaeological assessment. 260128_Email. Acknowledged AFN’s feedback on Stage 1 archaeological assessment. Provided an updated Stage 1 archaeological assessment to reflect AFN’s comments.
Beausoleil First Nation	Yes		250911_Email. Circulated NOCm. 250919_Follow-up call. Left message. 250925_Follow-up call. Left message. 251003_Follow-up call. Left message.
Chippewas of Georgina Island	Yes	250925_Follow-up call. JL Porte confirmed receipt of NOCm. Requested finalized PFR once completed.	250911_Email. Circulated NOCm. 250919_Follow-up call. Left message.
Chippewas of Mnjikaning First Nation (Rama)	Yes	250919_Follow-up call. Dillon Bickell confirmed receipt of NOCm.	250911_Email. Circulated NOCm.
Curve Lake First Nation	Yes		250911_Email. Circulated NOCm. 250919_Follow-up call. Left message.

Community	Notices	Comments Received	Response Provided
			250925_Follow-up call. Left message. 251003_Follow-up call. Left message.
Hiawatha First Nation	Yes	250912_Email. Tom Cowie confirmed receipt of NOCm. Understanding the age and heritage issues it may be best to rebuild. The concern is that the aquatic habitat that will be affected and archaeological potential in the area.	250911_Email. Circulated NOCm. 251023_Email. Acknowledged feedback. Indicated that studies have been completed to assess the existing conditions in the Study Area – including natural heritage features and a Stage 1 Archaeological Assessment to evaluate the potential impact of the solutions, confirm the preferred solution, and identify any mitigation measures if needed. Noted that comments will be included in the public record for the project.
Wendat Nation	Yes		250911_Email. Circulated NOCm.
Kawartha Nishnawbe First Nation	Yes	250917_Email. Jenna Nahrgang confirmed receipt of NOCm. Indicated that Chief Nahrgang is no longer in role. Removed from contact list.	250911_Email. Circulated NOCm. 251031_Email. Acknowledged Chief Nahrgang is no longer in role and has been removed from contact list. Inquired about new contact.
Mississaugas of Scugog Island First Nation	Yes	250916_Email. Confirmed receipt of NOCm. MSIFN Consultation requests to receive the study report once drafted.	250911_Email. Circulated NOCm.
Williams Treaty First Nations Claims Coordinator	Yes		250911_Email. Circulated NOCm.

9.0 Preferred Solution

Based on the evaluation of alternatives, the comments received from interest holders and agencies, the Preferred Solution for Bridge No. 11 (Edgerton Bridge) is Alternative 4 - Two-Lane Bridge Replacement.

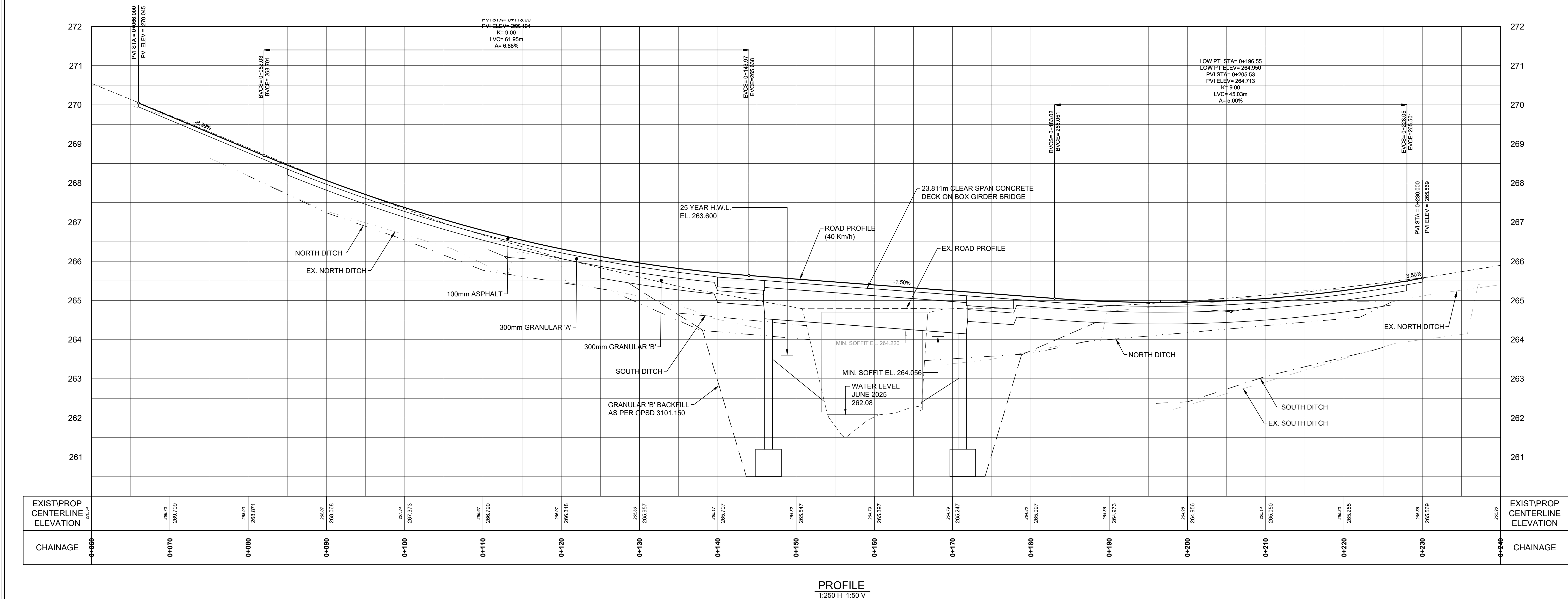
While this alternative solution represents the highest capital costs (estimated construction cost of approximately \$1,950,000.00, excluding HST), it is the only option that fully addresses the Problem / Opportunity Statement by addressing the deteriorating condition and existing load restrictions of the bridge and improving operational issues to meet current standards for width and traffic flow as a full two-lane structure. Additionally, this solution conforms to the Official Plan and transportation planning by supporting safe and efficient movement of people and goods, accommodating active transportation, and enhancing environmental resilience through improved hydraulic performance and structural durability, and demonstrates the need for infrastructure based on traffic volume warrants and access facilitation for individual properties. It will provide the best solution for technical factors, accommodating two lanes of traffic and improving operational safety. Although this option will impact the CHVI of the existing bridge, the new barriers can be designed to match the aesthetics and art deco-style of the existing bridge barriers to preserve its heritage attributes per the recommendations of the HIA. No property acquisition is anticipated to be required for this solution.

9.1 Details of the Preferred Solution

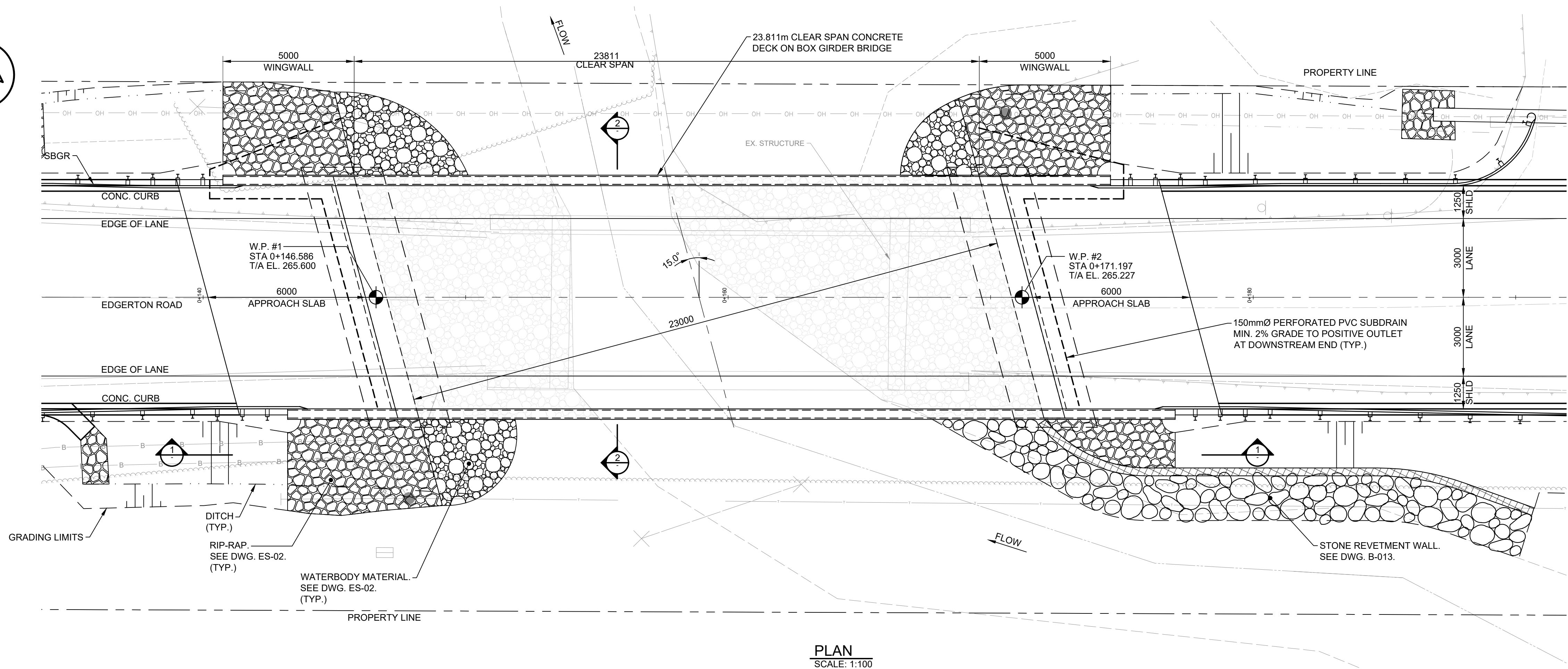
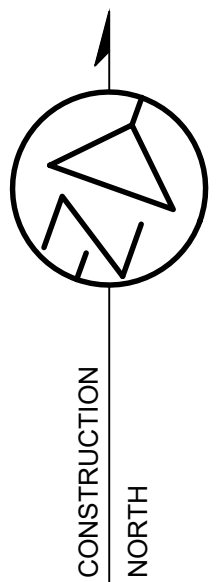
The design would involve a pre-stressed concrete box girder bridge with an expected service life of 75+ years (with regular maintenance).

The structure and approach roadway would be widened to an 8.5 m wide driving platform, with the road profile improved to match the posted speed limit. Replacement of Bridge No. 11 (Edgerton Bridge) would allow for a 40 km/h design speed profile to be achieved without load restrictions. The final road profile under the replacement scenario will be elevated by approximately 0.4 m to 0.7 m, depending on the geometry of the proposed 23.0 m span structure. Potential relocation of utilities – either temporary or permanent – may be required based on the bridge works and grading limits.

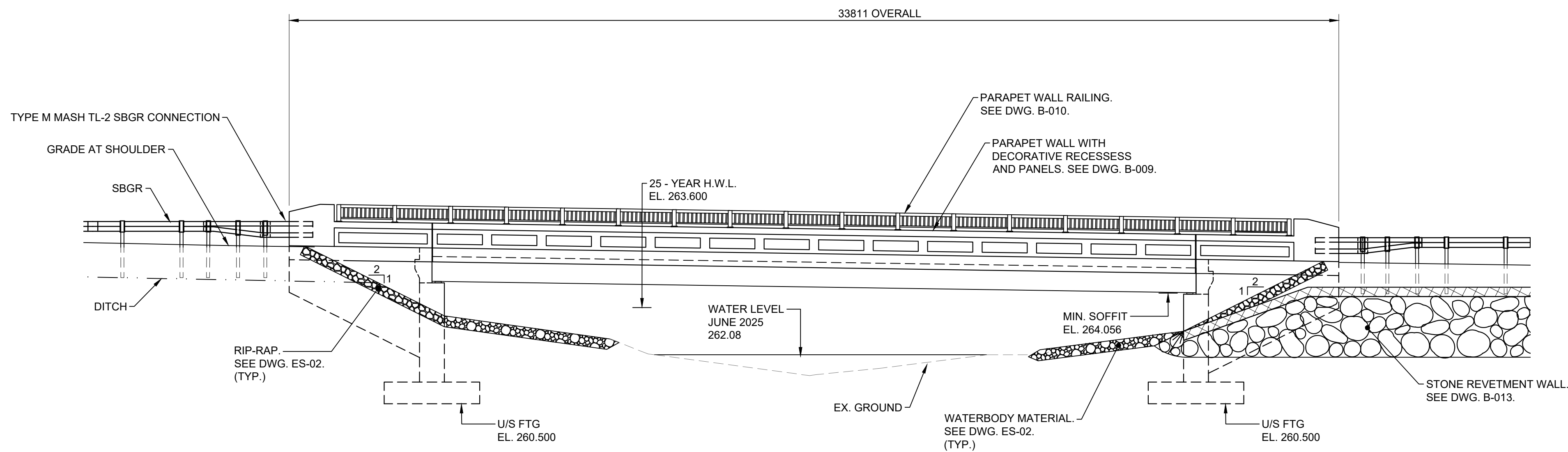
Bridge replacement will utilize conventional construction techniques and is anticipated to be completed with a full road closure over approximately 20 to 22 weeks.



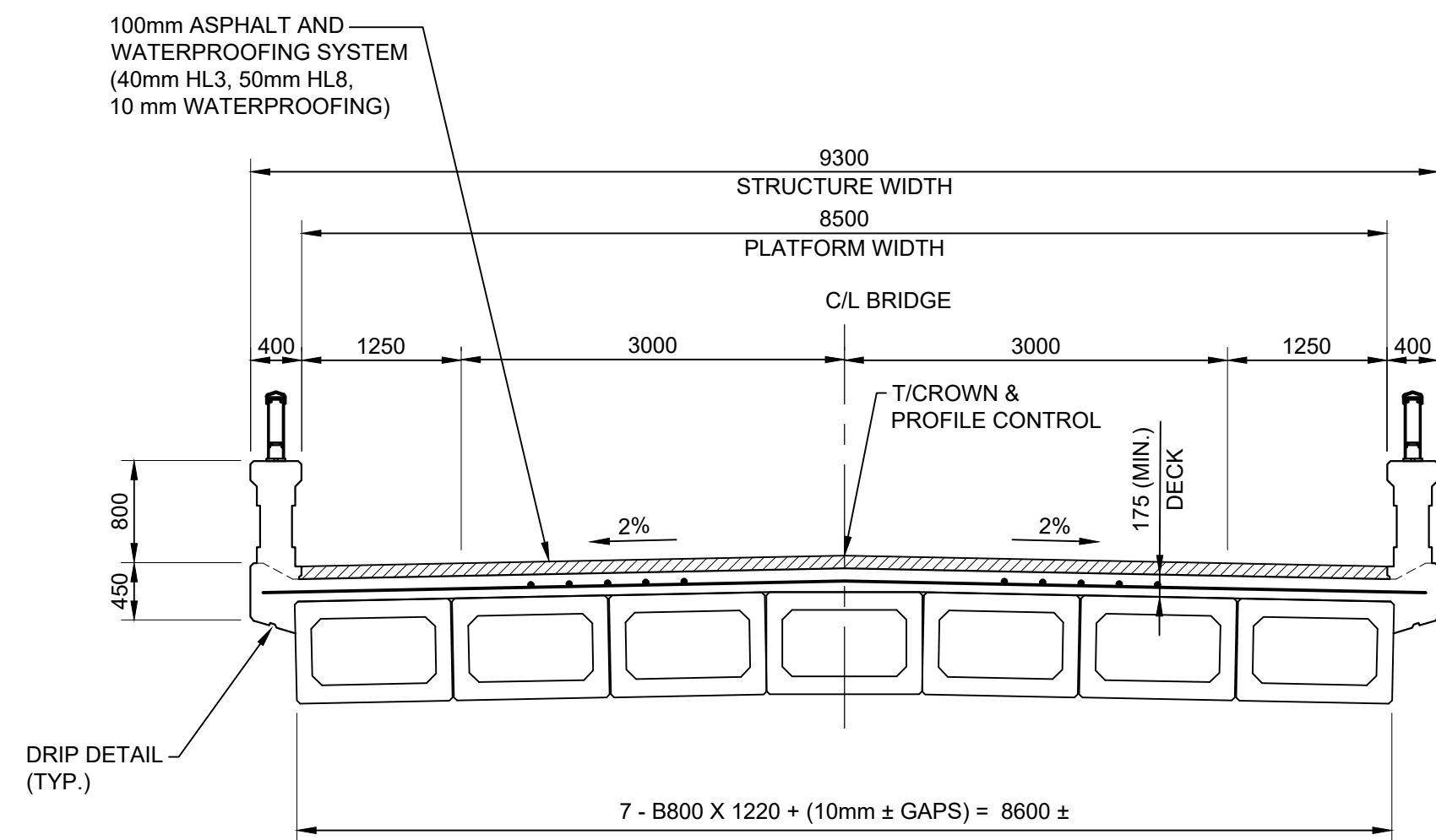
Notes 1. This drawing is the exclusive property of R. J. Burnside & Associates Limited. The reproduction of any part without prior written consent of this office is strictly prohibited. 2. The contractor shall verify all dimensions, levels, and datums on site and report any discrepancies or omissions to this office prior to construction. 3. This drawing is to be read and understood in conjunction with all other plans and documents applicable to this project. NOT FOR CONSTRUCTION	<table><tr><th>No.</th><th>Issue / Revision</th><th>Date</th><th>Auth.</th></tr><tr><td>0</td><td>ISSUED FOR PRELIMINARY REVIEW</td><td>25/09/05</td><td>M.B.</td></tr><tr><td>1</td><td>ISSUED FOR KC REVIEW</td><td>25/11/13</td><td>M.B.</td></tr><tr><td>2</td><td>ISSUED FOR 90% REVIEW</td><td>25/11/28</td><td>M.B.</td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	No.	Issue / Revision	Date	Auth.	0	ISSUED FOR PRELIMINARY REVIEW	25/09/05	M.B.	1	ISSUED FOR KC REVIEW	25/11/13	M.B.	2	ISSUED FOR 90% REVIEW	25/11/28	M.B.																	BURNSIDE R.J. Burnside & Associates Limited 3 Ronell Crescent, Collingwood, Ontario, L9Y 4J6 telephone 1-800-265-9662 web www.rjburnside.com Client TOWNSHIP OF SCUGOG 181 PERRY STREET PO BOX 780 PORT PERRY, ON L0L 1A7	Drawing Title EDGERTON ROAD BRIDGE REPLACEMENT PLAN AND PROFILE <table><tr><td>Drawn</td><td>Checked</td><td>Designed</td><td>Checked</td><td>Date</td><td rowspan="3">Drawing No.</td></tr><tr><td>A.A.</td><td>M.B.</td><td>A.M.</td><td>V.W.S.</td><td>26/06/11</td></tr><tr><td>Project No.</td><td colspan="2">Contract No.</td><td>Revision No.</td><td></td></tr><tr><td>300059896</td><td colspan="2">300059896</td><td>0</td><td></td><td></td></tr><tr><td colspan="4">Scale:</td><td colspan="2"> 0 5.0 10.0 15.0m </td></tr><tr><td colspan="4">H 1:250 V 1:50</td><td colspan="2"></td></tr></table>	Drawn	Checked	Designed	Checked	Date	Drawing No.	A.A.	M.B.	A.M.	V.W.S.	26/06/11	Project No.	Contract No.		Revision No.		300059896	300059896		0			Scale:				0 5.0 10.0 15.0m		H 1:250 V 1:50					
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PLAN
SCALE: 1:100



1 ELEVATION
SCALE: 1:100



2 SECTION
SCALE: 1:50

GENERAL NOTES:

- DESIGNED TO CANADIAN HIGHWAY BRIDGE DESIGN CODE (CHBDC) CAN/CSA-S6-19, LIVE LOAD TRUCK TO CL-625-ONT.
- CONCRETE SHALL BE EXPOSURE CLASS C-1 WITH A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 35 MPA AT 56 DAYS.
 - CLASS OF CONCRETE FOR PRECAST GIRDERS ARE GIVEN ON PRESTRESSED GIRDER DRAWINGS..
- CLEAR COVER TO REINFORCING STEEL

FOOTING, FACES CAST DIRECTLY AGAINST SOIL	100 ± 25
DECK (DISTRIBUTION SLAB), TOP	70 ± 20
REMAINDER	70 ± 20 UNLESS OTHERWISE NOTED
- REINFORCING BARS:
STEEL:
 - REINFORCING STEEL (BLACK) SHALL BE GRADE 500W UNLESS OTHERWISE SPECIFIED.
 - STAINLESS REINFORCING STEEL SHALL BE TYPE 316LN OR DUPLEX 2205 AND HAVE A MINIMUM YIELD STRENGTH OF 500 MPA, UNLESS OTHERWISE SPECIFIED.
 - BAR MARKS WITH PREFIX 'S' DENOTE STAINLESS STEEL BARS.
 - ALL LAP AND DEVELOPMENT LENGTHS SHALL BE CONSIDERED TENSION CLASS 'B' LAP SPLICE LENGTHS UNLESS NOTED OTHERWISE.
 - NOT ALL LAP SPLICES ARE SHOWN ON THE DRAWINGS. WHERE BARS ARE SHOWN AS CONTINUOUS, LAP SPLICES ARE REQUIRED TO SUIT THE ACTUAL AVAILABLE LENGTHS OF THE REBAR. THE CONTRACTOR MAY PROVIDE LAPS NOT REPRESENTED IN THE DRAWINGS, SUBJECT TO THE APPROVAL OF THE ENGINEER.
 - WHERE LAP SPLICES ARE PROPOSED BY THE CONTRACTOR, THE LOCATIONS SHALL BE SUCH THAT THEY LEAST IMPACT THE STRUCTURE.
 - BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL STANDARD DRAWING SS12-1, (AVAILABLE UPON REQUEST) OR THE REINFORCING STEEL INSTITUTE OF CANADA (RSIC) MANUAL OF STANDARD PRACTICE, UNLESS INDICATED OTHERWISE.
- CONSTRUCTION NOTES
 - IF THE ACTUAL BEARING THICKNESS ARE DIFFERENT FROM THOSE GIVEN WITH THE BEARING DESIGN DATA, THE CONTRACTOR SHALL ADJUST THE BEARING SEAT ELEVATIONS AND REINFORCING STEEL TO SUIT.
 - THE CONTRACTOR SHALL CONFIRM ALL DIMENSIONS AND DETAILS BEFORE STARTING WORK.
 - THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES, SERVICES, STRUCTURES, ROADWAYS, ETC. DURING CONSTRUCTION.
 - FALSE WORK FOR DECK SLAB SHALL NOT BE REMOVED UNTIL THE CONCRETE IN DECK SLAB HAS REACHED 75% OF ITS DESIGN STRENGTH.
 - CHAMFERS MAY OR MAY NOT BE SHOWN ON DRAWINGS. ALL EXPOSED CORNERS TO HAVE 25mm x 25mm CHAMFERS UNLESS NOTED OTHERWISE. CONSTRUCTION JOINTS TO HAVE A 20mm x 20mm CHAMFER.
 - CONCRETE IN BARRIERS SHALL NOT BE PLACED UNTIL ALL CONCRETE IN DECK SLAB HAS REACHED 75% OF ITS DESIGN STRENGTH.
 - EXISTING ROAD BED IN AREAS THROUGH WHICH PILES MUST PENETRATE TO BE REMOVED BEFORE PLACING FILL.
 - GEOTECHNICAL REPORT BY CAMBIUM INC. REF. No. 22971, DATED: AUGUST 29, 2025.

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Client
TOWNSHIP OF SCUGOG
181 PERRY STREET PO BOX 780
PORT PERRY, ON
L9L 1A7

Drawing Title
EDGERTON ROAD BRIDGE REPLACEMENT
GENERAL ARRANGEMENT

Drawn	Checked	Designed	Checked	Date	Drawing No.
A.A.	M.B.	A.M.	V.W.S.	25/06/11	B-002
Project No.	Contract No.	Revision No.			
300059896	300059896	0			
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10.0 Impacts

Project activities associated with the Preferred Solution for the bridge includes the removal and replacement of the existing bridge and abutments including excavation, grading, and asphalt application within the existing ROW.

10.1 Technical Environment

From a technical perspective the Preferred Solution will provide a bridge that is safe, efficient, and provides a high level of service.

The widened structure and approach roadway would surpass the minimum pavement width requirements for a local residential road. Bridge improvements are anticipated to be completed within the existing ROW.

The vertical profile of the new bridge would allow for improved conveyance capacity and resilience to potential flood conditions during periods of very high flow. The larger span bridge will also convey the 100-year storm event and reduce headwater elevation, providing improved hydraulic performance, reducing the backwater flood elevation during all flood events (2- to 100-year storm events), including the regional flood. The existing issues like erosion and scour along the road embankment and abutment will be improved.

10.2 Natural Environment

Potential impacts to the Natural Environment include removal of some vegetation and trees located within the ROW due to grading. Minimal impacts to terrestrial and aquatic species and habitat are anticipated with appropriate mitigation, including timing windows for construction.

The Preferred Solution, a Two-Lane Bridge Replacement, will improve hydraulic performance, allowing for more efficient water conveyance during high flow events, including the Regional Storm and 100-year storm, thereby enhancing the structure's resilience to climate change and reducing erosion and scour risks along the embankments and abutments.

There is potential for direct impacts to fish and fish habitat with the removal of abutments and in-water work, though the larger span bridge has the potential to reduce indirect impacts of scour and erosion, improve flow conditions, and maintain the existing watercourse morphology. Upstream and downstream conditions are recommended to be preserved during construction to maintain habitat integrity.

Construction of the new bridge will result in some impacts to vegetation and trees due to grading within the ROW. All identified vegetation communities are considered relatively common in Ontario. Impacts to vegetation are anticipated along the south side of Edgerton Road, where the treed area (fresh-moist White Cedar coniferous forest FOCM4, Fencerow TAGM5) is located within the ROW. Impacts to existing trees and vegetation are required to accommodate construction works associated with grading and excavation around the vicinity of the Edgerton Bridge. A total of 25 individual trees are recommended for removal to accommodate the on-site construction and rehabilitation work. Tree No. T34, a Dead Ash, is also recommended for removal based on its Poor condition, although not anticipated to be impacted by the proposed construction. A partial removal of the tree group (TG1) associated with the Fencerow TAGM5, is also recommended for machinery access.

The Preferred Solution is not anticipated to directly impact breeding birds, common wildlife species, or SAR wildlife with the implementation of avoidance measures, including minimizing the construction footprint, isolating works from surrounding habitat, and timing vegetation removal and in-water works.

Based on the presence of historical spring (e.g., Creek Chub, Largemouth Bass) and fall spawning (e.g., Brook Trout) fish species, any in-water work is restricted to occurring between July 15 and September 30 of a given year. Harmful Alteration, Disruption, or Destruction (HADD) of fish habitat and the death of fish must be mitigated during design and construction. Temporary displacement and disturbance to wildlife and migratory breeding birds is anticipated during construction due to vegetation removal, noise, and in-water work.

10.3 Socio-Economic / Cultural Environment

The construction of the preferred solution will occur within the Kawartha Region Conservation Authority (KRCA) Regulated Area. As such, development or alterations within this jurisdiction will require a permit from KRCA, in accordance with applicable regulations governing interference with watercourses and natural features. Consultation with KRCA will be required during the detailed design phase to ensure compliance and minimize environmental impacts.

Temporary changes to driveway access and temporary disruption to residents would occur due to the road closure during construction. The replacement bridge allows for improved connectivity of the transportation network and enhances pedestrian and cyclist safety through the wider platform width, accommodating two-way active transportation. The new bridge would provide access to local properties with no load restrictions. Furthermore, the new two-lane structure will accommodate heavy emergency vehicles and remove existing load restrictions. The project is not expected to require property acquisition.

10.3.1 Built Heritage Resources and Cultural Heritage Landscape Impacts

The existing bridge has been identified as having Cultural Heritage Value or Interest (CHVI). The proposed undertaking involves the complete removal of the existing bridge, including all its heritage features and attributes. There is potential for major adverse impacts from demolition related to the removal of the existing bridge with CHVI; however, long-term impact to CHVI is not anticipated with the implementation of mitigation measures including the design of the new structure, location, and orientation of the new structure along with photographic documentation of the existing bridge for the historic record prior to its removal.

10.3.2 Archaeological Resources Impacts

A Stage 1 Archaeological Assessment determined that the study area generally exhibits low archaeological potential due to extensive disturbance from past infrastructure development. No further archaeological assessment is recommended.

10.4 Financial

The preferred solution, a Two-Lane Bridge Replacement, will result in high capital cost. While high initial costs are associated with construction, lower costs are anticipated for minor concrete repairs and maintenance over time to reach the expected lifespan of 75 years. More accurate cost estimates are expected to be developed during the detailed design stage.

11.0 Mitigation Measures

The following mitigation measures and design approach should be implemented to mitigate negative impacts of the proposed project on the environment of the study area and considered for future improvements. It is also recommended that the following mitigation and monitoring measures be included within the detailed design process and reporting, and within the Special Provisions Section of the Tender Documents, as applicable.

All Design and Construction Reports and Plans will be based on a best management approach that centres on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of the impacted areas.

11.1 Surface Water / Hydrology and Sedimentation

Potential Effects

1. Potential for sediments to enter East Cross Creek, due to:
 - a) Stockpiling of materials.
 - b) Excavation and grading activities.
 - c) General construction operations.
2. Localized water quality impacts may occur due to accidental spills.
3. Potential introduction of invasive species into the environment.

Mitigation Measures

1. The footprint of disturbed areas should be minimized as much as possible. Vegetated buffers / setbacks should remain untouched adjacent to the watercourse, wherever possible.
 - a) An Erosion and Sediment Control (ESC) Plan should be developed during detailed design, prior to construction. Implementation of ESC measures shall conform to recognized standard specifications (e.g., Ontario Provincial Standards Specification (OPSS)), and the requirements of KRCA, MECP, and DFO.
 - b) In-water operation of heavy equipment should be prevented, and operation of equipment on the banks of the watercourse should be minimized. Stockpiled material should be stored and stabilized at least 30 m from the watercourse. All materials and equipment used for site preparation and project completion should be operated and stored in a manner that prevents any deleterious substance from entering the water.
 - c) ESC measures (e.g., silt curtains, silt fence, rock check dams) should be installed and maintained during the Work phased until the Site has been stabilized. Control measures should be inspected daily to ensure they are functioning and maintained as required. If control measures are not functioning properly, no further Work should occur until the problem is resolved.
 - d) Temporary mitigation measures should be installed prior to the commencement of any clearing, grubbing, excavation, filling, or grading works and must be maintained on a regular basis, prior to, and after precipitation events.

- e) Water quality impacts related to surface water runoff should be mitigated to avoid downstream impacts by controlling runoff within the boundaries of the Site.
 - f) All disturbed areas of the work site should be stabilized immediately and re-vegetated as soon as conditions allow. An appropriate seed mix should be selected in consultation with KRCA.
2. All equipment fueling and maintenance should be completed off-site (or at least 30 m from a watercourse, on a non-permeable surface) to ensure that no deleterious substances enter the waterway.
- a) The contractor will be required to develop Spill Prevention and Contingency Plans for construction and operational phases of the project. Personnel will be trained in how to apply the plans, and the plans will be reviewed to strengthen their effectiveness and ensure continuous improvement. Spills will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. A hydrocarbon spill response kit will always be on-site during the Work. Spills will be reported to the Ontario Spills Action Centre at 1-800-268-6060.
3. All equipment and personal protective equipment must arrive on-site clean to prevent the potential transfer of invasive species (i.e., phragmites) to the local environment.

11.2 Soil and Groundwater

Potential Effects

- 1. Potential for localized groundwater quality impacts as a result of spills.
- 2. Potential dewatering of the work area may be required.
- 3. Potential for excess soil generation as a result of bridge replacement.

Mitigation Measures

- 1. Refueling of equipment and fuel storage should be conducted off-site, if possible. If this must occur on-site, refueling and fuel storage must only occur in designated areas, at least 30 m away from the watercourses and any existing wells, on a non-permeable surface, with spill protection provided.
- 2. If applicable, the work area should be dewatered as per recognized provincial standards and pumped into acceptable dewatering traps. These traps should be placed away from the watercourse to allow for infiltration prior to discharging to the watercourse. It is recommended the work be scheduled following periods of

prolonged dry weather, when the groundwater table and creek flow are typically at their lowest, to minimize the quantity of water to be handled.

- a) Avoid EASR and PTTW by modifying pumping activity to stay within daily limits.
3. Activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and MECP's current guidance document titled "On-Site and Excess Soil Management" (2019). All waste generated during construction must be disposed of in accordance with ministry requirements.

11.3 Trees and Vegetation

Potential Effect

- 1. Loss of vegetation.
 - a) Grading impacts. Trees adjacent to the ROW may be subject to impacts due to proposed grading and other construction activities.
 - b) Loss of woody vegetation and creation of new forest edges causing new growing conditions, sun exposure, weed invasion

Mitigation Measures

- 1. Minimize disturbance to existing vegetation. Adjust grading prior to construction to reduce impacts to trees by increasing the steepness of slopes in isolated locations, where feasible.
 - a) To improve habitat and allow for opportunities for native species, invasive plant species (if present) should be removed in consultation with KRCA using species-appropriate methods / best practices during construction and grading.
 - b) Disturbed areas will be stabilized and re-vegetated upon project completion and restored to a pre-disturbed state where practical. An appropriate seed mix will be selected based on consultation with KRCA.
 - c) Protection measures (e.g., tree-protection fencing, erosion and sediment control) are recommended where construction is proposed to protect trees from grading impacts and to prevent access, stockpiling, and storage within adjacent communities.
 - d) A Tree Protection Fence (TPF) is recommended to be installed around select trees in close proximity to construction work. The TPF has been coordinated with heavy duty erosion and sediment control (ESC) measures where ESC can function as TPF in areas. TPF should be configured to avoid driveways and other

existing hard surfaces where fence installation is not feasible and significant tree root extension is not anticipated.

- e) Tree No.'s T2, T4, T6, and T7 will be subject to Minimum Tree Preservation Zone (MTPZ) encroachment from proposed grading and excavation activities within the ROW. It is recommended that low impact construction methods using hand tools and digging are utilized in these areas to minimize impact to tree root zones. Root pruning within the MTPZ is acceptable if completed using sharp hand tools and pruning of roots greater than 5 cm in diameter are completed by, or under the direction of a certified arborist. Pruned root material will be disposed of along with the rest of the debris as specified by the project arborist and / or the Township.
- f) Trees should be felled so that they fall into the construction footprint to avoid damage to the retained trees, including both trunks and roots.
- g) Tree removals are to be replaced as per KRCA compensation requirements.
- h) ESC measures must be installed prior to commencement of any grading or vegetation disturbance. An environmental inspector shall be engaged during the construction phase to review ESC measures that will also act as tree protection measures. Deficiencies will be resolved immediately. No access, storage, or stockpile of materials or equipment can occur within the area protected by the ESC measures.
- i) A certified arborist should carry out or oversee the mitigation of any impacts to trees, including broken branches.
- j) All retained trees should be reviewed following construction to determine if additional mitigative measures such as pruning are required to reduce risk to pedestrians.

11.4 Wildlife / Habitat

Potential Effects

1. Temporary displacement of and disturbance to wildlife and wildlife habitat during the construction phase (e.g., vegetation removals, noise disturbance, in-water work), including migratory birds, SAR. Construction activities may temporarily limit wildlife movement and reduce usable habitat.

Mitigation Measures

1. The footprint of the proposed disturbed area should be minimized as much as possible.
 - a) Vegetation clearing should be timed to avoid sensitive periods for wildlife. To reduce the risk of impact to SAR, clearing should not occur between April 1 and October 31 which encompasses the active periods for:
 - 1) Breeding Birds – To reduce the risk of contravening the federal *Migratory Bird Convention Act*, 1994 (MBCA), timing constraints shall be applied to avoid any limited vegetation clearing (including grubbing) and / or structure works (construction) during the active window, broadly from April 1 to August 31 for most species.
 - 2) Amphibian and Reptile species – generally considered to be from spring (April) to mid-October.
 - 3) Bat species – Considered to be between April 1 to October 1, of any calendar year.
 - b) It is recommended that the selected contractor receive SAR identity training for the listed SAR and wildlife encounter in case an encounter occurs. This training should also include the process and steps taken should a SAR be encountered during construction and how to proceed based on the mitigation measures established through discussions with the Township, MECP, and / or Environment Canada.
 - c) To avoid contravention of the MBCA and / or ESA, the bridge structure should be completely excluded with tarping or netting material prior to the next active window for breeding birds (i.e., by end of March) if construction works are to occur during the active window for breeding birds (as noted above). Tarping or netting of the bridge ensures that breeding birds are excluded from nesting on or under the structure while the bridge is being replaced.
 - d) Active nests (nests with eggs or young birds) of protected migratory birds, including SAR protected under the ESA, cannot be destroyed at any time of the year. If a nesting migratory bird or SAR protected under ESA is identified within, or adjacent to the construction site and the activities are such that continuing works in that area would result in a contravention of the MBCA or ESA, all activities shall stop and the contract administrator (with assistance from an avian biologist) shall discuss mitigation measures with the Township.

- e) Should SAR be identified, all activities shall stop and MECP, responsible for administering SAR under the ESA, shall be contacted immediately to ensure compliance with the ESA. The contract administrator shall instruct the contractor on how to proceed based on the mitigation measures established through discussions with the Township, MECP, and / or Environment Canada.
- f) Temporary exclusion fencing (e.g., silt fence barriers) should be installed to prevent amphibians and reptiles from entering active work zones. Fencing should allow wildlife to exit the area during vegetation clearing. Once cleared, the area should be securely fenced to prevent re-entry. The excluded area should be searched immediately after fencing installation for any trapped wildlife, which should be safely relocated to a suitable habitat.
- g) An environmental inspector shall be engaged during construction to review ESC measures that protect adjacent natural features and prevent wildlife such as reptiles and amphibians from entering the work zone. The environmental inspector shall ensure that all deficiencies are resolved immediately.
- h) Consideration should be given during detailed design to facilitate wildlife passage through appropriate sizing and design of bridge structures to reduce road mortality for reptiles, amphibians, and small mammals. Design coordination should occur with MECP and KRCA.

11.5 Fish and Fish Habitat

Potential Effect

1. In-water works will be required for bridge replacement, which could result in the Harmful, Alteration, Disruption, or Destruction (HADD) of fish and / or fish habitat, as defined under the *Fisheries Act*.

Mitigation Measure

1. The proposed works will be reviewed by a qualified professional aquatic ecologist to determine whether HADD can be avoided or adequately mitigated. If HADD cannot be avoided, the DFO will be consulted through a Request for Project Review to determine appropriate next steps.
 - a) Fish salvage prior to the commencement of in-water works should be completed. During detailed design, correspondence should be maintained with a qualified professional aquatic ecologist to determine appropriate mitigation measures and whether the proposal has potential to pose an unavoidable HADD. Preferred mitigation measures include work zone isolation while maintaining flow downstream and fish salvage. Efforts will be made in consultation with the DFO to mitigate, should HADD be unavoidable.

- b) Near-water work and work below the annual high-water mark will adhere to the appropriate in-water work timing window (i.e., July 15 to September 30) to avoid potential impacts to resident and migratory fish species.
- c) A permit from the KRCA will be required prior to conducting the proposed works as work is proposed within a regulated area.

11.6 Noise / Vibration / Air Quality / Greenhouse Gas Emissions

Potential Effect

- 1. Temporary nuisance noise during construction activities. Effects could also include increased dust in the air and carbon emissions from construction activities.

Mitigation Measure

- 1. Noise control measures, such as restricted hours of operation and the use of appropriate machinery / mufflers will be implemented where required. Vehicles / machinery and equipment should be in good repair, equipped with emission controls, as applicable, and operated within regulatory requirements. If required, dust control measures may include the wetting of surfaces using a non-chloride-based compound to protect water quality.

11.7 Cultural Heritage

11.7.1 Built Heritage Resources and Cultural Landscape

Potential Effect

- 1. Potential for major adverse impacts from demolition related to the removal of the existing bridge with CHVI. The proposed undertaking involves the complete removal of the existing bridge, including all its heritage features and attributes.

Mitigation Measures

- 1. The proposed replacement bridge includes decorative recesses and panels which recreate the art deco-style of the original bridge.
 - a) Photographic documentation of all elevations of the existing bridge should be conducted prior to its removal to supplement the historic record.
 - b) The replacement bridge should be constructed at the current location over East Cross Creek along Edgerton Road with an east-west orientation.

11.7.2 Archaeological Resources

Potential Effect

1. The entirety of the study area was determined to have low archaeological potential comprising slopes, watercourse, and previous disturbance. No further assessment is recommended.

Mitigation Measure

1. It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the Site, until such time as a licensed archaeologist has completed archaeological fieldwork on the Site, submitted a report to the Minister stating the Site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
 - a) Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the *Ontario Heritage Act*.
 - b) The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c. 33 requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with O. Reg. 30/11, the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites³. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

12.0 Climate Change Considerations

Climate change is defined as any significant change in long-term weather patterns. The term can apply to any major variation in temperature, wind patterns or precipitation that occurs over time. Global warming describes the recent rise in the average global temperature caused by increased concentrations of greenhouse gases (GHGs) trapped in the atmosphere.

Scientists have concluded that human activity is largely responsible for recently observed changes to our climate since GHGs are mainly caused by burning fossil fuels to produce energy.

The MECP finalized a document entitled “Considering Climate Change in the Environmental Assessment Process” in 2017 that provides guidance relating to the Ministry’s expectations for considering climate change during the MCEA process. It is suggested that this guide be consulted if an approved MCEA has no climate consideration method.

There are two types of climate change effects that can be considered. The first is the effect that a project can have on climate change. In this case, the degree to which the project can provide some climate change mitigation measures is to be assessed. The second is the effect climate change has on the project. In this case, the degree to which the project can demonstrate adaptation to climate change impacts is assessed. Climate change was considered during this MCEA and is discussed in this section.

12.1 Effects of the Project on Climate Change

There is potential for the Works proposed to impact the atmosphere through the emission of GHGs on an ongoing basis.

An increase in traffic volumes over time may lead to higher GHGs. The replacement of the bridge with a wider span is anticipated to alleviate traffic congestion. Other sources of carbon emissions related to the project may include construction vehicle use. Emissions can be decreased through improved operational efficiency and routine maintenance of equipment.

Landscape alterations may also influence climate change. A carbon sink is described as a land or ocean mass that can take in carbon, in particular carbon dioxide, from the atmosphere. Vegetation can assist in removing carbon dioxide from the atmosphere.

The proposed works will involve some vegetation removal during grading activities. Vegetation removal due to construction of the new bridge is not anticipated to significantly impact the availability of carbon sinks. Vegetation loss is anticipated to be

minimized as much as possible by reducing the footprint of grading activities where feasible.

12.2 Effects of Climate Change on the Project

The bridge deck and pavement infrastructure are vulnerable to deterioration caused by freeze-thaw cycles. Additionally, roadside drainage systems and adjacent watercourses may be affected by the increasing frequency and intensity of precipitation events in Ontario, a trend linked to climate change. These conditions can lead to flooding and erosion, particularly around bridge abutments.

To address these risks, the detailed design of the bridge improvements and associated infrastructure will incorporate considerations for peak flow rates and drainage capacity, ensuring resilience against future climate-related impacts.

13.0 Conclusions

The Two-lane Bridge Replacement (Alternative 4) has been identified as the Preferred Solution for Bridge No. 11 (Edgerton Bridge). This alternative fully addresses the Problem Statement by replacing the structurally deficient bridge with a modern, safe structure designed for a 75+ year service life, while eliminating load restrictions and widening the driving platform to 8.5 m to meet municipal standards. The new structure will also improve hydraulic performance, ensuring resilience against flood conditions, including the Regional Storm.

During the detailed design and construction phases of the project, the following commitments and ongoing measures are required to minimize impacts and ensure regulatory compliance:

- Mitigation measures as detailed in Section 11.0.

Environmental Protection

- The project proponent is required to secure all necessary permits and / or authorizations. This includes consultation with the Kawartha Region Conservation Authority (KRCA) for working within their regulated area.
- Consultation and approvals from the Department of Fisheries and Oceans Canada (DFO), and the Ministry of the Environment, Conservation and Parks (MECP) are required during the detailed design stage regarding potential impacts to fish and fish habitat, and Species at Risk (SAR).
- The proposed works must adhere to the in-water work timing window, generally restricted to between July 15 and September 30 of a given year, to avoid impacts to resident and migratory fish species.

Cultural Heritage and Archaeology

- To mitigate the major adverse impact resulting from the demolition and loss of the existing heritage fabric, the new structure's barriers should be designed to recreate the art deco aesthetic of the original bridge.
- Photographic documentation of all elevations of the existing bridge must be conducted prior to its removal to supplement the historic record.

Indigenous Consultation

- Alderville First Nation should be engaged at the initiation of the design phase to confirm their level of interest in the project.

As per the requirements of the MCEA, this Project File Report (PFR) is available for public review and comment for a period of 30 calendar days following the publication of the Notice of Completion.

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