Township of Scugog

Seagrave Bridge and Bridge No. 9 over the Nonquon River Class Environmental Study Report

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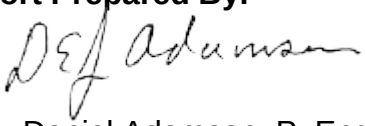

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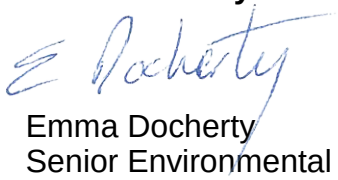

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1. Study Introduction

1.1 Study Introduction

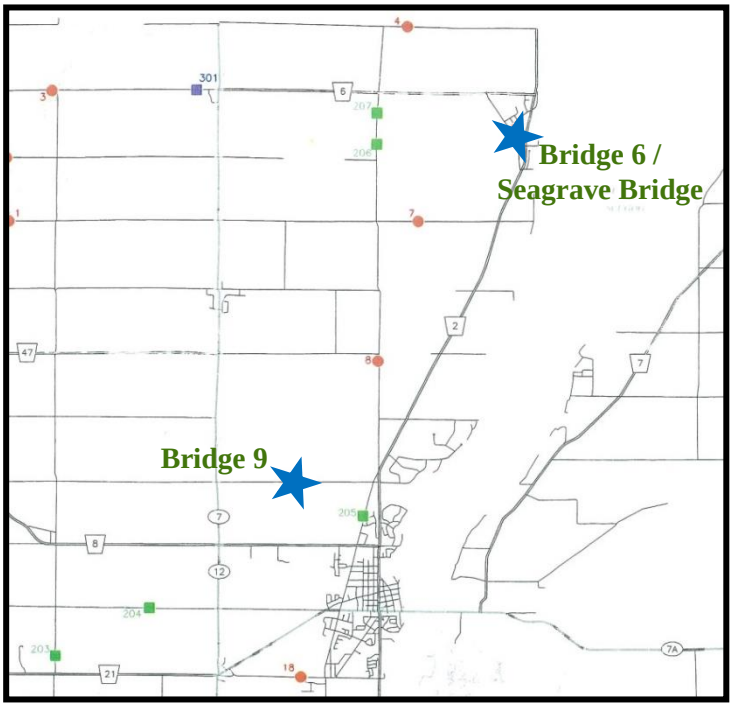
The Township of Scugog (the Township) retained AECOM to undertake a Class EA study for the Preliminary Design of Seagrave Bridge and Bridge No. 9 over the Nonquon River in accordance with the Municipal Class EA (2000, as amended 2007, 2011 and 2015). The purpose of the Study is to identify a solution to address the deteriorated condition of Seagrave bridge in Seagrave (Bridge No. 6), and Bridge No. 9 on Scugog Line 8. The Study has identified a plan for the bridges and preliminary design of the preferred solutions has been completed. The Study was completed in accordance with the requirements for a Schedule “B”, Municipal Class Environmental Assessment (EA).

This Project File Report (PFR) documents the planning process followed to undertake this study and summarizes the findings and recommendations of the study team in consideration of input received in consultation with regulatory agencies and members of the public. The PFR fully defines potential benefits, costs and a full range of environmental impacts.

1.2 Study Area

The location of each bridge is shown in Figure 1.

Figure 1 Study Area



1.3 Study Process

The Municipal Class EA (2000, as amended 2007, 2011 and 2015) document defines four schedules under which projects may be planned (A, A+, B, C). The selection of the appropriate schedule for each project is dependent on the anticipated costs and potential environmental impacts associated with implementation of the project. Schedule “C” projects have potential for significant environmental effects and they generally include the construction of new facilities and/or major expansions to existing facilities. These projects must proceed under the full procedures specified in the Municipal Class EA.

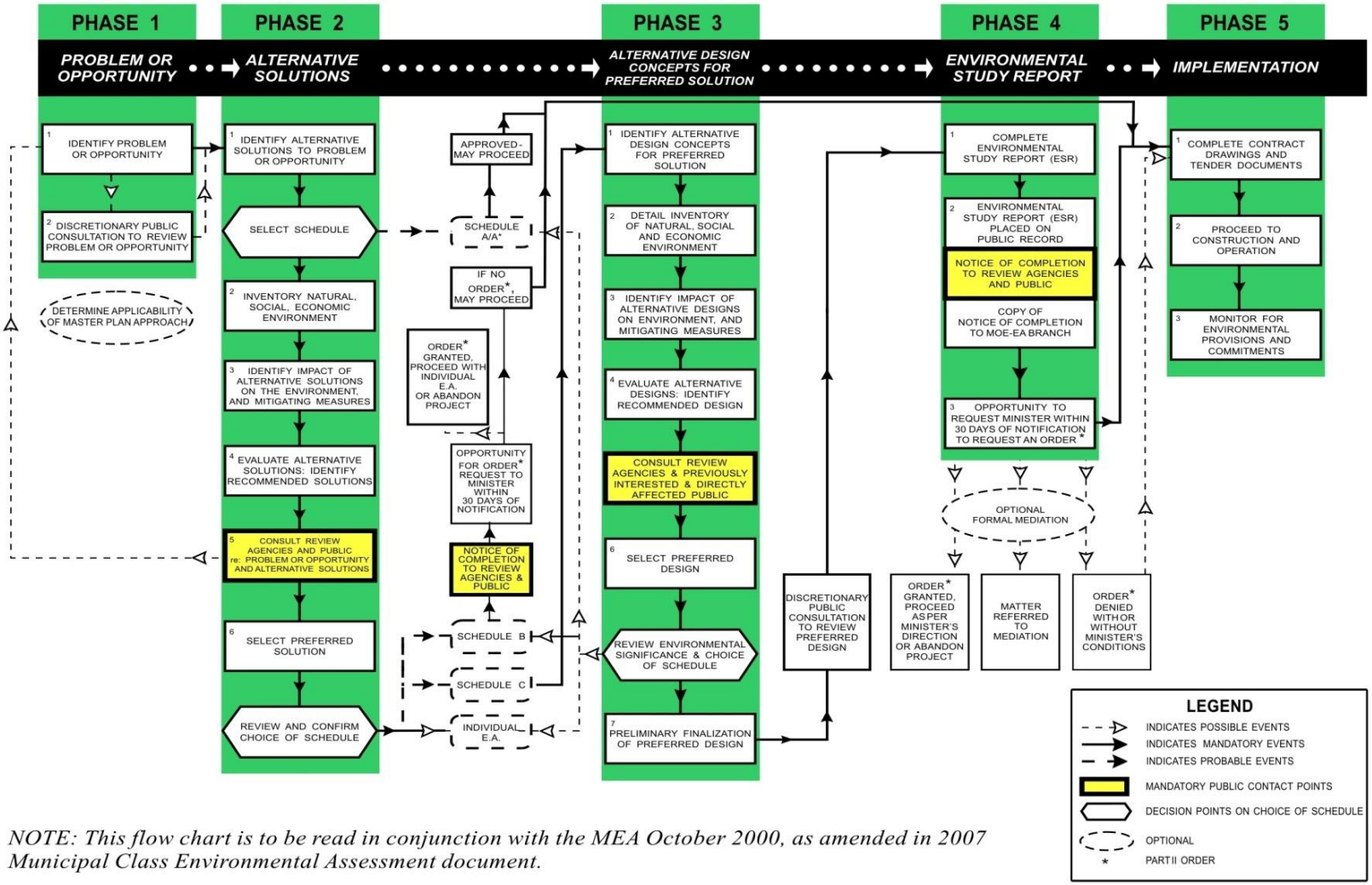
This study was conducted in accordance with Schedule “B” of the Municipal Class Environmental Assessment, given that there is a reasonable expectation of environmental effects. As a Schedule “B” project, the Study proceeded under the full planning and documentation procedures and this Project File Report (PFR) is prepared and submitted for review by the public. Figure 2 illustrates the Municipal Class EA Process.

The process includes the following five phases, and consultation is a key feature of the process. Mandatory consultation with stakeholders occurs in Phases 2, 3 and 4:

1. Phase 1 - Identification of the problem or opportunity
2. Phase 2 - Assessment and evaluation of alternative solutions
3. Phase 3 - Assessment and evaluation of the alternative design concepts for the preferred solution
4. Phase 4 - Documentation in an Environmental Study Report
5. Phase 5 - Project Implementation

A Schedule “B” Class Environmental Assessment requires completion of Phases 1 and 2 prior to implementing the project in Phase 5.

Figure 2 Municipal Class Environmental Assessment Process



NOTE: This flow chart is to be read in conjunction with the MEA October 2000, as amended in 2007 Municipal Class Environmental Assessment document.

1.4 Purpose of Project File Report

This Project File Report (PFR) details the Class EA process followed during the study including the assessment of improvement needs, the development and evaluation of alternative solutions, the recommended design for the preferred solution, and proposed measures to mitigate identified impacts. The PFR also documents the public and agency consultation process utilized during the study and how comments received were incorporated into the study recommendations.

The filing of the PFR completes the planning and preliminary design stage of the project. This PFR is filed with the Ministry of the Environment and Climate Change (MOECC) in the public record and made available for review by the public for a thirty (30) calendar day review period. A public notice is published at the time of submission to MOECC. Copies of the report are available for review and comment during normal business hours at the following locations:

Township of Scugog
Community Services
181 Perry Street
Port Perry, ON L9L
1A7

Monday – Friday
8:30 am to 4:30 pm

And online at:
www.scugog.ca

Anyone with an interest in the study is encouraged to review the PFR and provide comments to the Township of Scugog. If any concerns regarding the project cannot be resolved with the Township of Scugog, a person or party may request that the Minister of the Environment and Climate Change make an order for the project to comply with Part II of the Environmental Assessment Act (referred to as a Part II Order), which addresses Individual Environmental Assessments.

Anyone wishing to request a 'Part II Order' of the Township of Scugog's Seagrave Bridge and Bridge No. 9's Class Environmental Assessment Study must submit a written request detailing their comments/concerns within the thirty (30) calendar day review period, to the Minister of the Environment and Climate Change, with a copy to the Township, at the following addresses:

Minister of the Environment and Climate Change
Honorable Glen Murray
77 Wellesley Street West
11th Floor
Toronto, ON M7A 2T5:

Ministry of the Environment and Climate Change
Director, Environmental Approvals Branch address:
135 St. Clair Ave West, 1st Floor
Toronto, ON M4V 1P5

Township of Scugog
Ms. Carol Coleman
Director of Community Services
181 Perry Street
Port Perry, ON L9L 1A7
Email:
ccoleman@scugog.ca

If no outstanding concerns are brought forward during the review period, the Township may proceed to Phase 5 – Implementation, which includes the detail design/construction stage.

A copy of the Notice of Completion is provided in Appendix A.

2. Consultation and Public Engagement

Under the Schedule B process in the Municipal Class EA document proponents are required to consult with the public, regulatory agencies, First Nations, and other community stakeholder groups and shall ensure that consultation occurs with those who may be affected. These include a Notice of Study Commencement and a public consultation following the assessment of the problem, development of alternatives, and selection of the preferred solution. A contact database and mailing list was prepared by AECOM to track stakeholder correspondence throughout the study (including correspondence with regulatory agencies, member of the local public and business communities and other interested groups).

2.1 Notices and Public Information Centres

2.1.1 Notification of Study Commencement

A “Notice of Study Commencement” was mailed to all contacts on the study’s mailing list for regulatory agencies and members of the public / local stakeholders groups. The Notice (one Notice for each bridge) provided a summary of the study, identified the study area, and invited stakeholders to provide any initial comments or questions to the study team. A copy of the notices are provided in **Appendix A**.

The Notice of Study Commencement was also published in *The Scugog Standard* on Friday, August 21, 2014, and on the Township website www.scugog.ca on August 11, 2014.

2.1.2 Public Information Centre #1

The first Public Information Centre (PIC) was held in the Scugog Recreation Centre, on Tuesday, March 31, 2015. PIC was held as an informal drop-in session to allow attendees easy access to members of the study team. The study findings and recommendations presented at PIC included:

- Study Overview and Purpose
- Problem / Opportunity Statement
- Identification and preliminary evaluation of planning alternatives
- Recommended Design and Planning Solution
- Environmental Protection

Attendees were asked to sign-in and indicate their interest to continue being updated on the study.

A copy of the display materials for PIC are included as part of **Appendix A**. Written comments that were received are provided in **Appendix B**.

Seagrave Bridge:

Comments received at and after the PIC highlighted the following issues at Seagrave Bridge:

- That River Street offered a safe, low volume road to travel as an alternative to Simcoe Street;
- That the bridge was highly used by local residents;
- That the bridge is architecturally pleasing and is a prominent bridge in the area;
- That River Street is a detour route when Simcoe Street is closed;
- Concern that clearance under the bridge will not be maintained for navigable waters;
- That the existing structure is used as a traffic control device (one lane forces drivers to slow down); and,
- When replacing the bridge make it two lanes to accommodate emergency vehicle traffic.

These comments have been considered in the development and evaluation of the alternatives.

Bridge No. 9:

Comments received at and after the PIC highlighted the following issues: at Bridge No. 9:

- The current traffic volume and availability of alternative roads travelling east-west indicates that the replacement of the bridge is unnecessary.
- When funds are available the possibility of a pedestrian bridge should be considered.

These comments have been considered in the development and evaluation of the alternatives.

2.1.3 Public Information Centre #2

The second PIC was held in Council Chambers on April 10, 2017, The meeting was held in conjunction with the Township of Scugog Planning and Community Affairs Committee. Township staff presented the initial recommendations for Seagrave Bridge and Bridge No. 9.

Public Notices for the 2nd Public meeting were published on the Township of Scugog Website, Township of Scugog Social Media feeds, the Agenda for the committee meeting, and in the Scugog Standard newspaper. A notice was also mailed out to all property owners on the mailing list from the first Public Information Center and all interested parties that signed in during the first meeting. Copies of the notifications are provided in **Appendix A**.

Members of the Public were able to provide comments on the Draft Project File Report and Preliminary Recommended solutions for Seagrave Bridge and Bridge No. 9. A summary of the Meeting is provided in **Appendix A.**

2.2 Regulatory Agency Consultation

The following external Ministries, Municipalities, Agencies and Authorities were contacted at the project initiation stage through correspondence notifying them of the project commencement and requesting their comments.

Federal Agencies:	**Provincial Agencies:**
• Environment Canada – Environmental Assessment Co-ordinating Committee • Canadian Environmental Assessment Agency Ontario Regional Office • Department of Fisheries and Oceans • Transport Canada • Canada Coast Guard	• Ministry of the Environment and Climate Change (MOECC) • Ministry of Natural Resources and Forestry (MNRF) • Ministry of Transportation • Ministry of Tourism, Culture, and Sport (MTCS)
Municipal Agencies and Authorities:	**Utilities:**
• Region or Durham • Township of Scugog • Kawartha Region Conservation Authority • Scugog Fire Department	• Hydro One • Enbridge Gas • Peterborough Utilities Service Inc / Peterborough Utilities Commission • Veridian Connections • Bell Canada • Rogers Cable TV
First Nations:	**Others:**

Mississauga's of Scugog Island First Nation	• Durham Police Service • Durham-City Health Unit • Durham Public District School Board • Durham Catholic district School Board

A summary of agency comments are noted below and relevant correspondence is included in **Appendix B.**

Seagrave Bridge:

- Kawartha Region Conservation Authority (KRCA) commented that in the Draft Hydraulic Report, the HEC RAS proposed condition profile, (pg. 12), did not appear to reflect the raised deck elevation as described which may affect the results shown in Table 4 (pg. 13) of the report. This was discussed with the KRCA and it was agreed that an updated analysis would be completed during detailed design.
- KRCA also recommended that the bridge structure located downstream at Simcoe Street be included in the HEC RAS model to more accurately reflect the boundary conditions and potential backwater impacts. In subsequent discussions with KRCA it was agreed that this would be included in an updated analysis during detailed design.
  during detailed design.

Bridge No. 9

- The Region of Durham commented on the fact that the existing Nonquon WPCP outfall manhole location shown on the conceptual drawing appears to be based on best available information (i.e. drawing records rather than a field survey) - and since the proposed barricade will be much longer than the CAD symbol shown on the drawing, it could extend past and/or over the existing MH. The Region will require a minimum clearance of 2m between the closed edge of the MH and the barricade to allow for any future maintenance or repair work and that the clearance will need to be field verified at the time of construction. This will be carried forward into detailed design.

- The Region also noted the location of the existing Nonquon WPCP outfall outlet appears to be based on best available info – and the drawing shows it extending into the Nonquon River. However, based on a site visit it appears that the outlet discharges right at the shoreline close to the bridge abutment. The outlet discharge location will need to be field verified at the time of construction - and temporary fencing erected during construction to prevent the outlet from being buried/damaged, with the fencing extending from top of existing slope to the river at a 2m offset (due south) from centreline of the existing outlet pipe. If any modifications to the existing outlet are proposed (i.e. relocation, extension, additional fill, etc), the integrity and capacity of the outlet will be maintained and verified. This will be carried forward into detailed design.

Comments were received from the Ministry of the Environment and Climate Change on April 11, 2017, and provided in **Appendix B.** The PFR has been updated to reflect these comments.

2.3 Notification of Study Completion and Filing of the PFR

The project file will be filed in the Public record for 30 days. The public, agencies, and other stakeholders will be notified by means of newspaper advertisements, Township website, and direct mailings to interested individuals and residents on the contact list and in proximity to the study area. A copy of the Notice of Study Completion is provided in **Appendix A**.

3. Background and Existing Conditions

This section of the report summarizes the existing conditions in terms of the current bridge conditions, the applicable planning and policy regulations that the project adheres to, and the existing natural and cultural heritage environments.

3.1 Existing Bridge Conditions

Currently, the existing bridges do not meet code requirements and have deteriorated to such a condition that Bridge 9 has been closed and the Seagrave Bridge is becoming a liability to the Township. If no action is taken to repair or replace Seagrave Bridge, it too will need to be closed. The current condition of each structure is detailed below:

3.1.1 Seagrave Bridge

The existing structure is a single span steel pony truss with a laminated timber deck and asphalt wearing system. It is located on River Street in the village of Seagrave and crosses the Nonquon River. It was originally constructed in 1920, and most recently rehabilitated in September 2014, when a 2 week closure was needed to allow emergency repair of the bridge abutments. The bridge is approximately 4.9 m wide and 16.5 m long with an annual average daily traffic count of 145. A detailed bridge inspection completed in September 2014 identified the need for rehabilitation or replacement of the structure to address deficiencies in the structure including:

- Structure is posted with a 10 tonne load limit,
- Timber curbs are in generally poor condition with localized checking and splitting. Sections of the east & west curbs are missing and sections have uplifted,
- Displacement of the west curb was noted. (8.0m^2, poor),
- Asphalt wearing surface is in poor to fair condition with numerous transverse narrow to wide cracks and localized potholes,
- Extensive potholes and cracking were noted over the south abutment (8.0m^2, poor),

- Timber deck soffit is in fair condition and exhibit checking, splitting and wet areas,
- Structural steel trusses are in generally good condition with a breakdown of the protective paint and minor corrosion,
- Structural steel stringers and floor beams are in poor to fair condition with light to severe corrosion of the web and bottom flanges. Localized perforations and minor crushing of the stringers were noted adjacent to the south abutment. Two stringers exhibit perforations on the bottom flange and web (6.0m², poor). The interior stringers exhibit light to severe corrosion and rust jacking. The exterior stringers are in good condition. Steel sway bracing exhibits light to severe corrosion with section loss of the west connection plate,
- North concrete abutment is in generally good condition with water staining, localized scouring, delaminations, efflorescent stained cracks and spalling at bearing seat level. A horizontal construction joint was noted. (2m²,poor). Severe spalling at the bearing seat is causing a partial loss of support for the truss. There is a 25% loss of support at each north bearing due to disintegration of both bearing seats,
- Watercourse is unobstructed with evidence of scour,
- Roadway embankments are in generally good condition with severe erosion noted in the southeast quadrant,
- Asphalt paved approach roads are in generally fair condition with transverse and longitudinal sealed and unsealed cracking, potholes and asphalt patches. (3.0m², poor),
- Concrete curb and gutter on the north approach are in generally good condition with minor cracking noted,
- Evidence of structural distress of stringers.

The latest Municipal Inspection Report for Seagrave bridge is provided in **Appendix C.**

3.1.2 Bridge No. 9

The existing structure is a three span structural steel girder bridge with timber decking and an asphalt wearing surface. It is located on Scugog Line 8, 1.7 km east of Highway 7/12 and crosses the Nonquon River. It was originally constructed in 1940 and has never been rehabilitated. In 2012 the bridge was closed due to deteriorating conditions and has remained closed. The bridge is approximately 7.5 m wide and 10.4 m long and had an annual average daily traffic of 130 prior to closing. A detailed bridge inspection completed in September 2014 identified the immediate need to replace the entire structure of the bridge to address deficiencies in the structure including:

- Structure is not posted with a load limit. Structure is closed to traffic
- Timber curbs are in generally poor condition and not connected to structure. The curbs were covered with gravel at time of inspection.
- Asphalt wearing surface is in poor condition with extensive map cracking, patches and potholes.
- Exposed portion of the timber deck (at pothole) is in poor condition with rot and broken timbers (2.0m², poor).

- Timber deck soffit is in poor condition with minor splitting and broken deck timbers (2.0m², poor).
- Structural steel girders and floor beams are in poor to fair condition with minor to severe corrosion, delaminations, rust jacking, and perforations. The protective paint coating is in poor condition with cracking and peeling.
- Timber piers and abutments are in generally fair condition. Timber sheeting at the east abutment is undermined. The sheeting at both abutments has rot. The timber abutments, piers and piles are in poor to fair condition with splitting, undermining and rot.
- The steel pile caps are in generally good condition with minor corrosion and delaminations. A breakdown of the protective coating was noted.
- Timber wingwalls are in poor condition with extensive displacement and rot.
- Roadway embankments are in fair condition with severe erosion noted in the northeast quadrant.
- Gravel approach roads are in generally good condition with erosion noted adjacent to the deck ends.
- No traffic protection is provided on the bridge approaches.
- There is no load limit on the structure required due to it being closed.

The most recent Municipal Inspection Report for Bridge No. 9 is provided in **Appendix C**.

3.2 Existing Traffic Conditions

3.2.1 Seagrave Bridge

Traffic data from a 2004 study was provided in the Bridge Inspection Form for Seagrave Bridge and consisted of Annual Average Daily Traffic (AADT) projections follows:.

Year	AADT (Annual Average Daily Traffic)
2004	145
2014	217 (Projected in 2004)
2024	325 (Projected in 2004)

The bridge inspection form also outlined that the road had a 0% trucks and a legal speed limit of 50 kph.

3.2.2 Bridge No. 9

The 2004 traffic data for Bridge No. 9 was also provided in the Bridge Inspection Form and consisted of AADT projections as follows:

Year	AADT (Annual Average Daily Traffic)
2004	130
2014	195 (Projected in 2004)
2024	292 (Projected in 2004)

The bridge inspection form also outlined that the road had a 0% trucks and a legal speed limit of 80 kph.

3.3 Provincial and Municipal Planning Context

3.3.1 The Planning Act 2005

The *Planning Act* (2005) sets the framework for land use planning in Ontario. According to the provisions within the Planning Act, the Province of Ontario is the primary authority for planning matters within Ontario, and the Act enables the Province to delegate some of its planning authority to the upper-tier municipalities (i.e. counties and regional municipalities, and planning boards) while retaining control through the approval process. Municipalities must conform to approved policies of the Provincial government and its agencies.

3.3.2 Provincial Policy Statement (PPS) 2014

Issued under Section 3 of the *Planning Act*, the Provincial Policy Statement (PPS) provides direction on matters of provincial interest related to land use planning and development, and promotes the provincial 'policy-led' planning system that recognizes and addresses the complex inter-relationship among environmental, economic and social factors in land use planning.

The PPS also provides guidance for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural environment through a detailed set of policies that generally address the following:

- Building Strong Communities
- Wise Use and Management of Resources
- Protecting Public Health and Safety

The PPS encourages provision of safe and efficient transportation infrastructure to facilitate the movement of people and goods, and are appropriate for projected needs. The Project is consistent with the policies outlined in the PPS. The following provides an overview of relevant policies:

- *Section 1.6 Infrastructure and Public Service Facilities:*
  Should be provided in a coordinated, efficient and cost effective manner that considers impacts from climate change while accommodating project needs. Planning for infrastructure should be coordinated and integrated with land use planning so that they are financially viable over their life cycle and meets current and projected needs. Before considering new infrastructure the use of existing should be optimized and opportunities for adaptive re-use considered. The effective and efficient delivery of emergency services should be considered for strategic location of infrastructure.

- *Section 1.6.7 Transportation Systems:*

Should be safe and energy efficient, facilitate the movement of people and goods, and address projected needs. Efficient use should be made of existing and planned infrastructure. Development and Site Alteration shall not be permitted in fish habitat, habitat of endangered or threatened species except in accordance with provincial and federal requirements or on adjacent lands to natural heritage features unless it has been evaluated and demonstrated that there will be no negative impacts.

- *Section 2.1 Natural Environment*
  According to Section 2.1.4 and 2.1.5 of the PPS, development and site alteration shall not be permitted in the following features:
  - Significant wetlands;
  - significant woodlands;
  - significant valleylands;
  - significant wildlife habitat;
  - significant areas of natural and scientific interest;
  - significant portions of the habitat of endangered or threatened species; or,
  - fish habitat.

- *Section 2.6 Cultural Heritage and Archaeology*

Development or site alteration shall not be permitted in areas containing archaeological resources, or adjacent to protected heritage properties unless the proposed works shall not have an impact to the property or its features.

- *Section 3.1 Natural Hazards*

Development should be directed away from natural and human-made hazards, and shall not create new or aggravate existing hazards, including certain areas associated with flooding hazards along river, stream, and small in-lake systems.

3.3.3 Growth Plan for the Greater Golden Horseshoe (Growth Plan)

Population and employment growth forecasts in Durham Region are provided in Places to Grow: Growth Plan for the Greater Golden Horseshoe (Growth Plan), issued by the province in 2006, as amended in June 2013. Under the Places to Grow Act, municipalities are required to utilize these forecasts for planning purposes.

The Growth Plan is a strategic Provincial vision for long-term growth in the Greater Golden Horseshoe and surrounding areas. The Growth Plan guides municipalities to optimize the use of existing and new infrastructure to support growth, and to co-ordinate infrastructure planning, land use planning and infrastructure investment. The Growth Plan mirrors policies found in the PPS with respect to transportation corridors.

Many policies in the Growth Plan deal with planning for transportation infrastructure, with an emphasis on encouraging municipalities to plan for transportation systems that are adequate for the level of anticipated growth, offer multi-modal access to destinations, provide safety for users, and are interconnected and planned for in a co-ordinated manner. The Growth Plan also focuses heavily on planning for greater density

in urban areas that can support higher transit service levels and increase the modal share of transit.

The June 2013 update to the Provincial Growth Plan included updated 2031 and 2041 growth forecasts. Population and employment in the Region is expected to increase from 970,000 and 360,000 in 2031 to 1,190,000 and 430,000 respectively in 2041.

3.3.4 Greenbelt Plan

The study area is located within the Greenbelt Area as defined by Ontario Regulation 59/05 and is governed by the Greenbelt Plan (2005). The Greenbelt Plan (2005) builds upon the existing policy framework established in the Provincial Policy Statement (PPS), and its implementation through municipal official plan policies and maps. The Greenbelt Plan "identifies where urbanization should not occur in order to provide permanent protection to the agricultural land use base and the ecological features occurring on the landscape." Seagrave Bridge and Bridge No. 9 are both located within the Protected Countryside of the Greenbelt Plan. Seagrave Bridge is located within the Hamlet of Seagrave, and Bridge No. 9 is located within the Natural Heritage System. Some of the applicable policy sections are:

- *Section 3.2 Natural System*
  For lands within the Natural Heritage System there shall be no negative impacts on key natural heritage features or key hydrologic features.

- *Section 3.4 Settlement Areas - Hamlets*
  For lands within Hamlets Municipalities are encouraged facilitate access by a range of transportation options, including active transportation.

- *Section 4.2. Infrastructure*
  Maintenance and construction of infrastructure and construction practices shall minimize negative impacts on the Greenbelt and particularly the Natural Heritage System.

3.3.5 Regional Municipality of Durham Official Plan (2015)

The Official Plan (OP) of the Regional Municipality of Durham supports the provision of an integrated, safe, efficient, and reliable transportation system for all users and modes and offers a variety of mobility choices for all Durham residents. The Plan also supports the protection of natural and cultural environments.

3.3.6 Durham Region Transportation Master Plan

The Durham Region's Transportation Master Plan (TMP) was issued in 2005 and is currently being updated (completion anticipated in 2017) to conform to the recently approved Regional Municipality of Durham Official Plan. The TMP defines the policies, programs and infrastructure improvements required to address the Region's transportation needs.

3.3.7 Township of Scugog Official Plan (2014)

The Township of Scugog Official Plan encourages the preservation of the rural character and cultural heritage of the Township, and protection of the natural environment throughout the Greenbelt Plan. The Plan also encourages establishing infrastructure that safely and efficiently accommodates various modes of transportation, including automobiles, trucks, transit, cycling, and walking. Based on the Official Plan the Seagrave bridge is located within the hamlet area known as Seagrave and Bridge No. 9 is located within a Natural Linkage Area.

3.3.7.1 Land Use

The Seagrave Bridge is located on River Street in the Seagrave Hamlet and crosses the Nonquon River. The lands surrounding the Seagrave Bridge are designated as agricultural on the west side of the bridge and residential (Hamlet) on the east side.

Bridge No. 9 is located on Scugog Line 8, west of Old Simcoe Road, and crosses the Nonquon River. It is surrounded by Natural Linkage Area and Natural Core Areas.

Existing Land Use is shown in **Appendix D**.

3.4 Existing Natural Environment

Existing background information on natural heritage features present within the study area was obtained from the following secondary information sources: Detailed mapping is shown in **Appendix D**.

- Ontario Ministry of Natural Resources and Forestry (MNRF) Make a natural heritage map, Natural Heritage Information Centre (NHIC) data;
- Conservation Ontario 2014 Aquatic species at risk distribution mapping;
- Ontario Breeding Bird Atlas (OBBA);
- Kawartha Conservation Authority (KRCA) Regulated Area mapping and natural heritage information;
- Ontario Ministry of Natural Resources and Forestry Fish On-Line Mapping;
- Ontario Reptile and Amphibian Atlas.

Information from the secondary sources were compiled and analyzed in order to develop a general understanding of the terrestrial, aquatic ecosystem components present within the study area for the 2 water crossings. Designated Natural Areas within the Study Area include:

- Nonquon River Wetlands ANSI
- Nonquon River Wetland # 7 Provincially Significant Wetland
- Nonquon River Mouth Provincially Significant Wetland
- Falls within the Green Belt Natural Heritage System

3.4.1 Terrestrial Species at Risk and Provincially Significant Species

Results of the desktop survey indicate the following species may be present at the site:

Natural Heritage Information Center confirmed:

- Least Bitten (Ixobrychus exilis), provincially threatened
- Restricted Species (likely turtle Species at Risk (SAR))

Ontario Breeding Bird Atlas:

- Least Bittern, provincially threatened
- Eastern Whip-poor-will (Antrostomus vociferous), provincially threatened
- Chimney Swift (Chaetura pelagica), provincially threatened
- Bank Swallow (Riparia riparia), provincially threatened
- Barn Swallow (Hirundo rustica), provincially threatened
- Bobolink (Dolichonyx oryzivorus), provincially threatened
- Eastern Meadowlark (Sturnella magna), provincially threatened
- Black tern (Childonia niger), provincially special concern
- Common nighthawk (Chordeiles minor), provincially special concern
- Red-headed woodpecker (Melanerpes erythrocephalus), provincially special concern
- Eastern wood-pewee (Contopus virens), provincially special concern
- Wood Thrush (Hylocichla mustelina), provincially special concern
- Golden-winged Warbler (Vermivora chrysoptera), provincially special concern
- Canada Warbler (Cardellina Canadensis), provincially special concern

Ontario Reptile and Amphibian Atlas:

- Blanding's turtle (Emydoidea blandingii)
- Snapping Turtle (Chelydra serpentine)
- Eastern Musk Turtle (Sternotherus odoratus)
- Eastern Ribbonsnake (Thamnophis sauritus)
- Milksnake (Lampropeltis triangulum)

Other SAR potentially present at the sites:

- Little Brown Bat (Myotis lucifugus)
- Northern Long-eared Bat (Myotis septentrionalis)
- Eastern Small-footed Myotis (Myotis leibii)

3.4.2 Aquatic Resources

The Kawartha Conservation Authority (KCA) indicated that for Seagrave Bridge, which spans the Nonquon River near its outlet, this portion of the river is considered a warmwater migratory section that supports spawning runs of important fishes such as muskellunge and walleye. In-water work restrictions are from March 1st – June 30th, as per Aurora OMNRF guidance.

The Scugog Line 8 Bridge (Bridge No. 9) spans the Nonquon River in its mid-reaches near the Nonquon River Wildlife Area: a large provincially significant wetland. This portion of the river is considered a warmwater section that supports important fish species such as largemouth bass and muskellunge, and several turtle species at risk. In-water work restrictions are from April 1st – June 30th, as per Aurora OMNRF guidance.

Fish in the Nonquon River Port Perry Sub-watershed, as indicated by Kawartha Conservation Authority, include:

- Central Mudminnow (Umbra limi)
- White Sucker (Catostomus commersonii)
- Northern Redbelly Dace (Chrosomus eos)
- Finescale Dace (Chrosomus neogaeus)
- Golden Shiner (Notemigonus crysoleucas)
- Brassy Minnow (Hybognathus hankinsonii)
- Common Shiner (Luxilus cornutus)
- Bluntnose Minnow (Pimephales notatus)
- Fathead Minnow (Pimephales promelas)
- Creek Chub (Semitolus atromaculatus)
- Pearl Dace (Margariscus margarita)
- Brown Bullhead (Ameiurus nebulosus)
- Banded Killifish (Fundulus diaphanous)
- Brook Stickleback (Culaea inconstans)
- Rock Bass (Ambloplites rupestris)
- Pumpkinseed (Lepomis gibbosus)
- Bluegill (Lepomis macrochirus)
- Largemouth Bass (Micropterus salmoides)
- Yellow Perch (Perca flavescens)

Both bridges are near mouth to Lake Scugog. Fish species identified to occur in Lake Scugog from MNRF Fish On-line Map (game fish), include:

- Common Carp (Cyprinus carpio)
- Rock Bass
- Yellow Bullhead (Ameiurus natalis)
- White Sucker
- Black Crappie (Pomoxis nigromaculatus)
- Yellow Perch
- Walleye (Sander vitreus)
- Pumpkinseed
- Brown Bullhead
- Largemouth Bass
- Bluegill
- Smallmouth Bass (Micropterus dolomieu)
- Muskellunge (Esox masquinongy)
- Golden shiner

There were no known records of SAR fish within the study area or connected waterbodies.

3.4.1 Source Water Protection

The Seagrave Bridge and Bridge No. 9 are both situated in the Kawartha-Haliburton Source Water Protection Area. Both bridges are within Intake Protection Zone 3 (IPZ-3). The Trent Source Protection Plan policies would apply at both locations. According to the Kawartha Conservation website, only IPZ-1 and IPZ-2 have policies that apply to them. Standard construction environmental protection measures with regards to fueling and debris will apply to any future work.

3.5 Existing Socio-Economic Environment

Seagrave Bridge is located in the village of Seagrave and crosses the Nonquon River. There are approximately 20 residences within 200m on either side of the bridge, as well as a small general store. The land on either side of the bridge is valley land regulated by the Kawartha Conservation Authority. The bridge provides an important link with Seagrave and adjacent properties.

Comments from the public indicated that the Seagrave bridge is used for fishing, and the river is used by light watercraft and boats. The Seagrave bridge is also part of course for the traditional “Canoe the Nonquon” event.

Bridge No. 9 is located in the Nonquon River Wetlands, regulated by Kawartha Conservation. The closest residence is located approximately 500m east of the bridge. The nearest residence to the west of Bridge No. 9 is approximately 1.4 km away. The Region of Durham’s Nonquon Water Pollution Control Plant is located approximately 500m east of the bridge, and the Nonquon WPCP outfall is located near Bridge no. 9 east abutment, south side.

3.6 Existing Cultural Heritage Environment

3.6.1 Cultural Heritage Assessment

The Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes checklist was completed during the initial stages of this EA study to determine if the study area may be of any cultural heritage value and/or is a recognized heritage property. The findings of the Checklist indicated that a Cultural Heritage Evaluation Report (CHER) and Heritage Impact Assessment (HIA) were required for this project, mainly due to the age of the bridges. The findings of the CHER and HIA indicated the following:

- The Seagrave Bridge is a typical example of a short-span steel Warren pony truss design that was found built over numerous small creeks and rivers

throughout southern Ontario. Although it exhibits characteristics of an increasingly rare form of bridge, it does not exhibit significant cultural heritage value or interest.

- Bridge No. 9 is a three span steel girder bridge with timber decking, and was not determined to have cultural heritage value or interest.

The potential impacts to the cultural heritage value of the bridges are dependent upon the preferred alternatives for the future of the bridge crossings. A rehabilitation of the bridges would ultimately retain the most historic fabric, and would ultimately not result in the loss of the heritage attributes. Replacement of the Seagrave Bridge would ultimately result in the eventual replacement and loss of the historic bridge.

Given that Bridge No. 9 was not identified as having cultural heritage value, no alternatives identified for the Class EA would result in impacts to cultural heritage value. The replacement or removal of the bridge would ultimately result in a loss of historic building material, however, it would not result in a loss of significant cultural heritage value.

A copy of the CHER and the HIA report is provided in **Appendix E**

3.6.2 Archeological Assessment

A Stage 1 background study for the Seagrave Bridge and Bridge No. 9 EA has determined that the potential for the recovery of both First Nation and Euro-Canadian archaeological resources within parts of each of the study areas is high. Overall, as a result of the existing bridge construction and road grading, some portions of the study area have been previously disturbed and archaeological potential has been removed.

A copy of the Stage 1 Archeological Assessment is provided in **Appendix F**.

4. Problem / Opportunity Statement

Currently, the existing bridges do not meet code requirements and have deteriorated to such a condition that Bridge 9 has been closed and the Seagrave Bridge is becoming a liability to the Township. If no action is taken to repair or replace both bridges they will both need to be closed. Rehabilitation would maintain the existing road network and could improve pedestrian, cyclist and natural environment conditions depending on the preferred solution.

5. Alternative Solutions

5.1 Description of Alternative Solutions for Seagrave Bridge

Alternative solutions are different ways to address the problem/opportunity statement. The alternative solutions generated and assessed by the study team are discussed

below. The alternative solutions were evaluated based on criteria within the technical, natural environment, social/land use, cultural, and economic environments. The evaluation criteria categories and indicators are shown in table below.

Categories	Indicators/Measure
Cultural	Potential to affect Aboriginal Rights or interests
	Potential to affect archaeological resources
	Potential to impact built and/or cultural heritage resources
Natural Environment	Potential to affect fish species
	Potential to affect aquatic Species at Risk (SAR)
	Potential to affect fish habitat
	Potential to affect vegetation and/or woodlot areas
	Potential to affect vegetative SAR
	Potential to affect wildlife habitat
	Potential to affect SAR
Social / Land Use	Potential to support federal/provincial policies/plans/goals and objectives
	Potential to support local planning objectives/policies/plans and goals
Technical	Feasibility of construction (constructability)
	Potential to affect vehicle/pedestrian/cyclist's safety
	Estimated costs for initial capital expenditures and on-going maintenance
Economic	Ability to support economic development in community
	Ability to support and/or promote tourism in the area
	Relative construction costs

The detailed evaluation of the alternatives are provided in **Appendix G**.

5.1.1 Seagrave Bridge Alternative No.1 – Do Nothing

The Class EA process requires that the 'Do-Nothing' alternative be considered. The 'Do Nothing' alternative acts as a comparative benchmark for all of the other alternatives with no changes or improvements considered.

5.1.2 Seagrave Bridge Alternative No. 2 – Rehabilitate Structure

This rehabilitation alternative acts as a short-term and inexpensive solution to the Problem Statement. It would offer a shorter construction schedule (approximately 12 weeks) and a lower cost (approximately $580,000) but long term maintenance and future minor to major rehabilitation would be necessary. The projected life span of the structure following rehabilitation would be roughly 15-25 years if this alternative is selected. Load limits on the structure would also remain in place.

5.1.3 Seagrave Bridge Alternative No. 3 – Replace Structure

This replacement alternative acts as a long-term solution and is the most cost effective solution to the Problem Statement. It has a slightly longer construction schedule and total cost but the long term maintenance is much lower than Alternative 2. The projected life span of the structure would be 50-75 years without major rehabilitation and only minor rehabilitation. It also allows the opportunity to widen the deck, provide a sidewalk, and provide adequate roadway width. The existing load limit on the structure could be lifted if this alternative is selected. The estimated cost of this alternative is $1,890,000.

- Traffic over the structure will be impacted for an estimated period of 20 weeks.

5.2 Description of Alternative Solutions for Bridge No. 9

The alternative solutions generated and assessed by the study team for Bridge No. 9 are discussed below:

5.2.1 Bridge No. 9 Alternative No. 1 – Do Nothing

While the ‘Do Nothing’ alternative has no direct physical impacts on the existing natural, social and economic environments, it does not address the problem statement and the technical considerations such as reopening, improved lane width, or pedestrian access.

5.2.2 Bridge No. 9 Alternative No. 2 – Rehabilitate Structure

This alternative includes the rehabilitation of the existing structure to restore it’s original function. The estimated cost to rehabilitate the bridge for vehicles with a load restriction is approximately $565,000. Due to the current closed condition traffic over the structure would not be impacted during construction.

5.2.3 Bridge No. 9 Alternative No. 3 - Replace Structure at Existing Location

This replacement alternative acts as a long-term solution. The projected life span of the structure would be 50-75 years without major rehabilitation and only minor rehabilitation. It also allows the opportunity to widen the deck, provide a sidewalk, and provide adequate roadway width.

The estimated cost of this alternative is $1,200,000.
Due to the current closed condition traffic over the structure will not be impacted.
Construction is estimated to be a period of 20 weeks.

5.2.4 Bridge No. 9 Alternative No. 4 - Replace Structure at Existing Location with Pedestrian/Cyclist Bridge

This replacement alternative includes replacing the existing bridge with a pedestrian/cyclist bridge. The estimated cost of this alternative is $350,000.
Due to the current closed condition traffic over the structure will not be impacted.
Construction is estimated to be a period of 12 weeks.

5.2.5 Bridge No. 9 Alternative No. 5 - Remove Bridge

This alternative addresses some of the problem statements and takes advantage of some opportunities. Removing the existing structure completely would allow for the greatest improvement on natural environment conditions within the watercourse and on the embankments. The estimated cost of this alternative is $185,000.

5.2.6 Bridge No. 9 Alternative No. 6 – Repair Bridge to Accommodate Pedestrian Traffic and Limited Vehicle Traffic

On April 10, 2017, a second Public Meeting was held as part of the Township of Scugog Planning and Community Affairs Committee. . As a result of the comments received from the Public, and discussion by Committee members, a sixth alternative was developed for Bridge 9.

This alternative retains and repairs the existing bridge for use as a pedestrian bridge. This alternative also includes repairs to re-open the existing bridge to limited vehicular traffic (i.e. reduced posted weight limit).

6. Preferred Solutions

6.1 Preliminary Preferred Solutions

Prior to the April 10, 2017 Public Meeting, the preliminary preferred solutions were presented:

6.1.1 Preliminary Preferred Solution - Seagrave Bridge

Based on the findings of the evaluation of the Alternative Solutions, the construction of a new bridge (Seagrave Bridge Alternative No. 3 – Replace Structure), was recommended, based on the following rationale:

- The crossing provides a key north south connection in Seagrave Village.
- Costs to replace the bridge are similar to costs associated with rehabilitation of the bridge but will extend the service life of the bridge more significantly.

Replacing the bridge provides an opportunity to address design deficiencies, expand the deck to provide 2 lanes and implement a sidewalk. Also provides for full load carrying capacity in the event of a closure of Regional Road 2/Simcoe Street. The proposed solution replaces the existing bridge with a new 25m long two lane bridge. The proposed cross section will consist of two 3.0m wide lanes, two 0.5 m shoulders, and one sidewalk. The bridge will be constructed on the existing alignment with an adjustment to the vertical grade. The estimated construction cost is $1,890,000 and the estimated construction duration is 20 weeks.

6.1.2 Preliminary Preferred Solution - Bridge No. 9

Based on the findings of the evaluation of the Alternative Solutions, the removal of the existing bridge (Bridge No. 9 Alternative No. 5 – Remove Structure), was recommended, based on the following rationale:

- Removal of the structure is significantly less expensive than replacement or rehabilitation.
- Removing the structure does not result in significant out of the way travel or detour of vehicular traffic.
- Removal of the structure provides an opportunity to enhance the natural conditions within the watercourse and on the embankments.

The proposed solution includes removal of the existing bridge and construction of a turn around on each approach. Stream improvements will be undertaken to provide natural channel features at this previous crossing location.

It is noted from the consultation that the Region of Durham will require a minimum clearance of 2m between the closed edge of the Manhole and the barricade to allow for any future maintenance or repair work - and that the clearance will need to be field verified at the time of construction. Also, the existing outlet will need to be verified and protected during construction.

The estimated construction cost is $185,000 and the estimated construction duration is 6 weeks.

6.2 Final Preferred Solutions

At the April 10, 2017 Public meeting, several members of the Public provided comment on the alternatives and criteria. For Seagrave Bridge, the criteria of cost, and retention of cultural heritage, were emphasized. For Bridge No. 9, the criteria of cost and maintaining transportation access for all modes of transportation were emphasized. As a result of the meeting, the alternatives were re-assessed, and the recommended alternatives are as follows:

6.2.1 Final Preferred Solution – Seagrave Bridge

Based on the findings of the evaluation of Alternative Solutions, Alternative 2, the rehabilitation of the Seagrave Bridge, was recommended, based on the following rationale:

- Has minimal impact to the natural environment
- Retains the cultural heritage value of the bridge
- Has a moderate cost of construction

The proposed solution maintains the existing configuration of the existing bridge. Rehabilitation will involve, as a minimum, the following items:

- Detailed Design and Construction Administration
- Installation of environmental controls and work platform

- Removal and replacement of timber deck and deteriorated steel components
- Sandblasting and Painting of superstructure
- Concrete Abutment and Bridge Seat Repairs
- Replacement of guiderail and extruder
- Scour protection and site restoration.

The anticipated duration of the repair work is estimated at 12 weeks, with complete closure of the bridge required. The estimated cost is $710,000.

6.2.2 Final Preferred Solution – Bridge No. 9

Based on the findings of the evaluation of Alternative Solutions, Alternative 6 – Repair Bridge to accommodate Pedestrian Traffic and limited vehicle traffic, was recommended, based on the following rationale:

- Has minimal impact to the natural environment
- Maintains safe infrastructure for the use of pedestrians and load limited vehicle traffic.

The proposed solution would maintain the existing configuration of the existing bridge. Based on the availability of funding the work can be done in phases. The first phase would include initial repairs Initial repairs would be undertaken to make the deck safe for pedestrian traffic. This would include removal of asphalt, replacement of deteriorated timber components, and replacement or upgrading of the existing barrier walls.
The second phase would include a detailed design to rehabilitate the bridge to make the bridge safe for load limited vehicular traffic. The anticipated rehabilitation scope of work would include as a minimum:

- Detailed engineering design and data collection to confirm existing dimensions
- Geotechnical investigation to confirm timber pile foundation loads
- Installation of environmental protections and controls
- Replacement of steel stringers, floorbeams, and pile caps
- Replacement of deteriorated timbers in abutments and wingwalls
- Replacement of guiderail and barrier walls

The estimated cost to complete this work is $565,000.

7. Potential Impacts and Proposed Mitigation Measures

Many of the environmental impacts and concerns related to the project have been mitigated through the process by which the recommended bridge alternatives were selected, as described in this PFR. The remaining anticipated impacts to the environment and the proposed mitigation measures for the recommended bridge design alternative are described in the following sections and will be accounted for in the contract provisions.

7.1 Natural Environment

Overall, the recommended bridge alternatives have minimal impacts to the natural environment in the study areas. Some impacts to the terrestrial and aquatic environments are anticipated and detailed below. The potential short term environmental impacts primarily relate to construction activities, Long-term impacts relate to operation and maintenance. Many of these impacts are commonly encountered with land development and have associated standard mitigation measures.

7.1.1 Terrestrial Impacts

For Seagrave Bridge and Bridge No. 9, minor tree limbing and vegetation removal may be required to facilitate construction access. Vegetation removal can lead to sedimaentation and erosion due to lack of natural groundcover,

Construction activities can result in the trampling of adjacent vegetation communities and the compaction of soil, which impedes natural regeneration of the vegetation in the area.

The sites are not highly significant for wildlife but some wildlife is present and is likely to be disturbed when vegetation clearing occurs. Construction activities within the study area can result inexcess noise, lighting, and vibrations which could disturb breeding birds and other residential wildlife.

7.1.2 Aquatic impacts

Clearing of vegetation for access will cause exposure of soils, which can result in sediment run-off discharging into the Nonquon River. The use of machinery and vehicles on-site could result in leaks or spills of oil, gasoline, and other fluids which could enter the natural environment.

Rehabilitation of bridge superstructure components could cause deleterious material to enter the Nonquon River.

7.1.3 Species at Risk/Species of Conservation Concern

Species at Risk were identified in the Desktop Terrestrial Survey. Further investigation will be undertaken during detailed design.

7.1.4 Cultural Heritage Resources

Seagrave Bridge is a typical example of a short-span steel Warren pony truss design that was found built over numerous small creeks and rivers throughout southern Ontario. Although it exhibits characteristics of an increasingly rare form of bridge, it does not exhibit significant cultural heritage value or interest. Nevetheless, the recommended alternative proposes to replace components in-kind.

As Bridge No. 9 was not deemed to have cultural heritage value or interest, the proposed work will not impact any cultural heritage.

7.1.5 Archaeological Resources

While a Stage 2 Archaeological Assessment (AA) was recommended for portions of the study, land disturbance activities associated with this project are anticipated to be undertaken in areas where no further AA were required. As such, Stage 2 AA activities are not required for this project.

7.2 Mitigation Measures

A preliminary Environmental Protection Plan has been developed in order to identify measures to mitigate the impacts of the rehabilitation of Seagrave Bridge and Bridge No. 9. A number of measures are recommended for implementation to address the anticipated components of the construction, which have the potential to negatively affect the aquatic and terrestrial environment and will require management. The following components are presented:

- In-water work restrictions are in effect to reflect the Kawartha Lakes resident warm water fish community. **At Seagrave bridge, in-water work restrictions are from March 1st to June 30th**, based on guidance from Aurora OMNRF. **At Bridge No. 9, in-water work restrictions are from April 1st to June 30th.**
- Establishment of erosion/sediment controls (ESC) will be necessary to enclose exposed ground to prevent migration of sediments. Erosion control fencing should be placed along the base of all roadway approach embankments, around all ongoing construction activity areas as well as at adjacent locations where supplies or excavated materials and imported fills may be temporarily stored. Fencing is to be checked routinely for effectiveness and regularly cleared of silt accumulation to ensure the integrity of erosion prevention measures. Areas of exposed soil, especially the new roadway approach embankments that cannot be immediately stabilized with the final slope treatment are to be treated with straw mulch, erosion blanket, sod or hydroseed, depending on the specific circumstances.
- Similarly, to mitigate dust deposition, a non-chloride dust suppressant can be applied to areas of exposed soils to reduce or eliminate dust generation. Contingency measures should include keeping extra ESC materials on site in order to respond quickly. Removal/replacement of the existing structure components must occur under conditions that effectively prevent the entry of debris (concrete, wood, asphalt or metals) into the water. A platform temporarily suspended beneath the deck (placement of scaffolding on the channel bed is discouraged) or a similar such device to capture any debris must be employed.
- Where it becomes necessary to dewater excavation areas (removal and replacement of abutments, utilities placement) effluent should be directed over grassed areas where locally available. Filter bags may necessarily be attached to

pump outlets, which must be located no closer than 30 m from any body of water. Settling ponds, swales and check dams and/or any other measures must be incorporated as necessary to prevent sedimentation of the adjacent waterbody. A Permit to Take Water (PTTW) may be required from the Ministry of the Environment should anticipated water taking be in excess of 50,000 liters per day.

- Should excess soil be generated at either Seagrave bridge or Bridge No. 9, soil management shall be completed in accordance with MOECC current guidance document “Management of Excess Soil – A Guide for Best Management Practices (2014).
- Soils are to be determined if contaminated. Disposal of contaminated soils shall be according to the Environmental Protection Act and Ontario Regulation 153/04, Records of Site Condition.
- Any removal of the major trees and shrubs should be undertaken before the onset of the avian breeding season, as per the federal Migratory Birds Act. In the event this is not possible, a qualified individual must inspect the vegetation areas to be removed to provide assurance that they do not contain active nests of any of the avian species covered by the Migratory Birds Act. Tree cutting will only be permitted after August 1 and before May 1 to prevent destruction of migratory bird nests.
- Upon the completion of construction, suitable areas of the right-of-way should be replanted with site-appropriate indigenous trees and shrubs. Landscape trees should be as large as is economically feasible. Clearing of vegetation along the roadway approach slopes and fringes of the road allowance should be kept to the minimum required to safely and efficiently undertake the work. Snow fencing must be utilized to protect existing vegetation and to delineate areas not to be disturbed by construction activities.
- All waste generated during construction will be hauled to a licenced disposal facility and disposed of in accordance with provincial and municipal requirements.
- Operating, refuelling and maintenance of construction equipment and the handling and storage of toxic materials (e.g., fuel, lubricants, form oils, paints, wood preservative, and other chemicals) must be carried out in such a way as to avoid contamination of soils, groundwater and surface waters. Temporary materials and equipment storage locations must be approved. Measures must be in place to reduce the risk of spills and to minimize impacts of accidental spills during construction including a contingency plan ready for immediate implementation. In addition, there must be adequate measures to prevent or capture and contain any debris and spills resulting from construction activities. All such measures and procedures will conform to pertinent provincial requirements.
- For Species at Risk, proponents must comply with Section 32(1) of the Species at Risk Act, which states “No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species”. Should the contractor encounter a species at risk at any time during the project they should cease work and contact the local office of the Ministry of Natural Resources and Forestry (Peterborough 705-755-2000). MNRF will advise management options to minimize, reduce or control adverse effects, and design compensatory mitigation and environmental effects monitoring if

required, to avoid destruction, injury or interference with the species, its residence and/or its habitat (e.g. through site, timing or design changes).

7.2.1 Drainage and Stormwater Management

During construction, the following techniques will be used to mitigate drainage into the waterway:

- Maintain existing watercourses and improve ditching where applicable
- Prevent sediment and debris from entering watercourses by installation of silt fencing and careful construction practices at stream crossings
- Include standard contract provisions regarding watercourse/fisheries protection and erosion and sedimentation control in the contract documents

7.3 Social Environment

No impacts to the social environment are anticipated based on the Preferred Solution for each bridge.

Access to all neighbor properties will be maintained, no impacts to adjacent land use are anticipated.

Potential impacts from noise during construction will be mitigated through contract provisions and will include requirements such as:

- All construction will be limited to the hours of work set out in the Township of Scugog Noise By-Law.

- All equipment shall be properly maintained to limit noise emissions. As such, all construction equipment will be operated with effective muffling devices that are in good working order. The Contract Documents shall contain a provision that any initial noise complaint will trigger verification that the general noise control measures agreed to are in effect. In the presence of persistent noise complaints, all construction equipment shall be verified to comply with MOECC NPC-115 guidelines.

- In the presence of persistent complaints and subject to the results of a field investigation, alternative noise control measured during construction may be required, where reasonably available. In selecting appropriate noise control and mitigation measures, consideration shall be given to the technical, administrative and economic feasibility of the various alternatives.

7.3.1 Traffic Delays/ Access Restrictions during Construction

During the detailed design phase of the project, a detailed traffic protection plan will be created for Seagrave Bridge. The bridge would remain closed to traffic for the duration of the construction period. Construction access to the bridge site would be maintained from either end of the structure.

Currently, Bridge No. 9 is closed requiring local traffic to seek alternative travel routes. Traffic impacts are therefore not anticipated for the bridge construction.

8. Commitments to Future Work

During detailed design and during development of the contract provisions the mitigation measures will be carried forward to ensure minimal impacts to the environment:

8.1 Environmental

- Minimum clearances to access the Nonquon WPCP outfall manhole will be provided and verified to the satisfaction of the Region of Durham,
- The Nonquon Water Pollution Control Plant outfall location is to be field verified at the time of construction. Temporary fencing shall be erected during construction to prevent the outlet from being buried/damaged, with the fencing extending from top of existing slope to the river at a 2m offset (due south) from centreline of the existing outlet pipe. If any modifications to the existing outlet are proposed (i.e. relocation, extension, additional fill, etc), during detailed design, the integrity and capacity of the outlet will be maintained to the satisfaction of the Region of Durham.
- In-water work restrictions will be adhered to. At Seagrave bridge, in-water work restrictions are from March 1st to June 30th. At Bridge No. 9, in-water work restrictions are from April 1st to June 30th.
- Establish erosion and sediment controls to enclose exposed ground to prevent migration of sediments.
- Rehabilitation of the existing structures will occur under conditions that effectively prevent the entry of debris (concrete, wood, asphalt or metals) into the water.
- Effluent from dewatered excavation areas effluent will be directed over grassed areas where locally available. Filter bags may necessarily be attached to pump outlets, which must be located no closer than 30 m from any body of water.
- Any removal of the major trees and shrubs should be undertaken before the onset of the avian breeding season, as per the federal Migratory Birds Act. Tree cutting will only be permitted after August 1 and before May 1 to prevent destruction of migratory bird nests.
- Upon the completion of construction, suitable areas of the right-of-way should be replanted with site-appropriate indigenous trees and shrubs. Clearing of vegetation along the roadway approach slopes and fringes of the road allowance should be kept to the minimum required to safely and efficiently undertake the work. Snow fencing will be used to protect existing vegetation and to delineate areas not to be disturbed by construction activities.
- Operating, refuelling and maintenance of construction equipment and the handling and storage of toxic materials must be carried out in such a way as to avoid contamination of soils, groundwater and surface waters.

- A qualified environmental monitor be present on site during construction.

8.2 Socio Economic

- Potential impacts from noise during construction will be mitigated through contract provisions.
- A detailed traffic protection plan will be created for Seagrave Bridge.
- Bridge No. 9 is currently closed.

9. Permits and Approvals

Following the successful completion of the Class EA process documented in this Project File Report prepared under the Municipal Class EA (2000 as amended in 2007, 2011 and 2015), all requirements of the Municipal Class EA process will have been met.

Other approval requirements will be addressed during detailed design, which may include:

9.1 Navigation Protection Act Process

The Nonquon River is not outlined by the Navigation Protection Act (NPA) as a river or riverine and therefore does not need navigable water protection. The list of protected waters can be found here: http://laws-lois.justice.gc.ca/eng/acts/n-22/FullText.html#h-27

9.2 Ministry of Natural Resources and Forestry Work Permit Process

An application for a work permit for the construction of the bridge projects must be submitted to the Ministry of Natural Resources and Forestry (MNRF) for review. A permit under the Endangered Species Act may be required.

9.3 Kawartha Conservation Authority permit

A permit under Ontario Regulation 182/06 – Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses, may be required from Kawartha Conservation prior to the commencement of any on-site works or site alteration for both bridges. A detailed review of the hydraulic study may be required.

9.4 Ministry of the Environment and Climate Change

If detailed design determines that water taking in excess of 50,000 liters per day is anticipated, a registration with the Environmental Activity and Sector Registry (EASR) or a Permit to Take Water (PTTW) maybe required from the MOECC.