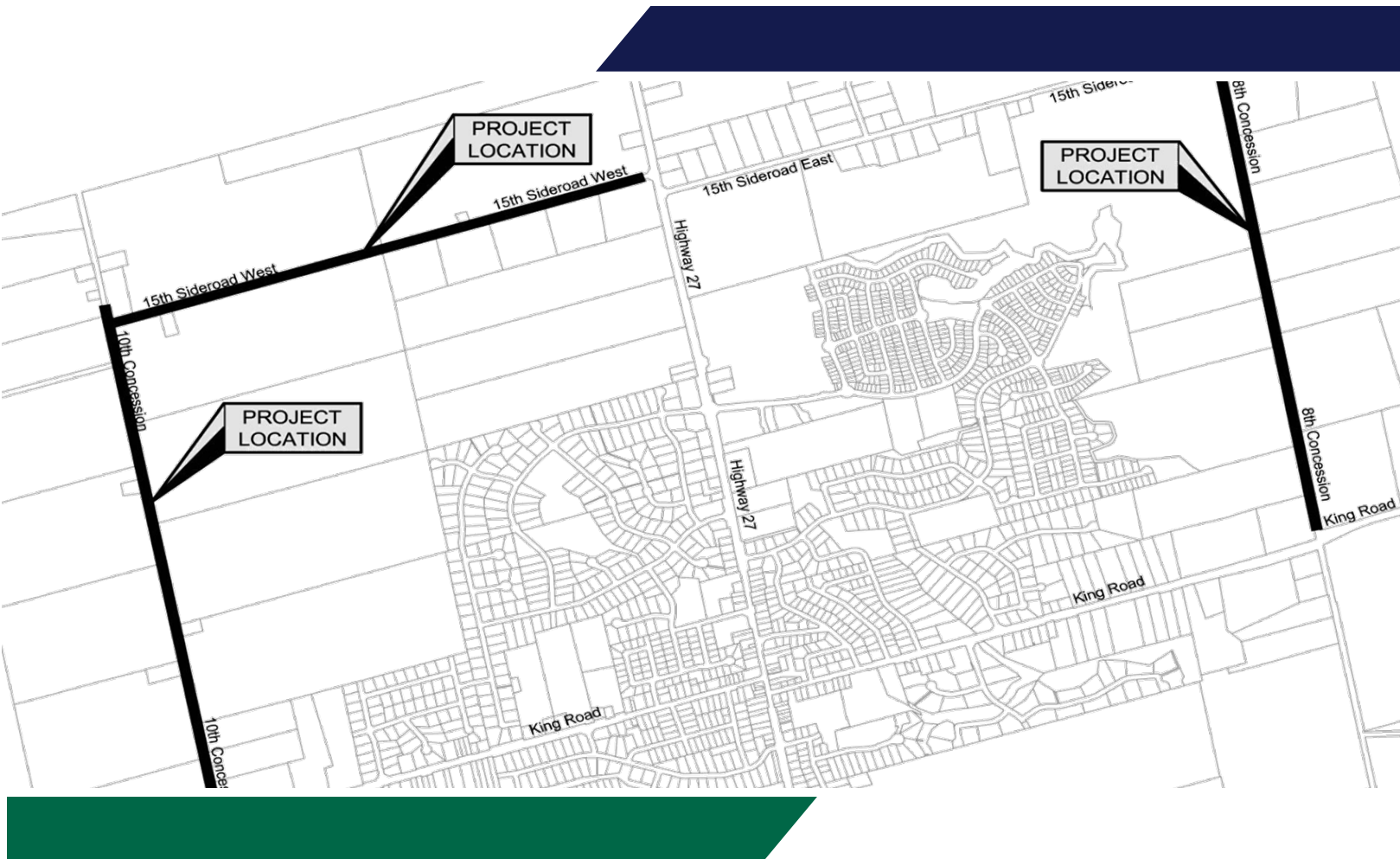




ROAD REHABILITATION OF 15TH SIDEROAD, 10TH CONCESSION, AND 8TH CONCESSION

Schedule 'B' Municipal Class Environmental Assessment

PROJECT FILE REPORT



PREPARED FOR:
TOWNSHIP OF KING

FEBRUARY 2021
PROJECT NO. 217102



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1. BACKGROUND

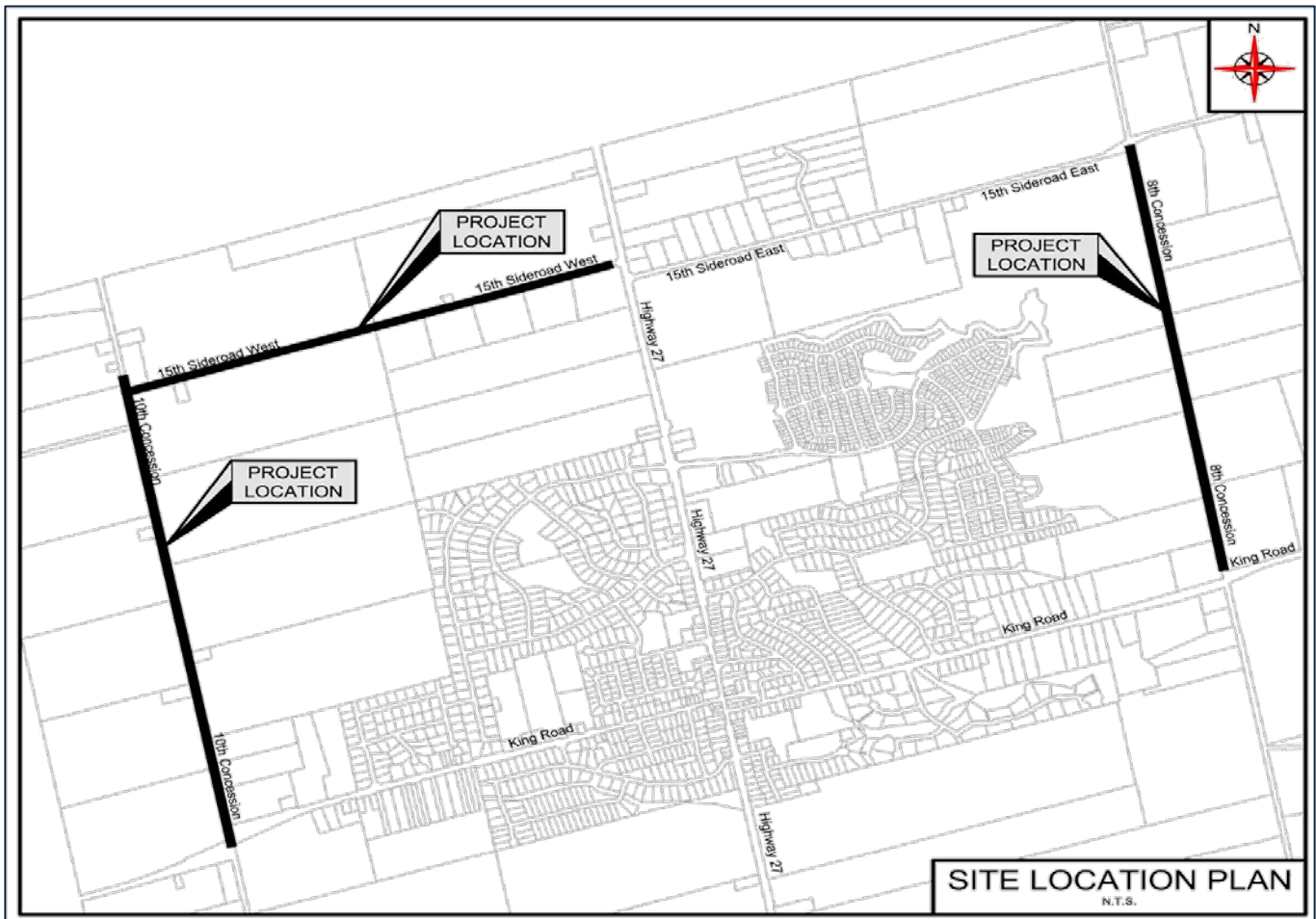
1.1 Introduction

The Township of King initiated a preliminary design in 2018 for the reconstruction of the 3 segments to address poor road surface conditions and limited sight lines. They are approximately 2.3 kilometers of Concession 10 from King Road to Sideroad 15, 2.0 kilometers of Sideroad 15 from Concession 10 to Regional Road 27 and 2.1 kilometers of Concession 8 from King Road to Sideroad 15. Since the roads are to be reconstructed to provide adequate pavement structure (gravel base thickness and hot mix asphalt overlay) it was appropriate that consideration was given to addressing other deficiencies such as shoulder width, clear zone requirements, steep road grades, existing culvert condition and limited sightlines.

During the initial investigation it was noted that right-of-way (ROW) constraints and the undulating topography would require modifications of the rural road cross-section in order to minimize property impacts, cross-section modifications were considered for ditch depth and back slope, but no reduction has been considered for lane and shoulder width. Based on the results of the preliminary investigation, it was determined that the scope of work required would necessitate the completion of a Schedule 'B' Municipal Class Environmental Assessment.

The Township of King initiated a Municipal Class Environmental Assessment (Class EA) in 2019 for the reconstruction of the 3 segments of roadway in the Nobleton area (Figure 1). The purpose of this undertaking is to improve the existing cross-section, pavement structure, road surface and overall condition of the aforementioned segments of Sideroad 15, Concession 8 and Concession 10, as well as address sightlines and drainage improvements within these portions of roadway.

Figure 1: Project Study Locations



1.2 Class Environmental Assessment Process

The Municipal Class Environmental Assessment document (amended 2015) as published by the Municipal Engineers Association outlines a planning process for municipalities to follow so as to complete infrastructure projects in an environmentally responsible manner and in accordance with the *Environmental Assessment Act (EA Act)*. Based on the scope of the proposed improvements, a Schedule 'B' level of planning was determined to be required. A Schedule 'B' project requires completion of Phases 1 & 2 of the Class EA process as illustrated in Figure 2, which is generally comprised of the following tasks:

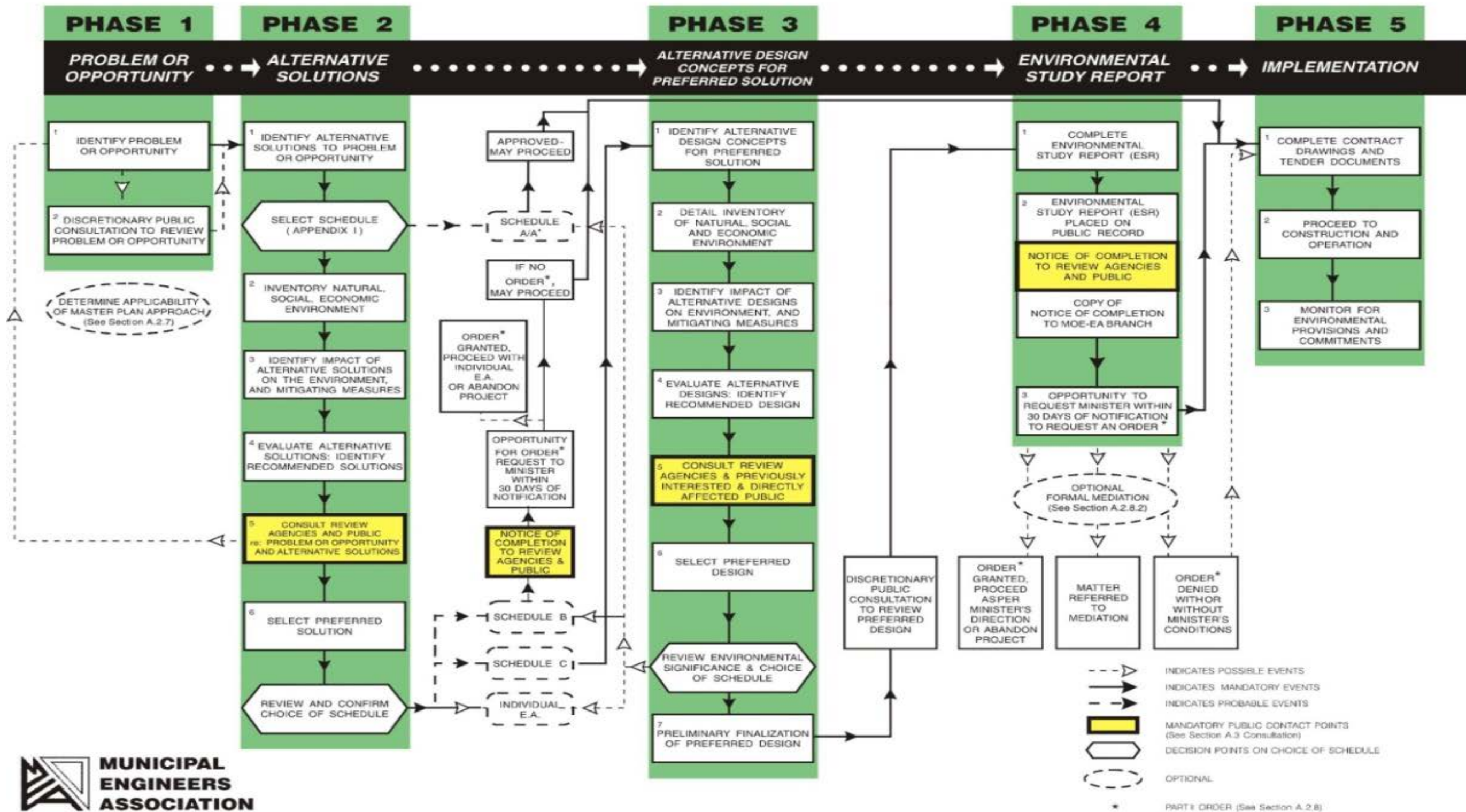
PHASES 1 & 2

- Identify the problem/opportunity;
- Inventory the existing environment (physical, natural, social and economic);

- Develop alternative solutions to address the problem/opportunity;
- Evaluate proposed alternative solutions;
- Consult with the public, review agencies, relevant stakeholders;
- Select the Preferred Solution giving consideration to the evaluation and any feedback received through consultation;
- Establish mitigation measures to minimize potential environmental impacts;
- Document the process in a Project File Report (PFR);
- Issue a Notice of Completion followed by a 30-day review period; and
- Address and final comments and conclude the Class EA process.

Consultation is a key component of the Class EA process as it allows members of the public, Indigenous communities, and review agencies opportunity to provide relevant information and feedback for consideration.

Figure 2: Municipal Class Environmental Assessment Flow Chart



1.3 Objective of this Report

The objective of this report is to document the Class EA, Schedule 'B', planning process. This report identifies the deficiencies affecting the project study area; the Problem/Opportunity Statement to be addressed; the alternative solutions considered; and the evaluation of these alternatives to demonstrate the decision-making process leading to the selection of the preferred solution. This report also describes the existing project environment, the potential for environmental impact, and the mitigation strategy proposed. Consultation completed during this process is also included.

1.4 Project Team

The project team involved in the completion of this Schedule 'B' Class EA includes the following:

Proponent: Township of King

Prime Consultant: Ainley Group

Sub-Consultants: AMICK Consultants Limited

Palmer Environmental Consulting Group Inc.

2. PLANNING POLICY AND THIS CLASS EA

This section provides a brief discussion of various land use planning policies and principles to illustrate the consistency of this project in relation to provincial, regional and municipal planning goals.

2.1 Provincial Policy Statement (2020)

The *Provincial Policy Statement (2020)* provides policy direction relating to land use planning and development in Ontario. Section 3 of the *Planning Act* stipulates that all decisions affecting planning matters are to be consistent with the *Provincial Policy Statement (PPS)*. Policies applicable to this project include the following:

- Section 1.1.1e) "Healthy, livable and safe communities are sustained by promoting the integration of land use planning, growth management, transit-supportive development, intensification and infrastructure planning to achieve cost-effective development patterns, optimization of transit investments, and standards to minimize land consumption and servicing costs."
- Section 1.6.1 "Infrastructure and public service facilities shall be provided in an efficient manner that prepares for the impacts of a changing climate while accommodating projected needs."

- Section 1.6.6.7c) “Planning for stormwater management shall minimize erosion and changes in water balance, and prepare for the impacts of a changing climate through the effective management of stormwater, including the use of green infrastructure.”
- Section 2.1.1 “Natural features and areas shall be protected for the long term.”
- Section 2.6.1 “Significant built heritage resources and significant cultural heritage landscapes shall be conserved.”

As the current project is following a Municipal Class Environmental Assessment process consideration is being given to the potential to impact the physical, natural, social, and economic environment prior to selection of the preferred solution. Various studies have been completed to obtain a better understanding of the existing conditions of the study area so that impacts can be properly assessed and appropriate mitigation developed.

2.2 Places to Grow Act (2005)

Under the Places to Grow Act (2005), regional Growth Plans have been developed to manage long-term growth and infrastructure renewal throughout the province. *A Place to Grow - Growth Plan for the Greater Golden Horseshoe (2020)*, is the Ontario government's initiative to plan for growth and development in a way that supports economic prosperity, protects the environment, and helps communities achieve a high quality of life.

The infrastructure framework in this Plan requires that municipalities undertake an integrated approach to land use planning, infrastructure investments, and environmental protection to achieve the outcomes of the Plan. Co-ordination of these different dimensions of planning allows municipalities to identify the most cost-effective options for sustainably accommodating forecasted growth to the horizon of this Plan to support the achievement of complete communities.

2.3 Greenbelt Plan

The Greenbelt Plan, together with the Growth Plan, the Niagara Escarpment Plan and the Oak Ridges Moraine Conservation Plan, builds on the Provincial Policy Statement to establish a land use planning framework for the Greater Golden Horseshoe that supports a thriving economy, a clean and healthy environment and social equity. The policies of the Greenbelt Plan are intended to apply outside of the Oak Ridges Moraine Conservation Plan Area. Together, the Oak Ridges Moraine Conservation Plan and Greenbelt Plan apply to nearly the entirety of the Township. The study area is located within and adjacent to lands designated as Protected Countryside and Settlement Area – Towns and Villages. Support for infrastructure which achieves the social and economic aims of the Greenbelt Plan and the Growth Plan and improves integration with land use planning while seeking to minimize environmental impacts is promoted within the Protected Countryside.

Figure 3 is taken from the Township's Official Plan and shows the study area and project locations within the Greenbelt Plan designated areas identified.

2.4 Oak Ridges Moraine Conservation Plan (2017)

The Oak Ridges Moraine Conservation Plan (2017) is set out in O. Reg. 140/02 under the Oak Ridges Moraine Conservation Act, 2001. The *Greenbelt Plan*, together with this Plan and the *Niagara Escarpment Plan*, identifies where urbanization should not occur in order to provide permanent protection to the agricultural land base and the ecological and hydrological features, areas and functions occurring on this landscape and found within the Oak Ridges Moraine. The Plan provides land use and resource management planning direction to provincial ministers, ministries, and agencies, municipalities, landowners and other stakeholders on how to protect the Moraine's ecological and hydrological features and functions.

The study area is located adjacent to lands designated as Natural Core Area, Natural Linkage Area, Countryside Area and Settlement Area under the Plan. Section 41 (1.2) of the Plan states that; "*Municipalities shall ensure that the development of new infrastructure or the upgrading or extension of existing infrastructure is supported by the necessary studies, assessments and documentation such as infrastructure master plans, asset management plans, land use and financial scenarios, watershed studies and sub watershed plans, environmental assessments and other relevant studies.*"

Figure 3 is taken from the Township's Official Plan and shows the study area and project locations within the Oak Ridges Moraine Conservation Plan designated areas identified.

2.5 Source Water Protection

The purpose of the Clean Water Act (2006) is to protect drinking water at the source and to safeguard human health and the environment. It aims to protect existing and future drinking water sources. It ensures that municipal drinking water supplies are protected through prevention by the development of a watershed-based source protection plan. The source protection plans identify vulnerable areas within each municipality and provide policies to address existing and future risks to municipal drinking water sources within these vulnerable areas.

This project is subject to the Credit Valley, Toronto and Region, and Central Lake Ontario Source Protection Plan (CTC – SPP) and is within the Toronto Source Protection Area. The Ministry of Environment, Conservation and Parks (MECP) Source Protection Information Atlas was reviewed to confirm if the subject study area is located within a designated vulnerable area. When a Class EA undertaking proposes an activity that is a threat to drinking water it must conform to the policies in the CTC-SPP. Refer to Section 4.2.5 for further details.

2.6 Township of King Official Plan (2019)

Under the *Places to Grow Act*, regional and municipal Official Plans are required to reflect the policies of the *A Place to Grow – Growth Plan for the Greater Golden Horseshoe*. At the municipal level, provincial policy is implemented through the Township of King's Official Plan

document. Since the plan has incorporated both the Growth Plan and the PPS, among others, into the Official Plan, the reasoning provided in the previous sections that demonstrate consistency of this Class EA with those policies can also be applied to the Official Plan.

2.7 Township of King Transportation Master Plan (2020)

A Transportation Master Plan (TMP) is a visionary document that includes plans, policies and strategies for transportation infrastructure and services for walking, cycling, transit and roads. This project is guided by the long-term planning of the recent Township of King TMP. It found that these 3 segments of roads working as two-lane roads are adequate for the time frame considered in that study. This project aims to provide two lane roads that meet the Township standard and are compatible with the long-term active transportation goals contained in the TMP.

2.8 Toronto and Region Conservation Authority Guidance Documents

The Toronto and Region Conservation Authority (TRCA) regulates certain activities in and adjacent to watercourses, wetlands, shorelines of inland lakes and other hazardous lands. TRCA issues permission for work in these areas by issuing a permit under Ontario Regulation 166/06. This role is granted to TRCA under section 28 of the *Conservation Authorities Act*. Portions of the project study area are within areas regulated by the TRCA and as such, a permit will be required from this agency prior to construction.

2.9 Climate Change

The MECP document entitled “Considering Climate Change in the Environmental Assessment Process” (2017) provides guidance relating to the Ministry’s expectations for considering climate change during the environmental assessment process. The Guide is now a part of the Environmental Assessment Program’s Guides and Codes of Practice. The environmental assessment of proposed undertakings is to consider how a project might impact climate change and how climate change may impact a project. Climate Change was considered during the course of this Class EA and is discussed further in Section 6.5 of this document.

3. PHASE 1 – PROBLEM/OPPORTUNITY STATEMENT

The purpose of Phase 1 of the Class EA process is to develop a problem/opportunity statement that clearly identifies the issue, challenge, or opportunity that is being reviewed and addressed. The problem/opportunity statement that has been developed for the Township of King Road Rehabilitation is summarized as follows:

“The purpose of the undertaking is to improve the existing cross-section, pavement structure, road surface and overall condition of the segments of Sideroad 15, Concession 8 and Concession 10 in the village of Nobleton. Additionally, road rehabilitation will address sightlines and drainage deficiencies within these portions of roadway.”

4. EXISTING CONDITIONS

This section describes the characteristics of the study area to provide context and allow for accurate evaluation of potential impacts.

4.1 Physical Environment

The study area is approximately 2 kilometres to the north, west and east of the intersection of the Highway 27 and King Road, approximately the middle of Nobleton.

4.1.1 Existing Road Network

The three road segments within the project area are two-lane gravel roads; posted at 60 km/h through the project limits. Both 10th Concession and 8th Concession are north/south orientated, while 15th Sideroad runs east/west. All three road segments are designated as a township road in the Transportation Master Plan.

4.1.2 Existing Deficiencies

The existing road conditions for the three segments of road were compared to the Township design standard for local roads (Table 1). The lane and shoulder width are less than the Township standard, as well as the existing pavement structure.

Table 1: Local Road Cross-Section - Existing and Township Standard

Item	Existing Condition	Township Standard
Lane Width	3.2m	3.5m
Shoulder Width	0.5m	1.0m
Sideslope	3:1 – 2:1	3:1
Backslope	2:1	3:1
Granular Base (Thickness)	320mm (Avg.)	450mm
Asphalt Surface (Thickness)	60mm (Avg.)	100mm
Maximum Vertical Grade	10.31%	6% (Recommended) 8% (Maximum)
Right-Of-Way Width	20m – 23m	20m (local roads)

In addition, poor sightlines at drives and lack of clear zones are issues that create unsafe road conditions. Clear Zones are the areas adjacent to the road that are free of obstructions to a

vehicle leaving the roadway. The recommended width of the clear zone is dependent on vehicle speed and the slopes forming the roadway embankment and ditches. Maintaining appropriate clear zone width is a road safety feature. There have also been drainage issues identified along the 15th Sideroad due to inadequate culverts. The existing deficiencies along each road segment have been illustrated in Figures 4 to 6.

Figure 4: 15th Sideroad Existing Deficiencies



- A** DEFICIENT PAVEMENT STRUCTURE
- B** POOR SIGHT LINES
- C** DEFICIENT CLEAR ZONE
- D** DRAINAGE ISSUES

Figure 5: 10th Concession Existing Deficiencies



Figure 6: 8th Concession Existing Deficiencies



4.1.3 Existing Utilities and Services

Existing utility companies, including Hydro One, Enbridge Gas, Bell Canada, and Rogers Communications were all contacted at the start of the project to confirm the location of existing utilities within the project study area. Aerial hydro and telecommunications are present along the south side of 15th Sideroad, the east side of 10th Concession and the west side of 8th Concession. There are no municipal water or sewer lines within the road right of way.

4.2 Natural Environment

This section provides an inventory of the Study Area's existing natural environment, including significant resources, vegetation, Species-at-Risk (SAR), aquatic (fish/fish habitat), and ground and surface water. To assist in the completion of this inventory, Palmer Environmental Consulting Group (Palmer), on behalf of Ainley Group, completed a natural heritage conditions assessment for each of the three segments. A copy of each report is included in **Appendix A**. The study approach used by (Sub Consultant) Palmer to complete the natural heritage assessment involved background information research and field surveys.

4.2.1 Significant Natural Heritage Features

The Study Area is located within an area that is subject to the Greenbelt Plan (2017), and the Oak Ridges Moraine Conservation Plan (2017). There are two Provincially Significant Wetlands (PSW) found within the study area; Nobleton PSW located on the north and south side of the 15th Sideroad and Black Duck PSW bisected by the 8th Concession. There are Areas of Natural & Scientific Interest (ANSI) adjacent to the subject study area boundary on the northwest corner of 15th Sideroad and 8th Concession known as the Linton – Kelly Lake Channel Earth Science ANSI. There is also the Hall – Thompson Lake Kettles Life Science Candidate ANSI located on both the north and south side of 15th Sideroad. Ongoing discussions with the TRCA have indicated the need for wetland compensation and an Edge Management Plan for the areas of wetland impact.

4.2.2 Vegetation Communities

The vegetation assessment was conducted according to the Ecological Land Classification (ELC) system for Southern Ontario (Lee et al. 1998). All natural and cultural vegetation communities within and adjacent to the study area were classified and mapped. Communities were assessed from the edge of the road right-of-way.

15th Sideroad

The lands within the study area are primarily agricultural and rural residential. Field investigations identified five vegetation communities along the study area:

- Swamp Maple Organic Deciduous Swamp (SWD6-3)
- Willow Mineral Thicket Swamp (SWT2-2)
- Cattail Mineral Shallow Marsh (MAS2-1)

- Reed-canary Grass Mineral Meadow Marsh (MAM2-2)
- Dry-Moist Old Field Meadow (CUM1-1)

A total of 64 species of vascular plants were recorded, consisting of 49 native species, six non-native species, and nine species identified to genus level. There were nine species identified from within the wetland that have an L3 Ranking under the TRCA species rank for flora of conservation concern within the TRCA region. L3 status is identified as “*of regional concern; restricted in occurrence and/or requires specific site conditions; generally occurs in natural rather than cultural areas*”. There are five species listed as locally or regionally uncommon or rare within York Region that were observed in isolated or occasional occurrences along the right of way or swamp area.

10th Concession

The overall project area is characterized by past disturbance and is dominated by cultural and agricultural influenced vegetation with regenerating shrub and woodland areas. Field investigations and background data review identified seven different vegetation communities immediately adjacent to the 10th Concession project area:

- Cattail Mineral Shallow Marsh Type (MAS2-1)
- Mineral Shallow Marsh – (MAS2)
- Reed-CANARY Grass Mineral Meadow Marsh (MAM2-2)
- Marsh (MA)
- Deciduous Forest (FOD)
- Coniferous Forest (FOC)
- Coniferous Plantation (CUP3)

None of the vegetation communities identified were considered to be provincially rare and none of the species observed were considered to be provincially Endangered, Threatened or of Special Concern. A tree inventory was completed within and directly adjacent to the area of proposed disturbance along the project area by a Certified Arborist. The tree inventory was completed for all trees ≥ 10 centimeters (cm) diameter at breast height (DBH). The tree inventory comprised of 87 individual trees; 60 native, 24 non-native species, and 3 trees identified to the genus level. There were no Species at Risk trees observed, such as Butternut.

8th Concession

The overall project area is characterized by past disturbance and is dominated by cultural and agricultural influenced vegetation with regenerating shrub and woodland areas, as well as small wetland pockets. Field investigations and background data review identified seven different vegetation communities immediately adjacent to the 8th Concession project area:

- Cattail Mineral Shallow Marsh Type (MAS2-1) *Part of the Black Duck PSW complex
- Marsh (MA)
- Deciduous Forest (FOD)

- Coniferous Forest (FOC)
- Mineral Cultural Thicket Ecosite (CUT1)
- Coniferous Plantation (CUP3)
- Deciduous Plantation (CUP1)

None of the vegetation communities identified were considered to be provincially rare and none of the species observed were considered to be provincially Endangered, Threatened or of Special Concern. A tree inventory was completed within and directly adjacent to the area of proposed disturbance along the project area by a Certified Arborist. The tree inventory comprised 107 individual trees; 64 native species, 41 non-native species, and 2 trees identified to the genus level. There were no Species at Risk trees observed, such as Butternut.

4.2.3 Wetlands

As indicated, there are two Provincially Significant Wetlands (PSW) found within the study area; Nobleton PSW located on both the north and south side of the 15th Sideroad and Black Duck PSW bisected by the 8th Concession.

15th Sideroad

The Nobleton Wetland Complex is 83 ha in size and made up of three wetland types, swamp, marsh, and fen. The swamp type is the largest proportionally, representing 82.2% of the area of the complex, while marsh represents 16.6% and fen is 1.2%. Soils are 100% organic and there is good winter cover for wildlife. The segment of 15th Sideroad bisects the most southerly wetland in the complex, while the remaining wetlands are interspersed within agricultural fields and woodlands to the northwest of the study area.

Within the study area, adjacent to 15th Sideroad, marsh (MAS2-1) and swamp (SWD6-3) types are present. The marsh along the south edge of the road occurs under a hydro easement and is subject to repeated maintenance activities such as tree and shrub cutting. The portion of the wetland within the project area is approximately 2% of the total wetland size and is described as narrow strips of existing edge habitats, which are already subject to road use effects such as traffic (noise, pollution) and light penetration. As part of the natural heritage assessment for the 15th Sideroad, an Edge Management Plan was developed to provide detailed specifications on restoration works to help mitigate the effects of potential road reconstruction and widening.

10th Concession

There are no evaluated wetlands present within the study area adjacent to 10th Concession. Small pockets of marsh (MAS2, MAM2-2, and MAM) and swamp (SWD2-2) habitat are present. These habitat types are associated with the various headwater drainage features along 10th Concession. Amphibian breeding surveys were conducted at potentially suitable wetland areas in the Study Area at eight locations (see Section 4.2.4).

8th Concession

Within the study area, 8th Concession bisects a small wetland marsh (MAS2-1) community that is a part of the larger Black Duck PSW Complex. This adjacent wetland pocket is

approximately 1100m², combined. The area within the project study limits is described as narrow strips of existing edge habitats, which are already subject to road use effects such as traffic (noise, pollution) and light penetration. Proper erosion and sediment control will be required prior to any work adjacent to this wetland pocket.

4.2.4 Wildlife Including Species at Risk (SAR)

Under the natural heritage assessment, SAR include species listed as Endangered, Threatened or Special Concern under Ontario's *Endangered Species Act*. Incidental observations of wildlife were recorded during field investigations.

Nest searches were conducted within the wetland areas of the project area by scanning through the field with binoculars and documenting any bird calls and songs heard. Incidental observations included direct sightings and indirect evidence such as nests, tracks, scat, and browse.

15th Sideroad

Given the agricultural setting of the study area, wildlife habitat opportunities are generally limited along the length of the road for areas outside of the Nobleton PSW. The remaining natural features in the local landscape are generally small and isolated within agricultural fields. The Nobleton PSW likely provides amphibian breeding habitat, and there may be some movement of amphibians and mammals within the Nobleton PSW adjacent to 15th Sideroad.

10th Concession

Information obtained from the Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC) mapping, indicates three provincially Threatened bird species have previously been found in the vicinity of the project area: Eastern Meadowlark, Bobolink, and Cerulean Warbler. In addition, there are three Endangered bat species in Ontario that could possibly inhabit a variety of forest habitats adjacent to the roadway: Eastern Small-footed bat, Little Brown Myotis, and Northern Myotis. Of the listed species that have potential suitable habitat in the general project area, none of the listed provincially listed species were recorded during the field surveys and opportunistic (incidental) observations within the 10th Concession Project Area. There were incidental observations of Bobolink and Eastern Meadowlark approximately 4km outside of the project area.

Amphibian breeding surveys were conducted and targeted at potentially suitable wetland areas in the Study Area at eight locations (identified on Figure 7). Six species of amphibians were recorded during the surveys: Spring Peeper, American Toad, Gray Treefrog, Green Frog, Wood Frog, and Western Chorus Frog. The federally list SAR Chorus Frog was recorded adjacent to the road alignment. Western Chorus Frog is an L2 species that is designated as a Regional Species of Concern, as it is considered at risk within the TRCA jurisdiction over the long term (TRCA 2017). The other five species of amphibians recorded from the Study Area are considered common in southern Ontario and have no provincial rarity status.

According to the DFO Aquatic Species at Risk online mapping, there are no critical habitat or distribution data for aquatic species listed under the Species at Risk Act (SARA), within the vicinity of the 10th Concession project area.

8th Concession

Information obtained from the MNRF NHIC mapping indicates that there are records of three provincially regulated SAR in the vicinity of the project area: Redside Dace (Endangered), Butternut (Endangered), and Eastern Wood-pewee (Special Concern). In addition, there are three Endangered bat species that could possibly inhabit trees adjacent to the roadway: Eastern Small-footed bat, Little Brown Myotis, and Northern Myotis. Of the listed species that have potential suitable habitat in the general project area, none of the listed provincially listed species were recorded during the field surveys and opportunistic (incidental) observations within the 8th Concession Project Area.

Eastern Meadowlark (Threatened), were observed and heard calling on both east and west sides of 8th Concession. One Eastern Meadowlark was observed hopping through and singing in the field near Headwater Drainage Feature 'L'. Three more Eastern Meadowlark were heard calling and singing on the east side of 8th Concession, between 15th Sideroad and King Road.

Amphibian breeding surveys were conducted and targeted at potentially suitable wetland areas in the Study Area at three locations (identified on Figure 8). Three species of amphibians were recorded during the surveys: Spring Peeper, American Toad and Gray Treefrog.

According to the DFO Aquatic Species at Risk online mapping, Redside Dace is located to the east of 8th Concession. Correspondence with a MECP Management Biologist confirmed that watercourses crossing 8th Concession would be considered 'contributing' Redside Dace habitat and that the main branch to the east of 8th Concession is considered recovery habitat.

4.2.5 Groundwater

There are numerous water well records associated with the dwellings within close proximity to the project area. The well records indicate the wells range from approximately 18 m to 148 m in depth. The identified purposes of these well is for domestic use.

As indicated, this project is subject to the Credit Valley, Toronto and Region and Central Lake Ontario Source Protection Plan and is within the Toronto Source Protection Area. The results of the review identified that the parts of the project area are with in areas designated as follows:

15th Sideroad

- Wellhead Protection Area D (score of 2)
- Significant Groundwater Recharge Area (score of 2)
- Wellhead Protection Area – Q1 and Q2 (Moderate Stress)

10th Concession

- Highly Vulnerable Aquifer (HVA)
- Significant Groundwater Recharge Area (score of 2, 4 and 6)
- Wellhead Protection Area – Q1 and Q2 (Moderate Stress)

8th Concession

- Wellhead Protection Area D (score of 2)
- Highly Vulnerable Aquifer (HVA)
- Significant Groundwater Recharge Area (score of 2, 4 and 6)
- Wellhead Protection Area – Q1 and Q2 (Moderate Stress)

CTC-SPP Policy SAL-11 applies to this project; Application of Road Salt Moderate/Low Threat within a Significant Groundwater Recharge Area with a score ≥ 6 and a Highly Vulnerable Aquifer. Where the application of road salt is, or would be, a moderate or low drinking water threat best management practices for the application of road salt will be implemented to protect sources of municipal drinking water.

4.2.6 Surface Water

Headwater Drainage Feature (HDF) Assessments were conducted and completed in accordance with the *Evaluation, Classification and Management of Headwater Drainage Features Guideline* (TRCA and Credit Valley Conservation, 2014) in order to classify the various characteristics of the features and to identify the functions they provide.

15th Sideroad

The drainage feature is mapped as a watercourse by the Ministry of Natural Resources and Forestry, however the assessment indicated that this is a drainage feature. There was no surficial connectivity to downstream aquatic habitat to the Black Duck Wetland Complex. The drainage feature does not provide fish habitat at this site, and does not directly connect to any fish-bearing water features immediately downstream.

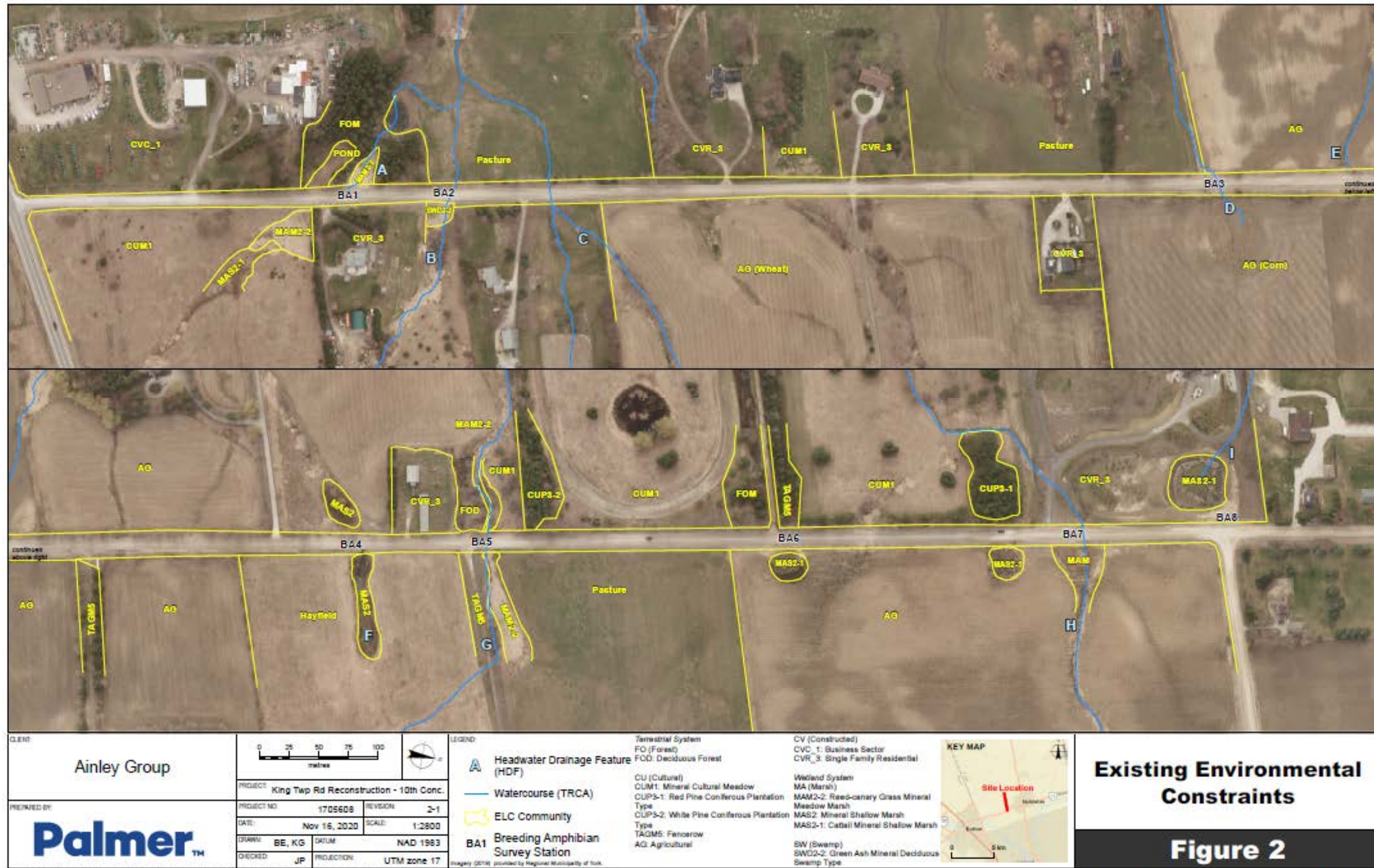
10th Concession

HDF Assessments were completed for nine drainage features (HDF A to I) within the study area. Based on the *Evaluation, Classification and Management of Headwater Drainage Features Guidelines*, no drainage features in the Study Area are permanent streams. Rather, all of the drainage features are considered intermittent or ephemeral. Additional information about the terrestrial features near the HDFs are provided in Figure 7.

8th Concession

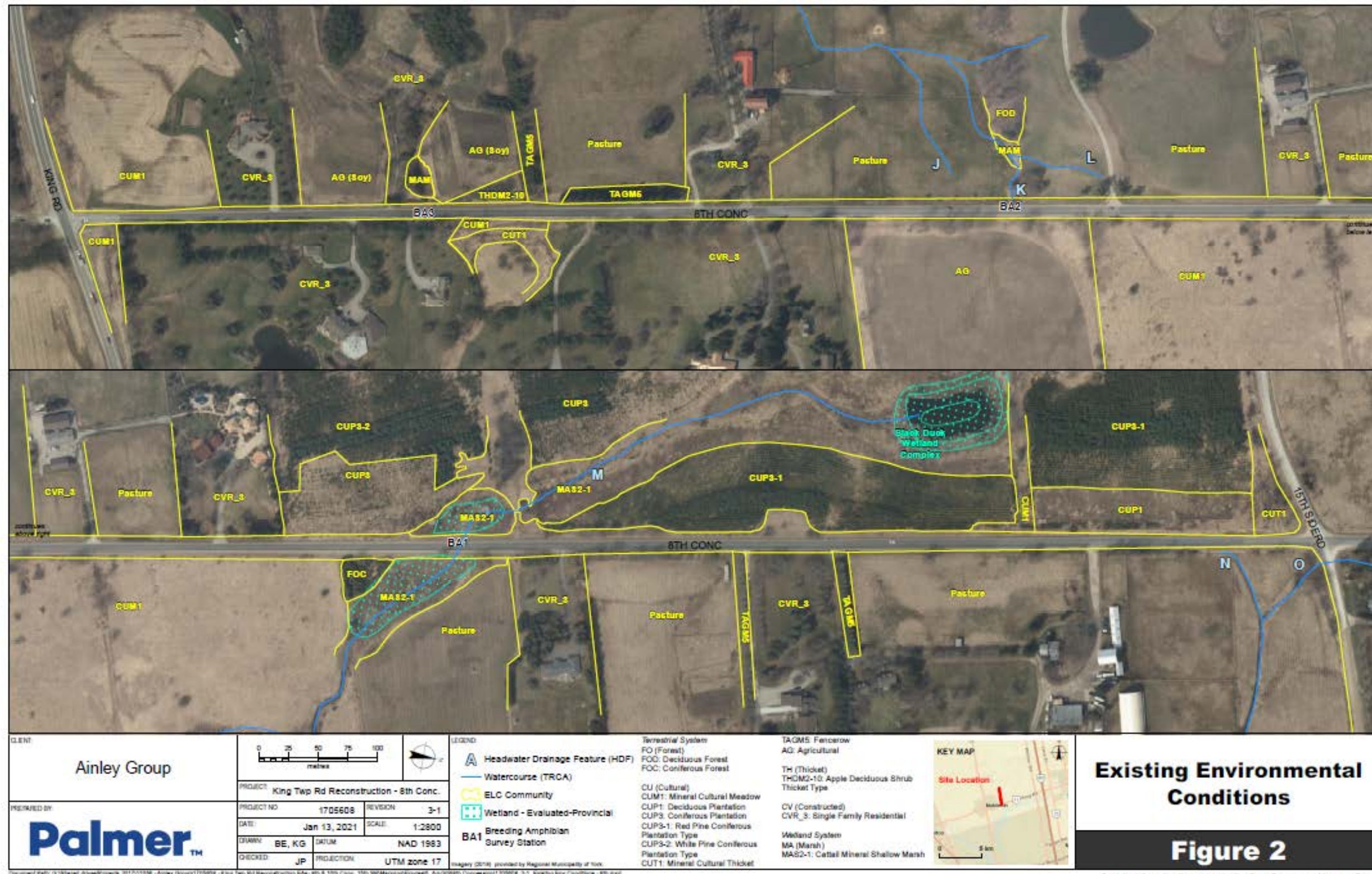
Based on the *Evaluation, Classification and Management of Headwater Drainage Features Guidelines*, no drainage features in the Study Area are permanent (perennial) streams. Rather, all of the drainage features are considered intermittent or ephemeral. Additional information about the terrestrial features near the HDFs (HDF J to O) are provided in Figure 8.

Figure 7: 10th Concession HDF Assessments



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Figure 8: 8th Concession HDF Assessments



Existing Environmental Conditions

Figure 2

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4.3 Cultural and Social Environment

AMICK Consulting Limited (AMICK) on behalf of Ainley Group completed a Stage 1 Archaeological Assessment and a scoped Cultural Heritage Impact Assessment. Copies of the full reports are included in **Appendix B and Appendix D**, respectively.

4.3.1 Archaeological Resources

Background research indicated the vicinity of the study area has potential for archaeological resources of Native origins based on proximity to previously registered archaeological sites of Pre-Contact origins and proximity to a source of potable water. Background research also suggested potential for archaeological resources of Post-Contact origins based on proximity to previously registered archaeological sites of Post-Contact origins, proximity to a historic roadway, and proximity to areas of documented historic settlement.

Three cemeteries lie along the boundary of the proposed study area, along the 10th Concession Road. Two of the cemeteries, Chamberlain Burying Ground and St. Andrews Presbyterian Cemetery, are designated as heritage sites under the *Ontario Heritage Act*. The third cemetery is known as Saint Mary's Roman Catholic Church Cemetery.

Current conditions within the study area indicate that some areas of the property may have no or low archaeological potential and do not require Stage 2 Property Assessment. However, a significant proportion of the study area does exhibit archaeological potential and therefore a Stage 2 Property Assessment is required. As this study was undertaken during winter conditions, a Stage 1 Property Inspection was not viable. Therefore, no part of the study area may be excluded from the Stage 2 Property Assessment. The Stage 1 Property Inspection will have to be undertaken concurrently with the Stage 2 Property Assessment.

4.3.2 Cultural Heritage Resources

The *Ministry of Heritage, Sport, Tourism and Cultural Criteria for Evaluating Potential for Built Heritage Resources and Cultural Landscapes Checklist* was completed for the Project study area (**Appendix C**). Two of the adjacent properties along the project segment of 10th Concession are listed under the *Ontario Heritage Act*. Both of the designated heritage properties are cemeteries; St. Andrews Presbyterian Cemetery and Chamberlain Burying Ground. There is a third cemetery, Saint Mary's Roman Catholic Church Cemetery, along the segment of 10th Concession that is registered as having a historical plaque on site. A scoped Cultural Heritage Impact Assessment was completed on the cemetery properties to identify and if necessary, mitigate indirect impacts on its Cultural Heritage Value or Interest from the alteration of the adjacent roadway.

Township Heritage staff was consulted to determine if there were any other properties with some form of municipal recognition. One property was found on the north side of 15th Sideroad, however the municipal address is on Highway 27. The property is an almost 100

acre agricultural field, which is adjacent to the study area, with a Victorian style house not accessible or viewable from the 15th Sideroad.

4.3.3 Land Use

The area land use is predominantly agricultural fields with residential dwellings. There is one commercial property on the 10th Concession and one institutional property, a Montessori school, on the south side of 15th Sideroad. It is assumed that the road segments are used by farm equipment accessing the active agricultural fields surrounding the study area. There are no brownfield properties within or adjacent to the project areas and therefore can be assumed there are no known areas of contamination in proximity to the study area.

5. PHASE 2 - PROPOSED ALTERNATIVE SOLUTIONS

As part of Phase 2 of the Class EA process, several alternative solutions were developed to address the problem/opportunity statement and are presented in the subsections that follow.

5.1 Alternative 1 – “Do Nothing”

The “Do-Nothing” option considers no improvements and/or modifications. This alternative does not address the problem/opportunity statement and is provided as a benchmark to gauge the potential impacts of the other alternatives being considered.

5.2 Alternative 2 – Base and Surface Reconstruction

This alternative proposes to simply resurface the existing roadway of each segment and maintain existing road cross-section and profile or grade line. A typical Cross-Section would apply to 15th Sideroad, 10th Concession and 8th Concession.

5.3 Alternative 3 – Full Reconstruction with Modest Grade Lines & 20m ROW

This alternative proposes to reconstruct each of the road segments with standard cross-section and with minor improvement of sight lines and modest improvement in grade line. Approximate typical cross-section would apply to 15th Sideroad, 10th Concession and 8th Concession.

5.4 Alternative 4 – Full Reconstruction with Substantial Grade Lines & 26m ROW

This alternative proposes to reconstruct each of the road segments with standard cross-section and with substantial improvement of sight lines and grade line, requiring a 26 metre right of way. A variety of cross-sections would be used for each road segment to decrease property impacts by shifting the centre line of the road. The 15th Sideroad West at the intersection with Hwy 27 will be realigned with 15th Sideroad East to form a “cross” intersection, instead of two offset ‘T’ intersections.

A schematic of the cross-section for each alternative is provided in Figures 9 to 13.

Figure 12: Alternative 4 Full Reconstruction 26m ROW

10th Concession

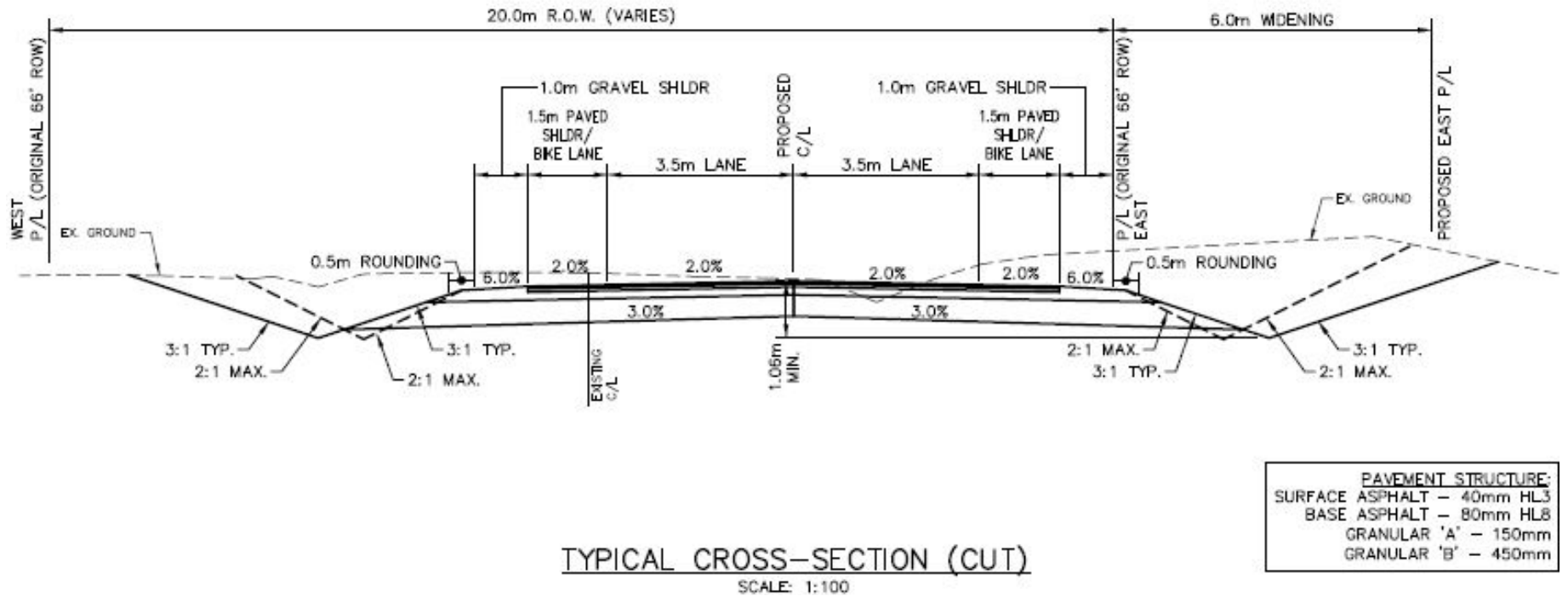
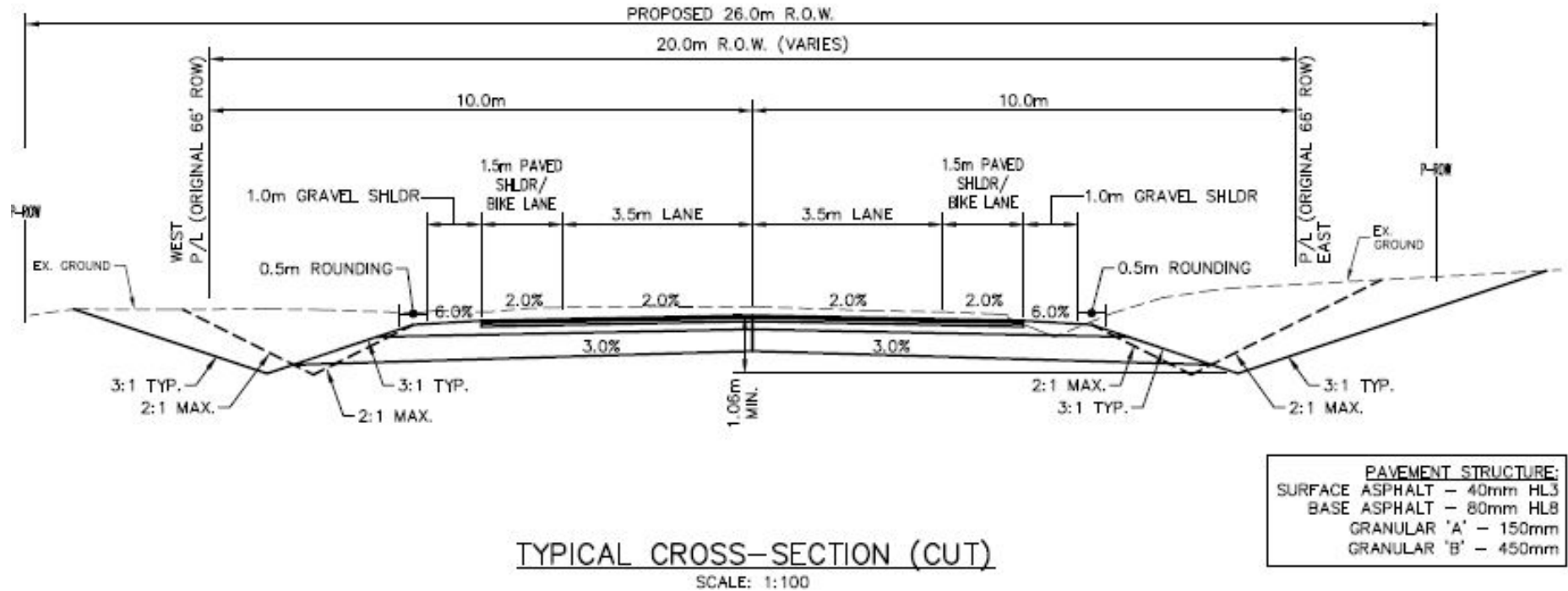


Figure 13: Alternative 4 Full Reconstruction 26m ROW

8th Concession



6. EVALUATION OF ALTERNATIVES & ENVIRONMENTAL IMPACTS

6.1 Evaluation Criteria

The aforementioned proposed alternative solutions were evaluated with respect to their impact on the environment. The completion of the evaluation considered a number of factors, which were separated into evaluation criteria:

- **Physical Environment:** Meets the Township Design Standards, Addresses Drainage Concerns, Property Impacts, Impacts to Existing Utilities, Impacts to Existing Services, and Clear Zone Requirements
- **Natural Environment:** Terrestrial Vegetation/Wildlife, Aquatic Vegetation/Wildlife, Wetlands, Surface Runoff Quality, and Surface Water Quantity
- **Social Environment:** Noise, Archaeological, Built Heritage, Traffic Impacts, and Property Access
- **Economic Environment:** Property Acquisition Costs, Construction Costs, and Operation and Maintenance Costs

6.2 Potential for Impact

The detailed evaluation was completed using information gathered through specific field studies and background research. A summary of the evaluation results for each of the three road segments was presented to interested stakeholders in the format of an Evaluation Matrix during the Public Information Centre presentation. Visual markers were used to represent the potential for impact on each of the evaluation criteria. A large circle represents the most preferred alternative, as it will address the key concerns, but create the least amount of environmental impact. A small circle is indicative of a least preferred alternative as it has a higher potential to impact the environment. A red circle indicates that the impact is considered neutral. An alternative that receives the highest number of “positive” visual markers and also addresses key issues is considered to be the Preferred Solution. Tables 2 to 4 provide a copy of the evaluation matrices.

Note: There is an error under criteria ‘Property Impacts’ for Alternative 4 for each road segment. The visual marker intended was a small circle. As the matrices included in Table 2-4 are copies of what was previously presented to stakeholders, the edits cannot be made after the fact. The error does not change the outcome of the evaluation as the criteria description presented remains accurate.

Table 2: Evaluation Matrix for 15th Sideroad



15th Sideroad Evaluation Matrix

EVALUATION CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4	DESCRIPTION OF EFFECTS
PHYSICAL ENVIRONMENT					
Meets the Township Design Standards	●	●	○	○	Alternative 3 and 4 will meet the design standards for sight lines, clear zone and lane width.
Addresses Drainage Concerns	●	●	○	○	Alt. 4 provides a culverts to accommodate the 100 year storm on the significant watercourses.
Property Impacts	○	○	○	○	Alt. 3 requires no property impacts as it would not be changing the right of way. Alt. 4 provides the best balance of road improvements with minor property acquisition requirements.
Impacts to Existing Utilities	○	○	○	○	Alt. 3 and Alt. 4 requires repositioning of the entire Hydro pole line.
Impacts to Existing Services	○	○	○	○	There is no water and sewer services within the right of way.
Clear Zone Requirement	●	●	○	○	Repositioning of Hydro lines and the Provincial guide rail at the key areas allow Alt. 3 and Alt. 4 to meet clear zone requirement
NATURAL ENVIRONMENT					
Terrestrial Vegetation/Wildlife	○	○	○	○	Alt. 1 and Alt. 2 would have the least impact
Aquatic Vegetation & Wildlife	○	○	○	○	Alt. 1 and Alt. 2 would have the least impact but Alt. 3 and Alt. 4 provides an opportunity to eliminate the perched culvert conditions.
Wetlands	○	○	○	○	Alt. 4 requires additional mitigation measures to limit impact on adjacent wetlands such as modified back slopes and reduced ditch depth.
Surface Runoff Quality	○	○	○	○	With appropriate mitigation measures Alt. 3 and Alt. 4 will have no more impact on water quality than Alt. 2.
Surface Water Quantity	○	○	○	○	Alt. 3 and Alt. 4 will have a minor impact on surface water quantity.
SOCIAL ENVIRONMENT					
Noise	○	○	○	○	Other than construction noise there is no difference between the alternatives.
Archaeological	○	○	○	○	The limit of disturbance are generally within previously disturbed lands although Alt. 4 will require Stage 2 Archaeological Assessment as there is areas outside of the existing ROW
Built Heritage	○	○	○	○	There are no built heritage structures within the project study area and as such, there will be no impacts in this regard.
Traffic Impacts	○	○	○	○	Alt. 4 provides a road way that fully meets the Township Standards.
Property Access	○	○	○	○	Alt. 4 provides improved sight lines to driveways within the project limits.
ECONOMIC ENVIRONMENT					
Property Acquisition Costs	○	○	○	○	Preliminary estimates rate Alt. 4 as the most costly.
Construction Costs	○	○	○	○	Alternative 4 has the highest construction cost.
Operating/Maintenance Costs	○	○	○	○	Both alternatives 3 and 4 provide an improved road surface with reduced maintenance cost over existing conditions.

LEGEND:

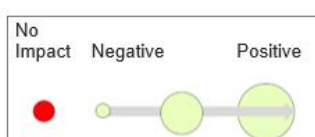


Table 3: Evaluation Matrix for 10th Concession

10th Concession Evaluation Matrix

EVALUATION CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4	DESCRIPTION OF EFFECTS
PHYSICAL ENVIRONMENT					
Meets the Township Design Standards	●	●	○	○	Alternative 3 and 4 will meet the design standards for sight lines, clear zone and lane width.
Addresses Drainage Concerns	○	○	○	○	Alt 3 and Alt.4 provide opportunity to provide minor drainage improvements along ditch line.
Property Impacts	○	○	○	○	Alt. 3 requires no property impacts as it would not be changing the right of way. Alt. 4 provides the best balance of road improvements with minor property acquisition requirements.
Impacts to Existing Utilities	○	○	○	○	Alt. 3 and Alt. 4 requires repositioning of the entire Hydro pole line.
Impacts to Existing Services	○	○	○	○	There is no water and sewer services within the right of way.
Clear Zone Requirement	●	●	○	○	Repositioning of Hydro lines and the Provincial guide rail at the key areas allow Alt. 3 and Alt. 4 to meet clear zone requirement.
NATURAL ENVIRONMENT					
Terrestrial Vegetation/Wildlife	○	○	○	○	Alt. 1 and Alt. 2 would have the least impact.
Aquatic Vegetation & Wildlife	○	○	○	○	Alt. 1 and Alt. 2 provide least amount of disturbance to existing road side ditches.
Wetlands	○	○	○	○	Alt. 4 requires additional mitigation measures to limit impact on adjacent wetlands such as modified back slopes and reduced ditch depth.
Surface Runoff Quality	○	○	○	○	With appropriate mitigation measures Alt. 3 and Alt. 4 will have no more impact on water quality than Alt. 2.
Surface Water Quantity	○	○	○	○	Alt. 3 and Alt. 4 will have a minor impact on surface water quantity.
SOCIAL ENVIRONMENT					
Noise	○	○	○	○	Other than construction noise there is no difference between the alternatives.
Archaeological	○	○	○	○	The limit of disturbance are generally within previously disturbed lands although Alt. 4 will require a Stage 2 Archaeological Assessment as there is areas outside of the existing ROW
Built Heritage	○	○	○	○	There are two cemeteries located adjacent to the road however they are outside the Project boundary and therefore will have no impacts.
Traffic Impacts	○	○	○	○	Alt. 4 provides a road way that fully meets the Township Standards.
Property Access	○	○	○	○	Alt. 4 provides improved sight lines to driveways within the project limits.
ECONOMIC ENVIRONMENT					
Property Acquisition Costs	○	○	○	○	Preliminary estimates rate Alt. 4 as the most costly.
Construction Costs	○	○	○	○	Alternative 4 has the highest construction cost.
Operating/Maintenance Costs	○	○	○	○	Both alternatives 3 and 4 provide an improved road surface with reduced maintenance cost over existing conditions.

LEGEND:

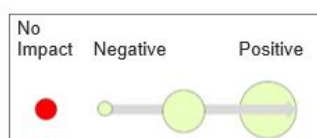


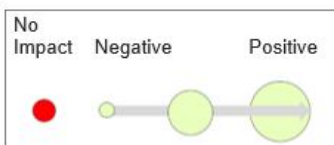
Table 4: Evaluation Matrix for 8th Concession



8th Concession Evaluation Matrix

EVALUATION CRITERIA	ALT 1	ALT 2	ALT 3	ALT 4	DESCRIPTION OF EFFECTS
PHYSICAL ENVIRONMENT					
Meets the Township Design Standards	●	●	○	○	Alternative 3 and 4 will meet the design standards for sight lines, clear zone and lane width.
Addresses Drainage Concerns	●	●	○	○	Alt. 4 provides a culverts to accommodate the 100 year storm on the significant watercourses.
Property Impacts	○	○	○	○	Alt. 3 requires no property impacts as it would not be changing the right of way. Alt. 4 provides the best balance of road improvements with minor property acquisition requirements.
Impacts to Existing Utilities	○	○	○	○	Alt. 3 and Alt. 4 requires repositioning of the entire Hydro pole line.
Impacts to Existing Services	○	○	○	○	There is no water and sewer services within the right of way.
Clear Zone Requirement	●	●	○	○	Repositioning of Hydro lines and the Provincial guide rail at the key areas allow Alt. 3 and Alt. 4 to meet clear zone requirement
NATURAL ENVIRONMENT					
Terrestrial Vegetation/Wildlife	○	○	○	○	Alt. 1 and Alt. 2 would have the least impact
Aquatic Vegetation & Wildlife	○	○	○	○	Alt. 1 and Alt. 2 would have the least impact but Alt. 3 and Alt. 4 provides an opportunity to eliminate the perched culvert conditions.
Wetlands	○	○	○	○	Alt. 4 requires additional mitigation measures to limit impact on adjacent wetlands such as modified back slopes and reduced ditch depth.
Surface Runoff Quality	○	○	○	○	With appropriate mitigation measures Alt. 3 and Alt. 4 will have no more impact on water quality than Alt. 2.
Surface Water Quantity	○	○	○	○	Alt. 3 and Alt. 4 will have a minor impact on surface water quantity.
SOCIAL ENVIRONMENT					
Noise	○	○	○	○	Other than construction noise there is no difference between the alternatives.
Archaeological	○	○	○	○	The limit of disturbance are generally within previously disturbed lands although Alt. 4 will require a Stage 2 Archaeological Assessment as there is areas outside of the existing ROW
Built Heritage	○	○	○	○	There are no built heritage structures within the project study area and as such, there will be no impacts in this regard.
Traffic Impacts	○	○	○	○	Alt. 4 provides a road way that fully meets the Township Standards.
Property Access	○	○	○	○	Alt. 4 provides improved sight lines to driveways within the project limits.
ECONOMIC ENVIRONMENT					
Property Acquisition Costs	○	○	○	○	Preliminary estimates rate Alt. 4 as the most costly.
Construction Costs	○	○	○	○	Alternative 4 has the highest construction cost.
Operating/Maintenance Costs	○	○	○	○	Both alternatives 3 and 4 provide an improved road surface with reduced maintenance cost over existing conditions.

LEGEND:



6.2.1 Physical Environment Evaluation

a) Meets the Township Design Standards

The proposed alternative 1 and 2 for each road segment will not meet the Township's design standards. Alternatives 3 and 4 proposed for each road segment do meet the Township's design standard.

b) Addresses Drainage Concerns

Alternatives 1 and 2 for all road segments will not address or improve the drainage within the study area and adjacent lands. Alternatives 3 and 4 will provide minor drainage improvements along the ditch line of 10th and 8th Concessions. Alternative 4 for the 15th Sideroad includes a culvert replacement near the PSW that will accommodate 100-year storm.

c) Property Impacts

Alternative 1 proposes no work to be completed and therefore there would be no property impacts. Alternatives 2 and 3 for all road segments do not require any property acquisition or disruptions as all of the work would be contained within the existing right of way. Alternative 4 for all road segments will have property impacts and acquisition. With property acquisition being required along the entire length of each road segment, impacts to resident's driveways, property gates and fences where present, and landscaping will occur. The centerline of the road under Alternative 4 has been shifted where appropriate to help minimize these impacts.

d) Impacts to Existing Utilities and Services

Alternatives 1 and 2 for all road segments do not propose any utility relocations, no impacts are anticipated. Alternatives 3 and 4 for all three road segments will require the relocation of utility lines. No impacts to municipal services are anticipated with any of the proposed alternatives as there are no municipal water or sewer lines within the right of way.

e) Clear Zone Requirements

Alternatives 1 and 2 for all road segments will not address or improve clear zone requirements. Relocation of the utility line and the provincial guide rail found along the road segments will enable Alternatives 3 and 4 for each road segment to meet the requirements for clear zones.

6.2.2 Natural Environment Evaluation

a) Terrestrial Vegetation

Alternative 1 proposes no work to be completed and therefore there would be no impacts to vegetation communities. The proposed roadway improvements under Alternative 2 and 3 for all road segments is accommodated predominantly within the

existing road right of way thereby minimizing potential impacts to vegetation communities. The proposed works for Alternative 4 for each road segment involves minor encroachment into the edge of forest and wetland (marsh) communities, which includes the removal of individual edge trees. Potential impacts to the function of these communities are not expected. There is a potential to impacts adjacent retained trees, in the form of mechanical trunk damage and root compression by heavy machinery, and branch damage. These impacts are considered low risk and can be mitigated by the installation of tree protection barriers prior to work. Planting and restoration efforts will further mitigate and impacts as a result of tree removals.

b) Aquatic Habitat

Alternative 1 proposes no work to be completed and therefore no impacts are anticipated. Under Alternatives 2, 3, and 4 for all road segments all drainage features will remain on the landscape and culverts will be maintained in their current. Specifically, Alternatives 2, 3, and 4 for 8th Concession create potential impacts to Redside Dace Contributing Habitat, but can be mitigated through the implementation of the mitigation measures, particularly as they relate to Erosion and Sediment Control (ESC).

a) Wildlife and SAR

Alternative 1 proposes no work to be completed and therefore there would be no impacts to wildlife or SAR. Under Alternatives 2, 3 and 4 for all road segments potential impacts to SAR and wildlife due to construction activity include very minor impacts to potential habitat and individuals. The primary concern for impacts is associated with the forested communities and wetland pockets. Impacts to wildlife are associated with construction works and are therefore considered short-term. Alternative 4 for the 15th Sideroad creates an opportunity to improve wildlife passage with the installation of a concrete box culvert as replacement for the existing corrugated steel pipe culvert.

b) Wetlands

Alternative 1 proposes no work to be completed and therefore no impacts are anticipated. Under Alternatives 2, 3 and 4 for all road there is the potential to impact adjacent wetlands from sedimentation during construction, but can be mitigated with the appropriate ESC. Under Alternative 4 the cross section has been reduced with steeper back slopes to reduce ditch depth to minimize impacts to the wetlands. Alternative 4 for 15th Sideroad has the potential to impact wetland communities due to the loss of habitat. The development of an edge management plan will provide specifications on restoration works to help mitigate the effects of the proposed road widening to the large PSW complex located along 15th Sideroad. The area of disturbance within the evaluated wetland pocket along 8th Concession is described as narrow strips of existing edge habitats, which are already subject to road use effects.

c) Ground Water and Surface Water

Alternative 1 proposes no work to be completed and therefore no impacts are anticipated. The construction activities proposed under Alternatives 2, 3 and 4 for all

road segments are very limited in depth and therefore have low potential to impact local wells. All of these three alternatives would include the installation of permanent rock check dams along ditch line to improve infiltration in order to attain groundwater balance. Under Alternatives 2, 3, and 4 for all road segments all drainage features will remain on the landscape with appropriate ESC installed to mitigate and potential impacts. Under Alternative 4 for all road segments, any culvert replacements will be designed to maintain conveyance and hydrological functions of the HDF and would be completed within the appropriate in-water work construction window. With the paved surfaces being a component of all Alternatives 2 to 4, the increased use of road salt by municipal public works department has the potential to impact ground water in areas. The use of best management practices will be used I the application of road salt to mitigate these impacts.

6.2.3 Social Environment Evaluation

a) Archaeological

Through the Stage 1 Archaeological Assessment it was determined that portions of the study area exhibit archaeological potential. Alternative 2 and 3 for all road segments do not pose any impacts to archaeological resources as the work is contained to the previously disturbed corridors. Alternative 4 for all road segments would require construction outside of the existing road right-of way, creating higher potential impact to archaeological resources and would require a Stage 2 investigation to be completed.

b) Built and Cultural Heritage

Alternative 1 proposes no work to be completed and therefore no impacts are anticipated. Alternative 2 and 3 for all road segments do not pose any impacts to adjacent cultural heritage resources as the work is contained to the previously disturbed corridors. Under Alternative 4, consideration has been given to the presence of adjacent cultural heritage sites (i.e. cemeteries) and to ensure impacts are minimized the alternative proposes to shift the centre line of the road of the 10th Concession 6m to the east. This would ensure that the limit of disturbance does not go beyond the current ditch line adjacent to the cemetery lands on the west side of 10th Concession.

The proposed reconstruction of the roadways will occur in close proximity to the adjacent heritage properties but will not directly impact them and there is no plan at this stage to make use of any portion of these privately owned heritage space.

c) Noise

Alternative 1 proposes no work to be completed and therefore no impacts are anticipated. The anticipated impacts from Alternatives 2, 3, and 4 for all road segments are associated with construction activities. Construction noise impacts are temporary in nature but may be noticeable at times at residential receptors. Methods to minimize construction noise impacts will be incorporated into mitigation measures.

d) Traffic Impacts

Alternative 1 proposes no work to be completed and therefore no impacts are anticipated. Under Alternatives 2, 3, and 4 for all road segments interruptions to through traffic are anticipated during construction. In the operational phase of the completed roadway under each alternative the road surface would be improved and positively impact traffic using the roadway. Additionally, Alternative 4 for all segments will improve the sightlines along the road for travelling vehicles and agricultural machinery.

e) Property Access

Alternative 1 proposes no work to be completed and therefore no impacts are anticipated. Under Alternatives 2, 3, and 4 for all road segments property access during construction will be maintained except for short durations where construction is taking place in front of entrance. Mitigation measures will be developed to minimize these impacts where feasible.

6.2.4 Economic Environment

a) Property Acquisition Cost

Alternatives 1, 2 and 3 do not require any property acquisition. Alternative 4 for all road segments will require property acquisition. The estimated costs are hard to quantify.

b) Construction Cost

The construction costs associated with Alternative 2 are considered to be the lowest in comparison to the other alternatives. The estimated construction costs related to Alternative 3 are moderate in comparison to all alternatives. Alternative 4 construction costs are expected to be the highest, due to the costs associated with widening the right of way and replacement of culverts.

c) Operation and Maintenance Cost

The operating and maintenance costs are relatively similar for all of the proposed alternatives.

6.3 Air Quality

Typical air quality impacts from construction are anticipated, but will be limited in duration. Dust will be expected from the construction works to a minor degree and will be managed through standard construction practices. With the project located within a rural and countryside area the sources of air quality impacts are limited. There are sensitive receptors such as residential dwellings along each road segments and one critical receptor, a Montessori school, in the immediate vicinity of 15th Sideroad. The current source of air quality impacts could be considered to be the adjacent main transportation corridors of King Road and Highway 27. With the land use of the area remaining unchanged, operationally, there are no lasting impacts anticipated from the roadways.

6.4 Natural Heritage Features

As identified previously in Sections 2.3 the study area is located within lands designated as part of the Greenbelt Plan. Under policy 4.2.1.1 of the Greenbelt Plan, infrastructure is permitted within the Protected Countryside provided it supports agriculture, recreation and tourism, Towns/Villages and Hamlets, resource use or the rural economic activity that exists and is permitted within the Greenbelt. The project involves upgrading the pavement structure of each road segment which will support the operation and mobility of agricultural equipment for surrounding agricultural lands. The rehabilitation of the road segments will also provide rural residence

The project adheres to policy 4.2.1.2 by ensuring that the planning, design and construction practices shall minimize, wherever possible, the negative impacts on and disturbance of the existing landscape, including, but not limited to, impacts caused by light intrusion, noise and road salt. The project infrastructure does run through key natural heritage features and key hydrologic features however rehabilitation of existing infrastructure in these areas is the most reasonable alternative. Planning, design and construction practices will minimize negative impacts on and disturbance of the key features or their related functions and, where reasonable, maintain or improve connectivity. The development of mitigation measures will ensure that negative impacts are minimized, where the proposed box culvert installation along 15th Sideroad would improve connectivity of the hydrologic feature as well as wildlife passage.

The project continues to adhere to policy 4.2.1.2 as it does not propose any crossings of specialty crop or prime agricultural areas. The project does not propose the creation of new waste disposal site and facilities or an organic soil conditioning site.

In addition, as identified previously in Section 2.4 of this report, the study area is located within lands designated as part of the Oak Ridges Moraine Conservation Plan. The initiation of this project Class EA indicates that the Township is ensuring the upgrading of existing infrastructure is supported by the necessary studies demonstrating adherence to Policy 41 (1.2) of the Plan.

6.5 Climate Change

As per the MECP guidance document referenced in Section 2.9, the project's potential impacts to climate change and how climate change may impact the project was considered. Climate change concerns generally relate to the increased concentration of greenhouse gases in the atmosphere, which can result in a rise in the global mean surface temperature. Increased temperatures worldwide are creating changes in climate that is resulting in extreme weather events.

The current undertaking is a small-scale project involving the reconstruction of an existing corridor. As it is a transportation project the impacts to climate change relate to vehicular

greenhouse gas emissions. The reconstruction will maintain an adequate level of service post construction with minimal delays and it is not expected that the emission of greenhouse gases will significantly increase over existing conditions. One tool to assist in reducing greenhouse gas levels is through carbon sequestration. Vegetation can assist in removing carbon dioxide from the atmosphere. Compensation planting will be required by the TRCA for any tree removals required for construction, additional plantings will be considered during detailed design.

Climate change has the potential to result in increased storm events that can lead to flooding. The failing culvert along 15th Sideroad is currently contributing to localized flooding across the road. This culvert is going to be replaced as part of this project and will be capable of supporting surface drainage up to the 100-year storm level. Low Impact Development measures for increased infiltration may be considered in the new design which will assist in reducing impacts. This undertaking is expected to make the area less vulnerable to climate change.

7. CONSULTATION

7.1 Discretionary Consultation

The Township of King initiated a preliminary design in 2018 for the reconstruction of the 3 segments to address poor road surface conditions and limited sight lines. During the initial investigation it was noted that right-of-way constraints and the undulating topography would require modifications of the rural road cross-section in order to minimize property impacts. Based on the results of the preliminary investigation, it was determined that the scope of work required would necessitate the completion of a Schedule 'B' Municipal Class Environmental Assessment.

During the initial preliminary design study, a Public Open House was held on November 28, 2018. Council, Engineering and Public Works & Building Department invited residents in the Nobleton area to attend the open house. The notice was mailed to adjacent property owners on November 7, 2018 and posted in the *King Weekly Sentinel* in the November 15 and 22, 2018 editions. The open house was attended by Township and Ainley staff, the boards presented proposed design drawings for reconstruction. The open house was well attended with 24 residents in attendance and the project team received 12 comments. Areas of interest identified in the comments included improvements made to the road surfaces, drainage along 15th Sideroad, and sightlines. The main areas of concern included impacts to properties, loss of private property landscaping, and potential for increased traffic and noise. Comments were received that suggested the road reconstruction be wide enough to accommodate agricultural equipment, give consideration for wildlife passages, and addition of traffics lights. A formal response letter providing all comment categories and associated municipal response was sent to public members on March 2, 2020.

In anticipation of the commencement of a Schedule 'B' Municipal Class EA an agency and Indigenous community contact list was developed. A Notice of PIC letter was created for the open house and was sent out on November 15, 2018 to agencies and Indigenous communities on the contact list. The Aboriginal Treaty Information System previously identified Indigenous Communities to be consulted and therefore 21 communities were sent the Notice of PIC. Copies of the published notice, issued letters, contact list, comments received, as well as the presentation boards can be found in **Appendix E** and are filed under the title Public Information Centre 1.

In response to the Notice of PIC, comments were received from Mississaugas of the Credit First Nation (MNCFN) that indicated they had reviewed the notice provided and determined that, at this time, MNCFN had a low level of concern about the project. MNCFN requested copies of any environmental and/or archaeological reports and to be notified if any additional field work was required so as to discuss and arrange for MNCFN's participation. A copy of the natural heritage studies and the Stage 1 Archeological report was sent to MNCFN on January 29, 2021. This correspondence also informed MNCFN that at this time no field work has been scheduled and that communication would continue with MNCFN. Follow-up phone calls were made the week of February 8, 2021.

The project team also received comments from the TRCA and MECP. Planning staff from the TRCA identified a number of areas of interest within the study area related to TRCA's Living City Policies. Consultation with TRCA has been ongoing throughout this project, with a meeting held on July 29, 2019. Copy of the meeting minutes can be found in **Appendix E**. MECP staff provided a formal commenting letter with respect to notification of the pending Schedule 'B' Municipal Class EA process. The letter provided contact information for Indigenous communities to be consulted throughout the EA process; Mississaugas of the Credit First Nation and Huron Wendat Nation. Within the letter the MECP identified several Area of Interest that should be reviewed and incorporated into the study as a part of the EA process.

A summary of all comments received during the Notice of PIC 1 period can be found in Table 5. The contact information for all public member comments has been removed.

7.2 Notice of Commencement and Public Information Centre

A notice of Public Information Centre 2 was published on the Township's website and social media accounts in September 2020. This Notice functioned as the initial commencement notice for the project under the Municipal Class EA process. In an effort to avoid confusion with the public, this Notice was titled PIC 2.

The PIC 2 was conducted via a virtual platform, to maintain staff and public safety as directed by Public Health Ontario in response to the COVID-19 pandemic. The virtual PIC 2 was originally scheduled for September 3, 2020, however the Notice of PIC 2 was not published in the local newspaper accordingly. To ensure accordance with the requirements of Section A.3.5.3 Public Notices of the Municipal Engineers Association Class EA the Notice of PIC 2 was re-issued. The notice was mailed to agencies, Indigenous communities, and public

members on September 3, 2020. The notice was published on the Township's website and in the *King Weekly Sentinel* in the September 10 and 17, 2020 editions.

The virtual PIC 2 was presented as a live broadcast with information boards and commentary. The virtual PIC 2 platform provided opportunities for the audience to submit written questions at check points during the presentation and Town staff were able to respond or provide further information.

The PIC 2 virtual presentation material provided information pertaining to the Municipal Class EA Schedule 'B' planning process and its application to the current project. The scopes of the location of the study area were identified as well as a description of the existing conditions. Four (4) Alternatives to address the identified problem/opportunity statement were presented to the public for their review and input. An Evaluation Matrix was created that summarized the potential impacts associated with each alternative for each road segment. Through this evaluation, a preliminary preferred solution was identified although it was noted that the final Preferred Solution would be selected based on continued evaluation and consideration of comments received during the consultation period. With the PIC 2 being conducted as a virtual presentation, it enabled a recording of the live presentation to be uploaded to the Township's website for interested parties to view at a later date.

A total of 18 participants registered for the virtual PIC 2. Comments and questions received during the live presentation referenced the addition of traffic lights at the intersections, and availability of utilities. Concerns for an increase in traffic or use of the roadways as a bypass was expressed. A copy of all questions and comments received during the live broadcast with the associated municipal response was published to the Township's website and emailed to PIC 2 participants (a copy of this document can be found in **Appendix F**). In addition, 4 comment sheets were submitted to the project time during the three-week comment period following the virtual PIC 2. The comment sheets received indicated specific concerns to the respective commenter's property. Response letters to comments received were sent out on October 29, 2020. The project team did not receive any comments or correspondence from Indigenous communities in response to the Notice of PIC 2. Copies of the published notice, issued letters, contact list, comments received, as well as the presentation boards can be found in **Appendix F** and are filed under the title Public Information Centre 2.

A summary of all comments received during the Notice of PIC 2 period can be found in Table 5. The contact information for all public member comments has been removed.

Table 5: Comment Summary Table

NO.	RESPONDENT INFORMATION	COMMENTS RECEIVED	RESPONSE / ACTION REQUIRED
AGENCY COMMENTS			
Notice of Public Information Centre 1.0 – November 28, 2018			
1.	<p>Toronto Region Conservation Authority Manirul Islam Planner</p>	<p><u>Letter Received on January 21, 2019:</u></p> <ul style="list-style-type: none"> • The letter indicated TRCA has a number of commenting roles relative to its review of this environmental assessment. • TRCA staff has identified a number of areas of interest within the study area related to the Living City Policy (LCP). • TRCA requires that the preferred alternative considers avoiding, minimizing, mitigating and compensating impacts to the ecosystem, and avoid, mitigate or remediate hazards, in that order. In order to fulfill requirements of Ontario Regulations 166/06 at the detailed design stage, staff also requires that the preferred alternative meets LCP policies in Section 8. <p>“Please contact the undersigned TRCA planner to discuss the appropriate time for a site visit, ensure TRCA planner is included in all Technical Advisory Committee (TAC) meetings and add TRCA’s Humber River Senior Program Manager, Sonia Dhir to the Project mailing list to receive any public information updates.”</p> <p>Further details and a full copy of the letter can be found in Appendix E.</p>	<p>Meeting held with TRCA on July 29 2019 – Meeting Minutes can be found in Appendix E</p>
2.	<p>Emilee O’Leary Regional Environmental Assessment Coordinator/Planner - Central Region Environmental Assessment Branch Ministry of the Environment, Conservation and Parks emilee.oleary@ontario.ca</p>	<p><u>Comment Received January 8, 2019:</u></p> <p>“We are in receipt of the attached letter and notice for the Class EA project re: Rehabilitation of Sideroad 15 West, Concession 8 and Concession 10, in the Township of King. We apologize for the delayed response.</p> <ol style="list-style-type: none"> 1) This Notice functions as the initial notice or commencement notice for the project. As such, I would like to inform you that there is a new notification process for submitting commencement and completion notices for Class EA projects to the Ministry of the Environment, Conservation and Parks. Please read below the new process and re-submit the notice following the correct process for notices of commencement. At that time, the ministry will provide a formal response. 2) Additionally, I would also like to confirm whether the November 28, 2018 Notice of Public Open House (page 3-4 of the attached PDF) that was sent to residents was accompanied by a letter that included the following missing mandatory content requirements: <ul style="list-style-type: none"> • Description and purpose of the project • Name of the Class EA being followed (i.e. Municipal Class EA (2015)) • Schedule of the Class EA being followed (i.e. Schedule B) • Freedom of Information and Protection of Privacy (FIPPA) disclaimer (Note that minimum mandatory content requirements for notices is found in Appendix 6 of the 2015 MEA Class EA document). 3) Please also confirm whether the notice was published in accordance with the requirements of Section A.3.5.3 Public Notices of the MEA Class EA. (I.e. first mandatory point of contact for Schedule B and C projects is two (2) published notices. Two (2) published notices shall mean two (2) notices appearing in separate issues of the same newspaper). 4) Can you please provide any material from the Public Open House that occurred on November 28, 2018, for our records.” <p><u>Letter received March 8, 2019:</u></p> <ul style="list-style-type: none"> • MECP Staff provided a formal commenting letter with respect to notification of the pending Schedule ‘B’ Municipal Class EA process. • Provide contact information for Indigenous communities to be consulted throughout the EA process. • Identified several Area of Interested that should be reviewed and incorporated into the study as a part of the EA process; • Indicated that a draft copy of the PFR should be provided to MECP Staff a minimum of thirty (30) day prior to filing the final report. 	

		A complete copy of the MECP response letter can be found in Appendix E .	
Notice of Public Information Centre 2.0 – September 2020			
1.	Emilee O’Leary Ministry of the Environment, Conservation and Parks emilee.oleary@ontario.ca	<u>Comment received via email September 8, 2020:</u> “I’ve re-attached our initial response to the Notice of Commencement to this project. As a reminder, a draft copy of the Project File Report should be sent to the MECP prior to the filing of the final report, allowing a minimum 30 days for the ministry’s technical reviewers to provide comments. Additionally, some of the information in the attached letter is outdated. Specifically, the Environmental Assessment Act was recently amended through Bill 197, Covid-19 Economic Recovery Act, 2020. The changes will apply to this project.”	No response required at this time
2.	Joseph Harvey <i>On behalf of</i> Dan Minkin Heritage Planner Dan.Minkin@ontario.ca	<u>Comment received via email September 8, 2020:</u> “Thank you for providing the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) with the Notice for the above-referenced project. MHSTCI’s interest in this Environmental Assessment (EA) project relates to its mandate of conserving Ontario’s cultural heritage, which includes: • Archaeological resources, including land and marine; • Built heritage resources, including bridges and monuments; and, • Cultural heritage landscapes. Under the EA process, the proponent is required to determine a project’s potential impact on cultural heritage resources.” The letter provides further details and links to Ministry resources to help project proponent determine any potential impacts. A copy of the full letter can be found in Appendix F .	No response required at this time
3.	Amanda Crow Lines Customer Support Clerk Hydro One Networks Inc. Amanda.Crow@HydroOne.com	<u>Comment received via email September 11, 2020:</u> “Once the Township of King has requested map mark ups and has requested a class ‘C’, we can provide them that information once we know the utility conflicts. Additionally, as the locations provided (attached) are geographically in different areas, they should be treated as separate requests. Please submit the appropriate letters (Must come from the Township on their Letterhead). Below is a summary of what each letter is, letters 1-5 can be combined for your convenience. If you are just requiring map mark ups and a site meet (no estimate), please submit letters 1 and 2. If you would like a Class C estimate, please submit letters 1-5.”	<u>Email sent by Ainley on October 21, 2020:</u> The project Notice provided was a part of the consultation process of the Class Environmental Assessment the Township is undertaken for the road rehabilitation. As there are utilities located along the road segments, we have included Hydro One in the consultation process. A more detailed plan and the formal request process as you have outlined below will be completed by Township staff as the project moves through to detailed design at a later date.
4.	Councilor David Boyd	<u>Comment received via email September 17, 2020:</u> “ Thank you Wayne, Tammy and those who attended. I look forward to the improved Safety and enhancement to our existing road network.”	No response required
INDIGENOUS COMMUNITY COMMENTS			
Notice of Public Information Centre 1.0 – November 28, 2018			

	<p>Mississaugas of the New Credit First Nation Fawn D. Sault 4065 Hwy 6 North Hagersville, ON NOA 1H0</p>	<p>Comment received via email December 20, 2018:</p> <p>“Thank you for the notification sent to The Mississaugas of the New Credit First Nation (MNCFN) regarding <i>the Schedule B Municipal Class EA for the reconstruction of 3 segments of roadway in the Nobleton area</i>. We have reviewed the document you have provided and determined that, at this time, MNCFN has a low level of concern about the project. <i>Please see the attached letter for more information.</i> (Copy of letter is provided in Appendix E)</p> <p>Respectfully, we ask that you immediately notify MNCFN if there are any changes to the project as they may impact MNCFN's interests. Additionally, MNCFN requests a copy of all associated environmental and/or archaeological reports. These can be electronic copies, if you prefer. Furthermore, MNCFN employs Field Liaison Representatives who must be on location whenever any fieldwork for environmental and/or archaeological assessments is undertaken. If additional work is scheduled, please notify us as soon as possible so that we may work together to discuss and arrange for MNCFN's participation.”</p>	<p>A copy of the natural heritage studies and the Stage 1 Archeological report was sent to Ms. Sault on January 29, 2021. In this correspondence MNCFN was informed that no additional field work has been scheduled at this time, but that communication with MNCFN would continue.</p> <p>A copy of this correspondence can be found in Appendix F.</p>
Notice of Public Information Centre 2.0 – September 2020			
	No Comments were received.		
PUBLIC COMMENTS			
Notice of Public Information Centre 1.0 – November 28, 2018			
1.	<p>Comment received at PIC Prefers Alternative 1 for each section – Do Nothing</p> <ul style="list-style-type: none"> • “Paving 15th and 10th will create a substantial increase in traffic, noise and pollution, which will be closer to our house. We propose moving intersection at 15th and 10th about 50 feet south to reduce these issues and improve road safety; see separate email. If intersection is moved, we propose Alt 4.” • “Alt 3 and Alt 4 will most likely impact our hedge and mature trees and remove that traffic barrier for us. Cars and trucks will literally end up on our door step. There will be a steady stream of bypass traffic because HWY 27 was not widened thru Nobleton.” 	Formal response letter sent by Ainley on behalf of the Township March 2, 2020. A copy of the response letter can be found in Appendix E .	
2.	<p>‘New Proposal’ via email December 4, 2018:</p> <p>“As we discussed on Friday, the following is our proposal to improve the intersection at 15th Sideroad and 10th Concession vs. the King Township plan presented on Wednesday. First, let's list the concerns with the paving project as it is proposed to the public:</p> <ul style="list-style-type: none"> - As we all agreed, paving these roads will create substantially increased traffic, noise, and pollution. Especially since Hwy 27 was not widened thru Nobleton in this summer's road improvement project of 27 and King Rd. Hwy 27 even lost a thru lane. - Widening the 15th Sideroad and building a berm would force the elimination of our hedge and mature trees, resulting in traffic coming closer to our house. Our house is already close to the road, and we have now witnessed the unwelcome impact of increased bypass traffic during the reconstruction of 27 at King Road. - To create a safer intersection and longer sight line from 15th up 10th, a large section needs to be cut from our corner, including removing large mature trees. This well-established vegetation is not replaced overnight, it takes years to grow. <p>This is our NEW proposal: Move the intersection and a short stretch of 15th SR about 50ft south, to the other side of the power poles along 15th. In the process, create an S-shaped bend in the road (15th) similar to the proposal for the opposite end of 15th at the Hwy 27 intersection, but not nearly as large. Travelling West on 15th, the soft bend south can start right after the lot of our neighbour to the southeast of our property. There appears to be sufficient space between power poles to make this slight left turn. Probably about a 45 degree turn. Once on other side of power poles, the road can bend back and go straight to a stop sign at 10th Concession. The farm field in this corner is sitting high and level, which should help in the construction. That entire intersection area is being rebuilt anyhow to fix elevation issues, drainage concerns and road safety, hence, this proposal should not complicate the work to be done. From what I can tell, the power poles would not need to be moved to accommodate this. Benefits:</p>	<ul style="list-style-type: none"> • A meeting was held with the Property owners on March 26th, 2019 with Ainley and Township staff to discuss concerns of potential property impacts. The information presented a PIC included a board for a proposed roundabout at the intersection of 10th Concession and 15th Sideroad. <p>Formal response letter sent by Ainley on behalf of the Township March 2, 2020. A copy of the response letter can be found in Appendix E.</p> <ul style="list-style-type: none"> • A second meeting with the property owner was held on October 9, 2020 with Township staff to discuss ongoing concerns of property impacts. The Township confirmed the shifting of the road realignment to minimize impacts, the property owner was satisfied with the Township's adjustment. 	

	<ul style="list-style-type: none"> - No need to remove hedge and trees along our property, and having to replant them all. - No need to take out as much, or any, of our yard on the 10th. - Greatly improves sight line North along 10th at stop sign on 15th. Today, cars literally have to go into middle of intersection for a safe view of oncoming southbound cars. - Will help reduce noise and truck exhausts close to our house. - The S-shaped bend should slow vehicles down along 15th and near the intersection, as they would have to navigate the turns at slower speed. - Provides sufficient space to build a noise reducing berm along 15th between our property and the new road. <p>We hope you will take this proposal under serious consideration to help us manage the undesired shift from living on a quiet country road to a busy paved road, and all that comes with that. Also, it may not affect our property value to the same extent as receiving a paved road at our door step under the current proposal.”</p>	
3.	<p><u>Comment received at PIC</u></p> <ul style="list-style-type: none"> • Prefers Alternative 4 for each section • “Drainage for 15th and 10th, proper ditches that drain the fields also the drains are drained to the ditches. Cross pipes on the 15th (wetland). How many are being constructed? Driveway width has to be sufficient for tractor” trailers on both properties. Traffic lights have to be addressed for all major intersections (Hwy 27 and 15th), King Rd and 8th, and King Rd and 10th). Natural gas and high speed internet should be installed during construction.” 	<p>Formal response letter sent by Ainley on behalf of the Township March 2, 2020. A copy of the response letter can be found in Appendix E.</p>
4.	<p><u>Comment received at PIC</u></p> <ul style="list-style-type: none"> • Only concerned with 15th Sideroad West • Prefers Alternative 2 however it does not address property drainage in the low area. • “I would like the road to be better maintained with asphalt lines in the road. Complete better drainage in the low area as water has no drainage or place to go. I do not want expensive major work done, that you have to tear down my gate and expropriate my lands, too expensive for me office and rest of tax payers.” • “Road is gravel, difficult to maintain, should be paved. Yes, there is a bit of water at the lower area but does not cause road to be worked on. Clean the ditches so far. Hydro has made a mess.” <p><u>Sent Via Email</u></p> <p>“As clearly stated to Mr. Fournier, we do not want our gates torn down, and our trees within our property line to be destroyed. Take 10 feet of our property to build a road which we do not see as needed. We request is for the road to be structurally sound and able to take a busier traffic in the area, paved, and improved drainage of the lower area. What we are experiencing is proper drainage is not happening, especially in the low area of 15th Sideroad. When Hydro One put more poles to upgrade their electric power transmission, they removed and blocked all the drainage. They cut the trees and leave them in the area, further preventing proper drainage. The municipal road staff, do not clean the low lying area, and all the water is blocked mainly on my property, and the surrounding area, causing erosion and flooding of the present road. I would like a copy of the proposed plan of this road to obtain a better understanding of the proposed changes and how it will impact my property.”</p>	<ul style="list-style-type: none"> • Consultation has taken place with property owner to address concerns on March 26th, 2019 • The alignment has been adjusted to the North in order to avoid their gate feature <p>Formal response letter sent by Ainley on behalf of the Township March 2, 2020. A copy of the response letter can be found in Appendix E.</p>
5.	<p><u>Comment received at PIC</u></p> <ul style="list-style-type: none"> • Concerned with 10th Concession • Determined that it ‘partially’ address the problem statement • “trees, automatic gate and rocks (large ones), drive way used by tractor trailers pulling 52 ft trailers still safer than trying to pull into dealership off the King Road.” 	<ul style="list-style-type: none"> • Consultation has taken place with property owner to address concerns on March 26th, 2019 <p>Formal response letter sent by Ainley on behalf of the Township March 2, 2020. A copy of the response letter can be found in Appendix E.</p>

6.	<p>Comment received at PIC</p> <ul style="list-style-type: none"> Concerned with 10th Concession Determined that 'yes; it address the problem statement Prefers Alternative 4 for 10th Conc. "Need traffic lights at 10th and King Rd and at 15th and Hwy 27 as well as right and left turn lanes for both. This will become a Nobleton bypass." 	Formal response letter sent by Ainley on behalf of the Township March 2, 2020. A copy of the response letter can be found in Appendix E .
<p>Town conversation with Public member</p> <ul style="list-style-type: none"> "Indicated a mirror be placed on the east side of 10th conc on the Hydro pole for a reflection to aid in viewing oncoming traffic approaching their driveway." 		
7.	<p>Comment received at PIC</p> <ul style="list-style-type: none"> 8th Conc Alt 1 10th Alt 2 15th Alt 2 "Increased traffic without lights at the corner of 10th and King Rd will make it impossible to get out and increase the danger of this intersection. "volume of traffic without traffic lights. I also hate the inevitable change to the peaceful country road – I know it's coming but progress isn't all good." 	Formal response letter sent by Ainley on behalf of the Township March 2, 2020. A copy of the response letter can be found in Appendix E .
8.	<p>Comment received at PIC</p> <ul style="list-style-type: none"> Alt 2 for both 10th and 15th "Concerns are changing the width and height of the road. Would like road paved to second driveway north of 15 sideroad on 10th Conc." 	Formal response letter sent by Ainley on behalf of the Township March 2, 2020. A copy of the response letter can be found in Appendix E .
9.	<p>Comment received at PIC</p> <ul style="list-style-type: none"> Alt 4 for 10th and 15th How far north on the 10th Conc will be paved? Will there be consideration for stoplights at 8th Conc and King and 10th Con and King Rd? 	Formal response letter sent by Ainley on behalf of the Township March 2, 2020. A copy of the response letter can be found in Appendix E .
10.	<p>Comment received at PIC</p> <ul style="list-style-type: none"> Prefers Alt 4 for all sections "we need the road paved unbearable to drive on. Pot holes damaging my vehicle." 	Formal response letter sent by Ainley on behalf of the Township March 2, 2020. A copy of the response letter can be found in Appendix E .
11.	<p>Comment received at PIC</p> <ul style="list-style-type: none"> Prefers Alt 3 for all sections "As per the transportation Plan, this covers almost all of the proposed bypass for this village. I have an idea how 27 to 8th on 15 will rest with the increased traffic. Ensure large trucks (18 wheelers) can turn at roundabout at 15th and the 8th? Keep country look of roads. Minimizing speed for turtle crossings and other wildlife. Snapping turtles build nests on side of 15th between 27 and 8th. Sensitive pool on 15h as well." 	Formal response letter sent by Ainley on behalf of the Township March 2, 2020. A copy of the response letter can be found in Appendix E .
12.	<p>Comment received at PIC</p> <ul style="list-style-type: none"> Alt 1 for 8th Conc. Large increase of traffic, put your by pass somewhere else 	Formal response letter sent by Ainley on behalf of the Township March 2, 2020. A copy of the response letter can be found in Appendix E .

Notice of Public Information Centre 2.0 – September 2020

1.	<p>Comment received September 15, 2020:</p> <p>"In addition to the concerns we have regarding the road construction on the 10th Concession that were addressed in our earlier letter, we would also-strongly suggest the Township should approach York Region to create or install some form of traffic control at the intersection of the 10th Concession of King and the King Road. Currently, this is an extremely dangerous and busy intersection. With the paving of the 10th Concession there will be increased traffic speed and, in all probability, increased traffic at this intersection.</p> <p>Since the first meeting regarding this road improvement in November 2018, there has been a traffic light installed at Hwy 27 and the King/Vaughan road. We have noticed that since the installation of that traffic light increased traffic has funneled through the 10th and</p>	<p><u>Ainley response on behalf of Township:</u></p> <p>At this time the traffic does not warrant traffic signals. Traffic at this intersection will continue to be monitored. When traffic volumes meet the warrants a joint project with the region of York will be developed.</p> <p>Ongoing monitoring of traffic will continue and when signalization warrants are met at 10th Concession and King Road or at 15th Sideroad and York Regional Road 27 traffic signals will be provided.</p>
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	<p>King intersection. The major road project that King Township is completing on the 10th Concession, 15th Side road and 8th Concession will also increase traffic, including both cars and large trucks. You are quite aware that this area developing very rapidly and the traffic has dramatically increased in the last two years. Moving forward it is difficult to imagine how much traffic will be on our roads in the next two years.</p> <p>Wayne, in one of our conversations regarding the major construction on our road, you suggested that this needed to be done correctly. With that in mind, moving King Township forward please install-a light or some other method of traffic control at the 10th and King Road.”</p>	<p>A copy of the response letter can be found in Appendix F</p>
2.	<p><u>Comment received during PIC broadcast</u></p> <ul style="list-style-type: none"> • “What changes would have been made between the drawings of 2018 and now at our property at the John Deere Dealership?” • “What is the rationale for not doing any long term planning? Won't that just be a waste of time and money? Not sure as a business person that the short term planning is the best use of tax payers dollars.” • “What improvements will be made at the corner of the 15 Sideroad and 10th Concession? What type of intersection will be at Highway 27 and 15 Sideroad, as well as 15 Sideroad and 10th Concession?” 	<p><u>Response provided during PIC broadcast</u></p> <p>Additional refinement of the crest vertical curve just north of the intersection with King Road but it was found that vertical curve sight lines would require reducing the posted speed to 50km/hr for the southernmost 300 m of concession 10 as vehicles approach the King Road intersection.</p> <p>This project is guided by the long-term planning of the recent Transportation Master Plan (TMP). It found that these roads working as two-lane roads are adequate for the time frame considered in that study. This project aims to provide two lane roads that meet the Township standard and are compatible with the long-term active transportation goals contained in the TMP.</p> <p>The possibility of applying a roundabout for the intersection of Sideroad 15 and Concession 10 but was dropped for further study because of topography. The proposed intersection of Concession 10 and Sideroad 15 will continue to be a ‘T’ intersection but with improved sightlines on the north east approach.</p>
3.	<p><u>Comment received during PIC broadcast</u></p> <p>“Why no traffic lights going in at the 10th Concession and the King Road as well as turning lanes?”</p> <p>“Will the 15th and the 10th Concession become a major bypass route around Nobleton?”</p>	<p><u>Response provided during PIC broadcast</u></p> <p>At this time the traffic does not warrant traffic signals. Traffic at this intersection will continue to be monitored. When traffic volumes meet the warrants a joint project with the region of York will be developed.</p> <p>This project has not included long term planning but traveling from King Road to concession 10 to Sideroad 15 to Highway 27, or the reverse of that route would allow motorists avoid the centre of Nobleton and the intersection of Highway 27 and King Road. Implementing such a strategy would involve separate Environmental Assessment study.</p>
4.	<p><u>Comment received during PIC broadcast</u></p> <p>“Does the study include for street lights?”</p>	<p><u>Response provided during PIC broadcast</u></p> <p>There will not be full illumination installed along the length of each road segment, only partial illumination at the intersections.</p>
5.	<p><u>Comment received during PIC broadcast</u></p> <p>“Speed has increased substantially on 10th Concession since paved. Can speed alert signs be installed?”</p>	<p><u>Response provided during PIC broadcast</u></p> <p>This project will not involve the installation of speed alert signage. The Township will make the York Region Police aware of traffic high speeds in this area.</p>
6.	<p><u>Comment received during PIC broadcast</u></p> <p>“How long will construction take for Alt 4 (15th Sideroad)?”</p>	<p><u>Response provided during PIC broadcast</u></p> <p>At this time, we expect that concession 10 would be undertaken first followed by side road 15. Each of those road segments will take approximately 4 to 5 months to complete.</p>

7.	<p><u>Comment received during PIC broadcast</u></p> <p>“Will the study area include supplying natural gas and high speed internet to the homes affected in this study?”</p>	<p><u>Response provided during PIC broadcast</u></p> <p>The utility companies are aware of this project. Communication will continue to occur in anticipation of utility relocation as part of this project</p>
8.	<p><u>Comment received during PIC broadcast</u></p> <p>“Will there be any temporary paving on these gravel roads? The problem is traffic has increased and the roads are becoming unsafe to drive on.”</p>	<p><u>Response provided during PIC broadcast</u></p> <p>It will depend in large part to the construction timing. If there is substantial delay in the start of the construction, then the Township resurfacing program may need to be adjusted.</p>
9.	<p><u>Comment received via email October 2, 2020</u></p> <p>“Entrance at 13120 10th Concession:</p> <ul style="list-style-type: none"> - Slope into the property is a concern with the road lowering - Security gate will need to be moved – how, when and where? Our insurance company requires this gate - Landscaping and work to match the new road level will be extensive. The entrance is used by heavy trucks and large farm equipment <p>Note – we have a truck delivery every weekday morning at 6:30am using that entrance.”</p>	<p><u>Ainley response on behalf of Township:</u></p> <p>The current preliminary design shows the driveway being reconstructed for 40m from the road with a grade of 8% and replacement of the gate. This can be refined with your input during detailed design. Requirement to accommodate access to all businesses and private homes during construction will be part of the construction contract conditions.</p> <p>A copy of the response letter can be found in Appendix F</p>
10.	<p><u>Comment received via email October 4, 2020</u></p> <p>No comment on project rather a request to change their contact address for future mailings.</p>	<p>Contact List updated</p>
11.	<p><u>Comment received via email October 6, 2020</u></p> <p>“Can you or anyone please explain what the ultimate goal of linking these roads together really is? Yes, individually they need improving. The term now used seems to be “The Nobleton Loop” yet “The Nobleton Bypass” has been used in the past. Yes, eventually King may want to upload them to the Region and upgrading would be required first. What is the real overall purpose of the project, please?”</p>	<p><u>Ainley response on behalf of Township:</u></p> <p>This project is guided by the long-term planning of the recent Transportation Master Plan (TMP). It found that these roads working as two-lane roads are adequate for the time frame considered in that study. This project aims to provide two lane roads that meet the Township standard and are compatible with the long-term active transportation goals contained in the TMP.</p> <p>This project has not included additional long term planning but traveling from King Road to 10th Concession to 15th Sideroad to Highway 27, or the reverse of that route would allow motorists to avoid the centre of Nobleton and the intersection of Highway 27 and King Road. Upgrading the roads beyond the Township standard at some time in the future to accommodate the traffic of a bypass road would involve a separate Environmental Assessment study.</p> <p>A copy of the response letter can be found in Appendix F</p>
12.	<p><u>Comment received via email October 9, 2020</u></p> <p>“What type of intersection will be at the corner of 15th Sideroad and 10th Concession? There should be traffic lights at the 10th Concession and King Road. What type of intersection will be at the 15th Sideroad and Highway 27? We prefer Alternative 4.”</p>	<p><u>Ainley response on behalf of Township:</u></p> <p>At this time the traffic does not warrant traffic signals. Traffic at this intersection will continue to be monitored. When traffic volumes meet the warrants a joint project with the region of York will be developed.</p> <p>The possibility of applying a roundabout for the intersection of Sideroad 15 and Concession 10 but was dropped for further study because of topography. The proposed intersection of Concession 10 and Sideroad 15 will continue to be a ‘T’ intersection but with improved sightlines on the north east approach.</p> <p>A copy of the response letter can be found in Appendix F</p>

8. SELECTION OF THE PREFERRED SOLUTION

Following the completion of the Public Information Centre 2 and a review of all comments received, the following alternative was selected as the final Preferred Solution:

Alternative 4 – Full Reconstruction with Substantial Grade Lines & 26m ROW

This alternative best addresses the existing deficiencies with limited potential to impact the environment. Full road reconstruction to Township Standard with two 3.5 meter paved lanes, 1.5 meter paved and 1 meter gravel shoulder for 15th Sideroad, and 1 meter shoulder along 10th and 8th Concessions. The proposed works will provide improved structural adequacy by applying Township minimum pavement structure of 400 mm Granular B, 150 mm Granular A, 60 mm base asphalt and 50 mm surface asphalt.

Reconstruction will reduce the crests of the knolls and reduce the valleys along the centerline of the road to improve sightlines along the roadway and at driveways. The drainage along the 15th Sideroad segment will be improved with the installation of a new box culvert, which can improve wildlife passage opportunities. The 15th Sideroad West at the intersection with Hwy 27 will be realigned with 15th Sideroad East to form a “cross” intersection, instead of two offset ‘T’ intersections.

The anticipated timing for next steps includes; property acquisitions and detailed design to be completed within the year 2021, with construction implemented during 2022 and 2023. The preliminary cost estimates for each road segment are shown in Table 6 below.

Table 6: Preliminary Project Cost

Road Segment	Preliminary Cost Estimate (\$)
15 th Sideroad	5.2 million
10 th Concession	5.0 million
8 th Concession	4.5 million

A copy of the final proposed alignment drawings for each road segment are included in **Appendix G**.

9. MITIGATION

The following sub-sections outline the mitigation measures that are to be included in the development of the detailed design for the implementation of the Preferred Solution. The anticipated approvals and permitting requirements are also described.

9.1 Vegetation

- Vegetation clearing should occur outside of the breeding bird season (generally late April to late July) to prevent nest destruction to comply with the Migratory Birds Convention Act. Winter season, during frozen ground conditions, is the ideal period for tree and vegetation removal if feasible. In the event that tree removal must occur within the breeding bird window a qualified biologist must screen the area. Clearing in identified nesting areas would be prohibited until such time that it has been confirmed that the young have fledged.
- Where feasible, trees proposed to be retained will be protected by tree protection fencing (TPF), which is to be placed at the dripline or in a location to minimize encroachment into the root zone and protect the trunk. Fencing provides protection from potential damage during construction activities such as the use of machinery near trees and branches, and stockpiling of materials over the root zone. ESC fencing can be combined with TPF.
- It is recommended that a tree compensation ratio of 2:1 be implemented. Planting and restoration efforts will aim to restore the natural areas where disturbances have occurred as a result of construction works.

9.2 Wetlands

In order to mitigate the potential short and long-term impacts to the wetland complex the following key mitigation and protection measures are proposed for implementation:

- Install environmental protection and erosion control fencing along the limits of the reconstruction area prior to the commencement of construction (includes prior to vegetation removal).
- Prior to work near any type of marsh or removal of marsh vegetation, if construction activities occur within the period of April to July, areas with standing water that may support amphibians are to be surveyed by a qualified biologist for the presence of amphibians. If present these are to be relocated to outside of the construction area to suitable habitats.
- Prior to construction works, a qualified ecologist will inspect the work area for the presence of regionally rare plant species (specifically Stiff Marsh Bedstraw and Hoary Sedge) that if present will be transplanted to a suitable location outside the impact zone.
- The Edge Management Plan is to be implemented and the plantings installed as outlined on the Edge Management Plan drawings and details.

- Machinery or equipment will be maintained and refueled within the construction area defined by the ESC measures, and at no time will approach within 30 m of the watercourses or wetland areas.
- Any equipment, stockpiled material or construction material will be stored within the construction area defined by the ESC measures, and in a manner that prevents sediment or deleterious substances from entering any watercourses or wetland areas.
- All work areas are to be effectively isolated from wetland communities and drainage features with appropriate ESC measures in order to ensure that deleterious substances do not enter these areas at any time.

9.3 Groundwater and Surface Water

- To minimize the potential for erosion and off-site transport of sediment into surface water features and the natural environment, the project will implement Best Practices related to erosion and sediment control. ESC measures used by the contractor on all construction should meet guidelines as outlined in Erosion and Sediment Control Guideline for Urban Construction, December 2006 (ESC Guideline), prepared by the Greater Golden Horseshoe Area Conservation Authorities.
- All exposed and newly constructed surfaces should be stabilized using appropriate means in accordance with the characteristics of the exposed soils. These surfaces should be fully stabilized and re-vegetated with native species as quickly as possible following the completion of the works
- No sediment, sediment-laden water or deleterious substances are to be discharged into watercourses/drainage features at any time. A response plan for spills will be developed before work commences. This plan will be implemented immediately in the event of a sediment release or spill of a deleterious substance and an emergency spill kit will be kept on site.
- All ESC measures are to be inspected daily including after every rainfall, cleaned, maintained and/or adjusted accordingly to ensure sediment does not enter drainage features at any time.
- Any dewatering (if required) is to be filtered to remove sediment prior to discharging to a well vegetated area at least 30 m from a watercourse.
- Given the proximity of wells to the roads, if construction dewatering is required, affected wells in the vicinity will be identified during detailed design and the development of a monitoring program to predict or confirm actual effects during construction and plan for the replacement of such supplies temporarily as needed.
- Any in-water works during culver replacements should be completed in the appropriate construction timing window. The new culvert will be placed at a slight offset so existing culvert remains functional until new culvert is installed.
- To ensure compliance with CTC-SPP Policy SAL-11 regarding the application of road salt, best management practices will be implemented by the Township's Operations Staff.

9.4 Species at Risk

- Prior to tree removal, trees that meet the criteria should be screened for presence of SAR Bats.
- If a SAR is encountered during construction, all works in the immediate area must cease. The Contract Administrator must contact the MECP at SAROntario@ontario.ca. Harassment to SAR should not occur during construction activities.
- Consultation with MECP will be required regarding proposed culvert replacement in Redside dace contributing habitat.

9.5 Specific Erosion and Sediment Control Measures

The TRCA Requires that the ESC measures by demonstrated on all relevant plans and/or drawings submitted. Further recommendations for the ESC plan include:

- The ESC measures should remain in place and in good working condition for the duration of the project, until landscaping and sodding has stabilized.
- ESC fencing/measures are to be erected as near to the development as possible.
- ESC measures are to be installed prior to beginning work and are maintained in working order throughout all stages of construction activities.
- That ESC fencing be erected to specifications outlined in Ontario Provincial Standard Drawings (OSPD), being at a minimum, a double row of sediment silt fencing consisting of a non-woven geotextile with straw bales staked in between.

Specific locations for the installation of ESC measures have been identified for headwater drainage features, to include:

8th Concession

- ESC fencing on west side at STA. 1+790 - 1+810 (HDF K)
- ESC fencing on east side at STA. 3+000 - 3+020 (HDF N)
- All other headwater drainage features occur within woodland and wetland communities, for which ESC measures and protection fencing are recommended below. Tree/wetland protection fencing (combined with ESC fencing) to be installed at the west side from STA 1+290 - 1+320 and both sides from STA 2+310 - 2+440

10th concession

- ESC fencing on both sides at STA. 5+040 - 5+060 (HDF C)
- ESC fencing on west side at STA. 5+600 (HDF D)
- ESC fencing on west side at STA. 5+710 (HDF E)
- All other headwater drainage features occur within woodland and wetland communities, for which ESC measures and protection fencing are recommended below. Tree/wetland protection fencing (combined with ESC fencing) to be installed:

- East side from STA 4+830 - 4+860
- West side from STA 4+880 - 4+950
- East side from STA 4+920 - 4+970
- East side from STA 5+580 - 5+660
- Both sides from STA 6+010 - 6+040
- East side from STA 6+130 - 6+150
- East side from STA 6+370 - 6+400
- East side from STA 6+540 - 6+650
- West side from STA 6+700 - 6+760

9.6 Air Quality and Noise

As this project involves a reconstruction of an existing corridor with the extension, the potential to impact air quality is not expected to be significant. Some of the best practices include the following:

- Use of reformulated fuels, emulsified fuels, exhaust catalyst and filtration technologies, cleaner engine repowers, and new alternative-fueled trucks to reduce emissions from construction equipment.
- Regular cleaning of construction sites and access roads to remove construction-caused debris and dust.
- Non-chloride dust suppression on unpaved haul roads and other traffic areas susceptible to dust, subject to the area being free of sensitive plant, water or other ecosystems that may be affected by dust suppression chemicals.
- Covered loads when hauling fine-grained materials. Covered stockpiles of soil, sand and aggregate as necessary.
- Compliance with posted speed limits and as appropriate further reductions in speeds when travelling sites on unpaved surface.

There is the potential for increased noise during the construction period; however, this will be temporary and can be minimized through implementation of the mitigation measures outlined below:

- Construction should be limited to the time periods allowed by the locally applicable bylaws. If construction activities are required outside of these hours, the Contractor must seek permits / exemptions directly from the municipality in advance.
- All equipment should be properly maintained to limit noise emissions. As such, all construction equipment should be operated with effective muffling devices that are in good working order.

9.7 Excess Materials Management

- Activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP's document entitled "Rules for Soil Management and Excess Soil Quality Standards" includes both "Soil Rules" and "Excess Soil Standards" which are incorporated by reference into the excess soil regulation and must be read alongside the regulation.
- All waste generated during construction must be disposed of in accordance with ministry requirements.

9.8 Archaeological Resources

A Stage 1 Property Inspection will have to be undertaken concurrently with the Stage 2 Property Assessment prior to any construction work. In the event the following situations are encountered during construction, the contractor should be advised to stop work immediately and take the appropriate actions as noted below:

- Should previously unknown or un-assessed deeply buried archaeological resources be uncovered, 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 archaeologist to carry out archaeological fieldwork, in compliance with section 48 (1) of the Ontario Heritage Act. The Heritage Operations Unit of the Ministry of Culture must be immediately notified at 807-468-2450.
- In the event that human remains are encountered, the proponent or person discovering human remains must immediately notify the police or coroner and the Registrar of the Bereavement Authority of Ontario at 647-483-2645 or 1-807-468-2450.
- Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources.

9.9 Built Heritage and Cultural Landscapes

There is a low potential to impact existing cultural heritage resources. The following mitigation will assist in avoiding and direct or indirect impacts.

- Staging and construction activities should be suitably planned to avoid impacts to an adjacent identified resource.
- Establish no-go zones adjacent to all identified cultural heritage resources and issue instructions to construction crews in order to prevent impacts to existing resources.
- Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.

9.10 Utilities and Servicing

The utility companies are aware of this project. Communication will continue to occur in anticipation of utility relocation as part of this project.

9.11 Property Impacts

The following measures will assist in keeping impacts to a minimum:

- Construction shall utilize measures to minimize impacts to local traffic to the extent feasible and to maintain access during construction.
- Entrances are to be kept open except when construction activities are taking place in front of the entrance.
- Property acquisition is required and discussions with the affected property owners will continue and if feasible the Township will incorporate their suggestions into detailed design.

10. PERMITS AND APPROVALS

During detailed design permits and approvals will need to be acquired from the following agencies:

- Toronto and Region Conservation Authority: Portions of the project study area are within areas regulated by the TRCA and as such, a permit will be required from this agency prior to construction.
- Ministry of Environment, Conservation and Parks: Continued consultation with MECP is required to determine if permitting or authorization will be required under the Endangered Species Act regarding work within the contributing habitat for Redside dace.
- Ministry of Environment, Conservation and Parks: During detailed design, the extent and need of the removal of peat soils will be determined. This would constitute a significant dewatering exercise and a Permit to Take Water or Environmental Activity and Sector Registry registration may be required.

11. MONITORING

Information pertaining to required mitigation and monitoring will be incorporated into the Construction Documents once the detailed design has been finalized. Monitoring will be conducted by on-site construction staff to make certain that environmental protection measures are being implemented and are effective. The Contract Administrator will make certain that environmental protection measures and monitoring, as identified, are implemented during construction and that any repairs to protection measures will be made in a timely fashion.