

Schedule 'C' Municipal Class  
Environmental Assessment

**County Road 22 (Horseshoe Valley Road)  
Transportation Improvements  
(From 3<sup>rd</sup> Line to 4<sup>th</sup> Line, Oro-Medonte)**

**County of Simcoe**



OCTOBER 2017

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**VOLUME 1 OF 3  
MAIN BODY**

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# EXECUTIVE SUMMARY

## 1. DESCRIPTION OF THE PROBLEM

The section of County Road 22 (Horseshoe Valley Road) between the 3<sup>rd</sup> Line and 4<sup>th</sup> Line of Oro-Medonte is a two-lane rural primary arterial roadway. There are five intersecting side roads between 3<sup>rd</sup> Line and 4<sup>th</sup> Line. Traffic control is provided by stop signs on all side roads. The condition of the road surface is fair to poor and exhibits some rutting and cracking. The existing lane widths, vertical road profile and site line distances do not comply with current County of Simcoe standards. The current posted speed limit is 70 km/h; however, significant variations in speed have been recorded along this stretch of roadway. Between 2001 and 2011, there were 398 motor vehicle collisions recorded on County Road 22, a large portion of which are attributed to aggressive driving, speeding, and unsafe passing of slow-moving vehicles, including trucks, climbing the hills.

Recognizing the planned development and continued growth that will occur within Horseshoe Valley in conjunction with the on-going traffic safety concerns associated with the steep hills between the 3<sup>rd</sup> and 4<sup>th</sup> Line, the County identified a need to investigate possible solutions to improve traffic safety. To that end, the County initiated a Municipal Class Environmental Assessment (Class EA).

The purpose of the study is to identify appropriate roadway improvements, which will reduce the potential occurrence and severity of accidents and collisions resulting from impatient drivers passing slow-moving vehicles illegally on the steep hills. In addition, the study will consider upgrades to the configuration of the 3<sup>rd</sup> Line, Birch Grove and 4<sup>th</sup> Line intersections to improve traffic operations, capacity, level of service and safety.

## 2. CLASS EA PROCESS

The study followed the process for a Schedule 'C' project, in accordance with the Municipal Engineer's Association (MEA) Class EA document (October 2000, as amended in 2007, 2011, & 2015). The process provided for the evaluation of alternative solutions to address the identified problems and opportunities, while taking into consideration the potential impacts on the area environment (natural, cultural, social, and economic) and identifying any mitigation measures to be implemented.

This Environmental Study Report (ESR) documents the planning process that was followed in accordance with the procedures established within the aforementioned Municipal Class EA document, including the public consultation efforts.

## 3. PUBLIC AND AGENCY CONSULTATION

Public consultation is a key component of the Municipal Class EA process. As part of this study, extensive consultation was undertaken with both the public and other interested agencies and stakeholders.

Property owners, local conservation authorities, federal and provincial agencies, First Nations, utility companies, emergency services, and other local businesses were notified of the study and provided with an opportunity to become involved.

A total of three (3) Public Information Centres (PICs) were held between November of 2013 and September of 2016 to provide a forum and opportunity for the public to ask questions and provide input.

The following is a summary of the points of contact:

#### **Agency and Public**

- Letters to external agencies and adjacent property owners were mailed out for all Phases of the Class EA.

#### **Newspaper Advertisements**

- A Notice of Study Commencement was published in the Barrie Advance and in the Orillia Times on April 18, 2013. Refer to Appendix A.
- A Notice of PIC (Public Information Centre 1) was published in the Barrie Advance and in the Orillia Times on November 11, 2013.
- A Notice of PIC (Public Information Centre 2) was published in the Barrie Advance and in the Orillia Times on April 24, 2014.
- A Notice of PIC (Public Information Centre 3) was published in the Barrie Advance and in the Orillia Times on September 6, 2016.
- A Notice of Study Completion (filing of Environmental Study Report for environmental clearance) was published in the Barrie Advance and in the Orillia Times on – Date to be determined
- In addition to publishing these notices in newspapers, they were also posted on the County of Simcoe website.

#### **Public Information Centre 1 – November 28, 2013**

- A PIC was held on November 28, 2013 at the Horseshoe Valley Resort from 4:00pm to 7:30pm. In total, 66 people signed the attendance sheet, including members of the public and agencies. Refer to Appendix B for further details.

#### **Public Information Centre 2 – May 12, 2014**

- A PIC was held on May 12, 2014 at the Horseshoe Valley Resort from 4:00pm to 7:30pm. In total, 106 people signed the attendance sheet. Refer to Appendix C for further details.

#### **Public Information Centre 3 – September 29, 2016**

- A PIC was held on September 29, 2016 at the Horseshoe Valley Resort from 6:00pm to 9:00pm. More than 100 people signed in and 35 sets of comments were received and responded to. Refer to Appendix D for further details.

#### **Public Concerns**

Concerns raised by the public were considered and incorporated into the Class EA process, where applicable. Some of the concerns that were raised by the public during the process included:

- Passing Lane would result in increased speeds and volumes;
- Pedestrian crossing at 4th Line would be unsafe;
- Widening of the road would have a negative impact on existing private property; and
- Water wells and septic systems and sight lines approaching 4th Line would be poor.

Responses were provided to all submitted comments and concerns. Additional non-mandatory points of contact were also added to the process, including an additional PIC and information mailout, to provide the public with more detail and to address their concerns.

## 4. ALTERNATIVE SOLUTIONS AND DESIGN CONCEPTS

The project was divided into two main components in order to assess alternative solutions:

### **Project A – Roadway Improvements**

The alternative solutions identified to improve the roadway include:

- Do nothing (for baseline comparison);
- Implementation of passing/climbing lanes; and
- Rerouting truck traffic to adjacent roads.

After evaluation of the alternatives, it was determined that the implementation of passing/climbing lanes to provide improvements is the preferred solution.

With the preferred alternative solution identified, three alternative design concepts were evaluated, including:

- Rural cross-section with 3.75 m climbing lanes and 3.0 m paved shoulder;
- Semi-urban cross-section with 3.75 m climbing lanes, curb and gutter (one-side) and 3.0 m paved boulevard; and
- Urban cross-section with 3.75 m climbing lanes, curb and gutter (both sides) and 3.0 m paved boulevard.

All alternatives were also to include any necessary upgrades to existing drainage problems, replacement of culverts, addition of illumination at sideroad intersections, roadside safety upgrades and correction of vertical alignment deficiencies.

### **Project B – Intersection Improvement**

The various intersections were classified into primary and secondary intersections, as follows:

#### **Primary Intersections**

- 3<sup>rd</sup> Line
- 4<sup>th</sup> Line
- Horseshoe Boulevard (i.e. main entrance to Horseshoe Valley Resort)

The alternative solutions to improve the primary intersections include:

- Do nothing (for baseline comparison);
- Add turning lanes and maintain stop control;
- Add turning lanes and install traffic signals; and
- Utilize roundabouts.

#### **Secondary Intersections**

- Beechwood Road
- Maplecrest Court

- Pineridge Trail
- Country Club Lane

The alternative solutions to improve the secondary intersections include:

- Do nothing (for baseline comparison);
- Add right turn tapers and maintain stop control;
- Add dedicated left turn lane and right turn taper and maintain stop control; and
- Close/Remove intersection.

## 5. EVALUATION OF ALTERNATIVE SOLUTIONS AND DESIGN CONCEPTS

Throughout the Class EA process, the evaluation of alternative solutions and design concepts was based on an assessment of the potential impacts to the natural, physical, cultural, social, and economic environments within the study area as well as the degree to which the solution would best address the problem statement.

## 6. PREFERRED DESIGN

After evaluation of the alternative design concepts, the following summarizes the preferred design that is recommended:

### **Project A – Roadway Improvements**

The preferred design includes the reconstruction of the roadway as follows:

From 3<sup>rd</sup> Line to Horseshoe Boulevard:

- 3.75 m East Bound Through Lane (EBTL)
- 3.75 m West Bound Through Lane (WBTL)
- 3.75 m West Bound Climbing Lane (WBCL)
- Curb and Gutter (both sides)
- 3.0 m paved shoulder/boulevard (both sides)

From Horseshoe Boulevard to Country Club Lane:

- 3.75 m EBTL and WBTL
- Dedicated center left turn lane
- Right turn tapers at all intersections
- School bus lay by on north side between Maplecrest Court and Pineridge Trail

From Country Club Lane to 4<sup>th</sup> Line:

- 3.75 m EBTL and WBTL
- 3.75 m East Bound Climbing Lane (EBCL)
- Curb and Gutter (both sides)
- 3.0 m paved shoulder/boulevard (both sides)

- Right turn taper at Trillium Trail

Additional general improvements include:

- Illumination improvements at sideroads
- Storm sewer and drainage upgrades
- Retaining wall structures to reduce property impacts
- Place additional signage and pavement markings to promote reduced travel speeds
- Encourage safer driving habits and reduced speeds through increased law enforcement, education, and periodic use of speed radar signs

### **Project B – Intersection Improvements**

The preferred design for the primary intersections includes implementing a single-lane roundabout at the intersection of 3rd Line as well as Horseshoe Boulevard and a multi-lane roundabout at 4th Line. Varying improvements were identified for the secondary intersections, including adding right turn tapers at most intersections, adding a median left turn lane between Horseshoe Boulevard and Country Club Lane, and closing the intersection of Beechwood Road. This improvement would also include reducing the posted speed limit from 70 km/h to 50 km/h on approaches to roundabouts with suggested 30 km/h signage through the roundabout.

Plan view drawings illustrating the preferred design, as presented at PIC No. 3, can be found in Appendix D.

The assessment suggests that this preferred design has the lowest impact on property requirements and utility relocations; the lowest capital cost; provides separation between opposing traffic; and has minimal impact on soils, groundwater and recreation.

## **7. MITIGATION MEASURES**

The preferred alternative has minor potential impacts on environmental factors, including fisheries and aquatic ecosystems. Most of the impacts will be as a result of construction and can be mitigated through careful and conscientious design as well as consideration of construction methods. A list of potential environmental impacts and mitigation measures is included in Appendix M.

## **8. PROJECT COSTS**

The total preliminary estimated cost of the preferred design is \$20.4 M. This cost includes road widening and reconstruction, intersection improvements, drainage works, engineering and contingencies as well as allowances for property acquisition and utility relocations. A copy of the preliminary cost estimate is included in Appendix O.

## **9. NEXT STEPS**

Based on a review of the current Municipal Class EA project schedules, the completion of this Schedule 'C' Class EA satisfies the requirements of the Environmental Assessment Act. Therefore, the Notice of Completion will be filed with the Ministry of the Environment, circulated to all agencies and stakeholders



that expressed an interest, and published in the local newspaper, thus commencing the mandatory 30-day public review period.

During the 30-day review period, if concerns are raised that cannot be resolved through discussion with the County of Simcoe, then the Minister of Environment may be requested to make an order for the project to comply with Part II of the Environmental Assessment Act (referred to as a Part II order), which addresses individual environmental assessments.

If no Part II Order requests are received, the County intends to proceed with the following:

- Prepare the detail design and contract documents to allow for tendering and construction following County approval.
- Initiate property negotiations to acquire additional right of way necessary to accommodate the construction.
- Obtain all necessary approvals and permits from the appropriate agencies for the proposed construction. Agencies may include but are not limited to the Township of Oro-Medonte, Ministry of the Environment, Nottawasaga Valley Conservation Authority, and the Department of Fisheries and Oceans (DFO).
- Initiate contact with affected utilities regarding utility relocations.
- Complete geotechnical soils investigations to carry out a subsurface investigation and pavement design.
- Complete Stage II Archaeological Assessment.
- A Phase I and II Environmental Site Assessment may be completed during detail design to determine the presence of any contaminated property. If required, the work will be conducted in conjunction with geotechnical investigations, which will require soil samples to be taken for chemical analysis.

Construction of the project is currently anticipated to be phased from 2020 to 2023, pending budget approvals.

## PHASES 1 & 2

### 1. INTRODUCTION

#### 1.1 Background

The section of County Road 22 (Horseshoe Valley Road) between the 3<sup>rd</sup> Line and 4<sup>th</sup> Line of Oro-Medonte is a two-lane rural primary arterial roadway. There are five intersecting side roads between 3<sup>rd</sup> Line and 4<sup>th</sup> Line. Traffic control is provided by stop signs on all sideroads. The condition of the road surface is fair to poor and exhibits some rutting and cracking. The existing lane widths, vertical road profile and site line distances do not comply with current County of Simcoe standards. The current posted speed limit is 70 km/h; however, significant variations in speed have been recorded along this stretch of roadway. Between 2001 and 2011, there were 398 motor vehicle collisions recorded on County Road 22, a large portion of which are attributed to aggressive driving, speeding, and unsafe passing of slow-moving vehicles, climbing the hills.

Recognizing the planned development and continued growth that will occur within Horseshoe Valley in conjunction with the on-going traffic safety concerns associated with the steep hills between the 3<sup>rd</sup> and 4<sup>th</sup> Line, the County identified a need to investigate possible solutions to improve traffic safety.

The County retained the Ainley Group to identify and evaluate solutions to address the problem through the completion of a Municipal Class Environmental Assessment (Class EA) planning process.

#### 1.2 Municipal Class Environmental Assessment Planning Process

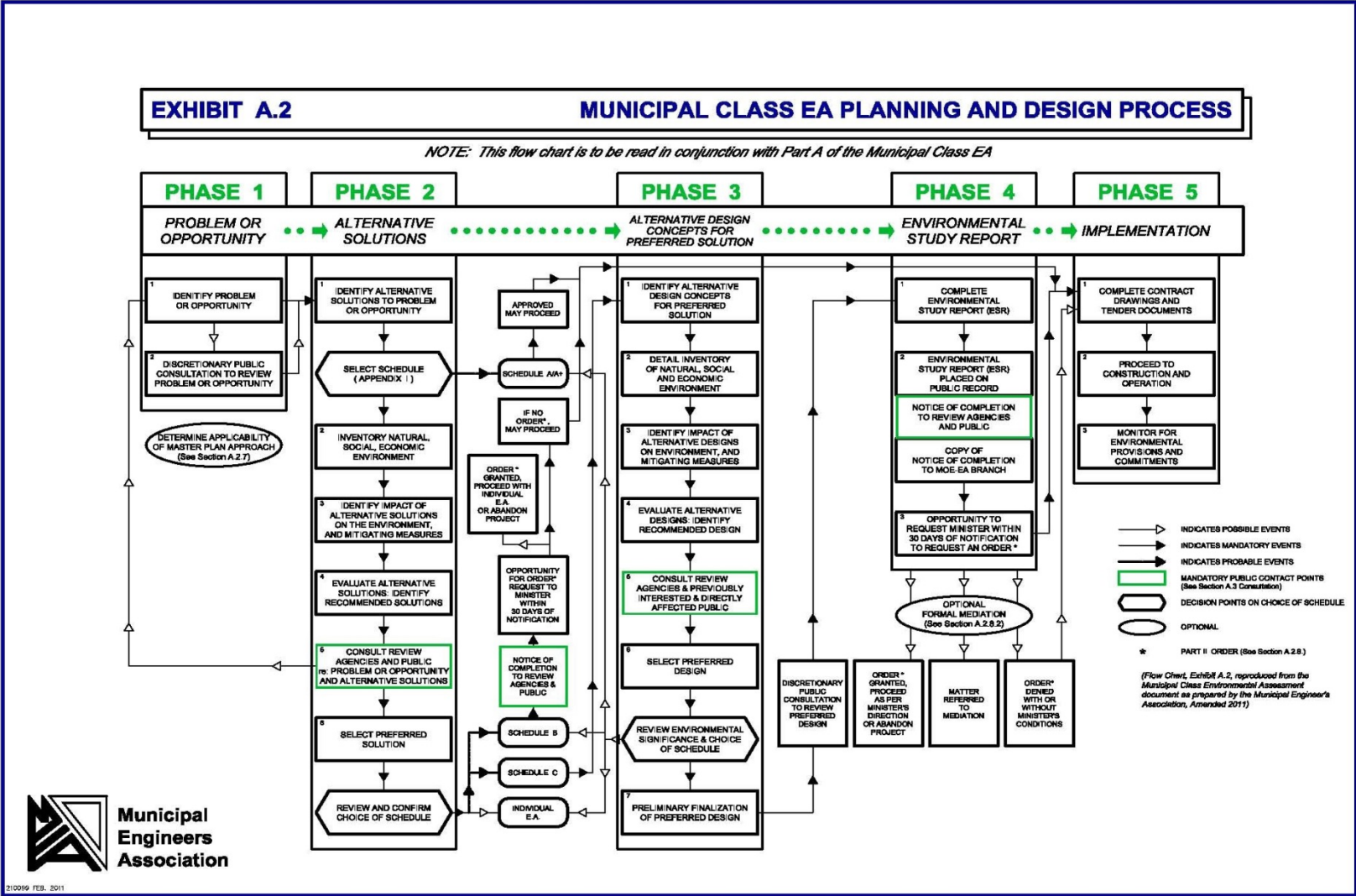
Projects undertaken by municipalities vary in their environmental impact. As such, they are classified in terms of schedules based on the anticipated degree of potential impact. The Municipal Engineers Association (MEA) Class EA document provides guidance on the selection of the appropriate schedule for intended projects. After consideration of the potential impacts and the magnitude of the proposed improvements to County Road 22, it was determined that this project should follow a Schedule C Class EA planning process.

A Schedule C Class EA involves a 5-stage planning process, which includes the following steps:

- |         |   |
|---------|---|
| Phase 1 | Identify the problem or opportunity   |
| Phase 2 | Identify alternative solutions and select a preferred solution to address the problem or opportunity  |
| Phase 3 | Identify alternative design concepts for the preferred solution and select a preferred design   |
| Phase 4 | Prepare the Environmental Study Report (ESR)  |
| Phase 5 | Implement the Preferred Design, including completion of the detail design, preparation of the contract drawings and tender documents, proceed through construction and operation, as well as monitoring of the environmental provisions |

An illustration of the process is included overleaf (Figure 1). This report summarizes how the process has been satisfied.

Figure 1: Municipal Class EA Flow Chart



### 1.3 Purpose of the Project (Problem Statement)

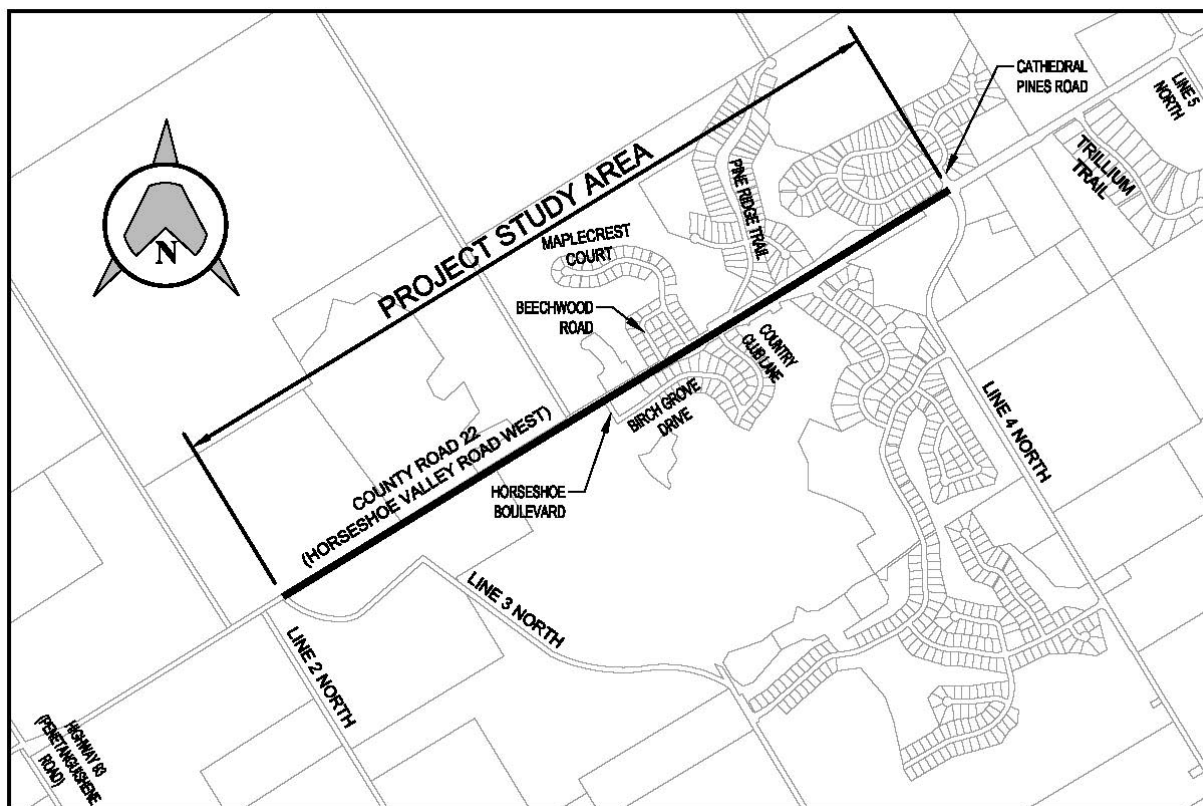
The purpose of the study is to identify appropriate roadway improvements, which will reduce the potential occurrence and severity of accidents and collisions, resulting from impatient drivers passing slow-moving vehicles illegally on the steep hills within the study area. In addition, the study will consider upgrades to the configuration of the various intersections to improve traffic operations, capacity, level of service and safety. These improvements and upgrades will have regard for the future anticipated increase in traffic demands associated with the planned development of the Horseshoe Valley Resort area.

### 1.4 Study Area

The proposed project is located in the Township of Oro-Medonte, one of sixteen municipalities that are part of the County of Simcoe. In 2011, the Township's permanent population was just over 20,000, with seasonal increases. The population is expected to grow to 27,000 by 2031.

As illustrated in Figure 2, below, the study area encompasses County Road 22, also referred to as Horseshoe Valley Road, from 3<sup>rd</sup> Line to 4<sup>th</sup> Line, a distance of just over 3 km.

**Figure 2: Project Study Area**



For the purposes of the planning process and to facilitate the consideration of alternative solutions, it was decided that the project should be divided into two main components, as follows:

Project A – Roadway Improvements

Project B – Intersection Improvements

However, both projects have been considered and documented under one environmental assessment planning process.

## 1.5 Project Team

The project team for this Class EA consisted of the following parties:

- County of Simcoe – The proponent, providing overall input and direction throughout the study.
- Ainley & Associates Limited – The lead consultant, providing transportation engineering and planning consultation.
- Archaeological Assessment Limited – Stage I Archaeological Assessment.
- J. E. Coulter Associates Limited – Noise/Vibration Assessment.
- Tarandus Associates Limited – Natural Heritage.
- Soil Engineers Limited – Baseline Hydrogeological Assessment.
- McElhanney Consulting Services Limited – Intersection Control Value Study, which was peer reviewed by CIMA+.

## 1.6 Planning Policy and this Municipal 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 and municipal planning goals.

The Provincial Policy Statement (as updated in 2014) provides policy direction relating to land use planning and development in Ontario. It supports an efficient land use system that provides for development and all of its aspects, including the provision of employment lands, housing, Open Space, infrastructure, public service facilities etc., but in a manner that makes wise use of the provinces resources (i.e. natural heritage resources, water, agriculture etc.) and protects the public from natural and man-made hazards. Section 3.0 of the Planning Act stipulates that all decisions affecting planning matters are to be consistent with the Provincial Policy Statement (PPS). More specifically, Section 1.1.3 of the PPS provides direction for settlement areas indicating that these should be regenerated and that development standards should be promoted. Section 2.0 provides direction for the protection of the Province's resources including, natural heritage features, water, agriculture as well as cultural heritage and archaeological resources. Section 1.6.5 of the PPS directs that transportation systems be provided that are "safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs."

Additional direction is provided through the Places to Grow initiative based on the Places to Grow Act (2005) that defines where and how growth should occur within a region. The current project study area is found within the limits of an area known as the Greater Golden Horseshoe and, as such, is subject to the "Places to Grow: Growth Plan for the Greater Golden Horseshoe" (2006 as amended in 2013 & 2017) document.

The Growth Plan works within the existing planning framework and provides growth management policy for transportation, infrastructure, land use, housing, resources and natural heritage features. Section 3.2.2 (1) of the Growth Plan directs that transportation systems provide connectivity, offer a balance of transportation choices, be sustainable, offer multi-modal access and provide for the safety of users. The County of Simcoe implements this policy through development of the County's Official Plan that also promotes the wise use of the County's resources and natural heritage features, the efficient use of land, cost-effective servicing, economic sustainability, and public health and safety. The County also completed a Transportation Master Plan to identify high-level improvements to their transportation infrastructure.

The proposed undertaking adheres to the policies of Places to Grow and is consistent with the Provincial Policy Statement. The proposed project will resolve deficiencies, minimize impacts to the environment, and provide infrastructure that will promote the safe movement of system users, including both vehicular traffic as well as pedestrians and cyclists.

## 2. EXISTING CONDITIONS

This section provides a description of the existing natural, physical, cultural, social, and economic environment of the study area. A combination of field investigations and desk top review of existing drawings, reports, studies, and databases were used to establish this inventory.

### 2.1 Natural Environment

#### 2.1.1 Vegetation, Fish, and Wildlife

A Report titled "Natural Heritage Review" was completed by Tarandus Associates Limited and a copy is included in Appendix F. Existing information about the natural environment in the study area was obtained from the Nottawasaga Valley Conservation Authority (NVCA), the County of Simcoe, the Natural Heritage Information Centre (NHIC), the Ontario Ministry of Natural Resources (MNR), air photos, and Ontario Base Map (OBM).

Field surveys were initiated in January of 2013 and were concluded in July, 2013. A total of three visits to the study area were undertaken on January 10<sup>th</sup>, June 8<sup>th</sup>, and July 23<sup>rd</sup>, 2013. During these visits, vegetation was inspected, plant species and communities recorded, and incidental observations of wildlife presences noted. Photographs were also taken to document conditions. MNR's NHIC database and MNR regional biologists were directly consulted regarding species at risk, which could potentially be in the study area.

The study area is located in rural and semi-urban environments with adjacent land uses including a major recreational resort, a golf course, residential developments, and some small relatively natural patches of woodland. The study-area corridor includes several drainage features which are headwater tributaries of the Sturgeon River, all of which are regulated by the NVCA. The entire corridor has been significantly affected by human activity. Not surprisingly, the natural-heritage characteristics reflect these circumstances, with much of the vegetation being ornamental or introduced and fauna consisting of species tolerant of human presence and developed lands.

The following sections provide more specific information related to the existing vegetation, fish, and wildlife of the area.

#### **Fisheries and Aquatic Habitat**

Based on the Tarandus Report, the subject property is located in the Sturgeon River watershed and the three drainage features that cross the County Road 22 study area are all headwater tributaries of the Sturgeon River. The headwaters of this watershed originate between the Simcoe highlands and the western edge of the Oro Moraine. From there, it flows generally northward for about 25 km through the communities of Springwater, Hillsdale, Sturgeon Bay, and Sturgeon Beach to where it discharges to Severn Sound in Georgian Bay. A 4 Mega-Watt small-hydro facility is located at the Rumbles Dam approximately 1.6 km east of Hillsdale, Ontario. The land use in much of the watershed is dominated by agriculture or forest.

Only two drainage features were found to have flowing water during all three site visits to the study area - the tributary which crosses the road immediately west of the entrance to the Horseshoe Valley Resort and

a small drainage feature to the east of the Resort entrance, which crosses County Road 22 and Pineridge Trail. Some other culvert crossings were noted between Horseshoe Valley Resort and the westernmost terminus of the study area. These crossings; however, were dominated by terrestrial vegetation on both sides of the road; there was no evidence of any aquatic habitat associated with these crossings; the gradients were steep; and it is considered likely that they are “equalization culverts” and only convey water during snow melt and periods of high rainfall.

### Existing Terrestrial Habitat

More than 47 species of vascular plants were found in the study area, at least 19 of which were exotic or ornamental. Some vegetation could not be identified to species due of the stage of plant maturity. All species, such as sugar maple (*Acer saccharum*), staghorn sumac (*Rhus typhina*), silver maple (*Acer saccharinum*), white cedar (*Thuja occidentalis*), eastern hemlock (*Tsuga canadensis*), raspberry (*Rubus* sp.), Queen Anne’s lace (*Daucus carota*), common milkweed (*Asclepias syriaca*), Scotch thistle (*Onopordum acanthium*) etc. are considered common throughout southern Ontario.

### Wildlife Habitat

There is no significant wildlife habitat located in the study area.

Birds observed during the field surveys included: American Crow (*Corvus brachyrhynchos*), Mourning Dove (*Zenaida macroura*), House Sparrow (*Passer domesticus*), Blue Jay (*Cyanocitta cristata*), American Robin (*Turdus migratorius*), American Goldfinch (*Carduelis tristis*), European Starling (*Sturnus vulgaris*). Based on habitats existing in the study area, some of the bird species that could also be expected in the vicinity of the County Road 22 corridor include: Savannah Sparrow (*Passerculus sandwichensis*), Ruby-throated Hummingbird (*Archilocus colubris*), Rosebreasted Grosbeak (*Pheucticus ludovicianus*), and House Finch (*Carpodacus mexicanus*), Purple Finch (*Carpodacus purpureus*) and Yellow Warbler (*Dendroica petechia*).

Mammals observed in the study area included raccoon (*Procyon lotor*), groundhog (*Marmotamonax*) common gray squirrel (*Sciurus carolinensis*) and skunk (*Mephitis* sp.) Other small mammals such as mice (*Mus* sp.), voles (*Peromyscus* sp.), shrews, and moles would also be expected in the study area, along with larger mammals such as coyote (*Canis latrans*), white-tailed deer (*Odocoileus virginianus*), and fox (*Vulpes* sp.).

### Woodlands, Wetlands, and ANSIs

There are no significant woodlands or Areas of Natural and Scientific Interest (ANSI) in the study area. Although there are some small pockets of unevaluated wetlands within the study area, there are no provincially, regionally, or locally, significant wetlands.

### Species at Risk (SAR)

Consultation with the MNR revealed the presence of four species at risk (SAR) in the vicinity of the study area. These are American ginseng (*Panax quinquefolius*), butternut (*Juglans cinerea*), milk snake (*Lampropeltis triangulum*), and snapping turtle (*Chelydra serpentina*). Milk snake and snapping turtle are classified as “species of special concern”, both provincially and federally. American ginseng and butternut are “endangered”, both provincially and federally. None of these species at risk were observed in the study area during the 2013 field surveys.

Amphibian and reptile species that might be expected in the study area include the American toad (*Bufo americanus*), Eastern garter snake (*Thamnophis sirtalis sirtalis*), DeKays brown snake (*Storeria dekayi*), and Eastern smooth green snake (*Opheodrys vernalis*). However, none of these are considered to be species at risk. No breeding-amphibian habitat exists in the study area corridor and no breeding amphibian surveys were undertaken. No reptiles were observed during the field surveys.

## 2.1.2 Surface Water and Groundwater

### ■ Surface Water

As noted above, there are two watercourses within the study area. As a result, the project falls within an area regulated by the Nottawasaga valley Conservation Authority (NVCA). Their approval and permitting will be required during detail design.

### ■ Ground Water

Some of the residences and businesses in and around the study area are connected to the Horseshoe Valley Municipal Water Supply System and others are on private well systems. Municipal Well No. 1 & 2 are located on the south side of Horseshoe Valley Road just east of Country Club Lane, within the study area. As a result, the project is considered to be within a well head protection area as well as within a significant groundwater recharge area.

A Report titled "Baseline Hydrogeological Assessment" was prepared by Soil Engineers Ltd. A copy of the Report is included in Appendix J.

The Assessment concluded the following:

- Shallowest depth of groundwater being drawn for drinking water purposes is approximately 27.0 meters below ground surface;
- Average depth of groundwater being drawn for drinking water purposes is about 80.0 meters below ground surface;
- It is not expected that any construction activity (associated with the project) will have an adverse impact on groundwater resources at a depth of 27 meters below ground surface; and
- Future construction and excavation will likely not affect any groundwater supply for wells within a 500 m zone of influence.

The Report suggests that a pre-condition well survey be completed. It also suggests that a contingency plan be put in place for temporary water supply to be made available to property owners in the unlikely event that the drinking water supply is affected by the project. This contingency plan as well as further assessment will be completed during the detail design phase.

## 2.1.3 Geotechnical (Soils Investigation)

Based on the Simcoe County Soil Survey, the soils in the area are expected to be a combination of Tioga loamy sand and Vasey sandy loam, with generally good drainage, but moderately stony characteristics. A detailed geotechnical assessment is not required for the completion of the Class EA. However, it is recommended that a Geotechnical Consultant be retained as part of the detail design for the purposes of confirming existing conditions and providing comment on the proposed construction.

## 2.2 Physical/Technical Environment

### 2.2.1 General

The assessment of the physical environment for this study is predominantly related to the existing transportation infrastructure.

### 2.2.2 Existing Road Conditions

The section of County Road 22 is identified in the County's Transportation Master Plan as a primary arterial road. Through the study area, County Road 22 is a two-lane rural county road providing one travel lane in each direction with a 2 to 3 m gravel shoulder on each side. Upon approaching the 3rd



Line, the horizontal alignment of CR22 is relatively straight. However, there are vertical curves to the east and west of the intersection. There is grade of approximately 3.5% from the west to the east. County Road 22 at the 4th Line is straight and flat. There is a downgrade further to the east (approximately 2.5%) and another downgrade further to the west (gradually changing from 2% to 10%). County Road 22 at the entrance to Horseshoe Valley Resort is straight. However, the road increases in grade to the west (7.5%) and to the east (6.5%).

The 3rd Line is serving as a collector road. Upon approaching County Road 22, the 3rd Line is mainly a two-lane urban/semi-urban road providing one lane of travel in each direction with mountable curbs and paved shoulders (0.5 to 1.0m) on both sides. The road curves to the east and increases in grade (approximately 5%) from County Road 22 to the south.

Horseshoe Boulevard (i.e. Horseshoe Valley Resort entrance) serves as a collector road. Upon approaching County Road 22, it is relatively straight and flat. It has an urban/semi-urban cross-section with a curb and a sidewalk on the east side and a mountable curb on the west side. The road has one lane in each direction and a left turn lane onto County Road 22. At approximately 80m south of County Road 22, the Horseshoe Valley Resort entrance increases in grade and a curb and a sidewalk is provided on the west side. North of County Road 22, High Vista Drive is a private road with one lane in each direction and a gravel shoulder on each side. The road becomes a gravel road at approximately 80m north of County Road 22 and bends to the west and ends at approximately 230m north of County Road 22.

The 4th Line is also serving as a collector road. Upon approaching County Road 22, the 4th Line is a divided road with one lane in each direction, a curbed center island and a gravel shoulder on the east and west sides. The road is relatively flat and bends to the west.

Cathedral Pine Road serves as a collector road. From County Road 22 to approximately 90m north, the road is a divided or one-way only rural road with one inbound lane and one out bound lane and minimal gravel shoulders. The alignment of this section of road is straight and flat. Cathedral Pine Road then becomes a circular road.

### 2.2.3 Traffic

The existing traffic volume data for County Road 22 was obtained from the County of Simcoe and is included in Appendix E. A Traffic Impact Study (Ainley Group, April 2014) was prepared based on the County data and a copy has been included in Appendix G.

A summary of the County traffic data is as follows:

- AADT 6,600 – 8,700 (2033 forecast)
- Percentage of Truck Bypass Volumes is 17%
- 78.6% to 88% of the truck traffic on CR22 are coming from or going to either 3rd Line, Horseshoe Boulevard, or 4th Line on weekdays

The Traffic Impact Study concludes that the roadway and intersections operate satisfactorily under existing conditions and traffic volumes, but with anticipated traffic volume increases through 2023 and 2033, the level of service of the intersections will decrease and will not operate satisfactorily without operational improvements.

### 2.2.4 Utilities

There is existing hydro, gas distribution, telecommunications, and water infrastructure within the study area that may be impacted by the proposed project. Coordination and consultation with affected utility providers will be required during detail design and construction.

## 2.3 Social/Cultural Environment

### 2.3.1 Archaeological and Heritage Resources

A Stage 1 Archaeological Assessment of the proposed widening of County Road 22 was completed by Archaeological Assessments Limited. A copy of the Report is included in Appendix H.

The intent of this study was to identify any registered archaeological sites that might be located within this study area and to estimate the potential for further cultural heritage resources that may be present there.

The result of the Stage 1 assessment indicates that the majority of the proposed study area has already been disturbed by the existing road corridor and no longer has any archaeological potential. However, some areas at the western and eastern ends of the proposed project limits may be undisturbed and do have some potential for both aboriginal and Euro-Canadian archaeological resources. Therefore, a Stage 2 Assessment is required prior to final design and construction.

### 2.3.2 Noise Assessment

A noise impact assessment was completed by J. E. Coulter Associates Limited (May 2017). A copy of the Report is included in Appendix I.

There are no existing noise walls or other barriers within the study area. The noise sensitive areas were identified as typical residential uses and the Horseshoe Valley resort.

Under existing conditions, but with future projected traffic volume increases, it was determined that the noise level at the sensitive areas would be in the order of 60 dB and are considered to be acceptable.

### 2.3.3 Pedestrian/Cycling Facilities

There are currently no dedicated pedestrian or cycling facilities within the study area. Pedestrians and/or cyclists would have to either utilize the existing gravel shoulder or share the road with vehicular traffic.

## 2.4 Economic Environment

### 2.4.1 General

The economic environment plays an important role in all projects considered under any Schedule of Class EA. All impacts on the economics of both the Proponent and the area must be considered.

### 2.4.2 Capital Budget Considerations

Due to the magnitude of the project, the proposed reconstruction will likely be staged over multiple years with the need for advanced planning and the overall budget being subject to Council approval. The project has been included for consideration in the County's capital budget and long term plans.

### 2.4.3 Operations and Maintenance Considerations

As the existing roadway continues to deteriorate, the operations and maintenance costs are increasing. In addition, there are maintenance costs associated with repairing various components of the system that are damaged in motor vehicle collisions.

### 2.4.4 Commercial/Recreation Considerations

There are limited commercial establishments on both sides of the roadway within the study area. The remaining properties are either residential or farm operations. Any proposed project will have an impact

on these properties; therefore, it will be important to maintain access to these commercial establishments during construction and it will be the responsibility of the County and the Contractor to ensure that a traffic plan is designed and implemented to provide access at all times. Ultimately, it is anticipated that following construction of any proposed improvements, there will be a positive economic impact on these properties.

## 3. ALTERNATIVE SOLUTIONS – ROADWAY IMPROVEMENTS (PROJECT A)

### 3.1 Identification of Alternative Solutions

The following three alternative solutions were identified for improving the roadway:

- Alternative Solution #1: “Do nothing”;
- Alternative Solution #2: Add Climbing/Passing Lanes; and
- Alternative Solution #3: Reroute Major Through Traffic / By-Pass Route

A description of each Alternative Solution is summarized below:

#### 3.1.1 Do Nothing

The Class EA process requires that the “Do nothing” alternative be considered. The Do Nothing alternative acts as a comparative benchmark for all of the other alternatives. To that end, no changes or improvements would be considered under the “Do nothing” alternative.

#### 3.1.2 Add Climbing/Passing Lanes

This alternative solution would introduce climbing/passing lanes on County Road 22 between the 3rd and the 4th Lines within the project limits.

Slow moving vehicles can impede traffic flow and pose a safety hazard on significant up-gradients. To alleviate traffic safety issues, climbing lanes are considered as an alternative solution.

#### 3.1.3 Reroute Major Through Traffic / By-Pass Route

This alternative solution would include maintaining the existing roadway in its current state and rerouting the major through traffic to another location. It would avoid major construction and widening of County Road 22 in the project area.

## 3.2 Evaluation Process

### 3.2.1 General

Under the Class EA process, municipalities are required to consider all aspects of the environment in their assessment and evaluation of infrastructure projects. The EA Act includes a broad definition of the “environment”, including natural, social, cultural, physical/technical and economic environments. The Class EA process requires a systematic evaluation of alternatives in terms of their advantages and disadvantages as well as their positive and negative impacts on the environment.

The project team developed criteria, indicators and measures through which to evaluate each of the alternatives that have been identified for Project A (roadway improvements) to fulfill the project objectives.

Once the criteria and indicators were identified, the alternative planning solutions were ranked in an evaluation matrix according to the desirability of each measure. This process was also utilized later in the process to assess the alternative design concepts.

### 3.2.2 Evaluation Criteria

Evaluation criteria are described under four categories as follows:

ENVIRONMENT	EXAMPLES
Natural	Impacts on land; existing fish, vegetation, and wildlife; surface and groundwater
Social & Cultural	Impacts on archaeological and cultural heritage; visual aesthetics, noise, pedestrian environment
Physical/Technical	Impact on condition of infrastructure; vehicular traffic; intersection operations
Economic	Impact on capital costs; operations and maintenance; local residents and businesses

## 3.3 Evaluation of Alternatives

### 3.3.1 Alternative Solution #1: Do Nothing

The Class EA process requires that the “do nothing” alternative be considered as a comparative benchmark. However, the “do nothing” solution, by definition, does not result in substantial opportunities to enhance the public realm in the study area and hence does not address the problem statement. Therefore, no further consideration of this alternative is required.

### 3.3.2 Alternative Solution #2: Climbing/Passing Lanes

Implementation of climbing/passing lanes on County Road 22 was considered. As per the Ministry of Transportation (MTO) geometric design standards for two lane roads:

*“Climbing lanes are introduced on steep up-grades to provide a lane for trucks and other slow-moving vehicles whose speed drops because of the grade. Climbing lanes are warranted by specific grade effects on Level of Service and/or operating speed, rather than a lack of passing opportunity over a long stretch of a two-lane highway.*

*A climbing lane is generally recommended if all three of the following criteria are satisfied:*

- *A speed reduction of 15 km/h for a 180 g/w truck (300 lb/hp);*
- *Up-grade traffic flow exceeds 200 veh/h; and*
- *Up-grade truck traffic exceeds 20 veh/h”*

Based on the available traffic data, all three of the above-mentioned criteria are met within the study area. Furthermore, MTO geometric design standards confirm that slow-moving vehicles, in particular heavy trucks and recreational vehicles, can impede traffic flow and can pose a safety hazard on significant up-grades. To alleviate traffic safety issues, climbing lanes are an appropriate solution to resolve the traffic problem on County Road 22.

Justification for the use of climbing lanes as a means to improve traffic safety was further reviewed based on literature from the American Trucking Association and traffic accident data provided by the County of Simcoe. From this information, the following observations were made:

- 75% of collisions between heavy trucks and cars are due to driver error on the part of the operator of the car, as a result of aggressive driving, speeding, and unsafe passing.
- Between 2001 and 2011, 398 collisions were recorded on County Road 22 (Horseshoe Valley Road).

- The highest number of collisions (43) occurred on the section of Horseshoe Valley Road between the 3<sup>rd</sup> Line and Horseshoe Boulevard.
- Of the 398 collisions, 97% involved an at-fault car driver.
- Passing related head on collisions were the fourth most frequent accident at 7.8% just behind single motor vehicle collisions, rear end collisions, and single motor vehicle collisions with fixed object.

### 3.3.3 Alternative Solution #3: Reroute Major Through Traffic / By-Pass Route

In order to evaluate this alternative, a truck haul route review was carried out by Ainley Group (February 2014) for further consideration of the feasibility of diverting major through traffic onto adjacent roads. A copy of the Assessment is included in Appendix K. The objective of the review was to:

- Assess truck volumes and truck trip distribution on County Road 22;
- Identify alternative major through traffic routes between the area major urban centres (being Orillia and Collingwood);
- Review traffic volumes on the alternative haul routes and assess the suitability of these roads to accommodate additional truck traffic diverted from County Road 22; and
- Review the truck climbing lane warrants and rationale for implementing them on County Road 22 to improve road operations and address traffic safety issues.

Based on a review of the traffic data provided by the County, the following observations were made:

- Truck volumes on County Road 22 are 200% higher on a weekday than on a weekend.
- Roughly 20% of truck traffic is bypass volume, meaning that it travels through the project study area whereas roughly 80% of the truck traffic on County Road 22 is either originating from or bound for 3<sup>rd</sup> Line, Horseshoe Boulevard, or 4<sup>th</sup> Line.

As a result, a truck by-pass may not resolve the issue. Despite this, the following truck haul routes between Orillia and Collingwood were considered:

1. County Road 22 (approximately length 38km)
2. County Road 93 (approximately length 50km)
3. County Road 11 (approximately length 45km)
4. Highway 11 (approximately length 54km)

The following criteria were used in the assessment of the identified truck routes:

- Route length/travel distance
- Route travel time
- Traffic volumes, including percentage of heavy trucks
- Physical environment (road topography, profile, alignment, geometrics)
- Social environment (societal impacts, residential communities and schools)
- Road classification (provincial highways, county arterial, and township local roads)
- Road surface condition (paved, gravel)
- Cost (road improvement costs)

Existing traffic volumes on each of the truck by-pass routes were assessed based on historical traffic count data provided by the County of Simcoe from 2002 to 2011 and updated traffic counts taken in June 2013 and January 2014 (for Horseshoe Valley Road only).

Based on the evaluation of each potential truck route, County Road 22 was determined to represent the most suitable route for the following reasons:

- Shortest distance and most direct route between origin and destination points
- Least impact on the social environment (i.e. settlement areas) compared to others
- Physical environmental conditions at Horseshoe Resort comparable to steep hills at east end of County Road 11 (Old Barrie Road)
- Diverting truck traffic onto County Road 11 (Old Barrie Road) will have a negative impact on the residential communities and school (located just west of the Hamlet of Edgar)
- Upgrading local Township roads to accommodate diversion of truck traffic is cost prohibitive
- Road upgrade costs on County Road 19 and County Road 11 to address horizontal and vertical deficiencies comparable to road improvement costs on County Road 22

Based on this review, it was determined that no further assessment of the rerouting of major through traffic is warranted.

### 3.4 Evaluation Matrix

In addition to the above considerations, each alternative solution was ranked against the four evaluation criteria and the results are summarized in the Table below.

**Table 1: Evaluation Matrix – Roadway Improvements (Project A)**

	#1 Do Nothing	#2 Climbing/Passing Lanes	#3 Diverting Truck Traffic
<b>Natural Environment</b>	<ul style="list-style-type: none"> <li>● No disturbance to existing Natural Environment</li> <li>● Does not allow for improved SWM infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>● Minimal anticipated impact as the corridor has been impacted by human activity and no evidence of SAR, habitat or other ANSI was found</li> <li>● Allows for improved SWM infrastructure</li> <li>● Allows for replacement of crossing culverts to improve drainage</li> </ul>	<ul style="list-style-type: none"> <li>● Disturbance to existing Natural Environment would be greater due to increased scope of work to upgrade alternative roads where there may be natural heritage features that would need to be reviewed</li> <li>● Does not allow for improved SWM infrastructure</li> </ul>
<b>Social and Cultural Environment</b>	<ul style="list-style-type: none"> <li>● No impact to existing businesses and residences</li> <li>● No impact to archaeological or heritage resources</li> <li>● No negative noise impacts</li> <li>● Does not improve pedestrian and cycling environment</li> </ul>	<ul style="list-style-type: none"> <li>● Supports vehicle movement for adjacent businesses and residences in the corridor</li> <li>● Minimal impact to archaeological and heritage resources</li> <li>● Anticipated noise levels will be within acceptable limits</li> <li>● Provides opportunity to improve pedestrian and cycling environment</li> </ul>	<ul style="list-style-type: none"> <li>● Some improvement to existing residents, but potential negative impact to existing businesses that rely on movement of goods</li> <li>● May increase noise elsewhere, which would need to be reviewed</li> <li>● Does not improve pedestrian and cycling environment</li> </ul>

**Table 1: Evaluation Matrix – Roadway Improvements (Project A) - Continued**

	#1 Do Nothing	#2 Climbing/Passing Lanes	#3 Diverting Truck Traffic
<b>Technical Environment</b>	<ul style="list-style-type: none"> <li>Does not address the problem/opportunity statement</li> </ul>	<ul style="list-style-type: none"> <li>Alleviates existing safety issues on CR 22.</li> <li>Provides opportunity to incorporate additional improvements, including pedestrian and cycling facilities</li> </ul>	<ul style="list-style-type: none"> <li>Does not allow for addition of climbing lanes on CR22 or other improvements</li> <li>Increases truck traffic on alternative roads and potentially creates safety issues elsewhere</li> </ul>
<b>Economic Environment</b>	<ul style="list-style-type: none"> <li>No capital cost of construction</li> <li>Operations and Maintenance Costs will continue to increase</li> <li>Does not support vehicle movement for adjacent current and future businesses and residences</li> </ul>	<ul style="list-style-type: none"> <li>Capital Cost of construction is less than Alternative 3</li> <li>Provides for roadway renewal, which may reduce operations and maintenance costs</li> <li>Supports vehicle movement for adjacent current and future businesses and residences</li> </ul>	<ul style="list-style-type: none"> <li>Capital cost of construction for alternative roads would be much greater</li> <li>Does not support vehicle movement for adjacent current and future businesses and residences</li> <li>Operations and Maintenance costs will increase with continued use of road and no improvements</li> </ul>
<b>Summary</b>			

- ☐ Denotes a high negative impact based on the specific criteria being evaluated.
- ◐ Denotes that particular alternative is placed in between the low and high ranking based on the criteria being evaluated.
- Denotes a low negative impact based on individual criteria being evaluated.

### 3.5 Selection of Recommended Alternative Solution

Based on the evaluation of all alternatives, Alternative Solution 2 – Climbing/Passing Lanes on County Road 22 is the most balanced approach as it addresses the problem statement, providing a higher level of service and alleviating the safety issues while minimizing negative impacts to the various environments.

Therefore, the addition of climbing lanes within the project study area was identified as the recommended solution (Phase 2) to address traffic concerns on County Road 22 within the study limits.

## 4. ALTERNATIVE SOLUTIONS – INTERSECTION IMPROVEMENTS (PROJECT B)

### 4.1 Identification of Solutions

In order to identify alternative solutions, the project team felt it necessary to first classify the intersections into those that are considered to be primary intersections with a higher volume and those that are considered to be secondary intersections with a lower traffic volume.

#### 4.1.1 Primary Intersections & Alternative Solutions

The following intersections were classified as primary:

- 3<sup>rd</sup> Line
- 4<sup>th</sup> Line
- Horseshoe Boulevard (i.e. main entrance to Horseshoe Valley Resort)

The alternative solutions to improve the primary intersections include:

Alternative Solution #1 – Do nothing (for baseline comparison);

Alternative Solution #2 – Add turning lanes and maintain stop control;

Alternative Solution #3 – Add turning lanes and install traffic signals; and

Alternative Solution #4 – Utilize roundabouts

#### 4.1.2 Secondary Intersections & Alternatives Solutions

The following intersections were classified as secondary:

- Beechwood Road
- Maplecrest Court
- Pineridge Trail
- Country Club Lane

The alternative solutions to improve the secondary intersections include:

Alternative Solution #1 – Do nothing (for baseline comparison);

Alternative Solution #2 – Add right turn tapers and maintain stop control;

Alternative Solution #3 – Add dedicated left turn lane and right turn taper and maintain stop control; and

Alternative Solution #4 – Close/Remove intersection.

### 4.2 Evaluation Process

A similar process was applied for the evaluation of the alternative solutions identified for the primary intersection improvements, including the same general criteria.



### 4.3 Evaluation of Primary Alternative Solutions

#### 4.3.1 Alternative Solution #1: Do Nothing

Once again, the Class EA process requires that the “do nothing” alternative be considered as a comparative benchmark. However, the “do nothing” alternative solution, by definition, does not result in substantial opportunities to enhance the public realm in the study area and hence does not address the problem or opportunity statement.

#### 4.3.2 Alternative Solutions #2, 3, & 4: Intersection Improvements

Viable alternative solutions for the improvement of the existing roadway intersections include:

- Two-way stop control
- Signalization
- Roundabout

#### 4.3.3 Stop Control, Signalization, and Roundabouts

In order to assess the best technical solution for the three primary intersections, McElhanney Consulting Services Limited was retained to undertake an Intersection Control Study, taking into consideration the traffic volumes, truck traffic, and anticipated need for climbing lanes.

The study built upon the analysis completed in the Traffic Impact Study, which had recommended maintaining two-way stop control on the side streets at Horseshoe Boulevard and 4<sup>th</sup> Line, but signalization at 3<sup>rd</sup> Line. Given the safety concerns along the study corridor, roundabouts were proposed as an alternative.

The following was considered for all three alternative solutions:

- Peak hour traffic operations (Queue and delay analysis)
- Future safety performance
- Capital cost estimates
- Operations and Maintenance costs

### 4.4 Evaluation Matrix

The following evaluation was included in the McElhanney report and is reprinted here for ease of reference:

**Table 2: Evaluation Matrix – Intersection Improvements (Project B)**

Category	Criteria	Intersection Control		
		Two-Way Stop	Signalization	Roundabout
Driver Expectation	Driver Security and Comfort	◐	◑	◒
	Driver perception of safety	○	◑	◑

**Table 2: Evaluation Matrix – Intersection Improvements (Project B) - Continued**

Category	Criteria	Intersection Control		
		Two-Way Stop	Signalization	Roundabout
Operations	High mobility on CR 22	●	◐	◑
	Delay and queuing on crossroads	◑	◐	◑
	Goods movement/truck accommodation	◑	◐	◑
	Residual capacity	○	◐	◑
	Travel time	●	◐	◑
	Pedestrian and cyclist accommodation	○	◐	◑
Design	Adherence to standards and policy	◑	◐	◑
Development	Favourable to adjacent land uses	◑	◐	◑
Costing	Lifecycle costs	○	◑	◑
	Societal costs of collisions	○	◑	◑
	Capital costs	●	◐	◑
	Operations and maintenance costs	◑	◐	◑
	User costs	◐	◑	◑
Physical Impact	Utility Impacts	●	◑	◑
	Property Impacts	●	◑	◑
	Constructability	●	◑	◑
Environmental	Noise	◑	◐	◑
	Environmental Impact	◐	◐	◑

- Denotes a high negative impact based on the specific criteria being evaluated.
- ◑ Denotes a relatively high negative impact based on the specific criteria being evaluated.

- Denotes that particular criteria is placed in between the low and high ranking based on the individual criteria being evaluated.
- Denotes relatively low negative impact based on individual criteria being evaluated.
- Denotes a low negative impact based on individual criteria being evaluated.

## 4.5 Selection of Recommended Alternative Solution

Ultimately, the McElhanney assessment recommended that roundabouts be constructed at all three primary intersections. The report was then peer reviewed and essentially validated by another engineering firm, CIMA+, in March 2016. The McElhanney Report was subsequently finalized in September of 2016. Copies of both Reports are included in Appendix L for reference. It is recommended that both of these Reports be reviewed during detail design.

The evaluation of the alternatives for the secondary intersections did not require as extensive of consideration and was based predominantly on traffic needs as well as safety with the recommended solution being a combination of all alternatives, including adding right turn tapers at all intersections, adding a median left turn lane between Horseshoe Boulevard and Country Club Lane, and closing the intersection of Beechwood Road.

With Phase 2 complete, as per the Class EA process, no further analysis of the intersections is required. As a result, moving through Phase 3, the recommended solution for the intersections will not change and will apply consistently to all options being considered for the roadway portion of the project.

# PHASE 3

## 5. ALTERNATIVE DESIGN CONCEPTS

### 5.1 Description of Alternative Design Concepts

With the preferred solution identified for the roadway in Phase 2, three alternative design concepts were evaluated, including:

- Rural cross-section (with 3.75 m climbing lanes and 3.0 m paved shoulder);
- Semi-urban cross-section (with 3.75 m climbing lanes, curb and gutter on one-side, and 3.0 m paved boulevard); and
- Urban cross-section (with 3.75 m climbing lanes, curb and gutter on both sides and 3.0 m paved boulevard).

In general, the horizontal alignment of all three alternative design concepts follows the centerline of the existing roadway. Further, all alternatives include recommended upgrades to existing drainage problems, replacement of culverts, addition of illumination at sideroad intersections, roadside safety upgrades, and correction of vertical alignment deficiencies.

Finally, as previously noted, all design concepts must accommodate the recommended solution for the various intersections, as identified in Phase 2.

## 5.2 Environmental Impacts and Mitigating Measures

### 5.2.1 General

It is important in the Class EA process to review the alternative design concepts for the effects that they may have on the environment and determine what mitigating measures are required, if any. The previously identified environments discussed in Section 3.0 of this report have once again been analyzed in order to select a preferred design alternative that addresses safety issues, minimizes the impact on the environment, including property acquisition, and provides a long-term cost-effective solution.

### 5.2.2 Natural Environment

#### ■ Vegetation, Fisheries, and Wildlife

The proposed road-widening works are located in a transportation corridor with adjacent urban, rural and recreational land uses. The study area is also one in which there is much ongoing human and vehicular activity and much existing disturbance and development. The ecological functions of the study area are limited; and as a result, the potential effects of the proposed road widening on the natural environment are not considered to be significant.

There are, nevertheless, some potential effects which would occur such as the loss of mature native trees and other existing native vegetation in those areas which will be cleared and re-graded to accommodate the road widening.

The loss of road side vegetation required to permit the development in either concept will have an inconsequential impact on the vegetation communities and the associated natural heritage functions in the adjacent areas. In addition, the majority of the road expansion will be within ditch areas associated with the road ROW which represents disturbed vegetation communities.

None of the vegetation communities or vegetation documented within the study area is of federal or provincial conservation concern.

There are two drainage features which were found to have flowing water during all site visits; however, there was no evidence of any aquatic habitat associated with these crossings. The proposed road widening will require replacement and extension of these existing crossings, but the impact on fisheries is expected to be minimal.

Detailed recommendations and mitigation measures are found in the Natural Heritage Review Report included in Appendix F.

### 5.2.3 Physical/Technical Environment

The main objectives of the proposed improvements are to address the safety issues of uphill passing on County Road 22 and provide traffic capacity for existing and future traffic volumes.

All three alternative design concepts will address these issues.

### 5.2.4 Social/Cultural Environment

#### ■ Archaeological and Historical

A Stage 1 archaeological assessment was completed for this assignment. The result of the Stage 1 assessment indicates that the majority of the proposed ROW has already been disturbed by the existing road corridor and no longer has any archaeological potential. However, a Stage 2 assessment is recommended for a portion of the proposed alignment. That assessment will be completed as part of the final design process.

For further details on the archaeological assessment completed for this project, please refer to Appendix H.

### **Noise**

A potential impact resulting from the expansion of the roadway is noise level increase. This is consistent for all alternative design concepts. The J. E. Coulter Study included a review of noise levels with consideration for the future roadway widening and proximity to existing residences. The analysis found that the project will not impact sound levels at all noise-sensitive receivers along County Road 22. As a result, mitigative measures to eliminate noise level increase such as acoustic barriers are not required to satisfy Ministry of Environment protocol as the implementation of the project does not increase the sound level by 5 dB or more. For further details on the noise assessment completed for this project, please refer to Appendix I.

### **Pedestrian/Cycling Facilities**

All three alternative design concepts provide for some level of accommodation of pedestrian and cyclist traffic, which are an improvement over the existing condition.

### **Recreation**

Significant recreational areas are located in the surrounding area. In addition to regular commuter traffic, increases in recreational volumes occur during several months throughout the summer and winter.

All alternatives provide improvements to the overall capacity problems experienced in the study area.

Construction activities may impact access to recreational activities; however, this can be mitigated through proper construction staging and traffic control.

## **5.2.5 Economic Environment**

A large portion of the costs are fixed and equivalent for all design concepts as a result of large quantity items such as asphalt, granular road base, streetlighting, guiderail, etc. It is recognized that typically a rural cross-section is less costly than an urban design. The cost difference is predominantly related to the handling of stormwater (i.e. ditches vs. curb, gutter, and storm sewer). However, in this case, the additional property acquisition that would be required to accommodate the rural cross-section offsets the savings.

## **5.3 Selection of the Preferred Design**

### **5.3.1 Factors Used to Evaluate Alternative Designs**

The factors used to evaluate the various alternatives are made up of concerns regarding the natural, physical/technical, social/cultural, and economic environments. These factors are divided into either primary or secondary groupings based on the impact that the alternatives have on the factor. Primary factors are those factors that the alternatives significantly impacted; while secondary factors are those factors the alternatives had a reduced impact. The rankings as either primary or secondary does not suggest the secondary factors are any less important but rather the proposed alternatives do not have significant impact on the secondary factors. All the factors were assessed to determine the impact that each alternative had on them.

#### **5.3.1.1 Primary Factors**

A total of four factors were considered highly significant with respect to the alternatives. These factors are safety, improved traffic capacity, cost, and the number of properties affected.

- **Safety**  
The main objective of this project is to improve safety for residential and commercial traffic within the study area. If the alternative did not effectively accomplish this objective it was given a poorer rating.
- **Improved Traffic Capacity**  
The alternatives were assessed based on how they improve traffic capacity within the study area. If the alternative did not effectively accomplish this objective, it was given a poorer rating.
- **Cost**  
Each alternative was assessed according to preliminary cost estimates. These costs include property acquisition as well as construction. The higher the cost the lower the evaluation rating.
- **Number of Properties Affected**  
In some cases, additional property is required to construct the alternative (urban vs. rural). Alternatives requiring a wider cross-sectional width require the purchase of a number of properties to accommodate construction. Factors are rated higher for having lower impact and rated lower for having a higher impact on properties.

### 5.3.1.2 Secondary Factors

A total of three factors were found to be of secondary importance for this project. The alternatives had minimal and similar effect on these factors and can be mitigated with any of the alternatives. These factors are archeology/heritage, commercial, and recreation.

- **Archeological/Historical**  
The stage 1 archaeological assessment concluded that the majority of the proposed right-of-way has been disturbed by the construction of the existing road corridor. However, there are sections of undisturbed land at the eastern and western ends of the Study Area which will require a Stage 2 archaeological assessment prior to construction.
- **Commercial**  
All of the alternatives were assessed for their ability to service and provide access to the commercial properties.
- **Recreation**  
All of the alternatives involve maintaining access to existing recreational areas and include the introduction of a 3.0-meter paved shoulder for pedestrian and bike traffic.

## 5.3.2 Preferred Alternative

### **Rural Cross Section**

This alternative provides the necessary capacity improvements and alleviates safety issues with climbing lanes. However, it requires the purchase of property to accommodate the road widening. Due to the existing road geometry, a rural cross section would require relatively more property acquisition and, as a result, it would have a higher overall cost and an impact on adjacent property owners. In addition, with the steep gradients, stormwater runoff would not be easy to control and there may be maintenance issues, including shoulder and embankment erosion.

### **Semi-Urban Cross Section with Climbing Lanes**

This alternative provides the same roadway capacity and safety improvements as the other two. It would also slightly reduce the required property acquisition and associated costs. Further, it would help to alleviate some of the potential erosion issues; however, stormwater control may still be somewhat problematic.

### **Urban Cross Section with Climbing Lanes**

This alternative provides the same roadway capacity and safety improvements as the other two. Of the three alternative concepts, it would require the least amount of property acquisition and associated costs.

Having curb and gutter will provide for stormwater control options and would also provide both a visual and physical barrier between vehicular traffic and pedestrians/cyclists using the paved boulevard. It also provides for the easiest transition to the roundabouts at the primary intersections, which by design, will have curb and gutter. It is considered that the additional cost for stormwater infrastructure would be more than offset by avoiding property acquisition costs.

Based on the evaluation of the factors and, as described above, the three-lane urban alternative, including climbing lanes in both eastbound and westbound directions has been selected as the preferred design concept.

Improvements will include urbanization through the roadway corridor including a 3.0-meter paved shoulder for pedestrian and cyclist use, bus lay by lanes and a median left 2-way turn lane. The alternative provides a balanced solution to the problem statement. It provides a high level of service while alleviating existing safety issues with moderate cost in comparison to the alternative solutions. Also, the intersections at 3rd Line, Horseshoe Boulevard and 4th Line will be converted from two-way stop control intersections to roundabouts.

## 6. PROJECT DESCRIPTION

### 6.1 Engineering Aspects of the Works

The engineering aspects of the proposed project play a significant role in the design of County Road 22 and include a review of the geometry, safety, roadway conditions and intersections.

#### 6.1.1 Overall Geometry

##### **■ Cross Section**

The preferred alternative will provide a two-lane urban cross section with climbing lanes and a 3.0 meter paved shoulder for the majority of the project. The preliminary design is shown on Ainley Drawings 112166 PP-1 to PP-3 (copies included in Appendix D). At both eastbound and westbound uphill portions of the roadway corridor, climbing lanes will be introduced to allow vehicles to safely pass slower moving vehicles.

Between Horseshoe Boulevard and Country Club Lane, a median 2-way left turn lane will be provided and right turn lanes will be introduced at all intersections. Also a bus lay by lane is proposed to be provided between Pine Ridge Trail and Maplecrest Court.

The intersection at County Road 22/3rd Line will be a single-lane urban roundabout and will include a mountable apron and three approach legs from the east, west and south.

The County Road 22/Horseshoe Boulevard intersection will be a single-lane urban roundabout and will include a mountable apron and four approach legs.

The County Road 22/4th Line will be a multi-lane urban roundabout with two lanes for the eastbound approach leg and eastbound exit. All other approaches are single lane. This roundabout will also include a mountable apron.

All the roundabout intersections will include pedestrian crossings at all legs.

The intersection with Beechwood Road will be closed/gated, but will remain available for emergency use only.

The design work will be coordinated to ensure a consistent geometry per County and Provincial standards.

## Roadway Alignment

The horizontal alignment is tangent throughout the project length. Curves will be introduced for approach legs for the roundabouts for speed control. However, the alignment will generally match the existing centerline of County Road 22.

The existing vertical alignment will generally be maintained throughout the corridor, with localized improvements implemented, where possible to meet design standards.

### 6.1.2 Roadside Safety

The roadway will be upgraded to meet current roadside safety standards. The roadway widening will require removal of obstacles such as trees to offsets in conformance with current safety standards. Existing cable guiderail systems will be removed and replaced as part of the design and construction. Steel beam guiderail systems including end treatments will be introduced at several locations to meet current standards due to the height of roadway embankments.

### 6.1.3 Roadway Condition

The roadway currently shows significant asphalt wear. Transverse and longitudinal cracking is observed throughout the roadway section. Due to this, and the widening of the roadway, reconstruction is required. The improvements will result in improved pavement ride quality within the project limits.

A geotechnical soils investigation will be completed during detailed design to investigate the subsurface soil condition. The work will provide input for pavement structure design requirements including granular base course and asphalt pavement design recommendations with consideration for the volume of truck traffic. The work will also include investigations for the replacement of roadway crossings, including soil bearing capacity. Soil samples will be taken during the geotechnical investigations for chemical analysis. Contaminated soils are not anticipated, but should be assessed for general re-use and/or excess disposal requirements. Phase I and II Environmental Site Investigations may be carried out during detail design if required. A preliminary hydrogeological assessment has been carried out as part of the Environmental Assessment. Further work will be required during detail design to establish existing water well quality levels for baseline purposes prior to construction as well as permitting requirements.

### 6.1.4 Drainage

The drainage concept is to convey roadway drainage using curb and gutter for the minor storm events. Urban cross-sections may also include small portions of storm sewers and/or gutter outlets to maintain positive drainage. Consultation with the NVCA will be required to determine the requirements for stormwater quantity and quality control.

### 6.1.5 Miscellaneous

A review and the incorporation into the design of a number of miscellaneous items are listed as follows:

- Landscaping and tree/bush reinstatement in areas where species have been removed and require replacement. Tree replacement or compensation will be made.
- Pavement markings and signage will be upgraded.
- Retaining wall systems will be installed throughout the study area in order to ensure the embankment slopes maintain within the right-of-way.
- Illumination will be reviewed/added at all intersections.
- Temporary radar speed signs



## 6.2 Utilities

The existing utilities and the name of the operating authority are as follows:

- Communications Cable – Bell Canada, Rogers Cable
- Hydro – Alectra (formerly Power Stream) – Barrie, Hydro One
- Natural Gas – Enbridge Gas

There will be impacts to utilities as a result of the detail design and affected providers will need to be consulted.

## 6.3 Agreements/Approvals

Agreements and approvals are required from several agencies to carry out the construction including, but not limited to:

### 6.3.1 Nottawasaga Valley Conservation Authority

Work near or in an existing regulated area will require approval and permitting from the NVCA.

### 6.3.2 Ministry of Environment and Climate Change

Installation of storm sewers and quality controls will require an Environmental Compliance Approval from the MOECC. Further, dewatering may be required at locations where culvert replacements are taking place. If the dewatering is found to be considerable, a permit to take water may be required from the MOECC prior to construction to permit the work to proceed.

### 6.3.3 Township of Oro-Medonte

The project is within the jurisdiction of the Township of Oro-Medonte. Upgrades will be required on various sideroads throughout the roadway corridor and consultation will be required.

# 7. PUBLIC CONSULTATION PROCESS

## 7.1 Public Notification

### 7.1.1 Study Commencement Notice

An advertisement was placed in Barrie Advance on April 18th and April 23rd, 2013 (Study Commencement Notice) regarding the County's intention to carry out a Class EA process for this project. A copy of this advertisement can be found in Appendix A. The advertisement informed the public that the County was planning to undertake a Class EA to address existing and future traffic concerns and develop improvements of County Road 22 east and west of Horseshoe Boulevard (i.e. Horseshoe Valley Resort main entrance) in the Township of Oro-Medonte. Additionally, the advertisement informed the public that the County was planning to undertake a Class EA to address existing and future traffic concerns and develop improvements at the intersections of County Road 22/3rd Line North and the intersection of County Road 22/4th Line North in the Township of Oro-Medonte. Letters were also mailed to adjacent property owners, agencies, and other stakeholders.

### 7.1.2 Public Information Centre 1 – November 28, 2013

A Public Information Center (PIC) was held on November 28, 2013 at Horseshoe Valley Resort (Fairway Room) from 4:00pm to 7:30pm.

Letters and a Notice of Public Information Centre Number 1 were mailed to adjacent property owners, agencies and utility companies beforehand. The Notice was also published in the Barrie Advance and Orillia Times. Copies of these are attached in Appendix B.

The notice informed the public that the County of Simcoe was planning to undertake a Class EA for future and existing traffic concerns along County Road 22 and intersection improvements in the study area. The notice also provided the name and address of a contact person and invited the public to attend a PIC to comment on the project.

Staff from the County of Simcoe and the Ainley Group were in attendance. Also in attendance were representatives from the Horseshoe Valley Resort Homeowners Association as well as some businesses and agencies. In total, sixty-six people signed the attendance sheet, including members of the public and agencies. A total of sixty-eight comment sheets, including email submissions, were received in response to the PIC. A summary of discussions is attached in Appendix B.

### 7.1.3 Public Information Centre 2 – May 12, 2014

A Public Information Centre (PIC) was held on May 12, 2014 at the Horseshoe Valley Resort (Alpine Room) from 5:00pm to 9:00pm.

Once again, letters to adjacent property owners, agencies and utility companies were mailed out and the Notice was published in the local newspapers in advance of the PIC. Copies of these are attached in Appendix C.

Staff from the County of Simcoe and the Ainley Group were in attendance. Also in attendance were representatives from Horseshoe Valley Resort as well as some businesses and agencies. In total, 106 people signed the attendance sheet, including members of the public and agencies. A total of forty-nine comment sheets, including email submissions, were received in response to the PIC. A summary of discussions is attached in Appendix C.

### 7.1.4 Public Information Centre 3 – September 29, 2016

A Public Information Centre (PIC) was held on September 29, 2016 at the Horseshoe Valley Resort (Horseshoe Center Room) from 6:00pm to 9:30pm.

Once again, letters to adjacent property owners, agencies and utility companies were mailed out and the Notice was published in the local newspapers in advance of the PIC. Copies of these are attached in Appendix D.

Staff from the County of Simcoe and the Ainley Group were in attendance. Also in attendance were representatives from the Horseshoe Valley Resort Homeowners Association as well as some businesses and agencies. In total, 105 people signed the attendance sheet, including members of the public and agencies. A total of thirty-five comment sheets, including email submissions, were received in response to the PIC. A summary of discussions is attached in Appendix D.

## 7.2 Agency and Public Concerns

### 7.2.1 General

Public concerns were addressed during the Class Environment Planning process. Concerns raised by individuals were incorporated into the Class EA process where applicable. Some of the concerns that were raised by the public included:

- The climbing lanes would increase speeds on Horseshoe Valley Road;
- The climbing lanes would increase heavy vehicle traffic through the area;
- There would be impacts on private property, existing water wells and septic systems; and
- The pedestrian crossing at 4th Line is unsafe.

These concerns were considered in the study and incorporated into the Class EA planning process. Records of agency and public correspondence, including responses to concerns are provided in Appendices B, C and D.

### 7.2.2 Action Items Resulting From PIC # 2

A review of the items requiring future consideration by the County – arising from PIC # 2 – is summarized as follows:

- Update Transportation Master Plan;
- Consider partial illumination at each intersection;
- Consider additional signage advising – “Residential Area – Avoid Using Engine Brakes – Excessive Noise Prohibited”;
- Consider paving shoulders for added safety;
- Operational noise constraints will be implemented during construction;
- Consider other safety measures – additional warning and regulatory signage, temporary/permanent speed radar signs, flashing amber lights and additional police presence;
- Consider extending 70 km/hr speed limit to beyond Trillium Trail in the east and past the entrance to Settlers Ghost in the west;
- Consider reducing speed limit to 60 or even 50 km/hr; and
- Maintain access to all private residences during construction.

### 7.2.3 Action Items Resulting From PIC #3

A review of the items requiring future consideration by the County - arising from PIC # 3 - is summarized as follows:

- Consideration of an eastbound right turn lane at Trillium Trail including “other improvements” at this location which could include a westbound left turn slip-around lane and a paved shoulder extending from the 4th line to Trillium Trail;
- The design of the asphalt shoulder....may involve options such as signage, pavement markings etc.;
- County to consider extension of a paved bike trail as far as 5th Line;
- Consideration of extension of paved shoulder from 4th Line to Trillium Trail and on to 5th Line;
- Consideration of pavement markings and signage for bike lanes next to climbing lanes;
- Extension of paved shoulders to 5th Line – future resurfacing project;

- Consider emergency access lane to closed Beechwood Rd., including a locked gate, to mitigate delays to fire hydrant access;
- Consider opportunities to improve sightlines through clearing of vegetation;
- Following construction, conduct speed studies to examine and monitor effects of reconstruction. Consider changes to posted speed limits;
- Undertake a Geotechnical Study and a Pavement Design Report as part of detailed design;
- Consult affected land owners to commence process of land acquisition, including legal surveys and land appraisals; and
- Determine volume of fill required to construct climbing lanes.

#### 7.2.4 Traffic Warrant Analysis

The County provided traffic data for County Road 22 for 2011 and 2014 as follows:

##### 2011

- Traffic count 7th Line to Horseshoe Valley Resort entrance – May 3 to May 5, 2011
- Traffic count Horseshoe Valley Resort entrance to County Rd. 93 – May 3 to May 5, 2011
- Vehicle Class information 7th Line to Horseshoe Valley Resort – May 2 to May 6, 2011
- Vehicle Class information Horseshoe Valley Resort to County Rd. 93 – May 2 to May 6, 2011
- Traffic count 7th Line to Horseshoe Valley Resort entrance – August 15 to August 18, 2011
- Traffic count Horseshoe Valley Resort entrance to County Rd. 93 – August 15 to August 18, 2011
- Vehicle Class information 7th Line to Horseshoe Valley Resort – August 15 to August 19, 2011
- Vehicle Class information Horseshoe Valley Resort to County Rd. 93 – August 15, to August 19, 2011
- Traffic count 7th Line to Horseshoe Valley Resort entrance – Oct 17 to Oct 20, 2011
- Traffic count Horseshoe Valley Resort entrance to County Rd 93 – Oct 18 to Oct 19, 2011

##### 2014

- Traffic count 7th Line to Horseshoe Valley Resort entrance – Spring 2014
- Traffic count Horseshoe Valley Resort entrance to County Rd. 93 – Spring 2014
- Vehicle Class vs. Length 7th Line to Horseshoe Valley Resort entrance – Spring 2014
- Vehicle Class vs. Length Horseshoe Valley Resort entrance to County Rd. 93 – Spring 2014
- Vehicle Class 7th Line to Horseshoe Valley Resort entrance – Spring 2014
- Vehicle Class Horseshoe Valley Resort entrance to County Rd. 93 – Spring 2014
- Vehicle speed 7th Line to Horseshoe Valley Resort entrance – Spring 2014
- Vehicle speed Horseshoe Valley Resort entrance to County Rd. 93 – Spring 2014
- Vehicle Class vs. Speed 7th Line to Horseshoe Valley Resort entrance – Spring 2014
- Vehicle Class vs. Speed Horseshoe Valley Resort entrance to County Rd. 93 – Spring 2014
- Accident data – January 2001 to December 2011

Copies of this data are included in Appendix E.

This information was assessed by Ainley Group to determine the need for climbing lanes within the study area. The assessment was summarized in a memo to the County dated November 18, 2011. Due to the significant number of concerns expressed by the public following the recommendation for the provision of climbing lanes, the County retained the services of CIMA + to provide a peer review of the Ainley analysis. The CIMA + review was provided to the County in June 2014. That review made 5

recommendations. Ainley responded to those 5 recommendations in a Memorandum to the County dated October 20, 2014. A copy of the Memorandum is included in Appendix E. CIMA + responded in a letter to the County dated December 21, 2014. (Copy included in Appendix E).

In summary, CIMA noted the following:

- All three conditions warranting climbing lanes as outlined by GDSOH must be satisfied
- “Including the Class 5 vehicles in the warrant analysis is consistent with the guidance provided by the GDSOH for this analysis”.
- “It confirms that a climbing lane is warranted for both conditions”. (120 kg/kW and 180 kg/kW performance curves)
- “Research on technical specifications of Class 5 vehicles would assist in confirming the desired performance curve to use, but would not alter the outcome of the assessment completed.”
- “...warrant condition 1c is, therefore, satisfied”.
- “CIMA confirms that Ainley followed the guideline indicated in the GDSOH.”
- “Given that the 10% heavy vehicle ratio has been substantiated by recent counts, we find [Ainley Group’s] original assumption reasonable.”
- CIMA “confirms that the inclusion of Class 5 vehicles ...is consistent with the guidance provided in the GDSOH.”
- CIMA “confirms that climbing lanes are warranted in the study area ....”

### 7.3 Meetings

Over the course of the Class EA planning process, several meetings were held to discuss the project and to determine further planning. Copies of the Minutes of those meetings are included in Appendix N.

## 8. MITIGATION AND MONITORING

### 8.1 Mitigation Measures

Environmental impacts (Effects) of the proposed roadway and intersection improvements were considered. The list of “Effects” as provided in Appendix M of the MEA Municipal Class EA was used for the purposes of identifying mitigation measures. A copy of the MEA List is included in Appendix M with suggested mitigation measures for the construction of the proposed works.

Temporary erosion and sediment control measures are proposed to protect from sedimentation that may occur with construction activity. All erosion and sediment control measures are periodically checked during the construction phase of the project to ensure performance and maintenance.

The County will continue to strictly follow its Salt Management Plan. Separation between wells will be maximized. Surface runoff will be diverted away from wells. New or replacement wells if required within the study area must meet the requirements of Regulation 903.

All contractors must follow the municipal bylaws and contract requirements with respect to mitigation of noise produced from construction activities.

## 8.2 Monitoring

Monitoring of the proposed mitigation measures will occur during the construction phase and during the long-term operation and maintenance of County Road 22.

During the long-term operation of the roadway, the growth of the new plantings will be periodically monitored to ensure that the proper plantings were selected and that normal growth is taking place.

Standard roadway maintenance procedures should be followed during the service life of the roadway.

## 9. RECOMMENDATIONS

The following recommendations are proposed to accommodate vehicular traffic on Country Road 22 between 3rd and 4th Line.

- Implement single lane roundabout intersection controls at the 3<sup>rd</sup> Line and Horseshoe Blvd and a multi-lane roundabout at 4<sup>th</sup> Line
- Reconstruct County Road 22 to a 2-lane urban cross section complete with concrete curb and gutter and storm sewer outlets
- Widen County Road 22 to accommodate an eastbound climbing lane from Country Club Lane to just east of 4<sup>th</sup> Line and a westbound climbing lane between Horseshoe Boulevard and 3<sup>rd</sup> Line
- Minimize grading encroachment on private property through the use of retaining wall structures
- Add right turn tapers at all side road intersections, including Trillium Trail
- Install partial illumination (street lighting) at all side road intersections
- Add median left turn lane between Horseshoe Resort and Country Club Lane
- Provide school bus lay by lane adjacent to westbound through lane between Pine Ridge Trail and Maplecrest Crt
- Close Beechwood intersection connection to County Road 22 to eliminate conflict point and improve traffic safety
- Provide 3.0 m wide paved shoulder/boulevard behind curb for pedestrians and bicyclists
- Reduce posted speed limit from 70km/h to 50km/h on approaches to roundabouts
- Place additional pavement markings and signage to promote reduced travel speeds
- Encourage safer driving habits and reduced speeds through increased law enforcement, education and periodic use of speed radar signs
- Illumination improvements at sideroads
- Drainage upgrades and urbanization through the roadway section

The following is a list of further administrative recommendations:

- Prepare the detail design and contract documents to allow for tendering and construction
- Initiate property negotiations to acquire additional right of way necessary to accommodate the construction
- Obtain all necessary approvals and permits from the appropriate agencies for the proposed construction. Agencies include but are not limited to School Boards, Township, Ministry of the Environment, Conservation Authorities and local First Nation Groups
- Initiate contact with affected utilities regarding utility relocations
- Complete geotechnical soils investigations to carry out a subsurface investigation and pavement design

- Stage II Archaeological Assessment
- A Phase I and II Environmental Site Assessment may be completed during detail design to determine the presence of any contaminated property if required, the work will be conducted in conjunction with geotechnical investigations, which will require soil samples to be taken for chemical analysis

## 10. PRELIMINARY COST ESTIMATE

The Total pre-design project cost estimate is approximately \$20,400,000. This cost estimate includes EA planning, detailed engineering design, utility relocation, property acquisition, construction administration and construction. The preliminary cost estimates are detailed in Appendix O and are summarized as follows:

Construction Description	Preliminary Cost Estimate (2017\$)
Roadway Mainline – Phase 1	\$8,500,000
Roadway Mainline – Phase 2	\$7,300,000
3 <sup>rd</sup> Line Intersection	\$1,700,000
Horseshoe Boulevard Intersection	\$1,300,000
4 <sup>th</sup> Line Intersection	\$1,600,000
<b>Total</b>	<b>\$20,400,000.00</b>

It is noted that the cost for Project A (Roadway Improvement) is 100% eligible for Development Charges and; therefore, will not be a financial burden to existing County taxpayers. The cost for Project B (Intersection Improvement) is 40% eligible for Development Charges with the remaining 60% falling to the County tax-based budget. Financing of the County portion of the project is subject to County Council approval. There are a number of potential funding sources available, including Federal Gas Tax, reserves and general tax levy.

## PHASE 4

## 11. NOTICE OF COMPLETION

The Notice of Completion was published in the November 2<sup>nd</sup> and November 9<sup>th</sup>, 2017 editions of the Barrie Advance and Orillia Times newspapers as well as on the County's website. A copy of the Notice has been included in Appendix P. Hard Copies of the ESR document were available for public viewing at the County Administration Centre in Midhurst as well as at the Township of Oro-Medonte Administration Centre until December 1<sup>st</sup>, 2017. A PDF version of the ESR was also available for viewing on the County website.

The public and interested parties were advised to address any outstanding questions or concerns regarding the project to the following individuals:

Mr. Paul Murphy, B.Sc., C.Tech. Engineering Technician II The Corporation of the County of Simcoe County Administration Centre 1110 Highway No. 26 Midhurst, Ontario, L9X 1N6 Fax:(705) 727-7984 Email: paul.murphy@simcoe.ca	Mr. Joe Mullan, P. Eng. President & CEO Ainley & Associates Limited 280 Pretty River Parkway Collingwood, Ontario, L9Y 4J5 Fax: (705) 445-0968 Email: mullan@ainleygroup.com
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Parties were also advised that if concerns regarding the project could not be resolved in discussion with the County, the party with the concern could request that the Minister of the Environment and Climate Change (MOECC) order a change in the project status and require a higher level of assessment under an individual Environmental Assessment process (referred to as a Part II Order). Detailed reasons for the request must accompany the submission and copies of the request must be sent to the following individuals:

Ministry of the Environment and Climate Change 77 Wellesley Street, West 11th Floor, Ferguson Block Toronto, ON, M7A 2T5	Ministry of the Environment and Climate Change Environmental Approvals Branch 135 St. Clair Avenue West, 1st Floor, Toronto, ON, M4V 1P5	Mr. Paul Murphy, B.Sc., C.Tech. Engineering Technician II The Corporation of the County of Simcoe County Administration Centre 1110 Highway No. 26 Midhurst, ON, L9X 1N6
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Finally, it was noted that if no requests were received within 30 days of the first publication of the notice, the County intended to proceed to carry on with the design and construction of the project as presented herein.