

# **Enhancing our communities**



# County Road 53 Improvements - County Road 21 to City of Barrie Limits

CLASS ENVIRONMENTAL ASSESSMENT

County of Simcoe

# **Document Control**

File: Prepared by: Prepared for:

419376 Tatham Engineering Limited County of Simcoe

41 King Street, Unit 4 1110 Highway 26
Date: Barrie, Ontario L4N 6B5 Midhurst, Ontario L9X 1N6

July **T** 705-733-9037 25, 2023 tathameng.com

Authored by:	Reviewed by:
Luchulus	M. J. CHLIP SUSSIDER STREET ST
Jennifer Conners B.Eng., M.Sc., EIT	Michael Cullip B.Eng., & Mgmt., M.Eng., P.Eng.
Engineering Intern	Vice President

Disclaimer	Copyright
The information contained in this document is solely for the use of the Client identified on the cover sheet for the purpose for which it has been prepared and Tatham Engineering Limited undertakes no duty to or accepts any responsibility to any third party who may rely upon this document.	This document may not be used for any purpose other than that provided in the contract between the Owner/Client and the Engineer nor may any section or element of this document be removed, reproduced, electronically stored or transmitted in any form without the express written consent of Tatham Engineering Limited.

Issue	Date	Description
1	July 25, 2023	Final Report

# **Document Contents**

1	Introduction	
1.1	Background	1
1.2	Municipal Class EA Process	1
1.3	Study Objectives	∠
1.4	Report Structure	5
2	Need & Justification	6
2.1	Study Area	6
2.2	Existing Conditions	6
2.3	Future Conditions	10
2.4	Problem Statement	12
3	Consultation - Study Commencement	13
3.1	Purpose	13
3.2	Notification	13
3.3	Comments	13
4	Alternative Solutions	15
4.1		
4.2	Road Network Improvement Options	16
5	Environment Inventory	15
5.1		
5.2	Natural Environment	19
5.3	Social Environment	19
5.4	Cultural/Heritage Environment	20
5.5	Economic Environment	21
6	Evaluation of Alternative Solutions	21



6.1	Evaluation Criteria	22
6.2	Environmental Impacts	22
7 C	Consultation - Public Information Centre	24
7.1	Purpose	24
7.2	Notification	25
7.3	Comments	25
8 P	Preferred Solution	27
8.1	Identification	27
8.2	Design concept	27
8.3	Anticipated Impacts	30
8.4	Confirmation of Class EA Schedule	30
9 C	Consultation – Notice of Completion	31
9.1	Purpose	31
9.2	Notification	31
9.3	30-Day Review Period	31
10 Ir	mplementation	32
10.1	Next Steps	32
10.2	Impact Mitigation & Monitoring	32
10.3	Consultation	35



# **Tables**

Table 1: Road Section Operations - Existing Conditions	S
Table 2: Intersection Operations - Existing Conditions	9
Table 3: Road Section Operations - 2030 (PM Peak hour)	11
Table 4: Road Section Operations - 2040 (PM Peak Hour)	11
Table 5: Intersection Operations - 2030 & 2040 (PM Peak Hour)	12
Table 6: Environmental Impacts Assessment	23
Table 7: Public Comments & Responses	26
Table 8: Assessment of Alternative Solutions	28
Table 9: Property Requirements	30
Table 10: Summary of Mitigating Measures	33
Figures	
Figure 1: Municipal Class EA Process	36
Figure 2: Study Area	37
Figure 3: Existing Conditions	38
Figure 4: Alternative A - Operational Improvements	40
Figure 5: Alternative B - Widen to 3-lanes	41
Figure 6: Alternative C - Widen to 4-lanes	42
Figure 7: Preferred Solution - Alternative A	43

# Appendices

Appendix A: Transportation Needs & Justification Report

Appendix B: Notice of Study Commencement

Appendix C: Natural Sciences Report

Appendix D: Archaeological Assessment

Appendix E: Cultural Heritage Assessment

Appendix F: Public Information Centre

Appendix G: Preferred Solution

Appendix H: Notice of Completion



# 1 Introduction

# 1.1 BACKGROUND

The County of Simcoe Transportation Master Plan Update - Final Report¹ recommended several improvements to the overall County road network, including the need for increased capacity along County Road 53. In consideration of the Transportation Master Plan findings, the County has initiated a Class Environmental Assessment (Class EA) to assess transportation improvements to County Road 53 between County Road 21 (Innisfil Beach Road) and the City of Barrie/Town of Innisfil boundary. Tatham Engineering Limited was retained to complete the study on behalf of the County, and in accordance with the Municipal Class Environmental Assessment process.

# 1.2 MUNICIPAL CLASS EA PROCESS

All road reconstruction projects in Ontario are subject to the Environmental Assessment Act. The Act allows the use of Class Environmental Assessments, such as the Municipal Class Environmental Assessment process<sup>2</sup> (amended 2015). Applying to all municipal road improvement projects, a number of study categories and schedules have been established recognizing the range of environmental impacts. These are briefly described below, whereas the process corresponding to each is illustrated in Figure 1.

In March 2023, an updated Municipal Class EA document was released, replacing the 2015 amended document. This new document provides provisions addressing projects that have already commenced; those that have issued a Notice of Commencement are to continue with the Class EA process that was started for the project, and the applicable schedules. Therefore, for the County Road 53 improvements Class EA, the 2015 Class EA process is being followed.

# 1.2.1 Class EA Schedule

# Schedule A

Schedule A projects generally include normal or emergency operational and maintenance activities. As the environmental effects of these activities are usually minimal, these projects are

<sup>&</sup>lt;sup>2</sup> Municipal Class Environmental Assessment. Municipal Engineers Association, October 2000, as amended in 2007, 2011, and 2015.



<sup>&</sup>lt;sup>1</sup> County of Simcoe Transportation Master Plan Update - Final Report. County of Simcoe & MMM Group, October 2014.

pre-approved and may proceed directly to implementation without the need to complete the design and planning process. No reports or study documents need to be prepared.

# Schedule A+

Schedule A+ projects are typically limited in size and scope, and thus have minimal associated environmental impacts. While these projects are also pre-approved, they require notification to the public prior to implementation. No reports or study documents need to be prepared outside of the notification.

# Schedule B

Schedule B projects generally include improvements and minor expansions to existing facilities or smaller new projects. As there is the potential for some adverse environmental impacts, the proponent is required to conduct a screening process whereby members of the public and review agencies are informed of the project and given the opportunity to provide comment (warranting completion of Phases 1 and 2 of the Class EA process). Documentation of the planning and design process is required under a Schedule B study. As these studies are generally straightforward and do not require detailed technical investigations to arrive at the preferred solution, a formal report is not required. Rather, a Project File shall be prepared to demonstrate that the appropriate steps have been followed. The Project File is to be submitted for review by the public and review agencies for comment and input. Once this is complete, the project can proceed to implementation (Phase 5).

## Schedule C

Schedule C projects generally include the construction of new facilities and major expansions to existing facilities. As they have the potential for significant environmental impacts, they must proceed under the full planning and documentation procedures specified by the *Municipal Class EA* document (Phase 1 to 5). Schedule C projects require that an Environmental Study Report be prepared and appropriately filed for review by the public and review agencies.

# 1.2.2 Section 16 Order

The Minister of the Environment, Conservation and Parks has the authority and discretion to make an Order under Section 16 of the *Environmental Assessment Act*. A Section 16 Order may require that the proponent of a project going through the Class EA process:

- Submit an application for approval of the project before they proceed (generally referred to as an individual EA).
- Meet further conditions in addition to those in the Class EA, including conditions for:



- further study;
- monitoring; and/or
- consultation.

If the minister makes a Section 16 Order, the proponent may only proceed with the project if they follow the conditions in the Order.

A Section 16 Order request (previously known as a Part II Order request) may only be made to the Minister if:

- the requestor has outstanding concerns that a project going through the Class EA process may have a potential adverse impact on constitutionally protected Aboriginal and treaty rights; and
- the requestor believes that an Order may prevent, mitigate or remedy this impact.

A Section 16 Order request cannot be made just to delay or stop the planning and implementation of a project going through the Class EA process.

# 1.2.3 Class EA Terminology

Prior to determining the appropriate Class EA schedule, an understanding of the defining terminology is required as noted below:

# **Localized Operational Improvements**

Refers to structural changes to an existing roadway at specific locations, and may include turning lanes at an intersection, storage lanes, U-turn lanes, busy bays, median changes, changing the curb radii, etc.

# **Road Capacity**

Means capacity defined in terms of the number of travelled lanes and does not differentiate between various lane widths to accommodate differing traffic volumes.

# Same Purpose, Use, Capacity & Location

Refers to the replacement or upgrading of a structure or facility or its performance, where the objective and application remain unchanged, and the volume, size and capability do not exceed the minimum municipal standard, or the existing rated capacity, and there is no substantial change in location. Works carried out within an existing road allowance such that no land acquisition is required are considered to be in the same location. Conversely, it is thus inferred that should improvements extend beyond the existing road allowance and additional property is



required, the location is considered to have changed. The widening of existing roads to provide additional lanes will result in an increase in road capacity and hence will not be considered for the same purpose, use, capacity and location.

# 1.2.4 Selected Class EA Schedule

The Municipal Class EA document details a number of road construction and reconstruction projects and defines the corresponding EA schedule to be applied based on the result of a screening process. The proposed works for County Road 53 are categorized in the *General Operation and Maintenance of Linear Paved Facilities and Related Facilities* group of projects. With respect to the selection of the appropriate Class EA schedule, the following project descriptions have been considered (as per *Appendix 1* of the *Municipal Class EA* document):

- Reconstruction or widening where the reconstructed road or other linear paved facilities (e.g. HOV lanes will not be for the same purpose, use, capacity or at the same location (e.g. additional motor vehicle lanes, continuous centre turn lane). A Schedule B Class EA applies for such projects with a construction value of less than \$3 million, whereas the Schedule C process applies for values equal to or exceeding \$3 million.
- Construction of localized operational improvements at specific locations. A Schedule B Class
   EA applies for these projects.

In consideration of the above and associated cost thresholds, and to ensure appropriate public consultation throughout the study, a Schedule B undertaking has been selected. The requirements of such would be to complete Phase 1 and Phase 2 of the overall Class EA process (as noted in Figure 1), which involves identifying the problem, developing alternative solutions and selecting a preferred solution prior to proceeding to Phase 5: Implementation (i.e. design and construction).

It is noted that the Schedule B selection will be confirmed upon identification of a preferred solution. If, through the initial phases of the Class EA process, a preferred solution is identified that otherwise triggers a Schedule C undertaking, the study process will follow the requirements of a Schedule C.

# 1.3 STUDY OBJECTIVES

The overall objectives of the *County Road 53 Improvements Class Environmental Assessment* are as follows:

- to provide a detailed description of the problem/opportunity;
- to establish alternatives to address the problem/opportunity;



- to prepare a detailed inventory of the affected/applicable environments (physical, natural, social, economic, cultural, etc.);
- to screen the impact of the alternatives on the environment; and
- confirm the Class EA schedule and outline the remaining steps to complete the Municipal Class EA process.

## 1.4 REPORT STRUCTURE

This report has been prepared in accordance with the chronological order of the Class EA process and is structured as follows:

- Chapter 2 presents the need and justification of the study and the preparation of a problem statement to guide the Municipal Class EA process;
- Chapter 3 addresses the Notice of Study Commencement;
- Chapter 4 details the alternative solutions developed to address the problem statement;
- Chapter 5 identifies the affected environments and provides an inventory of each to be considered in the subsequent evaluation;
- Chapter 6 details the evaluation of the alternative solutions in context of the manner to which they satisfy the problem statement and potential impacts to the environments;
- Chapter 7 addresses the first mandatory point of public consultation Public Information
   Centre 1;
- Chapter 8 identifies the recommended preferred solution, considering the initial evaluation and comments received from Public Information Centre 1; and
- Chapter 9 address the second mandatory point of public consultation the Notice of Completion; and
- Chapter 10 addresses implementation of the recommended improvements.



# 2 Need & Justification

The purpose of this Class EA is to identify the most appropriate improvement strategy to address the existing and future needs along the subject section of County Road 53. In doing so, it is first necessary to establish the existing and future conditions from which the needs are to be determined, which then allows for the overall problem statement to be defined. These tasks have been completed in accordance with Phase 1 of the Class EA process (see Figure 1).

# 2.1 STUDY AREA

The study area has been defined to include County Road 53 from County Road 21 (Innisfil Beach Road) to the City of Barrie/Town of Innisfil boundary, and the abutting lands recognizing that such could be impacted by the proposed improvements. The total length of the study corridor is approximately 2.1 kilometres. The study area is illustrated in Figure 2.

# 2.2 EXISTING CONDITIONS

The existing conditions along County Road 53 are detailed below and illustrated through site photographs provide in Figure 3.

# 2.2.1 Road Classification & Capacity

As per the *County of Simcoe Official Plan*<sup>3</sup>, County Road 53 is designated as a secondary arterial road, and as such:

- it is intended to convey relatively high volumes and all types of traffic; and
- has a planning capacity in the order of 900 to 1100 vehicles per hour per lane (vphpl).

# 2.2.2 Right-of-Way

The existing right-of-way along County Road 53 through the study area varies between 20 and 54 metres, with a predominant width of 26 metres.

As per the County's *Official Plan*, a 40 metre right-of-way is identified for County Road 53 in consideration of its road classification. As such, the existing right-of-way does not meet the current County requirements.



<sup>&</sup>lt;sup>3</sup> County of Simcoe Official Plan. Office Consolidated February 2023.

# 2.2.3 Road Platform

County Road 53 is a 2-lane road (1 travel lane per direction) with an asphalt surface (6.8 to 7.0 metres in width), gravel shoulders on both sides (1.5 to 2.0 metres in width) and open ditches. The road platform widens at the north and south access points to Georgian Downs to accommodate a slip-by lane (North Access) and turn lanes (South Access).

Prior to its transferal to the County in 2011, County Road 53 was formerly known as 5<sup>th</sup> Sideroad and hence was under the jurisdiction of the Town of Innisfil and thus constructed to Town standards. As a former local road, the existing road platform (i.e. lane and shoulder widths) does not satisfy the County's current standards.

# 2.2.4 Horizontal & Vertical Alignment

County Road 53 maintains a flat vertical alignment with a slight horizontal 'S' curve to the south of the Georgian Downs south access.

# 2.2.5 Speed Limit & Design Speed

The posted speed limit through the study area is 80 km/h, reflective of a County arterial road within a predominantly rural setting.

Design speed refers to the maximum safe speed that can be maintained over a specified section of road when conditions are so favourable that the design features of the road govern. To provide an additional level of safety in the road design, design speeds are selected in the order of 10 to 20 km/h in excess of the intended posted speed (depending on the posted speed and local practice). In consideration of the 80 km/h posted speed, a design speed of 100 km/h has been employed.

# 2.2.6 Intersections & Access Driveways

There are two intersections, two major access driveways and several minor driveways along County Road 53 within the study area.

# County Road 53 & County Road 21 (Innisfil Beach Road)

The intersection of County Road 53 with County Road 21 is a 4-leg signalized intersection. Improvements to the intersection were recently completed as part of the County Road 21 improvements project. The east and west approaches (County Road 21) now consist of an exclusive left turn lane, two through lanes and an exclusive right turn lane. The north and south approaches (County Road 53) consist of an exclusive left turn lane, a through lane and an exclusive right turn lane. Given the recent improvements to the intersection, no additional works



are anticipated as part of this Class EA in that the new intersection configuration will accommodate future volumes.

# County Road 53 & 9th Line

The intersection of 9<sup>th</sup> Line with County Road 53 is a 4-leg unsignalized intersection with stop control on 9<sup>th</sup> Line. All approaches consist of a single shared left/through/right turn lane.

# County Road 53 & Georgian Downs South (Main) Access

The intersection of County Road 53 with the Georgian Downs South Access is a 3-leg unsignalized intersection with stop control on the minor approach (Georgian Downs). The north approach provides an exclusive left turn lane and a through lane, whereas the south approach provides a through lane and an exclusive right turn lane. The east approach (Georgian Downs) provides exclusive right and left turn lanes and two inbound receiving lanes.

# County Road 53 & Georgian Downs North Access

The intersection of County Road 53 with the Georgian Downs North Access is a 3-leg unsignalized intersection with stop control on the minor approach (Georgian Downs). The north approach provides a shared left/through lane and a slip-by lane, whereas the south approach provides a shared through/right turn lane. The south approach also includes a 90-metre paved taper within the shoulder to facilitate the right turn movement into Georgian Downs. The east approach (Georgian Downs) provides exclusive right and left turn lanes and a single inbound receiving lane.

# **Private Driveways**

There are several private driveways and field access points which serve the abutting residential and agricultural properties. There is also a gravel driveway providing access to the parking area for the Trans-Canada Trail on the west side of County Road 53, south of Georgian Downs.

# 2.2.7 Traffic Operations

The existing traffic volumes and resulting operations are detailed in the *County Road 53 Class EA Transportation Needs & Justification*<sup>4</sup> report. The existing operations are summarized in Table 1 (road operations) and Table 2 (intersection operations), whereas the *Transportation Needs & Justification* report is included in Appendix A.

As indicated, there are no operational or capacity concerns along County Road 53 in consideration of the existing conditions.

<sup>&</sup>lt;sup>4</sup> County Road 53 Class EA Transportation Needs & Justification. Tatham Engineering Limited, May 2022.



**Table 1: Road Section Operations - Existing Conditions** 

ROAD SECTION & LANES / DIRECTION		САРА	CAPACITY <sup>1</sup>		TRAFFIC VOLUMES (VPH)		ME TO ACITY
		NB	SB	NB	SB	NB	SB
North of 9 <sup>th</sup> Line	1	900	900	546	365	0.61	0.41
9 <sup>th</sup> Line to Georgian Downs North Access	1	900	900	587	366	0.65	0.41
Georgian Downs North Access to Georgian Downs South Access	1	900	900	563	348	0.63	0.39
Georgian Downs South Access to I County Road 21	1	900	900	617	399	0.69	0.44
South of County Road 21	1	900	900	208	199	0.23	0.22

<sup>&</sup>lt;sup>1</sup> Capacity is denoted as vehicles per hour per direction

**Table 2: Intersection Operations - Existing Conditions** 

INTERSECTION & MOVEMENT		CONTROL	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 53 & 9th Line	EB	stop	10	В	0.03	15	С	0.03
	WB	stop	12	В	0.01	20	С	0.01
County Road 53 & Georgian Downs North	WB	stop	10	В	0.01	15	В	0.05
County Road 53 & Georgian Downs South	WB	stop	12	В	0.02	22	С	0.30
County Road 53 & County Road 21	EB	signal	18	В	0.60	13	В	0.35
County Noda 21	WB	signal	19	В	0.36	22	С	0.69
	NB	signal	20	В	0.16	22	С	0.38
	SB	signal	13	В	0.33	14	В	0.46
	overall	signal	17	В	0.54	19	В	0.59



## 2.2.8 Drainage

County Road 53 has a rural cross-section using infiltration, overland flow, ditches and corrugated steel and concrete culverts to manage stormwater run-off. Overall, the existing drainage system appears to be functioning as intended given the existing road platform, and hence a rural crosssection could be maintained for the alternative solutions - albeit enhanced to accommodate increased run-off associated with any proposed road widening.

### 2.2.9 Utilities

There are overhead utilities located on the east side of County Road 53 with a few service/guy poles located on the west side of the road.

Underground utilities located throughout the subject length of County Road 53 include a major gas pipeline running parallel to the east side of the road, watermain at the south end along the west side, and buried telecommunications predominantly along the west side throughout the project limits.

# 2.2.10 Adjacent Properties

The adjacent properties are predominantly rural/agricultural in nature, with some containing residences. Georgian Downs and the Innisvale Cemetery and Crematorium border County Road 53 to the east (south of 9th Line)

## **FUTURE CONDITIONS** 2.3

The need for improvements has also been considered in the context of future conditions, namely increased traffic volumes and expected operations. Future traffic projections were established for the 2030 and 2040 horizon years. Details with respect to future traffic projections and operations are provided in the Transportation Needs & Justification provided in Appendix A. A summary of the volumes and resulting road section and intersection operations is provided below.

## 2.3.1 **Traffic Operations**

# Roads

The road section operations for the 2030 and 2040 PM peak hour conditions (considered the critical period) are summarized in Table 3 and Table 4, respectively. As indicated, County Road 53 will operate at 87% of capacity or less (i.e.  $v/c \le 0.87$ ) through the 2030 horizon and will begin to exceed capacity by 2040, with northbound volumes surpassing the available capacity by 8% to 17%. Southbound volumes will remain below the assumed lane capacity.



# Intersections

The intersection operations for the 2030 and 2040 PM peak hour conditions are summarized in Table 5. As indicated, the study area intersections will provide acceptable operations through the 2030 horizon year; however, by 2040, poor conditions occur at the intersections of County Road 53 with 9th Line and the Georgian Downs South access.

Table 3: Road Section Operations - 2030 (PM Peak hour)

ROAD SECTION & LANES / DIRECTION		САРА	CAPACITY <sup>1</sup>		TRAFFIC VOLUMES (VPH)		ME TO ACITY
		NB	SB	NB	SB	NB	SB
North of 9 <sup>th</sup> Line	1	900	900	705	500	0.78	0.56
9 <sup>th</sup> Line to Georgian Downs North Access	1	900	900	750	505	0.83	0.56
Georgian Downs North Access to Georgian Downs South Access	1	900	900	725	490	0.81	0.54
Georgian Downs North Access to County Road 21	1	900	900	780	540	0.87	0.60

<sup>&</sup>lt;sup>1</sup> Capacity is denoted as vehicles per hour per direction

Table 4: Road Section Operations - 2040 (PM Peak Hour)

ROAD SECTION & LANES / DIRECTI	САРА	CAPACITY <sup>1</sup>		TRAFFIC VOLUMES (VPH)		ME TO ACITY	
		NB	SB	NB	SB	NB	SB
North of 9 <sup>th</sup> Line	1	900	900	975	690	1.08	0.77
9 <sup>th</sup> Line to Georgian Downs North Access	1	900	900	1025	700	1.14	0.78
Georgian Downs North Access to Georgian Downs South Access	1	900	900	1000	685	1.11	0.76
Georgian Downs North Access to County Road 21	1	900	900	1055	735	1.17	0.82

<sup>&</sup>lt;sup>1</sup> Capacity is denoted as vehicles per hour per direction



## 2.3.2 **Need for Improvements**

Based on the traffic operational review (considering both the road and intersection operations), improvements to County Road 53 are required to accommodate future traffic volumes and ensure acceptable operations.

Table 5: Intersection Operations - 2030 & 2040 (PM Peak Hour)

INTERSECTION & MOVEMENT		CONTROL	2030 PM PEAK HOUR			2040 PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 53 & 9 <sup>th</sup> Line	EB	stop	22	С	0.06	39	Е	0.13
	WB	stop	32	D	0.03	66	F	0.06
County Road 53 & Georgian Downs North	WB	stop	19	С	0.12	32	D	0.21
County Road 53 & Georgian Downs South	WB	stop	42	Е	0.50	175	F	1.04
County Road 53 & County Road 21	EB	signal	22	С	0.80	13	В	0.70
County Road 21	WB	signal	16	В	0.52	24	С	0.79
	NB	signal	7	А	0.23	14	В	0.42
	SB	signal	8	А	0.35	20	С	0.80
	overall	signal	15	В	0.52	19	В	0.79

## 2.4 PROBLEM STATEMENT

County Road 53 is a secondary arterial road within the County of Simcoe road network. In consideration of the existing capacity of the road and the projected future traffic growth along the corridor, and in context of the infrastructure requirements to support the continued arterial intent of County Road 53, the following Problem Statement has been defined (which sets the framework for the remainder of the study):

That improvements necessary to support the intended arterial function of County Road 53 be addressed in an environmentally sound manner in consideration of future traffic needs, current County standards and surface drainage requirements, with the overall intent being the delivery of a county road facility that provides safe and efficient travel for its users.



# **Consultation - Study Commencement** 3

As per the Class EA process (refer to Figure 1), there are various points of contact with the public - both discretionary and mandatory. The first point of contact is the Notice of Study Commencement which is used to inform the general public, stakeholders and rights holders that the study is being initiated. The remaining points of public contact are discussed further in the report following the chronological order in which they occur.

## 3.1 **PURPOSE**

The Notice of Study Commencement identified the study area, the study methodology and Class EA guidelines to be followed. In addition, it invited public input and comments early in the process such that they could be considered in the overall study process.

A copy of the Notice of Study Commencement is provided in Appendix B.

## 3.2 **NOTIFICATION**

The notice was:

- issued to all property owners along County Road 53 within the study area in September 2019:
- issued to agencies, rights holders and stakeholder groups in September 2019;
- advertised in local print media on September 26, 2019 and October 3, 2019.

## 3.3 **COMMENTS**

## **Public Comments** 3.3.1

No input was received from the general public or stakeholders in response to the Notice of Study Commencement.

## 3.3.2 **Agency Comments**

Written correspondence (via letter or email) was received from the City of Barrie, Town of Innisfil, Ministry of Heritage, Sport, Tourism and Culture Industries and Ministry of Transportation. The comments received are summarized below, whereas copies of the correspondence and responses are provided in Appendix B. Responses to the comments, where such was required or appropriate, are also summarized below.



# City of Barrie

The City of Barrie acknowledged receipt of the Notice of Study Commencement and requested to be included in future circulations/updates regarding the County Road 53 Class EA.

## Town of Innisfil

The Town of Innisfil acknowledged receipt of the Notice of Study Commencement and requested to be kept informed as the study progressed. The Town further noted that they would conduct an internal review to determine if there were any Town interests that should be incorporated into the assessment.

# Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)

The MHSTCI letter outlined the Ministry's interests in the County Road 53 Class EA as they relate to its mandate of conserving Ontario's cultural heritage, which includes archaeological resources, built heritage resources, and cultural heritage landscapes. The letter provided general direction as to what is required to facilitate MHSTCI's reviewing role and satisfy the requirements of the Class EA process with respect to cultural heritage.

# **Ministry of Transportation**

The MTO confirmed receipt and review of the Notice of Study Commencement, expressing no concerns. The MTO requested confirmation of the project timeline and information on how the proposed improvements would align with the ongoing improvement project at the intersection of County Road 21 and County Road 53.

The County confirmed to MTO (via email) that the proposed improvements to County Road 53 would follow completion of the intersection improvements at County Road 21 and County Road 53, with commencement of works tentatively scheduled for 2025.

## 3.3.3 **Rights Holder Comments**

# **Huron-Wendat Nation**

The Huron-Wendat Nation submitted a written request (via email) for a copy of the archaeological assessment undertaken as part of the Class EA study. The archaeological assessment was not complete at the time of the request, and the overall project was put on hold at the onset of the pandemic. Upon re-initiation of the project, the archaeological assessment was subsequently provided to Huron-Wendat Nation for review.



# 4 Alternative Solutions

In consideration of the Problem Statement and the planning requirements of the Class EA process, a number of alternative solutions were developed for consideration in the assessment. These alternatives included the following:

- do nothing (i.e. maintain the status quo):
- reduce travel demand;
- promote alternative travel routes; and
- improve the road network (i.e. widen the road to 3 or 4 lanes and incorporate intersection improvements).

## 4.1 **INITIAL SCREENING**

Prior to moving forward with the evaluation process, the alternative solutions have been screened for appropriateness in context of the Problem Statement.

## 4.1.1 Do Nothing

The Do Nothing alternative corresponds to the existing conditions and serves as a benchmark to confirm the benefits of any future improvements. Under this alternative, no improvements or changes to the road system would be made to solve the identified problem and as such, the problem would remain and in fact worsen as traffic volumes continue to increase over time. As the Do Nothing alternative will not address any aspects of the Problem Statement, it has not been carried forward for further consideration.

## 4.1.2 **Reduce Travel Demand**

Rather than increase road capacity, this alternative focuses on reducing the overall travel demands along County Road 53, negating the need for capacity-based improvements. Means to achieve this include increased use of non-auto-based travel (transit, cycling and walking), increased occupancy and ridesharing (more riders per car translates to fewer trips), telecommuting (working from home) and flex hours (shifting working hours to avoid commuting during the peak hours). To accommodate such, additional initiatives would have to be introduced (i.e. improved transit services, extended pedestrian and cycling linkages, etc.).

While implementing and/or supporting such initiatives is expected to have positive benefits; the extent of such is not considered sufficient to address the noted deficiencies along County Road 53. In particular, reducing travel demand does not address the existing road design which does



not satisfy County standards. As such, the reduce travel demand alternative has not been carried forward.

### 4.1.3 **Alternative Travel Route**

This alternative entails utilizing reserve capacity on alternative travel routes to accommodate existing and future travel demands from County Road 53.

County Road 53 is already considered an alternative travel route for Highway 400 given its close proximity and parallel service. Furthermore, it is the closest north-south transportation facility serving the Salem Secondary Plan area in south Barrie and the Innisfil Heights Strategic Settlement Employment Area. In this respect, there are no reasonable alternative routes in the area that would otherwise alleviate future demand on County Road 53. Furthermore, promoting alternative travel routes does not address the existing design deficiencies in context of the applicable standards for a County road. Therefore, the alternative route option has not been carried forward for further assessment.

## 4.1.4 **Road Network Improvements**

This alternative would consist of physical improvements to County Road 53 to increase capacity (provision of 2, 3 or 4 lanes with intersection improvements), address County design standards and improve drainage features. This alternative has the potential to address each of the concerns identified in the Problem Statement and thus it has been further developed for evaluation.

## **ROAD NETWORK IMPROVEMENT OPTIONS** 4.2

The following section identifies various road network improvement alternatives. It is noted that under all of the alternatives listed below, the road would be upgraded to satisfy the County's standard cross-section as follows:

- 3.75 metre travel lanes:
- 2.0 metre paved shoulders; and
- 1.0 metre gravel shoulders.

## 4.2.1 Alternative A - 2-Lane Cross-Section with Operational Improvements

Rather than widen the entire length of County Road 53 through the study limits, this alternative would attempt to address the capacity deficiencies and operational issues along County Road 53 by maintaining the existing 2-lane road, implementing improvements at intersection and major access locations only, and reconstructing County Road 53 to current County standards (wider travel lanes, paved shoulders, etc.) with drainage improvements. Examples of potential intersection improvements that might be considered are:



- exclusive left and/or right turn lanes,
- improvements to intersection control (i.e. from stop control to signalization); and
- minor changes to horizontal or vertical alignment through intersections as may be necessary.

The cross-section illustrating the conceptual design for Alternative A is provided in Figure 4.

## 4.2.2 Alternative B - 3-Lane Cross-Section with Operational Improvements

Under this alternative, County Road 53 would be widened to a 3-lane cross-section (1 travel lane per direction with a 4.0 metre centre turn lane) by increasing the platform and pavement width. Lane configurations at key intersections would be improved and traffic signals implemented where needed. The existing east shoulder line and ditch location will be maintained with all widening required to accommodate the 3-lane cross-section and improved drainage features occurring to the west (the existing west edge of pavement will shift 2.0 to 7.5 metres to the west).

The cross-section illustrating the conceptual design for Alternative B is provided in Figure 5.

## 4.2.3 Alternative C - 4-Lane Cross-Section with Operational Improvements

Alternative C consists of widening County Road 53 to a 4-lane cross-section to increase capacity. This option includes the provision of two travel lanes per direction with no center turn lane. Similar to the other alternatives, lane configurations at key intersections would be improved and traffic signals implemented where needed, and the east shoulder line and ditch locations will be maintained with all widening occurring to the west. Under this alternative, the existing west edge of pavement is expected to shift between 5.0 and 11.0 metres to the west to accommodate the 4-lane cross-section and improved drainage features.

The Alternative C cross-section is illustrated in Figure 6.



# **Environment Inventory** 5

A description of the study area has been developed considering the identified alternative solutions in context of the following environments:

- physical environment;
- natural environment:
- social environment:
- cultural/heritage environment; and
- economic environment.

In accordance with the Class EA framework (per Figure 1), detailed investigations and analysis with respect to the environmental inventories were not required at this point in the study. Rather, data was obtained based on several site visits and a review of secondary information pertaining to the study area. The purpose of the inventories is to provide the information from which the assessment of the alternative solutions can be based. Brief descriptions of the various environments investigated are provided below.

## 5.1 PHYSICAL ENVIRONMENT

The physical environment pertains to the transportation system and utility/infrastructure systems within the area.

The transportation network consists of County Road 53 between County Road 21 and the south limits of the City of Barrie. Details with respect to the road system were previously provided in Section 2.2. Additional elements of the physical environment are otherwise noted below.

There are overhead utilities located on the east side of County Road 53 with a few service/guy poles located on the west side. InnPower is planning to relocate the existing poles along County Road 53 through the study area as part of the County Road 53 Hydro Line Rebuild. The utility poles will remain on the east side of the road, albeit relocated to the east limit of the right-ofway.

Underground utilities located throughout the subject length of County Road 53 include telecommunication infrastructure, watermain, and a vital extra high pressure gas main.

The existing storm water drainage system consists of open ditches and surface flows.



## 5.2 NATURAL ENVIRONMENT

A Natural Sciences Report<sup>5</sup> documenting the existing natural environmental conditions was prepared by Azimuth Environmental Consulting. Key findings of the report are provided below, whereas the final report is provided in Appendix C.

The lands adjacent to County Road 53 consist of active agricultural lands, residential lots, the Georgian Downs/Gateway Casino and the Innisvale Cemetery and Crematorium. Aside from the general land-uses, the natural environment assessment also identified the following Key Natural Heritage Features in the area:

- wetland and woodland:
- significant wildlife habitat;
- fish habitat: and
- habitat for endangered and threatened species.

The natural environment assessment did not identify any significant valley land or any Areas of Natural and Scientific Interest within the study area.

While it is not uncommon for there to be natural heritage features within a study area, the potential impacts to these features and the degree to which these impacts can be effectively mitigated is a key consideration in the environmental assessment and by extension the selection of the preferred solution. In this respect, the Natural Sciences Report concluded that the impacts associated with the various alternative solutions could readily be mitigated through best management practices during design and construction. An Environmental Impact Assessment will be completed during the detailed design phase to better define mitigation measures.

## 5.3 SOCIAL ENVIRONMENT

A review of the social environment focused on existing residential dwellings, agricultural land and commercial properties that could be impacted by the proposed improvements.

The main impacts expected to properties along County Road 53 will be the potential need for land acquisition and widening of the road platform (affecting lawns, driveways, trees, etc.). All reasonable efforts to mitigate impacts to adjacent property owners will be explored during detailed design.



<sup>&</sup>lt;sup>5</sup> Natural Sciences Report. Azimuth Environmental Consulting Inc., February 2023.

The Georgian Downs/Gateway Casino and the Innisvale Cemetery and Crematorium will be temporarily affected by the proposed road works and any associated road closures and/or detours; however, these impacts will be short term in nature.

## **CULTURAL/HERITAGE ENVIRONMENT** 5.4

This environment encompasses archaeological sites and built heritage interests (i.e. historically significant buildings/properties).

## 5.4.1 Archaeological Assessment

Archeoworks Inc. was retained to conduct the required archaeological investigations. A literature review was conducted to review the findings of historical Stage 1 and Stage 2 archaeological assessments completed within the study area. Further to this review, a new Stage 1 assessment was conducted for areas not cleared by previous assessments. The Stage 1 Archaeological Assessment for the Proposed Widening and Improvements of County Road 536 report is provided in Appendix D.

The archaeological assessment concluded that there are no known impacts at this time. However, there are some sections of the study corridor that were identified as retaining archaeological potential and hence require a Stage 2 archaeological assessment to determine if additional investigation is required or to establish that there is no potential archaeological present. The Stage 2 investigation must be completed prior to the commencement of any construction activities, preferably during the design stage.

## 5.4.2 **Cultural Heritage Assessment**

The Cultural Heritage Assessment Report - County Road 537 and Technical Memorandum: Cultural Heritage Impact Assessment<sup>8</sup> were coordinated through Archeoworks Inc. and completed by MHBC Planning Ltd. The noted reports are provided in Appendix E.

The Cultural Heritage Assessment Report identified a built heritage resource located at 7370 County Road 53, key attributes of which include

- a 19th century farmhouse (approximately 40 metres from the existing right-of-way);
- a high-pitched centered gable on the front façade;
- original window and door openings;

<sup>&</sup>lt;sup>8</sup> Technical Memorandum: Cultural Heritage Impact Assessment. MHBC Planning Ltd., November 2022



<sup>&</sup>lt;sup>6</sup> Stage 1 Archaeological Assessment for the Proposed Widening and Improvements of County Road 53. Archeoworks Inc., February 2020.

<sup>&</sup>lt;sup>7</sup> Cultural Heritage Assessment Report - County Road 53. MHBC Planning Ltd., March 2021

- its physical relation to the barn;
- a tree-lined drive with tree windbreaks; and
- wood split-rail fencing.

The assessment also identified a cultural heritage landscape, otherwise known as the Thornton-Cookstown Trans-Canada Trail, given the delineation of the trail along the former rail line and tree lined pedestrian path.

The noted cultural heritage resources identified in the *Cultural Heritage Assessment Report* were the subject of further review as part of the *Cultural Heritage Impact Assessment*, which examined the potential impacts to the cultural heritage resources as a result of the proposed road works.

The *Cultural Heritage Impact Assessment* concluded that the existing house, outbuildings and wood-split fencing located at 7370 County Road 53 would not be impacted by the proposed road works; however, the potential does exist for the loss of mature trees along the tree-lined driveway, caused by land disturbances or required tree removal. With respect to the Thornton-Cookstown Trans-Canada Trail, no adverse impacts are anticipated recognizing that the trail has historically evolved due to road widening and other changes in infrastructure.

The report recommends that potential impacts can be mitigated through best management practices during the design and construction phases, with tree removal avoided, if feasible, and no storage of construction equipment and material within the immediate vicinity of the trees.

# 5.5 ECONOMIC ENVIRONMENT

The economic environment considers the associated costs to be incurred in constructing the proposed road improvements. The costs have been considered in relation to the extent of the existing road requiring upgrades/reconstruction. For the purpose of the preliminary assessments, the costs were considered on a qualitative basis only (i.e. least costly, most costly).

In addition, impacts to abutting lands have also been considered as part of the economic environment given the cost to obtain any required lands; however, no value has been associated with it at this stage. Similar to the above, the value has been considered on a qualitative basis based on the area of land to be acquired under the various alternatives.

As discussed under the social environment assessment, there are also economic impacts associated with the existing businesses or commercial establishments within the study area and the losses that could be incurred under each alternative during implementation (i.e. resulting from detours, restricted access).



# **Evaluation of Alternative Solutions** 6

This section will discuss the evaluation of the alternative solutions as previously described. The evaluation of results at this stage is considered preliminary given the need to solicit agency and public input. The evaluation is descriptive or qualitative in nature allowing for a comparative evaluation of the positives and negatives associated with each alternative solution.

## 6.1 **EVALUATION CRITERIA**

In completing the evaluation, a number of criteria were considered as outlined below.

# **Physical Environment**

- road geometry and alignment
- traffic operations
- utility conflicts and impacts

# **Natural Environment**

- vegetation impacts
- wildlife/terrestrial impacts
- fisheries/aquatic impacts

## **Social Environment**

future impacts on adjacent property

# First Nations impacts **Economic Environment**

construction costs

**Cultural/Heritage Environment** 

archaeological impacts

built heritage impacts

land acquisition costs

## 6.2 **ENVIRONMENTAL IMPACTS**

The potential impacts associated with each alternative are noted in Table 6 and discussed in further detail in the reports noted below.

The following reports were used to establish the potential impacts to the study area environs.

- County Road 53 Class EA Transportation Needs & Justification report prepared by Tatham Engineering;
- Natural Sciences Report prepared by Azimuth Environmental;
- Stage 1 Archaeological Assessment for the Proposed Road Widening and Improvements of County Road 53 prepared by Archeoworks;
- Cultural Heritage Assessment Report County Road prepared by MHBC Planning; and
- Technical Memorandum: Cultural Heritage Impact Assessment prepared by MHBC Planning.



Table 6: Environmental Impacts Assessment

ENVIRONMENT		JATION CRITERIA ERAL DESCRIPTOR		ALTERNATIVE A 2-LANE CROSS-SECTION (EXISTING) WITH OPERATIONAL IMPROVEMENTS	ALTERNATIVE B 3-LANE CROSS-SECTION WITH OPERATIONAL IMPROVEMENTS	ALTERNATIVE C 4-LANE CROSS-SECTION WITH OPERATIONAL IMPROVEMENTS				
Physical Environment	Traffic operations Ability to accommodate future traffic volumes			provides least amount of additional ✓ capacity	provides greater amount of additional 🗸 capacity	provides greatest amount of additional capacity				
			✓	addresses future operations	addresses future operations	addresses future operations				
	Utilities & services	Impact/conflicts with existing utilities	×	potential impact to hydro guy poles on west	side (same for each alternative)					
	<ul> <li>no known impacts to underground utilities (to be confirmed at detailed design)</li> </ul>									
Natural Environment	Vegetation impact	Vegetation impact Potential impact on vegetation ✓ no direct loss of any identified wetland features.  communities on adjacent								
		properties	•	indirect impacts to woodlands/ hedgerows wi	direct impacts to woodlands/ hedgerows will be minimal and can be effectively mitigated.					
	Wildlife/terrestrial	Potential Impact on Wildlife species	• potential impact on Eastern Meadowlark and Bobolink habitat. Additional consultation with MECP recommended at detailed design to determine if potential disturbance can be mitigated or if compensation is required.							
	Fisheries/aquatic watercourse/wetlands	Potential Impact on fish habitat and other aquatic feature	• all alternatives will require a culvert extension at the North Lawson Drain crossing. Additional assessment at detailed design is required to establish if works will impact fish habitat and, if so, identify appropriate mitigation.							
Social Environment	Future impacts on adjacent property	Impact to adjacent residential/agricultural land	✓	least impact to adjacent properties.	greater impact to adjacent properties. *	greatest impact to adjacent properties.				
Cultural Environment	Archaeological impact	Impact on archaeological resources	•	areas identified as retaining archaeological podetail design stage (same for all alternatives).	otential are subject to a Stage II Archaeologica	al Assessment which is to be completed at				
	Cultural heritage	Impact on built heritage and cultural heritage landscape	<b>√</b>	least potential impact to the existing built * heritage resource and cultural heritage landscape	greater potential impact to the existing * built heritage resource and cultural heritage landscape	greatest potential impact to the existing built heritage resource and cultural heritage landscape				
Economic Environment	Construction cost	Overall construction cost	✓	least construction costs (including land * acquisition)	greater construction costs (including land * acquisition)	greatest construction costs (including land acquisition)				
	Impact to commercial properties	Potential economic loss during construction (i.e. due to detours, closures.)	•	construction related closures and/or detours	will be relatively comparable across each altern	ative and will be short term in nature.				

<sup>✓</sup> most favourable impact



neutral impact or comparable impact across all alternatives

least favourable impact

# **Consultation - Public Information Centre**

Further to the first point of contact, the Notice of Study Commencement, as discussed in Chapter 3 (which is discretionary), there are 2 mandatory points of contact as per the following (refer also to Figure 1):

- the 1st mandatory point of contact occurs towards the end of Phase 2 when a notice is issued inviting stakeholder comment and input via a Public Information Centre; and
- the 2<sup>nd</sup> mandatory point of contact is upon completion of the Schedule B planning process at which time a Notice of Completion is issued.

The first mandatory point of contact, the notice inviting input via a Public Information Centre is discussed in this chapter, whereas the second mandatory point of contact (Notice of Completion) will be addressed in Chapter 9.

## 7.1 **PURPOSE**

The purpose of the Public Information Centre was to provide information to interested parties and seek their input with respect to the following:

- identification of the problem;
- development and evaluation of alternative solutions to the problem;
- general inventory of the affected environments;
- potential impacts of each alternative solution to the environments evaluated; and
- discussion of remaining tasks.

The Public Information Centre was held in a virtual setting with a narrated presentation posted on the County's website (as referenced in the circulated notices) for stakeholders to view at their leisure. The presentation materials, as provided in Appendix F, addressed the following:

- study background, objective and purpose which described the reasoning behind the undertaking;
- the Municipal Class EA process and those tasks relevant to this study;
- the purpose of public engagement;
- future traffic volumes, travel demands and resulting operations;
- problem/opportunity identification necessitating the need for improvements;
- alternative solutions for improvements;



- inventory of the natural, cultural heritage, archaeological, social and economic environments;
- preliminary assessment and identification of the recommended alternative;
- the remaining steps to completion; and
- who to contact for additional information.

The narrated presentation was made available for public viewing on the County's website for a 4-week period from April 27, 2023, to May 25, 2023. The presentation included a request for the public submit comments by May 25, 2023. Comments could be submitted to the contacts identified in the presentation (via phone, mail or email), or via an online comment form provide on the County's website.

## 7.2 **NOTIFICATION**

In accordance with the Municipal Class EA guidelines, a notification of the Public Information Centre was issued inviting comment and input. Notices were delivered in the same manner as the Notice of Study Commencement, namely:

- mailed to property owners, agencies, rights holders and stakeholder groups in April 2023;
- included in print publications of the Barrie Advance and Innisfil Journal (April 27 and May 11, 2023); and
- published on the County's website.

Copies of the notices and distribution list are provided in Appendix F.

## 7.3 COMMENTS

### 7.3.1 **Public Comments**

Input was received from stakeholders throughout the 4-week comment period by email and phone. A total of 4 comments were submitted, copies of which are included in Appendix F. A summary of the comments received from the public, and the subsequent responses is provided in Table 7.



**Table 7: Public Comments & Responses** 

No.	PUBLIC COMMENT	RESPONSE TO COMMENTS
1	Respondent requested that the County reconsider the necessity of acquiring their land and explore alternatives beyond what is currently being proposed.	It is noted that the property requirements identified at this stage of the Class EA are preliminary and subject to refinement through the detailed design phase in order to mitigate impacts to adjacent properties where possible. Nonetheless, the proposed improvements were reviewed in context of the potential impacts to the subject property.
	Respondent suggested that land acquisition should be taken equally from both sides of the road.	While subject to further review at detail design, a design solution is begin proposed to eliminate impacts to the responding resident's property.
2	Respondent shows disappointment with the proposed alternatives, as none of the alternatives proposed bicycle lanes. The respondent mentioned that there are a lot of cyclists in that area that would benefit from a bicycle lane.	In order to provide linkages with the Trans Canada Trail, the County will be providing 3.0 m paved shoulders north of the Trail.
3	Respondent preferred Alternative B, which will create a centre lane for left turns and the occasional passing of traffic.	This alternative was not adopted as the optimal solution given that the lands west of County Road 53 are designated for rural or agricultural use; thus, a centre turning lane would not serve the intended purpose (utilized to accommodate multiple access points on both sides of the road).  A centre turn lane is not to be used for occasional passing of traffic.  Alternative A adequately addresses the operational needs of the properties located on the east side.
4	Respondent did not express satisfaction with the project timeline.	We appreciate the public feedback and understand the responder's concerns. Due to the pandemic, the timeline for this project has been delayed.

## 7.3.2 **Agency Comments**

Comments were also received from the City of Barrie, Town of Innisfil and the Trans Canada Trail. The comments received and subsequent responses are documented in a comment matrix provided in Appendix F.



# **Preferred Solution** 8

## 8.1 **IDENTIFICATION**

Based on the evaluation of the noted alternatives and comments received through the PIC, the following was identified as the preferred solution:

Alternative A - 2-Lane Cross Section with Operational Improvements.

Recognizing that Alternative A does not recommend any road widening beyond what is necessary to provide exclusive turning lanes at intersections and accommodate upgrading the existing cross-section to meet County standards, the overall footprint of the improvements results in fewer impacts and costs as compared to Alternative B and C (both of which include widening the road throughout the entire corridor). In this respect, for environments where the impacts would be comparable across all of the alternatives, Alternative A was given a higher evaluation than Alternatives B and C whose overall footprints are greater.

While Alternative A does not satisfy the transportation needs criteria to the extent that the other alternatives with respect to the capacity provided, this does not infer that the capacity provided under Alternative A is insufficient - only that Alternatives B and C will provide more (or excess) capacity when compared to Alternative A. As noted in Table 6, Alternative A will accommodate the projected future volumes.

Table 8 provides a simplified summary of the evaluation assessment provided in Table 6.

## 8.2 **DESIGN CONCEPT**

As previously noted, Alternative A will consist of maintaining the 2-lane cross-section and incorporation operational improvements at key intersections. Preliminary design drawings have been developed which reflect the preferred designs and are illustrated in Figure 7, with additional drawings provided in Appendix G. Details of the preliminary design are provided in the following sections, as established through the Class EA evaluation process and input provided through public consultation. It is noted that these are considered preliminary and subject to updates and/or refinement through the detailed design process.



**Table 8: Assessment of Alternative Solutions** 

EVALUATION ( DESCRIPTOR	CRITERIA & GENERAL	ALT A 2 LANES	ALT B 3 LANES	ALT C 4 LANES
Physical Environment	traffic operations	•		
	utilities & services			•
Natural Environment	vegetation impact			•
	wildlife/terrestrial			•
	fisheries/aquatic Watercourse/wetlands			•
Social Environment	future impacts on adjacent property			•
Cultural / Heritage	archaeological impacts			•
	heritage impacts			•
Economic Environment	construction costs			•
	impact to commercial properties during construction			•
	Good	Better	Best	

PREFERRED SOLUTION: Alternative A - 2-Lane Cross-Section with Operational Improvements



## 8.2.1 **Cross-Section Improvements**

County Road 53 will be upgraded throughout the entire length of the study area to reflect the County's standard cross-section for a county road. The improvements will include:

- 3.75 metre travel lanes:
- 3.0 metre paved shoulders north of the Trans Canada Trail (increased from County standard 2.0 metre width to address comments regarding active transportation); and
- drainage and grading improvements.

## 8.2.2 Intersection/Access Improvements

The following intersection improvements are to be implemented (it is noted that these are subject to updates and/or refinement through the detailed design process).

# County Road 53 & 9th Line

The following improvements will be implemented at the 9th Line intersection:

- introduce a northbound left turn lane; and
- introduce a southbound left turn lane.

# County Road 53 & Georgian Downs (North Access)

The following improvements will be implemented at the Georgian Downs North Access:

- introduce a southbound left turn lane to serve Georgian Downs; and
- convert the existing southbound slip-by lane into a southbound through lane.

# County Road 53 & Georgian Downs (South Access)

The following improvements will be implemented at the Georgian Downs South Access:

- maintain/improve the existing southbound left turn lane;
- extend the existing northbound right turn taper; and
- implement traffic signals (signalization is to be implemented by the 2040 horizon and after the recommended road improvements are completed).

## 8.2.3 **Road Widening**

All widening required to accommodate the cross-section and intersection improvements will occur to the west due to the various constraints along the east side of the road (i.e. utility poles, gas pipe line, cemetery, etc.).



## 8.3 **ANTICIPATED IMPACTS**

## 8.3.1 Utilities

As part of the County Road 53 hydro improvements, InnPower is planning to relocate service/guy poles located on the west side of the road. Based on the plans received from InnPower in January 2023, 4 Hydro poles will need to be relocated to accommodate the proposed improvements.

## 8.3.2 **Property Impacts**

The proposed road improvements will require property acquisition from 4 properties along the west side of County Road 53, as summarized in Table 9. The property requirements do not impact any existing structures. It is noted that the property requirements are considered preliminary estimates and will be refined as the project progresses through the detailed design phase.

**Table 9: Property Requirements** 

ADDRESS / LOCATION	AREA REQUIRED	JUSTIFICATION	
7410 County Road 53 (Trans-Canada Trail)	120 m <sup>2</sup>	Required to accommodate standard County road cross-section (wider lanes and shoulders) and drainage/grading improvements	
7420 County Road 53 (residence)	485 m²		
3681 9th Line (agricultural)	1,300 m²		
Address Unknown (agricultural) North of 9 <sup>th</sup> Line to the Barrie Town limits	5,600 m <sup>2</sup>		

## 8.4 **CONFIRMATION OF CLASS EA SCHEDULE**

As noted previously, the Class EA guidelines for a Schedule B undertaking apply to the reconstruction of roads with an increase to travel lanes (including construction of localized operational improvements at intersections where property acquisition is required) where the cost of construction is less than \$3 million. The construction costs associated with the preferred solution, Alternative A - 2-Lane Cross-Section with Operational Improvements, are expected to be under \$3 million. As such, a Schedule B undertaking is confirmed to be appropriate.



# 9 Consultation - Notice of Completion

# 9.1 PURPOSE

The Notice of Study Completion represents the second mandatory point of public consultation in the Schedule B Class EA process. The purpose of such is to identify the conclusion of the study and provide an opportunity for additional review of the study findings and recommendations within a 30-day review period.

# 9.2 NOTIFICATION

In accordance with the Municipal Class EA guidelines, a Notice of Completion was prepared to identify the preferred solution and the opportunity for further review (a copy of the notice is provided in Appendix H). Notices were distributed as follows:

- mailed to each of the review agencies, municipalities, First Nations right holders, and stakeholder groups as previously contacted;
- mailed and/or emailed to area residents;
- posted on the County's website; and
- advertised in local print publications on two occasions.

# 9.3 30-DAY REVIEW PERIOD

This Class EA report will be placed on public record for a period of 30 days following the Notice of Study Completion. As per the notice, the public and review agencies will be encouraged to further review the report and provide written comments to the County.



# 10 Implementation

#### 10.1 **NEXT STEPS**

As per the Municipal Class EA process for a Schedule B undertaking, and having completed Phases 1 and 2, the project may proceed to Phase 5 - Implementation (subject to completion of the 30-day review period following issuance of the Notice of Completion). The timeline for implementation has not yet been established, but the County's general intent is to proceed with construction in the next several years (allowing for property acquisition, site preparation and utility improvements (by others)).

Phase 5 includes the following key tasks:

- completion of additional supporting studies, including:
  - a Stage 2 archaeological study for the areas identified as retaining archaeological potential (to be completed prior to any construction activity or disturbance of lands);
  - a Natural Heritage Impact Assessment to identify necessary mitigation measures to inform detailed design and subsequent construction activities; and
  - additional geotechnical to support the road work (to be completed as necessary).
- complete engineering design drawings and tender documents for required works;
- proceed to construction and operations; and
- monitor for environmental provisions and commitments.

#### 10.2 **IMPACT MITIGATION & MONITORING**

#### 10.2.1 Mitigation

Further to the possible impacts on the environments resulting from the implementation of the preferred solutions, a number of potential mitigating measures have been identified as outlined in Table 10. This is not intended to be a complete list of the potential impacts and mitigating measures, but rather an initial overview. During detailed design, the extent of impacts will be identified and the practicality of mitigation will be appropriately addressed.



**Table 10: Summary of Mitigating Measures** 

POTENTIAL IMPACT	MITIGATING MEASURES
Traffic Safety	<ul> <li>Follow Ontario Traffic Manual guidelines for proper signing and pavement markings</li> </ul>
Impact on Road Capacity During Construction	<ul> <li>Follow Ontario Traffic Manual guidelines for proper signing and pavement markings to ensure safe lane closures/temporary conditions</li> </ul>
	<ul> <li>One lane of traffic per direction is to be maintained throughout the construction</li> </ul>
Major Services / Utility Conflicts	<ul> <li>Coordinate with utility companies in identifying service and possible conflicts and relocation strategies</li> </ul>
	<ul> <li>All affected companies will be circulated on the design drawings to plan any necessary removals or relocations</li> </ul>
Fisheries & Aquatic	Stage work to non-critical times
Habitat	<ul> <li>Seasonal constraints</li> </ul>
Wildlife Habitat	Stage work to avoid bird and turtle breeding periods
Vegetation	<ul> <li>Revegetate disturbed areas with native seed mix immediately following final grading</li> </ul>
	<ul> <li>Delineate tree/vegetation protection areas</li> </ul>
	Minimize site-clearing activities
Groundwater Resources	<ul> <li>Delineate and properly prepare refueling areas to prevent soil contamination due to fuel spills</li> </ul>
	<ul> <li>Identify and protect groundwater upwelling/source areas from contamination and flow disturbance</li> </ul>
	<ul> <li>Culvert crossings and water crossings must be designed to minimize disruption of the discharge features of the banks</li> </ul>
Water Quality /	<ul> <li>Provisions for spill control in construction contracts</li> </ul>
Stormwater Management	<ul> <li>Fast, accurate reporting of spills to the appropriate agencies.</li> </ul>
	<ul> <li>Pollution prevention and source control by best management land use practices and best stormwater management practices.</li> </ul>
	<ul> <li>Refueling of equipment done away from watercourses</li> </ul>
	<ul> <li>Stockpiling of materials away from watercourses</li> </ul>



POTENTIAL IMPACT	MITIGATING MEASURES
	<ul> <li>Implementation of erosion and sedimentation controls and regular monitoring and reporting of maintenance after major rainfall events</li> </ul>
	<ul> <li>Revegetation of disturbed areas immediately following final grading</li> </ul>
	<ul> <li>Development of a stormwater quality management plan to minimize the entry of contaminants into the watercourses</li> </ul>
Archaeological / Cultural Heritage Resources	<ul> <li>If archaeological or cultural heritage features are encountered during construction, work will cease immediately and the Ministry of Heritage, Sport, Tourism and Culture Industries will be contacted</li> </ul>
Impact on Existing Residents and	<ul> <li>Notify public agencies and adjacent owners of construction schedule</li> </ul>
Businesses	<ul> <li>Ensure access is maintained</li> </ul>
	<ul> <li>Ensure services such as garbage, recycling, and green bin is maintained</li> </ul>
	<ul> <li>Ensure public transit is maintained in the area</li> </ul>
Nuisance Concerns (Dust/Noise)	<ul> <li>Dust levels monitored and road watering/sweeping completed regularly</li> </ul>
	Construction is limited to typical working hours

### 10.2.2 Monitoring

Monitoring objectives include:

- monitoring of individual measures and issues (i.e. erosion and sediment control, traffic control, etc.)
- monitoring of overall effectiveness of control measures; and
- ongoing identification of areas of potential concern.

Construction inspection will occur on a regular basis to ensure that the mitigation described in the report and in the subsequent contract documents are carried out effectively. The timing and frequency of these visits coincide with the schedule of the construction operations and will be adjusted to reflect the sensitivity of the site concerns and the development of unforeseen environmental problems during and after construction. The construction inspection will maintain daily records which will detail any concerns, corrective actions and further action required.



During short-term and long-term intervals of construction activities, the project site will be regularly monitored to ensure all environmental protection measures are operating effectively.

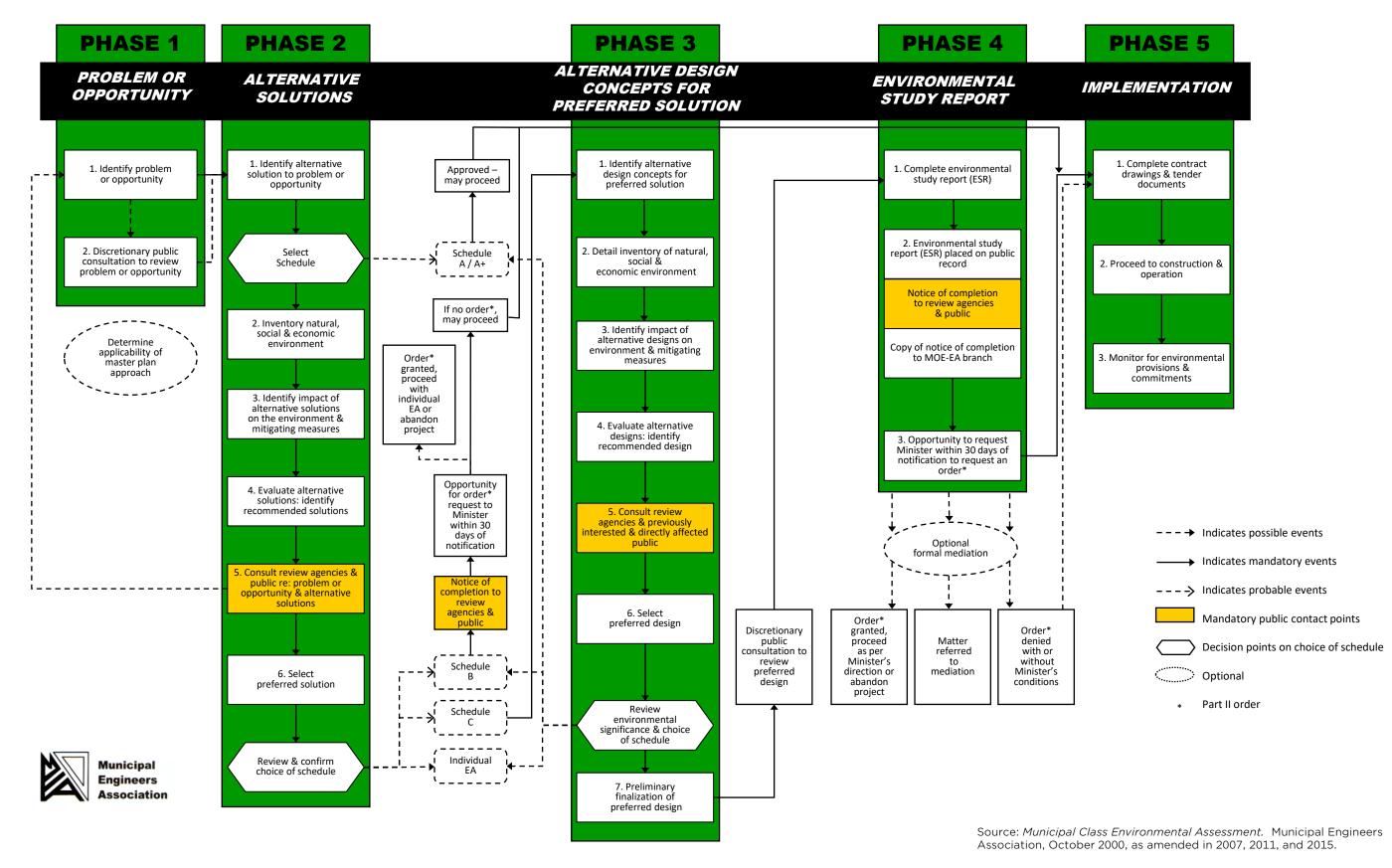
In addition to the site-specific monitoring requirements, an audit of the environmental performance of the project may be undertaken. Such an audit may include the following:

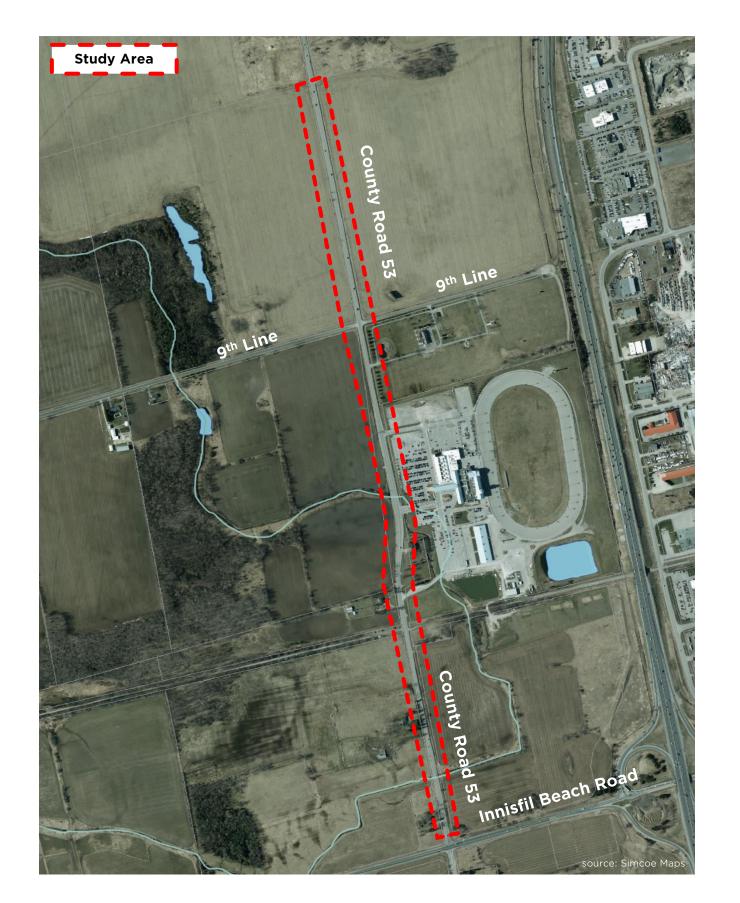
- the review of the long-term effectiveness of mitigation measures;
- the review inspection reports, notes and the resolution of noted concerns;
- the review of comments and concerns received from regulatory agencies and public interest groups and how these issues were addressed; and
- recommended modifications to the mitigation measures or procedures as required.

#### 10.3 **CONSULTATION**

There are no further requirements with respect to public consultation during Phase 5 (other than what may be required to secure the necessary permits and approvals of the ensuing design).







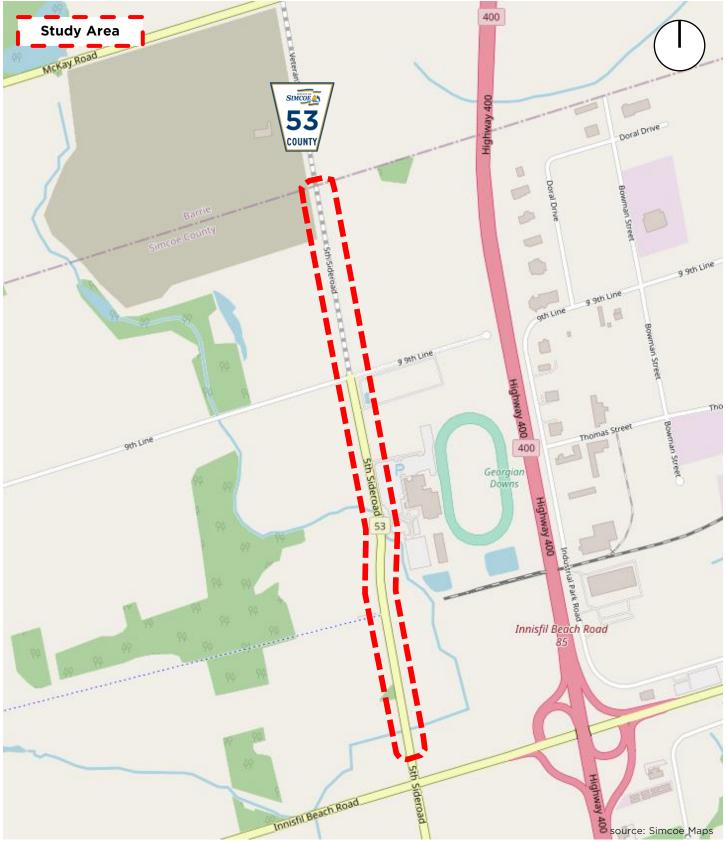




Figure 2: Study Area





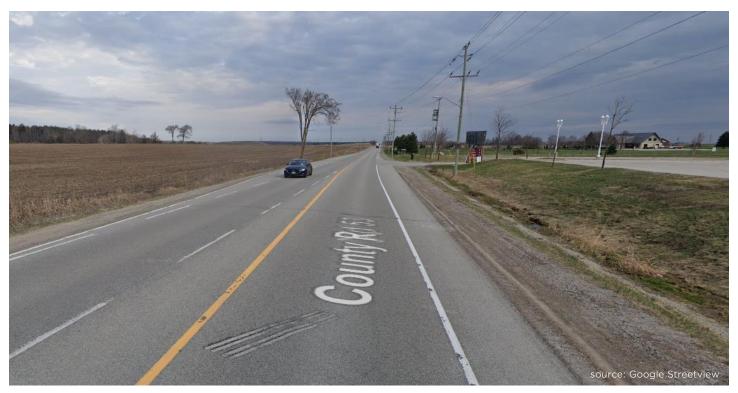
Looking north along County Road 53 from County Road 21



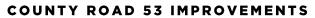
Looking north along County Road 53 from Georgian Downs South Access



Looking north along County Road 53 towards Georgian Downs South Access



Looking north along County Road 53 towards Georgian Downs north Access

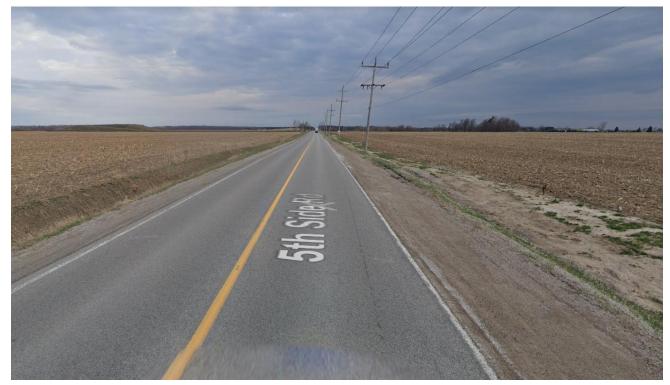








Looking north along County Road 53 from Georgian Downs South Access



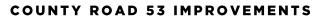
Looking north along County Road 53 from 9th Line



Looking north along County Road 53 towards 9th Line

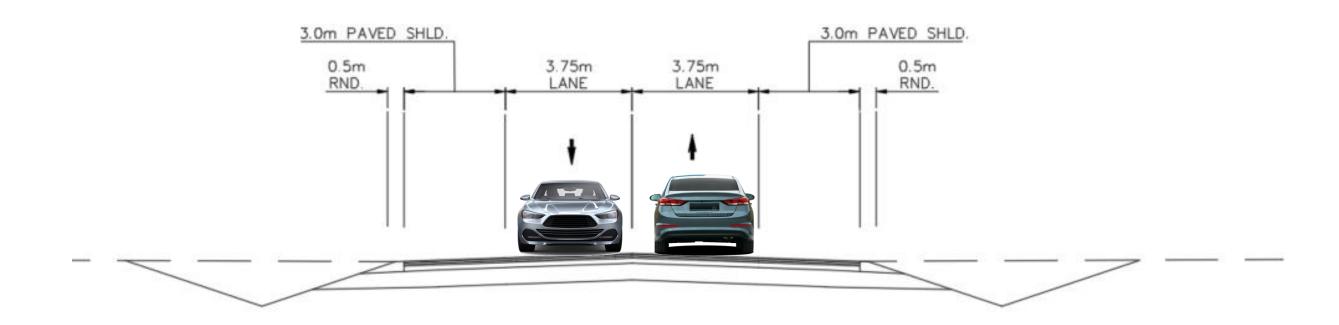


Looking north along County Road 53 towards Town of Innisfil/City of Barrie Boundary





# 2-Lane Cross-Section

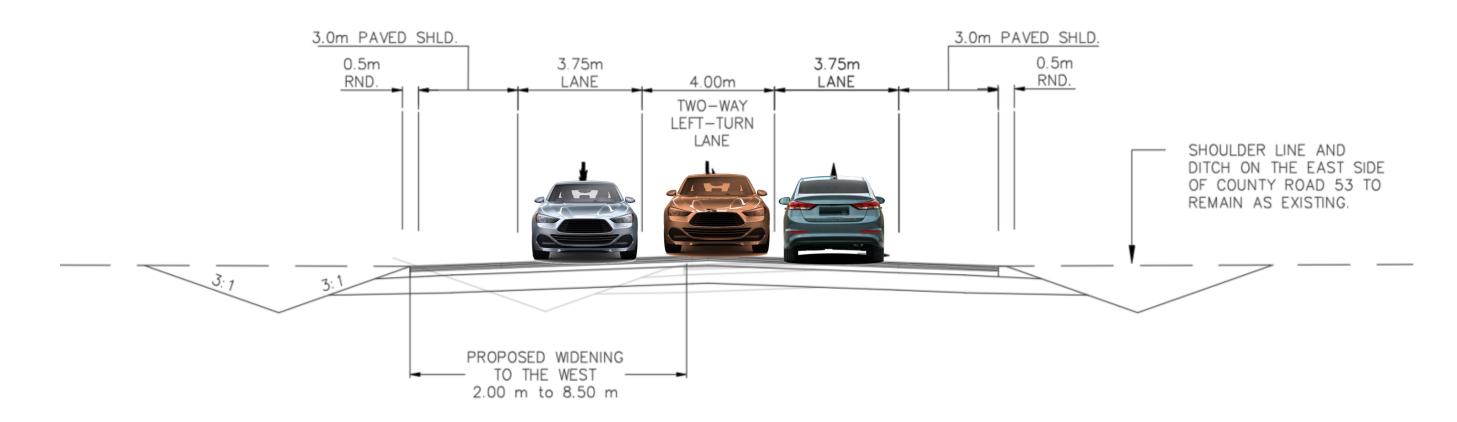


# Key elements include:

- maintain the existing 2-lane cross-section with intersection improvements (turn lanes and traffic signals)
- upgrade the existing cross-section to County standards (wider lanes and wider shoulders)
- maintain the east edge of shoulder and widen the right-of-way to the west as needed to accommodate intersection improvements and improved drainage (widening to the east is constrained due to Innisvale Cemetery, buried gas main and hydro poles)



# **3-Lane Cross-Section**

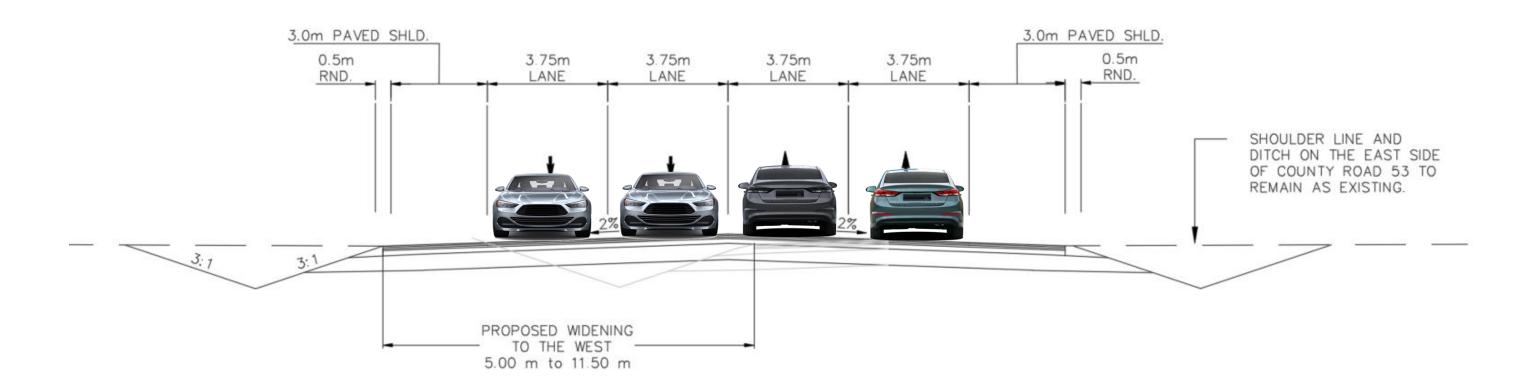


# Key elements include:

- widen the road to 3-lane cross-section to increase capacity (1 lane per direction + centre turn lane)
- improve lane configurations at intersections with traffic signals as needed
- maintain the east edge of shoulder and widen the right-of-way to the west as needed to accommodate the 3-lane cross section and improved drainage (widening to the east is constrained due to Innisvale Cemetery, buried gas main and hydro poles)



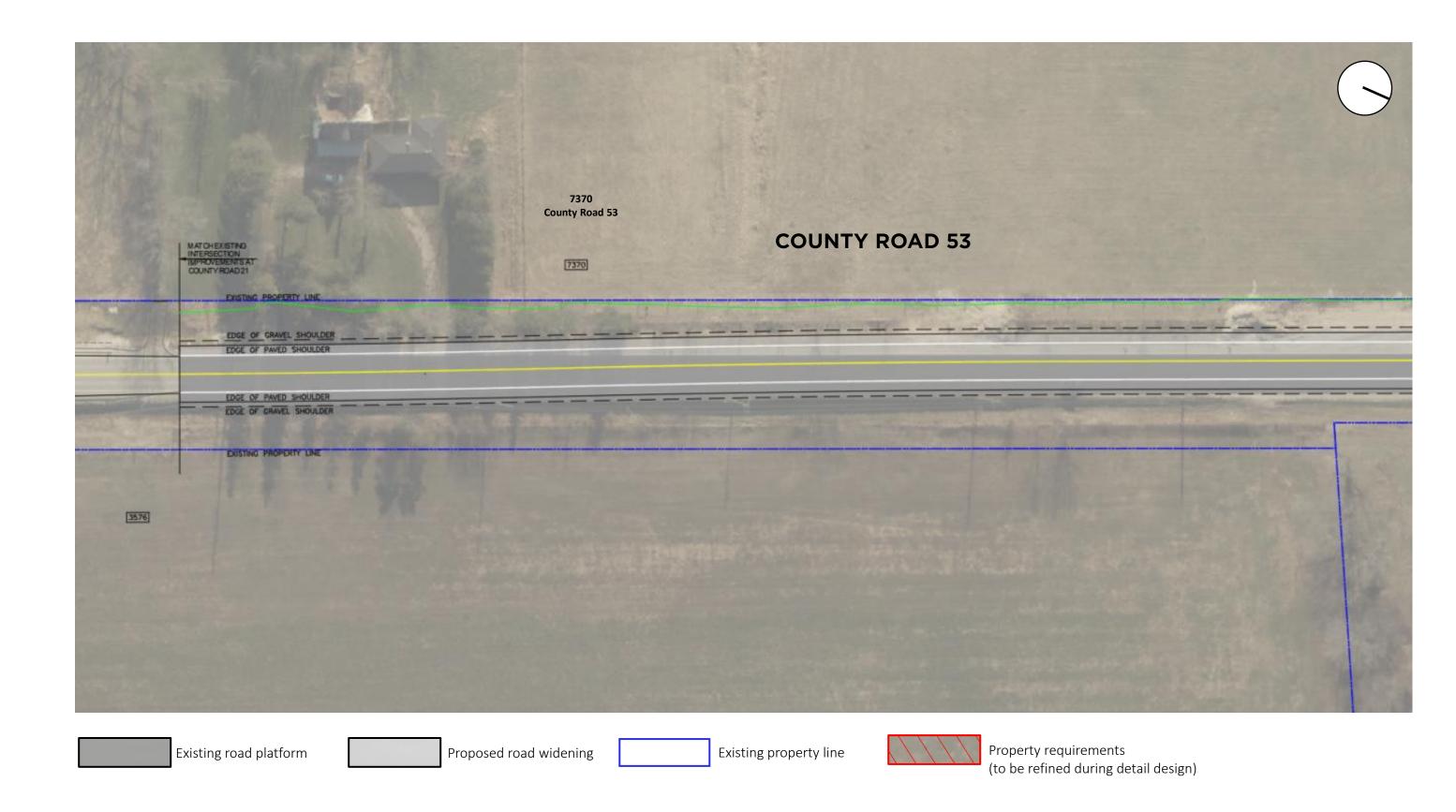
# **4-Lane Cross-Section**



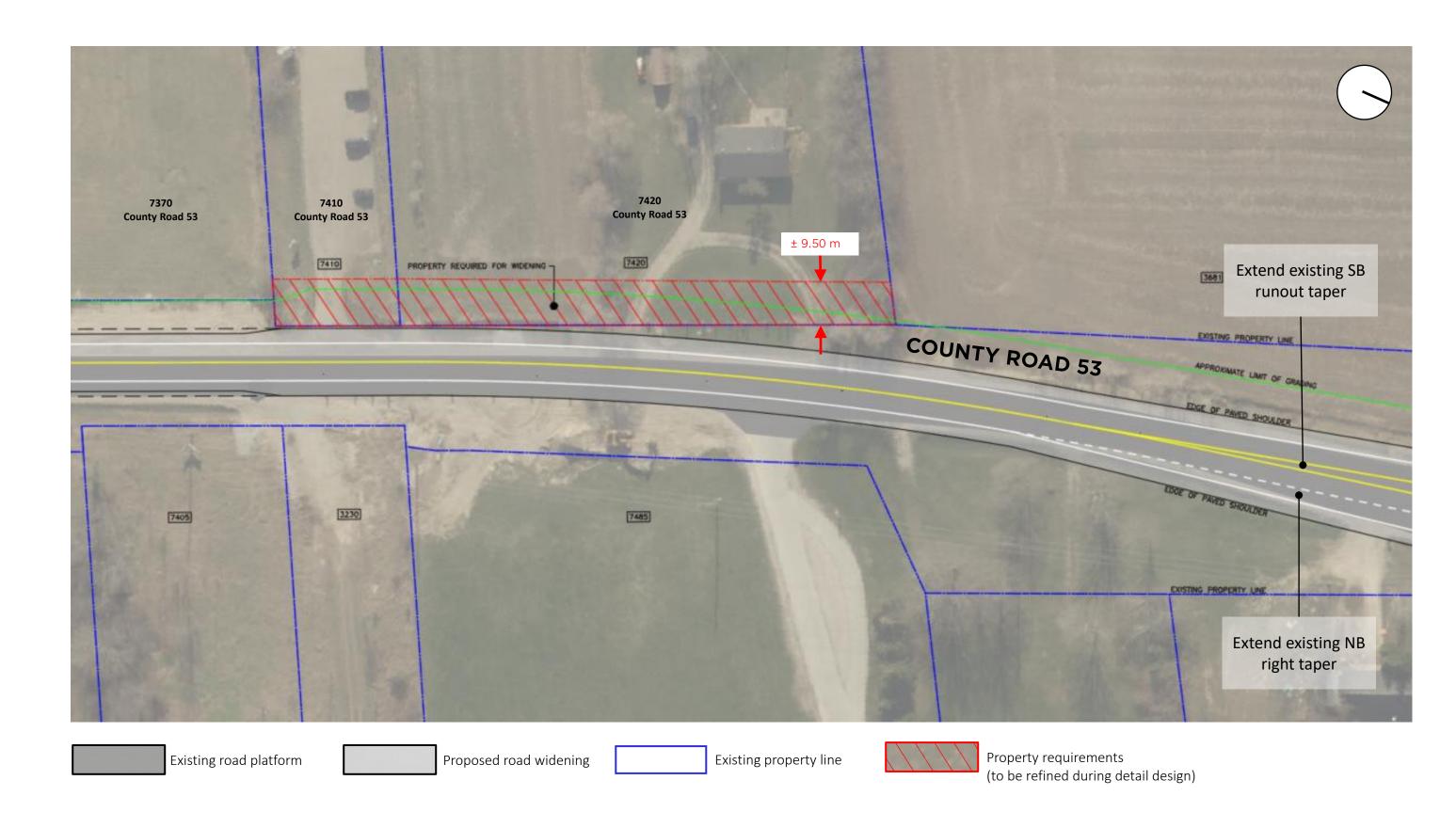
# Key elements include:

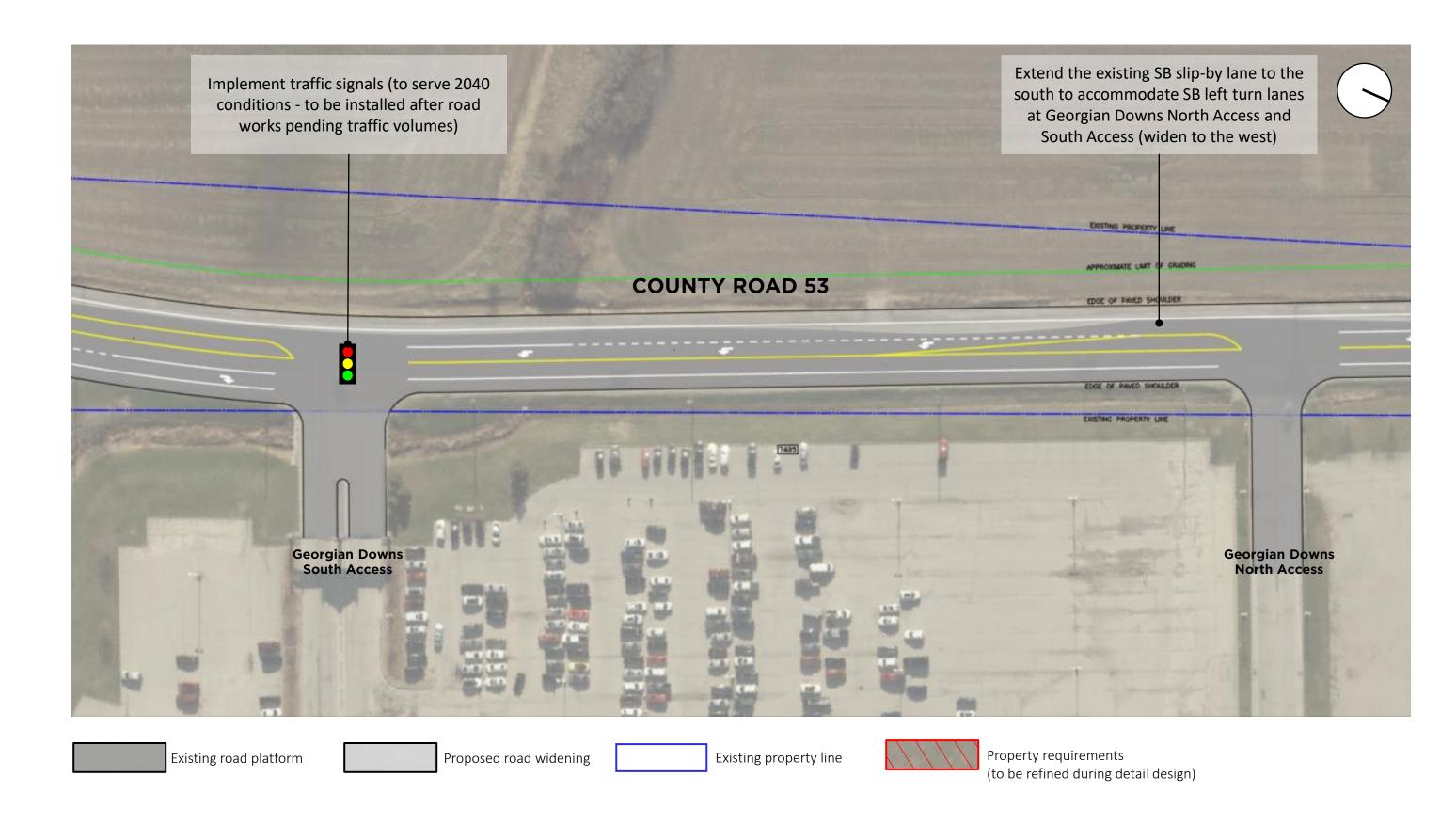
- widen the road to 4-lane cross-section to increase capacity (2 lanes per direction, no centre turn lane)
- improve lane configurations at intersections with traffic signals as needed
- maintain the east edge of shoulder and widen the right-of-way to the west as needed to accommodate the 4-lane cross section and improved drainage (widening to the east is constrained due to Innisvale Cemetery, buried gas main and hydro poles)

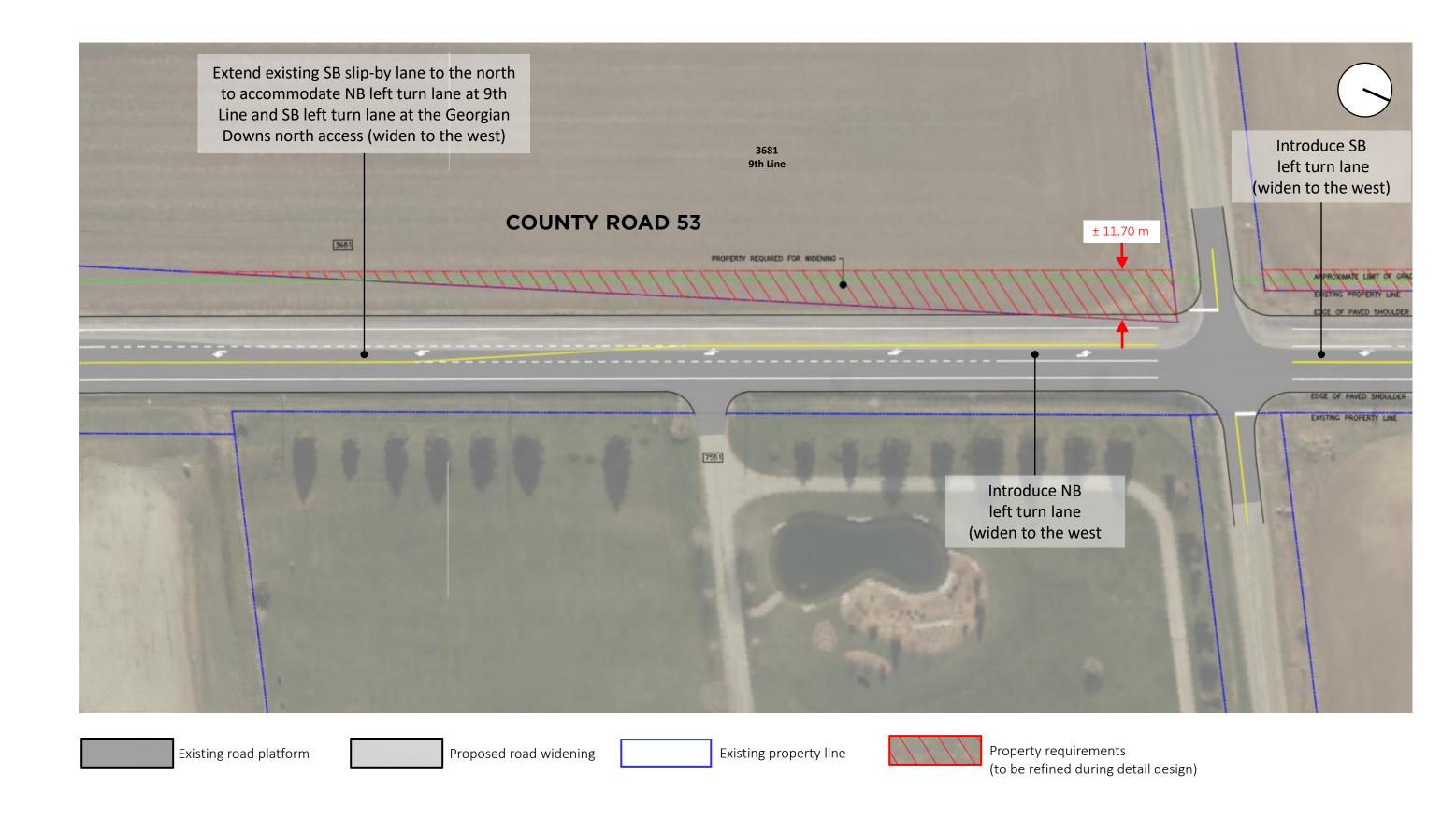


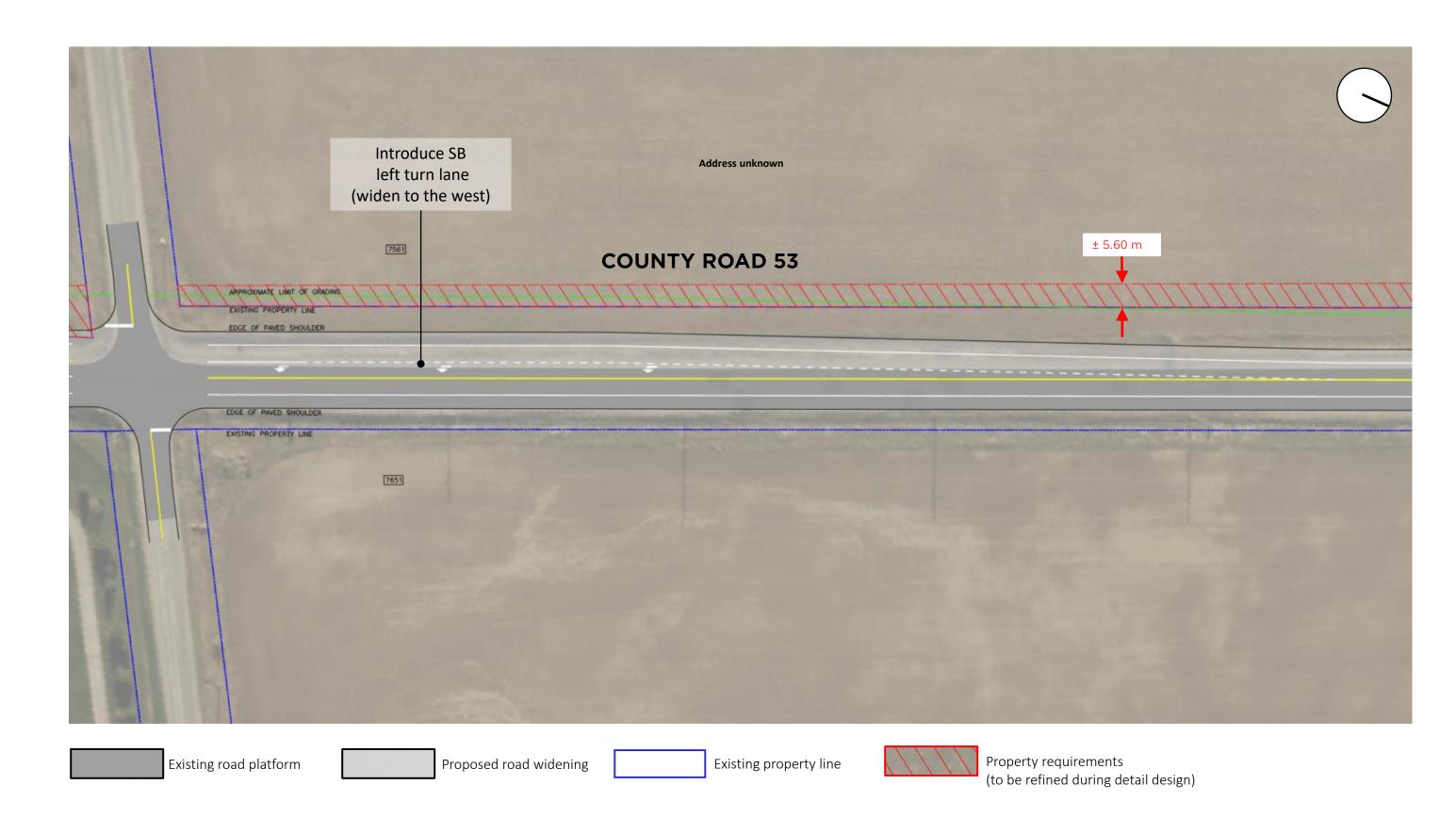




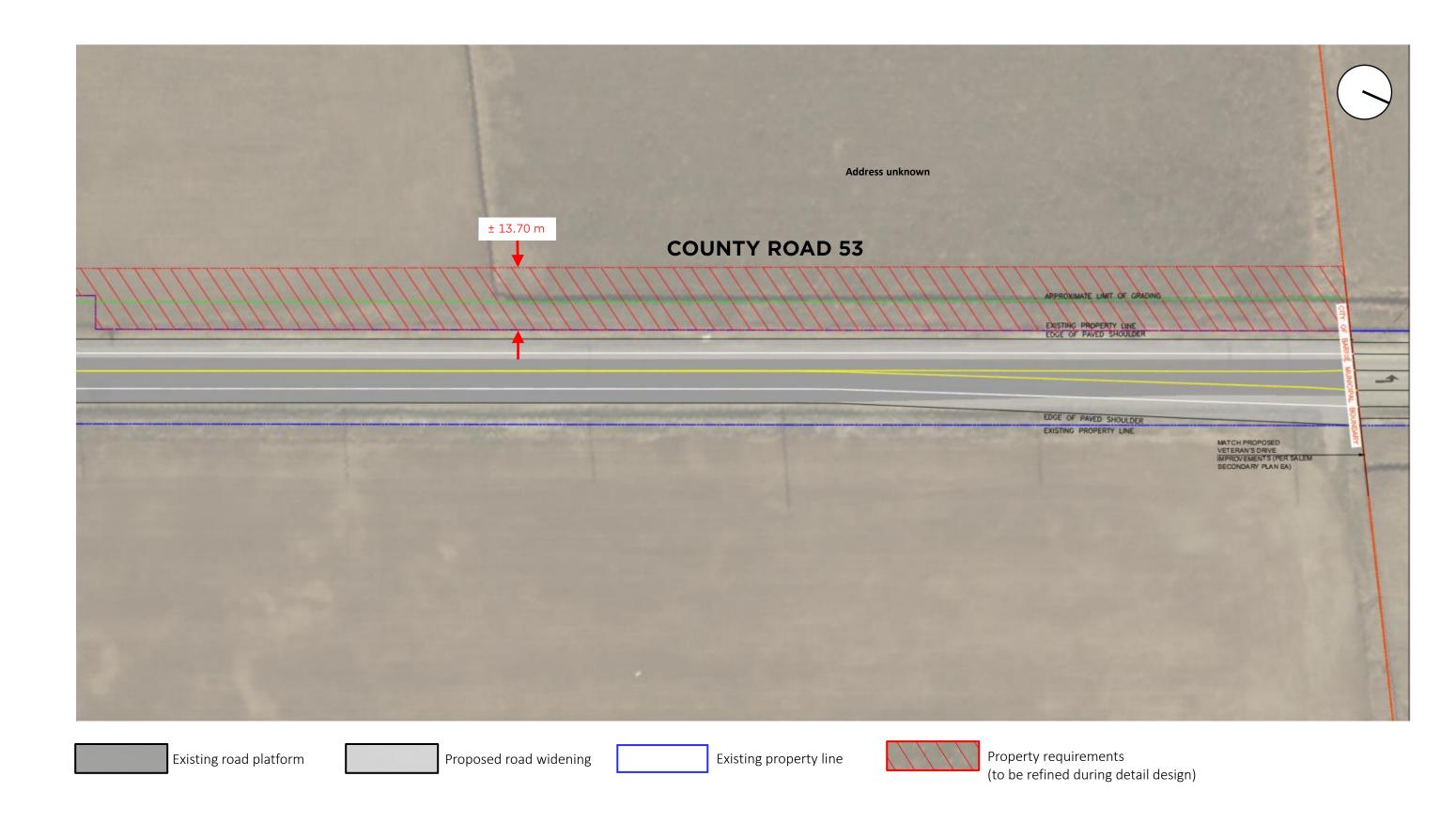














Appendix A: Transportation Needs & Justification Report



**Enhancing our communities** 



# County Road 53 Class EA TRANSPORTATION NEEDS & JUSTIFICATION

County of Simcoe

# **Document Control**

File: Prepared by: Prepared for:

419376 Tatham Engineering Limited County of Simcoe

41 King Street, Unit 4 1110 Highway 26
Date: Barrie, Ontario L4N 6B5 Midhurst, Ontario L9X 1N6

May **T** 705-733-9037 5, 2022 tathameng.com

Authored by:	Reviewed by:
Javid John	M. J. CILLIP SOSSIONAL PROPERTY OF ONTARIO PROPERTY OF ONTARIO
David Perks M.Sc., PTP	Michael Cullip B.Eng. & Mgmt., M.Eng., P.Eng.
Transportation Planner, Project Manager	Vice President Head Office Operations

Disclaimer	Copyright
The information contained in this document is solely for the use of the Client identified on the cover sheet for the purpose for which it has been prepared and Tatham Engineering Limited undertakes no duty to or accepts any responsibility to any third party who may rely upon this document.	This document may not be used for any purpose other than that provided in the contract between the Owner/Client and the Engineer nor may any section or element of this document be removed, reproduced, electronically stored or transmitted in any form without the express written consent of Tatham Engineering Limited.

Issue	Date	Description
1	May 5, 2022	Final Report

# **Document Contents**

1 li	Introduction	1
1.1	Background	1
1.2	Objectives	1
2 B	Baseline (2019) Conditions	2
2.1	Study Area	2
2.2	Road Network	2
2.3	Traffic Volumes	3
2.4	Traffic Operations	4
3 F	Future Conditions	6
3.1	Road Network Improvements	6
3.2	Projected Growth	7
3.3	Traffic Volumes	13
3.4	Traffic Operations - High Growth Scenario	13
3.5	Traffic Operations - Medium Growth Scenario	18
3.6	Traffic Operations - Low Growth Scenario	21
3.7	Turn Lane Requirements	23
4 R	Recommendations	27
4.1	Growth Scenario	27
4.2	Recommended Improvements	28
5 S	Summary	30
5.1	Baseline (2019) Operations	30
5.2	Future Operations	30



### Tables

Table 1: Intersection Operations - 2019 Conditions	4
Table 2: County Road 53 Road Section Operations - 2019 Conditions	5
Table 3: Traffic Growth Rates - Salem Secondary Plan ESR	9
Table 4: Growth Scenarios - County Road 53	11
Table 5: Road Section Operations - 2030 PM Peak   High Growth Scenario	14
Table 6: Road Section Operations - 2040 PM Peak   High Growth Scenario	14
Table 7: Road Section Operations - 2040 PM Peak   High Growth Scenario + Widen	15
Table 8: Intersection Operations - 2030 & 2040 PM Peak Hour   High Growth Scenario	15
Table 9: Intersection Operations - 2030 & 2040 PM Peak Hr   High Growth Scenario + Improve	: 17
Table 10: Road Section Operations - 2030 PM Peak   Medium Growth Scenario	18
Table 11: Road Section Operations - 2040 PM Peak   Medium Growth Scenario	19
Table 12: Intersection Operations - 2030 & 2040 PM Peak Hour   Medium Growth Scenario	20
Table 13: Intersection Operations - 2040 PM Peak Hour   Medium Growth Scenario + Improve	21
Table 14: Road Section Operations - 2030 PM Peak   Low Growth Scenario	22
Table 15: Road Section Operations - 2040 PM Peak   Low Growth Scenario	22
Table 16: Intersection Operations - 2030 & 2040 PM Peak Hour   Low Growth Scenario	23
Table 17: Right Turn Lane Warrants - 2030 PM Peak Hour	24
Table 18: Right Turn Lane Warrants - 2040 PM Peak Hour	24
Table 19: Left Turn Lane Warrants - 2030 PM Peak Hour	25
Table 20: Left Turn Lane Warrants - 2040 PM Peak Hour	25
Figures	
Figure 1: Study Area	33
Figure 2: Road Designations	34
Figure 3: 2019 Traffic Volumes	35
Figure 4: Diversion   High Growth Scenario	36
Figure 5: Diversion   Medium Growth Scenario	37
Figure 6: Diversion   Low Growth Scenario	38
Figure 7: 2030 Traffic Volumes   High Growth Scenario	39
Figure 8: 2030 Traffic Volumes   Medium Growth Scenario	40
Figure 9: 2030 Traffic Volumes   Low Growth Scenario	41
Figure 10: 2040 Traffic Volumes   High Growth Scenario	42
Figure 11: 2040 Traffic Volumes   Medium Growth Scenario	43
Figure 12: 2040 Traffic Volumes   Low Growth Scenario	44
Figure 13: Left Turn Lane Requirements	45



Figure 14: Recommended Improvements	46
Appendices	
Appendix A: Traffic Counts	
Appendix B: Intersection Operations   Baseline (2019)	
Appendix C: Background Information	
Appendix D: Intersection Operations   High Growth	
Appendix E: Intersection Operations   Medium Growth	
Appendix F: Intersection Operations   Low Growth	

# Introduction

#### 1.1 **BACKGROUND**

Tatham Engineering was retained by the County of Simcoe to complete Phases 3 and 4 of the Municipal Class EA process to assess transportation improvements along County Road 53 (5th Sideroad) from County Road 21 (Innisfil Beach Road) to the City of Barrie/Town of Innisfil boundary.

The County of Simcoe Transportation Master Plan Update - Final Report<sup>1</sup> recommended that County Road 53 be widened to a 4-lane profile from County Road 21 to the City of Barrie/Town of Innisfil boundary. In consideration of the TMP findings, the County has initiated a Class EA to address the recommended improvements. The County TMP Update was completed in accordance with the Class EA planning process to satisfy Phase 1 and Phase 2 requirements. The County Road 53 Class EA will be completed in accordance with the requirements of Phase 3 and Phase 4 of the Class EA process, including public consultation and completion of an Environmental Study Report, thereby satisfying the requirements of a Schedule C undertaking.

#### 1.2 **OBJECTIVES**

Prior to advancing Phases 3 and 4 of the Class EA process, a needs and justification study has been completed to address the potential impact of MTO improvement plans for the surrounding road network (namely the implementation of a full interchange at Highway 400 and McKay Road) that were not otherwise being considered by MTO at the time of the County's TMP Update.

In consideration of the planned McKay Road interchange and the potential impact of such on the traffic patterns on County Road 53, a traffic operations assessment was conducted to review the existing and future operations of the study area road network and to confirm the transportation improvements required to ensure acceptable operations through the 2040 horizon period. In this respect, the study has examined both midblock operations and intersection operations to confirm the overall lane provision required and further identify the need for additional turn lanes at the key intersections. The assessment has also included a review of the operations at the Georgian Downs access points for the purpose of identifying the need for greater intersection controls (signal vs stop), additional turn lanes and/or turn restrictions.

<sup>&</sup>lt;sup>1</sup> County of Simcoe Transportation Master Plan Update - Final Report. County of Simcoe & MMM Group. October 2014.



# 2 Baseline (2019) Conditions

#### 2.1 STUDY AREA

As previously noted, the study area has been defined as the 2.1 km segment of County Road 53 from County Road 21 (Innisfil Beach Road) to the City of Barrie/Town of Innisfil boundary. Along the study area road segment, County Road 53 intersects with County Road 21 (Innisfil Beach Road), the north and south access points to Georgian Downs and 9<sup>th</sup> Line

The corresponding study area is illustrated in Figure 1.

### 2.2 ROAD NETWORK

#### 2.2.1 County Road 53

As per the *County of Simcoe Official Plan²*, County Road 53 is designated as a secondary arterial road. From County Road 21 to the City of Barrie limit, the road has a 2-lane rural cross section with gravel shoulders and open drainage ditches along both sides of the road. The posted speed limit through the study area is 80 km/h and hence a design speed of 100 km/h has been assumed (posted speed limit + 20 km/h for higher volume roads). County Road 53 maintains a fairly flat vertical alignment with a slight horizontal 'S' curve to the south of the Georgian Downs south access. As an arterial road, County Road 53 has a planning capacity in the order of 900 to 1100 vehicles per hour per lane (vphpl).

Mapping from the County of Simcoe Official Plan, illustrating the corresponding road designation, is provided in Figure 2.

#### 2.2.2 Key Intersections

### County Road 53 & County Road 21

The intersection of County Road 53 with County Road 21 is 4-leg signalized intersection. The west approach (County Road 21) provides an exclusive left turn lane and a shared through/right turn lane, whereas the east approach consists of exclusive left, through and right turn lanes. The north and south approaches (County Road 53) each consist of an exclusive left turn lane and a shared through/right turn lane. It is noted that the intersection is currently under construction to incorporate various improvements on all approaches. The improvements, which are to be completed in 2022, are further detailed in Section 3.1.



<sup>&</sup>lt;sup>2</sup> County of Simcoe Official Plan. November 2008.

### County Road 53 & 9th Line

The intersection of County Road 53 with 9<sup>th</sup> Line is 4-leg unsignalized intersection with stop control on the minor approaches (9<sup>th</sup> Line). All approaches consist of a single shared left/through/right turn lane.

#### County Road 53 & Georgian Downs South (Main) Access

The intersection of County Road 53 with the Georgian Down main access is a 3-leg unsignalized intersection with stop control on the minor approach (Georgian Downs access). The north approach provides an exclusive left turn lane and a through lane, whereas the south approach provides an exclusive right turn lane and a through lane. The east approach (Georgian Downs access) provides exclusive right and left turn lanes and two receiving lanes.

#### County Road 53 & Georgian Downs North Access

The intersection of County Road 53 with the Georgian Downs north access is a 3-leg unsignalized intersection with stop control on the minor approach (Georgian Downs access). The north approach provides a shared left/through lane and a slip-by lane, whereas the south approach provides a shared through/right turn lane. The south approach also includes a 90-metre paved taper within the shoulder to facilitate the right turn movement into Georgian Downs. The east approach (Georgian Downs north access) provides exclusive right and left turn lanes and a single inbound receiving lane.

### **Private Driveways**

Notwithstanding the intersections noted above, there are several other minor access points along County Road 53 through the study area. There are several private driveways and field access points which serve the abutting residential and agricultural properties. There is also a gravel driveway providing access to the parking area for the Trans-Canada Trail on the west side of County Road 53, south of Georgian Downs.

#### 2.3 TRAFFIC VOLUMES

Traffic volumes along County Road 53 at the noted study intersections were determined from intersection counts completed on Tuesday May 28, 2019 from 7:00 to 10:00 and 16:00 to 20:00 (detailed count sheets are provided in Appendix A). Given the time of year, the observed volumes are considered reflective of typical peak conditions (in that Tuesdays are "race nights" at Georgian Downs).

The 2019 volumes are illustrated in Figure 3.



#### 2.4 TRAFFIC OPERATIONS

### 2.4.1 Intersection Operations

The assessment of the baseline conditions provides the basis for the assessment of the future conditions. The analysis baseline analysis is based on the 2019 traffic volumes, corresponding intersection configurations and control, and procedures outlined in the 2000 Highway Capacity Manual<sup>3</sup> (using Synchro v.10 software). For signalized intersections, the operating levels of service (LOS) and delays pertain to the overall approach; whereas the volume to capacity (v/c) ratio reflects the most critical movement (i.e. through movement, left turn or right turn). For unsignalized intersections, the review considers the average delay (measured in seconds), level of service and volume to capacity for the critical movements, namely the stop-controlled movements on the minor approach. LOS A corresponds to the best operating condition with minimal delays whereas LOS F corresponds to unacceptable operations resulting from high intersection delays. A v/c ratio of less than 1.0 indicates operations less than capacity, whereas a v/c of 1.0 indicates capacity has been reached. A summary of the analysis is provided in Table 1 with corresponding detailed worksheets provided in Appendix B.

Table 1: Intersection Operations - 2019 Conditions

INTERSECTION & MOVEMENT		CONTROL	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 53 & 9th Line	EB	stop	10	В	0.03	15	С	0.03
3. Line	WB	stop	12	В	0.01	20	С	0.01
County Road 53 & Georgian Downs North	WB	stop	10	В	0.01	15	В	0.05
County Road 53 & Georgian Downs South	WB	stop	12	В	0.02	22	С	0.30
County Road 53 & County Road 21	EB	signal	18	В	0.60	13	В	0.35
County Road 21	WB	signal	19	В	0.36	22	С	0.69
	NB	signal	20	В	0.16	22	С	0.38
	SB	signal	13	В	0.33	14	В	0.46
	overall	signal	17	В	0.54	19	В	0.59

<sup>&</sup>lt;sup>3</sup> Highway Capacity Manual. Transportation Research Board, Washington DC, 2000.



Based on the 2019 volumes, the signalized intersection of County Road 53 with County Road 21 provides excellent overall levels of service (LOS B or better) with minimal delays during both peak hours. It is further noted that none of the individual movements (i.e. left turn, right turn, and through movements) operate below a level of service C, with a majority of the movements providing a level of service B or better.

With respect to the unsignalized intersections, all intersections considered in the assessment provide good overall operating conditions (LOS C or better) with average delays.

Based on the noted operations of both the signalized and unsignalized intersections, no improvements are required to support the baseline conditions.

#### 2.4.2 **Road Section Operations**

Further to the operations at the key intersections, mid-block operations have also been considered. As previously noted, County Road 53 has a lane capacity in the order of 900 to 1100 vphpl. For the purpose of this study, the lower capacity threshold (900 vphpl) has been considered. The baseline road section operations are summarized in Table 2 considering the peak hour peak directional volumes (i.e., greatest volume per direction considering both peak periods).

Table 2: County Road 53 Road Section Operations - 2019 Conditions

ROAD SECTION & LANES / DIRECTION		CAPACITY <sup>1</sup>		TRAFFIC VOLUMES (VPH)		VOLUME TO CAPACITY	
		NB	SB	NB	SB	NB	SB
North of 9 <sup>th</sup> Line	1	900	900	546	365	0.61	0.41
9 <sup>th</sup> Line to Georgian Downs North Access	1	900	900	587	366	0.65	0.41
Georgian Downs North Access to Georgian Downs South Access	1	900	900	563	348	0.63	0.39
Georgian Downs South Access to I County Road 21	1	900	900	617	399	0.69	0.44
South of County Road 21	1	900	900	208	199	0.23	0.22

<sup>&</sup>lt;sup>1</sup> Capacity is denoted as vehicles per hour per direction

As indicated, County Road 53 is operating at 69% capacity or less (i.e.  $v/c \le 0.69$ ), thus indicating that the network currently operates with reserve capacity. No improvements are recommended to address capacity under baseline conditions.



#### **Future Conditions** 3

#### 3.1 **ROAD NETWORK IMPROVEMENTS**

The following road network improvements are planned for the area:

- County Road 21/County Road 53 intersection improvements;
- Highway 400/County Road 21 interchange improvements;
- County Road 21 (Innisfil Beach Road) widening;
- Veteran's Drive widening; and
- McKay Road/Highway 400 interchange.

### County Road 21/County Road 53 Intersection Improvements

As part of the County Road 21 (Innisfil Beach Road) widening project, the County is making improvements to several intersections along County Road 21, including the intersection with County Road 53. The intersection improvements include additional through lanes on County Road 21 and exclusive right turn lanes on the north, south and west approaches. Upon completion, the east and west approaches (County Road 21) will consist of an exclusive left turn lane, two through lanes and an exclusive right turn lane. The north and south approaches (County Road 53) will consist of an exclusive left turn lane, a through lane and an exclusive right turn lane. The intersection improvements are anticipated to be complete by 2022, and thus have been considered in the intersection operations assessments contained herein for all future horizon years.

#### Highway 400/County Road 21 Interchange Improvements

MTO has completed the detailed design for improvements to Highway 400/County Road 21 (Innisfil Beach Road) interchange. The improvements include replacement of the existing bridge structure and reconfiguration of the interchange ramps to accommodate the future widening of Highway 400. The new bridge will also accommodate the widening of Innisfil Beach Road to 4 lanes. The interchange works are to commence in 2022 with anticipated completion by 2024.

#### County Road 21 (Innisfil Beach Road) Widening

The County of Simcoe is in the process of widening County Road 21 (Innisfil Beach Road) to a 4lane cross section between County Road 39/20th Sideroad and County Road 27. The widening will occur in four phases working east to west. Phase 1 works (20th Sideroad to County Road 4) are currently underway. Timing for completion of the overall widening project is anticipated by



2028, although it is noted that widening of County Road 21 through its intersection with County Road 53 is anticipated this year (2022)

#### Veteran's Drive Widening

As per the Salem Secondary Plan Transportation Improvements Environmental Study Report<sup>4</sup>, Veteran's Drive is to be widened to a 5-lane cross section (two lanes per direction with a continuous centre turn lane) from Salem Road to approximately 250 metres south of McKay Road, at which point it will narrow to a 3-lane cross section (1 lane per direction with a continuous centre turn lane). At the City of Barrie/Town of Innisfil boundary (where Veteran's Drive transitions to County Road 53), the road will taper to a 2-lane cross section. The City of Barrie Transportation Master Plan identifies an estimated timeline of 2021.

#### McKay Road/Highway 400 Interchange

A full interchange at McKay Road and Highway 400 was identified in the City of Barrie's 2014 *Multi-Modal Active Transportation Master Plan* and was the subject of the *McKay Road / Highway 400 Interchange and Salem Road / Lockhart Road Crossing at Highway 400 Environmental Study Report<sup>5</sup>.* The planned interchange will be a full interchange (i.e. ramp access to/from the north and southbound lanes on Highway 400). While not within the County Road 53 Class EA study area limits, the implementation of the interchange will have a significant impact on the traffic volumes on County Road 53. Construction of the interchange is to commence in 2022. For the purpose of this study, the McKay interchange is assumed to be completed prior to 2030.

#### Other Improvements

In addition to the McKay Road interchange, there are other improvements to the wider road network that may impact the future traffic volumes on County Road 53. These improvements include the Harvie Road/Big Bay Point Road crossing of Highway 400 and the proposed Mapleview Drive/Highway 400 interchange improvements (i.e. diverging interchange). These improvements are expected to significantly ease traffic congestion along the Mapleview Drive corridor. The existing conditions along Mapleview Drive result in traffic diverting to alternative routes (such as County Road 21 and County Road 53) so as to avoid travel on Mapleview Drive.

#### 3.2 PROJECTED GROWTH

Traffic projections for the 2030 and 2040 horizon years have been determined based on:

McKay Road / Highway 400 Interchange and Salem Road / Lockhart Road Crossing at Highway 400. WSP Canada Group Limited. December 2017.



<sup>&</sup>lt;sup>4</sup> Salem Secondary Plan Transportation Improvements Environment Study Report. Stantec Consulting Ltd. October 12, 2017.

- the existing traffic volumes;
- historical and projected employment and population growth for the City of Barrie and Town of Innisfil;
- traffic projections provided in relevant planning reports/traffic studies; and
- the anticipated impact of planned road network improvements on traffic patterns in the study area.

#### 3.2.1 Population & Employment Growth

#### City of Barrie

The 2016 census results for the City of Barrie indicate that the population increased from 136,063 persons in 2011 to 141,434 in 2016, translating to an annual growth rate of 0.8%. *A Place to Grow: Growth Plan for the Greater Golden Horseshoe*<sup>6</sup>, which is intended to guide future development within Simcoe County, projects the population of the City of Barrie to grow from 141,000 in 2011 to 253,000 in 2041, translating to an annual increase of 1.5%. In consideration of the 2016 census population level of 141,434 and a projected population of 253,000 in 2041, the annual growth rate is slightly higher at 2.4%.

With respect to employment growth, the *Growth Plan for the Greater Golden Horseshoe* projects an increase from 70,000 jobs in 2011 to 129,000 jobs in 2041, equating to an annual increase of 2.1%. The City's *Growth Management Strategy*<sup>7</sup> claims a 2011 employment level of 68,000 jobs, which translates to a comparable annual growth rate of 2.2% (assuming 129,000 jobs in 2041).

### Town of Innisfil

The *Town of Innisfil Transportation Master Plan Update*<sup>8</sup> (referencing the Statistics Canada 2016 Census) indicates a population increase from 31,175 in 2006 to 36,566 in 2016, translating to an annual growth rate of 1.6%. The Town's TMP further projects the population to grow to 60,300 by 2031 and 76,400 by 2041. In considering the Town's population in 2016, the growth projections translate to annual growth of 3.4% for the period 2016 to 2031, and 2.4% for the period 2031 to 2041. Overall, the population is projected to grow 3.0% per annum from 2016 to 2041.



<sup>&</sup>lt;sup>6</sup> A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019. Ministry of Municipal Affairs and Housing. May 2019.

<sup>&</sup>lt;sup>7</sup> City of Barrie Growth Management Study, Executive Summary. Watson & Associates Economists Ltd. July 2012

<sup>&</sup>lt;sup>8</sup> Town of Innisfil Transportation Master Plan Update. HDR Inc. May 2018

#### 3.2.2 **Background Studies**

#### Salem Secondary Plan Transportation Improvements Environmental Study Report (ESR)

The Salem Secondary Plan Transportation Improvements Environmental Study Report considers several transportation improvements required to support the Salem Secondary Plan Area within the City of Barrie. The study area included Veteran's Drive from Salem Road to the City's south limit, abutting the north limit of the County Road 53 Class EA study area (County Road 53 transitions to Veteran's Drive at City limit). The report established future traffic volumes for the 2021 and 2031 horizon years based on growth rates calculated from the City's EMME transportation model. The growth rates applied to Veteran's Drive are summarized in Table 3 (excerpts of study are provided in Appendix C).

Table 3: Traffic Growth Rates - Salem Secondary Plan ESR

ROAD	2016 T	O 2021	2021 TO 2031		
	АМ	PM	АМ	PM	
Veteran's Drive	6.0%	7.0%	4.0%	5.0%	

As indicated, the Salem Secondary Plan ESR considered annual traffic growth rates of 6.0% and 7.0% for the AM and PM peak hours (respectively) for the period 2016 to 2021, and annual growth rates of 4.0% and 5.0% for the period 2021 to 2031.

### **Development Traffic Impact Studies**

In addition to the Salem Secondary Plan Transportation Improvements Environmental Study Report, available traffic studies prepared for specific developments within the Salem Secondary Plan Area were also reviewed with respect to traffic volumes and growth projections.

The Watersand Employment Draft Plan Traffic Study considered development of the Watersand employment lands - a 36-hectare parcel located on the southeast corner of Veteran's Drive and McKay Road. The study applied a background growth rate of 2% (non-compounded) to volumes on Veteran's Drive for the 10-year period 2016 to 2026.

The 910 Veteran's Drive Traffic Impact Study considered a 53-unit townhouse development located on the west side of Veteran's Drive, immediately north of McKay Road. The study applied a background growth rate of 2% to volumes Veteran's Drive for the period 2018 to 2025, and 3% for the period 2025 to 2031.

In addition to the noted background growth rates, both studies considered additional traffic volumes associated with the following Salem Secondary Plan Area developments:



- Crisdawn Lands (525 residential units);
- DiPoce Lands (329 residential units);
- H&H Lands (880 residential units);
- Watersand Residential (1,502 residential units and 10,422 m<sup>2</sup> of commercial GFA).

The development details vary slightly between the *Watersand Employment* and 910 Veteran's Drive studies - the details noted above reflect those provided in the 910 Veteran's Drive TIS, which is more current than the Watersand Employment Traffic Study.

In reviewing the total traffic volumes for the ultimate scenario for each respective study, the resulting annual growth on Veteran's Drive (south of McKay Road) is as follows:

- Watersand Employment TS 15% (AM) and 9% (PM) for the period 2016 to 2026; and
- 910 Veteran's Drive TIS 9% (AM) and 7% (PM) for the period 2018 to 2031.

#### 3.2.3 Overall Growth

As noted above, the projected traffic growth on Veteran's Drive varies from 4% to 7% in the Salem Secondary Plan Transportation Improvements Environmental Study Report, and from 7% to 15% in the development specific studies. While this is not unexpected given the extent of the planned development within the Salem Secondary Plan Area, it is noted that the anticipated growth on Veteran's Drive may not occur on County Road 53. This is not to suggest that the development of the Salem Secondary Plan Area will not have an impact on County Road 53, only that the growth is likely to be less than otherwise assumed for Veteran's Drive. It is noted that the south limit of the study areas considered in the Salem Secondary Plan Transportation Improvements Environmental Study Report, Watersand Employment Draft Plan Traffic Study and 910 Veteran's Drive Traffic Impact Study was the City of Barrie/Town of Innisfil boundary. A review of the proposed draft plans of the Salem Secondary Plan Area indicates several street connections to Veteran's Drive between the City's south limit and McKay Road. Thus, while this section of Veteran's Drive is expected to experience increased traffic as a result of development in the secondary plan area, the increase in volumes is not expected to be as significant to the south of the City's limits (i.e. along County Road 53) - recognizing that a significant portion of the Salem Secondary Plan development traffic accessing Veteran's Drive will be destined to/from the north (towards Barrie) and to/from the east along McKay Road towards the proposed interchange with Highway 400, and will not otherwise travel south along County Road 53. The 910 Veteran's Drive TIS does not assign any site traffic to/from the south along County Road 53 upon completion of the McKay Road interchange. Similarly, the Watersand Employment Draft Plan Traffic Study assigns only 3% of site traffic to/from the south on County Road 53.



Given the uncertainty with respect to the extent to which development of the Salem Secondary Plan Area will impact volumes on County Road 53, the study has considered three growth scenarios - high, medium and low. The growth scenarios are summarized in Table 4 and further described below.

Table 4: Growth Scenarios - County Road 53

SCENARIO		OVERALL		
	2019 to 2030	2030 to 2040	2019 to 2041	GROWTH
High Growth	6%	4%	5.0%	181%
Medium Growth	4%	3%	3.5%	107%
Low Growth	2%	2%	2.0%	52%

#### **High Growth Scenario**

The High Growth Scenario is somewhat consistent with the growth assumptions provided in the *Salem Secondary Plan Transportation Improvements Environmental Study Report.* This scenario assumes a growth rate of 6% per annum for the period 2019 to 2030, and a reduced growth rate of 4% per annum for the period 2030 to 2040. This results in an overall growth rate of 5% per annum over the entire study period (2019 to 2040).

#### Medium Growth Scenario

The Medium Growth Scenario assumes a growth rate of 4% per annum for the period 2019 to 2030, and a reduced growth rate of 3% per annum for the period 2030 to 2040. This results in an overall growth rate of 3.5% per annum over the entire study period (2019 to 2040). The Medium Growth Scenario reflects a slightly conservative approach when compared to the projected population growth for the City of Barrie (2.4% per annum for the period 2016 to 2041) and the Town of Innisfil (3.0% per annum for the period 2016 to 2041). While slightly conservative, the growth rate recognizes that growth in the study area may be greater given the proximity to the Salem Secondary Plan Area and the Innisfil Heights Strategic Employment Area.

#### Low Growth Scenario

The Low Growth Scenario considers a consistent growth rate of 2% per annum through to 2041. This scenario assumes that growth in the City of Barrie and Town of Innisfil will have minimal impact on the traffic volumes on County Road 53.



#### **Growth on Other Roads**

With respect to traffic volumes on County Road 21 and 9<sup>th</sup> Line, the following annual growth rates have been applied consistently across all scenarios:

- County Road 21 3% (2019 to 2030) and 2% (2030 to 2040); and
- 9th Line 1% (2019 to 2040).

#### 3.2.4 McKay Road/Highway 400 Interchange

As previously noted, a full interchange is planned at McKay Road and Highway 400. The McKay Road/Highway 400 Interchange and Salem Road/Lockhart Road Crossing at Highway 400 Environmental Study Report looked exclusively at the interchange operations for the 2031 horizon year. The study area did not include any other intersections. In this respect, the anticipated impact to volumes on Veteran's Drive/County Road 53 was not assessed.

While not in the immediate study area, the introduction of the McKay Road interchange is expected to impact the traffic volumes on County Road 53. Current traffic patterns indicate that County Road 53 is used by motorists as a means of by-passing the congested Mapleview Drive corridor. In the AM, a portion of trips originating from the west end of Barrie and destined to locations to the south, travel south along the Veteran's Drive/County Road 53 corridor in order to access Highway 400 at the County Road 21 (Innisfil Beach Road) interchange. Conversely, during the PM peak hour, trips destined to locations in the west end of Barrie from the south exit Highway 400 at County Road 21 and travel north on County Road 53. As indicated in the existing traffic volumes (see Figure 3), the traffic pattern is much more pronounced during the PM peak hour when conditions along Mapleview Drive are most congested. The County Road 21 interchange is currently the only alternative access to/from Highway 400 south of Mapleview Drive. However, the introduction of the McKay Road interchange will provide another option for motorists. In this respect, it is considered reasonable to assume that some motorists will alter their route to make use of the McKay Road interchange rather than the County Road 21 interchange.

The extent of the potential diversion is somewhat unknown. While the *Salem Secondary Plan Transportation Improvements Environmental Study Report* assumes that the Salem Road-Lockhart Road crossing of Highway 400 is constructed, the study does not make any specific mention of the completion of the McKay Road interchange at Highway 400 - thus it is unclear as to how, or if, the proposed interchange was considered in terms of impacts to traffic patterns on County Road 53. Furthermore, the development specific traffic studies reviewed do not make any adjustments to account for the potential diversion and resulting reduction in traffic volumes on County Road 53. In this respect, the background growth rates considered in each study apply growth to traffic volumes that may divert to the McKay Road interchange and not otherwise be



travelling on County Road 53. Thus, the background traffic volumes considered in the various studies are likely inflated.

To account for the anticipated impact of the McKay Road interchange, a diversion factor has been applied to the southbound left turn and westbound right turn movements at the intersection of County Road 53 with County Road 21. The resulting volume reductions for these movements have been carried through the County Road 53 corridor. The diversion factors have been established in conjunction with the high, medium and Low Growth Scenarios previously discussed. For example, a low diversion factor has been applied to the High Growth Scenario thus resulting in a conservative scenario whereby anticipated growth is high and the impact of the McKay Road interchange is low (i.e. traffic reduction associated with the new interchange is limited). The diversion factors considered in each scenario are as follows:

- High Growth Scenario 20% diversion;
- Medium Growth Scenario 30% diversion;
- Low Growth Scenario 40% diversion.

In establishing the future traffic volumes, the diversion factors have been applied to the existing (2019) volumes. The impact of the diversion for each scenario is illustrated in Figure 4 through Figure 6.

#### 3.3 TRAFFIC VOLUMES

The projected 2030 and 2040 traffic volumes for the High, Medium and Low Growth Scenarios are illustrated in Figure 7 through Figure 12, based on the existing volumes, adjusted to reflect the noted scenario growth rates and the McKay Road interchange diversion factor.

### 3.4 TRAFFIC OPERATIONS - HIGH GROWTH SCENARIO

The High Growth Scenario considers the following:

6%	4%	20%
annual growth on County	annual growth on County	diversion associated with the
Road 53 from 2019 to 2030	Road 53 from 2030 to 2040	McKay Road interchange

#### 3.4.1 Road Section Operations

As noted in Section 2.2.1, County Road 53 has an assumed planning capacity in the order of 900 to 1100 vphpl. For the purpose of this assessment, the lower capacity threshold (900 vphpl) has been considered. The assessment considers the PM peak hour volumes, which reflect the critical conditions. The road section operations for the 2030 and 2040 horizon years are summarized in Table 5 and Table 6.



Table 5: Road Section Operations - 2030 PM Peak | High Growth Scenario

ROAD SECTION & LANES / DIRECTION		CAPA	CITY <sup>1</sup>	TRAFFIC VOLUMES (VPH)		VOLUME TO CAPACITY	
			SB	NB	SB	NB	SB
North of 9 <sup>th</sup> Line	1	900	900	955	655	1.06	0.73
9 <sup>th</sup> Line to Georgian Downs North Access	1	900	900	1000	660	1.11	0.73
Georgian Downs North Access to Georgian Downs South Access	1	900	900	975	645	1.08	0.72
Georgian Downs North Access to County Road 21	1	900	900	1030	695	1.14	0.77

<sup>&</sup>lt;sup>1</sup> Capacity is denoted as vehicles per hour per direction

The northbound volumes on County Road 53 will begin to exceed capacity during the 2030 horizon, with volumes surpassing the available capacity by 6% to 14%. The southbound volumes remain below capacity. It is noted that should the upper capacity threshold of 1100 vphpl be considered, the northbound volumes will remain slightly below capacity.

Table 6: Road Section Operations - 2040 PM Peak | High Growth Scenario

ROAD SECTION & LANES / DIRECTION		CAPA	CITY <sup>1</sup>				ME TO ACITY
		NB	SB	NB	SB	NB	SB
North of 9 <sup>th</sup> Line	1	900	900	1450	990	1.61	1.10
9 <sup>th</sup> Line to Georgian Downs North Access	1	900	900	1500	1000	1.67	1.11
Georgian Downs North Access to Georgian Downs South Access	1	900	900	1475	985	1.64	1.09
Georgian Downs North Access to County Road 21	1	900	900	1530	1035	1.70	1.15

<sup>&</sup>lt;sup>1</sup> Capacity is denoted as vehicles per hour per direction

By 2040, the northbound volumes will exceed the available capacity by 61% to 70%, whereas the southbound volumes are expected to exceed capacity by 9% to 15%. It is noted that the capacity issues only occur during the PM peak hour. While not summarized herein, the road is expected to operate at 78% capacity or less during the AM peak hour.

In consideration of the projected traffic volumes, additional lane capacity is required to serve the 2040 volumes under the High Growth Scenario. While the northbound volumes surpass the available capacity in 2030, the volumes are not such that would require additional lane capacity.



## With Road Widening

The road section operations were re-assessed for the 2040 horizon to consider the provision of an additional lane per direction on County Road 53. The results are provided in Table 7.

Table 7: Road Section Operations - 2040 PM Peak | High Growth Scenario + Widen

ROAD SECTION & LANES / DIRECTION		CAPA	CITY <sup>1</sup>	TRAFFIC VOLUMES (VPH)		VOLUME TO CAPACITY	
			SB	NB	SB	NB	SB
North of 9 <sup>th</sup> Line	2	1800	1800	1450	990	0.81	0.55
9 <sup>th</sup> Line to Georgian Downs North Access	2	1800	1800	1500	1000	0.83	0.56
Georgian Downs North Access to Georgian Downs South Access	2	1800	1800	1475	985	0.82	0.55
Georgian Downs North Access to County Road 21	2	1800	1800	1530	1035	0.70	0.58

<sup>&</sup>lt;sup>1</sup> Capacity is denoted as vehicles per hour per direction

As indicated, County Road 53 will operate below capacity in 2040 under the High Growth Scenario when considering the noted road widening.

#### 3.4.2 Intersection Operations

The key intersections were analyzed to consider the 2030 and 2040 projected traffic volumes under the High Growth Scenario. It is noted that no operational issues occur during the AM peak hour (i.e. all the study area intersections provide acceptable operations during the AM peak). As such, the assessment only considers the PM peak hour volumes for each horizon.

For the signalized intersection of County Road 53 with County Road 21, the signal timings have been optimized to consider the following:

- a permitted + protected phase (i.e. advanced green) for the eastbound and southbound left turn movements; and
- a permitted + overlap phase for the westbound right turn movement.

It is noted that the proposed widening identified for the 2040 horizon has also been considered in the assessment (i.e. additional through capacity has been considered for the 2040 horizon).

The results are summarized in Table 8 (detailed worksheets are provided in Appendix D).

Table 8: Intersection Operations - 2030 & 2040 PM Peak Hour | High Growth Scenario



INTERSECTION & MOVE	MENT	CONTROL	2030 PM PEAK HOUR			2040 PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 53 & 9 <sup>th</sup> Line	EB	stop	37	Е	0.11	66	F	0.20
3 Line	WB	stop	59	F	0.06	176	F	0.16
County Road 53 & Georgian Downs North	WB	stop	30	D	0.19	56	F	0.45
County Road 53 & Georgian Downs South	WB	stop	141	F	0.94	709	F	2.32
County Road 53 & County Road 21	EB	signal	17	В	0.71	42	D	0.94
County Road 21	WB	signal	22	С	0.69	73	Е	1.06
	NB	signal	20	С	0.51	68	Е	0.96
	SB	signal	12	В	0.64	25	С	0.81
	overall	signal	18	В	0.78	54	D	1.06

The signalized intersection of County Road 53 with County Road 21 will provide acceptable operations through the 2040 horizon; however, the intersection will operate slightly above capacity in 2040. The capacity issue is caused primarily by the high volume of westbound right turns (870 vehicles during the peak hour). The westbound right turn movement is the only movement expected to operate above capacity. No improvements are recommended to address the capacity of the intersection; rather, given the option to travel north via Highway 400 to McKay Road, it is expected that some motorists will adjust their route to avoid the right turn movement.

The stop-controlled intersections of County Road 53 with 9<sup>th</sup> Line and the Georgian Downs South access are expected to begin experiencing poor operating conditions (LOS F) with long delays in 2030. As expected, the conditions will deteriorate further by 2040 with all stop-controlled intersections experiencing poor operating conditions, regardless of the widening of County Road 53. Despite the poor operating conditions, the intersections of County Road 53 with 9<sup>th</sup> Line and the Georgian Downs North access will each operate below capacity given the relatively low volumes on the minor approaches. The poor operations are caused by the high through volumes on County Road 53. Regardless of the poor operations, traffic signals would not be warranted, nor would they be recommended, at these locations. No further improvements are recommended at these intersections. The proposed widening and presence of traffic signals to



the north (at McKay Road) and south (at County Road 21) will provide additional gaps in traffic to facilitate movements from the minor approaches.

## With Intersection Improvements

To address the poor operations at the intersection of County Road 53 with the Georgian Downs South access, the intersection has been re-assessed to consider the implementation of traffic signals. The results of the assessment are provided in Table 9.

Table 9: Intersection Operations - 2030 & 2040 PM Peak Hr | High Growth Scenario + Improve

INTERSECTION & MOVEMENT		CONTROL	2030 P	2030 PM PEAK HOUR			2040 PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C	
County Road 53 & Georgian Downs South	WB	signal	30	С	0.43	26	С	0.49	
	NB	signal	7	Α	0.73	5	Α	0.62	
	SB	signal	4	А	0.47	3	А	0.45	
	overall	signal	7	Α	0.69	5	Α	0.61	

As indicated, traffic signals at the intersection of County Road 53 with the Georgian Downs South access will result in excellent operations through the 2040 horizon under the High Growth Scenario. It is further noted that the intersection will provide excellent operations in 2030, prior to the widening of County Road 53. The otherwise good intersection operations further indicate that the widening required to accommodate the 2040 conditions under the High Growth Scenario is not required to accommodate the 2030 conditions, recognizing that the signalized intersection reflects a pinch point in the network.

## 3.4.3 Recommended Improvements

To accommodate the projected traffic volumes associated with the High Growth Scenario, the following improvements are recommended:

#### 2030 Horizon

#### 2040 Horizon

Implement traffic signals at the intersection of County Road 53 with the Georgian Downs South Access.

Widen County Road 53 to provide two lanes of travel per direction.

# 3.5 TRAFFIC OPERATIONS - MEDIUM GROWTH SCENARIO

The Medium Growth Scenario considers the following:

4%	3%	30%
annual growth on County Road 53 from 2019 to 2030	annual growth on County Road 53 from 2030 to 2040	diversion associated with the McKay Road interchange

#### 3.5.1 Road Section Operations

The road section operations for the 2030 and 2040 horizon years are summarized in Table 10 and Table 11 reflect the projected PM peak hour volumes associated with the Medium Growth Scenario (as illustrated in Figure 8 and Figure 11).

Based on the Medium Growth Scenario, County Road 53 will operate at 87% of capacity or less (i.e.  $v/c \le 0.87$ ) through the 2030 horizon. Thus, additional capacity is not required to accommodate the 2030 volumes.

In 2040, the northbound volumes on County Road 53 begin to exceed capacity, with volumes surpassing the available capacity by 8% to 17%; whereas the southbound volumes remain below the available capacity. Should the upper capacity threshold of 1100 vphpl be considered, the northbound volumes will remain slightly below capacity through 2040.

Table 10: Road Section Operations - 2030 PM Peak | Medium Growth Scenario

ROAD SECTION & LANES / DIRECTION		CAPA	CITY <sup>1</sup>	TRAFFIC VOLUMES (VPH)		VOLUME TO CAPACITY	
			SB	NB	SB	NB	SB
North of 9 <sup>th</sup> Line	1	900	900	705	500	0.78	0.56
9 <sup>th</sup> Line to Georgian Downs North Access	1	900	900	750	505	0.83	0.56
Georgian Downs North Access to Georgian Downs South Access	1	900	900	725	490	0.81	0.54
Georgian Downs North Access to County Road 21	1	900	900	780	540	0.87	0.60

<sup>&</sup>lt;sup>1</sup> Capacity is denoted as vehicles per hour per direction



Table 11: Road Section Operations - 2040 PM Peak | Medium Growth Scenario

ROAD SECTION & LANES / DIRECTION		CAPA	CITY <sup>1</sup>	TRAI VOLUME			ME TO ACITY
		NB	SB	NB	SB	NB	SB
North of 9 <sup>th</sup> Line	1	900	900	975	690	1.08	0.77
9 <sup>th</sup> Line to Georgian Downs North Access	1	900	900	1025	700	1.14	0.78
Georgian Downs North Access to Georgian Downs South Access	1	900	900	1000	685	1.11	0.76
Georgian Downs North Access to County Road 21	1	900	900	1055	735	1.17	0.82

<sup>&</sup>lt;sup>1</sup> Capacity is denoted as vehicles per hour per direction

It is noted that the 2040 conditions under the Medium Growth Scenario are comparable to the 2030 conditions experienced under the High Growth Scenario. Recall that widening of County Road 53 was not considered necessary to accommodate the 2030 high growth conditions, recognizing that the signalized intersections (considered the pinch points of the road network) provide excellent operations. As such, widening County Road 53 to provide additional through capacity has not been considered to address the 2040 volumes under the Medium Growth Scenario; rather, the recommendation to provide additional lane capacity will be determined based on the results of the intersection operational assessment.

## 3.5.2 Intersection Operations

The key intersections were again analyzed to consider the 2030 and 2040 projected traffic volumes under the Medium Growth Scenario. Similar to the assessment for the High Growth Scenario, the assessment only considers the PM peak hour volumes for each horizon. For the signalized intersection of County Road 53 with County Road 21, the signal timings have been optimized to ensure optimal operations. For the 2040 horizon, an advanced green phase has been considered for the eastbound left turn movement. The results are summarized in Table 12 (detailed worksheets are provided in Appendix E).

Table 12: Intersection Operations - 2030 & 2040 PM Peak Hour | Medium Growth Scenario

INTERSECTION & MOVE	MENT	CONTROL	2030 PM PEAK HOUR			2040 PM PEAK HOUR		
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 53 & 9 <sup>th</sup> Line	EB	stop	22	С	0.06	39	Е	0.13
	WB	stop	32	D	0.03	66	F	0.06
County Road 53 & Georgian Downs North	WB	stop	19	С	0.12	32	D	0.21
County Road 53 & Georgian Downs South	WB	stop	42	Е	0.50	175	F	1.04
County Road 53 & County Road 21	EB	signal	22	С	0.80	13	В	0.70
County Rodd 21	WB	signal	16	В	0.52	24	С	0.79
	NB	signal	7	А	0.23	14	В	0.42
	SB	signal	8	А	0.35	20	С	0.80
	overall	signal	15	В	0.52	19	В	0.79

As indicated, the study area intersections will provide acceptable operations through the 2030 horizon year under the Medium Growth Scenario. Thus, no intersection improvements are required to address the 2030 conditions.

In 2040, poor conditions occur at the intersections of County Road 53 with 9<sup>th</sup> Line and the Georgian Downs South access. The operations at the County Road 53 and 9<sup>th</sup> Line intersection are not such that would warrant improvements. The delays are not onerous and the volumes on the minor approach are nominal. With respect to the intersection of County Road 53 with the Georgian Downs South access, the volumes are not such that would otherwise warrant traffic signals; however, to address the poor operating conditions for the outbound movement, traffic signals are recommended.

# With Intersection Improvements

The intersection of County Road 53 with the Georgian Downs South Access has been re-assessed to consider the implementation of traffic signals. The results of the assessment are provided in Table 13. In considering the implementation of traffic signals in 2040 to accommodate the



Medium Growth Scenario traffic volumes, the intersection of County Road 53 with the Georgian Downs South access will provide excellent operations with minimal delays.

Table 13: Intersection Operations - 2040 PM Peak Hour | Medium Growth Scenario + Improve

INTERSECTION & MOVEMENT		CONTROL	2	2040 PM PEAK HOUR				
INTERSECTION & MOVE	WIERSECTION & MOVEMENT		Delay	LOS	V/C			
	WB	signal	33	С	0.46			
County Road 53 &	NB	signal	7	А	0.73			
Georgian Downs South	SB	signal	4	А	0.49			
	overall	signal	7	А	0.70			

### 3.5.3 Recommended Improvements

To accommodate the projected traffic volumes associated with the Medium Growth Scenario, the following improvements are recommended:

2030 Horizon	2040 Horizon

Traffic signals not required to accommodate the 2030 conditions.

Implement traffic signals at the intersection of County Road 53 with the Georgian Downs South Access

While the northbound volumes are expected to surpass the available capacity in 2040 during the PM peak hour, additional lane capacity is not considered necessary given the otherwise excellent operating conditions at the signalized intersections (existing and proposed), which reflect the pinch points of the study area road network.

# 3.6 TRAFFIC OPERATIONS - LOW GROWTH SCENARIO

The Low Growth Scenario considers the following:

2%	2%	40%
annual growth on County Road 53 from 2019 to 2030	annual growth on County Road 53 from 2030 to 2040	diversion associated with the McKay Road interchange

## 3.6.1 Road Section Operations

The road section operations for the 2030 and 2040 horizon years are summarized in Table 14 and Table 15, and reflect the projected PM peak hour volumes associated with the Low Growth Scenario (as illustrated in Figure 9 and Figure 12). Based on the Low Growth Scenario, County Road 53 will operate at 80% of capacity or less (i.e.  $v/c \le 0.80$ ) through the 2040 horizon. Thus,



additional capacity is not required to accommodate the future projected volume associated with the Low Growth Scenario.

Table 14: Road Section Operations - 2030 PM Peak | Low Growth Scenario

ROAD SECTION & LANES / DIRECTION		САРА	CAPACITY <sup>1</sup>		TRAFFIC VOLUMES (VPH)		ME TO ACITY
		NB	SB	NB	SB	NB	SB
North of 9 <sup>th</sup> Line	1	900	900	510	375	0.57	0.42
9 <sup>th</sup> Line to Georgian Downs North Access	1	900	900	555	380	0.62	0.42
Georgian Downs North Access to Georgian Downs South Access	1	900	900	530	365	0.59	0.41
Georgian Downs North Access to County Road 21	1	900	900	585	415	0.65	0.46

<sup>&</sup>lt;sup>1</sup> Capacity is denoted as vehicles per hour per direction

Table 15: Road Section Operations - 2040 PM Peak | Low Growth Scenario

ROAD SECTION & LANES / DIRECTION		CAPA	CITY <sup>1</sup>	TRA VOLUME	FFIC ES (VPH)		ME TO ACITY
		NB	SB	NB	SB	NB	SB
North of 9 <sup>th</sup> Line	1	900	900	640	470	0.71	0.52
9 <sup>th</sup> Line to Georgian Downs North Access	1	900	900	690	480	0.77	0.53
Georgian Downs North Access to Georgian Downs South Access	1	900	900	665	465	0.74	0.52
Georgian Downs North Access to County Road 21	1	900	900	720	515	0.80	0.57

<sup>&</sup>lt;sup>1</sup> Capacity is denoted as vehicles per hour per direction

## 3.6.2 Intersection Operations

The results of the intersection operational assessment for the Low Growth Scenario are summarized in Table 16 (detailed worksheets are provided in Appendix F). Similar to the assessments for the other growth scenarios, only the PM peak hour has been assessed for each horizon year. To ensure optimal operations, the signal timings have been optimized for the signalized intersection of County Road 53 with County Road 21, with an advanced green phase considered in 2040 for the eastbound left turn movement.

Table 16: Intersection Operations - 2030 & 2040 PM Peak Hour | Low Growth Scenario

INTERSECTION & MOVE	MENT	IENT CONTROL		РМ РЕАК	HOUR	2040 F	PM PEAK	HOUR
			Delay	LOS	V/C	Delay	LOS	V/C
County Road 53 &	EB	stop	16	С	0.04	19	С	0.06
9 <sup>th</sup> Line	WB	stop	21	С	0.02	28	D	0.03
County Road 53 & Georgian Downs North	WB	stop	14	В	0.09	18	С	0.11
County Road 53 & Georgian Downs South	WB	stop	22	С	0.31	34	D	0.44
	EB	signal	21	С	0.74	11	В	0.54
	WB	signal	18	В	0.57	20	В	0.71
County Road 53 & County Road 21	NB	signal	6	А	0.18	12	В	0.31
•	SB	signal	7	А	0.22	13	В	0.42
	overall	signal	15	В	0.40	15	В	0.54

As indicated, the study area intersections will provide acceptable operations through the 2040 horizon year under the Low Growth Scenario. Thus, no intersection improvements are required to address the Low Growth Scenario traffic volumes.

# 3.6.3 Recommended Improvements

With respect to traffic signals and additional through lane capacity, no improvements are required to address the traffic volume and operations associated with the Low Growth Scenario.

# 3.7 TURN LANE REQUIREMENTS

Further to the intersection traffic operations, the need for left and right turn lanes on County Road 53 at the study area intersections has also been reviewed based on the following:

- MTO warrants/guidelines for auxiliary turn lanes at unsignalized intersections;
- a design speed of 100 km/h (20 km/h over the 80 km/h speed limit); and
- the future total traffic volumes.

# 3.7.1 Right Turn Lanes

MTO guidelines suggest that an exclusive right turn lane be considered where right turn volumes exceed 60 vehicles per hour and impede the operations of through traffic. The projected right turn volumes are illustrated in Figure 7 through Figure 12 and summarized in Table 17 and Table 18 for the PM peak hour under each growth scenario, along with the warrant analysis. For all of the noted right turn movements, the PM peak hour volumes are greater than those in the AM.

Table 17: Right Turn Lane Warrants - 2030 PM Peak Hour

INTERSECTION & MOVEMENT		HIGH G	ROWTH	MED GI	ROWTH	LOW G	ROWTH
		Volume	Warrant	Volume	Warrant	Volume	Warrant
9 <sup>th</sup> Line	SB right	10	-	10	-	10	-
9 <sup>th</sup> Line	NB right	5	-	5	-	5	-
Georgian Downs North	NB right	20	-	20	-	20	-
Georgian Downs South	NB right	70	Υ	70	Υ	70	Υ

Table 18: Right Turn Lane Warrants - 2040 PM Peak Hour

INTERSECTION & MOVEMENT		HIGH G	ROWTH	MED GI	ROWTH	LOW G	ROWTH
		Volume	Warrant	Volume	Warrant	Volume	Warrant
9 <sup>th</sup> Line	SB right	15	-	15	-	15	-
9 <sup>th</sup> Line	NB right	10	-	10	-	10	-
Georgian Downs North	NB right	20	-	20	-	20	-
Georgian Downs South	NB right	70	Υ	70	Υ	70	Υ

In all cases with the exception of the northbound right turn at the Georgian Downs South Access, the right turn volumes are less than 60 vehicles per hour and thus a right turn lane is not warranted. At the Georgian Downs South Access, the right turn volume exceeds 60 vehicles and thus the warrant is satisfied.

As previously noted, there is an existing northbound right turn lane at the Georgian Downs South Access consisting of an 85 metre parallel lane + 60 metre taper. As per geometric design standards for a 100 km/h design speed, the requirements are:



- 85 metre parallel lane; and
- 80 metre taper.

In consideration of the above, the existing right turn taper should be extended 20 metres.

### 3.7.2 Left Turn Lanes

MTO left turn warrants were similarly reviewed for the northbound and southbound left turn movements on County Road 53. The corresponding turn volumes are illustrated in Figure 7 through Figure 12 and summarized in Table 19 and Table 20 for the PM peak hour under each growth scenario (the PM peak hour remains the more critical condition). The warrant analysis is also summarized in the noted tables; where warranted, the length of the required left turn storage is indicated (as determined from the MTO left turn lane nomographs).

Table 19: Left Turn Lane Warrants - 2030 PM Peak Hour

INTERSECTION & MOVEMENT		HIGH G	HIGH GROWTH		MED GROWTH		ROWTH
		Volume	Warrant	Volume	Warrant	Volume	Warrant
9 <sup>th</sup> Line	SB left	5	-	5	-	5	-
9 <sup>th</sup> Line	NB left	50	35m	50	25m	50	25m
Georgian Downs North	SB left	30	35m	30	25m	30	15m
Georgian Downs South	SB left	25	35m	25	25m	25	15m

Given the minimal southbound left turn movements from County Road 53 to 9<sup>th</sup> Line, an exclusive turn lane is not required for this movement. For the remaining movements, left turn lanes are warranted considering the MTO turn lane warrant nomographs. Recognizing that a northbound left turn lane is recommended at 9<sup>th</sup> Line, a southbound left turn lane is required to maintain lane balance (albeit not warranted by the traffic volumes).

Table 20: Left Turn Lane Warrants - 2040 PM Peak Hour

INTERSECTION & MOVEMENT		HIGH G	ROWTH	MED GI	ROWTH	LOW G	ROWTH
		Volume	Warrant	Volume	Warrant	Volume	Warrant
9 <sup>th</sup> Line	SB left	10	-	10	-	10	-
9 <sup>th</sup> Line	NB left	60	35m	60	35m	60	30m



INTERSECTION & MOVEMENT		HIGH G	ROWTH	MED GI	ROWTH	LOW G	ROWTH
		Volume	Warrant	Volume	Warrant	Volume	Warrant
Georgian Downs North	SB left	30	35m	30	35m	30	25m
Georgian Downs South	SB left	25	35m	25	35m	25	25m

Geometric design standards dictate the following left turn lane configuration for a design speed of 100 km/h:

- 15 metre offset from the centre of the intersection;
- minimum 15 metre storage length (to be confirmed through the warrant analysis; required storage lengths are noted in Table 20);
- 70 metre parallel lane; and
- 160 metre taper length.

For a runout lane (ie. opposite the left turn lane at a 3-leg intersection), the requirement includes:

- 30 metre offset from the centre of the intersection; and
- 160 metre taper length.

In considering the above turn lane requirements, the cumulative requirements of back-to-back turn lanes or turn lane and runout lane, will extend beyond the corresponding intersection separations. The corresponding measures are identified in Figure 13. In this regard, an extended turn lane is recommended to serve 9<sup>th</sup> Line, the Georgian Downs North Access and the Georgian Downs South Access.

As previously noted, a southbound left turn lane exists at the Georgian Downs South Access (consisting of an 80 metre taper and 80 metre combined parallel/storage lane) and a slip-by lane (50 metre taper + 50 metre parallel lane + 50 metre taper) exists at the Georgian Downs North Access, and thus these lanes only need to be extended/combined and coordinated with the left turn lanes to be provided at 9<sup>th</sup> Line.



# 4 Recommendations

## 4.1 GROWTH SCENARIO

## 4.1.1 High Growth Scenario

The High Growth Scenario, while consistent with the *Salem Secondary Plan ESR* growth assumptions, is considered overly conservative in that the growth rates applied in the Salem study were specific to the anticipated growth on Veteran's Drive within the City of Barrie, and not necessarily applicable to County Road 53. As previously noted, proposed draft plans of the Salem Secondary Plan Area indicate several street connections to Veteran's Drive between the City's south limit and McKay Road. Thus, while this section of Veteran's Drive is expected to experience increased traffic as a result of development in the secondary plan area, the increase in volumes is not expected to be as significant to the south of the City's limits (i.e. along County Road 53) - recognizing that a significant portion of the Salem Secondary Plan development traffic accessing Veteran's Drive will be destined to/from the north (towards Barrie) and to/from the east along McKay Road towards the proposed interchange with Highway 400, and will not otherwise travel south along County Road 53. In this respect, the growth rates applied in the High Growth Scenario are considered overly conservative.

## 4.1.2 Low Growth Scenario

The Low Growth Scenario, which reflects a 2% annual growth rate, assumes that growth on County Road 53 will be below the anticipated growth projections for both the City of Barrie and the Town of Innisfil through the 2041 horizon - essentially assuming that area growth will have minimal impact to the County Road 53. This is not wholly unreasonable in consideration of the various road network improvements planned in the area (Salem Road crossing, McKay Road interchange, McKay Road widening, etc.). These improvements will provide new and/or improved connectivity between the City and the Town which may in turn reduce the traffic demand for County Road 53. However, given the proximity of the Salem Secondary Plan area, and the potential future development of the Innisfil Heights Employment Area, the future traffic volumes associated with the Low Growth Scenario are likely underestimated.

# 4.1.3 Medium Growth Scenario

The Medium Growth Scenario recognizes that growth on County Road 53 will be impacted by planned development in both the City of Barrie and Town of Innisfil, but also recognizes the impact of other planned improvements to the wider road network that will somewhat lessen the ultimate growth realized on County Road 53. The assumed growth is more conservative than



the overall growth projections for the City of Barrie and Town of Innisfil, but less conservative that the growth estimates assumed for other area roads within the Salem Secondary Plan Area.

#### 4.1.4 Recommended Growth Scenario

In consideration of the various growth scenarios assessed in this study, the Medium Growth Scenario is recommended as the reference growth scenario for County Road 53.

## 4.2 RECOMMENDED IMPROVEMENTS

## 4.2.1 Intersection Operations

In considering the Medium Growth Scenario as the reference scenario, the following improvements are recommended from a traffic operations perspective:

## 2030 Horizon 2040 Horizon

Traffic signals are not required to accommodate the 2030 conditions.

Implement traffic signals at the intersection of County Road 53 with the Georgian Downs South Access

While the traffic signals are noted to serve the 2040 traffic volumes, they will be required prior to this as volumes continue to grow beyond the 2030 horizon. In this regard, volumes and operations at the intersection should be monitored post 2030 and signals considered as appropriate.

As noted, the widening of County Road 53 to accommodate future traffic volumes through the 2040 horizon is not considered necessary.

## 4.2.2 Turn Lanes

In considering the projected traffic volumes and MTO turn lane warrants, the following are recommended:

- northbound left turn lane at 9<sup>th</sup> Line + southbound left turn lane to maintain lane balance;
- southbound left turn lane at Georgian Downs North Access (convert slip-by lane to full turn lane);
- southbound left turn lane at Georgian Downs South Access (extend existing turn lane to comply with 100 km/h design standards); and
- northbound right turn lane at Georgian Downs North Access (extend existing turn lane to comply with 100 km/h design standards).

While the above have been justified to serve the 2030 projected volumes, they are also required to serve existing conditions (albeit in some cases the storage length is less).



A conceptual illustration of the turn lane recommendations is provided in Figure 14.

# 4.2.3 Cross Section Improvements

In addition to the operational improvements recommended above, it is further recommended that the cross-section of County Road 53 be upgraded to reflect the County's standard cross-section, including 3.75 metre wide travel lanes and 3.0 metre wide shoulders.



# 5 Summary

This needs and justification study was conducted to review the existing and future operations of the study area road network and to confirm the transportation improvements required to ensure acceptable operations through the 2040 horizon period. The study has also considered the potential impact of MTO improvement plans for the surrounding road network (namely the implementation of a full interchange at Highway 400 and McKay Road) that were not otherwise being considered by MTO at the time of the County's *TMP Update*.

The study has examined both midblock operations and intersection operations to confirm the overall lane provision and the need for intersection improvements accommodate the future conditions. The assessment has also included a review of the operations at the Georgian Downs access points for the purpose of identifying the need for greater intersection control (signal vs stop) and/or other improvements (i.e. turn lanes).

#### 5.1 BASELINE (2019) OPERATIONS

In addressing the study area operations, the key intersections and road sections were analysed under baseline (2019) conditions. The results of the operational analysis indicate that the key intersections will provide acceptable overall conditions. Furthermore, County Road 53 is currently operating well below capacity.

No improvements are recommended to address intersection operations or road section capacity under the baseline (2019) conditions.

## 5.2 FUTURE OPERATIONS

## 5.2.1 Growth Scenarios

The future operations of the road network were reviewed in consideration of three growth scenarios along County Road 53:

- high growth;
- medium growth; and
- low growth.

In addition, each scenario considered a diversion factor associated with the planned McKay Road interchange. The diversion factor reflects traffic that currently travels on County Road 53 between the City of Barrie and Highway 400 that will divert to the McKay Road interchange, thus bypassing County Road 53. In establishing the future traffic volumes, the diversion factors were applied to the existing (2019) southbound left turn and westbound right turn movements at the



intersection of County Road 53 with County Road 21 (and carried through the study area as appropriate).

A summary of the growth scenarios is noted below:

	High Growth Scenario	Medium Growth Scenario	Low Growth Scenario
Annual Growth	5%	3.5%	2%
Diversion to MacKay Road Interchange	20%	30%	40%

# 5.2.2 Improvements by Growth Scenario

Based on the various growth scenarios, the following improvements were identified:

	High Growth Scenario	Medium Growth Scenario	Low Growth Scenario
2030 Horizon	<ul> <li>Implement traffic signals at County Road 53 / Georgian Downs South Access</li> <li>NB right turn at Georgian Downs South Access</li> <li>NB left turn at 9<sup>th</sup> Line</li> <li>SB left turn at Georgian Downs North Access</li> <li>SB left turn at Georgian Downs South Access</li> <li>SB left turn at Georgian Downs South Access</li> </ul>	<ul> <li>NB right turn at Georgian Downs South Access</li> <li>NB left turn at 9<sup>th</sup> Line</li> <li>SB left turn at Georgian Downs North Access</li> <li>SB left turn at Georgian Downs South Access</li> </ul>	<ul> <li>NB right turn at Georgian Downs South Access</li> <li>NB left turn at 9<sup>th</sup> Line</li> <li>SB left turn at Georgian Downs North Access</li> <li>SB left turn at Georgian Downs South Access</li> </ul>
2040 Horizon	<ul> <li>Widen County Road 53 to provide two lanes of travel per direction</li> <li>NB right turn at Georgian Downs South Access</li> <li>NB left turn at 9<sup>th</sup> Line</li> <li>SB left turn at Georgian Downs North Access</li> <li>SB left turn at Georgian Downs South Access</li> </ul>	<ul> <li>Implement traffic signals at County Road 53 / Georgian Downs South Access</li> <li>NB right turn at Georgian Downs South Access</li> <li>NB left turn at 9th Line</li> <li>SB left turn at Georgian Downs North Access</li> <li>SB left turn at Georgian Downs South Access</li> <li>SB left turn at Georgian Downs South Access</li> </ul>	<ul> <li>NB right turn at Georgian Downs South Access</li> <li>NB left turn at 9<sup>th</sup> Line</li> <li>SB left turn at Georgian Downs North Access</li> <li>SB left turn at Georgian Downs South Access</li> </ul>



## 5.2.3 Recommended Growth Scenario & Improvements

In considering the various growth scenarios assessed in this study, the Medium Growth Scenario was identified as the recommended reference scenario. In this respect, the improvements identified in the operational assessment of the conditions associated with Medium Growth Scenario are recommended for implementation - namely the implementation of traffic signals at the intersection of County Road 53 with the Georgian Downs South Access and the noted turn lanes.

While the traffic signals have been identified to serve the 2040 traffic projections, they will be required in advance of 2040 (i.e. between 2030 and 2040) and thus volumes and operations should be monitored accordingly.

Likewise, while the turn lanes have been identified the serve the 2030 and 2040 horizons, they are also required to serve existing conditions and thus should be implemented accordingly.



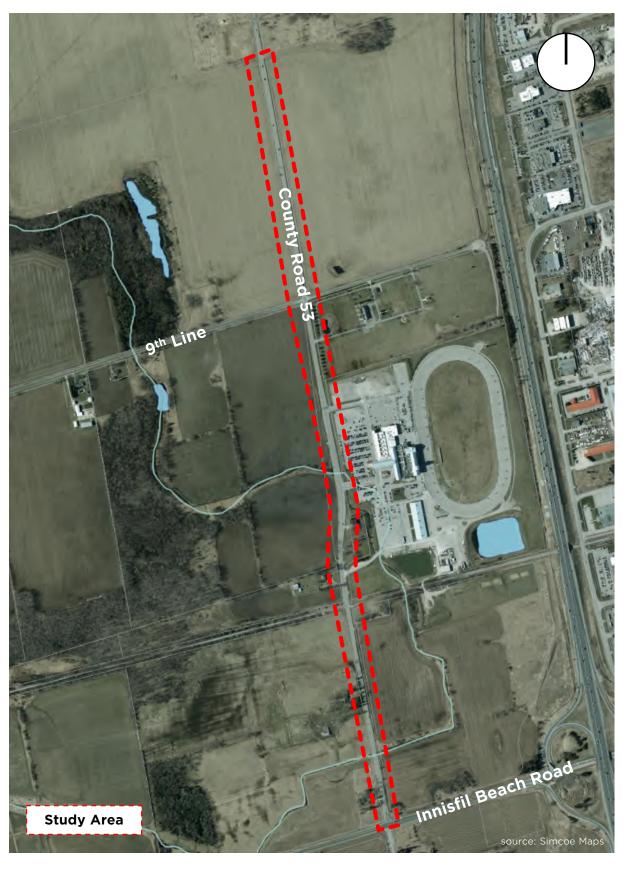


Figure 1: Study Area



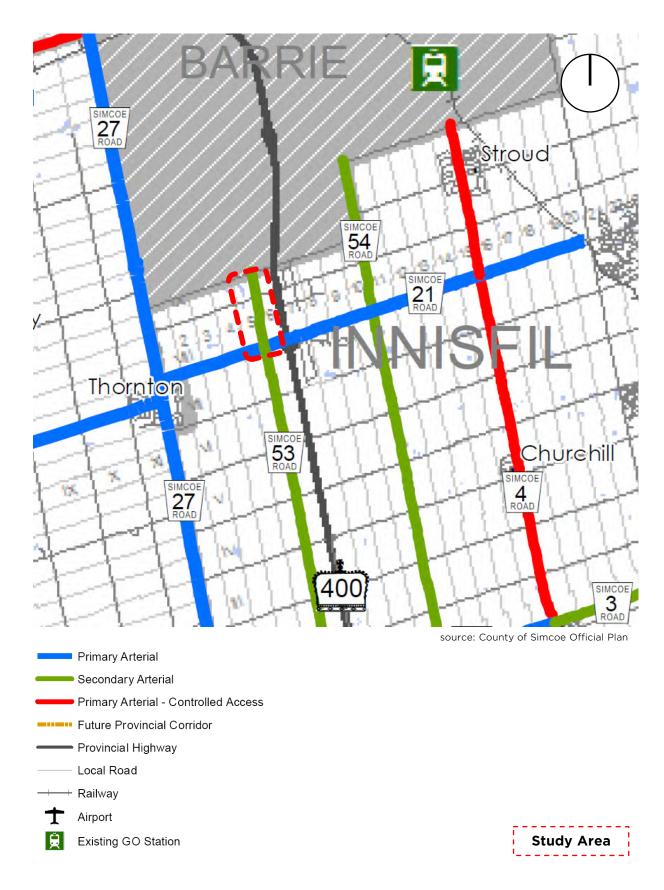
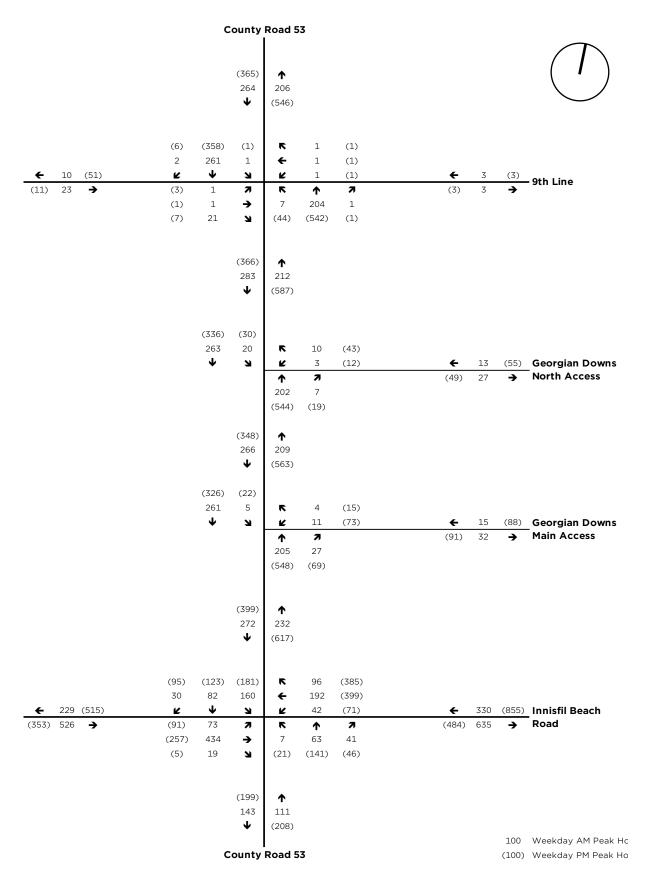


Figure 2: Road Designations







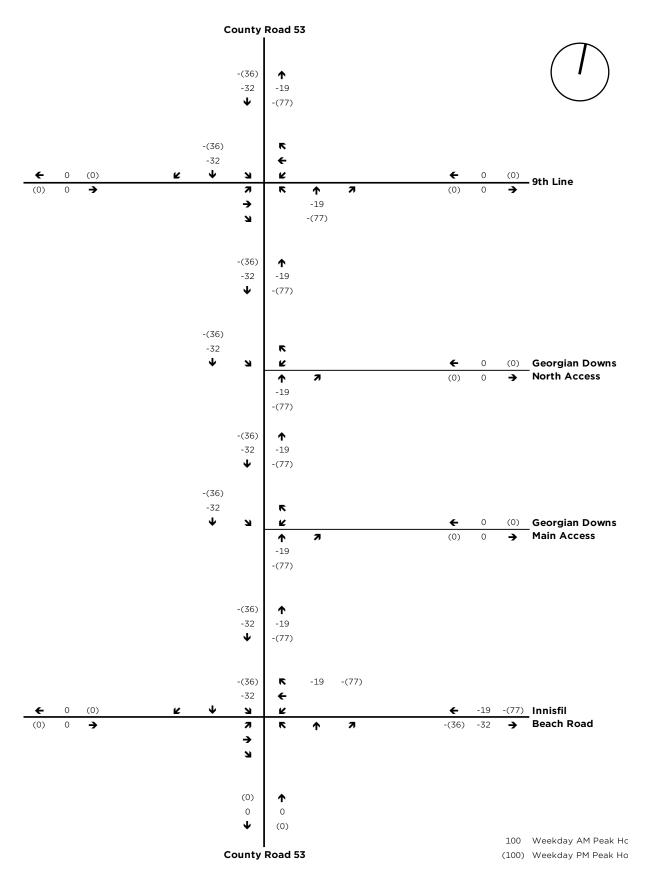


Figure 4: McKay Interchange Diversion | High Growth Scenario



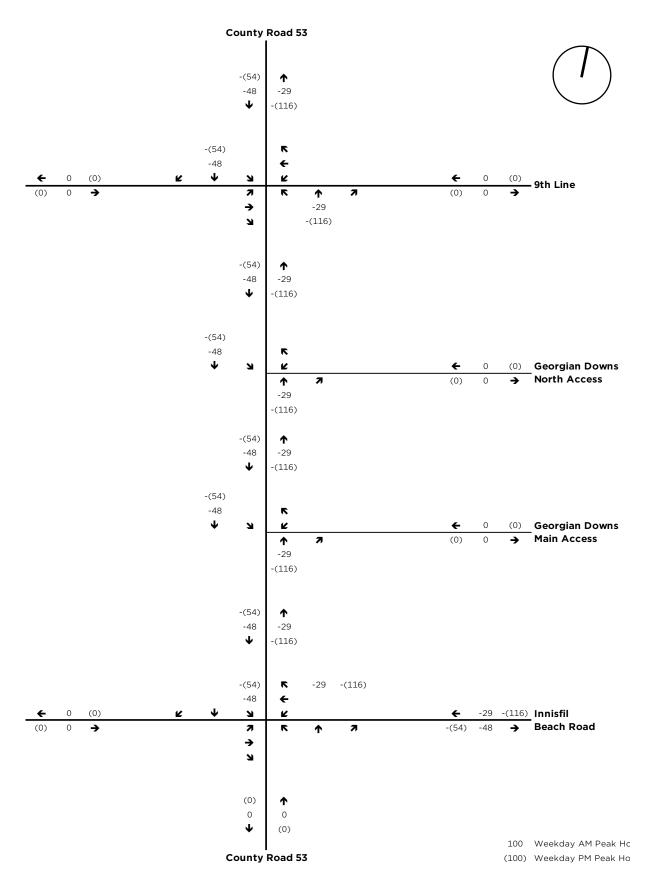
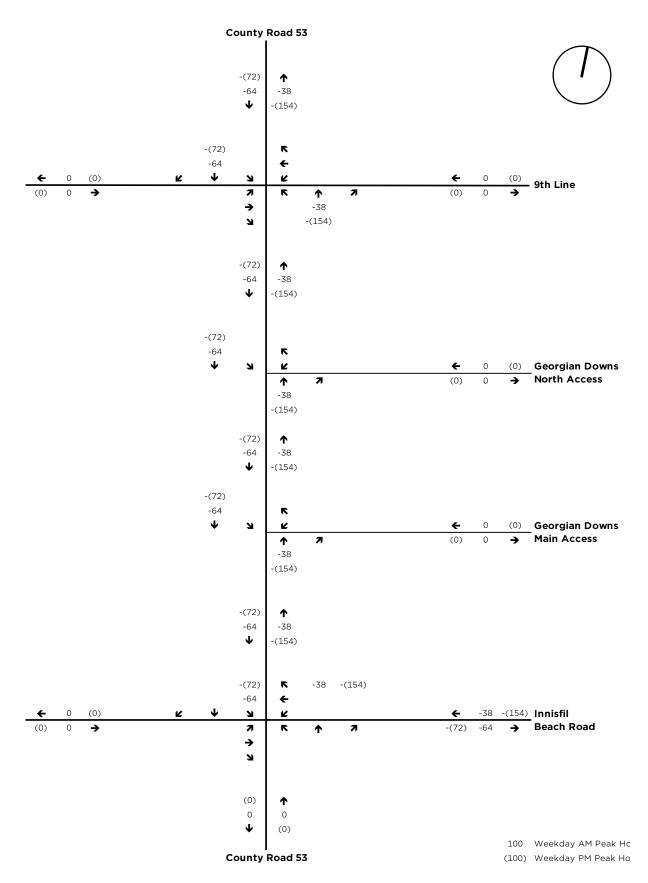


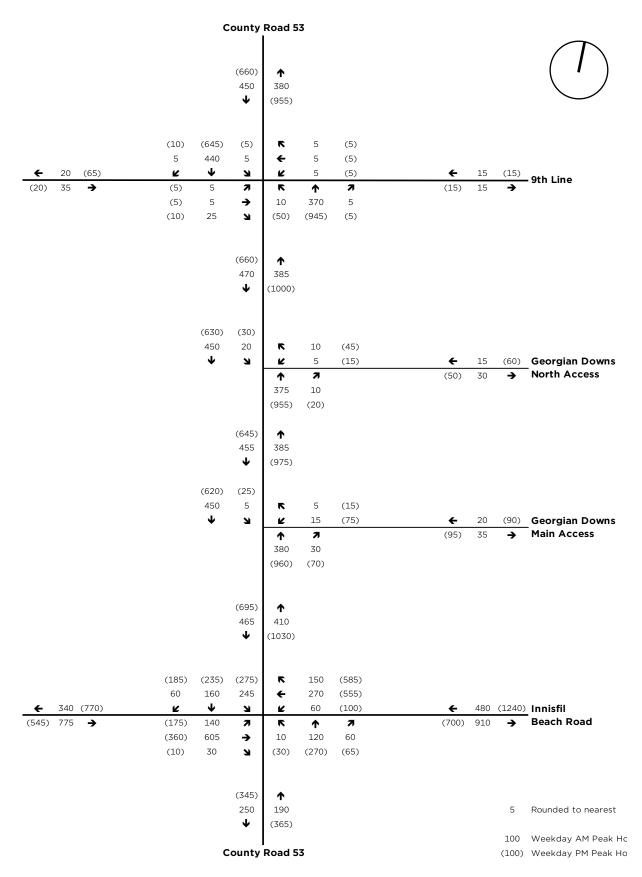
Figure 5: McKay Interchange Diversion | Medium Growth Scenario





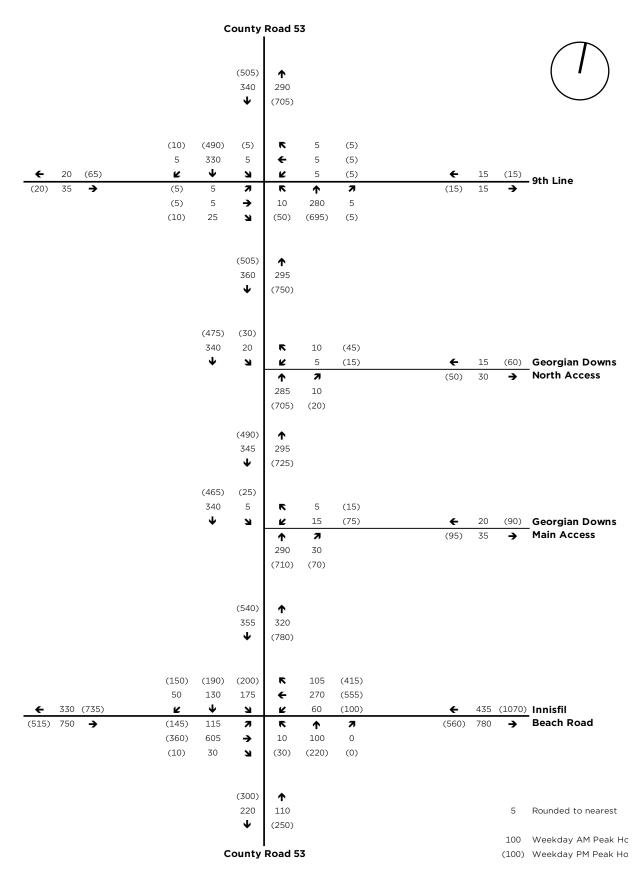






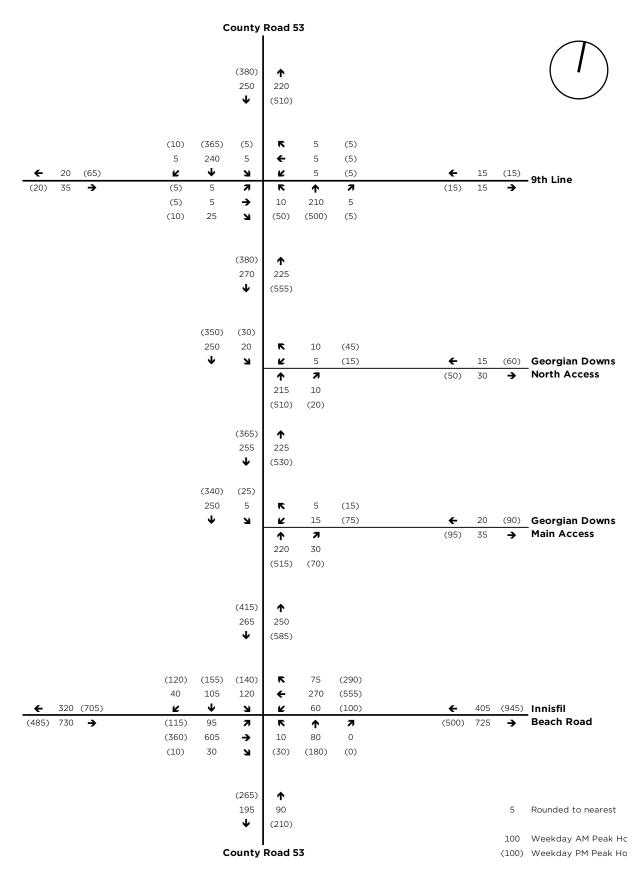






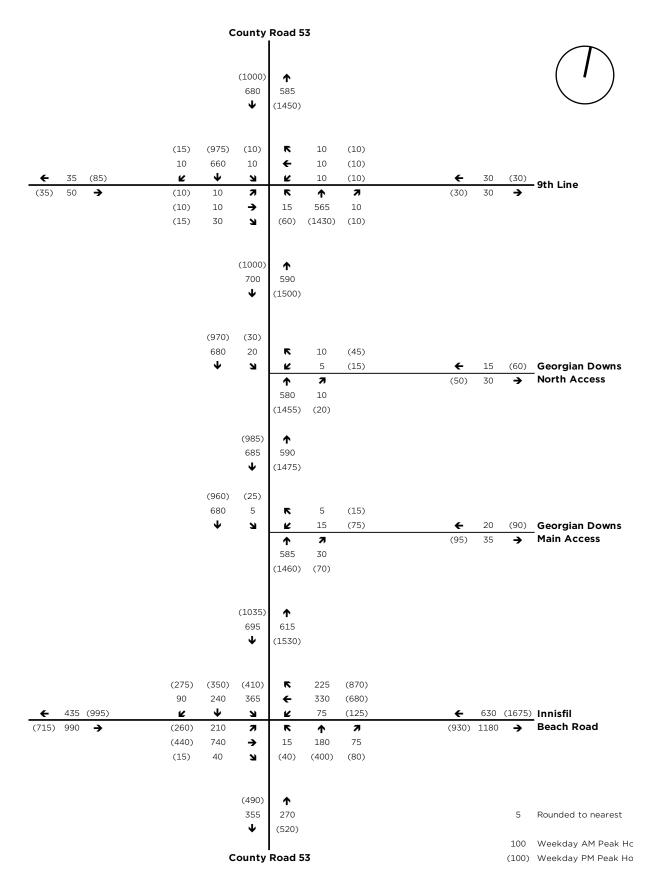


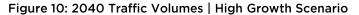




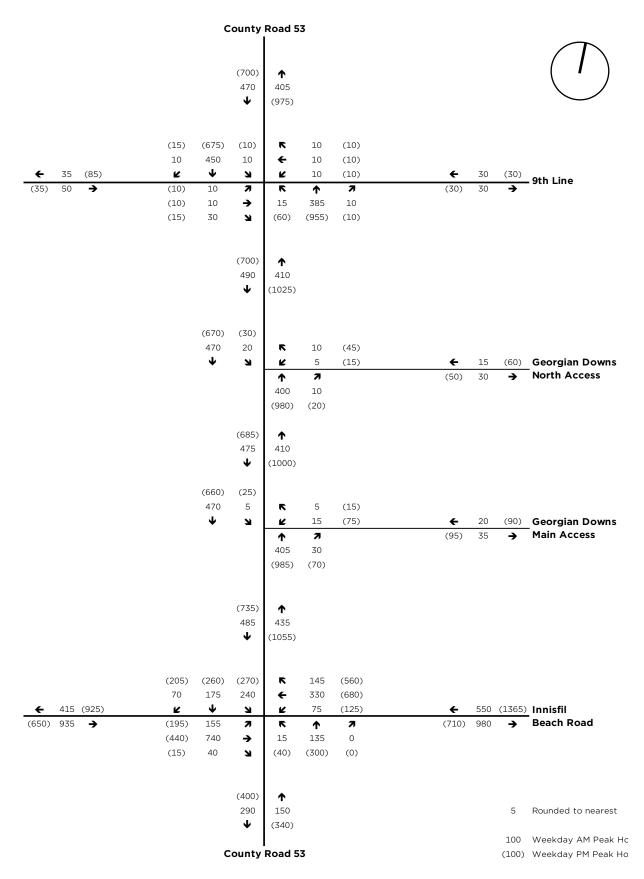






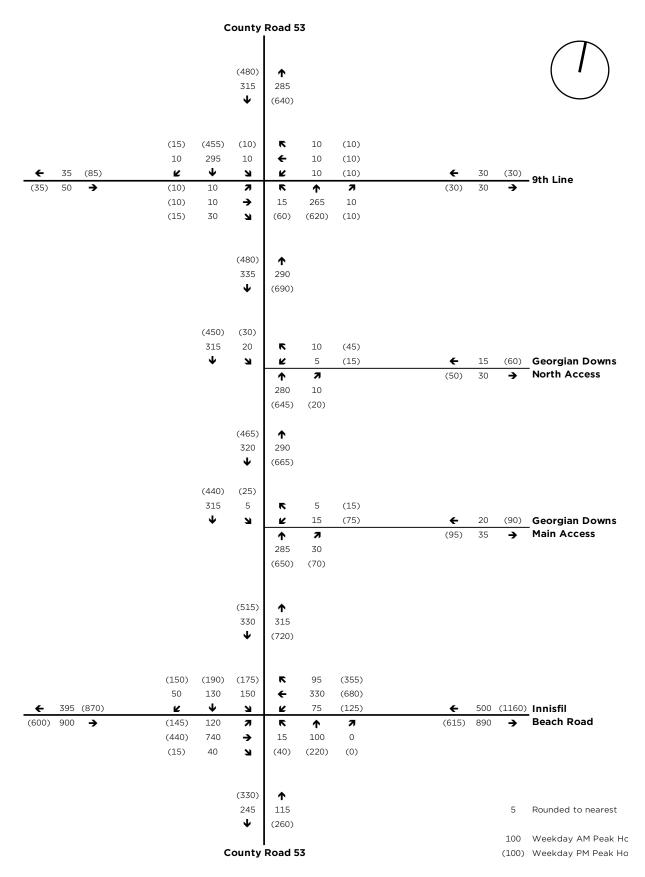
















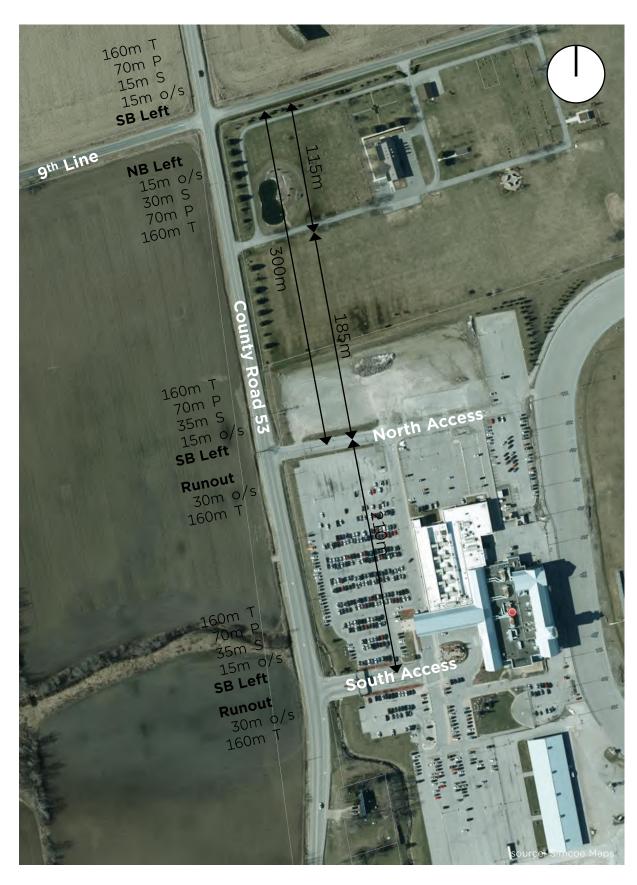


Figure 13: Left Turn Lane Requirements



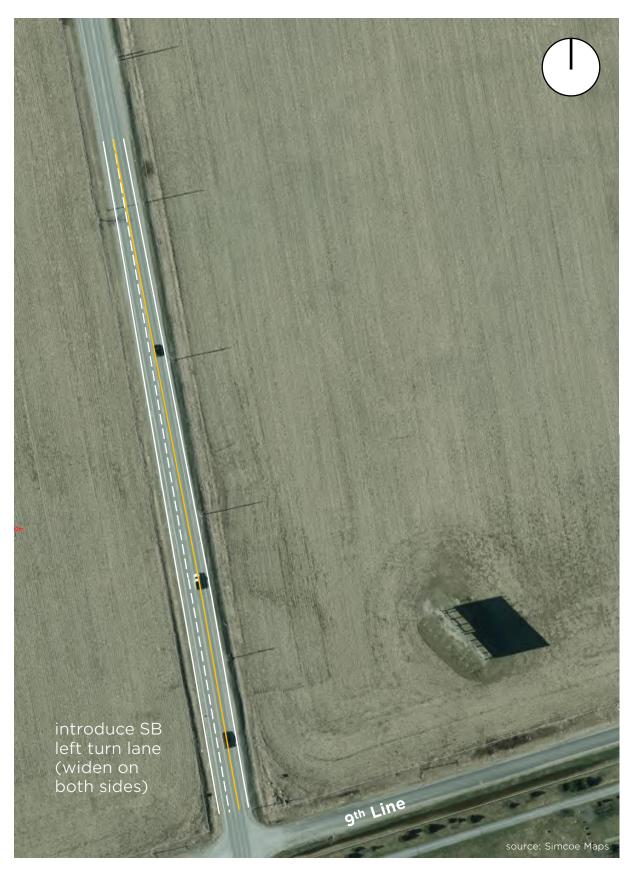


Figure 14A: Road System Improvements





Figure 14B: Road System Improvements





Figure 14C: Road System Improvements





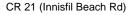
Figure 14D: Road System Improvements

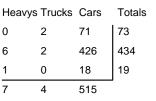


Appendix A: Traffic Counts



#### **Morning Peak Diagram Specified Period One Hour Peak** From: 7:15:00 From: 7:00:00 To: 10:00:00 8:15:00 To: Weather conditions: Municipality: Innisfil Site #: 1909000001 Intersection: CR 21 (Innisfil Beach Rd) & CR 53 Person counted: TFR File #: Person prepared: Count date: 28-May-19 Person checked: \*\* Signalized Intersection \*\* Major Road: CR 21 (Innisfil Beach Rd) runs W/E North Leg Total: 504 Heavys 0 0 7 7 Heavys 3 East Leg Total: 965 3 330 North Entering: 272 Trucks 0 2 Trucks 4 East Entering: North Peds: Cars 30 151 262 Cars 225 East Peds: X Peds Cross: Totals 30 160 Totals 232 Peds Cross: CR 53 Totals Trucks Heavys Totals Heavys Trucks Cars Cars 5 229 92 2 2 12 212 96 192 176 11





0

West Peds:

West Entering:

West Leg Total: 755

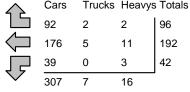


Trucks 1

Totals 143

Heavys

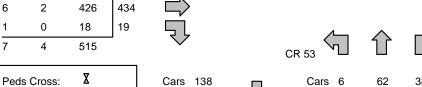


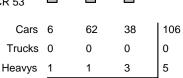


CR 21 (Innisfil Beach Rd)

Cars

615





41

Peds Cross: M South Peds: South Entering: 111 South Leg Total: 254

Trucks Heavys Totals

16

635

**Comments** 

Totals 7



ACCU-	Tramic inc.
Afternoon Peak Diagram	Specified Period         One Hour Peak           From: 16:00:00         From: 16:45:00           To: 20:00:00         To: 17:45:00
Municipality: Innisfil Site #: 1909000001 Intersection: CR 21 (Innisfil Beach Rd) & CR : TFR File #: 1 Count date: 28-May-19	Weather conditions:  Person counted: Person prepared: Person checked:
** Signalized Intersection **	Major Road: CR 21 (Innisfil Beach Rd) runs W/E
North Leg Total: 1016       Heavys 1 0 6         North Entering: 399       Trucks 0 1 2         North Peds: 0 Peds Cross: ✓       Cars 94 122 173         Totals 95 123 181         Heavys Trucks Cars Totals         7 4 504 515	7 3 3 389  Cars 602 Totals 617  CR 53  Heavys 6 Trucks 9 Cars 602 Totals 617  Cars Trucks Heavys Totals 375 4 6 385
CR 21 (Innisfil Beach Rd)	N 389 4 6 399 71 834 8 13
Heavys Trucks Cars Totals 0 3 88 91 8 5 244 257	CR 21 (Innisfil Beach Rd)
$\frac{0}{8}  \frac{0}{8}  \frac{5}{337}  \boxed{5}$	Cars Trucks Heavys Totals 460 8 16 484
Peds Cross:  Cars 197 West Peds: 0 Trucks 1	Cars 21       139       43       203       Peds Cross:       ►         Trucks 0       2       1       3       South Peds:       0         Heavys 0       0       2       2       South Entering:       208         Totals 21       141       46       South Leg Total:       407



## **Total Count Diagram**

Municipality: Innisfil

**Site #:** 1909000001

Intersection: CR 21 (Innisfil Beach Rd) & CR 53

TFR File #: 1

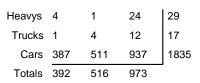
Count date: 28-May-19

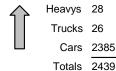
Weather conditions:

Person counted: Person prepared: Person checked:

#### \*\* Signalized Intersection \*\*

Major Road: CR 21 (Innisfil Beach Rd) runs W/E



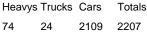


East Leg Total: 6573

East Entering: 3405

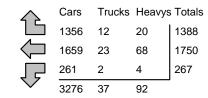
East Peds: 0

Peds Cross: X

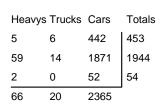








CR 21 (Innisfil Beach Rd)







CR 53





Cars	3	Trucks	Heavys
304	5	29	94
Г			

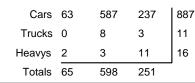
Peds Cross: X
West Peds: 0
West Entering: 2451
West Leg Total: 4658

 Cars
 824

 Trucks
 6

 Heavys
 7

 Totals
 837



Peds Cross: ► South Peds: 0
South Entering: 914
South Leg Total: 1751

Totals

3168



# Accu-Traffic Inc. Traffic Count Summary



Count	Date:		ger Cars -		pproach	0001		Truc	cks - Nort	h Approa	ach			He	avys - No	rth Appr	oach		Pedes	trians
Interval	Le		Th			ght	Le		Th		Rig	ght	Le		Th			ght	North	
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	27	27	15	15	7	7	0	0	0	0	0	0	1	1	0	0	0	0	0	0
7:30:00	58	31	41	26	19	12	0	0	0	0	0	0	5	4	0	0	0	0	0	0
7:45:00	107	49	57	16	25	6	0	0	0	0	0	0	5	0	0	0	0	0	0	0
8:00:00	141	34	71	14	33	8	1	1	0	0	0	0	6	1	0	0	0	0	0	0
8:15:00	178	37	96	25	37	4	2	1	1	1	0	0	8	2	0	0	0	0	0	0
8:30:00	208	30	111	15	42	5	3	1	1	0	0	0	8	0	0	0	1	1	0	0
8:45:00	249	41	129	18	48	6	3	0	1	0	0	0	8	0	0	0	1	0	0	0
9:00:00	287	38	145	16	54	6	5	2	1	0	0	0	10	2	0	0	2	1	0	0
9:15:00	311	24	154	9	57	3	5	0	2	1	0	0	12	2	0	0	2	0	0	0
9:30:00	335	24	165	11	61	4	6	1	2	0	1	1	12	0	0	0	2	0	0	0
9:45:00	353	18	180	15	67	6	8	2	2	0	1	0	12	0	0	0	2	0	0	0
10:00:00	376	23	189	9	72	5	8	0	3	1	1	0	12	0	0	0	2	0	0	0
10:15:00	376	0	189	0	72	0	8	0	3	0	1	0	12	0	0	0	2	0	0	0
16:00:00	376	0	189	0	72	0	8	0	3	0	1	0	12	0	0	0	2	0	0	0
16:15:00	420	44	214	25	92	20	8	0	3	0	1	0	12	0	0	0	3	1	0	0
16:30:00	472	52	233	19	124	32	9	1	3	0	1	0	12	0	0	0	3	0	0	0
16:45:00	521	49	254	21	150	26	9	0	3	0	1	0	13	1	0	0	3	0	0	0
17:00:00	554	33	281	27	178	28	10	1	3	0	1	0	15	2	0	0	4	1	0	0
17:15:00	610	56	310	29	194	16	11	1	4	1	1	0	16	1	0	0	4	0	0	0
17:30:00	646	36	346	36	216	22	11	0	4	0	1	0	19	3	0	0	4	0	0	0
17:45:00	694	48	376	30	244	28	11	0	4	0	1	0	19	0	0	0	4	0	0	0
18:00:00	727	33	399	23	268	24	11	0	4	0	1	0	21	2	0	0	4	0	0	0
18:15:00	757	30	411	12	284	16	12	1	4	0	1	0	23	2	0	0	4	0	0	0
18:30:00	803	46	429	18	303	19	12	0	4	0	1	0	23	0	0	0	4	0	0	0
18:45:00	840	37	450	21	322	19	12	0	4	0	1	0	24	1	0	0	4	0	0	0
19:00:00	863	23	464	14	332	10	12	0	4	0	1	0	24	0	0	0	4	0	0	0
19:15:00	885	22	476	12	347	15	12	0	4	0	1	0	24	0	0	0	4	0	0	0
19:30:00	903	18	489	13	361	14	12	0	4	0	1	0	24	0	0	0	4	0	0	0
19:45:00	921	18	501	12	375	14	12	0	4	0	1	0	24	0	1	1	4	0	0	0
20:00:00	937	16	511	10	387	12	12	0	4	0	1	0	24	0	1	0	4	0	0	0
20:15:00	937	0	511	0	387	0	12	0	4	0	1	0	24	0	1	0	4	0	0	0
20:15:15	937	0	511	0	387	0	12	0	4	0	1	0	24	0	1	0	4	0	0	0



		Passen	ger Cars	- East Ap	proach			Tru	cks - Eas	t Approa	ch			H	eavys - Ea	ast Appro	oach		Pedes	trians
Interval	Le	eft	Th	ru	Rig	ght	Le	eft	Th	ru	Ri	ght	Le	eft	Th	ru	Rig	ght	East (	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	4	4	22	22	16	16	0	0	0	0	1	1	0	0	2	2	1	1	0	0
7:30:00	13	9	65	43	41	25	0	0	0	0	1	0	1	1	7	5	1	0	0	0
7:45:00	25	12	118	53	59	18	0	0	0	0	3	2	1	0	9	2	1	0	0	0
8:00:00	35	10	157	39	87	28	0	0	2	2	3	0	1	0	11	2	3	2	0	0
8:15:00	43	8	198	41	108	21	0	0	5	3	3	0	3	2	13	2	3	0	0	0
8:30:00	50	7	229	31	136	28	1	1	6	1	3	0	3	0	19	6	4	1	0	0
8:45:00	56	6	257	28	167	31	1	0	6	0	3	0	3	0	25	6	4	0	0	0
9:00:00	68	12	293	36	192	25	1	0	8	2	4	1	3	0	31	6	4	0	0	0
9:15:00	74	6	332	39	229	37	1	0	10	2	5	1	3	0	35	4	4	0	0	0
9:30:00	81	7	377	45	257	28	2	1	10	0	6	1	3	0	39	4	5	1	0	0
9:45:00	85	4	413	36	300	43	2	0	12	2	6	0	3	0	40	1	5	0	0	0
10:00:00	89	4	446	33	345	45	2	0	14	2	6	0	3	0	41	1	6	1	0	0
10:15:00	89	0	446	0	345	0	2	0	14	0	6	0	3	0	41	0	6	0	0	0
16:00:00	89	0	446	0	345	0	2	0	14	0	6	0	3	0	41	0	6	0	0	0
16:15:00	98	9	546	100	422	77	2	0	14	0	7	1	3	0	46	5	6	0	0	0
16:30:00	112	14	642	96	486	64	2	0	17	3	8	1	3	0	51	5	7	1	0	0
16:45:00	118	6	744	102	567	81	2	0	18	1	8	0	3	0	54	3	8	1	0	0
17:00:00	134	16	843	99	657	90	2	0	19	1	10	2	3	0	56	2	10	2	0	0
17:15:00	151	17	953	110	756	99	2	0	20	1	11	1	4	1	57	1	12	2	0	0
17:30:00	170	19	1038	85	857	101	2	0	22	2	12	1	4	0	59	2	13	1	0	0
17:45:00	188	18	1133	95	942	85	2	0	22	0	12	0	4	0	60	1	14	1	0	0
18:00:00	197	9	1203	70	1011	69	2	0	22	0	12	0	4	0	63	3	16	2	0	0
18:15:00	207	10	1280	77	1069	58	2	0	22	0	12	0	4	0	65	2	16	0	0	0
18:30:00	216	9	1346	66	1125	56	2	0	22	0	12	0	4	0	65	0	16	0	0	0
18:45:00	224	8	1391	45	1175	50	2	0	22	0	12	0	4	0	66	1	17	1	0	0
19:00:00	232	8	1457	66	1219	44	2	0	22	0	12	0	4	0	66	0	18	1	0	0
19:15:00	240	8	1512	55	1257	38	2	0	23	1	12	0	4	0	67	1	18	0	0	0
19:30:00	249	9	1568	56	1299	42	2	0	23	0	12	0	4	0	68	1	19	1	0	0
19:45:00	256	7	1617	49	1333	34	2	0	23	0	12	0	4	0	68	0	20	1	0	0
20:00:00	261	5	1659	42	1356	23	2	0	23	0	12	0	4	0	68	0	20	0	0	0
20:15:00	261	0	1659	0	1356	0	2	0	23	0	12	0	4	0	68	0	20	0	0	0
20:15:15	261	0	1659	0	1356	0	2	0	23	0	12	0	4	0	68	0	20	0	0	0



Count	Date:		ger Cars -		nnroach	0001		Truz	ks - Sout	h Annro	ach		Ι	Но	avys - So	uth Annr	nach		Pedes	triane
Interval	14	eft	Th		<del>i                                     </del>	ght	Le		Th			ght	Le		Th			ght	South	
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	2	2	10	10	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	4	2	25	15	13	7	0	0	0	0	0	0	1	1	1	1	3	3	0	0
7:45:00	6	2	41	16	18	5	0	0	0	0	0	0	1	0	1	0	3	0	0	0
8:00:00	7	1	62	21	34	16	0	0	0	0	0	0	1	0	1	0	3	0	0	0
8:15:00	8	1	72	10	44	10	0	0	Ö	0	0	0	1	0	1	0	3	0	0	0
8:30:00	9	1	93	21	63	19	0	0	0	0	0	0	1	0	3	2	3	0	0	0
8:45:00	10	1	118	25	70	7	0	0	1	1	0	0	1	0	3	0	3	0	0	0
9:00:00	10	0	139	21	85	15	0	0	2	1	1	1	1	0	3	0	3	0	0	0
9:15:00	11	1	150	11	89	4	0	0	3	1	1	0	1	0	3	0	4	1	0	0
9:30:00	12	1	157	7	95	6	0	0	3	0	1	0	1	0	3	0	5	1	0	0
9:45:00	15	3	178	21	102	7	0	0	3	0	1	0	1	0	3	0	7	2	0	0
10:00:00	16	1	193	15	113	11	0	0	3	0	1	0	1	0	3	0	7	0	0	0
10:15:00	16	0	193	0	113	0	0	0	3	0	1	0	1	0	3	0	7	0	0	0
16:00:00	16	0	193	0	113	0	0	0	3	0	1	0	1	0	3	0	7	0	0	0
16:15:00	21	5	234	41	128	15	0	0	3	0	1	0	2	1	3	0	7	0	0	0
16:30:00	27	6	266	32	137	9	0	0	5	2	2	1	2	0	3	0	7	0	0	0
16:45:00	33	6	296	30	151	14	0	0	6	1	2	0	2	0	3	0	8	1	0	0
17:00:00	38	5	323	27	160	9	0	0	8	2	3	1	2	0	3	0	10	2	0	0
17:15:00	41	3	355	32	169	9	0	0	8	0	3	0	2	0	3	0	10	0	0	0
17:30:00	51	10	392	37	182	13	0	0	8	0	3	0	2	0	3	0	10	0	0	0
17:45:00	54	3	435	43	194	12	0	0	8	0	3	0	2	0	3	0	10	0	0	0
18:00:00	57	3	457	22	202	8	0	0	8	0	3	0	2	0	3	0	10	0	0	0
18:15:00	57	0	482	25	210	8	0	0	8	0	3	0	2	0	3	0	11	1	0	0
18:30:00	58	1	500	18	217	7	0	0	8	0	3	0	2	0	3	0	11	0	0	0
18:45:00	59	1	519	19	221	4	0	0	8	0	3	0	2	0	3	0	11	0	0	0
19:00:00	60	1	533	14	225	4	0	0	8	0	3	0	2	0	3	0	11	0	0	0
19:15:00	60	0	548	15	229	4	0	0	8	0	3	0	2	0	3	0	11	0	0	0
19:30:00	61	11	563	15	232	3	0	0	8	0	3	0	2	0	3	0	11	0	0	0
19:45:00	62	11	577	14	234	2	0	0	8	0	3	0	2	0	3	0	11	0	0	0
20:00:00	63	1	587	10	237	3	0	0	8	0	3	0	2	0	3	0	11	0	0	0
20:15:00	63	0	587	0	237	0	0	0	8	0	3	0	2	0	3	0	11	0	0	0
20:15:15	63	0	587	0	237	0	0	0	8	0	3	0	2	0	3	0	11	0	0	0



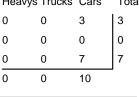
		Passen	ger Cars	- West Ap	proach			Tru	cks - Wes	t Approa	ıch			Не	avys - W	est Appr	oach		Pedes	trians
Interval	Le	eft	Th	ru	Riç	ght	Le	eft	Th	ru	Riç	ght	Le	ft	Th	ru	Ri	ght	West (	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	7	7	93	93	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	20	13	209	116	5	4	1	1	0	0	0	0	0	0	1	1	1	1	0	0
7:45:00	41	21	319	110	9	4	1	0	0	0	0	0	0	0	2	1	1	0	0	0
8:00:00	57	16	419	100	17	8	2	1	1	1	0	0	0	0	4	2	1	0	0	0
8:15:00	78	21	519	100	19	2	2	0	2	1	0	0	0	0	6	2	1	0	0	0
8:30:00	89	11	577	58	19	0	2	0	2	0	0	0	1	1	7	1	1	0	0	0
8:45:00	100	11	671	94	21	2	2	0	4	2	0	0	1	0	10	3	1	0	0	0
9:00:00	113	13	735	64	22	1	2	0	4	0	0	0	2	1	18	8	2	1	0	0
9:15:00	125	12	811	76	23	1	2	0	4	0	0	0	2	0	21	3	2	0	0	0
9:30:00	143	18	899	88	23	0	2	0	6	2	0	0	2	0	25	4	2	0	0	0
9:45:00	159	16	975	76	26	3	2	0	7	1	0	0	2	0	30	5	2	0	0	0
10:00:00	171	12	1037	62	28	2	2	0	7	0	0	0	2	0	36	6	2	0	0	0
10:15:00	171	0	1037	0	28	0	2	0	7	0	0	0	2	0	36	0	2	0	0	0
16:00:00	171	0	1037	0	28	0	2	0	7	0	0	0	2	0	36	0	2	0	0	0
16:15:00	206	35	1129	92	29	1	2	0	8	1	0	0	2	0	38	2	2	0	0	0
16:30:00	234	28	1211	82	32	3	3	1	9	1	0	0	3	1	40	2	2	0	0	0
16:45:00	255	21	1284	73	32	0	3	0	9	0	0	0	3	0	44	4	2	0	0	0
17:00:00	277	22	1345	61	33	1	4	1	10	1	0	0	3	0	45	1	2	0	0	0
17:15:00	302	25	1401	56	33	0	5	1	11	1	0	0	3	0	49	4	2	0	0	0
17:30:00	328	26	1462	61	36	3	5	0	13	2	0	0	3	0	52	3	2	0	0	0
17:45:00	343	15	1528	66	37	1	6	1	14	1	0	0	3	0	52	0	2	0	0	0
18:00:00	362	19	1568	40	40	3	6	0	14	0	0	0	4	1	54	2	2	0	0	0
18:15:00	379	17	1608	40	43	3	6	0	14	0	0	0	4	0	54	0	2	0	0	0
18:30:00	396	17	1644	36	44	1	6	0	14	0	0	0	5	1	55	1	2	0	0	0
18:45:00	411	15	1690	46	45	1	6	0	14	0	0	0	5	0	56	1	2	0	0	0
19:00:00	418	7	1726	36	47	2	6	0	14	0	0	0	5	0	57	1	2	0	0	0
19:15:00	426	8	1767	41	48	1	6	0	14	0	0	0	5	0	57	0	2	0	0	0
19:30:00	433	7	1808	41	50	2	6	0	14	0	0	0	5	0	58	1	2	0	0	0
19:45:00	439	6	1844	36	51	1	6	0	14	0	0	0	5	0	59	1	2	0	0	0
20:00:00	442	3	1871	27	52	1	6	0	14	0	0	0	5	0	59	0	2	0	0	0
20:15:00	442	0	1871	0	52	0	6	0	14	0	0	0	5	0	59	0	2	0	0	0
20:15:15	442	0	1871	0	52	0	6	0	14	0	0	0	5	0	59	0	2	0	0	0
	I		1		I		1		I		1				İ					



Accu-173	ame inc.
Morning Peak Diagram	Specified Period         One Hour Peak           From: 7:00:00         From: 7:15:00           To: 10:00:00         To: 8:15:00
Municipality: Innisfil Site #: 1909000002 Intersection: CR 53 & 9th Ln TFR File #: 1 Count date: 28-May-19	Weather conditions:  Person counted: Person prepared: Person checked:
Heavys Trucks Cars Totals  0 0 9 9  9th Ln  W  Heavys Trucks Cars Totals	Totals 221 Peds Cross: X  Cars Trucks Heavys Totals  1 0 0 1 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0
0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Cars Trucks Heavys Totals 2 0 0 2
West Peds: 0 Trucks 3 Truck West Entering: 23 Heavys 6 Heavy	



#### Accu-Traffic Inc. **Specified Period One Hour Peak Afternoon Peak Diagram** From: 16:00:00 From: 16:45:00 To: To: 20:00:00 17:45:00 Weather conditions: Municipality: Innisfil Site #: 1909000002 Intersection: CR 53 & 9th Ln Person counted: TFR File #: Person prepared: Count date: 28-May-19 Person checked: \*\* Non-Signalized Intersection \*\* Major Road: CR 53 runs N/S North Leg Total: 894 Heavys 0 0 3 Heavys 2 East Leg Total: 1 2 East Entering: North Entering: 348 Trucks 0 0 Trucks 8 North Peds: Cars 6 337 0 343 Cars 536 East Peds: X Totals 546 Peds Cross: Totals 6 342 Peds Cross: CR 53 Heavys Trucks Cars Totals Trucks Heavys Totals Cars 0 50 50 0 0 0 0 0 0 0 0 9th Ln Heavys Trucks Cars Totals 9th Ln 0 3 3







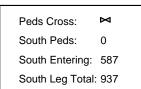


Peds Cross:	X
West Peds:	0
West Entering:	10
West Leg Total:	60





Cars	44	533	0	577
Trucks	0	8	0	8
Heavys	0	2	0	2
Totals	44	543	0	





## **Total Count Diagram**

Municipality:

Site #: 1909000002 Intersection: CR 53 & 9th Ln

TFR File #:

Count date: 28-May-19 Weather conditions:

Person counted: Person prepared: Person checked:

#### \*\* Non-Signalized Intersection \*\*

North Leg Total: 3899 North Entering: 1719

North Peds: Peds Cross: Heavys 1 17 0 Trucks 0 0 Cars 28 1653 3 Totals 29 1687 3

18 17 1684

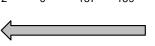
CR 53

Heavys 18 Trucks 22 Cars 2140

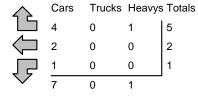
Major Road: CR 53 runs N/S

East Leg Total: 15 East Entering: East Peds: X Totals 2180 Peds Cross:

Totals Heavys Trucks Cars 0 159 157







9th Ln

Heavys Trucks Cars Totals 0 22 22 0 0 1 1 3 1 64 68 87

Peds Cross:

West Peds:

West Entering: 91

West Leg Total: 250





9th Ln

Cars 1718 Trucks 18 Heavys 20 Totals 1756



Cars 127 2114 3 2244 Trucks 0 22 0 22 Heavys 17 0 18 Totals 128 2153 3

Cars Trucks Heavys Totals 0 0 7

> Peds Cross: M South Peds: 0 South Entering: 2284 South Leg Total: 4040



# Accu-Traffic Inc. Traffic Count Summary

Municipality: Innisfil Intersection: CR 53 & 9th Ln Count Date: 28-May-19 **North Approach Totals South Approach Totals** North/South Includes Cars, Trucks, & Heavys Includes Cars, Trucks, & Heavys Total Hour Hour Total Total Grand Grand **Ending** Peds **Ending** Peds Approaches Thru Right Thru Right Total Total 7:00:00 7:00:00 8:00:00 8:00:00 9:00:00 9:00:00 10:00:00 10:00:00 16:00:00 16:00:00 17:00:00 17:00:00 18:00:00 18:00:00 19:00:00 19:00:00 20:00:00 20:00:00 S Totals: Totals: West Approach Totals **East Approach Totals** East/West Includes Cars, Trucks, & Heavys Includes Cars, Trucks, & Heavys Total Hour Hour Total Total Grand **Ending** Peds **Ending** Peds Approaches Right Left Thru Right Left Thru Total Total 7:00:00 7:00:00 8:00:00 8:00:00 9:00:00 9:00:00 10:00:00 10:00:00 16:00:00 16:00:00 5 17:00:00 17:00:00 18:00:00 18:00:00 19:00:00 19:00:00 20:00:00 20:00:00 Totals: W Totals: **Calculated Values for Traffic Crossing Major Street** 9:00 10:00 18:00 Hours Ending: 7:00 8:00 17:00 19:00 20:00 Crossing Values: 



		Passeng	ger Cars -		pproach			Truc	cks - Nort	h Approa	ach			He	avys - No	rth Appr	oach		Pedes	trians
Interval	Le		Th			ght	Le	eft	Th	ru	Riç	ght	Le	ft	Th	ru	Rig	ght	North	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	45	45	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0
7:30:00	1	1	109	64	0	0	0	0	1	1	0	0	0	0	3	2	1	0	0	0
7:45:00	1	0	180	71	0	0	0	0	1	0	0	0	0	0	3	0	1	0	0	0
8:00:00	1	0	244	64	1	1	0	0	2	1	0	0	0	0	3	0	1	0	0	0
8:15:00	1	0	305	61	2	1	0	0	3	1	0	0	0	0	6	3	1	0	0	0
8:30:00	1	0	353	48	3	1	0	0	3	0	0	0	0	0	7	1	1	0	0	0
8:45:00	2	1	423	70	3	0	0	0	3	0	0	0	0	0	8	1	1	0	0	0
9:00:00	2	0	488	65	3	0	0	0	6	3	0	0	0	0	10	2	1	0	0	0
9:15:00	3	1	528	40	3	0	0	0	8	2	0	0	0	0	11	1	1	0	0	0
9:30:00	3	0	564	36	3	0	0	0	10	2	0	0	0	0	11	0	1	0	0	0
9:45:00	3	0	613	49	3	0	0	0	12	2	0	0	0	0	11	0	1	0	0	0
10:00:00	3	0	651	38	3	0	0	0	13	1	0	0	0	0	11	0	1	0	0	0
10:15:00	3	0	651	0	3	0	0	0	13	0	0	0	0	0	11	0	1	0	0	0
16:00:00	3	0	651	0	3	0	0	0	13	0	0	0	0	0	11	0	1	0	0	0
16:15:00	3	0	735	84	3	0	0	0	13	0	0	0	0	0	12	1	1	0	0	0
16:30:00	3	0	806	71	6	3	0	0	14	1	0	0	0	0	12	0	1	0	0	0
16:45:00	3	0	899	93	7	1	0	0	14	0	0	0	0	0	12	0	1	0	0	0
17:00:00	3	0	974	75	8	1	0	0	14	0	0	0	0	0	14	2	1	0	0	0
17:15:00	3	0	1051	77	10	2	0	0	16	2	0	0	0	0	15	1	1	0	0	0
17:30:00	3	0	1150	99	11	1	0	0	16	0	0	0	0	0	15	0	1	0	0	0
17:45:00	3	0	1236	86	13	2	0	0	16	0	0	0	0	0	15	0	1	0	0	0
18:00:00	3	0	1310	74	15	2	0	0	16	0	0	0	0	0	16	1	1	0	0	0
18:15:00	3	0	1354	44	16	1	0	0	17	1	0	0	0	0	17	1	1	0	0	0
18:30:00	3	0	1416	62	18	2	0	0	17	0	0	0	0	0	17	0	1	0	0	0
18:45:00	3	0	1472	56	19	1	0	0	17	0	0	0	0	0	17	0	1	0	0	0
19:00:00	3	0	1509	37	22	3	0	0	17	0	0	0	0	0	17	0	1	0	0	0
19:15:00	3	0	1550	41	24	2	0	0	17	0	0	0	0	0	17	0	1	0	0	0
19:30:00	3	0	1585	35	25	11	0	0	17	0	0	0	0	0	17	0	1	0	0	0
19:45:00	3	0	1623	38	27	2	0	0	17	0	0	0	0	0	17	0	1	0	0	0
20:00:00	3	0	1653	30	28	1	0	0	17	0	0	0	0	0	17	0	1	0	0	0
20:15:00	3	0	1653	0	28	0	0	0	17	0	0	0	0	0	17	0	1	0	0	0
20:15:15	3	0	1653	0	28	0	0	0	17	0	0	0	0	0	17	0	1	0	0	0
			[										I							



		Passen	ger Cars	- East Ap	proach			Tru	cks - Eas	t Approa	ch			H	eavys - Ea	ast Appro	oach		Pedes	trians
Interval	Le	eft	Th	ru	Rig	ght	Le	ft	Th	ru	Riç	ght	Le	ft	Th	ru	Riç	ght	East (	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00	0	0	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00	0	0	2	1	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45:00	0	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
10:00:00	0	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
10:15:00	0	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
16:00:00	0	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
16:15:00	0	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
16:30:00	0	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
16:45:00	0	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:00:00	1	1	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:15:00	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:30:00	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
17:45:00	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
18:00:00	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
18:15:00	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
18:30:00	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
18:45:00	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
19:00:00	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
19:15:00	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
19:30:00	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
19:45:00	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
20:00:00	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
20:15:00	11	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
20:15:15	1	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0



Joant	Date:		er Cars -		pproach			Truc	ks - Sout	h Approa	ach			He	avys - So	uth Appr	oach		Pedes	trians
Interval	Le	eft	Th		<del></del>	ght .	Le		Th		1	ght	Le		Th			ght	South	
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	1	1	32	32	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
7:30:00	2	1	74	42	0	0	0	0	1	1	0	0	0	0	2	1	0	0	0	0
7:45:00	3	1	138	64	0	0	0	0	1	0	0	0	0	0	3	1	0	0	0	0
8:00:00	8	5	196	58	0	0	0	0	4	3	0	0	0	0	4	11	0	0	0	0
8:15:00	8	0	243	47	0	0	0	0	4	0	0	0	0	0	5	1	0	0	0	0
8:30:00	9	1	294	51	1	1	0	0	4	0	0	0	0	0	7	2	0	0	0	0
8:45:00	10	1	349	55	1	0	0	0	4	0	0	0	0	0	8	1	0	0	0	0
9:00:00	10	0	407	58	2	1	0	0	7	3	0	0	0	0	9	1	0	0	0	0
9:15:00	10	0	464	57	3	1	0	0	8	1	0	0	0	0	9	0	0	0	0	0
9:30:00	10	0	510	46	3	0	0	0	9	1	0	0	0	0	10	11	0	0	0	0
9:45:00	11	1	569	59	3	0	0	0	9	0	0	0	0	0	10	0	0	0	0	0
10:00:00	11	0	621	52	3	0	0	0	9	0	0	0	0	0	10	0	0	0	0	0
10:15:00	11	0	621	0	3	0	0	0	9	0	0	0	0	0	10	0	0	0	0	0
16:00:00	11	0	621	0	3	0	0	0	9	0	0	0	0	0	10	0	0	0	0	0
16:15:00	24	13	745	124	3	0	0	0	10	11	0	0	0	0	10	0	0	0	0	0
16:30:00	33	9	870	125	3	0	0	0	13	3	0	0	1	1	12	2	0	0	0	0
16:45:00	41	8	993	123	3	0	0	0	14	1	0	0	1	0	12	0	0	0	0	0
17:00:00	54	13	1118	125	3	0	0	0	19	5	0	0	1	0	13	1	0	0	0	0
17:15:00	63	9	1253	135	3	0	0	0	20	1	0	0	1	0	14	1	0	0	0	0
17:30:00	72	9	1402	149	3	0	0	0	21	1	0	0	1	0	14	0	0	0	0	0
17:45:00	85	13	1526	124	3	0	0	0	22	1	0	0	1	0	14	0	0	0	0	0
18:00:00	89	4	1618	92	3	0	0	0	22	0	0	0	1	0	15	1	0	0	0	0
18:15:00	93	4	1703	85	3	0	0	0	22	0	0	0	1	0	15	0	0	0	0	0
18:30:00	100	7	1776	73	3	0	0	0	22	0	0	0	1	0	15	0	0	0	0	0
18:45:00	105	5	1858	82	3	0	0	0	22	0	0	0	1	0	15	0	0	0	0	0
19:00:00	110	5	1919	61	3	0	0	0	22	0	0	0	1	0	15	0	0	0	0	0
19:15:00	114	4	1980	61	3	0	0	0	22	0	0	0	1	0	15	0	0	0	0	0
19:30:00	120	6	2038	58	3	0	0	0	22	0	0	0	1	0	16	1	0	0	0	0
19:45:00	124	4	2080	42	3	0	0	0	22	0	0	0	1	0	17	1	0	0	0	0
20:00:00	127	3	2114	34	3	0	0	0	22	0	0	0	1	0	17	0	0	0	0	0
20:15:00	127	0	2114	0	3	0	0	0	22	0	0	0	1	0	17	0	0	0	0	0
20:15:15	127	0	2114	0	3	0	0	0	22	0	0	0	1	0	17	0	0	0	0	0



		Passen	ger Cars -	· West Ap	proach			Tru	cks - Wes	t Approa	ch			Не	avys - We	est Appro	oach		Pedes	trians
Interval	Le	eft	Th	ru	Riç	ght	Le	eft	Th	ru	Riç	ght	Le	ft	Th	ru	Rig	jht	West	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	1	1	0	0	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	1	0	1	1	15	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	1	0	1	0	19	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	1	0	1	0	23	4	0	0	0	0	0	0	0	0	0	0	1	1	0	0
8:30:00	1	0	1	0	26	3	0	0	0	0	1	1	0	0	0	0	1	0	0	0
8:45:00	3	2	1	0	29	3	0	0	0	0	1	0	0	0	0	0	1	0	0	0
9:00:00	4	1	1	0	30	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0
9:15:00	5	1	1	0	31	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0
9:30:00	6	1	1	0	32	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0
9:45:00	6	0	1	0	33	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0
10:00:00	7	1	1	0	37	4	0	0	0	0	1	0	0	0	0	0	1	0	0	0
10:15:00	7	0	1	0	37	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
16:00:00	7	0	1	0	37	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
16:15:00	7	0	1	0	38	1	0	0	0	0	1	0	0	0	0	0	1	0	1	1
16:30:00	7	0	1	0	42	4	0	0	0	0	1	0	0	0	0	0	1	0	1	0
16:45:00	8	1	1	0	42	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0
17:00:00	9	1	1	0	44	2	0	0	0	0	1	0	0	0	0	0	1	0	1	0
17:15:00	10	1	1	0	45	1	0	0	0	0	1	0	0	0	0	0	1	0	1	0
17:30:00	11	1	1	0	47	2	0	0	0	0	1	0	0	0	0	0	1	0	1	0
17:45:00	11	0	1	0	49	2	0	0	0	0	1	0	0	0	0	0	1	0	1	0
18:00:00	14	3	1	0	52	3	0	0	0	0	1	0	0	0	0	0	1	0	2	1
18:15:00	14	0	1	0	52	0	0	0	0	0	1	0	0	0	0	0	3	2	2	0
18:30:00	15	1	1	0	56	4	0	0	0	0	1	0	0	0	0	0	3	0	2	0
18:45:00	16	1	1	0	57	1	0	0	0	0	1	0	0	0	0	0	3	0	2	0
19:00:00	18	2	1	0	59	2	0	0	0	0	1	0	0	0	0	0	3	0	2	0
19:15:00	19	1	1	0	60	1	0	0	0	0	1	0	0	0	0	0	3	0	2	0
19:30:00	20	1	1	0	60	0	0	0	0	0	1	0	0	0	0	0	3	0	2	0
19:45:00	22	2	1	0	62	2	0	0	0	0	1	0	0	0	0	0	3	0	2	0
20:00:00	22	0	1	0	64	2	0	0	0	0	1	0	0	0	0	0	3	0	2	0
20:15:00	22	0	1	0	64	0	0	0	0	0	1	0	0	0	0	0	3	0	2	0
20:15:15	22	0	1	0	64	0	0	0	0	0	1	0	0	0	0	0	3	0	2	0



	A	ccu-ira	attic inc		
Morning Pe	eak Diagra	ım	<b>Specified Po From:</b> 7:00: <b>To:</b> 10:00	00	One Hour Peak From: 7:15:00 To: 8:15:00
	000003 3 & Georgian Dow	ns (North a	Person cou Person prep Person che	nted: pared:	
** Non-Signalized I	ntersection **		Major Road	: CR 53 runs	s N/S
North Leg Total: 508  North Entering: 283  North Peds: 0  Peds Cross: ▶  ✓	Heavys 5 Trucks 2 Cars 25 Totals 26	33 20	5 T T T T T T T T T T T T T T T T T T T	$ \begin{array}{c} 1 \\ 9 \end{array} $	East Leg Total: 40 East Entering: 13 East Peds: 0 Peds Cross:   Trucks Heavys Totals 0 1 10 0 0 3 0 1 an Downs (North access)
	Cars 259 Trucks 2	CR 53 Ca Truck		Ca 25 6   215 0   3	Peds Cross: South Peds: 0
	Heavys 5 Totals 266	Heavy Tota		1 4 7	South Entering: 222 South Leg Total: 488



**Afternoon Peak Diagram Specified Period** From: 16:00:00 To: 20:00:00

**One Hour Peak** From: 16:45:00 To: 17:45:00

Municipality: Innisfil

Site #: 1909000003

Intersection: CR 53 & Georgian Downs (North a

TFR File #:

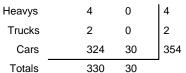
Count date: 28-May-19 Weather conditions:

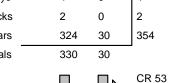
Person counted: Person prepared: Person checked:

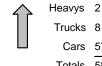
#### \*\* Non-Signalized Intersection \*\*

North Leg Total: 941 North Entering: 360 North Peds:

Peds Cross:

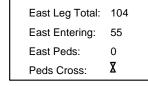




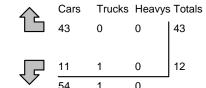


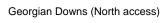
Trucks 8 Cars 571 Totals 581

Major Road: CR 53 runs N/S

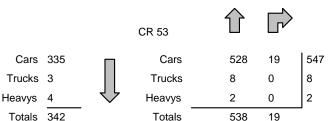


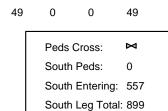






Cars





Trucks Heavys Totals



## **Total Count Diagram**

Municipality: Innisfil

**Site #:** 1909000003

Intersection: CR 53 & Georgian Downs (North a

TFR File #: 1

Count date: 28-May-19

Weather conditions:

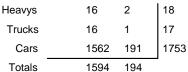
Person counted: Person prepared:

Person checked:

Major Road: CR 53 runs N/S

#### \*\* Non-Signalized Intersection \*\*

North Leg Total: 4056
North Entering: 1788
North Peds: 0
Peds Cross: ▶



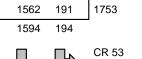
Cars 1634

1668

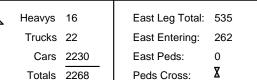
Trucks 17

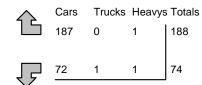
Heavys

Totals

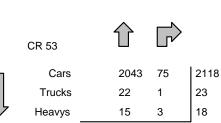






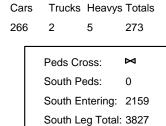


Georgian Downs (North access)



2080

79



#### **Comments**

Totals



# Accu-Traffic Inc. Traffic Count Summary

Municipality: Innisfil Intersection: CR 53 & Georgian Downs (North a Count Date: 28-May-19 **North Approach Totals South Approach Totals** North/South Includes Cars, Trucks, & Heavys Includes Cars, Trucks, & Heavys Total Hour Hour Total Total Grand Grand **Ending** Peds **Ending** Peds Approaches Thru Right Thru Right Total Total 7:00:00 7:00:00 8:00:00 8:00:00 9:00:00 9:00:00 10:00:00 10:00:00 16:00:00 16:00:00 17:00:00 17:00:00 18:00:00 18:00:00 19:00:00 19:00:00 20:00:00 20:00:00 S Totals: Totals: **East Approach Totals** West Approach Totals East/West Includes Cars, Trucks, & Heavys Includes Cars, Trucks, & Heavys Total Hour Hour Total Total Grand Grand **Ending** Peds **Ending** Peds Approaches Right Left Thru Right Left Thru Total Total 7:00:00 7:00:00 8:00:00 8:00:00 9:00:00 9:00:00 10:00:00 10:00:00 16:00:00 16:00:00 17:00:00 17:00:00 18:00:00 18:00:00 19:00:00 19:00:00 20:00:00 20:00:00 Totals: W Totals: **Calculated Values for Traffic Crossing Major Street** 9:00 10:00 18:00 Hours Ending: 7:00 8:00 17:00 19:00 20:00 Crossing Values: 



		Passeng	ger Cars -	North A	pproach			Truc	cks - Nort	h Approa	ach			He	avys - No	orth Appr	oach		Pedes	trians
Interval	Le	eft	Th	ru	Rig	ght	Le	ft	Th	ru	Ri	ght	Le	eft	Th	ru	Rig	ght	North	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	3	3	50	50	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
7:30:00	3	0	116	66	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0
7:45:00	8	5	186	70	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
8:00:00	19	11	242	56	0	0	0	0	1	1	0	0	0	0	4	1	0	0	0	0
8:15:00	22	3	306	64	0	0	0	0	2	1	0	0	1	1	6	2	0	0	0	0
8:30:00	26	4	354	48	0	0	0	0	3	1	0	0	1	0	6	0	0	0	0	0
8:45:00	34	8	420	66	0	0	0	0	3	0	0	0	1	0	6	0	0	0	0	0
9:00:00	41	7	477	57	0	0	0	0	6	3	0	0	2	1	7	1	0	0	0	0
9:15:00	45	4	514	37	0	0	0	0	8	2	0	0	2	0	8	1	0	0	0	0
9:30:00	47	2	554	40	0	0	1	1	10	2	0	0	2	0	8	0	0	0	0	0
9:45:00	53	6	595	41	0	0	1	0	12	2	0	0	2	0	8	0	0	0	0	0
10:00:00	60	7	631	36	0	0	1	0	13	1	0	0	2	0	8	0	0	0	0	0
10:15:00	60	0	631	0	0	0	1	0	13	0	0	0	2	0	8	0	0	0	0	0
16:00:00	60	0	631	0	0	0	1	0	13	0	0	0	2	0	8	0	0	0	0	0
16:15:00	64	4	703	72	0	0	1	0	13	0	0	0	2	0	9	1	0	0	0	0
16:30:00	70	6	784	81	0	0	1	0	14	11	0	0	2	0	9	0	0	0	0	0
16:45:00	84	14	862	78	0	0	1	0	14	0	0	0	2	0	9	0	0	0	0	0
17:00:00	91	7	936	74	0	0	1	0	14	0	0	0	2	0	12	3	0	0	0	0
17:15:00	95	4	1012	76	0	0	1	0	16	2	0	0	2	0	13	1	0	0	0	0
17:30:00	105	10	1099	87	0	0	1	0	16	0	0	0	2	0	13	0	0	0	0	0
17:45:00	114	9	1186	87	0	0	1	0	16	0	0	0	2	0	13	0	0	0	0	0
18:00:00	127	13	1250	64	0	0	1	0	16	0	0	0	2	0	14	1	0	0	0	0
18:15:00	138	11	1287	37	0	0	1	0	16	0	0	0	2	0	16	2	0	0	0	0
18:30:00	147	9	1348	61	0	0	1	0	16	0	0	0	2	0	16	0	0	0	0	0
18:45:00	153	6	1399	51	0	0	1	0	16	0	0	0	2	0	16	0	0	0	0	0
19:00:00	160	7	1433	34	0	0	1	0	16	0	0	0	2	0	16	0	0	0	0	0
19:15:00	166	6	1470	37	0	0	1	0	16	0	0	0	2	0	16	0	0	0	0	0
19:30:00	175	9	1498	28	0	0	1	0	16	0	0	0	2	0	16	0	0	0	0	0
19:45:00	184	9	1531	33	0	0	1	0	16	0	0	0	2	0	16	0	0	0	0	0
20:00:00	191	7	1562	31	0	0	1	0	16	0	0	0	2	0	16	0	0	0	0	0
20:15:00	191	0	1562	0	0	0	1	0	16	0	0	0	2	0	16	0	0	0	0	0
20:15:15	191	0	1562	0	0	0	1	0	16	0	0	0	2	0	16	0	0	0	0	0



		Passen	ger Cars	- East Ap	proach			Tru	cks - Eas	t Approa	ch			Н	eavys - Ea	ast Appro	oach		Pedes	trians
Interval	Le	eft	Th	ru	Rig	ght	Le	ft	Th	ru	Rig	ght	Le	ft	Th	ru	Rig	ght	East (	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	1	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	3	2	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	4	1	0	0	10	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	4	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	4	0	0	0	11	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0
8:30:00	5	1	0	0	12	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
8:45:00	5	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
9:00:00	6	1	0	0	14	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0
9:15:00	6	0	0	0	18	4	0	0	0	0	0	0	1	1	0	0	1	0	0	0
9:30:00	7	1	0	0	18	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
9:45:00	8	1	0	0	22	4	0	0	0	0	0	0	1	0	0	0	1	0	0	0
10:00:00	8	0	0	0	24	2	0	0	0	0	0	0	1	0	0	0	1	0	0	0
10:15:00	8	0	0	0	24	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
16:00:00	8	0	0	0	24	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
16:15:00	14	6	0	0	37	13	0	0	0	0	0	0	1	0	0	0	1	0	0	0
16:30:00	16	2	0	0	46	9	0	0	0	0	0	0	1	0	0	0	1	0	0	0
16:45:00	20	4	0	0	57	11	0	0	0	0	0	0	1	0	0	0	1	0	0	0
17:00:00	24	4	0	0	67	10	1	1	0	0	0	0	1	0	0	0	1	0	0	0
17:15:00	26	2	0	0	78	11	1	0	0	0	0	0	1	0	0	0	1	0	0	0
17:30:00	28	2	0	0	88	10	1	0	0	0	0	0	1	0	0	0	1	0	0	0
17:45:00	31	3	0	0	100	12	1	0	0	0	0	0	1	0	0	0	1	0	0	0
18:00:00	39	8	0	0	105	5	1	0	0	0	0	0	1	0	0	0	1	0	0	0
18:15:00	48	9	0	0	123	18	1	0	0	0	0	0	1	0	0	0	1	0	0	0
18:30:00	56	8	0	0	129	6	1	0	0	0	0	0	1	0	0	0	1	0	0	0
18:45:00	61	5	0	0	143	14	1	0	0	0	0	0	1	0	0	0	1	0	0	0
19:00:00	63	2	0	0	149	6	1	0	0	0	0	0	1	0	0	0	1	0	0	0
19:15:00	64	1	0	0	160	11	1	0	0	0	0	0	1	0	0	0	1	0	0	0
19:30:00	66	2	0	0	171	11	1	0	0	0	0	0	1	0	0	0	1	0	0	0
19:45:00	68	2	0	0	179	8	1	0	0	0	0	0	1	0	0	0	1	0	0	0
20:00:00	72	4	0	0	187	8	1	0	0	0	0	0	1	0	0	0	1	0	0	0
20:15:00	72	0	0	0	187	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0
20:15:15	72	0	0	0	187	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0



		Passeng	ger Cars -	South A	pproach			Truc	ks - Sout	th Appro	ach			He	avys - So	uth Appr	oach		Pedes	trians
Interval	Le	eft	Th	ru	Ri	ght	Le	eft	Th	ru	Rig	ght	Le	ft	Th	ru	Rig	ght	South	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	31	31	1	1	0	0	1	1	0	0	0	0	1	1	0	0	0	0
7:30:00	0	0	74	43	3	2	0	0	2	11	0	0	0	0	2	1	0	0	0	0
7:45:00	0	0	132	58	4	1	0	0	3	1	0	0	0	0	2	0	0	0	0	0
8:00:00	0	0	194	62	6	2	0	0	4	11	0	0	0	0	4	2	11	1	0	0
8:15:00	0	0	240	46	7	1	0	0	4	0	0	0	0	0	4	0	1	0	0	0
8:30:00	0	0	293	53	8	1	0	0	4	0	0	0	0	0	6	2	1	0	0	0
8:45:00	0	0	349	56	9	1	0	0	4	0	0	0	0	0	7	1	1	0	0	0
9:00:00	0	0	403	54	12	3	0	0	7	3	0	0	0	0	7	0	1	0	0	0
9:15:00	0	0	458	55	12	0	0	0	8	11	0	0	0	0	7	0	11	0	0	0
9:30:00	0	0	504	46	16	4	0	0	9	11	0	0	0	0	8	1	11	0	0	0
9:45:00	0	0	563	59	24	8	0	0	9	0	0	0	0	0	8	0	11	0	0	0
10:00:00	0	0	612	49	29	5	0	0	9	0	0	0	0	0	8	0	11	0	0	0
10:15:00	0	0	612	0	29	0	0	0	9	0	0	0	0	0	8	0	1	0	0	0
16:00:00	0	0	612	0	29	0	0	0	9	0	0	0	0	0	8	0	1	0	0	0
16:15:00	0	0	743	131	31	2	0	0	10	1	0	0	0	0	8	0	1	0	0	0
16:30:00	0	0	859	116	34	3	0	0	13	3	0	0	0	0	10	2	1	0	0	0
16:45:00	0	0	975	116	35	1	0	0	14	1	1	1	0	0	10	0	1	0	0	0
17:00:00	0	0	1097	122	38	3	0	0	19	5	1	0	0	0	11	1	1	0	0	0
17:15:00	0	0	1235	138	40	2	0	0	20	1	1	0	0	0	12	1	1	0	0	0
17:30:00	0	0	1378	143	45	5	0	0	21	1	1	0	0	0	12	0	1	0	0	0
17:45:00	0	0	1503	125	54	9	0	0	22	1	1	0	0	0	12	0	1	0	0	0
18:00:00	0	0	1593	90	60	6	0	0	22	0	1	0	0	0	13	1	1	0	0	0
18:15:00	0	0	1668	75	62	2	0	0	22	0	1	0	0	0	13	0	1	0	0	0
18:30:00	0	0	1743	75	64	2	0	0	22	0	1	0	0	0	13	0	1	0	0	0
18:45:00	0	0	1818	75	65	1	0	0	22	0	1	0	0	0	13	0	1	0	0	0
19:00:00	0	0	1877	59	65	0	0	0	22	0	1	0	0	0	13	0	3	2	0	0
19:15:00	0	0	1929	52	67	2	0	0	22	0	1	0	0	0	13	0	3	0	0	0
19:30:00	0	0	1980	51	69	2	0	0	22	0	1	0	0	0	14	1	3	0	0	0
19:45:00	0	0	2015	35	73	4	0	0	22	0	1	0	0	0	15	1	3	0	0	0
20:00:00	0	0	2043	28	75	2	0	0	22	0	1	0	0	0	15	0	3	0	0	0
20:15:00	0	0	2043	0	75	0	0	0	22	0	1	0	0	0	15	0	3	0	0	0
20:15:15	0	0	2043	0	75	0	0	0	22	0	1	0	0	0	15	0	3	0	0	0



		Passen	ger Cars -	West Ap	proach			Tru	cks - Wes	t Approa	ıch			Не	avys - W	est Appr	oach		Pedes	trians
Interval	Le	eft	Th	ru	Riç	ght	Le	eft	Th	ru	Riç	ght	Le	ft	Th	ru	Ri	ght	West	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



#### Accu-Traffic Inc. **Morning Peak Diagram Specified Period One Hour Peak** From: 7:00:00 From: 8:00:00 To: 10:00:00 To: 9:00:00 Weather conditions: Municipality: Innisfil Site #: 1909000004 Intersection: CR 53 & Georgian Downs (Main ac Person counted: TFR File #: Person prepared: Count date: 28-May-19 Person checked: \*\* Non-Signalized Intersection \*\* Major Road: CR 53 runs N/S North Leg Total: 465 Heavys 3 0 3 Heavys 2 East Leg Total: 48 5 North Entering: 245 Trucks 5 0 Trucks 3 East Entering: North Peds: Cars 231 6 237 Cars 215 East Peds: X Totals 220 Peds Cross: Totals 239 6 Peds Cross: CR 53 Trucks Heavys Totals Cars 11 Georgian Downs (Main access)

#### **Comments**

Cars

Trucks

Heavys

Totals

211

3

2

216

27

0

0

27

CR 53

Cars 241

250

Trucks 5

Heavys

Totals

Cars

0

33

238

3

2

Trucks Heavys Totals

0

South Entering: 243

South Leg Total: 493

Peds Cross:

South Peds:

33

M



	Acc	, a mai		<b>.</b>	
Afternoon F	Peak Diagra	****   F		<b>Period</b> 00:00 00:00	One Hour Peak From: 16:45:00 To: 17:45:00
	000004 3 & Georgian Downs ay-19	(Main ac P	erson co erson pre erson ch	epared:	ıns N/S
North Leg Total: 898  North Entering: 342  North Peds: 0  Peds Cross: ►	Heavys 4 Trucks 3 Cars 313 Totals 320	0   4   3   335   22   CR 53   N   N   S   S		Heavys 2 Trucks 8 Cars 546 Totals 556	East Leg Total: 179 East Entering: 88 East Peds: 0 Peds Cross: X   Cars Trucks Heavys Totals 15 0 0 15 68 0 5 73 83 0 5
	Cars 381 Trucks 3 Heavys 9 Totals 393	CR 53  Cars  Trucks  Heavys  Totals	531 8 2 541	64 595 0 8 5 7	Cars Trucks Heavys Totals  86 0 5 91  Peds Cross:  South Peds: 0 South Entering: 610 South Leg Total: 1003



## **Total Count Diagram**

Municipality:

Site #: 1909000004

Intersection: CR 53 & Georgian Downs (Main ac

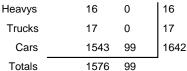
TFR File #:

Count date: 28-May-19 Weather conditions:

Person counted: Person prepared: Person checked:

#### \*\* Non-Signalized Intersection \*\*

North Leg Total: 3833 North Entering: 1675 North Peds: Peds Cross:





CR 53



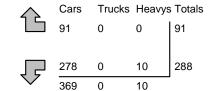
Heavys 17 Trucks 23 Cars 2118 Totals 2158

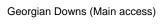
Major Road: CR 53 runs N/S

East Entering: 379 East Peds: X Peds Cross:

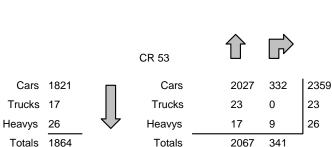
East Leg Total: 819

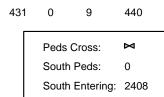






Cars





South Leg Total: 4272

Trucks Heavys Totals



# Accu-Traffic Inc. Traffic Count Summary

Municipality: Innisfil Intersection: CR 53 & Georgian Downs (Main a Count Date: 28-May-19 **North Approach Totals South Approach Totals** North/South Includes Cars, Trucks, & Heavys Includes Cars, Trucks, & Heavys Total Hour Hour Total Total Grand Grand **Ending** Peds **Ending** Peds Approaches Thru Right Thru Right Left Total Total 7:00:00 7:00:00 8:00:00 8:00:00 9:00:00 9:00:00 10:00:00 10:00:00 16:00:00 16:00:00 17:00:00 17:00:00 18:00:00 18:00:00 19:00:00 19:00:00 20:00:00 20:00:00 S Totals: Totals: **East Approach Totals West Approach Totals** East/West Includes Cars, Trucks, & Heavys Includes Cars, Trucks, & Heavys Total Hour Hour Total Total Grand Grand **Ending** Peds **Ending** Peds Approaches Right Left Thru Right Left Thru Total Total 7:00:00 7:00:00 8:00:00 8:00:00 9:00:00 9:00:00 10:00:00 10:00:00 16:00:00 16:00:00 17:00:00 17:00:00 18:00:00 18:00:00 19:00:00 19:00:00 20:00:00 20:00:00 Totals: W Totals: **Calculated Values for Traffic Crossing Major Street** 9:00 10:00 18:00 Hours Ending: 7:00 8:00 17:00 19:00 20:00 Crossing Values: 



	Date:		ger Cars -		pproach			True	cks - Nort	h Approa	ach			He	avys - No	rth Appr	oach		Pedes	trians
Interval	Le		Th			ght	Le		Th		1	ght	Le		Th			ght	North	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	3	3	49	49	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
7:30:00	3	0	117	68	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0
7:45:00	4	1	187	70	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
8:00:00	5	1	242	55	0	0	0	0	1	1	0	0	0	0	4	1	0	0	0	0
8:15:00	5	0	307	65	0	0	0	0	2	1	0	0	0	0	6	2	0	0	0	0
8:30:00	5	0	355	48	0	0	0	0	3	1	0	0	0	0	6	0	0	0	0	0
8:45:00	8	3	418	63	0	0	0	0	3	0	0	0	0	0	6	0	0	0	0	0
9:00:00	11	3	473	55	0	0	0	0	6	3	0	0	0	0	7	1	0	0	0	0
9:15:00	15	4	506	33	0	0	0	0	8	2	0	0	0	0	8	1	0	0	0	0
9:30:00	18	3	544	38	0	0	0	0	10	2	0	0	0	0	8	0	0	0	0	0
9:45:00	22	4	582	38	0	0	0	0	12	2	0	0	0	0	8	0	0	0	0	0
10:00:00	25	3	615	33	0	0	0	0	13	1	0	0	0	0	8	0	0	0	0	0
10:15:00	25	0	615	0	0	0	0	0	13	0	0	0	0	0	8	0	0	0	0	0
16:00:00	25	0	615	0	0	0	0	0	13	0	0	0	0	0	8	0	0	0	0	0
16:15:00	29	4	688	73	0	0	0	0	13	0	0	0	0	0	9	1	0	0	0	0
16:30:00	40	11	763	75	0	0	0	0	14	1	0	0	0	0	9	0	0	0	0	0
16:45:00	41	1	844	81	0	0	0	0	14	0	0	0	0	0	9	0	0	0	0	0
17:00:00	48	7	915	71	0	0	0	0	15	1	0	0	0	0	12	3	0	0	0	0
17:15:00	55	7	986	71	0	0	0	0	17	2	0	0	0	0	13	1	0	0	0	0
17:30:00	58	3	1072	86	0	0	0	0	17	0	0	0	0	0	13	0	0	0	0	0
17:45:00	63	5	1157	85	0	0	0	0	17	0	0	0	0	0	13	0	0	0	0	0
18:00:00	71	8	1222	65	0	0	0	0	17	0	0	0	0	0	14	1	0	0	0	0
18:15:00	74	3	1265	43	0	0	0	0	17	0	0	0	0	0	16	2	0	0	0	0
18:30:00	80	6	1330	65	0	0	0	0	17	0	0	0	0	0	16	0	0	0	0	0
18:45:00	85	5	1381	51	0	0	0	0	17	0	0	0	0	0	16	0	0	0	0	0
19:00:00	88	3	1414	33	0	0	0	0	17	0	0	0	0	0	16	0	0	0	0	0
19:15:00	92	4	1448	34	0	0	0	0	17	0	0	0	0	0	16	0	0	0	0	0
19:30:00	95	3	1477	29	0	0	0	0	17	0	0	0	0	0	16	0	0	0	0	0
19:45:00	97	2	1510	33	0	0	0	0	17	0	0	0	0	0	16	0	0	0	0	0
20:00:00	99	2	1543	33	0	0	0	0	17	0	0	0	0	0	16	0	0	0	0	0
20:15:00	99	0	1543	0	0	0	0	0	17	0	0	0	0	0	16	0	0	0	0	0
20:15:15	99	0	1543	0	0	0	0	0	17	0	0	0	0	0	16	0	0	0	0	0



		Passen	ger Cars	- East Ap	proach			Tru	cks - Eas	t Approa	ch			He	eavys - Ea	ast Appro	oach		Pedes	trians
Interval	Le	eft	Th	ru	Riç	jht	Le	ft	Th	ru	Ri	ght	Le	eft	Th	ru	Riç	ght	East (	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	3	2	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	4	1	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	5	1	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	7	2	0	0	4	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
8:45:00	9	2	0	0	6	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0
9:00:00	14	5	0	0	7	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
9:15:00	15	1	0	0	9	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0
9:30:00	19	4	0	0	10	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
9:45:00	20	1	0	0	12	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10:00:00	23	3	0	0	12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10:15:00	23	0	0	0	12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
16:00:00	23	0	0	0	12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
16:15:00	39	16	0	0	17	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0
16:30:00	65	26	0	0	26	9	0	0	0	0	0	0	1	0	0	0	0	0	0	0
16:45:00	79	14	0	0	31	5	0	0	0	0	0	0	2	1	0	0	0	0	0	0
17:00:00	98	19	0	0	34	3	0	0	0	0	0	0	3	1	0	0	0	0	0	0
17:15:00	122	24	0	0	38	4	0	0	0	0	0	0	3	0	0	0	0	0	0	0
17:30:00	133	11	0	0	41	3	0	0	0	0	0	0	6	3	0	0	0	0	0	0
17:45:00	147	14	0	0	46	5	0	0	0	0	0	0	7	1	0	0	0	0	0	0
18:00:00	162	15	0	0	47	1	0	0	0	0	0	0	8	1	0	0	0	0	0	0
18:15:00	172	10	0	0	53	6	0	0	0	0	0	0	8	0	0	0	0	0	0	0
18:30:00	186	14	0	0	56	3	0	0	0	0	0	0	8	0	0	0	0	0	0	0
18:45:00	206	20	0	0	61	5	0	0	0	0	0	0	9	1	0	0	0	0	0	0
19:00:00	223	17	0	0	69	8	0	0	0	0	0	0	9	0	0	0	0	0	0	0
19:15:00	242	19	0	0	75	6	0	0	0	0	0	0	9	0	0	0	0	0	0	0
19:30:00	255	13	0	0	84	9	0	0	0	0	0	0	9	0	0	0	0	0	0	0
19:45:00	270	15	0	0	88	4	0	0	0	0	0	0	10	1	0	0	0	0	0	0
20:00:00	278	8	0	0	91	3	0	0	0	0	0	0	10	0	0	0	0	0	0	0
20:15:00	278	0	0	0	91	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0
20:15:15	278	0	0	0	91	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0



Joann	Date.	Z8-IVIAY Passend	er Cars -		pproach	0004		Truc	ks - Sout	h Approa	ach			He	avys - So	uth Appr	oach		Pedes	 trians
Interval	Le	eft	Th		<del></del>	ght	Le		Th		Rig	ght	Le		Th			ght	South	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	31	31	2	2	0	0	1	1	0	0	0	0	1	1	0	0	0	0
7:30:00	0	0	76	45	3	1	0	0	2	1	0	0	0	0	2	1	0	0	0	0
7:45:00	0	0	134	58	6	3	0	0	3	1	0	0	0	0	2	0	0	0	0	0
8:00:00	0	0	197	63	6	0	0	0	4	1	0	0	0	0	5	3	0	0	0	0
8:15:00	0	0	243	46	9	3	0	0	4	0	0	0	0	0	5	0	0	0	0	0
8:30:00	0	0	297	54	14	5	0	0	4	0	0	0	0	0	7	2	0	0	0	0
8:45:00	0	0	353	56	25	11	0	0	4	0	0	0	0	0	7	0	0	0	0	0
9:00:00	0	0	408	55	33	8	0	0	7	3	0	0	0	0	7	0	0	0	0	0
9:15:00	0	0	461	53	41	8	0	0	8	1	0	0	0	0	7	0	0	0	0	0
9:30:00	0	0	510	49	46	5	0	0	9	1	0	0	0	0	8	1	0	0	0	0
9:45:00	0	0	575	65	59	13	0	0	9	0	0	0	0	0	8	0	0	0	0	0
10:00:00	0	0	629	54	76	17	0	0	9	0	0	0	0	0	8	0	0	0	0	0
10:15:00	0	0	629	0	76	0	0	0	9	0	0	0	0	0	8	0	0	0	0	0
16:00:00	0	0	629	0	76	0	0	0	9	0	0	0	0	0	8	0	0	0	0	0
16:15:00	0	0	757	128	97	21	0	0	10	1	0	0	0	0	8	0	0	0	0	0
16:30:00	0	0	867	110	115	18	0	0	13	3	0	0	0	0	10	2	0	0	0	0
16:45:00	0	0	978	111	134	19	0	0	15	2	0	0	0	0	10	0	1	1	0	0
17:00:00	0	0	1100	122	150	16	0	0	20	5	0	0	0	0	11	1	2	1	0	0
17:15:00	0	0	1236	136	160	10	0	0	21	1	0	0	0	0	12	1	3	1	0	0
17:30:00	0	0	1380	144	183	23	0	0	22	1	0	0	0	0	12	0	5	2	0	0
17:45:00	0	0	1509	129	198	15	0	0	23	1	0	0	0	0	12	0	6	1	0	0
18:00:00	0	0	1605	96	214	16	0	0	23	0	0	0	0	0	13	1	7	1	0	0
18:15:00	0	0	1678	73	235	21	0	0	23	0	0	0	0	0	13	0	7	0	0	0
18:30:00	0	0	1751	73	247	12	0	0	23	0	0	0	0	0	13	0	8	11	0	0
18:45:00	0	0	1822	71	262	15	0	0	23	0	0	0	0	0	13	0	8	0	0	0
19:00:00	0	0	1873	51	276	14	0	0	23	0	0	0	0	0	15	2	8	0	0	0
19:15:00	0	0	1921	48	287	11	0	0	23	0	0	0	0	0	15	0	8	0	0	0
19:30:00	0	0	1965	44	306	19	0	0	23	0	0	0	0	0	16	1	9	1	0	0
19:45:00	0	0	2000	35	322	16	0	0	23	0	0	0	0	0	17	11	9	0	0	0
20:00:00	0	0	2027	27	332	10	0	0	23	0	0	0	0	0	17	0	9	0	0	0
20:15:00	0	0	2027	0	332	0	0	0	23	0	0	0	0	0	17	0	9	0	0	0
20:15:15	0	0	2027	0	332	0	0	0	23	0	0	0	0	0	17	0	9	0	0	0



			9	MOST A	oproach			Tru	cks - Wes	t Approa	ich			He	avys - Wo	est Appro	oach		Pedes	trians
Interval	Le	eft	Th	ru	Rig	jht	Le	ft	Th	ru	Riç	ght	Le	ft	Th	ru	Riç	ght	West	Cross
Time	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix B: Intersection Operations | Baseline (2019)

Tr County reduce of	- C - C - C - C - C - C - C - C - C - C	0									,	
	•	<b>→</b>	•	•	<b>←</b>	•	4	<b>†</b>	<i>&gt;</i>	<b>\</b>	<b>↓</b>	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (veh/h)	1	1	21	1	1	1	7	204	1	1	261	2
Future Volume (Veh/h)	1	1	21	1	1	1	7	204	1	1	261	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	23	1	1	1	8	222	1	1	284	2
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	527	526	285	549	526	222	286			223		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	527	526	285	549	526	222	286			223		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	100	100	100	99			100		
cM capacity (veh/h)	458	454	754	430	453	817	1276			1346		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	25	3	231	287								
Volume Left	1	1	8	1								
Volume Right	23	1	1	2								
cSH	716	521	1276	1346								
Volume to Capacity	0.03	0.01	0.01	0.00								
Queue Length 95th (m)	8.0	0.1	0.1	0.0								
Control Delay (s)	10.2	11.9	0.3	0.0								
Lane LOS	В	В	Α	Α								
Approach Delay (s)	10.2	11.9	0.3	0.0								
Approach LOS	В	В										
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utiliza	ation		25.9%	IC	CU Level	of Service			Α			
Analysis Period (min)			15									

 11/12/2019
 Synchro 10 Report

 JL
 Page 1

	•	•	<b>†</b>	<b>/</b>	<b>\</b>	ļ
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	1>			4
Traffic Volume (veh/h)	3	10	202	7	20	263
Future Volume (Veh/h)	3	10	202	7	20	263
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	11	220	8	22	286
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	554	224			228	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	554	224			228	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			98	
cM capacity (veh/h)	485	815			1340	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	3	11	228	308		
Volume Left	3	0	0	22		
	0	11	8	0		
Volume Right cSH	485	815	1700	1340		
Volume to Capacity	0.01	0.01	0.13	0.02		
Queue Length 95th (m)	0.01	0.01	0.13	0.02		
Control Delay (s)	12.5	9.5	0.0	0.7		
Lane LOS	B 10.1	А	0.0	A		
Approach LOS	10.1		0.0	0.7		
Approach LOS	В					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utiliz	zation		39.3%	IC	U Level o	of Service
Analysis Period (min)			15			

 11/12/2019
 Synchro 10 Report

 JL
 Page 2

	•	•	<b>†</b>	<i>&gt;</i>	<b>\</b>	<b></b>
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<b>^</b>	7	ሻ	<b>†</b>
Traffic Volume (veh/h)	11	4	205	27	5	261
Future Volume (Veh/h)	11	4	205	27	5	261
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	4	223	29	5	284
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	517	223			252	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	517	223			252	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	516	817			1313	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	12	4	223	29	<u> </u>	284
Volume Left	12	0	0	0	5	0
Volume Right	0	4	0	29	0	0
cSH	516	817	1700	1700	1313	1700
Volume to Capacity	0.02	0.00	0.13	0.02	0.00	0.17
Queue Length 95th (m)	0.02	0.00	0.13	0.02	0.00	0.17
Control Delay (s)	12.1	9.4	0.0	0.0	7.8	0.0
	12.1 B	9.4 A	0.0	0.0	7.8 A	0.0
Lane LOS	11.5	А	0.0		0.1	
Approach LOS	11.5 B		0.0		U. I	
Approach LOS	В					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utiliz	zation		23.7%	IC	U Level	of Service
Analysis Period (min)			15			

 11/12/2019
 Synchro 10 Report

 JL
 Page 3

	•	-	•	•	<b>←</b>	•	•	<b>†</b>	/	<b>&gt;</b>	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	£		7	<b>†</b>	7	7	f)		ň	f)	
Traffic Volume (vph)	73	434	19	42	192	96	7	63	41	160	82	30
Future Volume (vph)	73	434	19	42	192	96	7	63	41	160	82	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	1871		1789	1883	1601	1789	1771		1789	1807	
Flt Permitted	0.48	1.00		0.44	1.00	1.00	0.68	1.00		0.56	1.00	
Satd. Flow (perm)	897	1871		834	1883	1601	1278	1771		1046	1807	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	472	21	46	209	104	8	68	45	174	89	33
RTOR Reduction (vph)	0	2	0	0	0	72	0	33	0	0	19	0
Lane Group Flow (vph)	79	491	0	46	209	32	8	80	0	174	103	0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	30.4	30.4		21.8	21.8	21.8	19.4	19.4		30.6	30.6	
Effective Green, g (s)	30.4	30.4		21.8	21.8	21.8	19.4	19.4		30.6	30.6	
Actuated g/C Ratio	0.43	0.43		0.31	0.31	0.31	0.28	0.28		0.44	0.44	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	441	812		259	586	498	354	490		528	789	
v/s Ratio Prot	0.01	c0.26			0.11			0.05		c0.03	0.06	
v/s Ratio Perm	0.07			0.06		0.02	0.01			c0.11		
v/c Ratio	0.18	0.60		0.18	0.36	0.07	0.02	0.16		0.33	0.13	
Uniform Delay, d1	12.0	15.2		17.6	18.7	16.9	18.4	19.2		12.4	11.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	3.3		1.5	1.7	0.3	0.1	0.7		0.4	0.3	
Delay (s)	12.2	18.5		19.1	20.4	17.2	18.5	19.9		12.8	12.1	
Level of Service	В	В		В	С	В	В	В		В	В	
Approach Delay (s)		17.6			19.3			19.8			12.5	
Approach LOS		В			В			В			В	
Intersection Summary												
HCM 2000 Control Delay			17.1	H	CM 2000	Level of	Service		В			
HCM 2000 Volume to Capa	city ratio		0.54									
Actuated Cycle Length (s)			70.0	Sı	um of los	time (s)			18.0			
Intersection Capacity Utiliza	ation		54.9%	IC	CU Level	of Service	:		Α			
Analysis Period (min)			15									

11/12/2019
JL Synchro 10 Report
Page 4

Tr County House of												
	•	<b>→</b>	•	•	•	•	4	<b>†</b>	<i>&gt;</i>	<b>\</b>	<b>↓</b>	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (veh/h)	3	1	7	1	1	1	44	542	1	1	358	6
Future Volume (Veh/h)	3	1	7	1	1	1	44	542	1	1	358	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	1	8	1	1	1	48	589	1	1	389	7
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1082	1080	392	1088	1084	590	396			590		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1082	1080	392	1088	1084	590	396			590		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	99	100	100	96			100		
cM capacity (veh/h)	188	209	656	184	208	508	1163			985		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	12	3	638	397								
Volume Left	3	1	48	1								
Volume Right	8	1	1	7								
cSH	364	246	1163	985								
Volume to Capacity	0.03	0.01	0.04	0.00								
Queue Length 95th (m)	0.8	0.3	1.0	0.0								
Control Delay (s)	15.2	19.8	1.1	0.0								
Lane LOS	С	С	Α	Α								
Approach Delay (s)	15.2	19.8	1.1	0.0								
Approach LOS	С	С										
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utiliza	ation		63.6%	IC	U Level	of Service			В			
Analysis Period (min)			15									

 11/12/2019
 Synchro 10 Report

 JL
 Page 1

	•	•	<b>†</b>	<b>/</b>	<b>/</b>	<b>+</b>	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	J
Lane Configurations	ሻ	7	1>			4	
Traffic Volume (veh/h)	12	43	544	19	30	336	
Future Volume (Veh/h)	12	43	544	19	30	336	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	13	47	591	21	33	365	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	1032	602			612		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1032	602			612		
tC, single (s)	6.4	6.2			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	95	91			97		
cM capacity (veh/h)	249	500			967		
Direction, Lane #	WB 1	WB 2	NB 1	SB 1			
Volume Total	13	47	612	398			
Volume Left	13		012	398			
		0 47	21				
Volume Right cSH	0 249	500	1700	0 967			
Volume to Capacity	0.05	0.09	0.36	0.03			
	1.2		0.36				
Queue Length 95th (m)		2.4		0.8			
Control Delay (s)	20.3	12.9	0.0	1.1			
Lane LOS	C	В	0.0	A			
Approach LOS	14.5		0.0	1.1			
Approach LOS	В						
Intersection Summary							
Average Delay			1.2				
Intersection Capacity Utiliza	tion		52.5%	IC	U Level	of Service	
Analysis Period (min)			15				

 11/12/2019
 Synchro 10 Report

 JL
 Page 2

	•	•	<b>†</b>	<i>&gt;</i>	<b>&gt;</b>	<b>↓</b>
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<b>†</b>	7	ሻ	<b>†</b>
Traffic Volume (veh/h)	73	15	548	69	22	326
Future Volume (Veh/h)	73	15	548	69	22	326
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	16	596	75	24	354
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	998	596			671	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	998	596			671	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	<u> </u>	0.2				
tF (s)	3.5	3.3			2.2	
p0 queue free %	70	97			97	
cM capacity (veh/h)	263	504			919	
			ND 1	ND 2		CD 1
Direction, Lane # Volume Total	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
	79	16	596	75	24	354
Volume Left	79	0	0	0	24	0
Volume Right	0	16	1700	75	0	0
cSH	263	504	1700	1700	919	1700
Volume to Capacity	0.30	0.03	0.35	0.04	0.03	0.21
Queue Length 95th (m)	9.3	0.7	0.0	0.0	0.6	0.0
Control Delay (s)	24.4	12.4	0.0	0.0	9.0	0.0
Lane LOS	С	В			A	
Approach Delay (s)	22.4		0.0		0.6	
Approach LOS	С					
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utiliza	ation		39.6%	IC	U Level o	of Service
Analysis Period (min)			15			

 11/12/2019
 Synchro 10 Report

 JL
 Page 3

	۶	<b>→</b>	•	•	<b>←</b>	•	•	<b>†</b>	/	<b>&gt;</b>	ļ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	1>		ሻ	<b>†</b>	7	ሻ	<b>∱</b>		ሻ	ĵ.	
Traffic Volume (vph)	91	257	5	71	399	385	21	141	46	181	123	95
Future Volume (vph)	91	257	5	71	399	385	21	141	46	181	123	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.96		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	1878		1789	1883	1601	1789	1814		1789	1761	
Flt Permitted	0.24	1.00		0.59	1.00	1.00	0.61	1.00		0.46	1.00	
Satd. Flow (perm)	451	1878		1103	1883	1601	1151	1814		862	1761	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	279	5	77	434	418	23	153	50	197	134	103
RTOR Reduction (vph)	0	1	0	0	0	278	0	17	0	0	40	0
Lane Group Flow (vph)	99	283	0	77	434	140	23	186	0	197	197	0
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases	7	4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	31.9	31.9		23.4	23.4	23.4	19.1	19.1		29.1	29.1	
Effective Green, g (s)	31.9	31.9		23.4	23.4	23.4	19.1	19.1		29.1	29.1	
Actuated g/C Ratio	0.46	0.46		0.33	0.33	0.33	0.27	0.27		0.42	0.42	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	281	855		368	629	535	314	494		431	732	
v/s Ratio Prot	0.02	c0.15			c0.23			0.10		c0.04	0.11	
v/s Ratio Perm	0.14			0.07		0.09	0.02			c0.15		
v/c Ratio	0.35	0.33		0.21	0.69	0.26	0.07	0.38		0.46	0.27	
Uniform Delay, d1	12.7	12.2		16.7	20.2	17.0	18.9	20.6		13.8	13.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	1.0		1.3	6.1	1.2	0.5	2.2		0.8	0.9	
Delay (s)	13.5	13.2		18.0	26.3	18.2	19.3	22.8		14.6	14.4	
Level of Service	В	В		В	С	В	В	С		В	В	
Approach Delay (s)		13.3			21.9			22.4			14.4	
Approach LOS		В			С			С			В	
Intersection Summary												
HCM 2000 Control Delay			18.7	H	CM 2000	Level of	Service		В			
HCM 2000 Volume to Capa	acity ratio		0.59									
Actuated Cycle Length (s)			70.0		um of lost				18.0			
Intersection Capacity Utiliza	ation		61.3%	IC	U Level	of Service	)		В			_
Analysis Period (min)			15									

11/12/2019
JL Synchro 10 Report
Page 4

Appendix C: Background Information

## SALEM SECONDARY PLAN TRANSPORTATION IMPROVEMENTS ENVIRONMENTAL STUDY REPORT CITY OF BARRIE

Traffic Operations Assessment October 12, 2017

Lockhart Road. The road surface is asphalt-paved with white edge of pavement and solid yellow centerline markings. In addition, the shoulders are asphalt-paved north of Lockhart Road; however, consist of gravel south of Lockhart Road.

## 2.1.2 Existing Traffic Volumes

Existing traffic volumes were determined for the base morning (AM) and evening (PM) peak hours based on traffic data and signal timing plans provided by the City. In general, the existing mid-block traffic conditions are experiencing minimal delays and are well within capacity.

Existing AM and PM peak hour traffic volumes and associated traffic data is offered in Appendix A of the Traffic Operation Assessment report provided in **Appendix C** of this ESR.

## 2.1.3 Existing Safety Review

Stantec undertook a review of collision data for the years 2010 through 2015 inclusive. The findings of the review indicated that the intersection of Essa Road/Mapleview Drive West experienced the highest number of collisions for the six-year period examined as well as the highest intersection collision rate. At this intersection, the most common collision type was rearend collisions. The rear-end collisions predominately occurred on the northbound and westbound approaches. These collisions may be attributed to the skewed intersection geometry. Drivers intending to make a northbound or westbound right-turn movement on red or at the yield marker are required to look over their shoulder at a wider angle in order to view oncoming traffic. This is a physically more challenging movement, which may make it more difficult to properly identify gaps and may result in vehicles moving in a less predictable fashion than anticipated by the motorist queued behind them.

The intersection of Huronia Road/Lockhart Road experienced a total of 40 collisions for the sixyear period examined. Rear-end collisions were the prominent collision type accounting for 35% of all collisions. These collisions may be attributed to the lack of auxiliary turn lanes on each approach, as each approach has a shared left/through/right lane configuration.

At the other intersections, the collision data is generally unremarkable and no trends or patterns are evident. At the mid-block locations, the collision rates are low and are primarily single-motor vehicle type collisions which, is typical for low-volume rural roads.

#### 2.1.4 Traffic Growth

While substantial development is expected throughout the study area, development plans are not sufficiently advanced to identify specific land use types, sizes, and access locations.

Future traffic volumes were developed for the 2021 and 2031 horizon years based on growth rates calculated from the City's EMME transportation demand model, as presented in **Table 2-1**. The growth rates were applied to existing traffic volumes to develop the future 2021 and 2031 traffic forecasts (please refer to Figures 2 and 3 offered in the Traffic Operation Report and provided in **Appendix C** of this ESR).



# SALEM SECONDARY PLAN TRANSPORTATION IMPROVEMENTS ENVIRONMENTAL STUDY REPORT CITY OF BARRIE

Traffic Operations Assessment October 12, 2017

Table 2-1 Growth Rates (Percentage Growth Per Annum)

0	2016 H	lorizon	2021 H	lorizon	2031 F	orizon
Road	AM	PM	AM	PM	AM	PM
Salem Road-Lockhart Road	1.0%	1.0%	5.0%	5.0%	5.0%	6.0%
McKay Road	2.0%	1.0%	10.0%	12.0%	8.0%	9.0%
Essa Road	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Veterans Drive	1.0%	1.0%	6.0%	7.0%	4.0%	5.0%
Huronia Road	1.0%	1.0%	6.0%	4.0%	5.0%	4.0%

At the intersection of Salem Road at Veterans Drive, existing traffic volumes are low on the westbound approach as there is currently no access to Norris Drive and the adjacent commercial developments. In anticipation of future development along Salem Road, as well as a connection to Norris Drive, the traffic volumes for the westbound approach were increased to match the eastbound approach at Huronia Road at Lockhart Road before the growth rates were applied.

## 2.1.5 Study Area Intersections

The following intersections were analyzed as part of the traffic operations assessment. The existing intersection configurations and controls are detailed in the Traffic Operations report, provided in **Appendix C** of this ESR:

- Huronia Road at Lockhart Road
- Huronia Road at McKay Road
- Veterans Drive at Salem Road
- Veterans Drive at McKay Road
- Essa Road at Mapleview Drive West
- Essa Road at Salem Road
- Essa Road at McKay Road
- Simcoe CR 27 at Salem Road
- Simcoe CR 27 at Essa Road

It should be noted that the MMATMP recommended that McKay Road be re-aligned to intersect with CR 27 and Essa Road forming the intersection of Essa Road at CR 27-McKay Road. However, no other realignments have been planned within the study area.

## 2.1.5.1 Existing Intersection Operations

The quality of intersection operations at signalized and unsignalized intersections is evaluated in terms of level of service (LOS) and Volume-to-Capacity (v/c), as defined by the Transportation Research Board's *Highway Capacity Manual* (2010). LOS is evaluated on the basis of average control delay per vehicle and includes deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Capacity is evaluated in terms of ratio of demand flow to capacity with a capacity condition represented by a v/c ratio of 1.00 (i.e. volume demand



Appendix D: Intersection Operations | High Growth

T. County Mode of	0. 0											
	٠	-	•	•	<b>←</b>	•	4	<b>†</b>	~	<b>&gt;</b>	<b>↓</b>	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (veh/h)	4	1	8	2	1	1	50	950	1	1	645	7
Future Volume (Veh/h)	4	1	8	2	1	1	50	950	1	1	645	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1	9	2	1	1	54	1033	1	1	701	8
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1850	1849	705	1858	1852	1034	709			1034		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1850	1849	705	1858	1852	1034	709			1034		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	99	98	96	99	100	94			100		
cM capacity (veh/h)	54	70	436	52	69	282	890			672		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	4	1088	710								
Volume Left	4	2	54	1								
Volume Right	9	1	1	8								
cSH	128	71	890	672								
Volume to Capacity	0.11	0.06	0.06	0.00								
Queue Length 95th (m)	2.7	1.3	1.5	0.0								
Control Delay (s)	36.7	58.8	1.8	0.0								
Lane LOS	E	F	Α	Α								
Approach Delay (s)	36.7	58.8	1.8	0.0								
Approach LOS	Е	F										
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utiliza	ation		99.1%	IC	CU Level	of Service			F			
Analysis Period (min)			15									

	•	•	<b>†</b>	<i>&gt;</i>	<b>&gt;</b>	<b></b>
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	f)			र्स
Traffic Volume (veh/h)	15	45	955	20	30	630
Future Volume (Veh/h)	15	45	955	20	30	630
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	49	1038	22	33	685
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1800	1049			1060	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1800	1049			1060	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	82			95	
cM capacity (veh/h)	83	276			657	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total						
	16	49	1060	718		
Volume Left	16	0	0	33		
Volume Right	0	49	22	0		
cSH	83	276	1700	657		
Volume to Capacity	0.19	0.18	0.62	0.05		
Queue Length 95th (m)	5.0	4.8	0.0	1.2		
Control Delay (s)	58.2	20.8	0.0	1.4		
Lane LOS	F	С	0.0	Α		
Approach Delay (s)	30.0		0.0	1.4		
Approach LOS	D					
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utiliza	ation		67.6%	IC	U Level o	of Service
Analysis Period (min)			15			

	•	•	<b>†</b>	<b>/</b>	<b>&gt;</b>	ļ	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	7	7	<b>†</b>	7	7	<b>†</b>	
Traffic Volume (veh/h)	75	15	960	70	25	620	
Future Volume (Veh/h)	75	15	960	70	25	620	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	82	16	1043	76	27	674	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	1771	1043			1119		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1771	1043			1119		
tC, single (s)	6.4	6.2			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	6	94			96		
cM capacity (veh/h)	88	279			624		
			ND 1	ND 2		CD 1	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	
Volume Total	82	16	1043	76	27	674	
Volume Left	82	0	0	0	27	0	
Volume Right	0	16	0	76	0	0	
cSH	88	279	1700	1700	624	1700	
Volume to Capacity	0.94	0.06	0.61	0.04	0.04	0.40	
Queue Length 95th (m)	39.6	1.4	0.0	0.0	1.0	0.0	
Control Delay (s)	164.4	18.7	0.0	0.0	11.0	0.0	
Lane LOS	F	С			В		
Approach Delay (s)	140.6		0.0		0.4		
Approach LOS	F						
Intersection Summary							
Average Delay			7.3				
Intersection Capacity Utilization	ation		61.3%	IC	U Level	of Service	3
Analysis Period (min)			15				
, , , , , , , , , , , , , , , , , , ,							

	۶	<b>→</b>	•	•	<b>←</b>	•	1	†	<i>&gt;</i>	<b>&gt;</b>	ļ	- ✓
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	<b>^</b>	7	ሻ	<b>^</b>	7	Ŋ	<b>†</b>	7	ሻ	<b>†</b>	7
Traffic Volume (vph)	175	360	10	100	555	585	30	270	65	275	235	185
Future Volume (vph)	175	360	10	100	555	585	30	270	65	275	235	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.20	1.00	1.00	0.52	1.00	1.00	0.60	1.00	1.00	0.37	1.00	1.00
Satd. Flow (perm)	380	3579	1601	981	3579	1601	1132	1883	1601	690	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	391	11	109	603	636	33	293	71	299	255	201
RTOR Reduction (vph)	0	0	7	0	0	179	0	0	49	0	0	68
Lane Group Flow (vph)	190	391	4	109	603	457	33	293	22	299	255	133
Turn Type	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8	1		2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	25.5	25.5	25.5	16.0	16.0	23.7	19.8	19.8	19.8	31.5	31.5	31.5
Effective Green, g (s)	25.5	25.5	25.5	16.0	16.0	23.7	19.8	19.8	19.8	31.5	31.5	31.5
Actuated g/C Ratio	0.39	0.39	0.39	0.25	0.25	0.36	0.30	0.30	0.30	0.48	0.48	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	268	1404	628	241	880	682	344	573	487	464	912	775
v/s Ratio Prot	c0.06	0.11			0.17	c0.08		0.16		80.0	0.14	
v/s Ratio Perm	c0.22		0.00	0.11		0.21	0.03		0.01	c0.24		0.08
v/c Ratio	0.71	0.28	0.01	0.45	0.69	0.67	0.10	0.51	0.04	0.64	0.28	0.17
Uniform Delay, d1	14.5	13.5	12.0	20.8	22.2	17.4	16.2	18.6	15.9	11.2	10.0	9.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.3	0.1	0.0	1.3	2.2	2.6	0.6	3.2	0.2	3.1	0.8	0.5
Delay (s)	22.8	13.6	12.0	22.1	24.4	20.0	16.7	21.9	16.1	14.2	10.8	9.9
Level of Service	С	В	В	С	С	В	В	С	В	В	В	Α
Approach Delay (s)		16.5			22.1			20.4			11.9	
Approach LOS		В			С			С			В	
Intersection Summary												
HCM 2000 Control Delay			18.3	H	CM 2000	Level of	Service		В			
HCM 2000 Volume to Capa	acity ratio		0.78									
Actuated Cycle Length (s)			65.0	Sı	um of los	st time (s)			16.0			
Intersection Capacity Utilization	ation		70.1%	IC	U Level	of Service	)		С			
Analysis Period (min)			15									

Page 4 12/19/2019

	•	•	<b>†</b>	<b>/</b>	<b>&gt;</b>	<b>↓</b>		
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	7	7	<b>†</b>	7	ሻ	<b>†</b>		
Traffic Volume (vph)	75	15	960	70	25	620		
Future Volume (vph)	75	15	960	70	25	620		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.85	1.00	0.85	1.00	1.00		
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1789	1601	1883	1601	1789	1883		
Flt Permitted	0.95	1.00	1.00	1.00	0.19	1.00		
Satd. Flow (perm)	1789	1601	1883	1601	359	1883		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	82	16	1043	76	27	674		
RTOR Reduction (vph)	0	14	0	14	0	0		
Lane Group Flow (vph)	82	2	1043	62	27	674		
Turn Type	Prot	Perm	NA	Perm	Perm	NA		
Protected Phases	8		2			6		
Permitted Phases		8		2	6			
Actuated Green, G (s)	7.3	7.3	52.7	52.7	52.7	52.7		
Effective Green, g (s)	7.3	7.3	52.7	52.7	52.7	52.7		
Actuated g/C Ratio	0.11	0.11	0.76	0.76	0.76	0.76		
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	189	169	1438	1222	274	1438		
v/s Ratio Prot	c0.05		c0.55			0.36		
v/s Ratio Perm		0.00		0.04	0.08			
v/c Ratio	0.43	0.01	0.73	0.05	0.10	0.47		
Uniform Delay, d1	28.9	27.6	4.3	2.0	2.1	3.0		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.6	0.0	3.2	0.1	0.7	1.1		
Delay (s)	30.5	27.6	7.5	2.1	2.8	4.1		
Level of Service	С	С	А	А	А	А		
Approach Delay (s)	30.0		7.2			4.0		
Approach LOS	С		А			А		
Intersection Summary								
HCM 2000 Control Delay			7.2	Н	CM 2000	Level of Serv	ice	Α
HCM 2000 Volume to Cap	acity ratio		0.69					
Actuated Cycle Length (s)	-		69.0	S	um of lost	time (s)		9.0
Intersection Capacity Utiliz	zation		62.2%	IC	CU Level of	of Service		В
Analysis Period (min)			15					
c Critical Lano Croun								

·	٠	<b>→</b>	•	•	+	•	•	†	<i>&gt;</i>	<b>/</b>	<b>+</b>	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			414			4T <del>)</del>	
Traffic Volume (veh/h)	4	1	9	2	1	1	60	1440	1	1	975	8
Future Volume (Veh/h)	4	1	9	2	1	1	60	1440	1	1	975	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1	10	2	1	1	65	1565	1	1	1060	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1980	2762	534	2238	2766	783	1069			1566		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1980	2762	534	2238	2766	783	1069			1566		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	94	98	90	94	100	90			100		
cM capacity (veh/h)	32	17	490	20	17	337	648			418		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	15	4	848	784	531	539						
Volume Left	4	2	65	0	1	0						
Volume Right	10	1	0	1	0	9						
cSH	74	25	648	1700	418	1700						
Volume to Capacity	0.20	0.16	0.10	0.46	0.00	0.32						
Queue Length 95th (m)	5.3	3.7	2.5	0.0	0.1	0.0						
Control Delay (s)	65.8	176.3	2.8	0.0	0.1	0.0						
Lane LOS	F	F	А		Α							
Approach Delay (s)	65.8	176.3	1.4		0.0							
Approach LOS	F	F										
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilizati	on		82.1%	IC	CU Level	of Service			E			
Analysis Period (min)			15									

	•	4	<b>†</b>	<i>&gt;</i>	<b>\</b>	ļ	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	ሻ	7	<b>†</b> 1>			4₽	
Traffic Volume (veh/h)	15	45	1455	20	30	970	
Future Volume (Veh/h)	15	45	1455	20	30	970	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	16	49	1582	22	33	1054	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	2186	802			1604		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	2186	802			1604		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	55	85			92		
cM capacity (veh/h)	36	327			404		
			ND 1	ND 2		CD 1	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	
Volume Total	16	49	1055	549	384	703	
Volume Left	16	0	0	0	33	0	
Volume Right	0	49	0	22	0	0	
cSH	36	327	1700	1700	404	1700	
Volume to Capacity	0.45	0.15	0.62	0.32	0.08	0.41	
Queue Length 95th (m)	11.5	4.0	0.0	0.0	2.0	0.0	
Control Delay (s)	170.4	17.9	0.0	0.0	2.6	0.0	
Lane LOS	F	С			Α		
Approach Delay (s)	55.5		0.0		0.9		
Approach LOS	F						
Intersection Summary							
Average Delay			1.7				
Intersection Capacity Utiliza	ation		58.5%	IC	U Level	of Service	e
Analysis Period (min)			15				
. ,							

	•	•	<b>†</b>	~	<b>&gt;</b>	<b>↓</b>	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	*	7	<b>†</b> Ъ			<b>†</b> †	
Traffic Volume (veh/h)	75	15	1460	70	25	960	
Future Volume (Veh/h)	75	15	1460	70	25	960	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	82	16	1587	76	27	1043	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	2200	832			1663		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	2200	832			1663		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	0	95			93		
cM capacity (veh/h)	35	313			383		
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	
Volume Total	82	16	1058	605	375	695	
Volume Left	82	0	0	0	27	0	
Volume Right	0	16	0	76	0	0	
cSH	35	313	1700	1700	383	1700	
Volume to Capacity	2.32	0.05	0.62	0.36	0.07	0.41	
Queue Length 95th (m)	69.8	1.2	0.0	0.0	1.7	0.0	
Control Delay (s)	843.9	17.1	0.0	0.0	2.3	0.0	
Lane LOS	F	С	0.0	0.0	A	0.0	
Approach Delay (s)	708.9	, i	0.0		0.8		
Approach LOS	F		0.0		0.0		
Intersection Summary							
Average Delay			24.8				
Intersection Capacity Utiliza	ation		55.3%	IC		of Service	
Analysis Period (min)	autiti		15	iC	O LEVEL	J. Jei VICE	
Anarysis Penou (IIIII)			13				

	٠	<b>→</b>	•	•	<b>←</b>	•	1	<b>†</b>	<i>&gt;</i>	<b>/</b>	<b>↓</b>	-√
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	٦	<b>^</b>	7	ሻ	<b>^</b>	7	ሻ	<b>†</b>	7	ሻ	<b>†</b>	7
Traffic Volume (vph)	260	440	15	125	680	870	40	400	80	410	350	275
Future Volume (vph)	260	440	15	125	680	870	40	400	80	410	350	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.13	1.00	1.00	0.48	1.00	1.00	0.54	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	251	3579	1601	902	3579	1601	1010	1883	1601	228	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	478	16	136	739	946	43	435	87	446	380	299
RTOR Reduction (vph)	0	0	10	0	0	54	0	0	62	0	0	39
Lane Group Flow (vph)	283	478	6	136	739	892	43	435	25	446	380	260
Turn Type	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8	1		2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	46.0	46.0	46.0	26.0	26.0	59.0	29.0	29.0	29.0	66.0	66.0	66.0
Effective Green, g (s)	46.0	46.0	46.0	26.0	26.0	59.0	29.0	29.0	29.0	66.0	66.0	66.0
Actuated g/C Ratio	0.38	0.38	0.38	0.22	0.22	0.49	0.24	0.24	0.24	0.55	0.55	0.55
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	301	1371	613	195	775	840	244	455	386	554	1035	880
v/s Ratio Prot	c0.13	0.13			0.21	c0.29		c0.23		0.22	0.20	
v/s Ratio Perm	0.23		0.00	0.15		0.27	0.04		0.02	0.22		0.16
v/c Ratio	0.94	0.35	0.01	0.70	0.95	1.06	0.18	0.96	0.06	0.81	0.37	0.30
Uniform Delay, d1	32.9	26.3	22.9	43.4	46.4	30.5	36.0	44.9	35.0	30.5	15.2	14.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.2	0.2	0.0	10.4	21.6	48.7	1.6	32.5	0.3	8.3	1.0	0.9
Delay (s)	69.1	26.5	22.9	53.7	68.0	79.2	37.6	77.4	35.4	38.8	16.2	15.4
Level of Service	Е	С	С	D	Е	Е	D	Е	D	D	В	В
Approach Delay (s)		41.9			72.7			67.9			24.9	
Approach LOS		D			Е			Е			С	
Intersection Summary												
HCM 2000 Control Delay			54.0	Н	CM 2000	Level of	Service		D			
HCM 2000 Volume to Capa	acity ratio		1.06									
Actuated Cycle Length (s)			120.0			st time (s)			16.0			
Intersection Capacity Utiliz	ation		99.3%	IC	CU Level	of Service	)		F			
Analysis Period (min)			15									

	•	•	<b>†</b>	<i>&gt;</i>	<b>\</b>	<b>↓</b>			
Movement	WBL	WBR	NBT	NBR	SBL	SBT			
Lane Configurations	ሻ	7	<b>∱</b> 1>			4∱			
Traffic Volume (vph)	75	15	1460	70	25	960			
Future Volume (vph)	75	15	1460	70	25	960			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Total Lost time (s)	4.5	4.5	4.5			4.5			
Lane Util. Factor	1.00	1.00	0.95			0.95			
Frt	1.00	0.85	0.99			1.00			
Flt Protected	0.95	1.00	1.00			1.00			
Satd. Flow (prot)	1789	1601	3554			3574			
Flt Permitted	0.95	1.00	1.00			0.88			
Satd. Flow (perm)	1789	1601	3554			3163			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	82	16	1587	76	27	1043			
RTOR Reduction (vph)	0	14	3	0	0	0			
Lane Group Flow (vph)	82	2	1660	0	0	1070			
Turn Type	Prot	Perm	NA		Perm	NA			
Protected Phases	8		2			6			
Permitted Phases		8			6				
Actuated Green, G (s)	5.4	5.4	42.7			42.7			
Effective Green, g (s)	5.4	5.4	42.7			42.7			
Actuated g/C Ratio	0.09	0.09	0.75			0.75			
Clearance Time (s)	4.5	4.5	4.5			4.5			
Vehicle Extension (s)	3.0	3.0	3.0			3.0			
Lane Grp Cap (vph)	169	151	2657			2365			
v/s Ratio Prot	c0.05		c0.47						
v/s Ratio Perm		0.00				0.34			
v/c Ratio	0.49	0.01	0.62			0.45			
Uniform Delay, d1	24.5	23.4	3.4			2.7			
Progression Factor	1.00	1.00	1.00			1.00			
Incremental Delay, d2	2.2	0.0	1.1			0.6			
Delay (s)	26.7	23.5	4.5			3.4			
Level of Service	С	С	А			А			
Approach Delay (s)	26.2		4.5			3.4			
Approach LOS	С		А			А			
Intersection Summary									
HCM 2000 Control Delay			4.8	Н	CM 2000	Level of Serv	/ice	А	
HCM 2000 Volume to Capa	acity ratio		0.61						
Actuated Cycle Length (s)	Ť		57.1	S	um of lost	t time (s)		9.0	
Intersection Capacity Utiliza	ation		56.2%			of Service		В	
Analysis Period (min)			15						
a Cultinal Laws Custon									

Page 1 12/19/2019

Appendix E: Intersection Operations | Medium Growth

The during Indua de												
	۶	<b>→</b>	•	•	←	•	4	<b>†</b>	~	<b>&gt;</b>	<b>↓</b>	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (veh/h)	4	1	8	2	1	1	50	700	1	1	490	7
Future Volume (Veh/h)	4	1	8	2	1	1	50	700	1	1	490	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1	9	2	1	1	54	761	1	1	533	8
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1410	1409	537	1418	1412	762	541			762		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1410	1409	537	1418	1412	762	541			762		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	99	98	98	99	100	95			100		
cM capacity (veh/h)	110	131	544	107	130	405	1028			850		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	4	816 54	542								
Volume Left	4	2		1								
Volume Right	9	1 1 2 0	1000	8								
cSH	232	139	1028	850								
Volume to Capacity	0.06	0.03	0.05	0.00								
Queue Length 95th (m)	1.5	0.7	1.3	0.0								
Control Delay (s)	21.5	31.7	1.3	0.0								
Lane LOS	C	D	A	A								
Approach Delay (s)	21.5	31.7	1.3	0.0								
Approach LOS	С	D										
Intersection Summary												
Average Delay			1.1									
Intersection Capacity Utiliza	ation		79.3%	IC	CU Level	of Service			D			
Analysis Period (min)			15									

Movement  Lane Configurations Traffic Volume (veh/h) 15 45 705 20 30 475 Future Volume (Veh/h) 15 45 705 20 30 475 Sign Control Grade 0% 0% Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
Traffic Volume (veh/h)         15         45         705         20         30         475           Future Volume (Veh/h)         15         45         705         20         30         475           Sign Control         Stop         Free         Free         Free           Grade         0%         0%         0%         0%           Peak Hour Factor         0.92<
Traffic Volume (veh/h)         15         45         705         20         30         475           Future Volume (Veh/h)         15         45         705         20         30         475           Sign Control         Stop         Free         Free         Free           Grade         0%         0%         0%         0%           Peak Hour Factor         0.92<
Future Volume (Veh/h)         15         45         705         20         30         475           Sign Control         Stop         Free         Free         Free           Grade         0%         0%         0%           Peak Hour Factor         0.92         0.92         0.92         0.92         0.92           Hourly flow rate (vph)         16         49         766         22         33         516           Pedestrians         Lane Width (m)         Walking Speed (m/s)         Valking Speed (
Sign Control Stop Free Free Grade 0% 0% 0% 0% Peak Hour Factor 0.92 0.92 0.92 0.92 0.92 0.92 Hourly flow rate (vph) 16 49 766 22 33 516 Pedestrians Lane Width (m) Walking Speed (m/s) Percent Blockage Right turn flare (veh) Median type None None Median storage veh) Upstream signal (m)
Grade         0%         0%         0%           Peak Hour Factor         0.92
Hourly flow rate (vph) 16 49 766 22 33 516  Pedestrians Lane Width (m)  Walking Speed (m/s)  Percent Blockage  Right turn flare (veh)  Median type None None  Median storage veh)  Upstream signal (m)
Pedestrians Lane Width (m) Walking Speed (m/s) Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (m)
Pedestrians Lane Width (m) Walking Speed (m/s) Percent Blockage Right turn flare (veh) Median type Median storage veh) Upstream signal (m)
Walking Speed (m/s) Percent Blockage Right turn flare (veh) Median type None Median storage veh) Upstream signal (m)
Walking Speed (m/s) Percent Blockage Right turn flare (veh) Median type None Median storage veh) Upstream signal (m)
Percent Blockage Right turn flare (veh) Median type None Median storage veh) Upstream signal (m)
Right turn flare (veh)  Median type  None  None  Median storage veh)  Upstream signal (m)
Median type None None Median storage veh) Upstream signal (m)
Median storage veh) Upstream signal (m)
Upstream signal (m)
pX, platoon unblocked
vC, conflicting volume 1359 777 788
vC1, stage 1 conf vol
vC2, stage 2 conf vol
vCu, unblocked vol 1359 777 788
tC, single (s) 6.4 6.2 4.1
tC, 2 stage (s)
tF (s) 3.5 3.3 2.2
p0 queue free % 90 88 96
cM capacity (veh/h) 157 397 831
Direction, Lane # WB 1 WB 2 NB 1 SB 1
Volume Total 16 49 788 549
Volume Left 16 0 0 33
Volume Right 0 49 22 0 cSH 157 397 1700 831
Volume to Capacity 0.10 0.12 0.46 0.04
Queue Length 95th (m) 2.5 3.2 0.0 0.9
Control Delay (s) 30.5 15.3 0.0 1.1
Lane LOS D C A
Approach Delay (s) 19.1 0.0 1.1
Approach LOS C
Intersection Summary
Average Delay 1.3
Intersection Capacity Utilization 59.6% ICU Level of Service
Analysis Period (min) 15

	•	•	<b>†</b>	<i>&gt;</i>	<b>&gt;</b>	ļ	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	ሻ	7	<b>†</b>	7	ሻ	<b>†</b>	
Traffic Volume (veh/h)	75	15	710	70	25	465	
Future Volume (Veh/h)	75	15	710	70	25	465	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	82	16	772	76	27	505	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	1331	772			848		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1331	772			848		
tC, single (s)	6.4	6.2			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	50	96			97		
cM capacity (veh/h)	165	400			790		
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	
Volume Total	82	16	772	76	27	505	
Volume Left	82	0	0	0	27	0	
Volume Right	0	16	0	76	0	0	
cSH	165	400	1700	1700	790	1700	
Volume to Capacity	0.50	0.04	0.45	0.04	0.03	0.30	
Queue Length 95th (m)	18.4	0.9	0.0	0.0	0.8	0.0	
Control Delay (s)	46.8	14.4	0.0	0.0	9.7	0.0	
Lane LOS	E	В	5.0	3.0	A	3.0	
Approach Delay (s)	41.5		0.0		0.5		
Approach LOS	E		0.0		0.0		
Intersection Summary							
Average Delay			2.9				
Intersection Capacity Utiliza	tion		48.2%	IC	III evel d	of Service	e
Analysis Period (min)	uon		15	10	O LOVEI (	JI JUI VICE	U
Analysis r chou (min)			13				

	۶	<b>→</b>	•	•	<b>←</b>	4	4	†	<i>&gt;</i>	<b>/</b>	ţ	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ħ	<b>†</b> †	7	۲	<b>^</b>	7	ň	<b>†</b>	7	۲	<b>†</b>	7
Traffic Volume (vph)	145	360	10	100	555	415	30	220	65	200	190	150
Future Volume (vph)	145	360	10	100	555	415	30	220	65	200	190	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.32	1.00	1.00	0.49	1.00	1.00	0.63	1.00	1.00	0.61	1.00	1.00
Satd. Flow (perm)	607	3579	1601	919	3579	1601	1183	1883	1601	1142	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	391	11	109	603	451	33	239	71	217	207	163
RTOR Reduction (vph)	0	0	7	0	0	304	0	0	22	0	0	60
Lane Group Flow (vph)	158	391	4	109	603	147	33	239	49	217	207	103
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	19.5	19.5	19.5	19.5	19.5	19.5	32.5	32.5	32.5	32.5	32.5	32.5
Effective Green, g (s)	19.5	19.5	19.5	19.5	19.5	19.5	32.5	32.5	32.5	32.5	32.5	32.5
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.54	0.54	0.54	0.54	0.54	0.54
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	197	1163	520	298	1163	520	640	1019	867	618	1019	867
v/s Ratio Prot		0.11			0.17			0.13			0.11	
v/s Ratio Perm	c0.26		0.00	0.12		0.09	0.03		0.03	c0.19		0.06
v/c Ratio	0.80	0.34	0.01	0.37	0.52	0.28	0.05	0.23	0.06	0.35	0.20	0.12
Uniform Delay, d1	18.5	15.3	13.7	15.5	16.4	15.0	6.5	7.2	6.5	7.8	7.1	6.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.5	0.2	0.0	8.0	0.4	0.3	0.2	0.5	0.1	1.6	0.4	0.3
Delay (s)	39.0	15.5	13.7	16.3	16.8	15.3	6.6	7.8	6.6	9.3	7.5	7.0
Level of Service	D	В	В	В	В	В	А	Α	Α	Α	Α	Α
Approach Delay (s)		22.1			16.2			7.4			8.1	
Approach LOS		С			В			A			А	
Intersection Summary												
HCM 2000 Control Delay			14.5	H	CM 2000	Level of	Service		В			
HCM 2000 Volume to Capa	city ratio		0.52									
Actuated Cycle Length (s)			60.0		um of lost				8.0			
Intersection Capacity Utiliza	ation		59.4%	IC	U Level	of Service	<b>,</b>		В			
Analysis Period (min)			15									

<u> </u>											
۶	<b>→</b>	•	•	←	•	4	<b>†</b>	~	<b>&gt;</b>	ļ	4
EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
	4			4			4			4	
4	1	9	2	1	1	60	965	1	1	675	8
4	1	9	2	1	1	60	965	1	1	675	8
	Stop			Stop			Free			Free	
	0%			0%			0%			0%	
0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
4	1	10	2	1	1	65	1049	1	1	734	9
							None			None	
1922	1920	738	1930	1924	1050	743			1050		
1922	1920	738	1930	1924	1050	743			1050		
7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
91	98	98	96	98	100	92			100		
47	62	418	45	62	276	864			663		
EB 1	WB 1	NB 1	SB 1								
15	4	1115	744								
4	2	65	1								
10	1	1	9								
120	63	864	663								
0.13	0.06	0.08	0.00								
3.2	1.5	1.8	0.0								
39.3	66.4	2.3	0.0								
Е	F	Α	Α								
39.3	66.4	2.3	0.0								
Е	F										
		1.8									
on		1.8 103.6% 15	IC	U Level	of Service			G			
	1922 1922 1922 7.1 3.5 91 47 EB 1 15 4 10 120 0.13 3.2 39.3 E 39.3	EBL EBT  4 1 4 1 Stop 0% 0.92 0.92 4 1  1922 1920  7.1 6.5  3.5 4.0 91 98 47 62  EB1 WB1 15 4 4 2 10 1 120 63 0.13 0.06 3.2 1.5 39.3 66.4 E F 39.3 66.4	EBL EBT EBR  4 1 9 4 1 9 5top 0% 0.92 0.92 0.92 4 1 10  1922 1920 738 7.1 6.5 6.2  3.5 4.0 3.3 91 98 98 47 62 418  EB1 WB1 NB1 15 4 1115 4 2 65 10 1 1 120 63 864 0.13 0.06 0.08 3.2 1.5 1.8 39.3 66.4 2.3 E F A 39.3 66.4 2.3 E F	EBL EBT EBR WBL  4 1 9 2  4 1 9 2  Stop 0% 0.92 0.92 0.92 0.92 4 1 10 2  1922 1920 738 1930 7.1 6.5 6.2 7.1  3.5 4.0 3.3 3.5 91 98 98 96 47 62 418 45  EB1 WB1 NB1 SB1 15 4 1115 744 4 2 65 1 10 1 1 9 120 63 864 663 0.13 0.06 0.08 0.00 3.2 1.5 1.8 0.0 39.3 66.4 2.3 0.0 E F A A 39.3 66.4 2.3 0.0 E F A A 39.3 66.4 2.3 0.0 E F	EBL EBT EBR WBL WBT  4 1 9 2 1  4 1 9 2 1  Stop	EBL EBT EBR WBL WBT WBR  4 1 9 2 1 1  4 1 9 2 1 1  Stop Stop 0% 0%  0.92 0.92 0.92 0.92 0.92 0.92  4 1 10 2 1 1  1922 1920 738 1930 1924 1050  7.1 6.5 6.2 7.1 6.5 6.2  3.5 4.0 3.3 3.5 4.0 3.3  91 98 98 96 98 100  47 62 418 45 62 276  EB1 WB1 NB1 SB1  15 4 1115 744  4 2 65 1  10 1 1 9  120 63 864 663  0.13 0.06 0.08 0.00  3.2 1.5 1.8 0.0  39.3 66.4 2.3 0.0  E F A A  39.3 66.4 2.3 0.0  E F A A  39.3 66.4 2.3 0.0  E F A A  39.3 66.4 2.3 0.0  E F	EBL EBT EBR WBL WBT WBR NBL  4 1 9 2 1 1 1 60  4 1 9 2 1 1 1 60  Stop	EBL EBT EBR WBL WBT WBR NBL NBT  4 1 9 2 1 1 1 60 965  4 1 9 2 1 1 1 60 965  Stop Stop O% O% O%  0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92  4 1 10 2 1 1 65 1049  None  1922 1920 738 1930 1924 1050 743  7.1 6.5 6.2 7.1 6.5 6.2 4.1  3.5 4.0 3.3 3.5 4.0 3.3 2.2  91 98 98 96 98 100 92  47 62 418 45 62 276 864  EB1 WB1 NB1 SB1  15 4 1115 744  4 2 65 1  10 1 1 9  120 63 864 663  0.13 0.06 0.08 0.00  3.2 1.5 1.8 0.0  39.3 66.4 2.3 0.0  E F A A  39.3 66.4 2.3 0.0  E F F A A  39.3 66.4 2.3 0.0  E F F A A  39.3 66.4 2.3 0.0  E F F A A  39.3 66.4 2.3 0.0	EBL EBT EBR WBL WBT WBR NBL NBT NBR  4 1 9 2 1 1 1 60 965 1  4 1 9 2 1 1 1 60 965 1  Stop	FBL   EBT   EBR   WBL   WBT   WBR   NBL   NBT   NBR   SBL	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT

	•	4	†	<i>&gt;</i>	<b>/</b>	<b>†</b>	
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	ሻ	7	4			र्स	
Traffic Volume (veh/h)	15	45	980	20	30	670	
Future Volume (Veh/h)	15	45	980	20	30	670	
Sign Control	Stop		Free			Free	
Grade	0%		0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	16	49	1065	22	33	728	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage veh)							
Upstream signal (m)							
pX, platoon unblocked							
vC, conflicting volume	1870	1076			1087		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1870	1076			1087		
tC, single (s)	6.4	6.2			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	79	82			95		
cM capacity (veh/h)	75	267			642		
Direction, Lane #	WB 1	WB 2	NB 1	SB 1			
Volume Total	16	49	1087	761			
Volume Left	16	0	0	33			
Volume Right	0	49	22	0			
cSH	75	267	1700	642			
Volume to Capacity	0.21	0.18	0.64	0.05			
Queue Length 95th (m)	5.6	5.0	0.0	1.2			
Control Delay (s)	65.3	21.5	0.0	1.4			
Lane LOS	F	С	0.0	A			
Approach Delay (s)	32.3		0.0	1.4			
Approach LOS	D						
Intersection Summary							
Average Delay			1.7				
Intersection Capacity Utilization	on		69.6%	IC	U Level o	of Service	
Analysis Period (min)			15				

	•	•	<b>†</b>	~	<b>\</b>	<b>↓</b>
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	*	7	<b>†</b>	7	*	<b>†</b>
Traffic Volume (veh/h)	75	15	985	70	25	660
Future Volume (Veh/h)	75	15	985	70	25	660
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	16	1071	76	27	717
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1842	1071			1147	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1842	1071			1147	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	94			96	
cM capacity (veh/h)	79	268			609	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	82	16	1071	76	27	717
Volume Left	82	0	0	0	27	0
Volume Right	0	16	0	76	0	0
cSH	79	268	1700	1700	609	1700
Volume to Capacity	1.04	0.06	0.63	0.04	0.04	0.42
Queue Length 95th (m)	43.6	1.4	0.0	0.0	1.1	0.0
Control Delay (s)	205.4	19.3	0.0	0.0	11.2	0.0
Lane LOS	F	С			В	
Approach Delay (s)	175.0		0.0		0.4	
Approach LOS	F				<del> </del>	
Intersection Summary						
Average Delay			8.8			
Intersection Capacity Utiliza	ation		62.7%	IC.	U Level d	of Service
Analysis Period (min)	4,1011		15	10	O LOVOI (	J. JOI VIOC
Analysis i Gilou (IIIII)			13			

	٠	<b>→</b>	•	•	<b>←</b>	•	4	†	<i>&gt;</i>	<b>/</b>	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ň	<b>†</b> †	7	ሻ	<b>^</b>	7	Ŋ	<b>†</b>	7	ሻ	<b>†</b>	7
Traffic Volume (vph)	195	440	15	125	680	560	40	300	80	270	260	205
Future Volume (vph)	195	440	15	125	680	560	40	300	80	270	260	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.19	1.00	1.00	0.48	1.00	1.00	0.52	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	350	3579	1601	902	3579	1601	986	1883	1601	894	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	212	478	16	136	739	609	43	326	87	293	283	223
RTOR Reduction (vph)	0	0	9	0	0	242	0	0	51	0	0	76
Lane Group Flow (vph)	212	478	7	136	739	367	43	326	36	293	283	147
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	27.5	27.5	27.5	17.5	17.5	17.5	24.5	24.5	24.5	24.5	24.5	24.5
Effective Green, g (s)	27.5	27.5	27.5	17.5	17.5	17.5	24.5	24.5	24.5	24.5	24.5	24.5
Actuated g/C Ratio	0.46	0.46	0.46	0.29	0.29	0.29	0.41	0.41	0.41	0.41	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	304	1640	733	263	1043	466	402	768	653	365	768	653
v/s Ratio Prot	c0.07	0.13			0.21			0.17			0.15	
v/s Ratio Perm	c0.25		0.00	0.15		0.23	0.04		0.02	c0.33		0.09
v/c Ratio	0.70	0.29	0.01	0.52	0.71	0.79	0.11	0.42	0.05	0.80	0.37	0.22
Uniform Delay, d1	11.6	10.2	8.8	17.7	19.0	19.5	11.0	12.7	10.7	15.6	12.4	11.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	0.1	0.0	1.7	2.2	8.6	0.5	1.7	0.2	16.9	1.4	0.8
Delay (s)	18.4	10.3	8.8	19.4	21.2	28.2	11.5	14.4	10.9	32.5	13.7	12.4
Level of Service	В	В	Α	В	С	С	В	В	В	С	В	В
Approach Delay (s)		12.7			23.9			13.5			20.2	
Approach LOS		В			С			В			С	
Intersection Summary												
HCM 2000 Control Delay			19.4	H	CM 2000	Level of	Service		В			
HCM 2000 Volume to Capa	acity ratio		0.79									
Actuated Cycle Length (s)			60.0		um of lost				12.0			
Intersection Capacity Utiliz	ation		73.7%	IC	U Level	of Service	<u> </u>		D			_
Analysis Period (min)			15									

MovementWBLWBRNBTNBRSBLSBTLane Configurations11111Traffic Volume (vph)75159857025660
Lane Configurations 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Traffic Volume (vph) 75 15 985 70 25 660
· 1 ·
Future Volume (vph) 75 15 985 70 25 660
Ideal Flow (vphpl) 1900 1900 1900 1900 1900
Total Lost time (s) 4.5 4.5 4.5 4.5 4.5
Lane Util. Factor 1.00 1.00 1.00 1.00 1.00
Frt 1.00 0.85 1.00 0.85 1.00 1.00
Flt Protected 0.95 1.00 1.00 0.95 1.00
Satd. Flow (prot) 1789 1601 1883 1601 1789 1883
Flt Permitted 0.95 1.00 1.00 0.19 1.00
Satd. Flow (perm) 1789 1601 1883 1601 349 1883
Peak-hour factor, PHF 0.92 0.92 0.92 0.92 0.92
Adj. Flow (vph) 82 16 1071 76 27 717
RTOR Reduction (vph) 0 14 0 13 0 0
Lane Group Flow (vph) 82 2 1071 63 27 717
Turn Type Prot Perm NA Perm Perm NA
Protected Phases 8 2 6
Permitted Phases 8 2 6
Actuated Green, G (s) 7.5 7.5 57.8 57.8 57.8 57.8
Effective Green, g (s) 7.5 7.5 57.8 57.8 57.8 57.8
Actuated g/C Ratio 0.10 0.10 0.78 0.78 0.78
Clearance Time (s) 4.5 4.5 4.5 4.5 4.5
Vehicle Extension (s)         3.0         3.0         3.0         3.0         3.0
Lane Grp Cap (vph) 180 161 1464 1245 271 1464
v/s Ratio Prot c0.05 c0.57 0.38
v/s Ratio Perm 0.00 0.04 0.08
v/c Ratio 0.46 0.01 0.73 0.05 0.10 0.49
Uniform Delay, d1 31.5 30.1 4.3 1.9 2.0 3.0
Progression Factor 1.00 1.00 1.00 1.00 1.00
Incremental Delay, d2 1.8 0.0 3.3 0.1 0.7 1.2
Delay (s) 33.3 30.1 7.5 2.0 2.7 4.1
Level of Service C C A A A A
Approach Delay (s) 32.8 7.1 4.1
Approach LOS C A A
Intersection Summary
HCM 2000 Control Delay 7.3 HCM 2000 Level of Service A
HCM 2000 Volume to Capacity ratio 0.70
Actuated Cycle Length (s) 74.3 Sum of lost time (s) 9.0
Intersection Capacity Utilization 63.5% ICU Level of Service B
Analysis Period (min) 15

Page 1 12/19/2019

Appendix F: Intersection Operations | Low Growth

1: County Iteaa co	0. 0 2											
	•	-	•	•	<b>←</b>	•	•	<b>†</b>	~	-	ţ	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (veh/h)	4	1	8	2	1	1	50	505	1	1	365	7
Future Volume (Veh/h)	4	1	8	2	1	1	50	505	1	1	365	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1	9	2	1	1	54	549	1	1	397	8
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1062	1061	401	1070	1064	550	405			550		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1062	1061	401	1070	1064	550	405			550		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	99	100	100	95			100		
cM capacity (veh/h)	193	213	649	188	212	535	1154			1020		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	4	604	406								_
Volume Left	4	2	54	1								
Volume Right	9	1	1	8								
cSH	356	232	1154	1020								
Volume to Capacity	0.04	0.02	0.05	0.00								
Queue Length 95th (m)	0.9	0.4	1.1	0.0								
Control Delay (s)	15.5	20.8	1.3	0.0								
Lane LOS	С	С	Α	Α								
Approach Delay (s)	15.5	20.8	1.3	0.0								
Approach LOS	С	С										
Intersection Summary												
Average Delay			1.0									
Intersection Capacity Utiliza	ntion		62.4%	IC	CU Level	of Service			В			
Analysis Period (min)			15									
• • • • • • • • • • • • • • • • • • • •												

	•	•	<b>†</b>	/	<b>\</b>	<b>↓</b>
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<b>1.</b>			4
Traffic Volume (veh/h)	15	45	510	20	30	350
Future Volume (Veh/h)	15	45	510	20	30	350
Sign Control	Stop	10	Free	20	00	Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	49	554	22	33	380
Pedestrians	10	47	554	22	33	300
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)			N.1			N.I.
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1011	565			576	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1011	565			576	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	91			97	
cM capacity (veh/h)	257	524			997	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	16	49	576	413		
Volume Left	16	0	0	33		
Volume Right	0	49	22	0		
cSH	257	524	1700	997		
Volume to Capacity	0.06	0.09	0.34	0.03		
Queue Length 95th (m)	1.5	2.3	0.0	0.03		
Control Delay (s)	20.0	12.6	0.0	1.0		
Lane LOS	20.0 C	12.0 B	0.0			
		D	0.0	A		
Approach LOS	14.4		0.0	1.0		
Approach LOS	В					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utiliz	ation		53.2%	IC	U Level o	of Service
Analysis Period (min)			15			

	•	•	<b>†</b>	~	<b>\</b>	<b>↓</b>
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<u></u>	7	ነ	<u></u>
Traffic Volume (veh/h)	75	15	515	70	25	340
Future Volume (Veh/h)	75	15	515	70	25	340
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	16	560	76	27	370
Pedestrians	<u> </u>		000	, 0	_,	0,70
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)			NONE			INOLIC
Upstream signal (m)						
pX, platoon unblocked	984	560			636	
vC, conflicting volume	904	200			030	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol	004	F/0			/2/	
vCu, unblocked vol	984	560			636	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	2.5	2.2			2.2	
tF (s)	3.5	3.3			2.2	
p0 queue free %	69	97			97	
cM capacity (veh/h)	268	528			947	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	82	16	560	76	27	370
Volume Left	82	0	0	0	27	0
Volume Right	0	16	0	76	0	0
cSH	268	528	1700	1700	947	1700
Volume to Capacity	0.31	0.03	0.33	0.04	0.03	0.22
Queue Length 95th (m)	9.6	0.7	0.0	0.0	0.7	0.0
Control Delay (s)	24.3	12.0	0.0	0.0	8.9	0.0
Lane LOS	С	В			Α	
Approach Delay (s)	22.3		0.0		0.6	
Approach LOS	С					
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utiliza	ation		37.9%	IC	U Level	of Service
Analysis Period (min)			15	.0	2 20001	J. 301 VI00
Analysis i Gilou (IIIII)			10			

	۶	<b>→</b>	•	€	<b>←</b>	4	4	†	<i>&gt;</i>	<b>/</b>	<b>↓</b>	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	۲	<b>†</b> †	7	۲	<b>^</b>	7	7	<b>†</b>	7	ሻ	<b>†</b>	7
Traffic Volume (vph)	115	360	10	100	555	290	30	180	65	140	155	120
Future Volume (vph)	115	360	10	100	555	290	30	180	65	140	155	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.30	1.00	1.00	0.48	1.00	1.00	0.65	1.00	1.00	0.63	1.00	1.00
Satd. Flow (perm)	570	3579	1601	900	3579	1601	1226	1883	1601	1195	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	391	11	109	603	315	33	196	71	152	168	130
RTOR Reduction (vph)	0	0	8	0	0	222	0	0	26	0	0	55
Lane Group Flow (vph)	125	391	3	109	603	93	33	196	45	152	168	75
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	17.7	17.7	17.7	17.7	17.7	17.7	34.3	34.3	34.3	34.3	34.3	34.3
Effective Green, g (s)	17.7	17.7	17.7	17.7	17.7	17.7	34.3	34.3	34.3	34.3	34.3	34.3
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.29	0.57	0.57	0.57	0.57	0.57	0.57
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	168	1055	472	265	1055	472	700	1076	915	683	1076	915
v/s Ratio Prot		0.11			0.17			0.10			0.09	
v/s Ratio Perm	c0.22		0.00	0.12		0.06	0.03		0.03	c0.13		0.05
v/c Ratio	0.74	0.37	0.01	0.41	0.57	0.20	0.05	0.18	0.05	0.22	0.16	0.08
Uniform Delay, d1	19.1	16.7	14.9	17.0	17.9	15.8	5.7	6.1	5.7	6.3	6.0	5.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.3	0.2	0.0	1.0	8.0	0.2	0.1	0.4	0.1	8.0	0.3	0.2
Delay (s)	35.4	17.0	14.9	18.0	18.7	16.0	5.8	6.5	5.8	7.1	6.4	6.0
Level of Service	D	В	В	В	В	В	А	Α	Α	А	Α	Α
Approach Delay (s)		21.3			17.8			6.3			6.5	
Approach LOS		С			В			Α			A	
Intersection Summary												
HCM 2000 Control Delay			14.9	H	CM 2000	Level of	Service		В			
HCM 2000 Volume to Capa	icity ratio		0.40									
Actuated Cycle Length (s)			60.0		um of lost				8.0			
Intersection Capacity Utiliza	ation		52.3%	IC	U Level	of Service	)		Α			
Analysis Period (min)			15									

	۶	<b>→</b>	•	•	<b>←</b>	•	•	†	<i>&gt;</i>	<b>/</b>	<b>+</b>	-√
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			4	
Traffic Volume (veh/h)	4	1	9	2	1	1	60	630	1	1	455	8
Future Volume (Veh/h)	4	1	9	2	1	1	60	630	1	1	455	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1	10	2	1	1	65	685	1	1	495	9
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1318	1318	500	1328	1322	686	504			686		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1318	1318	500	1328	1322	686	504			686		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	0.5	4.0	0.0	0.5	4.0		0.0			0.0		
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	99	98	98	99	100	94			100		
cM capacity (veh/h)	127	148	571	123	147	448	1061			908		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	15	4	751	505								
Volume Left	4	2	65	1								
Volume Right	10	1	1	9								
cSH	269	158	1061	908								
Volume to Capacity	0.06	0.03	0.06	0.00								
Queue Length 95th (m)	1.3	0.6	1.5	0.0								
Control Delay (s)	19.2	28.4	1.6	0.0								
Lane LOS	С	D	Α	Α								
Approach Delay (s)	19.2	28.4	1.6	0.0								
Approach LOS	С	D										
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilizati	on		74.4%	IC	U Level o	of Service			D			
Analysis Period (min)			15									

	•	•	<b>†</b>	<i>&gt;</i>	<b>&gt;</b>	<b>↓</b>
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ሻ	7	<b>†</b>			4
Traffic Volume (veh/h)	15	45	645	20	30	450
Future Volume (Veh/h)	15	45	645	20	30	450
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	49	701	22	33	489
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1267	712			723	
vC1, stage 1 conf vol	.20.	,			, 20	
vC2, stage 2 conf vol						
vCu, unblocked vol	1267	712			723	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	3.1	5.2				
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	89			96	
cM capacity (veh/h)	179	432			879	
					0,,	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1		
Volume Total	16	49	723	522		
Volume Left	16	0	0	33		
Volume Right	0	49	22	0		
cSH	179	432	1700	879		
Volume to Capacity	0.09	0.11	0.43	0.04		
Queue Length 95th (m)	2.2	2.9	0.0	0.9		
Control Delay (s)	27.0	14.4	0.0	1.0		
Lane LOS	D	В		Α		
Approach Delay (s)	17.5		0.0	1.0		
Approach LOS	С					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			58.3%	IC	U Level o	of Service
Analysis Period (min)			15			

	•	•	<b>†</b>	~	<b>&gt;</b>	<b>↓</b>
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	ነ ነ	7	<u></u>	7	ነ	<u> </u>
Traffic Volume (veh/h)	75	15	650	70	25	440
Future Volume (Veh/h)	75	15	650	70	25	440
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	82	16	707	76	27	478
Pedestrians	02		707	, 0	_,	170
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)			TAOTIC			TNOTIC
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1239	707			783	
vC1, stage 1 conf vol	1237	707			703	
vC2, stage 2 conf vol						
vCu, unblocked vol	1239	707			783	
	6.4	6.2			4.1	
tC, single (s)	0.4	0.2			4.1	
tC, 2 stage (s)	3.5	3.3			2.2	
tF (s)	56	3.3 96			97	
p0 queue free %	187	435			835	
cM capacity (veh/h)	107	433			633	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	82	16	707	76	27	478
Volume Left	82	0	0	0	27	0
Volume Right	0	16	0	76	0	0
cSH	187	435	1700	1700	835	1700
Volume to Capacity	0.44	0.04	0.42	0.04	0.03	0.28
Queue Length 95th (m)	15.4	0.9	0.0	0.0	8.0	0.0
Control Delay (s)	38.4	13.6	0.0	0.0	9.5	0.0
Lane LOS	Е	В			Α	
Approach Delay (s)	34.3		0.0		0.5	
Approach LOS	D					
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization		45.0%	IC	U Level	of Service	
Analysis Period (min)			15	.0		20.1100
Analysis i chou (illii)			IJ			

	٠	<b>→</b>	•	•	←	•	•	<b>†</b>	/	<b>&gt;</b>	<b>↓</b>	4
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	<b>†</b> †	7	ሻ	<b>^</b>	7	ሻ	<b>†</b>	7	ሻ	<b>†</b>	7
Traffic Volume (vph)	145	440	15	125	680	355	40	220	80	175	190	150
Future Volume (vph)	145	440	15	125	680	355	40	220	80	175	190	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.19	1.00	1.00	0.48	1.00	1.00	0.61	1.00	1.00	0.58	1.00	1.00
Satd. Flow (perm)	350	3579	1601	902	3579	1601	1156	1883	1601	1086	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	478	16	136	739	386	43	239	87	190	207	163
RTOR Reduction (vph)	0	0	9	0	0	273	0	0	51	0	0	73
Lane Group Flow (vph)	158	478	7	136	739	113	43	239	36	190	207	90
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	27.1	27.1	27.1	17.5	17.5	17.5	24.9	24.9	24.9	24.9	24.9	24.9
Effective Green, g (s)	27.1	27.1	27.1	17.5	17.5	17.5	24.9	24.9	24.9	24.9	24.9	24.9
Actuated g/C Ratio	0.45	0.45	0.45	0.29	0.29	0.29	0.41	0.41	0.41	0.41	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	292	1616	723	263	1043	466	479	781	664	450	781	664
v/s Ratio Prot	c0.05	0.13			c0.21			0.13			0.11	
v/s Ratio Perm	0.19		0.00	0.15		0.07	0.04		0.02	c0.18		0.06
v/c Ratio	0.54	0.30	0.01	0.52	0.71	0.24	0.09	0.31	0.05	0.42	0.27	0.14
Uniform Delay, d1	11.3	10.4	9.1	17.7	19.0	16.2	10.7	11.8	10.5	12.4	11.5	10.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.1	0.0	1.7	2.2	0.3	0.4	1.0	0.2	2.9	8.0	0.4
Delay (s)	13.4	10.5	9.1	19.4	21.2	16.5	11.0	12.8	10.7	15.3	12.4	11.3
Level of Service	В	В	А	В	С	В	В	В	В	В	В	В
Approach Delay (s)		11.2			19.6			12.1			13.1	
Approach LOS		В			В			В			В	
Intersection Summary												
HCM 2000 Control Delay			15.4	HCM 2000 Level of Servi					В			
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			60.0	Sum of lost time (s) 12.0								
Intersection Capacity Utilization			61.4%	IC	:U Level	of Service	;		В			
Analysis Period (min)			15									

c Critical Lane Group

Appendix B: Notice of Study Commencement



County of Simcoe Transportation and Engineering 1110 Highway 26, Midhurst, Ontario L9X 1N6

Main Line (705) 726 9300 Toll Free 1 866 893 9300 Fax (705) 727 7984 simcoe.ca



# County Road 53 (5th Sideroad) Improvements

# County Road 21 to City of Barrie Limits Municipal Class Environmental Assessment Study

## **Notice of Study Commencement**

## **Background**

The County of Simcoe is proposing improvements to County Road 53 (5<sup>th</sup> Sideroad) from County Road 21 (Innisfil Beach Road) to the City of Barrie south limits. The subject section of road was identified for widening from 2 to 4 lanes in the County's 2014 Transportation Master Plan Update. The proposed works are to resurface and widen the road to increase its capacity, improve existing lane configurations at intersections, upgrade drainage features, review illumination needs and address safety concerns. The improvements are necessary to support the arterial function of the road and accommodate planned growth in the area.

The study area is shown on the map provided on the reverse of this notice.

#### **Study Process**

The County is proceeding with a Schedule C Municipal Class Environmental Assessment (EA) to consider the impacts associated with the proposed upgrades. The Class EA process will address the following:

- existing traffic operations and conditions on County Road 53, including operations at key intersections and access points;
- alternative solutions to implementing the improvements and addressing the identified future needs:
- the location, extent and sensitivity of the existing environments within the area;
- the potential impacts of each alternative to the noted environments and possible mitigating measures;
- public and agency consultation and participation; and
- an assessment and evaluation of the alternatives culminating in a preferred solution.

## **Purpose of Notice**

The purpose of this notice is to invite public/agency input and comment early in the study such that they can be incorporated into the planning and overall study design. Comments should be directed to the County and/or Consultant as noted below. A further opportunity for public input and comment will be provided at a Public Information Centre (open house) to be held in the upcoming months, during which time the various alternative solutions and assessment of each will be presented. Further details with respect to the Public Information Centre will be provided closer to the date.

## **Project Contacts**

#### Owner

County of Simcoe 1110 Highway 26 Midhurst, ON LOL 1X0 **Julie Scruton, P.Eng.** Manager, Transportation Construction julie.scruton@simcoe.ca 705-726-9300 ext 1176

#### Consultant

Tatham Engineering Ltd.
115 Sanford Fleming Drive, Suite 200
Collingwood, ON L9Y 5A6
Michael Cullip, P.Eng.
Project Manager
mcullip@tathameng.com
705 444-2565 ext 2020



## **Study Area**



source: https://maps.simcoe.ca/public/



County of Simcoe Transportation and Engineering 1110 Highway 26, Midhurst, Ontario L9X 1N6

Main Line (705) 726 9300 Toll Free 1 866 893 9300 Fax (705) 727 7984 simcoe.ca



# County Road 53 (5th Sideroad) Improvements

# County Road 21 to City of Barrie Limits Municipal Class Environmental Assessment Study

## **Notice of Study Commencement**

## **Background**

The County of Simcoe is proposing improvements to County Road 53 (5<sup>th</sup> Sideroad) from County Road 21 (Innisfil Beach Road) to the City of Barrie south limits. The subject section of road was identified for widening from 2 to 4 lanes in the County's 2014 Transportation Master Plan Update. The proposed works are to resurface and widen the road to increase its capacity, improve existing lane configurations at intersections, upgrade drainage features, review illumination needs and address safety concerns. The improvements are necessary to support the arterial function of the road and accommodate planned growth in the area.

The study area is shown on the map provided on the reverse of this notice.

## **Study Process**

The County is proceeding with a Schedule C Municipal Class Environmental Assessment (EA) to consider the impacts associated with the proposed upgrades. The Class EA process will address the following:

- existing traffic operations and conditions on County Road 53, including operations at key intersections and access points;
- alternative solutions to implementing the improvements and addressing the identified future needs:
- the location, extent and sensitivity of the existing environments within the area;
- the potential impacts of each alternative to the noted environments and possible mitigating measures;
- public and agency consultation and participation; and
- an assessment and evaluation of the alternatives culminating in a preferred solution.

## **Purpose of Notice**

The purpose of this notice is to invite public/agency input and comment early in the study such that they can be incorporated into the planning and overall study design. Comments should be directed to the County and/or Consultant as noted below. A further opportunity for public input and comment will be provided at a Public Information Centre (open house) to be held in the upcoming months, during which time the various alternative solutions and assessment of each will be presented. Further details with respect to the Public Information Centre will be provided closer to the date.

## **Project Contacts**

#### Owner

County of Simcoe 1110 Highway 26 Midhurst, ON LOL 1X0 **Julie Scruton, P.Eng.** Manager, Transportation Construction julie.scruton@simcoe.ca 705-726-9300 ext 1176

#### Consultant

Tatham Engineering Ltd.
115 Sanford Fleming Drive, Suite 200
Collingwood, ON L9Y 5A6
Michael Cullip, P.Eng.
Project Manager
mcullip@tathameng.com
705 444-2565 ext 2020



## **Study Area**



source: https://maps.simcoe.ca/public/

City of Barrie Mr. Michael Prowse City Hall 70 Collier Street, Barrie, Ontario L4M 4T5 Town of Innisfil Mr. Oliver Jerschow Town of Innisfil 2101 Innisfil Beach Road, Innisfil, Ontario L9S 1A1

Indigenous Services Canada - Sustainable Infrastructure Planning, Regional Mr. Derek Nadeau 10 Wellington Street, North Tower, 18th floor, Gatineau, QC, Ontario K1A 0H4 Simcoe County District School Board Mr. Andrew Keuken 1170 Highway 26, MIDHURST, Ontario LOL 1X0

Simcoe County District School Board Ms. Kandas Bondarchuk 1170 Highway 26 , MIDHURST, Ontario L9X 1N6 Simcoe Muskoka Catholic District School Board Ms. Christine Hyde 46 Alliance Boulevard , BARRIE, Ontario L4M 5K3

Ministry of the Environment, Conservation and Parks - Barrie District Office Ms. Sheri Broeckel 54 Cedar Pointe Drive Unit 1201, BARRIE, Ontario L4N 5R7 County of Simcoe Mr. John Daly Administration Centre 1110 Highway #26, MIDHURST, Ontario L9X 1N6

Lake Simcoe Region Conservation Authority Ms. Ashlea Brown 120 Bayview Parkway Box 282, NEWMARKET, Ontario L3Y 4X1 Nottawasaga Conservation Authority Mr. Doug Hevenor John Hix Conservation Administration Centre 8195 8th Line, Utopia, Ontario LOM 1T0

Simcoe Muskoka District Health Unit Mr. Charles Gardner 15 Sperling Drive , BARRIE, Ontario L4M 6K9 Simcoe County Student Transportation Consortium Sir/Madam 64 Cedar Pointe Drive Suite 1403, BARRIE, Ontario M4N 5R7

Alectra Inc. Mr. Mike Matthews 2185 Derry Road West , Mississauga, Ontario L5N 7A6 Ontario Provincial Police - Central Region Headquarters Ms. Rose Dimarco 1 Hurtubise Drive , ORILLIA, Ontario L3V 0C8 Barrie Fire & Emergency Services Mr. Cory Mainprize 155 Dunlop Street West, Barrie, Ontario L4N 1A9 Simcoe County Paramedic Services Ms. Sarah Mills Administration Centre 1100 Highway 26, MIDHURST, Ontario L9X 1N6

City of Barrie Mr. Brett Gratrix City Hall 70 Collier Street, Barrie, Ontario L4M 4T5 Ministry of the Environment, Conservation and Parks - Barrie District Office Ms. Cindy Hood 54 Cedar Pointe Drive Unit 1201, BARRIE, Ontario L4N 5R7

Ministry of the Environment, Conservation and Parks Ms. Chunmei Liu 135 St Clair Ave W 1st Floor, TORONTO, Ontario M4V 1P5 Ministry of Municipal Affairs and Housing Mr. Aldo Ingraldi 8 Estate Lane, KINGSTON, Ontario K7M 9A8

Ministry of Northern Development, Mines, Natural Resources and Forestry - Midhurst District Mr. Dan L. Thompson 2284 Nursery Road , MIDHURST, Ontario L9X 1N8 Ministry of Transportation Mr. Peter Dorton 159 Sir William Hearst Ave 7th Floor, TORONTO, Ontario M3M 0B7

Ministry of Transportation - Legal Services Ms. Mary Gersht 159 Sir William Hearst Ave 7th Floor, TORONTO, Ontario M3M 0B7 Ministry of Indigenous Affairs - Indigenous Relations and Programs Division Ayn Cooney 160 Bloor St E 4th Floor, TORONTO, Ontario M7A 2E6

Ministry of Health - Communications Branch Paola Gemmiti 438 University Ave. 8th Floor, TORONTO, Ontario M5G 2K8 Ministry of Heritage, Sport, Tourism and Culture - Regional and Corporate Services Division Ms. Melody Robinson 400 University Ave. 2nd Floor, TORONTO, Ontario M7A 2R9

Ontario Heritage Trust Ms. Beth Hanna 10 Adelaide Street E 1st Floor, TORONTO, Ontario M5C 1J3 Infrastructure Ontario Mr. Toni Rossi 1 Dundas Street West Suite 2000, TORONTO, Ontario M5G 1Z3 Environment and Climate Change Canada Mr. Rob Dobos 867 Lakeshore Road Box 5050, BURLINGTON, Ontario L7S 1A1 Impact Assessment Agency of Canada - Ontario Office Ms. Anjala Puvananathan 600-55 York Street 6th Floor, TORONTO, Ontario M5J 1R7

Fisheries and Oceans Canada, Eastern Ontario District - Small Craft Harbours Ms. Chantal Larochelle 867 Lakeshore Rd., BURLINGTON, Ontario L7S 1A1 Transport Canada - Ontario Region, Programs (Airports, Harbours and Ports, and Environmental Services) Sir/Madam 4900 Yonge Street, NORTH YORK, Ontario M2N 6A5

Hydro One Sir/Madam 483 Bay Street 10th Floor Reception, TORONTO, Ontario M5G 2P5 Bell Canada Ms. Angela Taylor 136 Bayfield Street 2nd Floor, BARRIE, Ontario L4M 3B1

Enbridge Gas Sir/Madam 500 Consumer Road, NORTH YORK, Ontario M2J 1P8 Rogers Cable Inc Sir/Madam 1 Sperling Drive , BARRIE, Ontario L4M 6B8

Beausoleil First Nation Joanne P. Sandy-McKenzie 11 O'Gemaa Miikaans CHRISTIAN ISLAND, Ontario LOK1CO Alderville First Nation
Dave Mowat
11696 Second Line Rd
ALDERVILLE, Ontario KOK 2X0

Chippewas of Mnjikaning First Nation (Rama) Ted Williams 5884 Rama Road Suite 200, RAMA, Ontario L3V 6H6 Chippewas of Georgina Island Donna Big Canoe R.R. #2 P.O. Box N-13, SUTTON WEST, Ontario LOE 1RO

Hiawatha First Nation Laurie Carr 123 Paudash Street , HIAWATHA, Ontario KOL 2G0 Curve Lake First Nation Emily Whetung-MacInnes 22 Winookeeda Road , CURVE LAKE, Ontario KOL 1RO Moose Deer Point First Nation Rhonda Williams-Lovett 3719 Twelve Mile Bay Road PO BOX 119, MACTIER, Ontario POC 1H0 Wahta Mohawk Territory Blaine Commandant 2664 Muskoka Rd #38 PO BOX 260, BALA, Ontario POC 1A0

Wasauksing First Nation
Warren Tabobondung
PO Box 250 1508 Lane "G" Geewadin Road,
PARRY SOUND, Ontario P2A 2X4

Georgian Bay Métis Council Mr. Greg Garratt 355 Cranston Crescent PO BOX 4, MIDLAND, Ontario L4R 4K6

Moon River Métis Council Mrs. Erin Hadaway 385A Bethune Drive North, GRAVENHURST, Ontario P1P 1B8 Williams Treaty First Nation Ms. Karry Sandy-McKenzie 8 Creswick Court, BARRIE, Ontario L4M 2J7

Metis National Council Sir/Madam 340 MacLaren Street #3, OTTAWA, Ontario K2P 0M6 Saugeen Ojibway Nation Environment Office Ms. Emily Martin 25 Maadookii Subdivision , NEYAASHIINIGMIING, Ontario N0H 2T0

Huron-Wendat Nation 255 Chef-Michel Laveau Rue, Wendake, Ontario G0A 4V0 Metis Nation of Ontario - Lands & Resources Dept - copy to Region 7 Councillor David Dusome 66 Slater St. Suite 1100, Ottawa, Ontario K1P 5H1

Metis Nation of Ontario Ms. Linda Norheim 311-75 Sherbourne St., Toronto, Ontario M5A 2P9 Mississaugas of Scugog Island First Nation Kelly LaRocca 22521 Island Road RR# 5, PORT PERRY, Ontario L9L 1B6

BARRIE CITY 70 COLLIER ST PO BOX 400 STN MAIN BARRIE ON L4M 4T5 1792856 ONTARIO LIMITED 7214 5TH SIDEROAD INNISFIL ON L9S 3S5 6600 10TH LINE RR 3 THORNTON ON LOL 2NO 2291820 ONTARIO INC 31 MCGILLIVRAY AVE NORTH YORK ON M5M 2X9

INNISFIL TOWN 2101 INNISFIL BEACH RD INNISFIL ON L9S 1A1

PO BOX 1070 THORNTON ON LOL 2NO

23 EUPHRASIA DR NORTH YORK ON M6B 3V8 WATERSAND CONSTRUCTION LTD C/O D G GROUP 30 FLORAL PKY SUITE 300 CONCORD ON L4K 4R1

WATERSAND CONSTRUCTION LTD C/O DG GROUP 30 FLORAL PKY SUITE 300 CONCORD ON L4K 4R1 INNISFIL BEACH PARK GP INC 16766 TRANSCANADIENNE RTE SUITE 500 KIRKLAND QC H9H 4M7

GREAT CANADIAN GAMING
C/O GEORGIAN DOWNS LIMITED 7485 5TH SIDEROAD
INNISFIL ON L9S 3S1

88 WILDWOOD TRAIL BARRIE ON L4N 7Z8

INNISVALE CEMETARY AND PO BOX 2003 THORNTON ON LOL 2NO

7451 5TH SIDEROAD INNISFIL ON L9S 3S1

GEORGIAN DOWNS LIMITED 13775 COMMERCE PKY 200 RICHMOND BC V6V 2V4 GEORGIAN DOWNS LIMITED 7485 5TH SIDEROAD INNISFIL ON L9S 3S1

**From:** David Perks

**Sent:** Thursday, September 26, 2019 1:37 PM eanotification.cregion@ontario.ca

Subject: County of Simcoe, MEA Class EA, County Road 53/5th Sideroad (County Road 21 to City of Barrie-

Town of Innisfil Boundary)

Attachments: Cty Rd 53 EA - Notice of Study Commencement (Sept26).pdf; County Road 53 MEA Class EA

(streamlined\_ea\_project\_information\_form\_2).xlsx

To whom it may concern:

Please find attached the Notice of Study Commencement and Project Information Form for the above noted project.

Regards,

#### David Perks, M.Sc., PTP

Transportation Planner, Project Manager

#### **Tatham Engineering Limited**

41 King Street, Unit 4 | Barrie | Ontario | L4N 6B5

**T** 705-733-9037 x2066 | **C** 705-716-4121 | **E** dperks@tathameng.com

In conjunction with our 30<sup>th</sup> year of operations, we are pleased to announce our new name **Tatham Engineering Limited** and website **tathameng.com**. Please update your records accordingly, including email addresses which have also changed.

This email may contain confidential and/or privileged information for the sole use of the intended recipient. Any review or distribution by others is strictly prohibited. If you have received this email in error, please contact the sender and delete all copies.

Tatham Engineering Limited's agreement to transfer digital documents electronically or otherwise is made under the following conditions:

- 1. Electronic documents made available by Tatham Engineering Limited are supplied for the recipient's use only under authorization from the current owner and with the consent of Tatham Engineering Limited. It is the responsibility of the recipient to determine the accuracy, completeness and the appropriateness of the information provided.
- 2. It is agreed that only those hard copy documents bearing the professional seal and signature of the Tatham Engineering Limited project engineer will govern the work of the project. In the event of any dispute concerning an electronic document, the appropriately dated hard copy will be the document used by Tatham Engineering Limited to govern and resolve the dispute.

**From:** David Perks

**Sent:** Thursday, September 26, 2019 2:14 PM

**To:** emilee.oleary@ontario.ca

**Subject:** MEA Class EA - Indigenous Communities for Public Consultation **Attachments:** Cty Rd 53 EA - Notice of Study Commencement (Sept26).pdf

Hello Emilee.

The County of Simcoe is initiating a MEA Class EA for proposed improvements to County Road 53 (also known a 5<sup>th</sup> Sideroad) between County Road 21/Innisfil Beach road and the City of Barrie/Town of Innisfil municipal boundary. Tatham Engineering Ltd has been retained by the County to conduct the EA process. We are beginning our consultation process and was wondering if you could provide me with a list of Indigenous communities in the area that should be included in the consultation process? We have a list of communities that we have contacted for past projects within the County, but would like to ensure that our list is complete. I have attached our notice of study commencement which illustrates the study area.

Thanks for your help, Emilee.

Kind Regards, David

#### David Perks, M.Sc., PTP

Transportation Planner, Project Manager

#### **Tatham Engineering Limited**

41 King Street, Unit 4 | Barrie | Ontario | L4N 6B5

**T** 705-733-9037 x2066 | **C** 705-716-4121 | **E** <u>dperks@tathameng.com</u>

In conjunction with our 30<sup>th</sup> year of operations, we are pleased to announce our new name **Tatham Engineering Limited** and website **tathameng.com**. Please update your records accordingly, including email addresses which have also changed.

This email may contain confidential and/or privileged information for the sole use of the intended recipient. Any review or distribution by others is strictly prohibited. If you have received this email in error, please contact the sender and delete all copies.

Tatham Engineering Limited's agreement to transfer digital documents electronically or otherwise is made under the following conditions:

- 1. Electronic documents made available by Tatham Engineering Limited are supplied for the recipient's use only under authorization from the current owner and with the consent of Tatham Engineering Limited. It is the responsibility of the recipient to determine the accuracy, completeness and the appropriateness of the information provided.
- 2. It is agreed that only those hard copy documents bearing the professional seal and signature of the Tatham Engineering Limited project engineer will govern the work of the project. In the event of any dispute concerning an electronic document, the appropriately dated hard copy will be the document used by Tatham Engineering Limited to govern and resolve the dispute.

From: Ralph Scheunemann < Ralph. Scheunemann@barrie.ca>

Sent: Tuesday, October 22, 2019 9:00 AM

To: Michael Cullip
Cc: Kelly Oakley

**Subject:** FW: County Road 53 (5th Sideroad) Improvements - Notice of Study Commencement

**Attachments:** Scanned from CH7X7525.pdf

Hi MIcheal - please add me to the circulation list to be kept informed of this Municipal Class EA process.

Do they have a tentative schedule for construction?

Ralph Scheunemann, P.Eng. Senior Infrastructure Planning Engineer Engineering Department

City of Barrie: City Hall, 70 Collier Street, P.O. Box 400, Barrie ON, L4M 4T5

Office: 705-739-4220 x4782 | Cell: 705-817-0337 | Fax: 705-739-4247 www.barrie.ca

This email message (including attachments, if any) is intended for the use of the individual or entity to which it is addressed and may contain information that is privileged, proprietary, confidential and exempt from disclosure. If you are not the intended recipient, you are notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender and delete this e-mail immediately. If this email is intended for you, please consider the environment before printing.

------

This E-mail message (including attachments, if any) is intended for the use of the individual or entity to which it is addressed and may contain information that is privileged, proprietary, confidential and exempt from disclosure. If you are not the intended recipient, you are notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender and erase this E-mail message immediately.

\_\_\_\_\_\_

From: Scruton, Julie < Julie.Scruton@simcoe.ca>
Sent: Monday, October 21, 2019 10:07 AM

**To:** Dorton, Peter (MTO)

**Cc:** Kandiah, Nanda (MTO); Michael Cullip

**Subject:** RE: Simcoe CR53 (5th SR) - Notice of Study Commencement

#### Good morning Peter,

Thank you for your response.

Your assumption is correct; we would reconstruct CR53 following the intersection improvements at CR21 / CR53. Reconstruction of CR53 is tentatively scheduled to commence in 2025.

The preliminary study findings suggest that we may not need to widen CR53 to four lanes. If the widening to four lanes is not warranted, we will be able to tie into the north limits of the CR21 / CR53 intersection improvement project.

#### Regards,

Julie Scruton, P.Eng. Manager, Transportation Construction

County of Simcoe, Transportation & Engineering 1110 Highway 26, Midhurst, Ontario L9X 1N6 Phone: 705-726-9300 Ext. 1176 Fax 705-727-7984

Cell: 705-795-0787

E-mail: Julie.Scruton@simcoe.ca

simcoe.ca

From: Dorton, Peter (MTO) < Peter. Dorton@ontario.ca>

Sent: Thursday, October 17, 2019 10:57 AM

To: Scruton, Julie <Julie.Scruton@simcoe.ca>; Michael Cullip <mcullip@tathameng.com>

Cc: Kandiah, Nanda (MTO) < Nanda. Kandiah@ontario.ca>

Subject: Simcoe CR53 (5th SR) - Notice of Study Commencement

#### Hi Julie / Michael:

MTO has no concerns with the attached circulation.

We assume the intent is that the south limit of this CR53 widening project will match the north limit of the CR21 / CR53 intersection project, and construction will occur after CR21 / CR53 works are completed.

Thanks, Peter Dorton Senior Project Manager Highway Corridor Management Section – Central Region Ministry of Transportation 159 Sir William Hearst Avenue, 7th Floor Toronto, ON M3M 0B7 Tel. (416) 235 - 4280

E-Mail: peter.dorton@ontario.ca

Web: www.mto.gov.on.ca/english/engineering/management/corridor

From: Darrell Fuller <dfuller@innisfil.ca>
Sent: Thursday, October 10, 2019 1:22 PM

To: Michael Cullip
Cc: Jessica Jenkins

**Subject:** County Road 53 Improvements

Hello Mike,

The Town has received the Notice of Study Commencement of the Municipal Class Environmental Assessment Study for County Road 53 (5<sup>th</sup> Sideroad).

Please include the Town of Innisfil as the study progresses. We are investigating internally if there are elements to look to incorporate.

Thank you,

## Darrell Fuller, P.Eng.

Capital Engineer

705-436-3740 Ext. 3244 1-888-436-3710 (toll free) 705-220-4213 (cell) 705-436-7120 (fax) dfuller@innisfil.ca Town of Innisfil 2101 Innisfil Beach Road Innisfil ON L9S 1A1 www.innisfil.ca





This information is intended only for the person, persons, entity, or entities to which it is addressed; does not necessarily represent the views of the Town of Innisfil; may contain information that is privileged, confidential or exempt from disclosure under the Municipal Freedom of Information and Protection of Privacy Act. If the reader is not the intended recipient or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you received this communication in error, please notify us immediately by return e-mail and delete the correspondence from your computer.

#### Ministry of Heritage, Sport, Tourism, and Culture Industries

Programs and Services Branch 401 Bay Street, Suite 1700 Toronto, ON M7A 0A7 Tel: 416.314.7147

#### Ministère des Industries du Patrimoine, du Sport, du Tourisme et de la Culture

Direction des programmes et des services 401, rue Bay, Bureau 1700 Toronto, ON M7A 0A7 Tél: 416.314.7147



November 7, 2019

**EMAIL ONLY** 

Julie Scrunton, P.Eng.
Manager, Transportation Construction
County of Smcoe
1110 Highway 26
Midhurst, ON L0L 1X0
Julie.scruton@simcoe.ca

MHSTCI File : 0011529

Proponent : County of Simcoe

Subject : Notice of Commencement

Project : County Road 53 (5th Sideroad) Improvements, County Road 21 to City of

**Barrie Limit** 

Location : Town of Innisfil

#### Dear Ms. Scrunton:

Thank you for providing the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) with the Notice of Commencement for the above-referenced project. MHSTCI's interest in this Environmental Assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- Archaeological resources, including land and marine;
- Built heritage resources, including bridges and monuments; and,
- Cultural heritage landscapes.

Under the EA process, the proponent is required to determine a project's potential impact on cultural heritage resources. The recommendations below are for a Schedule C Municipal Class EA project, as described in the notice of study commencement. If any municipal bridges may be impacted by this project, we can provide additional screening documentation as formulated by the Municipal Engineers Association in consultation with MHSTCI.

#### **Project Summary**

We understand this to be a Schedule C study under the Municipal Class EA for resurfacing, widening, lane configuration improvements, drainage upgrades, and other improvements along County Road 53 (4<sup>th</sup> Sideroad) from County Road 21 to the Innisfil-Barrie boundary, in accordance with the 2014 Simcoe County Transportation Master Plan, which called for a widening of this road segment from 2 to 4 lanes.

#### **Identifying Cultural Heritage Resources**

While some cultural heritage resources may have already been formally identified, others may be identified through screening and evaluation. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Indigenous communities includes a discussion about known or potential cultural heritage resources that are of value to these communities. Municipal Heritage Committees, historical societies and other local heritage organizations may also have knowledge that contributes to the identification of cultural heritage resources.

#### **Archaeological Resources**

This EA project may impact archaeological resources and should be screened using the MHSTCI <u>Criteria for Evaluating Archaeological Potential</u> to determine if an archaeological assessment is needed. MHSTCI archaeological sites data are available at <u>archaeology@ontario.ca</u>. If the EA project area exhibits archaeological potential, then an archaeological assessment (AA) should be undertaken by an

archaeologist licenced under the OHA, who is responsible for submitting the report directly to MHSTCI for review.

#### **Built Heritage and Cultural Heritage Landscapes**

The MHSTCI <u>Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes</u> should be completed to help determine whether this EA project may impact cultural heritage resources. The Clerk for the Town of Innisfil can provide information on property registered or designated under the *Ontario Heritage Act*. Municipal Heritage Planners can also provide information that will assist in completing the checklist.

If potential or known heritage resources exist, MHSTCI recommends that a Heritage Impact Assessment (HIA), prepared by a qualified consultant, should be completed to assess potential project impacts. Our Ministry's *Info Sheet #5: Heritage Impact Assessments and Conservation Plans* outlines the scope of HIAs. Please send the HIA to MHSTCI and the Town of Innisfil for review, and make it available to local organizations or individuals who have expressed interest in review.

#### **Environmental Assessment Reporting**

All technical cultural heritage studies and their recommendations are to be addressed and incorporated into EA projects. Please advise MHSTCI whether any technical cultural heritage studies will be completed for this EA project, and provide them to MHSTCI before issuing a Notice of Completion. If screening has identified no known or potential cultural heritage resources, or no impacts to these resources, please include the completed checklists and supporting documentation in the EA report or file.

Thank you for consulting MHSTCI on this project and please continue to do so throughout the EA process. If you have any questions or require clarification, do not hesitate to contact me.

Sincerely,

Dan Minkin Heritage Planner Dan.Minkin@Ontario.ca

Copied to: Michael Cullip, P.Eng., Tatham Engineering Ltd.

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. MHSTCI makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MHSTCI be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

Please notify MHSTCI if archaeological resources are impacted by EA project work. All activities impacting archaeological resources must cease immediately, and a licensed archaeologist is required to carry out an archaeological assessment in accordance with the *Ontario Heritage Act* and the *Standards and Guidelines for Consultant Archaeologists*.

If human remains are encountered, all activities must cease immediately and the local police as well as the Registrar, Burials of the Ministry of Government and Consumer Services (416-326-8800) must be contacted. In situations where human remains are associated with archaeological resources, MHSTCI should also be notified to ensure that the site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

### **Michael Cullip**

From: Catherine Dupont <catherine.dupont@cnhw.qc.ca>

**Sent:** October 23, 2019 2:49 PM

**To:** julie.scruton@simcoe.ca; Michael Cullip

**Subject:** EA Study for the Improvements to County Road 53 (5th Sideroad) from County Road 21

to the City of Barrie South Limits Project

Hi there,

I was wondering if any archaeological assessment had been undertaken as part of the EA study for the Improvements to County Road 53 (5<sup>th</sup> Sideroad) from County Road 21 to the City of Barrie south limits project?

If so, would it be possible to obtain a copy?

Thank you for the information

Regards,



#### Avis sur la protection et la confidentialité des informations

L'information contenue dans ce courriel est confidentielle et protégée en vertu des lois et règlements applicables. Son contenu est réservé au(x) destinataire(s) à qui il est adressé. Il est donc interdit de le diffuser ou d'en dévoiler les intentions. Si vous recevez ce message par erreur, veuillez le détruire et nous en faire part dans les plus brefs délais.

#### Warning on protection and confidentiality of information

The information contained in this e-mail is confidential and protected in accordance with the applicable laws and regulations. Its content is intended specifically for the recipient(s) to whom it is addressed. It is therefore prohibited to distribute or to disclose the content. If you receive this communication by error, please destroy it and notify us as soon as possible.

#### **Jennifer Conners**

From: David Perks

Sent: Wednesday, June 7, 2023 11:27 AM

**To:** Jennifer Conners

**Subject:** FW: EA Study for the Improvements to County Road 53 (5th Sideroad) from County

Road 21 to the City of Barrie South Limits Project 419376

Attachments: Phase 1 AA - Supplementary Document.pdf; Phase 1 AA.pdf; PIC Notice.pdf

From: John Velick < jvelick@tathameng.com > Sent: Wednesday, May 17, 2023 3:58 PM
To: catherine.dupont@cnhw.qc.ca

Cc: Michael Cullip <mcullip@tathameng.com>; David Perks <dperks@tathameng.com>

Subject: FW: EA Study for the Improvements to County Road 53 (5th Sideroad) from County Road 21 to the City of Barrie

South Limits Project 419376

Hi Catherine,

This project was put on hold but has now been reinitiated. Looking back through our files, it appears that your request below may have been overlooked. Attached you will find a copy of the archeological assessment as requested.

Please also find attached a notice for the Public Information Centre that is currently underway. The PIC is pre-recorded and can be found on the County's website (link is in the notice attached).

I apologize for the late notice and for not sending the report earlier. If you have any questions about the project, I would be happy to discuss.

Thank you,

John

From: Catherine Dupont <catherine.dupont@cnhw.gc.ca>

Sent: Wednesday, October 23, 2019 2:49 PM

To: julie.scruton@simcoe.ca; Michael Cullip <mcullip@tathameng.com>

Subject: EA Study for the Improvements to County Road 53 (5th Sideroad) from County Road 21 to the City of Barrie

South Limits Project

Hi there,

I was wondering if any archaeological assessment had been undertaken as part of the EA study for the Improvements to County Road 53 (5<sup>th</sup> Sideroad) from County Road 21 to the City of Barrie south limits project?

If so, would it be possible to obtain a copy?

Thank you for the information

Regards,





## NATION HURONNE-WENDAT Bureau du Nionwentsïo

#### **Catherine Dupont**

Archéologue - Projets Ontario

255, Place Chef Michel-Laveau Wendake (Qc) G0A 4V0 Téléphone : 418-843-3767

Courriel: catherine.dupont@cnhw.qc.ca



Devez-vous vraiment imprimer ce courriel? Pensons à l'environnement

Do you really need to print this email? Think to the environment

#### Avis sur la protection et la confidentialité des informations

L'information contenue dans ce courriel est confidentielle et protégée en vertu des lois et règlements applicables. Son contenu est réservé au(x) destinataire(s) à qui il est adressé. Il est donc interdit de le diffuser ou d'en dévoiler les intentions. Si vous recevez ce message par erreur, veuillez le détruire et nous en faire part dans les plus brefs délais.

#### Warning on protection and confidentiality of information

The information contained in this e-mail is confidential and protected in accordance with the applicable laws and regulations. Its content is intended specifically for the recipient(s) to whom it is addressed. It is therefore prohibited to distribute or to disclose the content. If you receive this communication by error, please destroy it and notify us as soon as possible.

From: EA Notices to CRegion (MECP) <eanotification.cregion@ontario.ca>

**Sent:** Friday, June 16, 2023 7:25 PM

To: David Perks

**Cc:** EA Notices to CRegion (MECP); Battarino, Gavin (MECP); Hyde, Chris (MECP)

Subject: RE: County of Simcoe, MEA Class EA, County Road 53/5th Sideroad (County Road 21 to

City of Barrie-Town of Innisfil Boundary)

Attachments: MECP Aknwlgnt of NOC-Simcoe County MEA Sch B CountyRd 53.pdf; Municipal Class

Environmental Assessment Amendments - Stakeholder Notification - March 2023.pdf; Supporting Attachment - Proponent's Intro to Delegation of Procedural Aspects of Consultation with Aboriginal Communities.pdf; Supporting Attachment - Species at Risk

Proponents Guide to Preliminary Screening (May 2019).pdf

CAUTION: This email originated from outside of Tatham Engineering or Envision-Tatham. Do not click on links or open attachments unless you know the sender and have verified the sender's email address and know the content is safe.

#### Dear Project Team,

Please find attached MECP acknowledge letter and information shared regarding the Class EA process. If your project team have any questions, please let us know.

#### Thank you,

**Chunmei fiu** (she/her) | Regional Environmental Planner

Environmental Assessments Branch, Ontario Ministry of the Environment, Conservation and Parks | 7th Flr, 135 St Clair Ave W, Toronto, ON M4V 1P5 | <a href="mailto:Chunmei.Liu@ontario.ca">Chunmei.Liu@ontario.ca</a> | 437-249-3102

We want to hear from you. How was my service? You can provide feedback at 1-888-745-8888 or ontario.ca/inspectionfeedback

Nous attendons vos commentaires. Qu'avez-vous pensé de mon service? Vous pouvez nous faire part de vos commentaires au 1-888-745-8888 ou à ontario.ca/retroactioninspection

From: David Perks <dperks@tathameng.com>

Sent: September-26-19 1:37 PM

To: EA Notices to CRegion (MECP) <eanotification.cregion@ontario.ca>

Subject: County of Simcoe, MEA Class EA, County Road 53/5th Sideroad (County Road 21 to City of Barrie-Town of

Innisfil Boundary)

To whom it may concern:

Please find attached the Notice of Study Commencement and Project Information Form for the above noted project.

Regards,

#### David Perks, M.Sc., PTP

Transportation Planner, Project Manager

#### **Tatham Engineering Limited**

41 King Street, Unit 4 | Barrie | Ontario | L4N 6B5 **T** 705-733-9037 x2066 | **C** 705-716-4121 | **E** <u>dperks@tathameng.com</u>

In conjunction with our 30<sup>th</sup> year of operations, we are pleased to announce our new name **Tatham Engineering Limited** and website **tathameng.com**. Please update your records accordingly, including email addresses which have also changed.

This email may contain confidential and/or privileged information for the sole use of the intended recipient. Any review or distribution by others is strictly prohibited. If you have received this email in error, please contact the sender and delete all copies.

Tatham Engineering Limited's agreement to transfer digital documents electronically or otherwise is made under the following conditions:

- 1. Electronic documents made available by Tatham Engineering Limited are supplied for the recipient's use only under authorization from the current owner and with the consent of Tatham Engineering Limited. It is the responsibility of the recipient to determine the accuracy, completeness and the appropriateness of the information provided.
- 2. It is agreed that only those hard copy documents bearing the professional seal and signature of the Tatham Engineering Limited project engineer will govern the work of the project. In the event of any dispute concerning an electronic document, the appropriately dated hard copy will be the document used by Tatham Engineering Limited to govern and resolve the dispute.



Ministry of the Environment, Conservation and Parks Ministère de l'Environnement, de la Protection de la nature et des Parcs

Environmental Assessment

Branch

Direction des évaluations environnementales

1<sup>st</sup> Floor Rez-de-chaussée

135 St. Clair Avenue W
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tel.: 416 314-8001
Tél.: 416 314-8001
Téléc.: 416 314-8452
Téléc.: 416 314-8452

June 16, 2023 EA01-06-05

Claire Walker, P.Eng. PMP Project Engineer County of Simcoe 1110 Highway 26 Midhurst, ON LOL 1X0 claire.walker@simcoe.ca 705-726-9300 ext 1168 \*\*\*BY EMAIL ONLY\*\*\*

Re: County Road 53 (5th Sideroad) Improvements

**County of Simcoe** 

Municipal Class Environmental Assessment, Schedule B
Acknowledgement of Notices of Commencement and Online Public Engagement

Dear Claire Walker,

This letter is in response to the Notice of Commencement for the above noted project. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the County of Simcoe (proponent) has indicated that the study is following the approved environmental planning process for a Schedule B project under the Municipal Class Environmental Assessment (Class EA).

The updated (August 2022) attached "Areas of Interest" document provides guidance regarding the ministry's interests with respect to the Class EA process. Please address all areas of interest in the EA documentation at an appropriate level for the EA study. Proponents who address all the applicable areas of interest can minimize potential delays to the project schedule. Further information is provided at the end of the Areas of Interest document relating to recent changes to the Environmental Assessment Act through Bill 197, Covid-19 Economic Recovery Act 2020.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before authorizing this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the consultation process.

The proposed project may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to the proposed project, the MECP is delegating the procedural aspects of rights-based consultation to the proponent through this letter. The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

This study area is in Treaty 18, 1818 w/Chippewa, within traditional lands of the Williams Treaties First Nations and an area of Archaeological interest of the Huron-Wendat. Based on information provided to date and the Crown's preliminary assessment the proponent is required to consult with the following communities who have been identified as potentially affected by the proposed project:

- Chippewas of Rama First Nation
- Chippewas of Georgina Island First Nation
- Beausoleil First Nation
- Curve Lake First Nation
- Mississaugas of Scugog Island First Nation
- Alderville First Nation
- Hiawatha First Nation

\*\* if there is a potential of an impact to archaeological resources then the Huron-Wendat should also be engaged.

Steps that the proponent may need to take in relation to Aboriginal consultation for the proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process". Additional information related to Ontario's Environmental Assessment Act is available online at: <a href="https://www.ontario.ca/environmentalassessments">www.ontario.ca/environmentalassessments</a>.

Please also refer to the attached document "A Proponent's Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities" for further information, including the MECP's expectations for EA report documentation related to consultation with communities.

The proponent must contact the Director of Environmental Assessment Branch (EABDirector@ontario.ca) under the following circumstances after initial discussions with the communities identified by the MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities;
- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right;
- Consultation with Indigenous communities or other stakeholders has reached an impasse; or
- A Section 16 Order request is expected based on impacts to Aboriginal or treaty rights

The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

Please ensure a copy of the final notice and report is sent to the ministry's Central Region EA notification email account (eanotification.cregion@ontario.ca) when a Notice of Completion is issued for the public review.

Should you or any members of your project team have any questions regarding the material above, please contact me at chunmei.liu@ontario.ca.

Sincerely,

Chunmei Liu

Regional Environmental Planner – Central Region

Project Review Unit, Environmental Assessment Branch

Cc: Gavin Battarino, Supervisor, Project Review Unit, MECP

Chris Hyde, Manager, Barrie District Office, MECP

John Velick, Project Manager, Tatham Engineering Ltd.

Enclosed: Areas of Interest

Attached: Client's Guide to Preliminary Screening for Species at Risk

A Proponent's Introduction to the Delegation of Procedural Aspects of Consultation

with Aboriginal Communities

#### AREAS OF INTEREST (v. August 2022)

It is suggested that you check off each section after you have considered / addressed it.

#### **Planning and Policy**

- Applicable plans and policies should be identified in the report, and the proponent should describe how the proposed project adheres to the relevant policies in these plans.
  - o Projects located in MECP Central, Eastern or West Central Region may be subject to A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020).
  - Projects located in MECP Central or Eastern Region may be subject to the <u>Oak</u>
     <u>Ridges Moraine Conservation Plan</u> (2017) or the <u>Lake Simcoe Protection Plan</u>
     (2014).
  - Projects located in MECP Central, Southwest or West Central Region may be subject to the <u>Niagara Escarpment Plan</u> (2017).
  - Projects located in MECP Central, Eastern, Southwest or West Central Region may be subject to the <u>Greenbelt Plan</u> (2017).
  - Projects located in MECP Northern Region may be subject to the <u>Growth Plan</u> <u>for Northern Ontario</u> (2011).
- The <u>Provincial Policy Statement</u> (2020) contains policies that protect Ontario's natural heritage and water resources. Applicable policies should be referenced in the report, and the proponent should <u>describe</u> how the proposed project is consistent with these policies.
- In addition to the provincial planning and policy level, the report should also discuss the planning context at the municipal and federal levels, as appropriate.

#### **Source Water Protection**

The Clean Water Act, 2006 (CWA) aims to protect existing and future sources of drinking water. To achieve this, several types of vulnerable areas have been delineated around surface water intakes and wellheads for every municipal residential drinking water system that is located in a source protection area. These vulnerable areas are known as a Wellhead Protection Areas (WHPAs) and surface water Intake Protection Zones (IPZs). Other vulnerable areas that have been delineated under the CWA include Highly Vulnerable Aquifers (HVAs), Significant Groundwater Recharge Areas (SGRAs), Event-based modelling areas (EBAs), and Issues Contributing Areas (ICAs). Source protection plans have been developed that include policies to address existing and future risks to sources of municipal drinking water within these vulnerable areas.

Projects that are subject to the Environmental Assessment Act that fall under a Class EA, or one of the Regulations, have the potential to impact sources of drinking water if they occur in designated vulnerable areas or in the vicinity of other at-risk drinking water systems (i.e. systems that are not municipal residential systems). MEA Class EA projects may include

activities that, if located in a vulnerable area, could be a threat to sources of drinking water (i.e. have the potential to adversely affect the quality or quantity of drinking water sources) and the activity could therefore be subject to policies in a source protection plan. Where an activity poses a risk to drinking water, policies in the local source protection plan may impact how or where that activity is undertaken. Policies may prohibit certain activities, or they may require risk management measures for these activities. Municipal Official Plans, planning decisions, Class EA projects (where the project includes an activity that is a threat to drinking water) and prescribed instruments must conform with policies that address significant risks to drinking water and must have regard for policies that address moderate or low risks.

- In October 2015, the MEA Parent Class EA document was amended to include reference to the Clean Water Act (Section A.2.10.6) and indicates that proponents undertaking a Municipal Class EA project must identify early in their process whether a project is or could potentially be occurring with a vulnerable area. **Given this requirement, please include a section in the report on source water protection.** 
  - The proponent should identify the source protection area and should clearly document how the proximity of the project to sources of drinking water (municipal or other) and any delineated vulnerable areas was considered and assessed. Specifically, the report should discuss whether or not the project is located in a vulnerable area and provide applicable details about the area.
  - o If located in a vulnerable area, proponents should document whether any project activities are prescribed drinking water threats and thus pose a risk to drinking water (this should be consulted on with the appropriate Source Protection Authority). Where an activity poses a risk to drinking water, the proponent must document and discuss in the report how the project adheres to or has regard to applicable policies in the local source protection plan. This section should then be used to inform and be reflected in other sections of the report, such as the identification of net positive/negative effects of alternatives, mitigation measures, evaluation of alternatives etc.
- While most source protection plans focused on including policies for significant drinking
  water threats in the WHPAs and IPZs it should be noted that even though source protection
  plan policies may not apply in HVAs, these are areas where aquifers are sensitive and at risk
  to impacts and within these areas, activities may impact the quality of sources of drinking
  water for systems other than municipal residential systems.
- In order to determine if this project is occurring within a vulnerable area, proponents can use <a href="Source Protection Information Atlas">Source Protection Information Atlas</a>, which is an online mapping tool available to the public. Note that various layers (including WHPAs, WHPA-Q1 and WHPA-Q2, IPZs, HVAs, SGRAs, EBAs, ICAs) can be turned on through the "Map Legend" bar on the left. The mapping tool will also provide a link to the appropriate source protection plan in order to identify what policies may be applicable in the vulnerable area.

 For further information on the maps or source protection plan policies which may relate to their project, proponents must contact the appropriate source protection authority. Please consult with the local source protection authority to discuss potential impacts on drinking water. Please document the results of that consultation within the report and include all communication documents/correspondence.

#### More Information

For more information on the *Clean Water Act*, source protection areas and plans, including specific information on the vulnerable areas and drinking water threats, please refer to <a href="Conservation Ontario's website">Conservation Ontario's website</a> where you will also find links to the local source protection plan/assessment report.

A list of the prescribed drinking water threats can be found in <u>section 1.1 of Ontario Regulation 287/07</u> made under the *Clean Water Act*. In addition to prescribed drinking water threats, some source protection plans may include policies to address additional "local" threat activities, as approved by the MECP.

#### **Climate Change**

The document "Considering Climate Change in the Environmental Assessment Process" (Guide) is now a part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. Proponents should review this Guide in detail.

#### The MECP expects proponents of Class EA projects to:

- 1. Consider during the assessment of alternative solutions and alternative designs, the following:
  - a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
  - b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).
- 2. Include a discrete section in the report detailing how climate change was considered in the EA.

How climate change is considered can be qualitative or quantitative in nature and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered.

• The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "Community Emissions Reduction Planning: A Guide for Municipalities" document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

#### Air Quality, Dust and Noise

- If there are sensitive receptors in the surrounding area of this project, a quantitative air quality/odour impact assessment will be useful to evaluate alternatives, determine impacts and identify appropriate mitigation measures. The scope of the assessment can be determined based on the potential effects of the proposed alternatives, and typically includes source and receptor characterization and a quantification of local air quality impacts on the sensitive receptors and the environment in the study area. The assessment will compare to all applicable standards or guidelines for all contaminants of concern.
  Please contact this office for further consultation on the level of Air Quality Impact Assessment required for this project if not already advised.
- If a quantitative Air Quality Impact Assessment is not required for the project, the MECP expects that the report contain a qualitative assessment which includes:
  - A discussion of local air quality including existing activities/sources that significantly impact local air quality and how the project may impact existing conditions;
  - A discussion of the nearby sensitive receptors and the project's potential air quality impacts on present and future sensitive receptors;
  - A discussion of local air quality impacts that could arise from this project during both construction and operation; and
  - A discussion of potential mitigation measures.
- As a common practice, "air quality" should be used an evaluation criterion for all road projects.
- Dust and noise control measures should be addressed and included in the construction
  plans to ensure that nearby residential and other sensitive land uses within the study area
  are not adversely affected during construction activities.
- The MECP recommends that non-chloride dust-suppressants be applied. For a
  comprehensive list of fugitive dust prevention and control measures that could be applied,
  refer to <u>Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from
  Construction and Demolition Activities report prepared for Environment Canada. March
  2005.
  </u>

• The report should consider the potential impacts of increased noise levels during the operation of the completed project. The proponent should explore all potential measures to mitigate significant noise impacts during the assessment of alternatives.

#### **Ecosystem Protection and Restoration**

- Any impacts to ecosystem form and function must be avoided where possible. The report should describe any proposed mitigation measures and how project planning will protect and enhance the local ecosystem.
- Natural heritage and hydrologic features should be identified and described in detail to assess potential impacts and to develop appropriate mitigation measures. The following sensitive environmental features may be located within or adjacent to the study area:
  - Key Natural Heritage Features: Habitat of endangered species and threatened species, fish habitat, wetlands, areas of natural and scientific interest (ANSIs), significant valleylands, significant woodlands; significant wildlife habitat (including habitat of special concern species); sand barrens, savannahs, and tallgrass prairies; and alvars.
  - Key Hydrologic Features: Permanent streams, intermittent streams, inland lakes and their littoral zones, seepage areas and springs, and wetlands.
  - Other natural heritage features and areas such as: vegetation communities, rare species of flora or fauna, Environmentally Sensitive Areas, Environmentally Sensitive Policy Areas, federal and provincial parks and conservation reserves, Greenland systems etc.

We recommend consulting with the Ministry of Natural Resources and Forestry (MNRF), Fisheries and Oceans Canada (DFO) and your local conservation authority to determine if special measures or additional studies will be necessary to preserve and protect these sensitive features. In addition, for projects located in Central Region you may consider the provisions of the Rouge Park Management Plan if applicable.

#### **Species at Risk**

- The Ministry of the Environment, Conservation and Parks has now assumed responsibility of Ontario's Species at Risk program. Information, standards, guidelines, reference materials and technical resources to assist you are found at https://www.ontario.ca/page/species-risk.
- The Client's Guide to Preliminary Screening for Species at Risk (Draft May 2019) has been attached to the covering email for your reference and use. Please review this document for next steps.

• For any questions related to subsequent permit requirements, please contact SAROntario@ontario.ca.

#### **Surface Water**

- The report must include enough information to demonstrate that there will be no negative impacts on the natural features or ecological functions of any watercourses within the study area. Measures should be included in the planning and design process to ensure that any impacts to watercourses from construction or operational activities (e.g. spills, erosion, pollution) are mitigated as part of the proposed undertaking.
- Additional stormwater runoff from new pavement can impact receiving watercourses and flood conditions. Quality and quantity control measures to treat stormwater runoff should be considered for all new impervious areas and, where possible, existing surfaces. The ministry's <a href="Stormwater Management Planning and Design Manual (2003)">Stormwater Management Planning and Design Manual (2003)</a> should be referenced in the report and utilized when designing stormwater control methods. A Stormwater Management Plan should be prepared as part of the Class EA process that includes:
  - Strategies to address potential water quantity and erosion impacts related to stormwater draining into streams or other sensitive environmental features, and to ensure that adequate (enhanced) water quality is maintained
  - Watershed information, drainage conditions, and other relevant background information
  - Future drainage conditions, stormwater management options, information on erosion and sediment control during construction, and other details of the proposed works
  - Information on maintenance and monitoring commitments.
- Ontario Regulation 60/08 under the Ontario Water Resources Act (OWRA) applies to the
  Lake Simcoe Basin, which encompasses Lake Simcoe and the lands from which surface
  water drains into Lake Simcoe. If a proposed sewage treatment plant is listed in Table 1 of
  the regulation, the report should describe how the proposed project and its mitigation
  measures are consistent with the requirements of this regulation and the OWRA.
- Any potential approval requirements for surface water taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, except for certain water taking activities that have been prescribed by the Water Taking EASR Regulation O. Reg. 63/16. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information. Additionally, an

Environmental Compliance Approval under the OWRA is required for municipal stormwater management works.

#### Groundwater

- The status of, and potential impacts to any well water supplies should be addressed. If the
  project involves groundwater takings or changes to drainage patterns, the quantity and
  quality of groundwater may be affected due to drawdown effects or the redirection of
  existing contamination flows. In addition, project activities may infringe on existing wells
  such that they must be reconstructed or sealed and abandoned. Appropriate information to
  define existing groundwater conditions should be included in the report.
- If the potential construction or decommissioning of water wells is identified as an issue, the report should refer to Ontario Regulation 903, Wells, under the OWRA.
- Potential impacts to groundwater-dependent natural features should be addressed. Any
  changes to groundwater flow or quality from groundwater taking may interfere with the
  ecological processes of streams, wetlands or other surficial features. In addition,
  discharging contaminated or high volumes of groundwater to these features may have
  direct impacts on their function. Any potential effects should be identified, and appropriate
  mitigation measures should be recommended. The level of detail required will be
  dependent on the significance of the potential impacts.
- Any potential approval requirements for groundwater taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, with the exception of certain water taking activities that have been prescribed by the Water Taking EASR Regulation O. Reg. 63/16. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information.
- Consultation with the railroad authorities is necessary wherever there is a plan to use construction dewatering in the vicinity of railroad lines or where the zone of influence of the construction dewatering potentially intercepts railroad lines.

#### **Excess Materials Management**

In December 2019, MECP released a new regulation under the Environmental Protection
Act, titled "On-Site and Excess Soil Management" (O. Reg. 406/19) to support improved
management of excess construction soil. This regulation is a key step to support proper
management of excess soils, ensuring valuable resources don't go to waste and to provide
clear rules on managing and reusing excess soil. New risk-based standards referenced by

this regulation help to facilitate local beneficial reuse which in turn will reduce greenhouse gas emissions from soil transportation, while ensuring strong protection of human health and the environment. The new regulation is being phased in over time, with the first phase in effect on January 1, 2021. For more information, please visit https://www.ontario.ca/page/handling-excess-soil.

- The report should reference that activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP's current guidance document titled "Management of Excess Soil – A Guide for Best Management Practices" (2014).
- All waste generated during construction must be disposed of in accordance with ministry requirements

#### **Contaminated Sites**

- Any current or historical waste disposal sites should be identified in the report. The status of
  these sites should be determined to confirm whether approval pursuant to Section 46 of
  the EPA may be required for land uses on former disposal sites. We recommend referring to
  the MECP's D-4 guideline for land use considerations near landfills and dumps.
  - Resources available may include regional/local municipal official plans and data;
     provincial data on <u>large landfill sites</u> and <u>small landfill sites</u>; Environmental Compliance
     Approval information for waste disposal sites on Access Environment.
- Other known contaminated sites (local, provincial, federal) in the study area should also be identified in the report (Note – information on federal contaminated sites is found on the Government of Canada's <u>website</u>).
- The location of any underground storage tanks should be investigated in the report. Measures should be identified to ensure the integrity of these tanks and to ensure an appropriate response in the event of a spill. The ministry's Spills Action Centre must be contacted in such an event.
- Since the removal or movement of soils may be required, appropriate tests to determine contaminant levels from previous land uses or dumping should be undertaken. If the soils are contaminated, you must determine how and where they are to be disposed of, consistent with Part XV.1 of the Environmental Protection Act (EPA) and Ontario Regulation 153/04, Records of Site Condition, which details the new requirements related to site assessment and clean up. Please contact the appropriate MECP District Office for further consultation if contaminated sites are present.

## **Servicing, Utilities and Facilities**

- The report should identify any above or underground utilities in the study area such as transmission lines, telephone/internet, oil/gas etc. The owners should be consulted to discuss impacts to this infrastructure, including potential spills.
- The report should identify any servicing infrastructure in the study area such as wastewater, water, stormwater that may potentially be impacted by the project.
- Any facility that releases emissions to the atmosphere, discharges contaminants to ground
  or surface water, provides potable water supplies, or stores, transports or disposes of waste
  must have an Environmental Compliance Approval (ECA) before it can operate lawfully.
   Please consult with MECP's Environmental Permissions Branch to determine whether a new
  or amended ECA will be required for any proposed infrastructure.
- We recommend referring to the ministry's <u>environmental land use planning guides</u> to
  ensure that any potential land use conflicts are considered when planning for any
  infrastructure or facilities related to wastewater, pipelines, landfills or industrial uses.

## **Mitigation and Monitoring**

- Contractors must be made aware of all environmental considerations so that all
  environmental standards and commitments for both construction and operation are met.
  Mitigation measures should be clearly referenced in the report and regularly monitored
  during the construction stage of the project. In addition, we encourage proponents to
  conduct post-construction monitoring to ensure all mitigation measures have been effective
  and are functioning properly.
- Design and construction reports and plans should be based on a best management approach that centres on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of any impacted areas.
- The proponent's construction and post-construction monitoring plans must be documented in the report, as outlined in Section A.2.5 and A.4.1 of the MEA Class EA parent document.

#### Consultation

• The report must demonstrate how the consultation provisions of the Class EA have been fulfilled, including documentation of all stakeholder consultation efforts undertaken during the planning process. This includes a discussion in the report that identifies concerns that were raised and <u>describes how they have been addressed by the proponent</u> throughout

the planning process. The report should also include copies of comments submitted on the project by interested stakeholders, and the proponent's responses to these comments (as directed by the Class EA to include full documentation).

• Please include the full stakeholder distribution/consultation list in the documentation.

#### Class EA Process

- If this project is a Master Plan: there are several different approaches that can be used to conduct a Master Plan, examples of which are outlined in Appendix 4 of the Class EA. The Master Plan should clearly indicate the selected approach for conducting the plan, by identifying whether the levels of assessment, consultation and documentation are sufficient to fulfill the requirements for Schedule B or C projects. Please note that any Schedule B or C projects identified in the plan would be subject to Part II Order Requests under the Environmental Assessment Act, although the plan itself would not be. Please include a description of the approach being undertaken (use Appendix 4 as a reference).
- If this project is a Master Plan: Any identified projects should also include information on the MCEA schedule associated with the project.
- The report should provide clear and complete documentation of the planning process in order to allow for transparency in decision-making.
- The Class EA requires the consideration of the effects of each alternative on all aspects of the environment (including planning, natural, social, cultural, economic, technical). The report should include a level of detail (e.g. hydrogeological investigations, terrestrial and aquatic assessments, cultural heritage assessments) such that all potential impacts can be identified, and appropriate mitigation measures can be developed. Any supporting studies conducted during the Class EA process should be referenced and included as part of the report.
- Please include in the report a list of all subsequent permits or approvals that may be required for the implementation of the preferred alternative, including but not limited to, MECP's PTTW, EASR Registrations and ECAs, conservation authority permits, species at risk permits, MTO permits and approvals under the *Impact Assessment Act*, 2019.
- Ministry guidelines and other information related to the issues above are available at <a href="http://www.ontario.ca/environment-and-energy/environment-and-energy">http://www.ontario.ca/environment-and-energy/environment-and-energy</a>. We encourage you to review all the available guides and to reference any relevant information in the report.

## Amendments to the EAA through the Covid-19 Economic Recovery Act, 2020

Once the EA Report is finalized, the proponent must issue a Notice of Completion providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the proponent. The Notice of Completion must be sent to the appropriate MECP Regional Office email address.

The public can request a higher level of assessment on a project if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. In addition, the Minister may issue an order on his or her own initiative within a specified time period. The Director (of the Environmental Assessment Branch) will issue a Notice of Proposed Order to the proponent if the Minister is considering an order for the project within 30 days after the conclusion of the comment period on the Notice of Completion. At this time, the Director may request additional information from the proponent. Once the requested information has been received, the Minister will have 30 days within which to make a decision or impose conditions on your project.

Therefore, the proponent cannot proceed with the project until at least 30 days after the end of the comment period provided for in the Notice of Completion. Further, the proponent may not proceed after this time if:

- a Section 16 Order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, or
- the Director has issued a Notice of Proposed order regarding the project.

Please ensure that the Notice of Completion advises that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Section 16 Order requests on those matters should be addressed in writing to:

Minister David Piccini
Ministry of Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

and

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

# Ministry of the Environment, Conservation and Parks

Environmental Assessment Modernization Branch

135 St. Clair Avenue West 4th Floor Toronto ON M4V 1P5

# Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction de la modernisation des processus d'évaluation environnementale

135, avenue St. Clair Ouest 4e étage Toronto ON M4V 1P5



March 3, 2023

Good morning/afternoon,

Ontario is taking action to streamline and modernize its almost 50-year-old environmental assessment process that is too slow, unnecessarily burdensome and costly, to build Ontario while continuing to protect the environment. As part of this plan, we are making practical changes that would ensure strong environmental oversight while reducing delays to get shovels in the ground on projects that matter most to Ontario communities.

Today, on behalf of the Ministry of the Environment, Conservation and Parks, I am writing to let you know that the Municipal Class Environmental Assessment (EA) has been amended as part of the ministry's work on EA modernization.

Over the last three years, our modernization efforts have focused on ensuring strong environmental oversight while reducing delays on infrastructure projects that matter most to Ontario communities. This process includes considering input from stakeholders and Indigenous communities and streamlining requirements for low-risk municipal infrastructure projects, while maintaining strong environmental oversight and protection.

In 2019, the Ministry of the Environment, Conservation and Parks invited the proponents of class environmental assessments to review their assessment process and to propose changes to reduce duplication and better align assessment requirements with risk. We started consulting with municipalities, government agencies and Indigenous communities on the proposed amendments to the Municipal Class EA in 2020. I want to thank all who have offered feedback on the proposed amendments, through submitting comments, participating in webinars and correspondence. We have considered all comments received during the consultation, in addition to conducting our own analysis before the minister decided on the proposed amendments to the Municipal Class EA.

After careful consideration, the decision was made to approve many of the proposed amendments to the Municipal Class EA, including amendments proposed by the ministry. Various changes were made to the Municipal Class EA to update project schedules to better align the level of assessment with the environmental impact of the project. By looking at smarter, more modern ways of doing business, we're making sure important public services and infrastructure projects can get off the ground faster without unnecessary costs and delays.

Amendments to the Municipal Class Environmental Assessment Page 2.

Based on input received from Indigenous communities and Ministry of Citizenship and Multiculturalism (formerly the Ministry of Tourism, Culture and Sport) regarding the need to ensure the protection of archaeological resources and burial sites, an archaeological screening process will be required for various project types that are now eligible for exemption. The exemption will be conditional on the completion and outcome of the screening. The archaeological screening process consists of three questions with links to various tools and criteria developed under the *Ontario Heritage Act*. Proponents must carry out the specified research and consultation to accurately respond to each question, including consultation with Indigenous Communities, municipal governments, and Ministry of Citizenship and Multiculturalism, and may require the assistance of a licensed archaeologist. A project that the screening process applies to would not be exempt unless the archaeological screening process is completed as required, project documentation maintained and all mitigation measures that are identified through the screening process are implemented.

Please see Appendix 1 of the Municipal Class EA for more information on the new archaeological screening process.

Detailed information on the approved amendments to the Municipal Class EA, including the Minister of the Environment, Conservation and Parks' reasons for making the amendments, can be found at: <a href="https://ero.ontario.ca/notice/019-5069">https://ero.ontario.ca/notice/019-5069</a>. The changes are effective as of the date of posting on the Environmental Registry of Ontario, March 3, 2023.

Proponents authorized to proceed with projects through the Municipal Class EA are required to proceed in accordance with the transition provisions set out in the amended Municipal Class EA, as it came into effect on March 3, 2023. Municipalities should review the amended Municipal Class EA to determine the impact on their project.

If you have any questions, please contact Stephen Deneault, Project Officer, by e-mail at: Stephen.Deneault@ontario.ca and the Environmental Assessment Modernization Team at: EAModernization.MECP@ontario.ca.

Sincerely,

**Annamaria Cross** 

A. Croso

Director, Environmental Assessment Modernization Branch Ministry of the Environment, Conservation and Parks

Ministry of the Environment, Conservation and Parks
Species at Risk Branch, Permissions and Compliance
DRAFT - May 2019

# **Table of Contents**

1.0 Purpose, Scope, Background and Context	3
1.1 Purpose of this Guide	3
1.2 Scope	3
1.3 Background and Context	4
2.0 Roles and Responsibilities	5
3.0 Information Sources	6
3.1 Make a Map: Natural Heritage Areas	7
3.2 Land Information Ontario (LIO)	7
3.3 Additional Species at Risk Information Sources	8
3.4 Information Sources to Support Impact Assessments	8
4.0 Check-List	9

## 1.0 Purpose, Scope, Background and Context

# 1.1 Purpose of this Guide

This guide has been created to:

- help clients better understand their obligation to gather information and complete a preliminary screening for species at risk before contacting the ministry,
- outline guidance and advice clients can expect to receive from the ministry at the preliminary screening stage,
- help clients understand how they can gather information about species at risk by accessing publicly available information housed by the Government of Ontario, and
- provide a list of other potential sources of species at risk information that exist outside the Government of Ontario.

It remains the client's responsibility to:

- carry out a preliminary screening for their projects,
- obtain best available information from all applicable information sources,
- conduct any necessary field studies or inventories to identify and confirm the presence or absence of species at risk or their habitat,
- consider any potential impacts to species at risk that a proposed activity might cause, and
- comply with the Endangered Species Act (ESA).

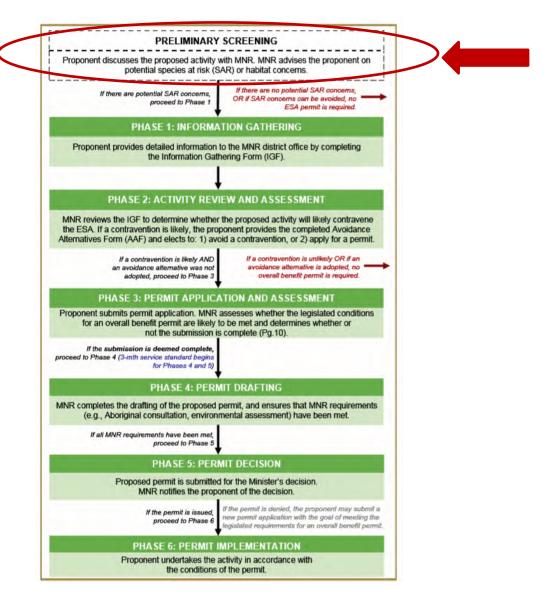
To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide, at a minimum, <u>prior to</u> contacting Government of Ontario ministry offices for further information or advice.

## 1.2 Scope

This guide is a resource for clients seeking to understand if their activity is likely to impact species at risk or if they are likely to trigger the need for an authorization under the ESA. It is not intended to circumvent any detailed site surveys that may be necessary to document species at risk or their habitat nor to circumvent the need to assess the impacts of a proposed activity on species at risk or their habitat. This guide is not an exhaustive list of available information sources for any given area as the availability of information on species at risk and their habitat varies across the province. This guide is intended to support projects and activities carried out on Crown and private land, by private landowners, businesses, other provincial ministries and agencies, or municipal government.

# 1.3 Background and Context

To receive advice on their proposed activity, clients <u>must first</u> determine whether any species at risk or their habitat exist or are likely to exist at or near their proposed activity, and whether their proposed activity is likely to contravene the ESA. Once this step is complete, clients may contact the ministry at <u>SAROntario@ontario.ca</u> to discuss the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. At this stage, the ministry can provide advice and guidance to the client about potential species at risk or habitat concerns, measures that the client is considering to avoid adverse effects on species at risk or their habitat and whether additional field surveys are advisable. This is referred to as the "Preliminary Screening" stage. For more information on additional phases in the diagram below, please refer to the *Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits* policy available online at <a href="https://www.ontario.ca/page/species-risk-overall-benefit-permits">https://www.ontario.ca/page/species-risk-overall-benefit-permits</a>



# 2.0 Roles and Responsibilities

To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide <u>prior to</u> contacting Government of Ontario ministry offices for further information or advice.

**Step 1:** Client seeks information regarding species at risk or their habitat that exist, or are likely to exist, at or near their proposed activity by referring to all applicable information sources identified in this guide.

**Step 2:** Client reviews and consider guidance on whether their proposed activity is likely to contravene the ESA (see section 3.4 of this guide for guidance on what to consider).

**Step 3:** Client gathers information identified in the checklist in section 4 of this guide.

**Step 4:** Client contacts the ministry at <a href="mailto:SAROntario@ontario.ca">SAROntario@ontario.ca</a> to discuss their preliminary screening. Ministry staff will ask the client questions about the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. Ministry staff will also ask the client for their interpretation of the impacts of their activity on species at risk or their habitat as well as measures the client has considered to avoid any adverse impacts.

**Step 5:** Ministry staff will provide advice on next steps.

**Option A:** Ministry staff may advise the client they can proceed with their activity without an authorization under the ESA where the ministry is confident that:

- no protected species at risk or habitats are likely to be present at or near the proposed location of the activity; or
- protected species at risk or habitats are known to be present but the activity is not likely to contravene the ESA; or
- through the adoption of avoidance measures, the modified activity is not likely to contravene the ESA.

**Option B:** Ministry staff may advise the client to proceed to Phase 1 of the overall benefit permitting process (i.e. Information Gathering in the previous diagram), where:

- there is uncertainty as to whether any protected species at risk or habitats are present at or near the proposed location of the activity; or
- the potential impacts of the proposed activity are uncertain; or
- ministry staff anticipate the proposed activity is likely to contravene the ESA.

#### 3.0 Information Sources

Land Information Ontario (LIO) and the Natural Heritage Information Centre (NHIC) maintain and provide information about species at risk, as well as related information about fisheries, wildlife, crown lands, protected lands and more. This information is made available to organizations, private individuals, consultants, and developers through online sources and is often considered under various pieces of legislation or as part of regulatory approvals and planning processes.

The information available from LIO or NHIC and the sources listed in this guide should not be considered as a substitute for site visits and appropriate field surveys. Generally, this information can be regarded as a starting point from which to conduct further field surveys, if needed. While this data represents best available current information, it is important to note that a lack of information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in more remote parts of the province. The absence of species at risk location data at or near your site does not necessarily mean no species at risk are present at that location. Onsite assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats.

Information on the location (i.e. observations and occurrences) of species at risk is considered sensitive and therefore publicly available only on a 1km square grid as opposed to as a detailed point on a map. This generalized information can help you understand which species at risk are in the general vicinity of your proposed activity and can help inform field level studies you may want to undertake to confirm the presence, or absence of species at risk at or near your site.

Should you require specific and detailed information pertaining to species at risk observations and occurrences at or near your site on a finer geographic scale; you will be required to demonstrate your need to access this information, to complete data sensitivity training and to obtain a Sensitive Data Use License from the NHIC. Information on how to obtain a license can be found online at https://www.ontario.ca/page/get-natural-heritage-information.

Many organizations (e.g. other Ontario ministries, municipalities, conservation authorities) have ongoing licensing to access this data so be sure to check if your organization has this access and consult this data as part of your preliminary screening if your organization already has a license.

# 3.1 Make a Map: Natural Heritage Areas

The Make a Natural Heritage Area Map (available online at <a href="http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR\_NHLUPS\_NaturalHeritage&viewer=NaturalHeritage&locale=en-US">http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR\_NHLUPS\_NaturalHeritage&viewer=NaturalHeritage&locale=en-US</a> provides public access to natural heritage information, including species at risk, without the user needing to have Geographic Information System (GIS) capability. It allows users to view and identify generalized species at risk information, mark areas of interest, and create and print a custom map directly from the web application. The tool also shows topographic information such as roads, rivers, contours and municipal boundaries.

Users are advised that sensitive information has been removed from the natural areas dataset and the occurrences of species at risk has been generalized to a 1-kilometre grid to mitigate the risks to the species (e.g. illegal harvest, habitat disturbance, poaching).

The web-based mapping tool displays natural heritage data, including:

- Generalized Species at risk occurrence data (based on a 1-km square grid),
- Natural Heritage Information Centre data.

Data cannot be downloaded directly from this web map; however, information included in this application is available digitally through Land Information Ontario (LIO) at <a href="https://www.ontario.ca/page/land-information-ontario">https://www.ontario.ca/page/land-information-ontario</a>.

# 3.2 Land Information Ontario (LIO)

Most natural heritage data is publicly available. This data is managed in a large provincial corporate database called the LIO Warehouse and can be accessed online through the LIO Metadata Management Tool at

https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home. This tool provides descriptive information about the characteristics, quality and context of the data. Publicly available geospatial data can be downloaded directly from this site.

While most data are publicly available, some data may be considered highly sensitive (i.e. nursery areas for fish, species at risk observations) and as such, access to some data maybe restricted.

## 3.3 Additional Species at Risk Information Sources

- The Breeding Bird Atlas can be accessed online at http://www.birdsontario.org/atlas/index.jsp?lang=en
- eBird can be accessed online at <a href="https://ebird.org/home">https://ebird.org/home</a>
- iNaturalist can be accessed online at https://www.inaturalist.org/
- The Ontario Reptile and Amphibian Atlas can be accessed online at <a href="https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas">https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas</a>
- Your local Conservation Authority. Information to help you find your local Conservation
   Authority can be accessed online at <a href="https://conservationontario.ca/conservation-authority/">https://conservationontario.ca/conservation-authority/</a>
  - Local naturalist groups or other similar community-based organizations
- Local Indigenous communities
- Local land trusts or other similar Environmental Non-Government Organizations
- Field level studies to identify if species at risk, or their habitat, are likely present or absent at or near the site.
- When an activity is proposed within one of the continuous caribou ranges, please be sure to consider the caribou Range Management Policy. This policy includes figures and maps of the continuous caribou range, can be found online at <a href="https://www.ontario.ca/page/range-management-policy-support-woodland-caribou-conservation-and-recovery">https://www.ontario.ca/page/range-management-policy-support-woodland-caribou-conservation-and-recovery</a>

## 3.4 Information Sources to Support Impact Assessments

- Guidance to help you understand if your activity is likely to adversely impact species at
  risk or their habitat can be found online at <a href="https://www.ontario.ca/page/policy-guidance-harm-and-harass-under-endangered-species-act">https://www.ontario.ca/page/categorizing-and-protecting-habitat-under-endangered-species-act</a>
- A list of species at risk in Ontario is available online at
   <a href="https://www.ontario.ca/page/species-risk-ontario">https://www.ontario.ca/page/species-risk-ontario</a>. On this webpage, you can find out more about each species, including where is lives, what threatens it and any specific habitat protections that apply to it by clicking on the photo of the species.

# 4.0 Check-List

Please feel free to use the check list below to help you confirm you have explored all applicable information sources and to support your discussion with Ministry staff at the preliminary screening stage.

	ing stage.		
✓	Land Information Ontario (LIO)		
✓	Natural Heritage Information Centre (NHIC)		
✓	The Breeding Bird Atlas		
✓	eBird		
✓	iNaturalist		
✓	Ontario Reptile and Amphibian Atlas		
✓ List Conservation Authorities you contacted:			
✓	List local naturalist groups you contacted:		
<b>√</b>	List local Indigenous communities you contacted:		
	Ziot local malgeneus communico you contactou.		
<b>√</b>	List any other local land trusts or Environmental Non-Government Organizations you		
	contacted:		
✓	List and field studies that were conducted to identify species at risk, or their habitat, likely		
	to be present or absent at or near the site:		
✓	List what you think the likely impacts of your activity are on species at risk and their		
	habitat (e.g. damage or destruction of habitat, killing, harming or harassing species at		
	risk):		

Appendix C: Natural Sciences Report



# **Natural Sciences Report**

County Road 53 from County Road 21 to City of Barrie Limit
Town of Innisfil

Prepared for: Tatham Engineering Limited

Prepared by: Azimuth Environmental Consulting, Inc.

February 2023

AEC 18-396



**Environmental Assessments & Approvals** 

February 9, 2023 AEC 18-396

Tatham Engineering Limited c/o John Velick, Transportation Engineering Manager 115 Sandford Fleming Drive, Suite 200 Collingwood, Ontario L9Y 5A6

Re: Natural Sciences Report, County Road 53 from County Road 21 to City of Barrie Limit, Town of Innisfil, County of Simcoe

Dear Mr. Velick:

Azimuth Environmental Consulting, Inc. was retained to provide a Natural Sciences report for a Schedule "C" Municipal Class Environmental Assessment associated with road widening at the location described above. The purpose of this report is to provide the County of Simcoe (the County) and other review agencies with an understanding of natural environmental conditions and potential for impacts related to the proposed development on significant natural heritage features and functions of the Right of Way (ROW) and adjacent lands.

Should you have any questions or require additional information please do not hesitate to contact the undersigned.

Yours truly,

AZIMUTH ENVIRONMENTAL CONSULTING, INC

Jordan Wrobel, B.Sc.,

Terrestrial Ecologist

Sara Murphy, B.Se., Senior Aquatic Ecologist/Partner



# **Table of Contents**

	p	age
Letter of t	ransmittal	i
1.0 INT	RODUCTION	1
2.0 PLA	ANNING CONTEXT	1
3.0 BAC	CKGROUND INFORMATION	2
4.0 STU	DY APPROACH	2
4.1 Bre	eeding Bird Surveys	3
	phibian Breeding Surveys	
	h and Fish Habitat	
5.0 EXI	STING CONDITIONS	4
5.1 Lar	nd Use	4
5.2 Veg	getation	5
5.3 Wil	ldlife	6
5.3.1	Breeding Bird Surveys	
5.3.2	Amphibian Breeding Surveys	
	h and Fish Habitat	
-	y Natural Heritage Features Review	
5.5.1	Wetland	
5.5.2	Woodland	
5.5.3	Significant Wildlife Habitat	
5.5.4	Habitat for Endangered and Threatened Species	
5.6 Key	y Natural Heritage Features Summary	9
6.0 PRC	OPOSED WORKS	9
7.0 SUN	MARY OF CONSTRAINTS AND OPPORTUNITIES	10
7.1 Lov	w Development Constraints	. 10
7.1.1	Wetland	. 11
7.1.2	Hedgerows (non-Significant)	
7.1.3	Habitat for Endangered and Threatened Species	. 11
7.1.4	Habitat of Special Concern Species	
7.1.5	Fish Habitat (South Lawson Drain Crossing)	
	derate Development Constraints	
7.2.1	Habitat for Endangered and Threatened Species	
7.2.2	Fish Habitat (North Lawson Drain Crossing)	. 15



8.0	RECOMMENDATIONS	16
8.1	Proposed Work for Detail Design	16
8.2	Reconstruction Timing Restrictions	
8.3	Fish and Fish Habitat	17
8.4	Worker Training	17
8.5	Sediment and Erosion Controls	18
8.6	Operations	18
9.0	CONCLUSIONS	19
10.0	REFERENCES	20

# **List of Figures**

Figure 1: Study Area Location Figure 2: Environmental Features

# **List of Tables**

Table 1: Breeding Bird Summary

Table 2: Species at Risk Habitat Summary and Assessment

# **List of Appendices**

Appendix A: Agency Correspondence and Mapping

Appendix B: Photographic Record

Appendix C: Provincial and Municipal Background Information

Appendix D: Design Alternatives



## 1.0 INTRODUCTION

Azimuth Environmental Consulting, Inc. (Azimuth) has been retained by Tatham Engineering Limited (Tatham) to complete a natural heritage assessment for consideration in completion of a Schedule "C" Municipal Class Environmental Assessment (Class EA), and to address agency approval requirements associated with County Road 53 (CR53) improvements. Approximately 2 kilometre (km) of CR53 is proposed to be widened between County Road 21 (CR21) to the City of Barrie limit within the Town of Innisfil (the Town), County of Simcoe (the County). The study area is shown on Figure 1.

The purpose of the Natural Sciences report is to investigate and characterize potential constraints as they relate to Key Natural Heritage Features (KNHFs), as defined by Provincial Planning Policy (MMAH, 2020). KNHFs may include significant woodlands, wetlands, significant valleylands, Significant Wildlife Habitat (SWH), fish habitat, and habitat for Species at Risk (SAR) protected under Ontario's *Endangered Species Act*, 2007 (ESA). For the purposes of this report, the "Study Area" includes CR53 and road margins within the right-of-way (ROW) limits, in the area outlined above. "Adjacent Lands" refers to lands within 120 metres (m) of the Study Area.

This report provides an update to Azimuth's previously completed Preliminary Environmental Constraints Analysis Report, (Azimuth, 2019), to include in-season field surveys completed following submission of reporting, updated SAR screening and impact assessment of road improvement alternatives for the EA, to assist in the evaluation of the preferred solution for construction.

Recommendations herein may be time sensitive given the seasonality of inventory studies for various natural heritage disciplines, and are intended to be considered during the detail design stage to facilitate the acquisition of regulatory agency approvals where applicable, prior to construction.

## 2.0 PLANNING CONTEXT

Azimuth has prepared this Natural Sciences Report relative to the following federal, provincial, and municipal planning policies with potential applicability to the Study Area:

- Provincial Policy Statement (MMAH, 2020);
- Endangered Species Act, 2007 (ESA);
- County of Simcoe Official Plan;
- Tow of Innisfil Official Plan;
- NVCA Ontario Regulation 172/06; and,



• Federal Fisheries Act.

## 3.0 BACKGROUND INFORMATION

A review of the following background documents provided information on site characteristics, habitat, wildlife, rare species and communities and general cultural/historic aspects of the Study Area and Adjacent Lands:

- Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC; MNRF, 2023a);
- Atlas of the Breeding Birds of Ontario (OBBA; Cadman et al., 2007);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2023);
- Ministry of Environment, Conservation, and Parks (MECP) Species at Risk Ontario list (MECP, 2023);
- Fisheries and Oceans Canada (DFO, 2023);
- Air photos available for the Project Area (Google, VuMap);
- NVCA Conservation Authority, regulated lands, (NVCA, 2023);
- Government of Canada's Species at Risk Public Registry; and,
- Atlas of the Mammals of Ontario (Dobbyn, 1994).

## 4.0 STUDY APPROACH

Activities undertaken to fulfill the objectives of this environmental assessment include the following:

- Established a Terms of Reference (TOR) with the NVCA (Appendix A);
- Contacted MECP with a request for information relating to potential SAR (Appendix A);
- Consulted with the Ministry of Natural Resources and Forestry (MNRF) to confirm fisheries timing restrictions (Appendix A);
- Completed a detailed vascular plant inventory September 25, 2019;
- Completed a site visit on September 25, 2019 to characterize vegetation community types based on Ecological Land Classification methods (Lee et al. 1998. Ecological land classification for southern Ontario: first approximation and its applications. SCSS Field Guide FG-02;
- Completed two fields visits November 9, 2019 and March 25, 2020 to characterize aquatic features and potential fish habitat during high flow conditions and baseline conditions;
- Conducted three dawn breeding bird surveys in June 2020 to identify SAR diurnal birds;



- Conducted three evening amphibian breeding habitat screening (April, May, and June 2020) in proximity to aquatic features;
- Completed one reconnaissance site visit November 14, 2022 to characterize site conditions and potential SAR habitat; and,
- Conducted a Butternut (Endangered; *Junglans cinerea*) and Black Ash (Endangered; *Fraxinus nigra*) screening on December 12, 2022 within the Study Area.

The TOR (Appendix A) developed with the NVCA included the request for a spring vegetation survey. Due to project timing, the survey was completed in September. As described in Section 5.0, the Study Area and Adjacent Lands are primarily comprised of open countryside (meadow and agricultural fields), and the vegetation screening suitably addressed the vascular plant survey program in the context of potential KNHFs related to vegetation and vegetation communities. Absence of the spring inventory was not considered limiting to the intent of the assessment, and it is presumed that the additional spring survey would not have yielded substantially more vascular plant species.

The SAR screening undertaken for the scope of this assignment compares the habitat requirements of species with potential to occur in the overall planning area with habitat types that occur on the property. The screening is based on air photo interpretation combined with onsite evaluation of the habitat as described below.

## 4.1 Breeding Bird Surveys

Three (3) dawn bird surveys were conducted within the study area on June 9, 2020 (time 06:58 to 08:04), June 19, 2020 (time 06:00 to 06:58), and June 26, 2020 (time 6:09 to 7:16) guided by point count methodology presented in Appendix D of the OBBA Guide for Participants (2001). Avian point count station locations are shown on Figure 2. All surveys were conducted no earlier than one half hour before sunrise and were completed prior to 10:00a.m. Surveys were completed under suitable weather conditions (*i.e.* no precipitation and light winds (Beaufort wind scale  $\leq$ 3)), with an observation period of 5 minutes carried out at the point count stations.

## 4.2 Amphibian Breeding Surveys

Azimuth conducted three (3) evening calling amphibian surveys on April 29, 2020, May 26, 2020, and June 16, 2020 to assess amphibian breeding within and adjacent to the development parcel in accordance with the Great Lakes Marsh Monitoring Program (Bird Studies Canada, 2008) protocol. The locations of survey stations are illustrated on Figure 2. In accordance with the protocol, amphibian surveys were completed during the period between 30 minutes after sunset and midnight, on evenings with winds Beaufort <4.



Surveys occurred during early (April 15-30), middle (May 15-31), and late (June 15-30) spring periods on evenings with minimum temperatures of 5°C, 10°C, and 17°C respectively.

## 4.3 Fish and Fish Habitat

Drainage areas in the project area were evaluated on November 9, 2019 and March 25, 2020. Site evaluations were aimed at understanding the location of drainage occurrences noting channel features and size such as wetted width, water depths, flow, bank slopes and vegetation communities, channel bottom material and general morphometrics, and observations of fish to determine characteristics of fish habitat and fish habitat sensitivity. Photographs of the drain are provided in Appendix B, and referenced below.

Background information pertaining to fish community data, known sensitivities, aquatic SAR, and fisheries timing windows were requested of MNRF on November 22, 2019, and a response was received on November 22, 2019.

## **5.0 EXISTING CONDITIONS**

#### 5.1 Land Use

The Study Area and Adjacent Lands are mainly composed of road surface, road margins and active agricultural lands. Several rural residential lots and driveways occur along CR53 (Figure 2). A large block of land east of CR53 contains maintained lands and facilities of Gateway Casinos Innisfil and the Innisvale Cemetery and Crematorium (Figure 2). Photographic record of the project area is provided in Appendix B and referenced below.

A watercourse known as the Lawson Drain crosses the Study Area at two locations as shown on Figure 2. The Town's Official Plan (OP) Natural Heritage System mapping identifies the drain as a "Key Natural Heritage Feature & Key Hydrologic Feature" (see Schedule B: Land Use, Appendix C). To the east, these natural heritage features are not mapped with the addition of Hazard Lands due to this area being part of the Innisfil Heights Settlement Area (see Schedule B6: Land Use: Innisfil Heights, Appendix C).

There are no valleyland features, Significant Woodland, Provincially Significant Wetlands (PSW), or Areas of Natural and Scientific Interest (ANSIs) located within or adjacent to the Study Area according to the County of Simcoe Official Plan (Simcoe OP; County of Simcoe, 2016), presented in Appendix C.



# 5.2 Vegetation

A field survey was undertaken to evaluate vegetation community types on September 25, 2020. Property access was granted within the ROW only, and therefore alternative survey techniques (*i.e.* "fenceline"/binocular surveys) were completed for lands located beyond the ROW. The site visit was undertaken by a qualified Terrestrial Ecologist with knowledge of rare, Threatened, and Endangered plant species with potential to occur in the area. Giving the timing of the survey (September 25, 2020), a general characterization of vegetation communities and late-season screening of sensitive plant species was undertaken.

A review of the MNRF NHIC database (1 x 1km squares 17NK0335 and 17NK0334) identified no records of for provincially rare species (S-Rank 1-3) or plant SAR in the vicinity of the Study Area.

No Special Concern, Threatened, or Endangered plants, including Butternut (Endangered) and Black Ash (Endangered) trees, were identified during Azimuth's field investigation. A detailed screening for Butternut and Black Ash was completed December 12, 2022; no individuals were observed within the Study Area or Adjacent Lands. No vegetation communities or species documented are of federal or provincial conservation concern (MNRF, 2023).

Vegetation communities within the Study Area and Adjacent Lands were determined in accordance with the ELC system, and are illustrated on Figure 2. Vegetation communities identified within the two combined areas are listed as follows:

- FODM5-11 (Dry-Fresh Sugar Maple-Hardwood Deciduous Forest)
- WODM5-1 (Fresh-Moist Poplar Deciduous Woodland)
- WODM4-2 (White Ash Deciduous Woodland)
- THDM4-2 (Native Deciduous Regeneration Thicket)
- THDM5 (Fresh-Moist Deciduous Thicket)
- MASM1-1 (Cattail Mineral Shallow Marsh)
- MEMM3 (Dry-Fresh Mixed Meadow)
- OAGM1 (Annual Row Crop)
- OAG (Open Agriculture such as pasture, hay, or other)
- ML (Maintained Land)



#### 5.3 Wildlife

Direct and indirect incidental observations of wildlife (*e.g.* tracks, scat, fur) were collected as a matter of course during field investigations. The following species and signs thereof were observed within the Study Area limits during the site investigations:

• Mammals: Red Squirrel

A review of the MNRF NHIC database (1 x 1km squares 17PK0404 and 17PK0305) identified records for provincially Threatened wildlife species in proximity to the Study Area and Adjacent Lands, as follows:

#### Birds:

- Eastern Meadowlark (Threatened)
- Wood Thrush (Special Concern)

## 5.3.1 Breeding Bird Surveys

A total of 32 bird species were recorded during the three dawn breeding bird surveys in June 2020, all of which are associated with semi-urban landscapes and open/agricultural habitats (Table 1). Three Threatened species (Barn Swallow, Bobolink, and Eastern Meadowlark; Figure 2) and one Special Concern species (Grasshopper Swallow) were observed during surveys.

# 5.3.2 Amphibian Breeding Surveys

A total of three amphibian species were identified during the evening calling amphibian surveys in spring (April, May, June) 2020, including Spring Peeper (full chorus), American Toad (1 individuals), and Gray Treefrog (3 individuals). The majority of breeding amphibians were associated with the Lawson Drain features. Detailed results of the amphibian breeding survey program are presented in Table 2.

## 5.4 Fish and Fish Habitat

A watercourse known as the Lawson Drain crosses CR53 at two locations as shown on Figure 2. Drainage is conveyed under the roadway through a box culvert at the southern crossing, and corrugated steel pipe (CSP) culvert at the northerly crossing. The watercourse ultimately discharges to Thornton Creek, a coldwater tributary of the Nottawasaga River (NVCA, 2018), roughly 2.5km downstream of the Study Area, within the Middle Nottawasaga River sub-watershed (NVCA Fisheries Habitat Management Unit 2, NVCA, 2009).



The Drain was evaluated fall of 2019 and documented in the Natural Heritage Constraints Memorandum (Azimuth, 2019). Photographs of the creek are included in Appendix B. The channel has been historically channelized and is densely vegetated with cattails at both crossings. Cattails are also present within the channel to the east/southeast of the north crossing location and west of the south crossing location. Minimal standing water was present at either end of the southern culvert, however no flows or coarse substrate were visible at either crossing at the time of the field investigation. No fish were present within the Study Area. Approximately 350m downstream of the Study Area, permanent flows were observed in a channelized ditch at CR21. The ditch had little to no riparian vegetation, with the exception of cattails. No fish were observed.

The southerly culvert crossing was reevaluated in March of 2020 for purposes of securing regulatory agency permits from DFO and LSRCA for replacing the culvert as part of a separate County Contract for intersection improvements at CR53 and CR21. As presented in the Constraints report and submission to DFO for permitting, background municipal drainage mapping classifies the drain feature as Type "D", which implied occurrence of fall-spawning fish species (MAFRA, 2019; DFO, 2018); however such conditions do not occur at this creek. DFO concurred during project review for culvert works that the creek is more accurately classified as a Type "F" drain indicative of an intermittent system with a spring-spawning fish community (Innisfil, 2009; DFO, 2018). Permitting was secured from DFO and LSRCA under this classification, and the south culvert crossing work was completed under a separate assignment.

Overall, the Lawson Drain is a watercourse hydraulically connected to Thornton Creek, and provides direct habitat for fish. The feature is a Type 'F' Drain protected under the Federal *Fisheries Act*, and maintenance and repair to the feature is to follow the Guidelines for Maintaining and Repairing Municipal Drains in Ontario (DFO, 2017). MNRF was contacted to confirm fisheries timing restrictions for the crossing. As per MNRF, the restricted activity timing window for the protection of fish and fish habitat is from March 15 to July 15 to protect spring-spawning species (Appendix A). MNRF consultation and DFO mapping confirms the Lawson Drain does not provide habitat for aquatic SAR.

## 5.5 Key Natural Heritage Features Review

#### 5.5.1 Wetland

Small isolated wetland communities have been identified within the Study Area and Adjacent Lands (see MASM1-1 on Figure 2). These wetlands are narrow features with a recent anthropogenic history, tied to portions of riparian corridors following the Lawson Drain. The wetlands appear to be formed only in areas where riparian channel manipulation has occurred within the past 30 years (County of Simcoe, 2019), where the



bottom of the drain is sufficiently wide for wetland plant establishment [especially Cattails (*Typha* spp.)]. There are no PSWs located within the Study Area or Adjacent Lands.

#### 5.5.2 Woodland

Very small segments of areas designated as woodland according to ELC methodology are present on Adjacent Lands as shown on Figure 2 (includes ELC communities WODM5-1, WODM4-2 and FODM5-11), however these features are hedgerows and should not be considered part of the greater Significant Woodland feature located south of the Study Area. Although the Study Area occurs outside of the Lake Simcoe watershed, provincial guidance within the Lake Simcoe Protection Plan technical definitions (2015) provides reasonable direction for determining a woodland boundary. According to the guideline, hedgerow features are linear wooded areas less than 40m in width, with a length:width ratio of at least 3:1. WODM402, WODM5-1 and FODM-11 (Figure 2) confirm with this definition, and therefore no wooded areas meeting the definition of a woodland are located within the Study Area or Adjacent Lands.

## 5.5.3 Significant Wildlife Habitat

Significant Wildlife Habitat, as outlined within the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015), has the potential to be present within the Study Area and Adjacent Lands.

The potential for Amphibian Breeding Habitat to occur due to the wetland (MASM1-1) and Lawson Drain features was considered. The results of the three evening amphibian calling surveys in April, May, and June 2020 (Table 2) indicated Amphibian Breeding Habitat does not occur within the Study Area or Adjacent Lands, as the documented breeding populations do not meet the criteria for a Significant Wildlife habitat.

The following Candidate SWH types were determined or have potential to be present within the Study Area and Adjacent Lands based on the results of the field program:

- Habitat for Special Concern and Rare Wildlife Species
  - o Grasshopper Sparrow; and,
  - o Monarch.

## 5.5.4 Habitat for Endangered and Threatened Species

Impacts with regards to the ESA and Habitat of Threatened or Endangered Species are covered under Section 9 and 10 of the ESA. Section 9 deals directly with killing, harming, or harassing living members of a species while Section 10 covers destruction or damage to habitat of Threatened or Endangered species. The following Threatened and



Endangered species were determined or have the potential to occur within the Study Area and on Adjacent Lands:

- Bats: Little Brown Myotis, Northern Myotis, and Tri-colored Bat
- Birds: Barn Swallow, Bobolink, and Eastern Meadowlark

Additional discussion regarding identified and potential SAR within the Study Area and Adjacent Lands are included below in the context of development alternatives provided by Tatham.

## 5.6 Key Natural Heritage Features Summary

KNHFs are protected by various levels of municipal and/or provincial policy and regulation. The results of our field assessments and review of background information indicate the potential for the following KNHFs to be associated with the Study Area and Adjacent Lands:

- Wetland (unevaluated; unmapped);
- Woodland (non-Significant; mapped);
- Significant Wildlife Habitat;
- Fish Habitat; and,
- Habitat for Endangered and Threatened Species.

The results of Azimuth's background review and field program concluded that the following KNHFs do not occur within the Study Area limits or Adjacent Lands:

- Significant Valleyland; and,
- Areas of Natural and Scientific Interest.

Below we summarize the present KNHFs with additional detail in the context of this assessment.

# 6.0 PROPOSED WORKS

Tatham Engineering is proposing three alternatives for road improvements as part of the Class EA. Proposed improvements to CR53 include localized intersection improvements (Alternative A), the construction of a third lane (Alternative B), and the construction of a four lane road cross section (Alternative C). Design alternatives A to C are included in Appendix D.



Recent intersection improvements at CR53 and CR21 have been completed and included the replacement of the south Lawson Drain culvert with a box culvert. As such, Alternative A proposes road works beyond the new culvert and will match the existing intersection conditions. Alternatives B and C propose road and ROW site grading to extend past the south Lawson Drain culvert to facilitate further road widening.

To accommodate the above design alternatives, for all three Alternatives the design includes expansion of the ROW on the west side of CR53. No road improvements are proposed on the east side of CR53 to maintain required ROW widths fronting the Casino. According to the design alternatives, the width of the road widening work will differ by approximately 10m or less between design alternatives.

## 7.0 SUMMARY OF CONSTRAINTS AND OPPORTUNITIES

Azimuth has outlined two categories of environmental constraint within the west side of the Study Area and Adjacent Lands based on a review of site conditions and potential restrictions outlined in municipal and provincial policies. Based on our assessment, areas of low development constraint and areas of moderate development constraint have been identified.

The three proposed road improvement alternatives to CR53 consist of relatively similar development footprints. As presented in Appendix D, the width of the road widening work will differ by approximately 10m or less between design alternatives, and will occur on the west side of the Study Area for all three designs. As described in the sections below, the impacts to KNHFs are considered mitigable regardless of the selected design option, as the impacts are comparable in the context of municipal and provincial environmental approvals.

## 7.1 Low Development Constraints

The Annual Row Crops, Maintained Lands, woodlands, thickets, meadow, agricultural fields, and wetland communities (OAGM1, ML, WODM5-1, WODM4-2, FODM5-11, THDM4-2, CUH1-A, MEMM3, OAGM1, MASM1-1; Figure 2) are classified as low developmental constraint areas based on feasibility for avoidance of impacts to the features for design alternatives A to C:

- Wetland (Unevaluated)
- Hedgerows (non-Significant)
- Habitat for Endangered and Threatened Species
  - o Little Brown Myotis, Northern Myotis, Tri-colored Bat
  - o Barn Swallow
- Significant Wildlife Habitat
  - Habitat of Special Concern Species;



- Monarch
- Grasshopper Sparrow
- Fish Habitat (North and South Lawson Drain crossings)

#### 7.1.1 Wetland

As per current project design alternatives A to C, expansion of the road footprint will not result in the direct loss of the mapped wetland features (MASM1-1). It is anticipated that potential indirect impacts to the wetland features are mitigable providing that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below.

# 7.1.2 Hedgerows (non-Significant)

Given the distance between the grading limits (as shown in design alternatives A to C) of the proposed road works and the edge of nearby hedgerow features on Adjacent Lands, wooded hedgerows are not anticipated to constrain the proposed road widening, as no hedgerow removals would occur for any of the design alternatives. Providing that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below, indirect impacts to woodlands or hedgerows would be considered mitigable.

# 7.1.3 Habitat for Endangered and Threatened Species

## Little Brown Myotis, Northern Myotis, Tri-colored Bat

Little Brown Myotis, Northern Myotis, and Tri-colored Bat may utilize trees within the Maintained Lands and the Hedgerows on Adjacent Lands (ML, WODM5-1, FODM5-11; Figure 2) as maternity roost sites; preferring trees >25 centimetre (cm) diameter at breast height (dbh) with evidence of cracks, holes, splits, lifted bark, *etc.* (called "snags") to provide refuge for the rearing of young during the late spring and early summer months (approximately June).

In addition, potential habitat for Little Brown Myotis, Northern Myotis, and Tri-colored Bat may be associated with anthropogenic structures within and adjacent to the Study Area (*e.g.* houses, large sheds). Anthropogenic structures capable of supporting roosting requirements for theses Endangered bat species would not be impacted as a result of the proposed works, therefore, consideration is only required for snag trees.

The Town OP requires that impacts to habitat of Endangered and Threatened species be considered where development and site alteration are expected to occur within 120m, however these habitat features are unlikely to be negatively impacted by the proposed



road widening alternatives, and potential woodland SAR habitat is >30m beyond the disturbance area (grading limit) for site works.

There is no expectation that municipal works would result in the removal of woodlands, structures, or any features with potential habitat for Little Brown Myotis, Northern Myotis, and Tri-colored Bat. As such, providing that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below, no impacts to bat SAR are anticipated as a result of the proposed design alternatives.

## Barn Swallow

Barn Swallow are closely associated with man-made structures in rural areas with nest commonly located in and around barns, garages, sheds, and other anthropogenic features. This species select nesting and foraging sites in close proximity to farmlands, wetlands, road rights-of-ways, and large forest clearings (COSEWIC, 2011a). Barn Swallows were observed on Adjacent Lands during the Dawn Breeding Bird Surveys at station five in 2020 (Table 1).

Anthropogenic structures capable of supporting nests for Barn Swallows would not be impacted as a result of the proposed road works, therefore, consideration is only required for foraging habitat.

The OAG and MEMM3 communities within the Study Area and Adjacent Lands have the potential to provide foraging opportunities for this species. Given that potential high quality foraging habitat is extensive throughout the surrounding landscape, it is not anticipated that the small removal of potential foraging habitat required for the municipal works will result in a negative impact to the species. Providing that that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below, no impact to Barn Swallow would be anticipated as a result of any of the design alternatives.

## 7.1.4 Habitat of Special Concern Species

#### Monarch

Monarch Butterfly are open and edge habitat generalists that occupy open wetlands, along roadsides, to cultural meadow habitats, however key habitat is most often associated with tracts of old-field meadows (MECP, 2023). Monarch eggs and larvae also require Common Milkweed (*Asclepias syriaca*) as a critical component of their life cycle. Open areas within the Study Area and Adjacent Lands (MEMM3, OAG; Figure 2) may provide marginal habitat opportunities for Monarch due to limited size and availability of Common Milkweed.



Given the abundance of much higher quality habitat for the species in large meadows and roadsides throughout the regional landscape, there is no expectation that removal of a marginally-suitable MEMM3 community and a small number of Milkweed plants would represent a negative impact to the species. As a result, negative impacts to the species or its habitat are not anticipated as a result of the proposed road alternatives A to C.

## Grasshopper Sparrow

Grasshopper Sparrow inhabit open grassland areas, and are typically found in large human created grassland (>5ha), such as pastures, hayfields, and occasionally grain crops (*i.e.* Barley). This species prefers well-drained soils with sparse perennial herbaceous vegetation cover and few shrubs (COSEWIC, 2013). Grasshopper Sparrow was observed within the Adjacent Lands (MEMM3 and OAG) at the point count station 1-3 and 7 (Table 2).

Given that potential high quality habitat is extensive within the surrounding landscape, it is not anticipated that the small removal of habitat required for the municipal works will result in a negative impact to the species. Providing that conformance is demonstrated for environmental considerations and mitigation described in Section 8 below, impacts to Grasshopper Sparrow are not anticipated as a result of proposed road alternatives A to C.

## 7.1.5 Fish Habitat (South Lawson Drain Crossing)

The County has already completed intersection improvements at CR53 and CR21 which included the replacement of the south Lawson Drain crossing in the project area, therefore this work is already complete, and will not require further consideration for the EA. Alternative A design proposes road works beyond the new culvert, and will therefore not result in direct impacts to the southern Lawson Drain crossing.

Construction activities will require road and ROW site grading, including removal of vegetation and exposure of soils, therefore impacts are related to the potential for sedimentation in areas of drainage, to which mitigation measures will be required to protect identified fish habitat resources. Impacts are considered readily identifiable and mitigable using standard measures for working around water, therefore, impacts to the southern crossing are not anticipated for any of the alternatives providing that environmental considerations and mitigation measures described in Section 8 are in place.

Alternatives A, B and C propose road widening in the area of the north crossing as discussed under the Moderate Constraint Section 7.2.2 below.



## **7.2** Moderate Development Constraints

The Mixed Meadow, Open Agriculture, and Deciduous Thicket (MEMM3, OAG, THDM5; Figure 2) communities are classified as moderate developmental constraint areas. This designation has been assigned based on confirmed or potential presence of the following based on the need for additional environmental considerations to avoid impacts to the features for design alternatives A to C:

- Habitat for Endangered and Threatened Species
  - o Bobolink, Eastern Meadowlark;
- Fish Habitat (Northern Lawson Drain Crossing)

## 7.2.1 Habitat for Endangered and Threatened Species

## Bobolink, Eastern Meadowlark

Bobolink nest in grasslands and open agricultural fields, with preference to hayfields and associated pastures. Bobolink are sensitive to habitat size and are unlikely to be found in small fragmented habitats (COSEWIC, 2010). Eastern Meadowlark are most commonly found in native grasslands, pastures, and savannahs; however they utilize a wide variety of anthropogenic grasslands, such as hayfields, weedy meadows, grain fields, herbaceous fencerows, and grassy roadside verges. Eastern Meadowlark prefers large tracts of grasslands for breeding and the typical minimal preferred habitat is 5 hectares (ha; COSEWIC, 2011b). Neither species generally occupy fields of row crops such as corn, soybean, or wheat.

Eastern Meadowlark and Bobolink were observed during Dawn Breeding Bird Surveys in 2020 (Figure 2). Eastern Meadowlark and Bobolink were observed within Adjacent Lands in eleven and four locations respectively, and one occurrence of Bobolink was recorded in the Study Area at station three (Table 1, Figure 2).

The agricultural fields where Bobolink and Meadowlark observations occurred would be considered designated habitat for Bobolink and Eastern Meadowlark, and as such, receive protection under Section 10 of the ESA. Although majority of observations occur beyond the Study Area and ROW limits (on adjacent agricultural fields), the MEMM3 and OAG communities within the Study Area in proximity to point count stations 1-3 are continuous with occupied habitat and would be considered a component of the same habitat block; as these areas are uninterrupted suitable habitat within 300m of an approximated defended territory in accordance with definitions of occupied habitat as directed by provincial guidance (MNRF, 2016a; MNRF, 2016b).



As the three design alternatives propose expansion into the MEMM3 and OAG communities on the CR53, habitat loss for Bobolink and Meadowlark require consideration for all development areas within ROW located south of the Historic Rail trail, extending for approximately 0.47km of roadside on both sides of the road. As the development alternatives will not result in significant fragmentation or removal of large tracts of suitable habitat, activities in general habitat may be permitted if the function for the species is maintained in the area and individuals of the species are not killed, harmed, or harassed; according to the MNRF General Habitat Description (2016a; 2016b) documents, however additional consultation with the MECP is recommended at the detailed design stage to determine if minor disturbance to meadows to facilitate road works is considered mitigable, or if compensation is required.

Should compensatory measures be required, the province has introduced a mechanism under O. Reg. 830/21 in which removals of habitat for Bobolink and Eastern Meadowlark are exempt from ESA permitting following completion a Registration with a commitments for habitat compensation. The proponent has the option of facilitating direct compensatory measures including associated habitat creation/restoration, monitoring, and reporting, or can elect to contribute to the provincial Species at Risk Conservation Trust enabled under O. Reg. 829/21 to offset impacts to the species. Regardless of the outcome of future MECP consultation with regards for SAR mitigation, regulatory options exist for suitable compensation/offsetting to prevent any contravention under the ESA with regard for any of the proposed design alternatives.

## 7.2.2 Fish Habitat (North Lawson Drain Crossing)

Design alternatives A, B and C propose to widen CR53 in the area of the north Lawson Drain crossing, requiring that the current 22m long CSP culvert be lengthened to accommodate the wider road platform. Culvert replacement activities will require inwater-work for all design alternatives (Appendix D), therefore implementation of standard Best Management Practices (BMPs) and environmental due diligence are required for culvert replacement/extension activities.

As described in Section 5.4 above, previously completed creek assessments confirmed that the Drain functions as a Type F municipal drain. Culvert details will require further review in detail design to confirm whether works around the watercourse can proceed in accordance with a Fisheries Screening by a qualified Fisheries Ecologist, or requires submission to DFO under a Request for Review. As directed by DFO for the works at the south crossing, if permitting is required for construction, a DFO submission should be completed utilizing the 2017 DFO document, 'Guidance for Maintaining and Repairing Municipal Drains in Ontario', (DFO, 2017). Noting that this document includes now



outdated terminology (*i.e.* impacts to fish habitat are described as 'serious harm' vs the current terminology 'harmful alteration, disruption or destruction of fish habitat [HADD]), however the principles and documentation requirements remain unchanged.

## 8.0 RECOMMENDATIONS

Azimuth can provide environmental considerations throughout future planning stages to adequately identify mitigation requirements for natural heritage protection, and to advise on the required ecological assessments for an EIS. The following additional work is foreseen depending on project activities and potential impacts resulting from the project:

# 8.1 Proposed Work for Detail Design

The following additional ecological works are recommended at the detailed design stage for CR53 improvements:

- Confirm works at the north Lawson Drain crossing and determine if a DFO Request for Review is required at the detailed design stage;
- Confirm areas of natural heritage impact for the selected design alternative; and,
- Consultation with the MECP at the detail design stage to understand the extent of impact and potential offsetting requirements for Bobolink and Eastern Meadowlark habitat loss.

Ecological field surveys completed in relation to the CR53 proposed road widening are expected to be accepted by review agencies for a period of five years following their completion. If the proposed road work occurs beyond 2024/2025 due to planning or approval delays, additional surveys may be required to support development.

Should works be delayed beyond 2024/2025, a single confirmatory site visit to verify the location and extent of natural features would likely be sufficient to satisfy agency expectations.

# **8.2** Reconstruction Timing Restrictions

The roadway improvements activities requiring the removal of vegetation should be restricted from occurring during the active season for migratory birds and bats. Migratory birds, nests, and eggs are protected by the *Migratory Birds Convention Act*, 1994 (MBCA) and the *Fish and Wildlife Conservation Act*, 1997 (FWCA). Environment Canada outlines dates when activities in any region have potential to impact nests at the Environment Canada Website (https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html). In Zone C2 clearing should be avoided between **April 1 through August** 



**31** of any given year. If proposed work dictates that vegetation clearing is required between these dates screening by an ecologist with knowledge of bird species present in the area could be undertaken to ensure that the vegetation has been confirmed to be free of nests prior to clearing.

Activities involving tree removal should be avoided between **April 1 through September 30** of any given year, during the active period for bat species that may utilize trees for maternity and day roosting purposes. It is anticipated that adherence to this timing restriction will avoid impacts to individual SAR bats, therefore remaining in compliance with Section 9 of the ESA affording individual protection to Endangered species.

Any work at both Lawson Drain crossings should consider impacts to fish and fish habitat. Fisheries timing restrictions apply to any work below the high water line, and no work is permitted from **March 15 through July 15** in any given year.

#### 8.3 Fish and Fish Habitat

Culvert replacement activities include commonly occurring construction activites that are anticipated to have predictable impacts requiring standard mitigation strategies for working around water. DFO's interim codes of practice (COPs), (DFO, 2022), will be applicable to in-water works, including the following:

- Interim code of practice: End-of-pipe fish protection screens for small water intakes in freshwater
- Interim code of practice: Temporary cofferdams and diversion channels

BMP's for working around water will apply for detail design stages, including specifications of OPSS.PROV182 (General Specification for Environmental Protection for Construction in and Around Waterbodies and on Waterbody Banks).

# 8.4 Worker Training

Worker training would assist the on-site workers in the identification of the SAR with potential to occur in the area. Workers should be instructed to stop work and contact the MECP immediately if any SAR are encountered within the work area. Individuals working on site should ensure that SAR are not harmed during construction or killed by heavy machinery, vehicles or other equipment.

The contractor should educate all site personnel to ensure that, if identified, the SAR are not wantonly injured or killed, and to ensure that damage to features which could constitute habitat is avoided. Information should be conveyed through a SAR expert and include:



- Species habitat and identification;
- Requirements under the ESA including avoidance of harm to the species and damage to relevant habitat;
- Appropriate action to take if the species is encountered;
- How to record sightings and encounters; and,
- That care should be taken when undertaking construction activities in order to avoid harming the species or damaging/destroying habitat.

The expert should be a qualified biologist who specializes in ecology/biology, or SAR.

## 8.5 Sediment and Erosion Controls

Construction activities occurring on the property associated with the proposed road widening should have regard for the watercourse and BMPs during construction to contain the work area and mitigate the potential for offsite runoff of exposed soils that may result following precipitation events or snowmelt.

To ensure that mitigation measures are effective, it is recommended that site disturbance be minimized during times of maximum runoff, which is typically during the spring months following the period of snow melt.

Diligent application of sediment and erosion controls is recommended for all future construction activities to minimize the extent of accidental or unavoidable impacts to the surrounding vegetation communities, watercourse and/or fish habitat. Prior to the commencement of site works, silt fencing should be applied along the length of directly adjacent natural or naturalized features, and routine inspection/maintenance of the silt fencing should occur throughout construction. It is recommended that erosion and sediment controls be maintained until vegetation is re-established post-construction.

# 8.6 Operations

All material storage and maintenance activities required during future construction should be conducted at least 30m away from watercourses and/or wetlands to prevent accidental spillage of deleterious substances that may harm natural environments.

Snow fencing or equivalent should be installed at the limit of the work area to prevent the accidental intrusion of machinery operations into adjacent undisturbed natural areas.



# 9.0 CONCLUSIONS

Based on our initial assessment areas of Low Development Constraint and Moderate Development Constraint and have been identified within the Study Area and Adjacent Lands.

Potential impacts to candidate KNHFs are likely mitigable, including vegetation removals within the MEMM3 community, however additional agency consultations through the completion of an EIS are recommended at the detailed design stage. Further consideration and consultation with the MECP is required at the detail design stage to understand the extent of impact and potential offsetting requirements for Bobolink and Eastern Meadowlark habitat loss. With respect to fisheries resources, project activities at the Lawson Drain will require review in detail design to confirm permitting requirements and possibly a DFO request for review utilizing the municipal drain guidance document for culvert works.

With respect to alternatives A to C, impacts to KNHFs are considered mitigable regardless of the selected design, as all three proposed design are comparable in respect to municipal and provincial environmental approvals. The project area is in NVCA's area of jurisdiction, therefore a work permit will be required in detail design for all work in regulated lands prior to construction.



## 10.0 REFERENCES

Azimuth, 2019. Preliminary Environmental Constraints Analysis, County Road 53 from County Road 21 to City of Barrie Limits, Widening to Four Lanes, Town of Innisfil, County of Simcoe.

Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier (eds.). 2007. Atlas of the Breeding Birds of Ontario (OBBA). 2001-2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologies, Ontario Ministry of Natural Resources and Ontario Nature, Toronto, xxii + 706pp.

COSEWIC. 2010. COSEWIC assessment and status report on the Bobolink *Dolichonyx oryzivorus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 42 pp.

COSEWIC. 2011a. COSEWIC assessment and status report on the Barn Swallow *Hirundo rustica* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 37 pp.

COSEWIC. 2011b. COSEWIC assessment and status report on the Eastern Meadowlark *Sturnella magna* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. x + 40 pp.

COSEWIC. 2013. COSEWIC assessment and status report on the Grasshopper Sparrow *pratensis subspecies Ammodramus savannarum pratensis* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 36 pp.

County of Simcoe Official Plan.

Dobbyn, J. 1994. Atlas of the Mammals of Ontario. Federation of Ontario Naturalists.

Endangered Species Act, Ontario. 2007. An Act to protect species at risk and to make related changes to other Acts. Bill 184 Chapter 6, Statutes of Ontario 2007.

Fisheries and Oceans Canada (DFO). 2017. Guidance for Maintaining and Repairing Municipal Drains in Ontario.

Fisheries and Oceans Canada (DFO). 2018. Classifying Municipal Drains Protocol. Version 3.1.



Fisheries and Oceans Canada (DFO). 2022. Projects Near Water, www.dfo-mpo.gc.ca.

Fisheries and Oceans Canada (DFO). 2023. Aquatic species at risk mapping. Available at: (https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html). Accessed January 2023.

Government of Ontario Land Information Ontario (LIO). 2019. Metadata Management Tool –Aquatic Resource Area Database.

Fish and Wildlife Conservation Act, Ontario. 1997. S.O. 1997, c.41

Government of Canada. 1985. Federal Fisheries Act. Available at: (http://lawslois.justice.gc.ca/eng/acts/f-14/). Accessed January 2023.

Government of Canada. 2014. Migratory Birds Convention Act. Available at (http://lawslois.justice.gc.ca/eng/acts/M-7.01/). Accessed January 2023.

Lake Simcoe Protection Plan (LSPP). 2015. Technical definitions and criteria for identifying key natural heritage features and key hydrologic features for the Lake Simcoe Protection Plan. Available at: (https://rescuelakesimcoe.org/wp-content/uploads/2020/05/lspp\_knhf\_khf\_definitions\_MNR.pdf). Accessed January 2023.

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998, 2008. Ecological Land Classification for Southern Ontario. First Approximation and its Application. Ontario Ministry of Natural Resources, Southcentral Sciences Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

Migratory Birds Convention Act (MBCA), S.C. 1994, c. 22. An Act to implement a Convention for the protection of migratory birds in Canada and the United States.

Ministry of the Environment, Conservation and Parks (MECP). 2023. Species at Risk in Ontario. Available at: (https://www.ontario.ca/page/species-risk-ontario). Accessed January 2023.

Ministry of Municipal Affairs and Housing (MMAH). 2020. Provincial Policy Statement.

Ministry of Natural Resources and Forestry (MNRF). 2015. Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. 38pp.



Ministry of Natural Resources and Forestry (MNRF). 2016a. General Habitat Description for Bobolink (*Dolichonyx oryzivorus*). Available at:

(https://www.ontario.ca/page/bobolink-general-habitat-description). Accessed January 2023.

Ministry of Natural Resources and Forestry (MNRF). 2016b. General Habitat Description for Eastern Meadowlark (*Sturnella magna*). Available at:

(https://www.ontario.ca/page/eastern-meadowlark-general-habitat-description). Accessed January 2023.

Ministry of Natural Resources and Forestry (MNRF). 2023a. Natural Heritage Information Centre. Online Make a Map Tool. Available at: https://www.ontario.ca/page/makenatural-heritage-area-map Accessed July 2022age/species-risk-ontario). Accessed January 2023.

Ministry of Natural Resources and Forestry (MNRF). 2023b. Fish ON-Line internet web page. Government of Ontario, Ministry of Natural Resources and Forestry (https://www.lioapplications.lrc.gov.on.ca/fishonline/Index.html?viewer=FishONLine.FishONLine&locale=en-CA). Accessed January 2023.

Nottawasaga Conservation Authority (NVCA). 2009. Fisheries Habitat Management Plan

Nottawasaga Conservation Authority (NVCA). 2023. Nottawasaga Valley Conservation Authority Regulated Area. Available at:

(https://maps2.camaps.ca/GVH/Index.html?configBase=https://maps2.camaps.ca/Geocort ex/Essentials/REST/sites/NVCA\_Public/viewers/NVCA\_Staff\_Viewer/virtualdirectory/R esources/Config/Default). Accessed January 2023.

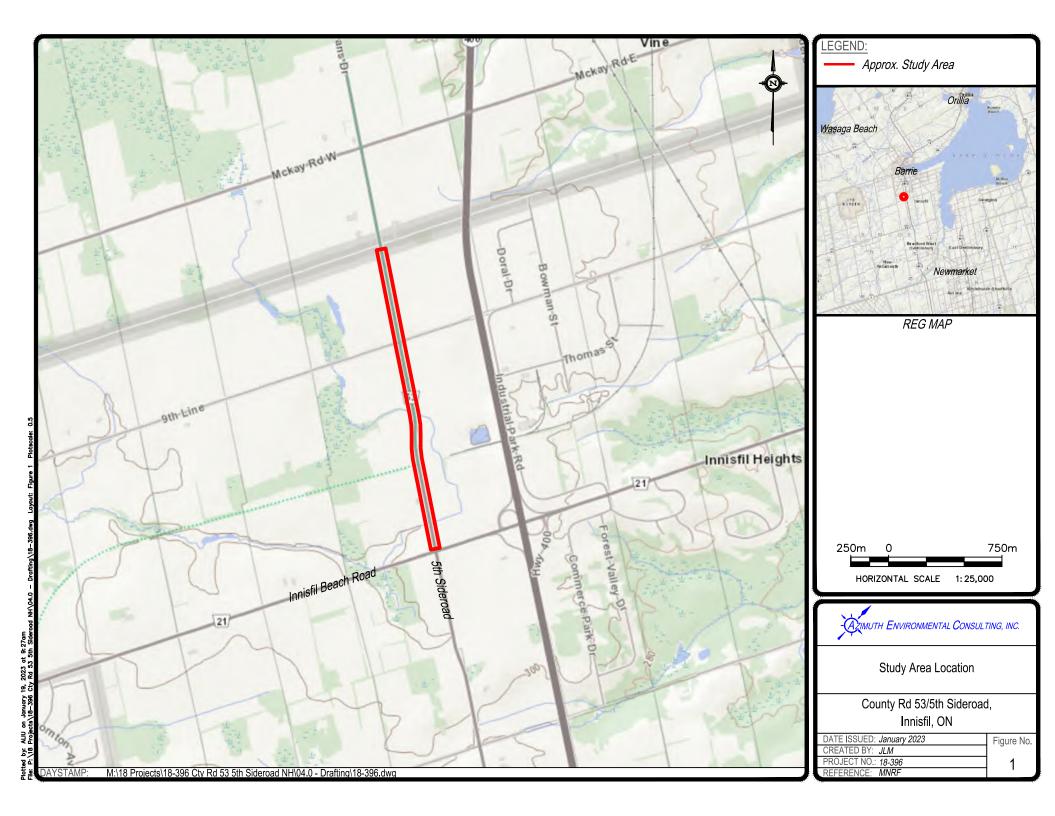
Nottawasaga Valley Conservation Authority (NVCA). 2018. Integrated Watershed Management Plan – Characterization Report.

Ontario Breeding Bird Atlas. 2001. Guide for Participants. 45pp.

Ontario Nature. 2023. Ontario Reptile and Amphibian Atlas Program (https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas/). Accessed January 2023.

Town of Innisfil. 2009. Municipal Drain Mapping.

Town of Innisfil. 2018. Town of Innisfil Official Plan.



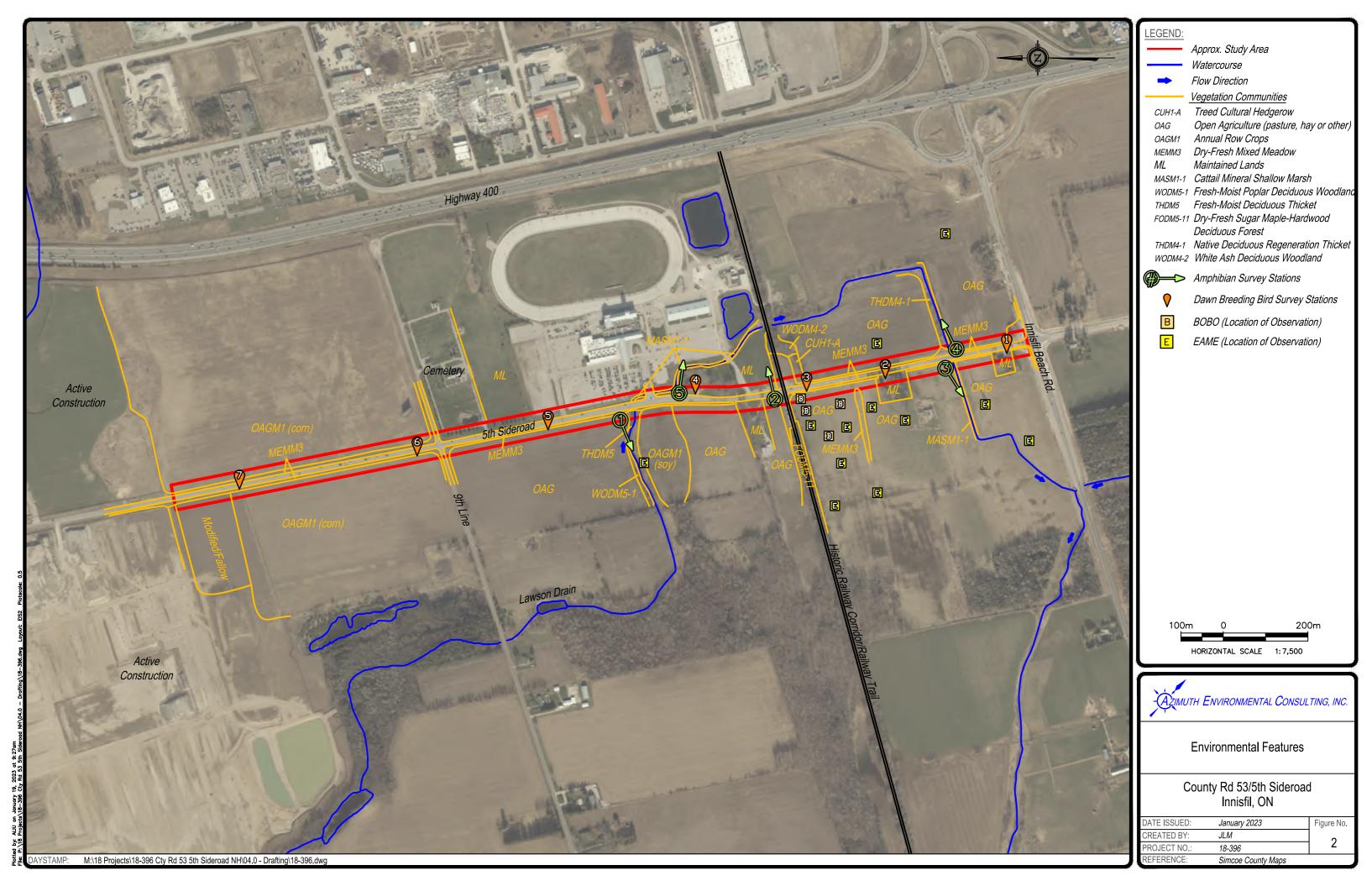


Table 1: Breeding Bird Survey, County Road 53 Widening		Surveyor: Scott Tarof												AEC18-396															
			Loca	ition <sup>1,</sup>	2																						Conservati	on Rankin	gs <sup>3</sup>
			1			2			3			4			5			6			7		spui						
EARCH SZ	SCIENTIFIC NAME	COMMON NAME	Visit 1	Visit 2	isit 3	isit 1	/isit 2	Visit 3	Visit 1	isit 2	7isit 3	'isit 1	Visit 2	isit 3	Visit 1		7 isit 3	'isit 1	/isit 2	Visit 3	7isit 1	/isit 2	isit 3	Adjacent Lands	Incidental	GRANK	SRANK	ESA	TRACK
FAMILY			>	>	>	>	>	>	>	>	>	~	_	>	<u> </u>	>	>	>	>	>	<u> </u>	>	>	V				E S	_
Anatidae	Anas platyrhynchos	Mallard	-				-	_				C, FC	-	-	<u> </u>				-				-			G5	S5		N
Bombycillidae	Bombycilla cedrorum	Cedar Waxwing	S				S	S	:			<u> </u>	S	S	<u> </u>				S		<u> </u>		S	S		G5	S5		N
Cardinalidae	Cardinalis cardinalis	Northern Cardinal							<u>.                                    </u>			<u>!</u>		S	<u> </u>						<u> </u>			S		G5	S5		N
Charadriidae	Charadrius vociferus	Killdeer							<u> </u>			<u> </u>			<u> </u>				_					S		G5	S4B		N
Columbidae	Zenaida macroura	Mourning Dove		-					<u> </u>	-	1	<u> </u>	1	1	<u> </u>				S	_	<u> </u>			S		G5	S5		N
Corvidae	Corvus brachyrhynchos	American Crow							<u>:</u>			<u>!</u>			<u> </u>					С	<u> </u>		FO	C, X		G5	S5		N
Fringillidae	Spinus tristis	American Goldfinch			S,C		S	S,C	<u>:</u>		S, C	<u> </u>	S		S				S, X	FO	<u> </u>		S, C	S, C		G5	S5		N
Hirundinidae	Hirundo rustica	Barn Swallow							<u> </u>			<u> </u>			<u> </u>									FO, X		G5	S4B	THR THI	
Icteridae	Agelaius phoeniceus	Red-winged Blackbird	S,C		C	C						S,C	C	S, C	<u> </u>	C			C, X	S,C				S, C		G5	S5		N
Icteridae	Dolichonyx oryzivorus	Bobolink							S			<u> </u>			<u> </u>						<u> </u>			S		G5	S4B	THR THI	_
Icteridae	Icterus galbula	Baltimore Oriole							<u> </u>			<u> </u>			<u> </u>									S		G5	S4B		N
Icteridae	Molothrus ater	Brown-headed Cowbird			C						C				<u> </u>									S		G5	S5		N
Icteridae	Sturnella magna	Eastern Meadowlark							<u> </u>			<u> </u>			<u> </u>									S		G5		THR THI	
Mimidae	Dumetella carolinensis	Gray Catbird							<u>:                                    </u>			<u> </u>		S	<u> </u>						<u> </u>			S		G5	S5B,S3N		N
Parulidae	Geothlypis trichas	Common Yellowthroat													<u> </u>									S		G5	S5B,S3N		N
Parulidae	Setophaga petechia	Yellow Warbler							<u> </u>			<u> </u>			<u> </u>									S		G5	S5B		N
Parulidae	Setophaga pinus	Pine Warbler							<u>:                                    </u>			<u> </u>	S		<u> </u>						<u> </u>					G5	S5B,S3N		N
Parulidae	Setophaga ruticilla	American Redstart	S			S						<u> </u>			<u> </u>									S		G5	S5B		N
Passerellidae	Ammodramus savannarum	Grasshopper Sparrow			S			S	<u>;                                    </u>		S	<u> </u>			<u> </u>						<u> </u>		S	S		G5	S4B	SC	Y
Passerellidae	Melospiza melodia	Song Sparrow	S,C		S	S	S	C	<u>.                                    </u>				S		S	S								S		G5	S5		N
Passerellidae	Pipilo erythrophthalmus	Eastern Towhee										<u> </u>			<u> </u>									S		G5	S4B,S3N		N
Passerellidae	Pooecetes gramineus	Vesper Sparrow							<u>;                                    </u>			<u> </u>			<u> </u>						<u> </u>			S		G5	S4B		N
Passerellidae	Spizella passerina	Chipping Sparrow							<u>.                                    </u>	S					<u> </u>	S				S				S		G5	S5B,S3N		N
Passerellidae	Spizella pusilla	Field Sparrow													S			S						S		G5	S4B,S3N		N
Passeridae	Passer domesticus	House Sparrow										S														G5	SNA		N
Picidae	Dryocopus pileatus	Pileated Woodpecker							:															С		G5	S5		N
Sturnidae	Sturnus vulgaris	European Starling	S			S					S	S	S				С						C, X	S		G5	SNA		N
Troglodytidae	Troglodytes aedon	House Wren							<u>:                                    </u>															S		G5	S5B		N
Turdidae	Turdus migratorius	American Robin						S, X					S			S								S		G5	S5		N
Tyrannidae	Empidonax alnorum	Alder Flycatcher																						С		G5	S5B		N
Tyrannidae	Tyrannus tyrannus	Eastern Kingbird	S			S			S			1			1									S		G5	S4B		N
Vireonidae	Vireo gilvus	Warbling Vireo				S		S	:	S	S	S		S										S		G5	S5B		N
Vireonidae	Vireo olivaceus	Red-eyed Vireo							:															S		G5	S5B		N

Visit 1: June 9, 2020, Observer: Scott Tarof, Tempurature 19°C, Cloud Cover 5%, Wind: B1, Precipitation: Nil, Search Time 06:58 to 08:04; Visit 2: June 19, 2020, Observer: Scott Tarof, Tempurature 15°C, Cloud Cover 10%, Wind: B1, Precipitation: Nil, Search Time 06:00 to 06:58; Visit 3: June 26 2020, Observer: Scott Tarof, Tempurature 13°C, Cloud Cover 10%, Wind: B1, Precipitation: Nil, Search Time 06:09 to 07:16

Table 1 (18-396) Page 1 of 1

<sup>&</sup>lt;sup>2</sup> Breeding Bird Evidence Codes: X - Species observed, C - Call heard, FO - Flyover (Species presence); H - Species observed in its breeding season in suitable nesting habitat, S - Singing male (Possible Breeding); P - Pair observed, T - Territorial behaviour, A - Agitated behaviour or anxiety calls of adult, V - Visiting a probably nest site, N - Nest building or excavation of nest hole (Probable Breeding); DD - Distraction display or injury feigning, NU - Used Nest or egg shells, FY - Recently fledged young, AE - Adult leaving or entering nest sites, FS - Adult carrying fecal sac, CF - Adult carrying food for young, NE - Nest containing eggs, NY - Nest with young seen or heard (Confirmed Breeding).

<sup>&</sup>lt;sup>3</sup> Conservation Rankings: From Ontario Ministry of Natural Resources and Forestry, Natural Heritage Information Centre (https://www.ontario.ca/page/natural-heritage-information-centre)

**Table 2: Amphibian Breeding Summary** 

Observer: David d'Entremont, Jason Runtas

			Species								
						Northern					
	Sampling		Wood	Spring	Chorus	Leopard	American	Green	Gray	Pickerel	Nothing
Date	Station(s)*	Start Time	Frog	Peeper	Frog	Frog	Toad	Frog	Treefrog	Frog	Heard
29-Apr-20	1	21:05									X
	2	21:15									X
	3	21:26									X
	4	21:34									X
	5	21:44									X
	Control	20:54		3							
	Control	20:56		3							
26-May-20	1	21:20		3					1-1		
	2	21:55		3			1-1		1-2		
	3	22:00									X
	4	21:40		1-2							
	5	21:29									X
16-Jun-20	1	22:14									X
	2	22:32									X
	3	22:36									X
	4	22:22						_			X
	5	22:16									X

<sup>\*</sup>see mapping

#### **Weather Conditions**

,, camer conditions										
Date	Air Temperature (°C)	Wind (Beaufort/ Direction)	Cloud Cover	Precipitation						
29-Apr-20	15	B2	100%	nil						
26-May-20	23	B1	25%	nil						
16-Jun-20	17	B1	0%	nil						

<sup>&</sup>lt;sup>1</sup> Call Code Levels

0 =none heard

1 = males could be individually counted

2 = calls overlap but numbers could be estimated

3 = overlapping calls, not possible to estimate numbers involved in chorus.

Table 2 Page 1 of 1

 $<sup>*</sup>format: call \ code \ - \ estimated \ \# \ of \ individuals$ 

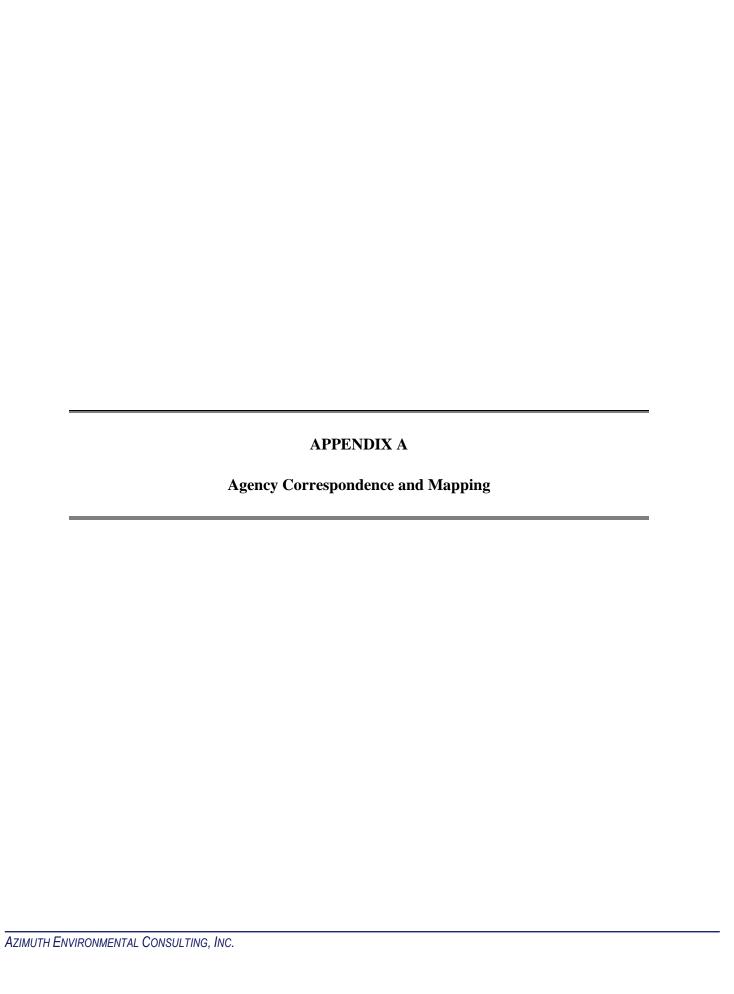
# **APPENDICES**

Appendix A: Agency Correspondence and Mapping

**Appendix B: Photographic Record** 

Appendix C: Provincial and Municipal Background Information

**Appendix D:** Design Alternatives



## **David D'Entremont**

From: Emma Perry [eperry@nvca.on.ca]

Sent: October 2, 2019 3:00 PM
To: David D'Entremont

Subject: RE: Terms of Reference (TOR) - AEC18-396 County Road 53/5 Sideroad Widening EIS

Follow Up Flag: Follow up Flag Status: Flagged

Hi David,

NVCA confirms the scope for the EIS as presented below is accepted. Please feel free to contact me if you have any other concerns along the way.

Best, Emma

# Emma Perry | Planner II

#### **Nottawasaga Valley Conservation Authority**

8195 8<sup>th</sup> Line, Utopia, ON L0M 1T0 **T** 705-424-1479 ext.244 | **F** 705-424-2115 **eperry@nvca.on.ca** | **nvca.on.ca** 

This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender and destroy all copies of the original message.

From: David D'Entremont [mailto:ddentremont@azimuthenvironmental.com]

**Sent:** Monday, September 23, 2019 2:40 PM **To:** Emma Perry eperry@nvca.on.ca>

Subject: Terms of Reference (TOR) - AEC18-396 County Road 53/5 Sideroad Widening EIS

Good afternoon Emma,

Azimuth has been retained to complete an Environmental Impact Study (EIS) to satisfy the requirements for road widening on County Road 53, within the Town of Innisfil (the Town), County of Simcoe (the County). The proposed development includes a widening of County Road 53 to accommodate four (4) lanes, starting at County Road 21 (Innisfil Beach Road) and extending north to the City of Barrie limit (see attached mapping). The exact footprint of development is not known at this time; however it is expected to follow close to the existing Right of Way (ROW).

Based on preliminary desktop review, we have identified one mapped drainage feature (the Lawson Drain, which flows into Thornton Creek) that crosses the road corridor at two separate crossings. The riparian zone of the northwest end of this drainage feature is currently mapped as Woodland, although this riparian zone may potentially include unmapped riparian wetland elements. Woodland is also mapped to thin treed strips following the rail trail south of the casino property. Due to the drainage feature, portions of the study area are within the regulation limit of the Nottawasaga Valley Conservation Authority (NVCA). The lands adjacent to the road corridor appear to be primarily composed of farmland, disturbed meadows, and manicured residential and business lands.

As such, the scope of work would include the following:

- Search the County, Town, NVCA and Ministry of Environment, Conservation, and Parks (MECP) records to obtain background information related to natural heritage conditions including Species at Risk (SAR) in the nearby area;
- · Contact the NVCA and MECP as required, to acquire background data related to natural heritage features associated with the property and adjacent lands;
- · Conduct the following field work in fall 2019 and spring/summer 2020 to document existing natural heritage features, functions, and species within the subject lands. Surveys include:
  - Evaluate/update/map vegetation community types based on Ecological Land Classification methods (Lee et al. 1998. Ecological land classification for southern Ontario: first approximation and its applications.
     SCSS Field Guide FG-02) (fall 2019);
  - o Complete two (2) detailed vascular plant inventories (fall 2019 and spring 2020);
  - Conduct two (2) evening amphibian breeding habitat screenings (April and May 2020);
  - o Conduct three (3) dawn breeding bird surveys (June 2020);
  - Complete two (2) field visits to characterize aquatic features and potential fish habitat during high flow conditions and baseline conditions (fall 2019 and early spring 2020);
  - o Screen for existing or potential significant wildlife habitat; and,
  - o Record all incidental wildlife observations and assess wildlife habitat function.
- Complete a SAR habitat assessment using field data collected by Azimuth staff during the field surveys and other data available and/or provided by agencies to confirm environmental constraints, and approval requirements under the ESA. Should subsequent species-specific presence/absence surveys be required by the regulatory agencies, related studies will be undertaken as part of a revised scope;
- · Assess the potential direct, and indirect ecological impacts of the proposed road widening on the sensitive or significant environmental features as described above;
- Prepare an Environmental Impact Study (EIS) Report. The EIS will describe the existing conditions, provide relevant mapping and include information on impact mitigation/avoidance/restoration to address major environmental concerns identified above; and,
- · Assess conformity with all applicable legislation and policies.

We would also like to take this opportunity to request any available natural heritage background information and fisheries/water quality sampling data from the NVCA that may be helpful in completing the EIS.

Please feel free to contact us if you would like to discuss any aspects of the project.

Kind regards,

David

# David d'Entremont Terrestrial Ecologist

Azimuth Environmental Consulting, Inc 642 Welham Road Barrie, ON, L4N 9A1 ph: (705) 721-8451 ext 214

cell: (705) 309-1147

ddentremont@azimuthenvironmental.com

www.azimuthenvironmental.com

# **David D'Entremont**

From: Species at Risk (MECP) [SAROntario@ontario.ca]

**Sent:** September 23, 2019 2:12 PM

To: David D'Entremont

Subject: Automatic reply: MECP Information Request - AEC18-396 County Road 53/5 Sideroad

Widening

Thank you for your inquiry to the Permissions and Compliance team, Species at Risk Branch, Ministry of the Environment, Conservations and Parks.

#### What's New?

The Ministry of the Environment, Conservations and Parks (MECP) has responsibility for the
administration of the Ontario Endangered Species Act (ESA). In MECP, work associated with
ESA authorizations has been centralized from Ministry of Natural Resources and Forestry
district offices into one, newly formed Permissions and Compliance team within the new
Species at Risk Branch in MECP.

#### What Next?

- Your email is being reviewed by branch staff to determine the nature of your inquiry or submission. Your inquiry or submission will then be actioned to someone from our team for follow up as required.
- We strive to follow up with a response to your inquiry within 15 business days to confirm that your submission has been actioned out and to provide contact information.

# Do you think you may need an ESA permit or authorization?

- Please visit https://www.ontario.ca/page/species-risk to learn more about protecting and recovering species at risk, then navigate to the Resources and Permits section, including Register or Get a Permit for more information about permits and authorizations under the ESA.
- You only need an authorization under the ESA (e.g. a permit or other type of authorization) if your work is going to contravene the ESA (e.g. if the activity you are proposing is going to kill, harm or harass a species at risk or damage or destroy their habitat). If you are able to undertake your work in a manner that does not contravene the ESA, that is what we call "avoidance" of impacts to species at risk or their habitat and it is the ideal scenario for clients and the species the species aren't adversely impacted, and you don't need an authorization.

# Do you want to know if any species at risk are at, or near, your project site? Do you need help determining if you need an ESA permit or authorization?

• We have developed a guide to help clients work through the preliminary screening process, including providing advice to clients on how they can gather information you have requested from publicly available information sources. The guide provides advice on how you can determine if any species at risk are likely to exist at your site. If you are seeking information regarding species at risk likely to occur at or near your site, please send an email to <a href="mailto:sarontario@ontario.ca">sarontario@ontario.ca</a> and include "request for preliminary screening guide" in the subject line. To provide the most efficient service, it is recommended clients read this guide and explore applicable information sources prior to contacting <a href="mailto:sarontario@ontario.ca">sarontario@ontario.ca</a> to begin discussions with the Permissions and Compliance team about your proposed project.

# Do you want to report a suspected violation of the ESA?

 Please call the MECP Tips/Pollution Hotline at 1-866-663-8477 and provide the details requested. Someone may follow up with you directly to request additional information. We may not be able to follow up with you to provide you an update on the status of your tip as the status of any ongoing inspections or investigations is confidential until resolved.

We also receive a high volume of inquiries related to Butternut (an endangered tree) to this email address. The following information can assist you if you have some of the more common questions regarding the ESA and impacts to Butternut.

# Do you think you may need an ESA permit or authorization to cut down a Butternut tree?

- If a Butternut tree has been identified, a Butternut Health Assessment will need to be completed to assess the health of the tree in accordance with the document titled <u>Butternut Assessment Guidelines</u>: <u>Assessment of Butternut Tree Health for the Purposes of the Endangered Species Act</u>, 2007. This will determine if the tree is Category 1, 2 or 3.
- Please note that Section 4.2 (Timing of Assessment) on page 10 of the Butternut Assessment Guidelines states that "A complete and accurate assessment of a Butternut tree can only be conducted during the leaf-on season." It also notes that "For the purposes of the ESA, an assessment will be considered to have been conducted during the leaf-on season if it was conducted between the dates of May 15 and August 31." For this reason, a Butternut Health Assessment should not be conducted until May 15 in order to get an accurate assessment of the live crown.
- Once A Butternut Health Assessment has been completed and submitted to the Ministry for at least 30 days, ESA requirements can be identified as per below:
- If a BHA identifies a tree as a hybrid, no authorization under the ESA is required to remove the tree, as it is not a pure Butternut and not protected under the ESA.
- If a BHA identifies a tree as a Category 1, no authorization under the ESA is required to remove the tree, as it affected by Butternut canker (a fungal disease) to such an advanced degree that retaining the tree would not support the protection or recovery of Butternuts in the area
- If a BHA identifies a tree as a Category 2, Registration under <u>section 23.7 of the Ontario</u> Regulation 242/08 is likely feasible so long as all requirements of the Regulation are met.
- If a BHA identifies a tree as a Category 3, then a <a href="17(2)(c) Permit">17(2)(c) Permit</a> is likely required.

# Are you submitting a Butternut health assessment?

Please submit your Butternut Health Assessment Forms to at <a href="mailto:sarontario@ontario.ca">sarontario@ontario.ca</a>. In the subject line, clearly indicate that the email contains a BHA and the municipality within which the BHA was conducted. Once received, the submission will be triaged and actioned.

# Did you recently see a species at risk?

• Please visit https://www.ontario.ca/page/report-rare-species-animals-and-plants for information on how to report a species at risk sighting.

## Would you like to learn more about species at risk and the ESA and its related policies?

Please visit https://www.ontario.ca/page/species-risk.

- Policies under the ESA, ministry-endorsed survey protocols and a number of bestmanagement practices related to how you can avoid or minimize impacts to species at risk can be found online at https://www.ontario.ca/page/species-risk-guides-and-resources.
- General inquires related to the ESA or species at risk can be directed to <a href="mailto:esa-sarinquiries@ontario.ca">esa-sarinquiries@ontario.ca</a>

# **David D'Entremont**

From: David D'Entremont

Sent: September 23, 2019 2:11 PM To: 'SAROntario@ontario.ca'

Subject: MECP Information Request - AEC18-396 County Road 53/5 Sideroad Widening

Attachments: 18-396 MECP Species at Risk Information Request\_Issued\_190923.pdf

Good afternoon,

Please find attached our request for Species at Risk (SAR) and background information related to the proposed widening of County Road 53/5 Sideroad, from County Road 21/Innisfil Beach Road north to the City of Barrie Limit, in the Town of Innisfil.

If you have any questions or concerns, please do not hesitate to contact me.

Best regards,

# David d'Entremont

**Terrestrial Ecologist** 

Azimuth Environmental Consulting, Inc 642 Welham Road Barrie, ON, L4N 9A1 ph: (705) 721-8451 ext 214

cell: (705) 309-1147

ddentremont@azimuthenvironmental.com

www.azimuthenvironmental.com

Providing services in hydrogeology, terrestrial and aquatic ecology & environmental engineering

Please consider the environment before printing this correspondence

# Midhurst District MNRF Information Request Form



Name:				
Company Name:				
Email Address:				
Phone Number:				
Project Name:				
Property Address:				
Township/Municipality:				
Lot & Concession:				
UTM Coordinates: (NAD83)		Easting (X)		Northing (Y)
Project Description:				
Project Type:	Planning Act	Aggregates Resource	es Act   Enviro	onmental Assessment Act
	Other			
Have you previously cont	acted someone	e at MNRF for information or	n this site? Yes	No 🗀
If yes, when and	who?			
your initial screening. Ple reasonable to expect cou	ease include a l uld be present	list of features/ habitats on a based on the available habit	site and summary ats. Available MNI	on and attach a summary of of the species at risk that are RF species at risk, fisheries and Ontario, and Species at Risk-
Please indicate in the bo	x below, any a	dditional information requir	ed.	



# MECP Information Request Form Attachment

# Initial Screening-SAR

Date: September 23, 2019 Project Ref: AEC 18-396

Azimuth Contact: David d'Entremont, Terrestrial Ecologist

Email ddentremont@azimuthenvironmental.com

Phone 705 721-8451 x 214

**Attachments:** Environmental Features Map (preliminary)

Natural Features Map (NHIC)

Project Name: 18-396 County Road 53/5 Sideroad Widening

**Activity Description:** Proposed road widening – Schedule "C" Municipal Class Environmental Assessment

**Subject Lands:** Town of Innisfil, County of Simcoe – County Road 53/5 Sideroad, from County Road 21/Innisfil Beach Road north to the City of Barrie Limit – *see attached mapping* 

# Comprehensive SAR List/Initial Screening Based on On-line and Other Sources<sup>1</sup>:

- Mammals: Little Brown Myotis (END), Northern Long-eared Myotis (END) and Tri-colored Bat (END);
- Reptiles and Amphibians: Snapping Turtle (SC);
- Birds: Bank Swallow (THR), Barn Swallow (THR), Bobolink (THR), Eastern Meadowlark (THR), Eastern Wood-pewee (SC), Grasshopper Sparrow (SC), Olive-sided Flycatcher (SC), Red-headed Woodpecker (SC) and Wood Thrush (SC);
- Plants: Butternut (END); and
- Insects: Monarch Butterfly (SC).

<sup>1</sup>On-line and other sources: Species at Risk Ontario (<a href="https://www.ontario.ca/environment-and-energy/species-risk-ontario-list">https://www.ontario.ca/environment-and-energy/species-risk-ontario-list</a>); Land Information Ontario (<a href="https://www.ontario.ca/page/land-information-ontario">https://www.ontario.ca/page/land-information-ontario</a>); Make a Natural Heritage Map - Natural Heritage Information Centre (Squares 17PK0213, 17PK0314, 17PK0413)



(http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR\_NHLUPS\_NaturalHeritage&viewer=NaturalHeritage&locale=en-US); Ontario Breeding Bird Atlas (Square

17PK01)(http://www.birdsontario.org/atlas/maps.jsp?lang=en); Ontario Reptile and Amphibian Atlas (Square 17PK01) (https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas/), eBird (https://ebird.org/explore); Fisheries and Oceans Canada (http://www.dfo-mpo.gc.ca/species-especes/index-eng.htm); Fish Online

(https://www.gisapplication.lrc.gov.on.ca/FishONLine/Index.html?site=FishONLine&viewer=FishONLine&view

## List of Features/Habitats on and Adjacent to Proposed Activity:

- Subject lands are primarily road and disturbed roadside areas, with the majority of adjacent land coverage maintained as agricultural land, with some manicured private lands and likely some meadow area (*see attached mapping*);
- Wetland no wetland has been mapped on background sources within the study area, however potential for riparian wetland is possible where drainage feature crosses road;
- Woodland mapped woodland is associated with riparian zone of the north watercourse crossing (west of the road), and along the rail trail south of the casino property (these to be confirmed);
- Watercourse/fish habitat<sup>2</sup> Lawson Drain (permanent, coldwater system with sensitive species that include Brook Trout and Rainbow Trout; class 'D' municipal drain). This feature crosses County Road 53 at two (2) locations in the study area.

# Consolidated SAR List Expected in Area Based on Habitat<sup>3</sup>:

- Mammals: Little Brown Myotis (END), Northern Long-eared Myotis (END) and Tri-colored Bat (END);
- Birds: Barn Swallow (THR), Bobolink (THR), and Eastern Meadowlark (THR);
- Plants: Butternut (END); and
- Insects: Monarch Butterfly (SC).

## **Information Requested:**

 Confirmation that the Consolidated List of SAR expected in the Area Based on Habitat includes all SAR of concern to the MECP with respect to this activity; or

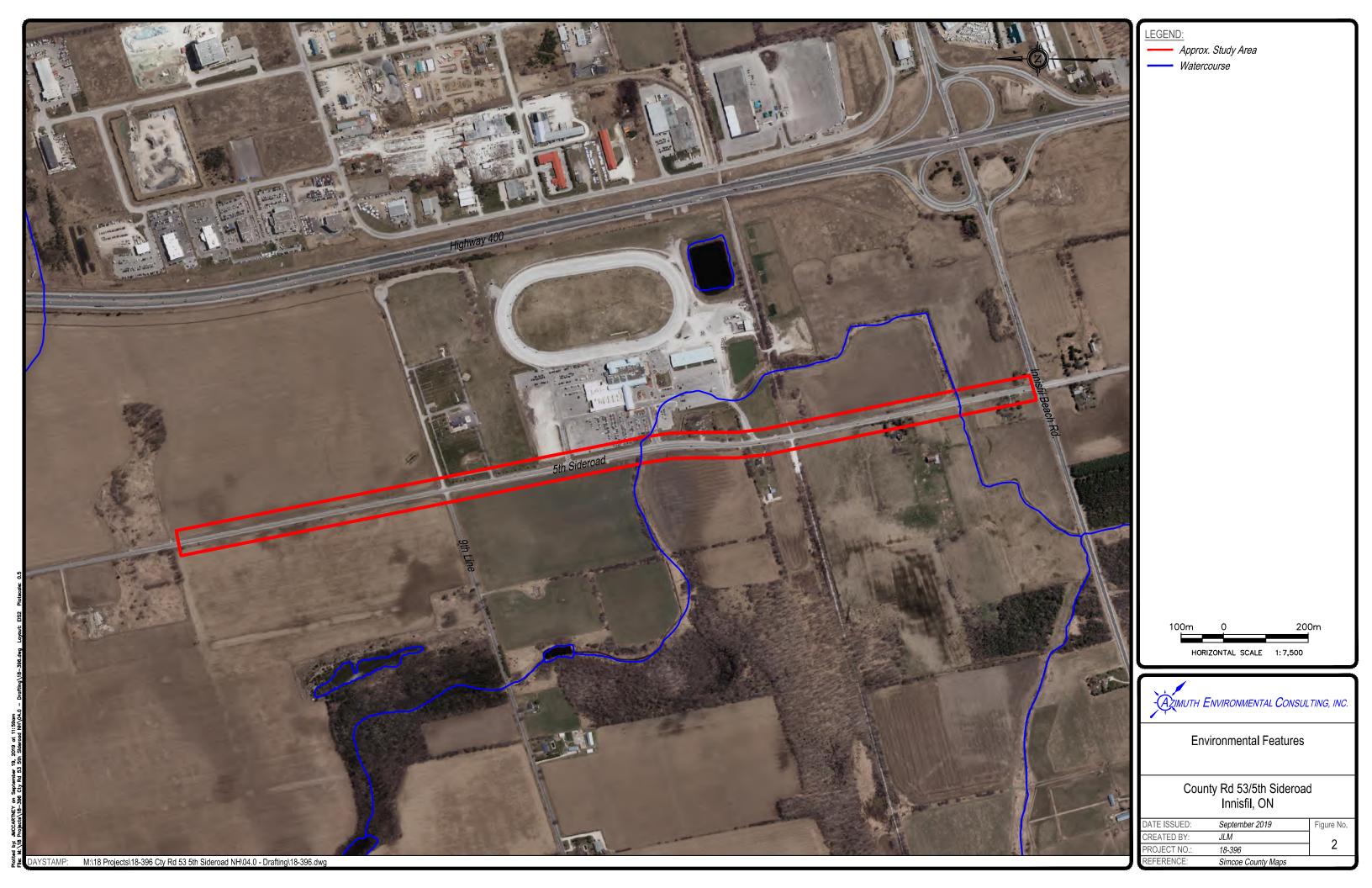
<sup>&</sup>lt;sup>2</sup>Online sources: Land Information Ontario - Aquatic Resource Area (https://www.ontario.ca/page/land-information-ontario); Ontario AgMaps (https://www.gisapplication.lrc.gov.on.ca/AIA/index.html?viewer = AIA.AIA&locale=en-US)

<sup>&</sup>lt;sup>3</sup>List of SAR to be assessed relative to the activity/proposed development.



• Provision of additional information related to SAR of concern to the MECP with respect to the activity/proposed development<sup>3</sup>.

<sup>3</sup>If SAR of concern are deemed "Restricted", Azimuth will protect the species identity within reporting that would become part of the public record.



# Natural Features Map

Notes: Blue polygon indicates approximate study area.



© Queen's Printer for Ontario, 2014

to navigation. The Ontario Ministry of Natural Resources and Forestry(OMNRF) shall not be

liable in any way for the use of, or reliance upon, this map or any information on this map.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide Imagery Copyright Notices: DRAPE @ Aéro-Photo (1961) Inc., 2008 - 2009 GTA 2005 / SWOOP 2006 / Simcoe-Muskoka-Dufferin © FirstBase Solutions, 2005 / 2006 / 2008

> © Copyright for Ontario Parcel data is held by Queen's Printer for Ontario and its licensors [2013] and may not be reproduced without permission. THIS IS NOT A PLAN OF SURVEY.



# Michael Gillespie

From: Shirley, Brent (MNRF) [brent.shirley@ontario.ca]

Sent: Friday, November 22, 2019 4:03 PM

To: Michael Gillespie

Subject: RE: County Road 53/ 5 Sideroad (Innisfil) Road Widening - Fisheries Timing Window

Confirmation

Hi Mike,

I agree with your assessment of the Lawson Drain, being both intermittent and not having suitable habitat for fall coldwater spawning species. I would apply the no in-water work timing window of March 15- July 15 to cover off all the potential spring spawning fish species. Based on the known downstream fall spawning fish species, in the reach that is not intermittent, please do employ all mitigation measures and BMP's for the protection of fish and fish habitat.

If you have any questions or concerns please don't hesitate contacting me at any time.

Best Regards,

Brent Shirley

A/ Management Biologist I Midhurst District Ministry of Natural Resources & Forestry I 2284 Nursery Rd I Midhurst, ON I L9X 1N8 I Phone 705-725-7547 I Fax- 705-725-7584

Please Note: As of July 2, 2019, I will no longer have voicemail services with my office phoneline. My phone line has been re-directed to Shannon Lawless for messaging; however should I miss your call you can email me directly or send your questions ot request to <a href="midhurstinfo@ontario.ca">midhurstinfo@ontario.ca</a> where your inquiry will be forwarded back to me or re-directed towards another staff member.

From: Michael Gillespie <mgillespie@azimuthenvironmental.com>

**Sent:** November-22-19 11:29 AM

To: MIDHURSTINFO (MNRF) < MIDHURSTINFO@ontario.ca>

Subject: County Road 53/5 Sideroad (Innisfil) Road Widening - Fisheries Timing Window Confirmation

#### CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

To whom it may concern,

The County of Simcoe is undertaking a Schedule "C" Municipal Class Environmental Assessment for the proposed widening of a section of County Road 53 (5 Sideroad) in the Town of Innisfil. This section is approximately 2.1km in length, extending from County Road 21 (Innisfil Beach Road) north to the City of Barrie limit (by 9<sup>th</sup> Line; Figure 1). Azimuth has been retained to evaluate natural heritage features and functions within the area of the proposed widening. A watercourse known as the Lawson Drain crosses County Road 53 in two locations within the study area (Figure 2; coordinates included below). In order to help identify timing constraints for the project, and to assist in project planning, Azimuth is seeking to confirm the restricted timing window that would apply to future in-water work within that watercourse.

Current municipal drainage mapping (AgMaps, 2019) shows that the Lawson Drain is a Type "D" drain, indicating a permanently flowing system with fall spawning fish species. However, a visit on October 9, 2019 confirmed that there

was no water at the north culvert crossing, and the channel at the southern crossing was dry except for small isolated pools by the CSP inlet and outlet. More water (0.18m average water depth, no visible flow) was present downstream (outside of the study area) where the drain receives water from the south side of Innisfil Beach Road. No groundwater indicators were observed at Innisfil Beach Road, or within the study area, and all assessed areas of the drain were choked with cattails. In addition to the largely dry conditions within the study area, no suitable substrate for fall-spawning species was observed.

Azimuth also worked in the study area for past projects (in 2009 and 2014), with all background sources at that time indicating that section of the Lawson Drain is intermittent (and a "F" type drain). Field observation confirmed this. The Lawson Drain does indeed flow into coldwater habitat in the form of Thornton Creek (a tributary of the Nottawasaga River) downstream; however, based on the observed lack of flows in the fall, Azimuth is of the opinion that a coldwater timing window is not appropriate for the study area. As a result, a restricted in-water timing window of March 15 to June 15 is recommended. We are seeking MNRF confirmation that this is appropriate, given site conditions. In-water work will employ all mitigation measures and BMP's for the protection of fish and fish habitat.

Thank you in advance for your help, and please don't hesitate to contact me if additional information is needed.

Regards,

Mike Gillespie, B.Sc.Env., Fisheries Ecologist

Azimuth Environmental Consulting, Inc 642 Welham Road Barrie, ON L4N 9A1

Phone: (705) 721 - 8451 ext. 203

Fax: (705) 721 - 8926

www.azimuthenvironmental.com

Providing services in hydrogeology, terrestrial and aquatic ecology & environmental engineering



# **Property Screening Report**

09-Jan-2023

# Information Resources for Regulated Properties

Do I need a permit? Submit a Property Inquiry Google Driving Directions Info Regarding Covid-19

Email the Regulations Department permits@nvca.on.ca

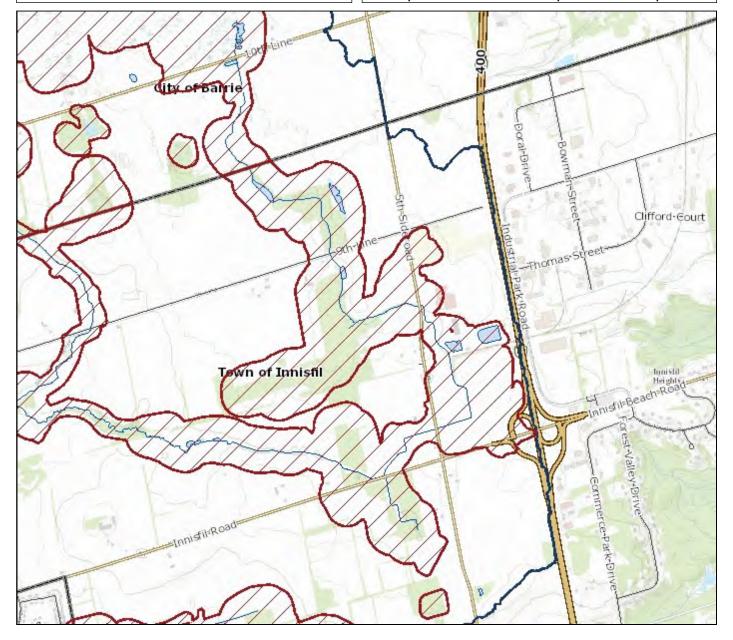
# **NVCA Contact Information**

(705) 424-1479 8195 8th Line, Utopia, ON LOM 1T0

www.nvca.on.ca

Monday to Friday 8:30 a.m. to 4:30 p.m.

except between 12:00 p.m. - 1:00 p.m.



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of the information displayed in this map product are strongly cautioned to verify all information before making any decisions. Produced by Nottawasaga Valley Conservation Authority under license with the MNRF. Reproduction of this map is prohibited without written permission from the Nottawasaga Valley Conservation Authority. © NVCA and Queen's Printer for Ontario, 2020.





**Photograph 1:** Cattails in the Lawson Drain to the west of the south crossing of County Road 53 (October 9, 2019).



**Photograph 2:** Lawson Drain and adjacent agricultural fields to the west of the south crossing of County Road 53 (March 25, 2020).



**Photograph 3**: View of THDM4-1 and Lawson Drain to the east of the south crossing of County Road 53 (March 25, 2020).



**Photograph 4:** Open agriculture field and MEMM3 along west side of County Road 53, north of the southern Lawson Drain (facing northwest; September 25, 2020).



**Photograph 5:** View of deciduous trees associated with ML on west side of County Road 53 south of Gateway Casinos (facing north; September 25, 2019).



**Photograph 6:** View of FODM5-11 community associated with Historic Railway Trail west of study area (September 25, 2019).



**Photograph 7:** CUH1-A community composition on east side of County Road 53 (facing east; September 30, 2022).



**Photograph 8:** View of open agricultural field adjacent (northwest) to the north Lawson Drain Crossing (facing west; November 14, 2022).



**Photograph 9:** North CSP culvert crossing of County Road 53 (conveying the Lawson Drain) within the Study Area (facing east at culvert inlet; October 9, 2019).



**Photograph 10:** Cattails in the Lawson Drain to the southeast of the north crossing of County Road 53 (October 9, 2019).





**Photograph 11:** North CSP culvert crossing of County Road 53 (conveying the Lawson Drain) within the Study Area (facing west at culvert outlet; March 25, 2020).



**Photograph 12:** The THDM5 and north CSP culvert crossing of County Road 53 (conveying the Lawson Drain) within the Study Area (facing west at culvert inlet; March 25, 2020).

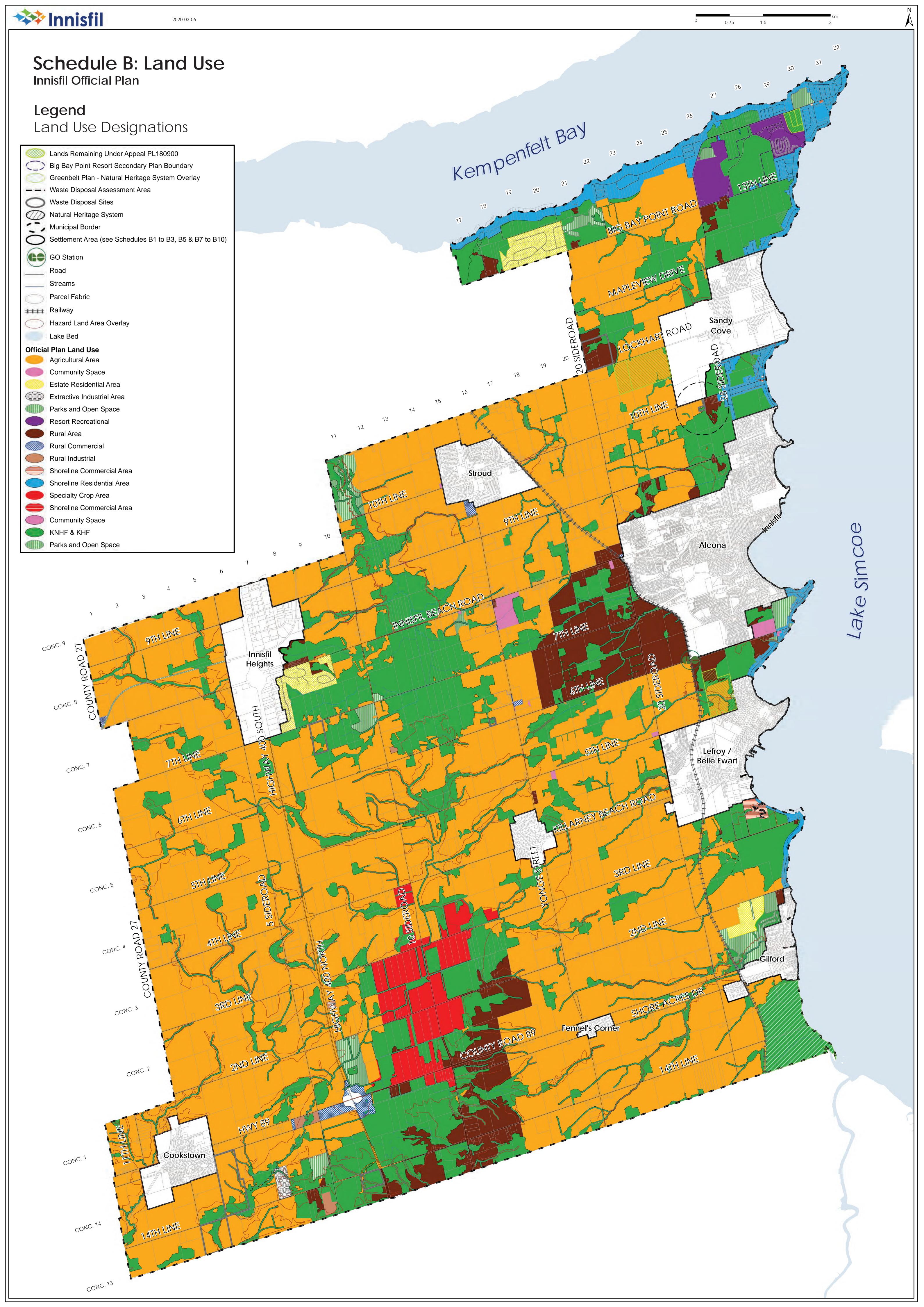


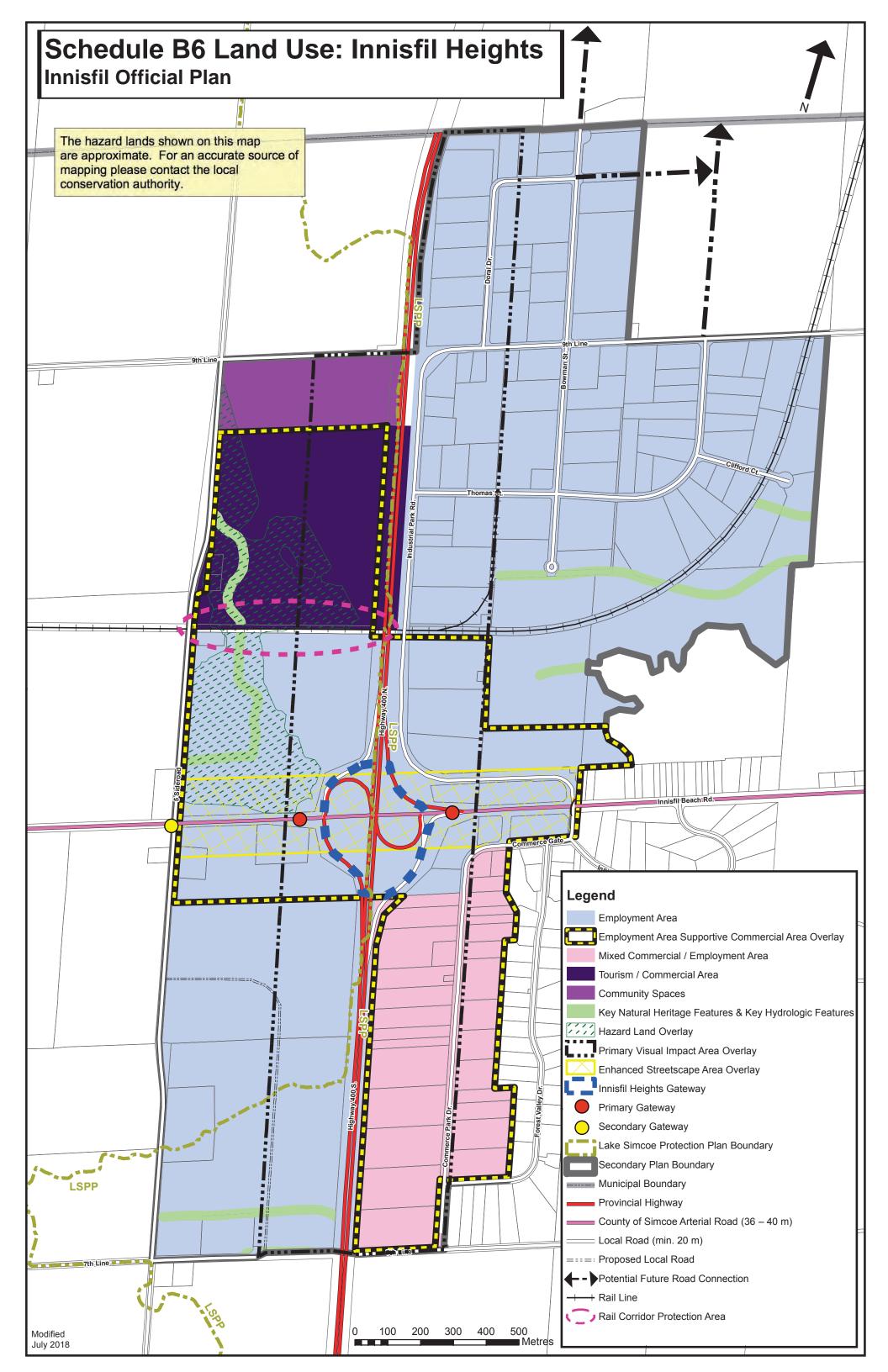
**Photograph 13:** Open agricultural field and MEMM3 vegetation community on west side of County Road 53 across from the Gateway Casino (facing north; September 25, 2019).

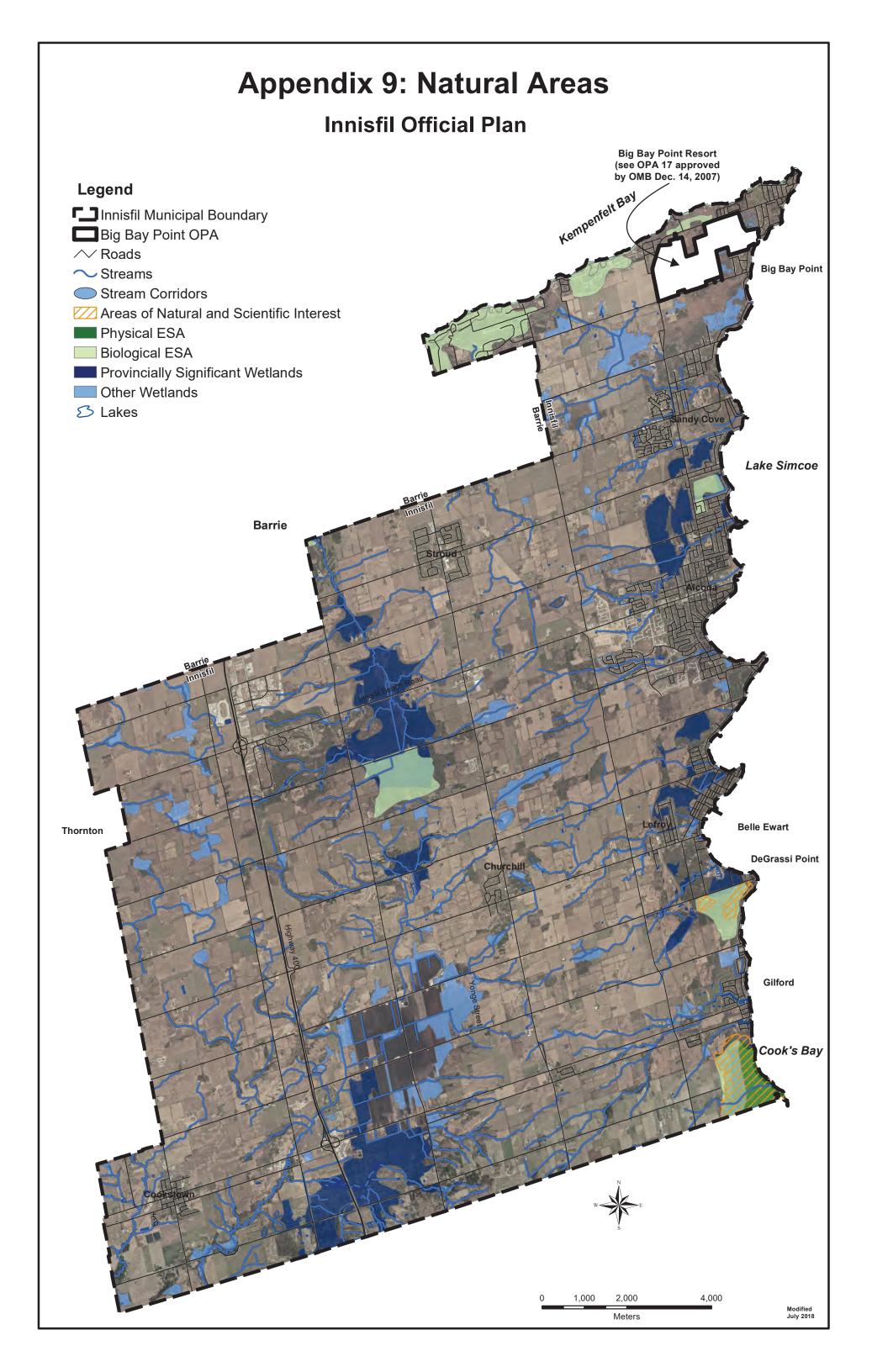


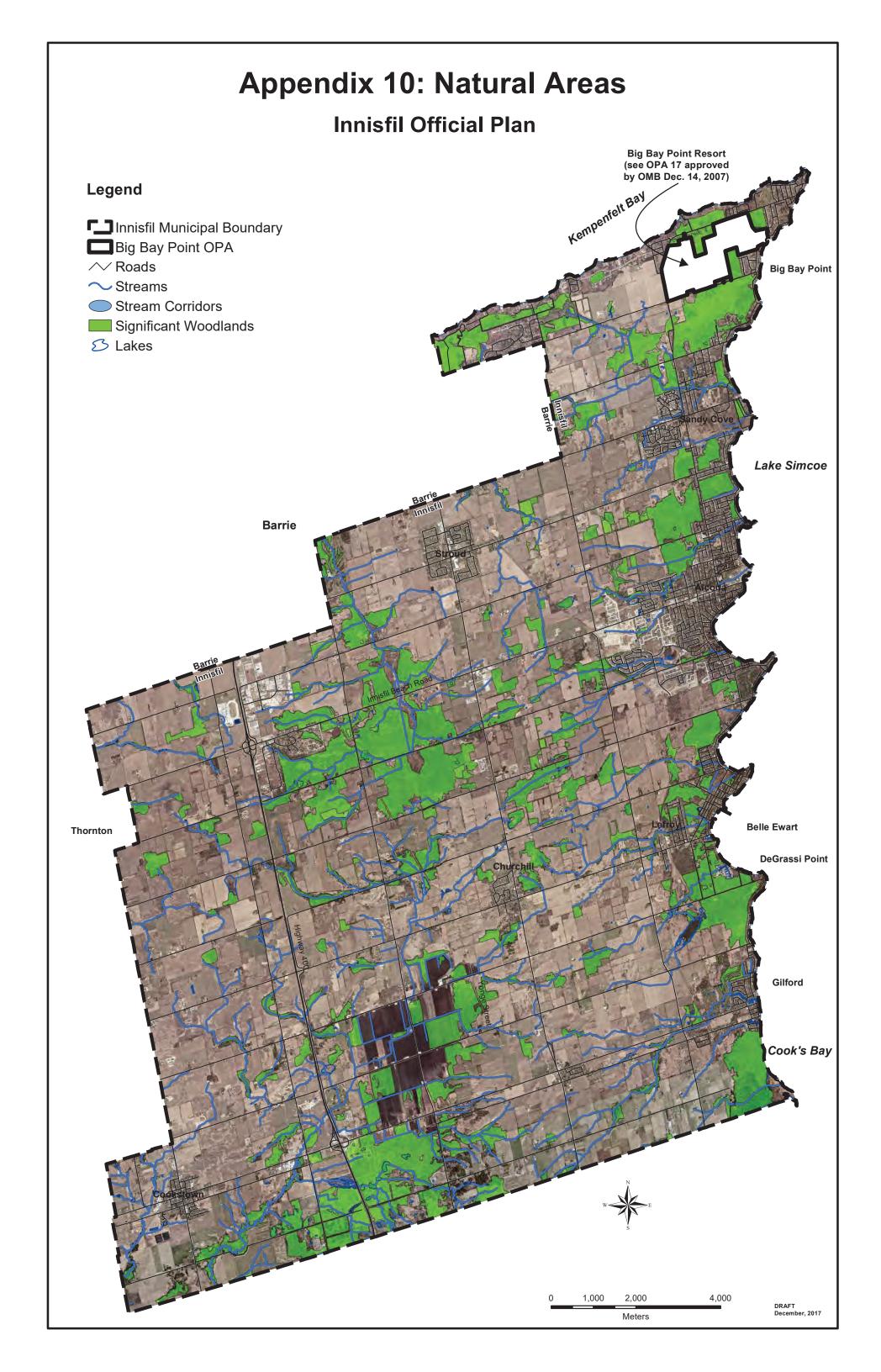
**Photograph 14:** Fallow field within the construction area located at the northwest corner of the study area (facing west; November 14, 2022).

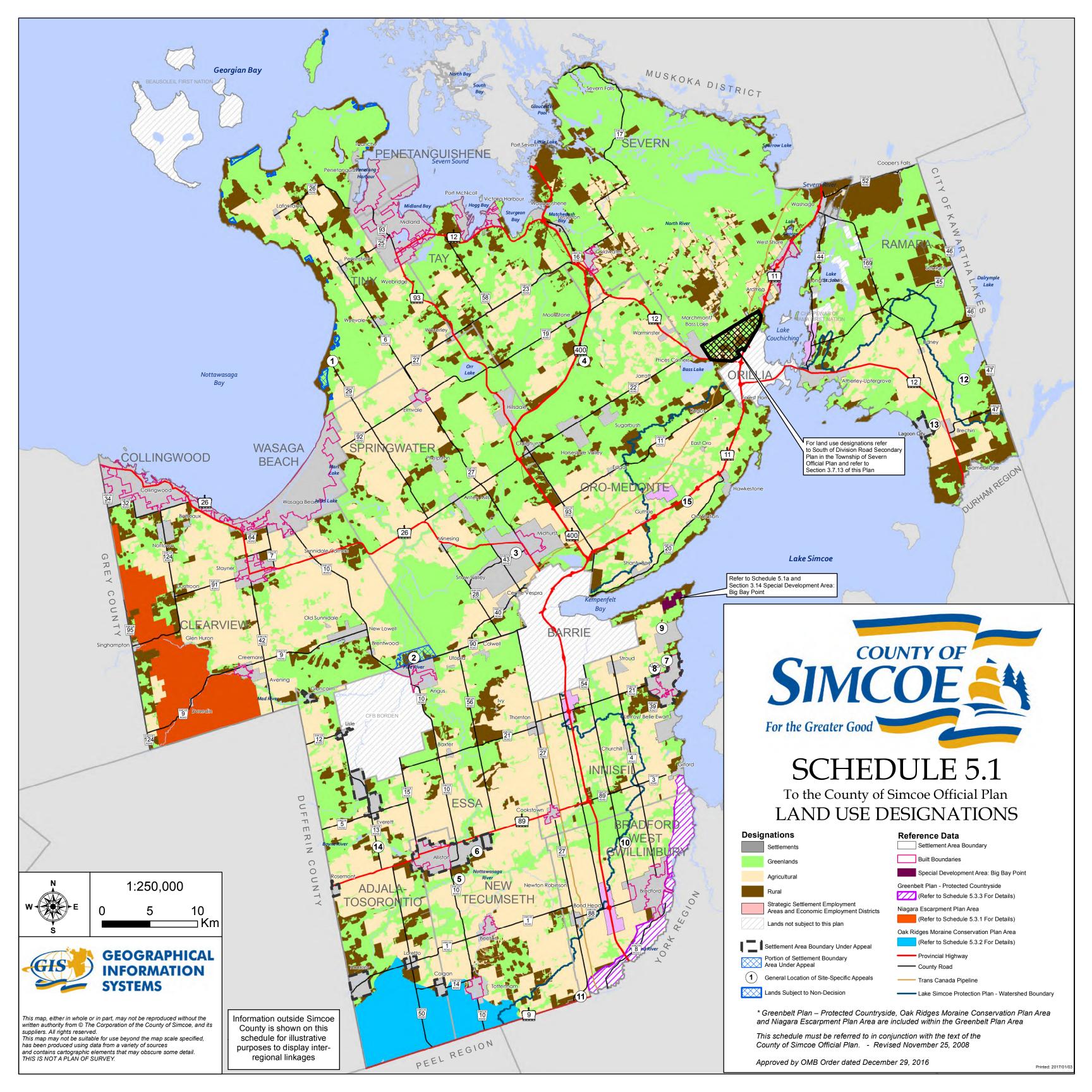


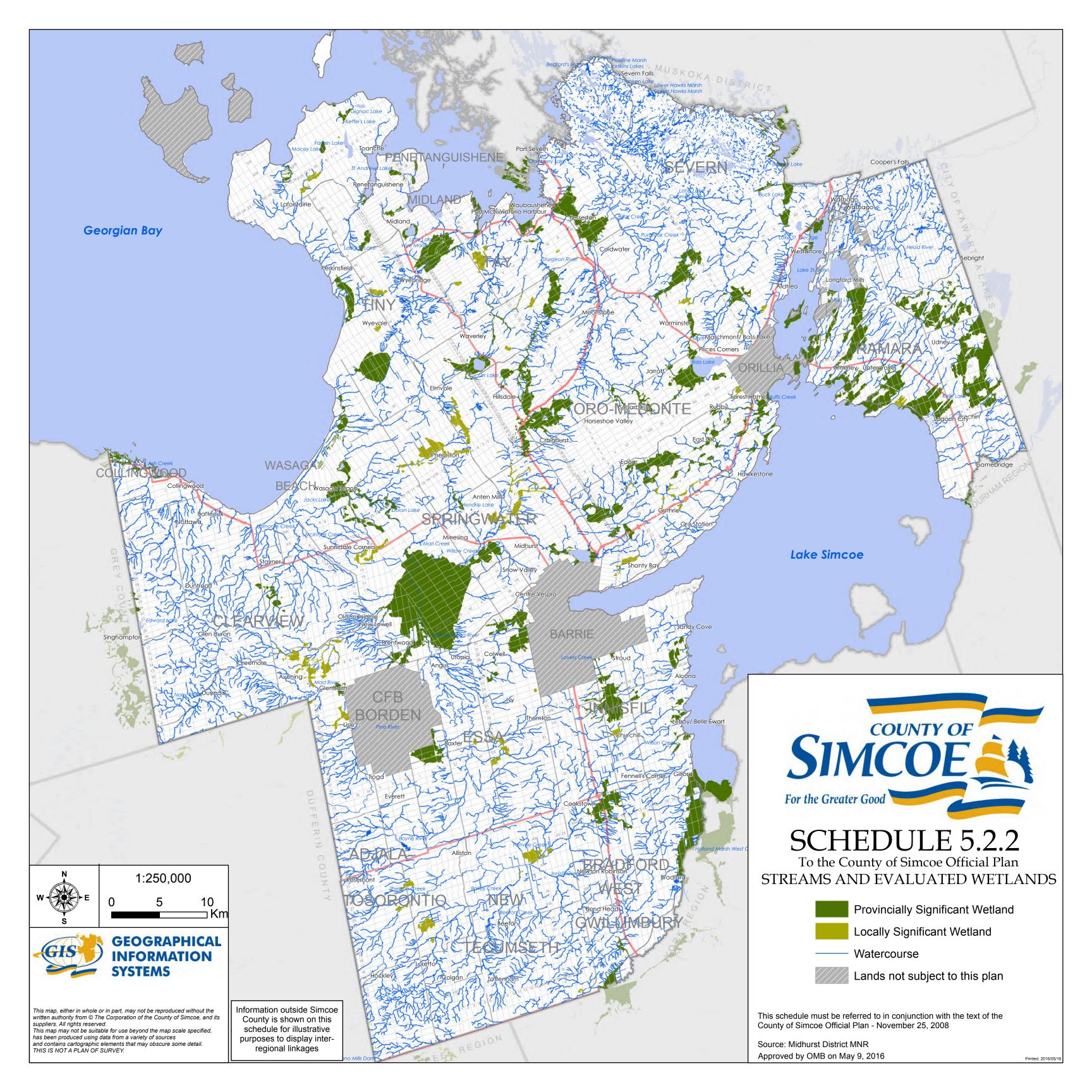


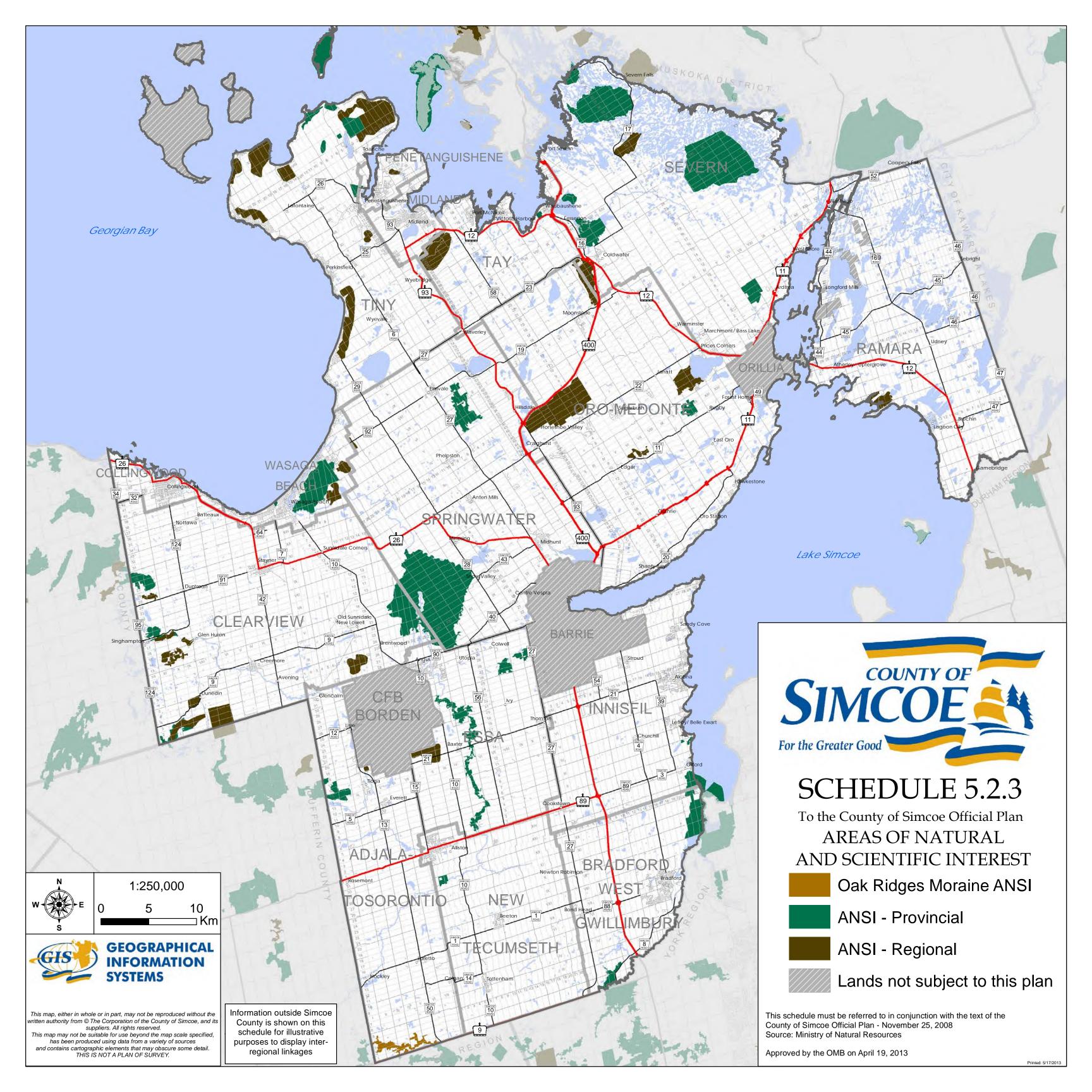












© Queen's Printer for Ontario, 2014

# **Natural Heritage Features**

Notes: Red polygon indicates approximate extent of Study

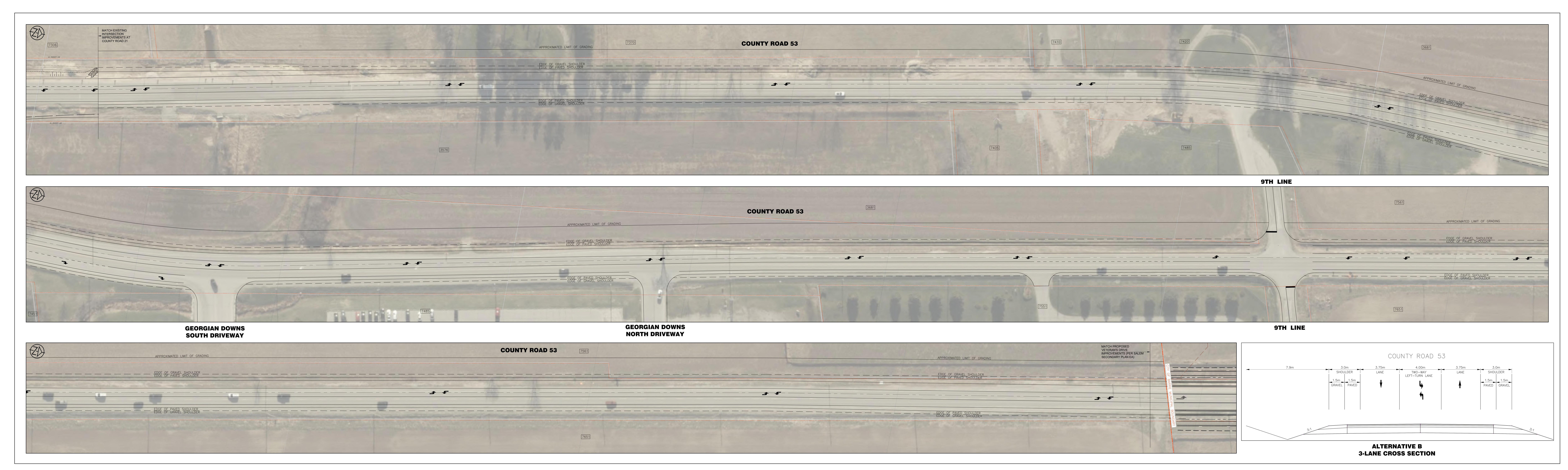
NE

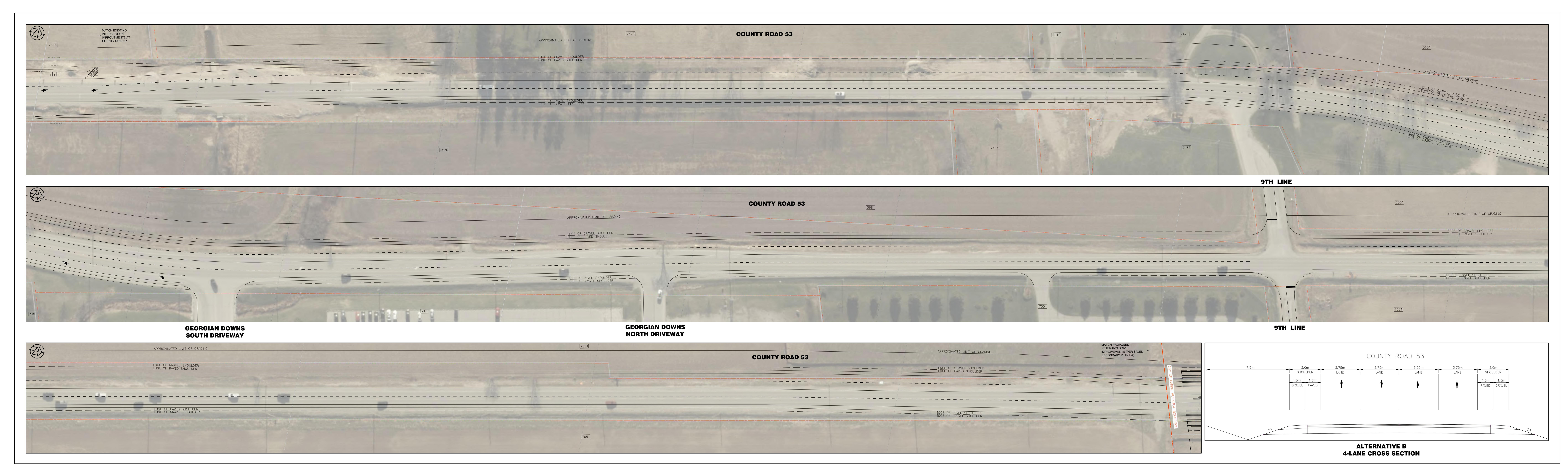


and may not be reproduced without permission. THIS IS NOT A PLAN OF SURVEY.









Appendix D: Archaeological Assessment

#### Ministry of Citizenship and Multiculturalism (MCM)

Archaeology Program Unit Heritage Branch Citizenship, Inclusion and Heritage Division 5th Floor, 400 University Ave. Toronto ON M7A 2R9 Tel.: (519) 671-7742

Email: Shari.Prowse@ontario.ca

Ministère des Affaires civiques et du Multiculturalisme (MCM)

Unité des programme d'archéologie Division de la citoyenneté, de l'inclusion et du patrimoine

5e étage, 400 ave. University Toronto ON M7A 2R9 Tél.: (519) 671-7742

Direction du patrimoine

Email: Shari.Prowse@ontario.ca

Jan 10, 2023

Ian Boyce (P1059) Archeoworks Inc. 1029 - 16715-12 Yonge Newmarket ON L3X 1X4

Review and Entry into the Ontario Public Register of Archaeological Reports: RE: Archaeological Assessment Report Entitled, "Stage 1 Archaeological Assessment for the Proposed Road Widening and Improvements of County Road 53 (5th Sideroad) From Innisfil Beach Road to the City of Barrie Municipal Limits Within Part of Lots 5-6, Concession 8-9 and the Road Allowance between Concession 8 and 9 Geographic Township of Innisfil Former County of Simcoe Now the Town of Innisfil County of Simcoe Ontario", Dated Nov 2, 2020, Filed with MCM Toronto Office on Nov 25, 2020, MCM Project Information Form Number P1059-0055-2019, MCM File Number 0011754

Dear Mr. Boyce:

This office has reviewed the above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. This review has been carried out in order to determine whether the licensed professional consultant archaeologist has met the terms and conditions of their licence, that the licensee assessed the property and documented archaeological resources using a process that accords with the 2011 Standards and Guidelines for Consultant Archaeologists set by the ministry, and that the archaeological fieldwork and report recommendations are consistent with the conservation, protection and preservation of the cultural heritage of Ontario.

The report documents the Stage 1 assessment of the study area as depicted in Maps 10-14 of the above titled report and recommends the following:

- 1. With previous assessments by This Land Archaeology Inc. (2016) and York North Archaeological Services Inc. (2013), having fulfilled the Stage 1 and 2 AA requirements within their respective portions of the current study corridor, it is recommended that these areas be exempt from further assessment within the scope of this project.
- 2. As per the Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 no intrusive activity may occur within the Innisvale Cemetery and Crematorium, located at 7551 5th Sideroad, without consent from the Bereavement Authority of Ontario.
- a. Should the area within the current cemetery limits be impacted, additional archaeological investigation

consisting of Stage 2 test pit survey followed by Stage 3 mechanical topsoil removal is required. An Investigation Order issued by the Bereavement Authority of Ontario is also required and needs to be obtained prior to conducting any soil-intrusive work (i.e.: Stage 2/3/4 investigations; construction monitoring).

- 3. Given the late establishment of the Innisvale Cemetery and Crematorium (1983) and the known pattern of burial distribution (from communications with the General Manager at the Innisvale Cemetery and Crematorium and as documented in historical aerial photographs, orthophotographs and satellite images), there is no risk of incidental impacts to unmarked burials within portions of the study corridor that fall adjacent to (i.e.: within the 20-metre cemetery investigation area) the Innisvale Cemetery and Crematorium. Therefore, lands within the 20-metre cemetery investigation area surrounding the Innisvale Cemetery and Crematorium that were identified as having low potential for unmarked burials are considered free of further cemetery investigations.
- 4. Parts of the study corridor that were identified as having no or low archaeological potential are exempt from requiring Stage 2 AA; extents of these areas to be confirmed during the Stage 2 AA.
- 5. All parts of the study corridor which retain archaeological potential must be subjected to a Stage 2 AA. These areas must be subjected to pedestrian or test pit survey at five-metre intervals in accordance with the standards set within Sections 2.1.1 and 2.1.2 of the 2011 S&G.
- 6. Should construction activities extend beyond the assessed limits of the study corridor, further archaeological investigation will be required to assess the archaeological potential of these lands.

Based on the information contained in the report, the ministry is satisfied that the fieldwork and reporting for the archaeological assessment are consistent with the ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences. This report has been entered into the Ontario Public Register of Archaeological Reports. Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,

Shari Prowse Archaeology Review Officer

cc. Archaeology Licensing Officer
David Perks, C.C. Tatham & Associates Ltd.
Julie Scruton, Simcoe County

<sup>&</sup>lt;sup>1</sup>In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.

# ARCHEOWORKS INC

Stage 1 Archaeological Assessment for the Proposed Road Widening and Improvements of County Road 53 (5 Sideroad)
From Innisfil Beach Road to the City of Barrie Municipal Limits
Within Part of Lots 5-6, Concession 8-9
and the Road Allowance between Concession 8 and 9
Geographic Township of Innisfil
Former County of Simcoe
Now the Town of Innisfil
County of Simcoe
Ontario

Project #: 235-DA6313-19 Licensee (#): Ian Boyce (P1059)

PIF#: P1059-0055-2019

**Original Report** 

February 6, 2020

#### Presented to:

C. C. Tatham & Associates Ltd.

41 King Street, Unit 4 Barrie, Ontario L4N 6B5

T: 705.733.9037

## **Prepared by:**

Archeoworks Inc.

16715-12 Yonge Street, Suite 1029 Newmarket, Ontario L3X 1X4

> T: 416.676.5597 F: 647.436.1938

# **EXECUTIVE SUMMARY**

The County of Simcoe is proposing to widen and improve County Road 53 (5 Sideroad) from County Road 21 (Innisfil Beach Road) to the southern municipal limits of the City of Barrie. This corridor of land extends for a distance of approximately 2.1 kilometres, in the Town of Innisfil. The proposed improvements include the widening of County Road 53 from a two-lane to a four-lane cross section, a flush asphalt median, increase capacity, improve the entrances, resurface the existing asphalt, pave shoulders, correct storm drainage problems, provide illumination and eliminate safety concerns. In addition, the County of Simcoe is proposing to improve the intersections of County Road 53 at the 9<sup>th</sup> Line. The intersection improvements include widening to a four-lane cross section, increase capacity, turning lanes, through lanes, curbs, illumination and storm drainage, if required.

To facilitate this study, *Archeoworks Inc.* was retained by *C.C. Tatham & Associates Ltd.* to conduct a Stage 1 Archaeological Assessment in support of the proposed road widening and improvements of approximately 2.1 kilometres of County Road 53 (5 Sideroad) from County Road 21 (Innisfil Beach Road) to the City of Barrie municipal limit, in the Town of Innisfil. This property will herein be referred to as the "study corridor." The study corridor is located along the road allowance between Lots 5 and 6, Concessions 8 and 9, in the Geographic Township of Innisfil, formerly in the County of Simcoe, now in the Town of Innisfil, in the County of Simcoe, Ontario.

Stage 1 AA background research established elevated potential for the recovery of archaeologically significant materials within the study corridor. To determine if the archaeological potential classification of the study corridor is relevant, a desktop review of ground conditions was undertaken using historical mapping, 20<sup>th</sup> century topographic maps and aerial photography. The desktop review identified parts of the study corridor as having archaeological potential removed and parts of the study corridor as having no or low archaeological potential. The remaining balance of the study corridor was identified as retaining archaeological potential and requires further archaeological assessment.

Considering the findings detailed in the following sections, the following recommendations are presented:

- 1. With previous assessments by *This Land Archaeology Inc.* (2016) and *York North Archaeological Services Inc.* (2013), having fulfilled the Stage 1 and 2 AA requirements within their respective portions of the current study corridor, it is recommended that these areas be exempt from further assessment within the scope of this project.
- 2. As per the *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 no intrusive activity may occur within the Innisvale Cemetery and Crematorium without consent from the *Bereavement Authority of Ontario*.

# STAGE 1 AA FOR THE PROPOSED ROAD WIDENING AND IMPROVEMENTS OF COUNTY ROAD 53 (5 SIDEROAD) TOWN OF INNISFIL, COUNTY OF SIMCOE, ONTARIO

- 3. Given the late (ca.1983) establishment of the Innisvale Cemetery and Crematorium and the known pattern of burial distribution (as documented in historical aerial photographs, satellite images and from communications with the General Manager at the Innisvale Cemetery and Crematorium), there is no risk of incidental impacts to unmarked graves within portions of the study corridor that fall adjacent to (i.e.: within a 10 metre radius) the Innisvale Cemetery and Crematorium. Therefore, no further Stage 3 archaeological assessment is recommended adjacent to the Innisvale Cemetery and Crematorium.
- 4. Parts of the study corridor that were identified as having no or low archaeological potential are exempt from requiring Stage 2 AA; extents of these areas to be confirmed during the Stage 2 AA.
- 5. All parts of the study corridor which retain archaeological potential must be subjected to a Stage 2 AA. These areas must be subjected to pedestrian or test pit survey at five-metre intervals in accordance with the standards set within *Sections 2.1.1* and *2.1.2* of the *2011 S&G*.
- 6. Should construction activities extend beyond the assessed limits of the study corridor, further archaeological investigation will be required to assess the archaeological potential of these lands.

No construction activities shall take place within the study corridor prior to the *Ministry of Heritage, Sport, Tourism and Culture Industries* (Archaeology Program Unit) confirming in writing that all archaeological licensing and technical review requirements have been satisfied.

# **TABLE OF CONTENTS**

EXECUTIVE SUMMARY	
TABLE OF CONTENTS	II
PROJECT PERSONNEL	IV
1.0 PROJECT CONTEXT	1
1.1 OBJECTIVE	
2.0 ANALYSIS AND CONCLUSIONS	14
2.1 PREVIOUS ARCHAEOLOGICAL ASSESSMENTS  2.2 PHYSIOGRAPHIC FEATURES OF NO OR LOW ARCHAEOLOGICAL POTENTIAL  2.3 IDENTIFIED DEEP AND EXTENSIVE DISTURBANCES  2.4 IDENTIFIED AREAS OF ARCHAEOLOGICAL POTENTIAL  2.5 CEMETERY	14
4.0 RECOMMENDATIONS	16
5.0 ADVICE ON COMPLIANCE WITH LEGISLATION	17
6.0 BIBLIOGRAPHY AND SOURCES	18
APPENDICES	25
APPENDIX A: MAPSAPPENDIX B: SUMMARY OF BACKGROUND RESEARCHAPPENDIX C: INVENTORY OF DOCUMENTARY AND MATERIAL RECORD	41
LIST OF TABLES	
TABLE 1: PRE-CONTACT PERIOD  TABLE 2: CONTACT PERIOD  TABLE 3: HISTORICAL LAND OWNERSHIP WITHIN THE STUDY CORRIDOR IN THE 1871 HOGG'S MAP  TABLE 4: HISTORIC STRUCTURES WITHIN THE STUDY CORRIDOR IN THE 1881 ILLUSTRATED ATLAS  TABLE 3: REGISTERED ARCHAEOLOGICAL SITES WITHIN ONE KILOMETRE OF THE STUDY CORRIDOR  TABLE 5: PREVIOUS ARCHAEOLOGICAL ASSESSMENTS	
TABLE 5. STUDY CORRIDOR SOIL TYPES	

# **PROJECT PERSONNEL**

Project Director	Ian Boyce – MHSTCI licence P1059
Report Preparation	Lee Templeton - MHSTCI licence R454
Graphics	Lee Templeton – MHSTCI licence R454
Report Reviewer	Kim Slocki – MHSTCI licence P029

# 1.0 PROJECT CONTEXT

# 1.1 Objective

The objectives of a Stage 1 Archaeological Assessment (AA), as outlined by the 2011 Standards and Guidelines for Consultant Archaeologists ('2011 S&G') published by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) (2011), are as follows:

- To provide information about the property's geography, history, previous archaeological fieldwork and current land condition;
- To evaluate in detail the property's archaeological potential, which will support recommendations for Stage 2 survey for all or parts of the property; and
- To recommend appropriate strategies for Stage 2 survey.

# **1.2 Development Context**

The County of Simcoe is proposing to widen and improve County Road 53 (5 Sideroad) from County Road 21 (Innisfil Beach Road) to the southern municipal limits of the City of Barrie. This corridor of land extends for a distance of approximately 2.1 kilometres, in the Town of Innisfil. The proposed improvements include the widening of County Road 53 from a two-lane to a four-lane cross section, a flush asphalt median, increase capacity, improve the entrances, resurface the existing asphalt, pave shoulders, correct storm drainage problems, provide illumination and eliminate safety concerns. In addition, the County of Simcoe is proposing to improve the intersections of County Road 53 at the 9<sup>th</sup> Line. The intersection improvements include widening to a four-lane cross section, increase capacity, turning lanes, through lanes, curbs, illumination and storm drainage, if required.

To facilitate this study, *Archeoworks Inc.* was retained by *C.C. Tatham & Associates Ltd.* to conduct a Stage 1 AA in support of the proposed road widening and improvements of approximately 2.1 kilometres of County Road 53 (5 Sideroad) from County Road 21 (Innisfil Beach Road) to the City of Barrie municipal limit, in the Town of Innisfil. This property will herein be referred to as the "study corridor." The study corridor is located along the road allowance between Lots 5 and 6, Concessions 8 and 9, in the Geographic Township of Innisfil, formerly in the County of Simcoe, now in the Town of Innisfil, in the County of Simcoe, Ontario (*see Appendix A – Map 1*). The study corridor extends approximately 30 metres both east and west from the centreline of County Road 53/5 Sideroad and encompasses the road right-of-way (ROW).

This study was triggered by the *Environment Assessment Act* in support of Schedule C under the Municipal Class Environmental Assessment regulatory process. It was conducted under the project direction of Mr. Ian Boyce under the archaeological consultant licence number P1059, in accordance with the *Ontario Heritage Act* (2009). Permission to investigate the study corridor was granted by *C.C. Tatham & Associates Ltd.* on August 2, 2019.

Simcoe County has an archaeological management plan (AMP), founded on the principles of archaeological potential modeling, and developed using a Geographic Information System (GIS). Per the Simcoe County AMP, part of the study corridor has archaeological potential (Simcoe County, 2019a; **see Map 2**).

## **1.3 Historical Context**

To establish the historical context and archaeological potential of the study corridor, *Archeoworks Inc.* conducted a review of Aboriginal and Euro-Canadian settlement history, and a review of available historical mapping and aerial imagery.

The results of this background research are documented below and summarized in **Appendix B** – **Summary of Background Research**.

#### 1.3.1 Pre-Contact Period

The Pre-Contact Period of Southern Ontario includes numerous Aboriginal groups that continually progressed and developed within the environmental constraints they inhabited (Ferris, 2013, p.13). **Table 1** includes a summary of the Pre-Contact Aboriginal history of Southern Ontario.

Table 1: Pre-Contact Period

Periods	Date Range	Overview and Attributes	
		PALEO-INDIAN	
Early	ca. 11,000- 8,500 BC	Small groups of nomadic hunter-gatherers utilized seasonal and naturally available resources; sites are rare; hunting in small family groups who periodically gathered into larger groups/bands during favourable periods in the hunting cycle; campsites used during travel episodes are found in well-drained soils in elevated locations; sites found primarily along glacial strandlines, per current understanding of regional	
Late	ca. 8,500- 7,500 BC	geological history; artifacts include fluted and lanceolate stone points, scrapers, dart heads.  - Gainey, Barnes, Crowfield Fluted Points (Early Paleo-Indian)  - Holcombe, Hi-Lo, Lanceolates (Late Paleo-Indian)  (Ellis and Deller, 1990, pp.37-64; Wright, 1994, p.25; Ellis, 2013, p.37).	
	ARCHAIC		
Early	ca. 7,800- 6,000 BC	Descendants of Paleo-Indians; lithic scatters are the most commonly encountered site type; trade networks appear; artifacts include reformed fluted and lanceolate stone points with notched bases to attach to wooden shaft; ground-stone tools	
Middle	ca. 6,000- 2,000 BC	shaped by grinding and polishing; stone axes, adzes and bow and arrow Side-notched, corner-notched, bifurcate projectile points (Early Archaic) - Stemmed, Otter Creek/Other Side-notched, Brewerton side and corner-notched	
Late	ca. 2,500- 500 BC	projectile points (Middle Archaic) - Narrow Point, Broad Point, Small Point projectile points (Late Archaic) (Ellis et al., 1990, pp.65-124; Wright, 1994, pp.26-28; Ellis, 2013, pp.41-46)	
WOODLAND			

Periods	Date Range	Overview and Attributes
Early	ca. 800 BC to 0 AD	Evolved out of Late Archaic Period; introduction of pottery, the earliest being coilformed, under-fired and for utilitarian usage; two primary cultural complexes: Meadowood (broad extent of occupation in southern Ontario) and Middlesex (restricted to eastern Ontario); poorly understood settlement-subsistence patterns; artifacts include cache blades, and side-notched points that were often recycled into other tool forms; primarily Onondaga chert; commonly associated with Saugeen and Point Peninsula complexes.  - Meadowood side-notched projectile points (Spence et al., 1990, pp.125-142; Wright, 1994, pp.29-30; Ferris and Spence, 1995, p.89-97; Williamson, 2013, pp.48-61)
Middle	ca. 200 BC to AD 700	Three primary cultural complexes: Point Peninsula (generally located throughout south-central and eastern Ontario), Saugeen (southwestern Ontario), and Couture (southwestern-most part of Ontario); introduction of large "house" structures and substantial middens; settlements have dense debris cover indicating increased degree of sedentism; incipient horticulture; burial mounds present; shared preference for stamped, scallop-edged or tooth-like decoration, but each cultural complex had distinct pottery forms.  - Saugeen Point projectile points (Saugeen)  - Vanport Point projectile points (Couture)  - Snyder Point projectile points (Spence et al., 1990, pp.142-170; Wright, 1994, pp.28-33; Ferris and Spence, 1995, p.97-102; Wright, 1999, pp.629-649; Williamson, 2013, pp.48-61)
Late (Transitional)	ca. AD 600 to 1000	Princess Point exhibits few continuities from earlier developments with no apparent predecessors; hypothesized to have migrated into Ontario or were an <i>in situ</i> development; the settlement data is limited, but oval houses are present; artifacts include 'Princess Point Ware' vessel that are cord roughened, with horizontal lines and exterior punctation; smoking pipes and ground stone tools are rare; introduction of maize horticulture; continuity of Princess Point and Late Woodland cultural groups.  - Triangular projectile points (Fox, 1990, pp.171-188; Ferris and Spence, 1995, pp.102-106)
Late (Early Ontario Iroquois)	ca. AD 900 to 1300	Two primary cultures: Glen Meyer (located primarily in southwestern Ontario from Long Point on Lake Erie to southwestern shore of Lake Huron) and Pickering (encompassed north of Lake Ontario to Georgian Bay and Lake Nipissing); well-made and thin-walled clay vessels with stamping, incising and punctation; multi-family longhouses and some small, semi-permanent palisade villages; adoption of greater variety of harvest products; increase in corn-yielding sites; crudely made smoking pipes, worked bone/antler present; evolution of the ossuary burials.  - Triangular-shaped, basally concave projectile points with downward projecting corners or spurs  (Williamson, 1990, pp.291-320; Ferris and Spence, 1995, pp.106-109)
Late (Middle Ontario Iroquois)	ca. AD 1300 to 1400	Fusion of Glen Meyer and Pickering caused by conquest and absorption of Glen Meyer by Pickering; two primary cultures: Uren (AD 1300-1350) and Middleport (AD 1350-1400); decorated clay vessels decrease; well-developed clay pipe complex that includes effigy pipes; increase in village sizes (0.5 to 1.7 hectares) and campsites (0.1 to 0.6 hectares) appear with some palisades; classic longhouse takes form; increasing reliance on maize and other cultigens such as beans and squash; intensive exploitation of locally available land and water resources.  - Triangular and (side of corner or corner removed) notched projectile points  - Middleport Triangular and Middleport Notched projectile points

Periods	Date Range	Overview and Attributes
		(Dodd el al., 1990, pp.321-360; Ferris and Spence, 1995, pp.109-115)
Late (Late Ontario Iroquois)	ca. AD 1400 to 1600	Ontario Iroquoian sites describes two major groups east and west of the Niagara Escarpment: the ancestral Neutral Natives to the west, and the ancestral Huron-Wendat and to the east; Huron-Wendat "concentrations of sites occur in the areas of the Humber River valley, the Rouge and Duffin Creek valleys, the lower Trent valley, Lake Scugog, the upper Trent River and Simcoe County" (Ramsden, 1990, p.363); Nine-Mile Portage from Kempenfeldt Bay to Willow Creek, a branch of the Nottawasaga River that connected Lake Ontario to Lake Huron through Simcoe County; longhouse; villages enlarged to 100 longhouses clustered together as horticulture (maize, squash, and beans) gained importance in subsistence patterns; villages chosen for proximity to water, arable soils, available fire wood and defendable position; diet supplemented with fish; ossuaries; tribe/band formation; relocation to north of Lake Simcoe.  - Huron-Wendat projectile points are limited but change from predominantly sidenotched to unnotched triangular.  (Hunter, 1909a, p.80; Jury and Jury, 1956, p.2; Heidenreich, 1978, pp.368-388; Ramsden, 1990, pp.361-384; Ferris and Spence, 1995, pp.115-122).

#### 1.3.2 Contact Period

The Contact Period of Southern Ontario is defined by European arrival, interaction and influence with the established Aboriginal communities of Southern Ontario. **Table 2** includes a summary of some of the main developments that occurred during the Contact Period of Southern Ontario.

Table 2: Contact Period

Period	Date Range	Overview and Attributes	
European Contact	ca. AD 1600s	The area "south of Lake Simcoe and along the north shore of Lake Ontario remained a no-man's land, with no permanent settlements and traversed only by raiding parties from the north or from the south" (Robinson, 1965, p.11); Huron-Wendat villages north of Lake Simcoe in and around the City of Barrie; trade relationship with Huron-Wendat and French establish; trade goods begin to replace traditional tools/items; Jesuit missionaries; epidemics (Heidenreich, 1978, pp.368-388; Trigger, 1994, pp.47-55; Warrick, 2008, pp.12, 245).	
Five Nations of Iroquois (Haudenosaunee) Arrival	ca. AD 1650s	· · · · · · · · · · · · · · · · · · ·	
Anishinaabe Arrival	ca. AD 1650s	Algonquin-speaking and cultural groups within the Anishinaabeg (Ojibway, Chippewa, Odawa, Mississauga and others) began to challenge the Five Nations of Iroquois for dominance in the region; battles fought throughout Southern Ontario;	

Period	Date Range	Overview and Attributes
	to 1700s	by 1690s, the Five Nations of Iroquois settlements were abandoned; by 1701, the Five Nations of Iroquois were defeated and were replaced by the Anishinaabe in Southern Ontario; 'Mississauga' term applied to those on the north shore of Lake Ontario and were recognized as occupants of lands extending north of Lake Ontario and Lake Erie; the Ojibway settled in the County of Simcoe around Lake Simcoe (Hunter, 1909a, p.10; Hathaway, 1930, p.433; Trigger, 1994, pp.57-59; Johnston, 2004, pp.9-10; Gibson, 2006, pp.35-41; Smith, 2013, pp.16-20; Williamson, 2013, p.60).
Trade, Peace and Conflict	ca. AD 1700 to 1780s	Great Peace of 1701 in Montreal established peace among nations around the Great Lakes; European trade and exploration resumed; the Anishinaabe continued to trade with both the English and the French; genesis of the Métis; French and Indian Wars fought as part of the Seven Years' War between France and Britain; French defeat transfers the territory of New France to the British; Treaty of Paris (1763); Royal Proclamation of 1763 established the government administration of the North American territories ceded by France to Britain and established the framework for the negotiation of treaties with First Nation inhabitants; Pontiac's War; fur trade continued until Euro-Canadian settlement (Schmalz, 1991, pp.35-62, 81; Surtees, 1994, pp.92-97; Johnston, 2004, pp.13-14; Jaenen, 2013; Hall, 2015).
Early British Administration and Euro- Canadian Settlement	ca. AD 1770s to 1800s	American Revolution (1775-1783) brings United Empire Loyalists, military land grantees, persecuted groups, and immigrants from the British Isles and Europe to settle in southern Ontario; Treaty of Paris (1783) formally recognizes the independence of the United States; Province of Quebec divided in 1791 into sparsely populated Upper Canada (now southern Ontario) and culturally French Lower Canada (now southern Quebec); Jay's Treaty of 1795 establishes American/Canadian border along the Great Lakes; large parts of Upper Canada opened to settlement after land cession treaties were secured with various First Nations groups by the British Crown (Department of Indian Affairs, 1891; Government of Ontario, 2014; Government of Ontario, 2019; Hall, 2019; Jaenen, 2014; Surtees, 1994, p.110; Sutherland, 2014).
British Land Treaties	ca. AD 1790s to 1830s	In 1793 Lieutenant-Governor John Graves Simcoe arrived at Penetanguishene Bay and sought to establish a fort should the Americans provoke war; William Claus, Superintendent of Indian Affairs, bargained on behalf of the British Government for a tract of land adjacent to the harbour of Penetanguishene, and purchased the tip of the peninsula for cloth, blankets and kettles valued at £101 of Quebec currency, known as Treaty No.5; in 1818, William Claus asked for over a million hectares to the west and south of Lake Simcoe and advised that Euro-Canadian settlement in this area would take several years; the government agreed to payment of goods in 'Montreal Price' since the economic hub of Upper and Lower Canada was Montreal; this became known as Treaty 18, or Lake Simcoe-Nottawasaga Treaty; the land that would become the Township of Innisfil were included in Treaty No.18; four additional treaties were signed with the Six Nations of Iroquois in 1822, 1831, 1844 and 1852 that included land in Lots 14, 16-19, and 21, in Concession 4 (Department of Indian Affairs, 1891, p.xxx; Hunter, 1909a, pp.12, 15, 84; Surtees, 1994, p.109; Pencen Museum, 2013; Surtees, 1994, pp.111-116; Government of Ontario, 2014; Government of Ontario, 2019).

## 1.3.3 Euro-Canadian Settlement Period (1800s to present)

#### 1.3.3.1 Township of Innisfil

The Township of Innisfil was surveyed in 1820 and contained 68,653 acres of rolling terrain that was mostly clay loam soils. Shortly after the completion of the survey of Innisfil, the Hewson Family, lead by Francis Hewson, arrived in the Township of Innisfil and settled on the point of land at the entrance to Kempenfeldt Bay, then called Hewson's Point. Before 1830, few settlers had farms in the Township of Innisfil, but those early settlers include the Clement Family, the McLean family, the Willson Family, the Laird Family, and the Rogerson Family. Scottish settlers who had left Scotland after the passing of the Reform Bill, settled closely together in the southeastern part of the Township while a large community of Irish settled in the west and southwestern part of the Township. By 1850, 1,887 individuals resided within the Township of Innisfil and the township had one grist, five sawmills and cultivated acreage that exceeded fifty percent. Agriculture is the main industry within the Township of Innisfil with a "considerable amount of lumbering done within its borders" (Belden, 1881, p.14; Hunter, 1909b, pp.53-68; Smith, 1851, pp.53-54).

#### 1.3.3.2 Hamlet of Thornton

The community of Thornton, located southwest of the study corridor, is described in McEvoy & Co.'s 1866-7 *County Directory* as "a post village, situated on Lot 15, 11<sup>th</sup> concession of Innisfil, 9 miles form Barrie, and 7 from Allendale [sic] station on the Northern Railway. It was first settled in 1853 by John Henry, Aaron Walker and Wm. Scott. John Henry, the present postmaster, was appointed to that office on its establishment on Dec. 21, 1853" (p.158). At this time, 100 individuals resided in the village and it contained a common school, a Loyal Orange lodge (No.16), a temperance lodge, daily mail, and three churches: Episcopal, Canada Presbyterian and Wesleyan Methodist. By 1873, *Lovell's Gazetteer* describes Thornton as "a post village in Simcoe co. [sic], Ont., 8 miles from Allendale. It contains an [sic] hotel and 3 stores. Pop.100" (p.334). In 1874, construction began on the Hamilton and North-Western Railway (H & NW) and its traveled through Thornton on its way to Barrie. In 1879, this railway merged with the Northern Railway of Canada and was known as the Northern and North Western Railways; in 1888, it was taken over by the Grand Trunk Railway (Vuckson, 2017, p.2). The Thornton Post Office was established in 1854 and is still functioning today (LAC, 2019a).

#### 1.3.3.2 Hamlet of Vine

The community of Vine, located northeast of the study corridor, is described in McEvoy & Co.'s 1866-7 *County Directory* as "a Post Village of the township of Innisfil, situated on lot 1, on the 10<sup>th</sup> concession, 7 miles from Barrie. The Post Office was established in Feb. 1865, Alex. Jameson, being appointed 1<sup>st</sup> postmaster" (p.161). At this time, only 25 individuals resided in the hamlet and there was a common school two lots south of the hamlet. By 1873, *Lovell's Gazetteer* describes Vine as "a post village in Simcoe co., [sic], 8 miles from Barrie. Pop.175" (p.349). When the Hamilton & North Western Railway was constructed to Barrie, the railway traveled through the community of Vine. The Thornton Post Office was established in 1864 and was closed in 1914 (LAC, 2019b).

#### 1.3.4 Past Land Use (19th Century)

To further assess the study corridor's potential for the recovery of Euro-Canadian remains, two maps were consulted to gain an understanding of the land use history: the 1842/1877/1930 Patent Plan of the Township of Innisfil (see Map 2), the J. Hogg's 1871 Map of the County of Simcoe (see Map 3) and the H. Belden's 1881 Simcoe Supplement in Illustrated Atlas of the Dominion of Canada (see Map 4).

A review of all pre-1800 historical maps revealed that the study corridor fell within along the open road allowance of County Road 53/5 Sideroad. Where the study corridor extends beyond the limits of the road allowance, it is located within the property limits of several landowners, but no structures were depicted within the study corridor or within a 300-metre radius of its limits (*see Tables 3-4*).

According to the *Patent Plan of the Township of Innisfil*, the study corridor traveled along the County Road 53 (5 Sideroad) road allowance. Beyond the road allowance, the study corridor extends into lands where the land has been patented by several individuals. However, this map does not identify the presence of any structures (both private and public), but only depicts the patent holders who had received the Crown Patent by 1842 and was subsequently revised in 1877 and in 1930.

Table 3: Historical Land Ownership within the Study Corridor in the 1871 Hogg's Map

Lot, Con.	Portion	Owner	Structure(s) Present
5, 8	Southeast half, 50 acres	J. McCleary	No structure(s)
5, 8	North half, 100 acres	W. McCullough	No structure(s)
6, 8	South half, 100 acres	T. Agent	No structure(s)
6, 8	South part of north half, 25 acres	S. Reynolds	No structure(s)
6, 8	North part of north half, 25 acres	T. Reynolds	No structure(s)
5, 9	South half, 100 acres	J. Rainey	No structure(s)
5, 9	South part of north half, 25 acres	M. Stewart	No structure(s)
6, 9	All, 200 acres	T. Mullholland	No structure(s)

According to the 1871 *Hogg's Map of the County of Simcoe,* no historic structures are located in or within 300 metres of the study corridor.

Table 4: Historic Structures within the Study Corridor in the 1881 Illustrated Atlas

Lot, Con.	Portion	Owner	Structure(s) Present
5, 8	South half, 100 acres	Unlisted	No structure(s)
6, 8	North half, 100 acres	Unlisted	No structure(s)
5, 9	South half, 100 acres	Unlisted	No structure(s)
6, 9	North half, 100 acres	Unlisted	No structure(s)

According to the 1881 *Illustrated Historical Atlas*, no historic structures are located in the study corridor, while the Hamilton & Northwestern Railway and a portion of Thornton Creek traverses the study corridor. It should be kept in mind, however, that not all historic features would have

been depicted in the Township of Innisfil as the *Simcoe Supplement in the Illustrated Atlas* required a paid subscription from the residents in the County of Simcoe (Benson, N.D., p.4).

Additionally, the study corridor is located along present-day County Road 53/5 Sideroad and is intersected by Innisfil Beach Road and 9 Line which were originally laid out during the survey of the Township of Innisfil. Furthermore, it is intersected by the Hamilton & Northwestern Railway. In Ontario, the 2011 S&G considers areas of early Euro-Canadian settlements (e.g., pioneer homesteads, isolated cabins, farmstead complexes, early wharf or dock complexes, pioneer churches, and early cemeteries), early historic transportation routes (e.g., trails, passes, roads, railways, portage routes), and properties that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations are considered features or characteristics that indicate archaeological potential (per Section 1.3.1 of the 2011 S&G). Therefore, based on the proximity of early historic transportation routes, there is elevated potential for the location of Euro-Canadian archaeological resources (pre-1900) within portions of the study corridor which lie within 100 metres of these historic features.

#### 1.3.5 Past Land Use (post-1900)

To facilitate the further evaluation of the established archaeological potential along the study corridor, a detailed review of topographic maps from 1928 and 1943 (*see Map 5*), aerial imagery from 1954, orthophotographs from 1989, 1997, 2002 and 2018, and satellite images from 2004 and 2016 was undertaken (*see Maps 6-9*).

The 1928 and 1943 *Topographic Maps* revealed the study corridor was located along County Road 53 (5 Sideroad), an open roadway described as "an unmetalled road" where telegraph of telephone line traveled along the east side or the road. The majority of land flanking County Road 53 (5 Sideroad) have been cleared of overgrown vegetation, except for a small scattering of trees on the south side of the CN Railway (formerly the Hamilton & Northwestern Railway). Eleven structures (6 houses and 5 barns) are depicted within 300 metres of the study corridor. By 1943, Innisfil Beach Road became a gravel roadway, while the remainder of the study corridor remained unchanged.

By 1954, the study corridor traversed County Road 53 (5 Sideroad) that was flanked by open agricultural fields and the driveways of several homesteads. Several homesteads were located within 300 metres of the study corridor. Furthermore, a portion of the Thornton Creek had extended through the farmland and bisected County Road 53 (5 Sideroad). Between 1989 and 1997, several additional houses had been constructed along the length of County Road 53 (5 Sideroad) and the CN Railway had been removed and replaced by the Thornton-Cookstown Trans Canada Trail, but the study corridor remained relatively unchanged.

By 2002, Georgian Downs Racetrack had been constructed along the east side of County Road 53 (5 Sideroad) in the central portion of the study corridor. The study corridor had been paved by this time, and the lands flanking the study corridor consisted of both open agricultural fields and pastural lands. The study corridor remained unchanged to 2018.

#### 1.3.6 Present Land Use

The present land use of the study corridor is categorized an Arterial Road flanked by Agricultural Area, Employment Area Supportive Commercial Area, Tourism/Commercial Area and Community Space (Town of Innisfil, 2017a; Town of Innisfil, 2017b).

# 1.4 Archaeological Context

To establish the archaeological context and further establish the archaeological potential of the study corridor, *Archeoworks Inc.* conducted a comprehensive review of designated and listed heritage properties, commemorative markers and pioneer churches and early cemeteries in relation to the study corridor. Furthermore, an examination of registered archaeological sites and previous AAs in proximity to the study corridor limits, and a review of the physiography of the study corridor were performed.

The results of this background research are documented below and summarized in **Appendix B** – **Summary of Background Research**.

#### 1.4.1 Designated and Listed Cultural Heritage Resources

Per Section 1.3.1 of the 2011 S&G, properties listed on a municipal register or designated under the Ontario Heritage Act, or that is a federal, provincial, or municipal historic landmark or site, are considered features or characteristics that indicate archaeological potential. The study corridor is not located in or within 300 metres of a designated or listed heritage resource (Town of Innisfil, 2010; Town of Innisfil, 2019). Therefore, this feature does not contribute in establishing the archaeological potential of the study corridor.

#### **1.4.2** Heritage Conservation Districts

Per Section 1.3.1 of the 2011 S&G, heritage resources listed on a municipal register or designated under the Ontario Heritage Act are considered features or characteristics that indicate archaeological potential. The study corridor is not located in or within 300 metres of a Heritage Conservation District (MHSTCI, 2019a). Therefore, this feature does not contribute in establishing the archaeological potential of the study corridor.

#### 1.4.3 Commemorative Plagues or Monuments

Per Section 1.3.1 of the 2011 S&G, commemorative markers of Aboriginal and Euro-Canadian settlements and history which may include local, provincial, or federal monuments, cairns or plaques, or heritage parks are considered features or characteristics that indicate archaeological potential. The study corridor is not located in or within 300 metres of a commemorative plaque or monument (Ontario Historic Plaques, 2019; OHT, 2019). Therefore, this feature does not contribute in establishing the archaeological potential of the study corridor.

#### 1.4.4 Pioneer/Historic Cemeteries

Per Section 1.3.1 of the 2011 S&G, pioneer churches and early cemeteries are considered features or characteristics that indicate archaeological potential. One cemetery, the Innisvale Cemetery

and Crematorium, is located in the study corridor (OGS, 2019). The Innisvle Cemetery and Crematorium, located at municipal address 7551 5 Sideroad, was established in 1983 and services the community of Innisfil and Barrie with a "beautifully landscaped property nestled within the rural surroundings of Central Ontario" (Innisvle Cemetery and Crematorium, 2019). Owning to its late date of establishment, this feature does not contribute in establishing the archaeological potential of the study corridor.

#### 1.4.5 Registered Archaeological Sites

Per Section 1.1, Standard 1 and Section 7.5.8, Standard 1 of the 2011 S&G, the Ontario Archaeological Sites Database (OASD) maintained by the MTCS was consulted in order to provide a summary of registered or known archaeological sites within a minimum one-kilometre distance of the study corridor limits.

According to the OASD there are four archaeological sites within a one-kilometre radius of the study corridor (MTCS, 2019b) (**see Table 3**). Of these, one is located within a 300-metre radius.

Table 5: Registered A	rchaeological Sites	within One Kilometre	of the Study Corridor

Borden #	Name	Cultural Affiliation	Туре	
Registered	Registered archaeological sites within 300 metres			
BbGw-36	Part 2 W Site	Post-Contact (Euro-Canadian)	Homestead	
Other Registered archaeological sites within one kilometre				
BbGw-33	Breezewood	Pre-Contact (Aboriginal)	Camp/campsite	
BbGw-78	-	Post-Contact	Homestead	
BbGw-81	Historic Parcel 2V	istoric Parcel 2V Post-Contact (Euro-Canadian) Homestead		

Per Section 1.3.1 of the 2011 S&G, previously registered archaeological sites in close proximity are considered to be features or characteristics that indicate archaeological potential. Therefore, given the presence of one registered archaeological site located within a 300 metre-radius of the study corridor, this feature contributes in the establishing archaeological potential of the study corridor.

#### 1.4.6 Previous Archaeological Assessments

Per Section 1.1, Standard 1 and Section 7.5.8, Standards 4-5 of the 2011 S&G, to further establish the archaeological context of the study corridor, a review of previous AAs carried out within the limits of, or immediately adjacent (i.e., within 50 metres) to the study corridor — as documented by all available reports — was undertaken. Four reports were identified (see Table 6).

Table 6: Previous Archaeological Assessments

Company, Year	Stage of Work	Relation to Current Study Corridor	Recommendation
Previous Archaeological Assessments Tied to C		sessments Tied to C	Other Development Projects:
Archeoworks Inc., 2007a	Stage 1 AA	Within 50 metres of the study corridor	Associated with the AA of the north half of Lot 6, Concession 7 in the Town of Innisfil. Stage 2 AA was recommended on all undisturbed area.

Company, Year	Stage of Work	Relation to Current Study Corridor	Recommendation	
Archeoworks Inc., 2007b	Stage 2 AA	Within 50 metres of the study corridor	Associated with the AA of the north half of Lot 6, Concession 7 in the Town of Innisfil. During the Stage 2 AA, despite careful scrutiny, no archaeological remains were encountered. It was recommended that the subject lands be cleared of further archaeological concern.	
This Land Archaeology Inc., 2016	Stage 1- 3 AA	Encompassing part of the study corridor	Associated with the Watersand Construction Ltd. and Wormwood Development Inc. properties located on Concessions 8 and 9, north and south of 9 <sup>th</sup> Line and west of Highway 400. The subject area was divided into parcels, where parcels 1 (1A) and 2 (2E) flank land along County Road 53/5 Sideroad. During the Stage 2 AA of 1A and 2E, consisting of pedestrian survey, no sites were encountered.  During the course of the Stage 2, 14 archaeological sites were found (findspots, scatters, historic sites and deposits): BbGw-79, BbGw-80, BbGw-81, BbGw-82, BbGw-83, BbGw-84, BbGw-85, Parcel 4F deposit, Parcel 16 deposit, BbGw-32, BbGw-35, BbGw-36, BbGw-37, BbGw-38. All these sites are located greater than 50 metres away and will not be impacted by the proposed construction. Stage 3 AA was recommended on BbGw-32, BbGw-35, BbGw-36, BbGw-37, BbGw-38 and BbGw-80;	
			however, test unit excavation only occurred on BbGw-32 and BbGw-36. Further Stage 3 AA is recommended at BbGw-32, BbGw-35, BbGw-36, BbGw-37, BbGw-38 and BbGw-80.	
York North Archaeological Services Inc., 2009	Stage 1 AA	Encompassing part of the study corridor	Associated with the proposed road widening of County Road 21 (Innisfil Beach Road) from east of County Road 27 to County Road 39. Stage 2 AA recommended.	
York North Archaeological Services Inc., 2013	Stage 2 AA	Encompassing part of the study corridor	Associated with the proposed road widening of County Road 21 (Innisfil Beach Road) from County Road 27 to County Road 39. At the time of Stage 2 AA, permission to enter was not granted by several property holders. Consequently, AA is required on those lands. During the Stage 2 AA, nothing of archaeological significance was identified for those lands that were assessed. No need for further AA was recommended on those lands that had been subjected to AA.	

#### **1.4.7 Physical Features**

#### 1.4.7.1 Physiographic Region

The study corridor is located within the Peterborough Drumlin Field physiographic region of Southern Ontario. The regional lies between the Oak Ridges Moraine and the area of shallow overburden on the limestones of the Gull River Formation. There is a rolling till plain, extending from Hastings County in the east to Simcoe County in the west, and includes the drumlins south of the moraine in Northumberland County. For the most part, the rock underlying this region is limestone of the Lindsay and Verulam Formations which are somewhat softer and less massive formations than the Gull River Formation. The Peterborough drumlin field is notable for its eskers

as well as its drumlins. While the eskers are perhaps the most striking features of the plain, apart from the drumlins themselves, they are not as important in respect to soils as the deposits of clay which lie between the drumlins in some area (Chapman & Putnam, 1984, pp.169-172).

#### 1.4.7.2 Soil Types

Several soil types are found within the study corridor including Bondhead sandy loam, Smithfield clay loam and Dundonald sandy loam. These soil types are distributed across the study corridor: The portion of the study corridor north of 9<sup>th</sup> Line is located in Bondhead sandy loam, along with a small portion situated around the former Canadian National Railway. The portion of the study corridor south of 9<sup>th</sup> Line is located primarily within Smithfield clay loam and a small portion at the southern limits of the study corridor is located in Dundonald sandy loam. A description of their characteristics may be found in **Table 5**.

Table 7: Study C	orridor Soil Types
------------------	--------------------

Soil Series and Type	Great Soil Group	Drainage	Topography. Stoniness	Parent Materials
Bondhead sandy loam	Grey-Brown Podzolic	Good	Smooth, moderately to steeply sloping. Slight to very stony	Light grey, calcareous, loam and sandy loam till.
Smithfield clay loam	Grey-Brown Podzolic	Imperfect	Smooth, gently sloping. Stonefree.	Calcareous lacustrine varved silt loam and clay.
Dundonald sandy loam	Grey-Brown Podzolic	Good	Smooth, gently sloping. Stonefree.	Outwash sand underlain by grey calcareous loam or sandy loam till at depths of 3 feet or less.

#### 1.4.7.3 Hydrological Features

Hydrological features such as primary water sources (i.e. lakes, rivers, creeks, streams) and secondary water sources (i.e. intermittent streams and creeks, springs, marshes, swamps) would have helped supply plant and food resources to the surrounding area and are indicators of archaeological potential (per *Section 1.3.1* of the *2011 S&G*). The Thornton Creek traverses the study corridor. Therefore, this feature contributes in establishing the archaeological potential of the study corridor.

#### 1.4.8 Current Land Conditions and Topography

The study corridor is currently situated along County Road 53 (5 Sideroad), within a mainly rural setting within the Town of Innisfil. The study corridor consists of paved roadways, gravel shoulders, graded embankments and ditches, open agricultural fields, manicured yardage fronting several homes, animal pastures, areas of overgrown vegetation, the Thornton Creek, Georgian Downs Racetrack, and the Innisvale Cemetery and Crematorium. The topography within the study corridor is decreases from north to south, measuring between 302 and 311 metres above sea level.

#### 1.4.9 Date of Review

A desktop review of field conditions using historic aerial photographs, and past and current satellite imagery obtained through the Simcoe County Maps and Google Earth application was undertaken on November 15<sup>th</sup>, 2019.

# 1.5 Confirmation of Archaeological Potential

Based on the information gathered from the background research documented in the preceding sections, elevated archaeological potential has been established within the study corridor limits. Features contributing to archaeological potential are summarized in **Appendix B**. However, it must be noted that post-1900 developments can negate the possibility of encountering intact archaeological deposits due to deep and extensive soil disturbance. Further assessment of conditions within the study corridor will be addressed in **Section 2.0** below.

# 2.0 ANALYSIS AND CONCLUSIONS

In combination with data gathered from the background research (*see Sections 1.3 and 1.4*) and an inspection of topographic maps, aerial photography and satellite imagery, an evaluation of the established archaeological potential was performed. An inventory of the documented records can be found within **Appendix C**.

## 2.1 Previous Archaeological Assessments

Background research has revealed that portions of the study corridor have been previously subjected to a Stage 1 and/or Stage 2 AA, as reported by: This Land Archaeology Inc. (2016) and York North Archaeological Services Inc. (2013).

With previous AAs having fulfilled the Stage 1 and/or Stage 2 AA requirements (*see Maps 11-12, 15*) within their respective portions of the current study corridor, it is therefore recommended that these areas be exempt from further assessment within the scope of this project.

## 2.2 Physiographic Features of No or Low Archaeological Potential

The study corridor was also evaluated for physical features of no or low archaeological potential. These include (but are not limited to): permanently wet areas, exposed bedrock, and steep slopes (greater than 20°) except in locations likely to contain pictographs or petroglyphs, as per *Section 2.1, Standard 2.a.* of the *2011 S&G*.

Physiographic features of no or low archaeological potential encountered within the study corridor include permanently wet areas consisting of Thornton Creek (*see Maps 13, 15*). On-site confirmation and documentation of the actual condition and exact extent of areas of no or low archaeological potential will, however, be required during the Stage 2 AA.

## 2.3 Identified Deep and Extensive Disturbances

The study corridor was evaluated for extensive and deep land alterations which have severely impacted the integrity of archaeological resources, commonly referred to as 'disturbances,' that remove archaeological potential. Per *Section 1.3.2* of the *2011 S&G*, features indicating that archaeological potential has been removed include (but are not limited to): quarrying, major landscaping involving grading below topsoil, building footprints, or sewage and infrastructure development.

Obvious disturbances include, but are not limited to, the existing paved roadways (Country Road 53/5 Sideroad and 9 Line), the Thornton-Cookstown TransCanada Trail, gravel and paved driveways, the landscaped frontage of Georgian Downs Racetrack (including the gravel parking area), culverts, gravel shoulders and embankments, shallow ditching, underground utilities (Bell,

hydro, natural gas), and extant residential structures (*see Maps 11-15*). The construction of these features would have resulted in severe damage to the integrity of any archaeological resources which may have been present within their footprints and, as such, are exempt from Stage 2 survey. On-site confirmation and documentation of the actual condition and exact extent of the disturbances will, however, be required during the Stage 2 AA.

## 2.4 Identified Areas of Archaeological Potential

Portions of the study corridor that exhibit neither extensively disturbed conditions nor contain physical features of no or low archaeological potential are considered to have archaeological potential. These areas include areas of overgrown vegetation, manicured lawns, areas of animal pastures and agricultural fields (*see Maps 11-15*).

Given the established potential to recover archaeological resources within these identified areas, a Stage 2 AA will be required. Actively or recently cultivated agricultural land must be subjected to pedestrian survey, in accordance with the standards outlined in *Section 2.1.1* of the *2011 S&G*. In areas where ploughing is not possible or viable due to the presence of overgrown vegetation or existing infrastructure and landscaping, a Stage 2 test pit survey at five metre intervals must be performed, in accordance with the standards outlined in *Section 2.1.2* of the *2011 S&G*.

# 2.5 Cemetery

Burials in nineteenth century historic cemeteries were not highly regulated, and burials may have occurred outside the current limits, often employing markers of little substance that have since disappeared. The possible absence of grave markers can result in inaccurate depictions of present-day cemetery limits.

However, the Innisvale Cemetery and Crematorium is a twentieth century cemetery located on the east side of County Road 53 (5 Sideroad), south of 9th Line at municipal address 7551 5 Sideroad, and within the study corridor (see Maps 12-13). Owning to its late date of establishment (ca.1983), better tracking and documentation of burial placements, and thus proper observance of property boundaries occurred. In fact, information from historical aerial photographs and satellite images (see Maps 7-10) show initial interments occurred in the eastern part of the property, and gradually expanded just west of the extant cemetery complex. Furthermore, personal communication with the General Manager of the Innisvale Cemetery and Crematorium Ltd. confirmed no burials have occurred within the western limits of the Innisvale Cemetery and Crematorium along County Road 53/5 Side Road or within 10 metres of the cemetery property limits (N. McNaughton 2020, personal communication, 05 February; see attached Supplementary Document). Additional discussions with the General Manager revealed the presence of very wet soil conditions within the western portion of the cemetery property preventing burials from occurring in this portion of the cemetery property. Given its late date of establishment and discussions with the General Manager, no archaeological concerns exist for the study corridor that falls within 10 metres of the limits of the cemetery.

# **4.0 RECOMMENDATIONS**

Considering the findings detailed in preceding sections, the following recommendations are presented:

- 1. With previous assessments by *This Land Archaeology Inc.* (2016) and *York North Archaeological Services Inc.* (2013), having fulfilled the Stage 1 and 2 AA requirements within their respective portions of the current study corridor, it is recommended that these areas be exempt from further assessment within the scope of this project.
- 2. As per the *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 no intrusive activity may occur within the Innisvale Cemetery and Crematorium without consent from the *Bereavement Authority of Ontario*.
- 3. Given the late (ca.1983) establishment of the Innisvale Cemetery and Crematorium and the known pattern of burial distribution (as documented in historical aerial photographs, satellite images and from communications with the General Manager at the Innisvale Cemetery and Crematorium), there is no risk of incidental impacts to unmarked graves within portions of the study corridor that fall adjacent to (i.e.: within a 10 metre radius) the Innisvale Cemetery and Crematorium. Therefore, no further Stage 3 archaeological assessment is recommended adjacent to the Innisvale Cemetery and Crematorium.
- 4. Parts of the study corridor that were identified as having no or low archaeological potential are exempt from requiring Stage 2 AA; extents of these areas to be confirmed during the Stage 2 AA.
- 5. All parts of the study corridor which retain archaeological potential must be subjected to a Stage 2 AA. These areas must be subjected to pedestrian or test pit survey at five-metre intervals in accordance with the standards set within *Sections 2.1.1* and *2.1.2* of the *2011 S&G*.
- 6. Should construction activities extend beyond the assessed limits of the study corridor, further archaeological investigation will be required to assess the archaeological potential of these lands.

No construction activities shall take place within the study corridor prior to the *MHSTCI* (Archaeology Program Unit) confirming in writing that all archaeological licensing and technical review requirements have been satisfied.

# **5.0 ADVICE ON COMPLIANCE WITH LEGISLATION**

- 1. This report is submitted to the *MHSTCI* as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the *MHSTCI*, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.
- 2. It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
- 3. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.
- 4. The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the *Ministry of Consumer Services*.

# **6.0 BIBLIOGRAPHY AND SOURCES**

Archeoworks Inc. (2007a). Stage 1 Archaeological Assessment of: Part of Lot 6, Concession 7, Town of Innisfil, Simcoe County, Ontario (P029-399-2007).

Archeoworks Inc. (2007b). Stage 2 Archaeological Assessment of: Part of Lot 6, Concession 7, Town of Innisfil, Simcoe County, Ontario (P029-407-2007).

Belden, H. & Co. (1881). Simcoe Supplement. In Illustrated Atlas of the Dominion of Canada. Toronto.

Benson, L.R. (1944). *Historical Atlases of Ontario: A Preliminary Check-List.* London, Ontario: The Library, University of Western Ontario.

Chapman, L. J. and Putnam, D. F. (1984). *Physiography of Southern Ontario. 3rd ed. Ontario Geological Survey, Special Volume 2.* Toronto: Ministry of Natural Resources.

Department of Indian Affairs, (1891). *Indian Treaties and Surrenders from 1680 to 1890*. Ottawa: Browns Chamberlin Printers.

Dodd, C.F., Poulton, D. R., Lennox, P.A., Smith, D.G., and Warrick, G.A. (1990). The Middle Ontario Iroquoian Stage. In Ellis, C.J. and N. Ferris (Eds.) *The Archaeology of Southern Ontario to A.D. 1650*. London, Ontario: Occasional Publication of the London Chapter, OAS, pp. 321-359.

Ellis, C.J. and Deller, D.B. (1990). Paleo-Indians. In C.J. Ellis, and N. Ferris, (Eds.). *The Archaeology of Southern Ontario to A.D. 1650*. London, Ontario: Occasional Publication of the London Chapter, OAS, pp. 37-64.

Ellis, C.J., Kenyon, I.T., and Spence, M.W. (1990). The Archaeology of Southern Ontario to A.D. 1650. London, Ontario: Occasional Publication of the London Chapter, OAS, pp. 65-124.

Ellis, C.J. (2013). Before Pottery: Paleoindian and Archaic Hunter-Gathers. In Munson, M.K. and Jamieson, S.M (Eds.) *Before Ontario: The Archaeology of a Province*. Montreal & Kingston, Ontario: McGill Queen's University Press.

Ferris, N. and Spence, M.W. (1995). The Woodland Traditions in Southern Ontario. *Revista de Arqueologia Americana* (9), 83-138.

Fox, W.A. (1990). The Middle Woodland to Late Woodland Transition. In C.J. Ellis, and N. Ferris, (Eds.). *The Archaeology of Southern Ontario to A.D. 1650*. London, Ontario: Occasional Publication of the London Chapter, OAS, pp. 171-188.

Gibson, M.M. (2006). *In the Footsteps of the Mississaugas*. Mississauga, Ontario: Mississauga Heritage Foundation.

Google Earth (2019a). 2004 Satellite Image. [Online]. Available at: http://www.google.com/earth/ [Accessed 16 November 2019].

Google Earth (2019b). 2016 Satellite Image. [Online.] Available at: http://www.google.com/earth/ [Accessed 16 November 2019].

Government of Ontario (2009). *Ontario Heritage Act*. [Online]. Available at: https://www.ontario.ca/laws/statute/90o18 [Accessed 27 November 2019].

Government of Ontario. (2014). *First Nations and Treaties Map*. [Online]. Available at: https://files.ontario.ca/firstnationsandtreaties.pdf [Accessed 27 November 2019].

Government of Ontario. (2019). *Map of Ontario Treaties and Reserves*. [Online]. Available at: https://www.ontario.ca/page/map-ontario-treaties-and-reserves [Accessed 27 November 2019].

Hall, A. J. (2015). *Royal Proclamation of 1763*. [Online]. Available at: https://www.thecanadianencyclopedia.ca/article/royal-proclamation-of-1763 [Accessed 27 November 2019].

Hall, R. (2019). *Upper Canada*. [Online]. Available at: https://www.thecanadianencyclopedia.ca/en/article/upper-canada [Accessed 27 November 2019].

Hathaway, E. (1930). The River Credit and the Mississaugas. In *Ontario Historical Society Papers and Records Vol. xxvi*. Toronto: Ontario Historical Society.

Heidenreich, C.E. (1978). Huron. In B.G. Trigger (Ed.). *Volume 15: Northeast*. Washington: Smithsonian Institution, pp.368-388.

Hunter, J. A. (1909a). *A History of Simcoe County: Volume I, Its Public Affairs*. [Online]. Available at: https://archive.org/details/localhistory 2GN/page/n1 [Accessed 27 November 2019].

Hunter, J. A. (1909b). *A History of Simcoe County: Volume II, Its Pioneers*. [Online]. Available at: https://archive.org/details/localhistory\_2GS/page/n5 [Accessed 27 November 2019].

Innisvle Cemetery and Crematorium (2019). *Innisvle Cemetery and Crematorium*. [Online]. Available at: https://www.innisvalecemetery.com/. [Accessed 15 November 2019].

Jaenen, C.J. (2013). *Treaty of Paris 1763*. [Online]. Available at: https://www.thecanadianencyclopedia.ca/en/article/treaty-of-paris-1763. [Accessed 13 December 2019].

Jaenen, C.J. (2014). *Treaty of Paris 1783*. [Online]. Available at: https://www.thecanadianencyclopedia.ca/en/article/treaty-of-paris-1783. [Accessed 13 December 2019].

Johnston, D. (2004). Connecting People to Place: Great Lakes Aboriginal History in Cultural Context. [Online]. Available at: http://www.attorneygeneral.jus.gov.on.ca/inquiries/ipper wash/transcripts/pdf/P1\_Tab\_1.pdf. [Accessed 27 November 2018].

Jury, W. and Jury, E.McLeod. (1956). *The Nine Mile Portage Route from Kempenfelt Bay to the Nottawasaga River*. London, Ontario: Museum Bulletin No.11, Museum of Indian Archaeology, the University of London.

Library and Archives Canada (LAC) (2019a). *Item:* 15649. [Online]. Available at: http://www.bac-lac.gc.ca/eng/discover/postal-heritage-philately/post-offices-postmasters/Pages/item.aspx?IdNumber=15649&&p\_ID=0&PagedPrev=TRUE [Accessed 15 November 2019].

Library and Archives Canada (LAC) (2019b). *Item: 10262*. [Online]. Available at: http://www.bac-lac.gc.ca/eng/discover/postal-heritage-philately/post-offices-postmasters/Pages/item.aspx?IdNumber=10262& [Accessed 15 November 2019].

Lovell, J. (1873). Gazetteer of British North America: containing the latest and most authentic descriptions of over six thousand cities, towns and villages in the provinces of Ontario, Quebec, Nova Scotia, New Brunswick, Newfoundland, Prince Edward Island, Manitoba, British Columbia, and the North West Territories. Montreal, Quebec: John Lovell, Printer and Publisher, St. Nicholas Street.

McEvoy & Co. (1866-67). *Gazetteer and Directory of the County of Simcoe*. Toronto, Ontario: McEvoy & Co. Publishers.

Natural Resources Canada. (2013). *Atlas of Canada – Toporama: Barrie 031D05*. [Online]. Available at: http://atlas.gc.ca/toporama/en/index.html. [Accessed 13 November 2019].

Ontario Agricultural College (1959). Soil Map of Simcoe County – South Sheet, Soil Survey Report No. 29. Guelph: Soil Research Institute.

Ontario Genealogical Society (OGS). (2019). *Innisfil Cemeteries Search*. [Online]. Available at: http://vitacollections.ca/ogscollections/results?q=innisfil+cemeteries [Accessed 15 November 2019].

Ontario Heritage Trust (OHT) (2019). *Plaque Database*. [Online]. Available at: https://www.heritagetrust.on.ca/en/index.php/online-plaque-guide [Accessed 15 November 2019].

Ontario Historical Plaques (2019). *Plaque Map*. [Online]. Available at: http://www.ontarioplaques.com/Menu Map.html [Accessed 15 November 2019].

Ontario Ministry of Heritage, Sport, Tourism and Culture Industries. (2011). *Standards and Guidelines for Consultant Archaeologists*. Toronto: Ministry of Heritage, Sport, Tourism and Culture Industries.

Ontario Ministry of Heritage, Sport, Tourism and Culture Industries (2019a). *List of Heritage Conservation Districts*. [Online]. Available at:

http://www.mtc.gov.on.ca/en/heritage/heritage\_conserving\_list.shtml. [Accessed 15 November 2018].

Ontario Ministry of Heritage, Sport, Tourism and Culture Industries (2019b). *Sites within a One Kilometre Radius of the Study Corridor*, provided from the Ontario Archaeological Sites Database, 18 November 2019.

Pencen Museum. (2013). A Short History of Penetangishene. [Online]. Available at: https://www.penetanguishene.ca/en/discover/History.asp [Accessed 27 November 2019].

Ramsden, P.G. (1990). The Hurons: Archaeology and Culture History. In Ellis, C.J. and N. Ferris (Eds.) *The Archaeology of Southern Ontario to A.D. 1650*. London, Ontario: Occasional Publication of the London Chapter, OAS, pp. 361-384.

Robinson, P.J. (1965). *Toronto during the French Regime: 1615-1793.* Toronto: University of Toronto Press.

Schmalz, P.S. (1991). The Ojibwa of Southern Ontario. Toronto: University of Toronto Press.

Simcoe County (2019a). *Archaeological Potential Layer*. [Online]. Available at: https://maps.simcoe.ca/public/. [Accessed 13 December 2019].

Simcoe County (2019b). 1989 Orthophotograph. [Online]. Available at: https://maps.simcoe.ca/public/. [Accessed 15 November 2019].

Simcoe County (2019c). 1997 Orthophotograph. [Online]. Available at: https://maps.simcoe.ca/public/. [Accessed 15 November 2019].

Simcoe County (2019d). 2002 Orthophotograph. [Online]. Available at: https://maps.simcoe.ca/public/. [Accessed 15 November 2019].

Simcoe County (2019e). 2013 Orthophotograph. [Online]. Available at: https://maps.simcoe.ca/public/. [Accessed 15 November 2019].

Simcoe County (2019f). 2018 Orthophotograph. [Online]. Available at: https://maps.simcoe.ca/public/. [Accessed 15 November 2019].

Smith, D.B. (2013). Sacred Feathers: The Reverend Peter Jones (Kahkewaquonaby) and the Mississauga Indians. Toronto: University of Toronto Press.

Smith, W.H. (1851). Canada: Past, Present and Future, being a Historical, Geographical, Geological and Statistical Account of Canada West. [Online]. Available at: http://archive.org/stream/canadapast00smituoft#page/n7/mode/2up [Accessed 27 November 2019].

Spence, M.W., Pihl, R.H., and Murphy, C.R. (1990). Cultural Complexes of the Early and Middle Woodland Periods. In Ellis, C.J. and N. Ferris (Eds.) *The Archaeology of Southern Ontario to A.D.* 1650. London, Ontario: Occasional Publication of the London Chapter, OAS, pp. 125-169.

Surtees, R.J. (1994). Land Cessions, 1763-1830. In E.S. Rogers, (Ed.). *Aboriginal Ontario: Historical Perspectives on the First Nations*. Toronto, Ontario: Dundurn Press Limited, pp. 92-121.

Sutherland, S.R.J. (2014). *Jay's Treaty*. [Online]. Available at: https://www.thecanadianencyclopedia.ca/en/article/jays-treaty. [Accessed 27 November 2019].

This Land Archaeology Inc. (2016). Report on the 2007, 2008, 2009 Stage 1 to 3 Archaeological Assessments of the Watersand Construction Ltd.'s and Wormwood Development Inc.'s Properties, Town of Innisfil, Simcoe County (P059-175-2009, P059-074-2008 & P059-045-2007).

Town of Innisfil (2010). *Town of Innisfil – Heritage Register*. [Online]. Available at: https://innisfil.ca/wp-content/uploads/2019/06/HC\_InnisfilHeritageRegisterJune20102.pdf. [Accessed 15 November 2019].

Town of Innisfil (2017a). *Official Plan: Schedule B: Land Use*. [Online]. Available at: https://innisfil.ca/wp-content/uploads/2019/06/Schedules-Combined.pdf. [Accessed 27 November 2019].

Town of Innisfil (2017b). *Official Plan: Schedule B6 Land Use – Innisfil Heights*. [Online]. Available at: https://innisfil.ca/wp-content/uploads/2019/06/Schedules-Combined.pdf. [Accessed 27 November 2019].

Town of Innisfil (2019). *Innisfil's Designated Properties*. [Online]. Available at: https://innisfil.ca/municipal-heritage-register/. [Accessed 15 November 2019].

Trigger, B.G. (1994). The Original Iroquoians: Huron, Petun and Neutral. In Edward S. Rogers (Eds.). *Aboriginal Ontario: Historical Perspectives on the First Nations*. Toronto, Ontario: Dundurn Press Limited, pp 41-63.

Vuckson, H.D. (2017). Death Knell on the Hamilton & North Western Railway. [Online]. Available at .

http://nebula.wsimg.com/1eb3333434d4b8152e8d6e1d1570da3d?AccessKeyId=FBBAA385BCD A1C2C4843&disposition=0&alloworigin=1. [Accessed 15 November 2019].

Warrick, G.A. (2000). The Precontact Iroquoian Occupation of Southern Ontario. In *Journal of World Prehistory*, Vol.14, No.4, pp. 415-466.

Warrick, G. (2008). *A Population History of the Huron-Petun, A.D. 500-1650*. New York: Cambridge University Press.

Williamson, R.F. (1990). The Early Iroquoian Period of Southern Ontario. In Ellis, C.J. and N. Ferris (Eds.) *The Archaeology of Southern Ontario to A.D. 1650*. London, Ontario: Occasional Publication of the London Chapter, OAS, pp. 291-320.

Williamson, R.F. (2013). The Woodland Period, 900 BCE to 1700 CE. In Munson, M.K. and Jamieson, S.M (Eds.) *Before Ontario: The Archaeology of a Province*. Montreal & Kingston, Ontario: McGill Queen's University Press.

Wright, J.V. (1994). Before European Contact. In Edward S. Rogers (Eds.). *Aboriginal Ontario: Historical Perspectives on the First Nations*. Toronto, Ontario: Dundurn Press Limited, pp 21-40.

Wright, J.V. (1999). A History of the Native People of Canada: Volume II (1,000B.C. – A.D. 500). Hull, Quebec: Museum of Civilization.

York North Archaeological Services Inc. (2009). A Stage I Archaeological/Heritage Assessment of the Proposed Road Widening of County Road 21, From County Road 27 to County Road 39, Located in Part Lots 1-20, Concession 7, and Part Lots 1-20, Concession 8, Township of Innisfil, County of Simcoe (P156-097-2009).

York North Archaeological Services Inc. (2013). A Stage II Archaeological Assessment of the Proposed Road Widening of County Road 21, from County Road 27 to County Road 39 (2009R21-041-01 and 2009R-041-02). (P156-109-2010, P156-122-2011).

#### **HISTORICAL MAP SOURCES:**

#### **ARCHIVES OF ONTARIO, PATENT PLANS, RG 1-100**

Unknown Author (1842/1877/1930) *Patent Plan of the Township of Innisfil*. [Online]. Available at:

http://ao.minisisinc.com/scripts/mwimain.dll/1574866611/IMAGES\_WEB\_ADD/IREFCODE/RG~ 201-100-0-0-1057?JUMP. [Accessed 15 November 2019].

#### MCGILL UNIVERSITY DIGITAL COLLECTIONS, The Canadian County Digital Atlas Project

H. Belden (1881). Simcoe Supplement in Illustrated Atlas of the Dominion of Canada, Ont. Toronto: H. Belden. Available at:

https://digital.library.mcgill.ca/countyatlas/searchmapframes.php [Accessed 15 November 2019].

#### ONTARIO COUNCIL OF UNIVERSITY LIBRARIES, Historical Topographic Map Digitization Project

- Department of National Defence (1928). Topographic Map, Ontario, Barrie Sheet No.105.
   [Digital]. https://ocul.on.ca/topomaps/map-images/ (15 November 2019).
- Department of National Defence (1943). Topographic Map, Ontario, Sheet 31 D/5, original survey 1927; reprinted 1943 [Digital]. https://ocul.on.ca/topomaps/map-images/ (15 November 2019).

#### **UNIVERSITY OF TORONTO LIBRARIES, Ontario Historical County Maps Project**

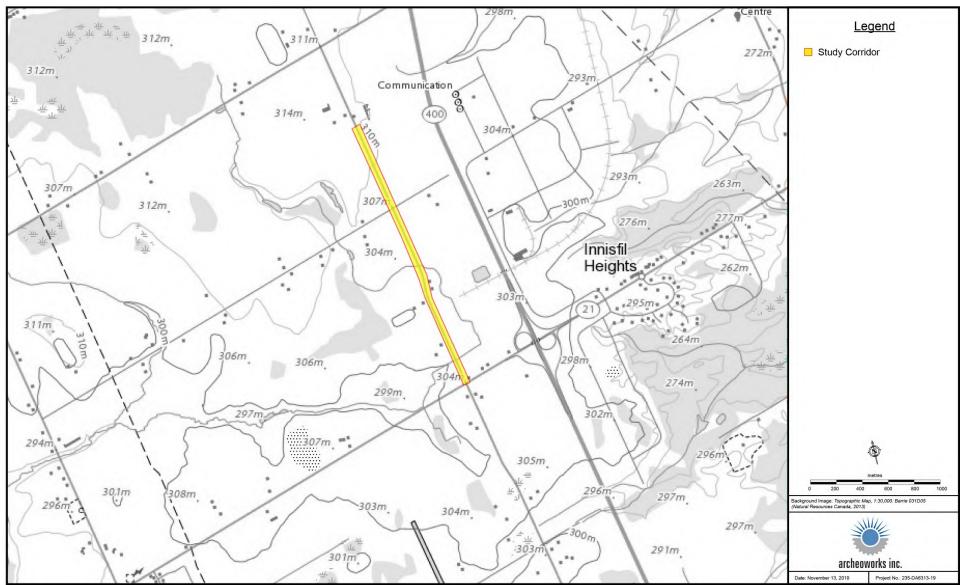
- J. Hogg (1871). *Hogg's Map of the County of Simcoe, Canada West*. [Online]. Available at: http://maps.library.utoronto.ca/hgis/countymaps/maps.html [Accessed 15 November 2019].

#### UNIVERSITY OF TORONTO MAP & DATA LIBRARY, 1954 Air Photos of Southern Ontario

 1954 Air Photos of Southern Ontario. [Online]. Available at: https://mdl.library.utoronto.ca/collections/air-photos/1954-air-photos-southern-ontario/index [Accessed 15 November 2019].

# **APPENDICES**

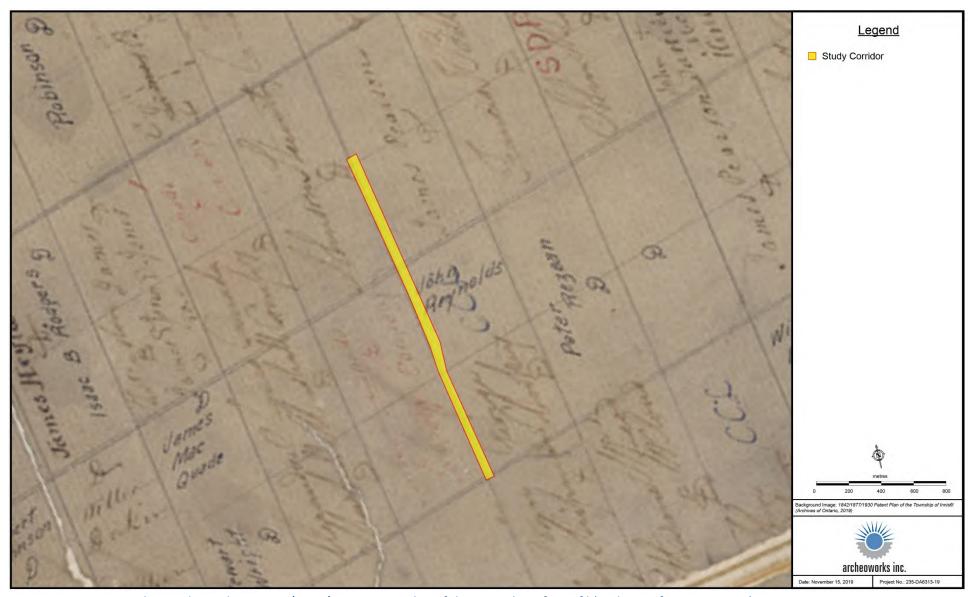
#### **APPENDIX A: MAPS**



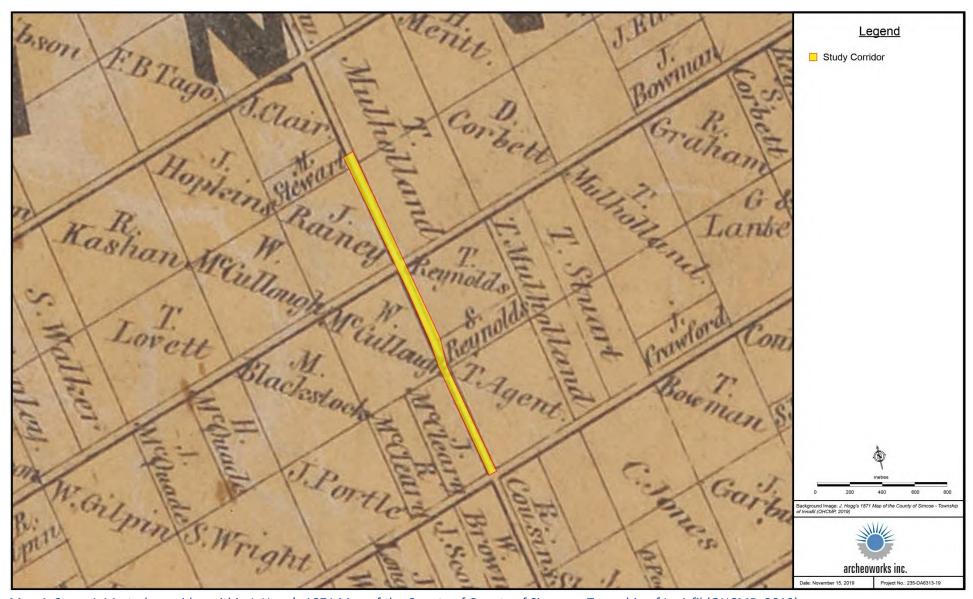
Map 1: Topographic Map, 1:30,000, Barrie 031D05 (Natural Resources Canada, 2013) identifying the Stage 1 AA study corridor.



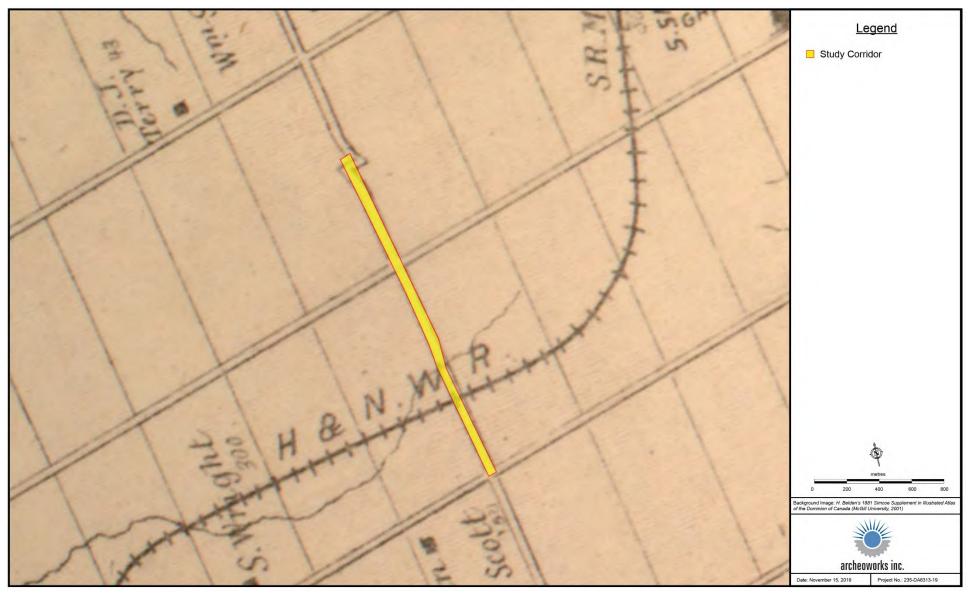
Map 2: Identifying areas of archaeological potential within the Stage 1 AA study corridor according to the Simcoe County AMP (Simcoe County Maps, 2019a).



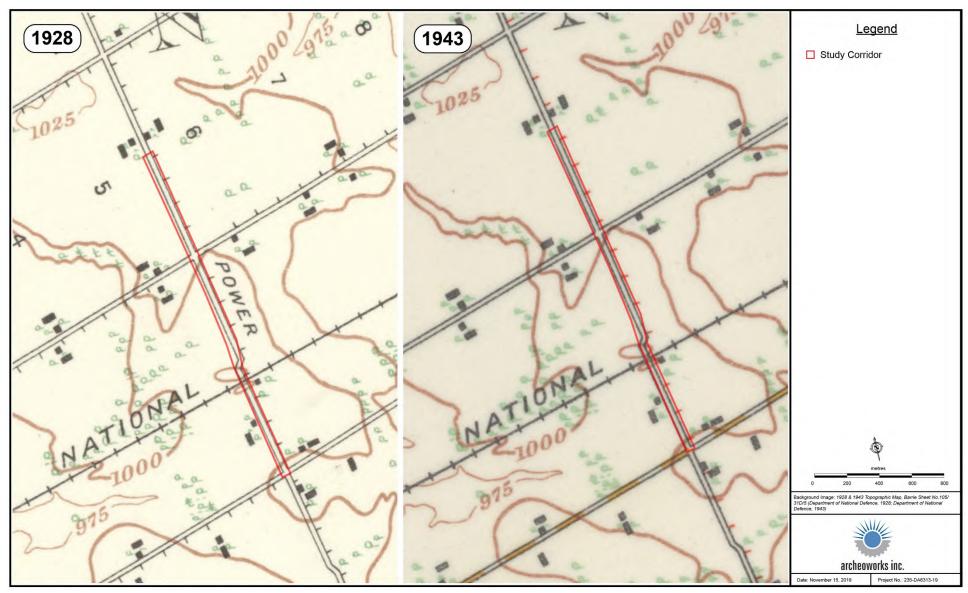
Map 3: Stage 1 AA study corridor within a 1842/1877/1930 Patent Plan of the Township of Innisfil (Archives of Ontario, 2019).



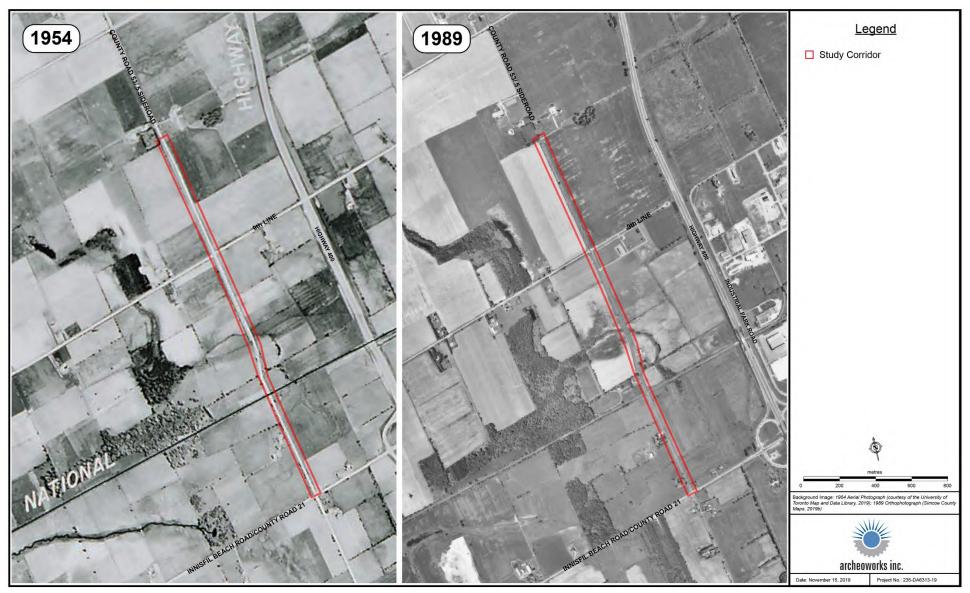
Map 4: Stage 1 AA study corridor within J. Hogg's 1871 Map of the County of Simcoe – Township of Innisfil (OHCMP, 2019).



Map 5: Stage 1 AA study corridor within the H. Belden's 1881 Simcoe Supplement in Illustrated Atlas of the Dominion of Canada – Township of Innisfil (McGill University, 2001).



Map 6: Stage 1 AA study corridor within a 1928 and 1943 Topographic Maps (Department of National Defence, 1928; Department of National Defence, 1943).



Map 7: Stage 1 AA study corridor within a 1954 aerial photograph, and a 1989 orthophotograph (University of Toronto Map and Data Library, 2019; Simcoe County, 2019b).



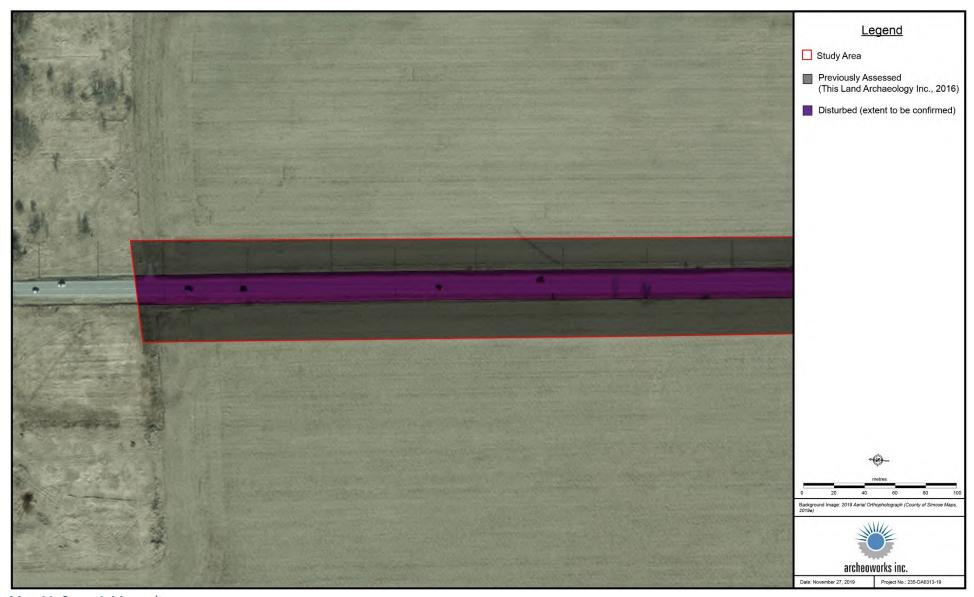
Map 8: Stage 1 AA study corridor within a 1997 and 2002 orthophotograph (Simcoe County, 2019c-d).



Map 9: Stage 1 AA study corridor within a 2004 aerial image and a 2013 orthophotograph (Google Earth, 2019a; Simcoe County, 2019e).



Map 10: Stage 1 AA study corridor within a 2016 aerial image and a 2018 orthophotograph (Google Earth, 2019b; Simcoe County, 2019f).



Map 11: Stage 1 AA results.



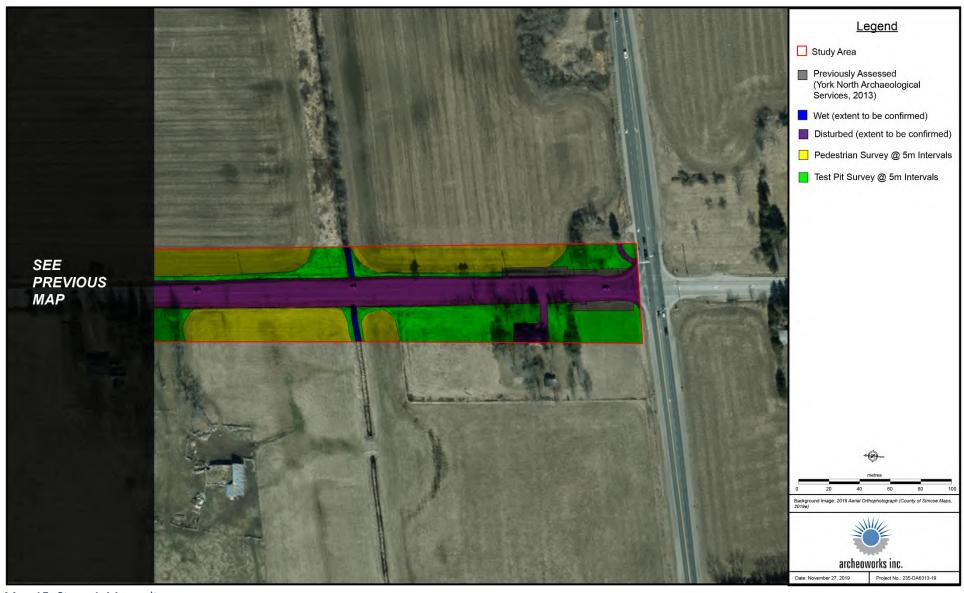
Map 12: Stage 1 AA results.



Map 13: Stage 1 AA results.



Map 14: Stage 1 AA results.



Map 15: Stage 1 AA results.

# **APPENDIX B: SUMMARY OF BACKGROUND RESEARCH**

Feature of Archaeological Potential		Yes	No	Unknown	Comment
1	Known archaeological sites within 300 m?	Х			If Yes, potential confirmed
Physical Features		Yes	No	Unknown	Comment
2	Is there water on or adjacent to the property?	Х			If Yes, potential confirmed
2a	Presence of primary water source within 300 metres of the study corridor (lakes, rivers, streams, creeks)	Х			If Yes, potential confirmed
2b	Presence of secondary water source within 300 metres of the study corridor (intermittent creeks and streams, springs, marshes, swamps)		Х		If Yes, potential confirmed
2c	Features indicating past presence of water source within 300 metres (former shorelines, relic water channels, beach ridges)		Х		If Yes, potential confirmed
2d	Accessible or inaccessible shoreline (high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh)		Х		If Yes, potential confirmed
3	Elevated topography (knolls, drumlins, eskers, plateaus, etc.)		Х		If Yes to two or more of 3-5 or 7-10, potential confirmed
4	Pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground		Х		If Yes to two or more of 3-5 or 7-10, potential confirmed
5	Distinctive land formations (mounds, caverns, waterfalls, peninsulas, etc.)		Х		If Yes to two or more of 3-5 or 7-10, potential confirmed
Cultural Features		Yes	No	Unknown	Comment
6	Is there a known burial site or cemetery that is registered with the Cemeteries Regulation Unit on or directly adjacent to the property?	Х			If Yes, potential confirmed
7	Associated with food or scarce resource harvest areas (traditional fishing locations, food extraction areas, raw material outcrops, etc.)		Х		If Yes to two or more of 3-5 or 7-10, potential confirmed
8	Indications of early Euro-Canadian settlement (monuments, cemeteries, structures, etc.) within 300 metres		Х		If Yes to two or more of 3-5 or 7-10, potential confirmed
9	Associated with historic transportation route (historic road, trail, portage, rail corridor, etc.) within 100 metres of the property	Х			If Yes to two or more of 3-5 or 7-10, potential confirmed
Property-specific Information		Yes	No	Unknown	Comment
10	Contains property designated under the Ontario Heritage Act		Х		If Yes, potential confirmed
11	Local knowledge (aboriginal communities, heritage organizations, municipal heritage committees, etc.)		Х		If Yes, potential confirmed
12	Recent ground disturbance, not including agricultural cultivation (post-1960, extensive and deep land alterations)	X – in some parts			If Yes, low archaeological potential is determined

# **APPENDIX C: INVENTORY OF DOCUMENTARY AND MATERIAL RECORD**

	Project Information:							
Project Number:		235-DA6313-19						
Licensee:		lan Boyce (P1059)						
MHSTCI PIF:		P1059-0055-2019						
Document/ Material			Location	Comments				
1	Research/	Digital files stored in:	Archeoworks Inc.,	Stored on				
	Analysis/	/2019/ 235-DA6313-19 -	16715-12 Yonge St., Suite 1029,	Archeoworks				
	Reporting Material	CR 53-5th SR /Stage 1	Newmarket, ON, Canada	network servers				
			L3X 1X4					

Under the Section 14 of the Terms and Conditions for Archaeological Licences issued under the *Ontario Heritage Act*, "the licensee shall hold in safekeeping all artifacts and records of archaeological fieldwork carried out under this licence, except where those artifacts and records are transferred by the licensee to Her Majesty the Queen in right of Ontario or the licensee is directed to deposit them in a public institution in accordance with subsection 66(1) of the Act." The collections are being stored at Archeoworks Inc. on the licensee's behalf.

Stage 1 Archaeological Assessment for the **Proposed Road Widening and Improvements of County Road 53 (5 Sideroad)** From Innisfil Beach Road to the City of Barrie Municipal Limits Within Part of Lots 5-6, Concession 8-9 and the Road Allowance between Concession 8 and 9 **Geographic Township of Innisfil Former County of Simcoe** Now the Town of Innisfil **County of Simcoe Ontario** 

Project #: 235-DA6313-19

Licensee (#): Ian Boyce (P1059)

PIF#: P1059-0055-2019

**Supplementary Document** 

February 6, 2020

#### Presented to:

C. C. Tatham & Associates Ltd.

41 King Street, Unit 4 Barrie, Ontario L4N 6B5

T: 705.733.9037

#### Prepared by:

Archeoworks Inc.

16715-12 Yonge Street, Suite 1029 Newmarket, Ontario L3X 1X4

T: 416.676.5597

F: 647.436.1938

# **TABLE OF CONTENTS**

TABLE OF CONTENTS	•••••		
1.0 INNISVALE CEMETERY	Y AND CREMATORIUM	CORRESPONDENCE.	

#### 1.0 INNISVALE CEMETERY AND CREMATORIUM CORRESPONDENCE

----Original Message-----

From: Nicole McNaughton <nicole@innisvalecemetery.com>

Sent: February 6, 2020 10:18 AM
To: Itempleton@archeoworks.com
Subject: RE: Contact Us Form Submission

Good Morning Lee,

Great talking with you yesterday as well!

This is to confirm there are absolutely no burials in the land lying along the western limit of our cemetery property. This is due to two reasons; the cemetery pond is directly adjacent to this location and as we discussed the soil is extremely wet due to a very high water table.

Please note the following; the Nottawasaga Valley Conservation Authority (NVCA) will need to be consulted prior to any work that may be required within the cemetery property. Innisvale was mandated to obtain approval from NVCA prior to creating the pond site in 2015. The pond site serves also to provide water via a fire hydrant located within the cemetery property in the event a fire should occur at our facility.

You have permission to include this message as part of a supplementary documentation for your purposes.

Please contact me if you require anything further.

Warmest Regards,

Nicole McNaughton - General Manager Innisvale Cemetery and Crematorium Ltd. 7551 5th Sideroad, Innisfil, ON L9S 3S1 (705)722-3121 nicole@innisvalecemetery.com

----Original Message-----

From: ltempleton@archeoworks.com [mailto:ltempleton@archeoworks.com]

Sent: Wednesday, February 05, 2020 4:04 PM

To: 'Nicole McNaughton' <nicole@innisvalecemetery.com>

Subject: RE: Contact Us Form Submission

Hi Nicole,

Thank you so much for taking the time to talk to me today, very much appreciated!

Per our phone call, no burials have occurred in those lands lying along the western limit of the cemetery property (along County Road 53/5 Sideroad, from 9 Line to Georgian Downs) and within 10 metres of the cemetery property limits. Additionally, no burials have occurred in this area due to the very wet soil conditions

in the western portion of the cemetery property. Please kindly confirm if I have confused any of the details you provided me.

With respect to this email correspondence, I am seeking your permission to include this email thread as part of our Supplementary Documentation. A Supplementary Document contains sensitive information that is submitted to the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) with the official archaeological report but will be inaccessible to the public and will not be entered in the Ontario Public Register of Archaeological Reports. The information you have provided will help address concerns regarding any potential impacts to the existing cemetery related to the proposed improvements of County Road 53/5 Sideroad.

Please and thank you!

Lee

Lee Templeton, H.B.A.
Archeoworks Inc.
16715-12 Yonge St., Suite 1029, Newmarket, ON, L3X 1X4
T: 416-948-6896 | F: 647-436-1938

Please consider the environment before printing this email.

The content of this email is confidential and intended for the recipient specified in message only. It is strictly forbidden to share any part of this message with any third party, without a written consent of the sender.

----Original Message-----

From: ltempleton@archeoworks.com < ltempleton@archeoworks.com >

Sent: January 31, 2020 9:42 AM

To: 'Nicole McNaughton' < nicole@innisvalecemetery.com >

Subject: RE: Contact Us Form Submission

Hi Nicole,

I hope you are doing well!

I just wanted to follow up on the request made in the email thread linked below.

As part of our background research for a project involving the road reconstruction along County Road 53/5 Sideroad, the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) requested that we obtain information from adjacent cemetery owners to ascertain whether or not there is or is not human burials in our project area — namely the land fronting on County Road 53/5 Sideroad at 9 Line, within the Innisvale Cemetery and Crematorium, in the Town of Innisvale. For your convinced, I've attached a general map of the area I'm most interested in.

To determine if there is the potential to encounter human remains in this area as well as delineating the original vs. current cemetery limits of the Innisvale Cemetery and Crematorium, I would like to inquire about the availability of any legal surveys, burial plot maps, plans, ground penetrating radar (GPR) surveys, drawings, historical photos, written/oral history, etc. held by the Innisvale Cemetery and Crematorium.

Thank you very much for your time. I look forward to your response.

Lee

Lee Templeton, H.B.A.
Archeoworks Inc.
16715-12 Yonge St., Suite 1029, Newmarket, ON, L3X 1X4
T: 416-948-6896 | F: 647-436-1938

22 Please consider the environment before printing this email. The content of this email is confidential and intended for the recipient specified in message only. It is strictly forbidden to share any part of this message with any third party without a written agreed of the conden.



----Original Message-----

From: ltempleton@archeoworks.com < ltempleton@archeoworks.com>

Sent: January 16, 2020 9:15 AM

To: 'Nicole McNaughton' <nicole@innisvalecemetery.com>

Subject: RE: Contact Us Form Submission

Hi Nicole,

Happy New Year!

I just wanted to follow up on the request made below.

Any information you can provide would be much appreciated!

Lee

Lee Templeton, H.B.A.
Archeoworks Inc.
16715-12 Yonge St., Suite 1029, Newmarket, ON, L3X 1X4
T: 416-948-6896 | F: 647-436-1938

In Please consider the environment before printing this email. The content of this email is confidential and intended for the recipient specified in message only. It is strictly forbidden to share any part of this message with any third party, without a written consent of the sender.

----Original Message----

From: ltempleton@archeoworks.com < ltempleton@archeoworks.com>

Sent: December 23, 2019 8:09 AM

To: 'Nicole McNaughton' < nicole@innisvalecemetery.com >

Subject: RE: Contact Us Form Submission

Dear Nicole McNaughton,

I wanted to follow up on an email sent December 13 (details below), with questions regarding the Innisvale Cemetery and Crematorium.

Any information you can provide would be much appreciated!

Happy Holidays!

Lee

Lee Templeton, H.B.A.
Archeoworks Inc.
16715-12 Yonge St., Suite 1029, Newmarket, ON, L3X 1X4
T: 416-948-6896 | F: 647-436-1938

212 Please consider the environment before printing this email. The content of this email is confidential and intended for the recipient specified in message only. It is strictly forbidden to share any part of this message with any third party, without a written consent of the sender.

----Original Message-----

From: <a href="mailto:ltempleton@archeoworks.com">ltempleton@archeoworks.com</a> <a href="mailto:ltempleton@archeoworks.com">ltempleton@archeoworks.com</a> <a href="mailto:ltempleton@archeoworks.com">ltempleton@archeoworks.com</a> <a href="mailto:ltempleton@archeoworks.com">ltempleton@archeoworks.com</a> <a href="mailto:ltempleton@archeoworks.com">ltempleton@archeoworks.com</a>>

Sent: December 13, 2019 12:41 PM

To: 'Nicole McNaughton' < nicole@innisvalecemetery.com >

Subject: RE: Contact Us Form Submission

Dear Nicole McNaughton,

Thank you for your quick response!

We have been contracted by C.C. Tatham & Associates Ltd. on behalf of Simcoe County to complete a Stage 1 Archaeological Assessment (AA) of the County Road 53/5 Sideroad road corridor, extending from Innisfil Beach Road (County Road 21) to the City of Barrie municipal limits, in advance of road reconstruction. The corridor of land we have been contracted to review encompasses a large swath of land to accommodate any possible design changes that would occur in later design phases of the road reconstruction. The swath of land roughly measures 30 metres outward from the centre line on either side of County Road 53/5 Sideroad, and consequently, a portion of the Innisvale Cemetery and Crematorium falls within this large swath of land. Attached you will find a map of our study corridor as supplied to us by C.C. Tatham & Associates Ltd. This proposed work is outlined further from the following Simcoe County bids + tenders webpage: <a href="https://simcoecounty.bidsandtenders.ca/Module/Tenders/en/Tender/Detail/226a042a-de85-45db-9cd1-b11be3e9a181">https://simcoecounty.bidsandtenders.ca/Module/Tenders/en/Tender/Detail/226a042a-de85-45db-9cd1-b11be3e9a181</a>.

As part of the Stage 1 AA process, we undertake background research, including a review of any cemeteries within 300 metres of the study corridor. The background research helps assist in archaeological potential modelling and provides a greater understanding of the history of the area.

Please kindly advise if you need any further clarification or supporting documents,

Thank-you!

Lee

Lee Templeton, H.B.A.
Archeoworks Inc.
16715-12 Yonge St., Suite 1029, Newmarket, ON, L3X 1X4
T: 416-948-6896 | F: 647-436-1938

② Please consider the environment before printing this email. The content of this email is confidential and intended for the recipient specified in message only. It is strictly forbidden to share any part of this message with any third party, without a written consent of the sender.

----Original Message-----

From: Nicole McNaughton <nicole@innisvalecemetery.com>

Sent: December 12, 2019 8:50 AM To: <a href="mailto:ltempleton@archeoworks.com">ltempleton@archeoworks.com</a>

Subject: FW: Contact Us Form Submission

Good Morning Lee,

I had always assumed that at some point the 5th Sideroad would be widened to support the large flow of traffic in our area. To date I have not received any documentation from the Town of Innisfil confirming any such road improvements.

I appreciate the work that needs to be completed on your part but wonder if you can provide me with supporting documentation related to the archaeological research from your end.

I look forward to your response.

Warmest Regards,

Nicole McNaughton - General Manager Innisvale Cemetery and Crematorium Ltd. 7551 5th Sideroad, Innisfil, ON L9S 3S1 (705)722-3121 nicole@innisvalecemetery.com

----Original Message-----

From: sales@whethamsolutions.com [mailto:sales@whethamsolutions.com]

Sent: Wednesday, December 11, 2019 3:00 PM

To: <u>nicole@innisvalecemetery.com</u> Subject: Contact Us Form Submission

There has been a submission of the form Contact Us through your concrete5 website.

Name

Lee Templeton

**Email Address** 

Itempleton@archeoworks.com

Phone number 416-948-6896

Message

To Whom it May Concern,

My name is Lee, an archaeologist and researcher for Archeoworks Inc., an archaeological consulting firm within the Greater Toronto Area.

As part of our background research for a project involving roadwork along 5th Sideroad/County Road 53, the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries requires that we obtain information (legal surveys, maps, plans, drawings, historical photos, etc., or written confirmation) from adjacent cemetery owners, to ascertain whether or not there are human burials in our project area — namely the land located along 5th Sideroad/County Road 53, extending approximately 30 metres from the centre of the 5th Sideroad/County Road 53

From our research we understand that this cemetery was established in 1983, and that no burials were ever placed along 5th Sideroad/53 County Road and beyond the current property limit (i.e., there are no burials within the present 5th Sideroad/County Road 53 right-of-way, and approximately 20m east of the right-of-way). Is this information correct?

Thank you very much for your time. We look forward to kind your response.

Lee Templeton, H.B.A.
Archeoworks Inc.
16715-12 Yonge St., Suite 1029, Newmarket, ON, L3X 1X4
T: 416-948-6896 | F: 647-436-1938

22 Please consider the environment before printing this email.

The content of this email is confidential and intended for the recipient specified in message only. It is strictly forbidden to share any part of this message with any third party, without a written consent of the sender.

To view all of this form's submissions, visit <a href="https://www.innisvalecemetery.com/index.php/dashboard/reports/forms?qsid=1467142709">https://www.innisvalecemetery.com/index.php/dashboard/reports/forms?qsid=1467142709</a>

Appendix E: Cultural Heritage Assessment



County 53 (5th Sideroad), From Innisfil Beach Road to the City of Barrie Municipal Limits, Within Part of Lots 5-6, Concession 8-9 and the Road Allowance between Concession 8 and 9, Town of Innisfil, County of Simcoe, ON

Date:

March 4, 2021

Prepared for:

Archeoworks Inc.

Prepared by:

**MacNaughton Hermsen Britton Clarkson** Planning Limited (MHBC)

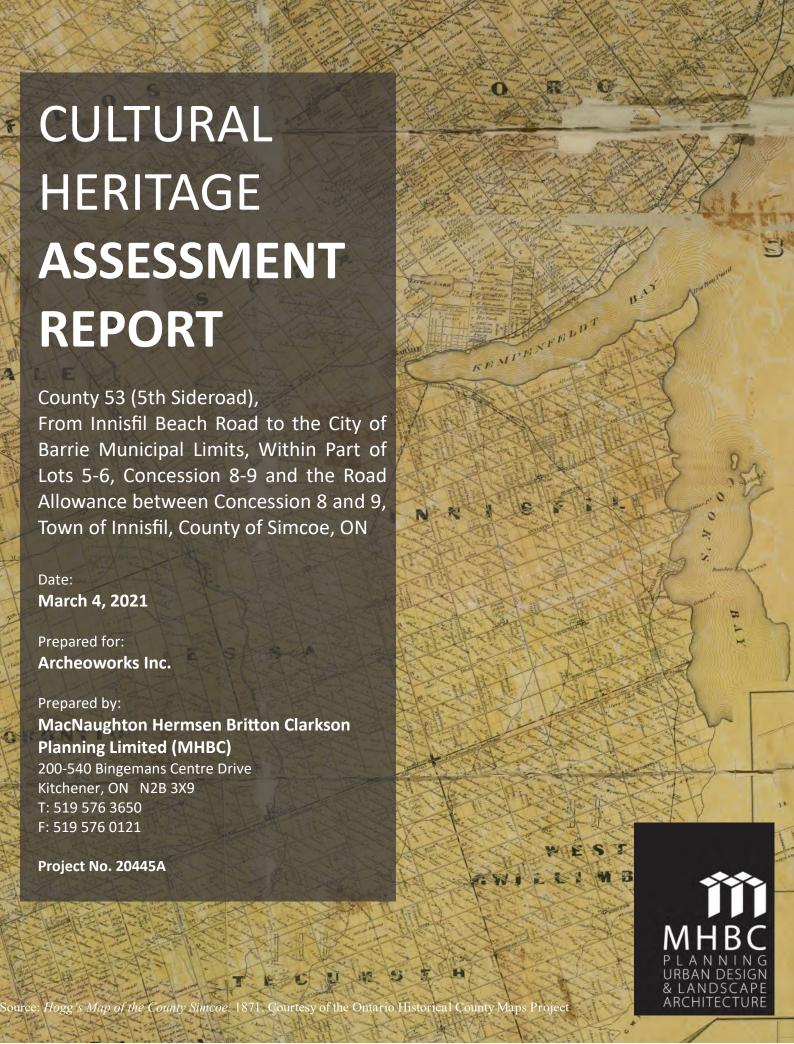
200-540 Bingemans Centre Drive

Kitchener, ON N2B 3X9

T: 519 576 3650

F: 519 576 0121

Project No. 20445A



## **Table of Contents**

Projec	ct Personnel	3
Gloss	sary of Abbreviations	3
Ackno	owledgement of Indigenous Communities	4
Execu	utive Summary	5
1.0	Introduction	6
1.1	Location and Description of Study Area	6
2.0	Methodology and Approach	9
2.1	Methodology	9
2.2	Approach	g
3.0	Policy Framework	10
3.1	The Planning Act and PPS 2020	10
3.2	The Ontario Heritage Act	12
3.3	The Ontario Heritage Tool Kit	13
3.4	Simcoe County Official Plan (2008)	13
3.5	Town of Innisfil Official Plan (2018)	14
4.0 Ba	ackground Research and Historical Context	15
4.1	Pre and Post European Contact Era/ Indigenous Communities	15
4.2	Township of Innisfil, Simcoe County	15
4.3	Study Area History	16
5.0	Screening of Study Area for Cultural Heritage Value or Interest	22
5.1	Introduction	22
5.2	Previously Identified Cultural Heritage Resources	22
5.3	Description of Potential Cultural Heritage Resources	22
5	3.1 Built Foatures	23

	5	.3.2 Landscape Features	. 26
6.0		Potential Significance of Cultural Heritage Resources	. 30
6	.1	Introduction	. 30
6	.2	Built Heritage Resources	. 30
6	.3	Cultural Heritage Landscapes	. 31
6	.4	Summary of Potential Heritage Character	. 31
7.0		Screening for Potential Impacts	. 32
7	.1	Introduction	. 32
7	.2	Potential Impacts to Resources Proposed Development	. 33
8.0		Conclusions and Recommendations	. 34
9.0		Sources	. 35
AP	PE	NDIX A – Location Maps	. 38
ΑP	PE	NDIX B – Criteria for Evaluating Potential for Built Heritage Resources an	d
Cul	tu	ral Heritage Landscapes	. 39
AP	PE	NDIX C – Ontario Regulation 9/06	. 40
AP	PE	NDIX D – Curriculum Vitae	. 41

## **Project Personnel**

Dan Currie, MA, MCIP, Managing Director of Project Manager, Reviewer

RPP, CAHP Cultural Heritage

Rachel Redshaw, MA, Heritage Planner Author, Field Review

H.E. Dipl., CAHP

## Glossary of Abbreviations

EA Environmental Assessment

EAA Environmental Assessment Act

CHAR Cultural Heritage Assessment Report

CHER Cultural Heritage Evaluation Report

CHL Cultural Heritage Landscape

HCD Heritage Conservation District

MHBC MacNaughton Hermsen Britton Clarkson

Planning Limited

MHSTCI Ministry of Heritage, Sport, Tourism and

Culture Industries

OHA Ontario Heritage Act

OHTK Ontario Heritage Toolkit

O-REG 9/06 Ontario Regulation 9/06 for determining

cultural heritage significance

PPS 2020 Provincial Policy Statement (2020)

### **Disclaimers:**

Due to the Covid-19 pandemic, in-person research has been limited and therefore, this report may not be able to reference relevant hard copy sources that are within collections that are temporarily closed to the public.

## Acknowledgement of Indigenous Communities

This document takes into consideration the cultural heritage of indigenous communities, including their oral traditions and history. This Cultural Heritage Assessment Report (CHAR) acknowledges that the study area is situated on the land of the Haudenosaunee, Anishinabewaki, Mississauga, Wendake-Nionwentsio, Mississauga/ Eastern Anishinaabe (Ojibwa) and Anishinaabe. These lands are acknowledged as being associated with the following treaties (accessed from www.native-land.ca):

Treaty 18, 1818

## **Executive Summary**

MHBC Planning, Urban Design and Landscape Architecture ("MHBC") was retained by Archeoworks Inc. to undertake a Cultural Heritage Assessment Report (CHAR) to screen for potential cultural heritage resources also referred to as a 'screening report'. The assessment is part of a Schedule C Class Environmental Assessment initiated by Simcoe County, for the widening of 5<sup>th</sup> Sideroad on County Road 53, Town of Innisfil between County Road 21 (Innisfil Beach Road) and the City of Barrie Municipal Limits.

This report concludes that there are potential cultural heritage resources located within the study area. Based on this preliminary review including background research and field review, one (1) built heritage resource (BHR) and one (1) cultural heritage landscape (CHL) were identified as having potential cultural heritage value or interest within the study area:

- BHR 1- 7370 5<sup>th</sup> Sideroad
- CHL 1- Thornton Cookstown Trans-Canada Trail (the Great Trail)

The above-mentioned potential cultural heritage resources will require further evaluation under *Ontario Regulation 9/06* and against the criteria in 4.2.11 of the *Town of Innisfil's Official Plan*; if the resources are confirmed to be of cultural heritage value or interest, the completion of a Heritage Impact Assessment may be required in accordance with Section 4.6.6 of the County's Official Plan.

<u>Note to the Reader</u>: The purpose of this executive summary is to highlight key aspects of this report and therefore does not elaborate on other components. Please note that this report is intended to be read in its entirety in order to gain a full understanding of its contents.

## 1.0 Introduction

MHBC Planning, Urban Design and Landscape Architecture ("MHBC") was retained by Archeoworks Inc. to undertake a Cultural Heritage Assessment Report (CHAR) as part of a Schedule C Class Environmental assessment initiated by Simcoe County for the widening of 5<sup>th</sup> Sideroad on County Road 53, Town of Innisfil between County Road 21 (Innisfil Beach Road) and the City of Barrie Municipal Limits. The purpose of the CHAR is to present an inventory of previously identified cultural heritage resources as well as potential cultural heritage resources identified during a field review of the study area. The scope of this CHAR does not include buried archaeological resources.

## 1.1 Location and Description of Study Area

The study area is on the 5th Sideroad between County Road 21 (Innisfil Beach Road) and the City of Barrie Municipal Limits within the Town of Innisfil, County of Simcoe, Ontario. The study area is east of the Township of Essa and south of the City of Barrie (see **Appendix 'A'**).

The study area has had limited alterations and predominately retains the original nineteenth century natural and agricultural landscape. The existing road consists of two-lanes with narrow shoulders and ditches. The study area includes two (2) culverts channelling Thornton Creek below the road. Both coniferous and deciduous trees and brush sporadically line either side of the roadway. The east side of the road is lined by wooden hydro posts. The surrounding landscape is primarily agricultural fields. See Figures 2-5.

The south end of the study area terminates at the intersection of County Road 21 (Innisfil Beach Road) and 5<sup>th</sup> Sideroad. There is wood post and wire fencing located on the south end of the study area. The Trans-Canada Trail terminates along the west side of the road on the southern half of the study area. On the north end, a deep ditch fronts Georgian Downs on the east side of the roadway followed by a chain link fence and line of coniferous trees fronting the Innisvale Cemetery and Mausoleum.



Figure 1: Aerial photo identifying study area in red dotted line (Source: MHBC, 2021).









**Figure 2, 3, 4 & 5**: (above left) View of 5<sup>th</sup> Sideroad looking south towards 7370 5<sup>th</sup> Sideroad; (above right) View of 5<sup>th</sup> Sideroad looking north towards Trans-Canada Trail parking lot on west side of road; (below left) View of deep ditch fronting Georgian Downs; (below right) View of chain link fence and line of coniferous trees fronting Innisvale Cemetery and Mausoleum (Source: Google Earth Pro, 2020).

## 2.0 Methodology and Approach

### 2.1 Methodology

The methodology of this screening report is guided by provincial guidelines and definitions including: the *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* by the *Ministry of Heritage, Sport, Tourism and Culture Industries* (MHSTCI), which is provided in **Appendix 'B'** of this report as well as *Ontario Regulation 9/06*. A built structure or landscapes is identified as a cultural heritage landscape when it is 1) considered to be 40 years and older and if the resources qualifies for at least one of the criteria of *Ontario Regulation 9/06* (provided in **Appendix 'C'**).

The 40-year threshold has been employed as a guideline in the screening for cultural heritage resources. This rolling age of 40 years for the preliminary identification of cultural heritage resource of potential cultural heritage value or interest has been accepted at the provincial and federal level as per the *Environmental Guide for Built Heritage and Cultural Heritage Landscapes* (Ministry of Transportation, 2007). While this is true, resources must be evaluated as per *Ontario Regulation 9/06* or *Ontario Regulation 10/06* in order to determine whether or not they are of significant cultural heritage value. Available historic topographic maps, aerial photographs and Fire Insurance Plans aids in the identification of structures, neighbourhoods, landforms, and other features which were constructed prior to 1981 as per the established 40 year rolling baseline.

### 2.2 Approach

The assessment will be divided into two (2) screening phases. The first or preliminary screening identifies any built heritage or cultural heritage landscapes which have already been recognized by agencies (i.e. *Town of Innisfil Municipal Heritage Register, the Ontario Heritage Act Register and the Canadian Register of Historic Places*). It also includes background historic research of primary and secondary sources to have a thorough understanding of the development of the area and to identify any significant themes, associations and/ or features. The second phase of screening during a field review to confirm the location and existing condition of previously identified cultural heritage resources as well as identify any cultural heritage resources that have not yet been identified on federal, provincial, or municipal databases.

## 3.0 Policy Framework

## 3.1 The Planning Act and PPS 2020

The *Planning Act* makes a number of provisions respecting cultural heritage, either directly in Section 2 of the Act or Section 3 respecting policy statements and provincial plans. In Section 2, the *Planning Act* outlines 18 spheres of provincial interest that must be considered by appropriate authorities in the planning process. One of the intentions of *The Planning Act* is to "encourage the co-operation and co-ordination among the various interests". Regarding cultural heritage, Subsection 2(d) of the Act provides that:

The Minister, the council of a municipality, a local board, a planning board and the Municipal Board, in carrying out their responsibilities under this Act, shall have regard to, among other matters, matters of provincial interest such as, ...

(d) the conservation of features of significant architectural, cultural, historical, archaeological or scientific interest;

The *Planning Act* therefore provides for the overall broad consideration of cultural heritage resources through the land use planning process.

In support of the provincial interest identified in Subsection 2 (d) of the *Planning Act*, and as provided for in Section 3, the Province has refined policy guidance for land use planning and development matters in the *Provincial Policy Statement, 2020* (PPS). The PPS is "intended to be read in its entirety and the relevant policy areas are to be applied in each situation". This provides a weighting and balancing of issues within the planning process. When addressing cultural heritage planning, the PPS provides for the following:

## 2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.

**Significant:** e) in regard to cultural heritage and archaeology, resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the Ontario Heritage Act.

**Built Heritage Resource:** means a building, structure, monument, installation or any manufactured or constructed part or remnant that contributes to a

property's cultural heritage value or interest as identified by a community, including an Indigenous community. Built heritage resources are located on property that may be designated under Parts IV or V of the Ontario Heritage Act, or that may be included on local, provincial, federal and/or international registers.

Cultural Heritage Landscape: means a defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Indigenous community. The area may include features such as buildings, structures, spaces, views, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association. Cultural heritage landscapes may be properties that have been determined to have cultural heritage value or interest under the Ontario Heritage Act, or have been included on federal and/or international registers, and/or protected through official plan, zoning by-law, or other land use planning mechanisms.

Conserved: means the identification, protection, management and use of built heritage resources, cultural heritage landscapes and archaeological resources in a manner that ensures their cultural heritage value or interest is retained. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment, and/or heritage impact assessment that has been approved, accepted or adopted by the relevant planning authority and/or decision-maker. Mitigative measures and/or alternative development approaches can be included in these plans and assessments

**Protected Heritage Property:** means property designated under Parts IV, V or VI of the Ontario Heritage Act; property subject to a heritage conservation easement under Parts II or IV of the Ontario Heritage Act; property identified by the Province and prescribed public bodies as provincial heritage property under the Standards and Guidelines for Conservation of Provincial Heritage Properties; property protected under federal legislation, and UNESCO World Heritage Sites.

## 3.2 The Ontario Heritage Act

The *Ontario Heritage Act*, R.S.O, 1990, c.0.18 remains the guiding legislation for the conservation of significant cultural heritage resources in Ontario. Preparation of this report has been guided by the criteria provided with *Regulation 9/06* of the *Ontario Heritage Act*, which outlines the mechanism for determining cultural heritage value or interest. The regulation sets forth categories of criteria and several sub-criteria.

In Section 2.0 of the Ontario Heritage Act directs the Ministry of Heritage, Sport, Tourism and Culture Industries to determine policies, priorities and programs for the conservation, protection and preservation of the heritage of Ontario. The Ministry published two (2) guidelines to aid in assessing cultural heritage resources as part of an environmental assessment; these guides include: Guidelines on the Man-Made Heritage Component of Environmental Assessments (1981) and Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessment (1992). Guidelines on the Man-Made Heritage Component of Environmental Assessments describe heritage and cultural heritage landscapes in Section 1.0. The following includes the definitions:

### Man-made Heritage

-works of man and the effects of his activities in the environment rather than with movable human artifacts or those environments that are natural and completely undisturbed by man.

#### **Cultural Feature**

-an individual part of a cultural landscape that may be focused upon as part of a broader scene, or viewed independently. The term refers to any man-made or modified object in or on the land or underwater, such as buildings or various types, street furniture, engineering works, plantings and landscaping, archaeological sites, or a collection of such objects seen as a group because of close physical or social relationships.

### **Cultural Heritage Landscapes**

The use and physical appearance of the land as we see it now is a result of man's activities over time in modifying pristine landscapes for his purposes. A cultural landscape is perceived as a collection of individual man-made features into a whole. Urban cultural landscapes are sometimes given special names such as townscapes or streetscapes that describe various scales of perception from the general scene to the particular view. Cultural landscapes in the countryside are viewed in or adjacent to natural, undisturbed landscapes, or waterscapes, and include such land uses as agriculture, mining, forestry, recreation, and

transportation. Like urban cultural landscapes, they too may be perceived at various scales: as a large area of homogeneous character, or as an intermediate sized area of homogeneous character or a collection of settings such as a group of farms; or as a discrete example of specific landscape character such as a single farm, or an individual village or hamlet.

## 3.3 The Ontario Heritage Tool Kit

The Province has published several resources containing information related to cultural heritage resources, and compiled the information into the *Ontario Heritage Toolkit*. This compilation is a collection of documents authored by the *Ministry of Heritage, Sport, Tourism and Culture Industries*, which provide guidance related to a variety of cultural heritage planning matters. The documents contained within the Heritage Resources in the Land Use Planning Process compilation have specifically been referenced in the preparation of this report, to ensure consistency with best practices.

## 3.4 Simcoe County Official Plan (2008)

Section 3.7.2 of the County's Official Plan states that the County is "-to encourage maintenance, protection, and restoration of significant natural heritage features and functions and to conserve the built heritage resources and cultural heritage landscapes associated with rural and agricultural areas." The study area is located within a rural, agricultural context and is reviewed within this context.

Section 4.6 of the Official Plan outlines policies regarding cultural heritage conservation and states that, "Significant built heritage resources, and significant cultural heritage landscapes, will be conserved." The County is obligated to work with local municipalities to develop and maintain an inventory of significant cultural heritage resources which may include: a) heritage resources designated under Parts IV and V of the Ontario Heritage Act; b) sites or areas having historical, archaeological, cultural, scenic, or architectural merit both on land and underwater; c) cemeteries; and d) other cultural heritage resources of community interest and significance" (Section 4.6.2).

Development and site alteration is not permitted on adjacent lands to protected property unless, "the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved" (Section 4.6.6).

## 3.5 Town of Innisfil Official Plan (2018)

Section 4.2 of the *Town of Innisfil Official Plan* ("Our Place") outlines policies for the Town's culture and heritage. Section 4.2.7 states that the Town Clerk is obligated to, "-establish and maintain a register of all properties designated by the municipality or by the Minister under Parts IV and V of the Ontario Heritage Act, including built heritage resources and heritage conservation districts that are of cultural heritage value or interest." This register may include resources that are deemed by the Innisfil Council or local heritage committee as having potential cultural heritage value or interest (Section 4.2.9). The Town identifies two categories for cultural heritage resources: historic and architectural value in Section 4.2.12. Historic value is identified as:

- a) Those that serve as an example of the Town's past social, cultural, political or physical development, including cultural heritage landscapes such as landscaping, hedgerows and natural features;
- b) Those that serve as an example of outstanding work by a local or national personality; and,
- c) Those that date from an early or significant period in the Town's development as determined to be significant by the Town.

#### Architectural value is identified as:

- a) Those that serve as a representative example of style, design or period of building:
- b) Those that serve as a representative example of method of construction which was used during a certain time period or rarely used today;
- c) Those that serve as an important Town landmark; and
- d) Those that make and important contribution to the area composition or streetscape of which it forms a part.

In order to conserve the Town's local significant cultural heritage resources in light of development, that Town requires the following:

Development proponents shall retain a heritage consultant to identify, research and document buildings considered to be significant built heritage resources and significant cultural heritage landscapes. In consultation with the Town's Heritage Committee and Town staff, such cultural resources and landscapes shall be conserved and integrated into the development and added to the register (4.2.13).

This report assesses the study area within the Town's policy context.

# 4.0 Background Research and Historical

### Context

## 4.1 Pre and Post European Contact Era/ Indigenous Communities

The first inhabitants of Southern Ontario arrived approximately 11,000 years before present after the retreat of the glaciers which shaped the landscape and created large glacial lakes. Inhabitants were small groups of nomadic hunter-gatherers which seasonally resided in Southern Ontario during the Paleo-Indian, Archaic and Woodland periods (TRCA, 27). During the Woodland period, there was an increasing sedentary lifestyle. Between1400-1600 AD the Neutral Natives and Huron-Wendat settled among other areas, within Simcoe County (Ramsden, 363). By the 1600s, it is claimed that the area "south of Lake Simcoe and along the north shore of Lake Ontario remained a noman's land, with no permanent settlements and traversed only by raiding parties from the north or from the south" (Robinson, 11). In the 1650s, the Five Nations, which later includes the Six Nations (Haudenosaunee), went to war with Huron-Wendat destroying several of their villages. The Five Nations settled along Lake Ontario to capitalize on the fur trade (TRCA, 42). Groups within the Anishinaabeg rivaled the First Nations and eventually their settlements were abandoned and replaced by the Anishinaabe. The Ojibway settled in the County of Simcoe around Lake Simcoe (TRCA, 44).

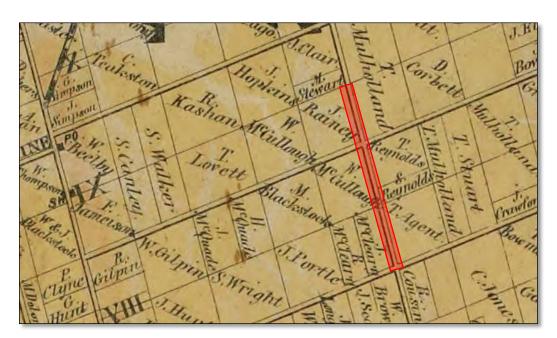
## 4.2 Township of Innisfil, Simcoe County

In 1792, Governor Lieutenant-Colonel John Graves Simcoe of England divided the Province of Upper Canada into nineteen counties. Arriving in Penetanguishene Bay, he decided to fortify the area against the Americans if war were to commence. William Claus who was the Superintendent of Indian Affairs requested a large tract of land to the west and south of Lake Simcoe from the government; he was awarded this land for Euro-Canadian settlement in 1818 (Treaty 18 or Nottawasaga Treaty) (Department of Indian Affairs, 1891). The Township of Innisfil was included in these lands. In 1829, the Township of Innisfil was surveyed and contained 68, 653 acres (Township of Innisfil). Hewson Family was claimed to be one of the first Euro-Canadian families to settle in the area (Middleton, 389). Other families included: Clement Family, the McLean family, the Willson family, the Laird Family and the Rogerson Family (Middleton, 389). The Township of Innisfil included primarily Irish and Scottish settlers. By the mid-19<sup>th</sup> century, there were

1,887 person living in the Township. At the time, agriculture was the primary industry in the area, although lumbering was also a thriving industry with the establishment of five sawmills (Hunter). The study corridor is within close proximity of the Hamlet of Thornton (southwest of study corridor) and Vine (north east of study corridor). The Hamlet of Thornton was settled in 1853. According to *McEvoy & Co.'s 1866-1867 County Directory*, there were approximately 100 persons living in the hamlet of Thornton with a school, temperance and Loyal Orange lodges and three churches; the Hamlet of Vine had approximately 25 persons residing in the hamlet and a common school. In the latter half of the 19<sup>th</sup> century, the Hamilton and North-Western Railway was constructed through Thornton and Vine; this railway line merged with the Northern Railway of Canada which later would become the Grand Trunk Railway (Vuckson, 2017, 2).

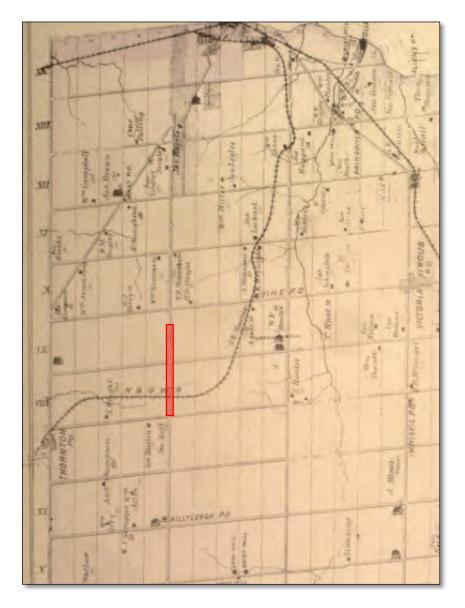
## 4.3 Study Area History

The 1842 Patent Plan of the Township of Innisfil does not identify any buildings or structures along the study corridor. By 1871, J. Hogg's Map of the County of Simcoe several land owners are identified including: J. McCleary, W. McCullough, T. Agent, S. Reynolds, T. Reynolds, J. Rainey, M. Stewart and T. Mullholland (see Figure 6). The map does not identify any buildings or structures, however, it should be noted that this does not confirm the lack of their existence. The only buildings are structures represented in the Township of Innisfil in this particular map includes schools, post offices and urban area.



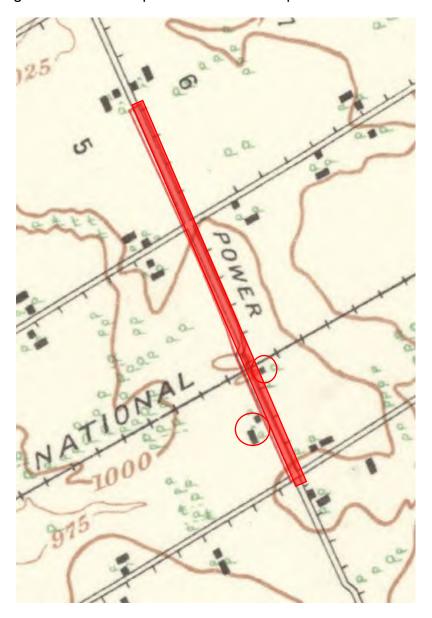
**Figure 6-** Excerpt of Hogg's Map County of Simcoe, 1871; red box indicates location of study area (Courtesy of Ontario Historical County Maps Project).

H. Belden's 1881 Simcoe supplement in Illustrated atlas of the Dominion of Canada also does not identify any buildings are structures within the study corridor. However, again, it should be noted that not all buildings and structures would be represented on the historical atlas as the level of detail was often based upon the local subscribers who financed the mapping. The Hamilton and North West Railway, which merged two years prior to the completion of the map, intersects the south end of the study corridor.



**Figure 7-** Excerpt of 1881 Simcoe supplement in Illustrated atlas of the Dominion of Canada 1; red box indicates location of study area (Courtesy of The Canadian County Atlas Digital Project).

A topographic map of 1928, demonstrates that there are buildings located on the south end of the study area (present day 7370 5<sup>th</sup> Side Road) and a building on the east side of the study corridor, immediately south of the CNR which no longer is present. There are no other buildings or structures represented in this map.



**Figure 8:** 1928 Topographic map; red box indicates location of study area; red circles indicate buildings (Source: Department of National Defence, 1928).

An aerial photograph in 1954 of Southern Ontario demonstrates that at the time there was a farm complex located on the south end of the study corridor (present day 7370 5<sup>th</sup> Side Road) and a building on the east side of the study corridor, immediately south of the CNR which is represented in the 1928 topographic map. There are no other buildings or structures present in aerial photograph of the study corridor.

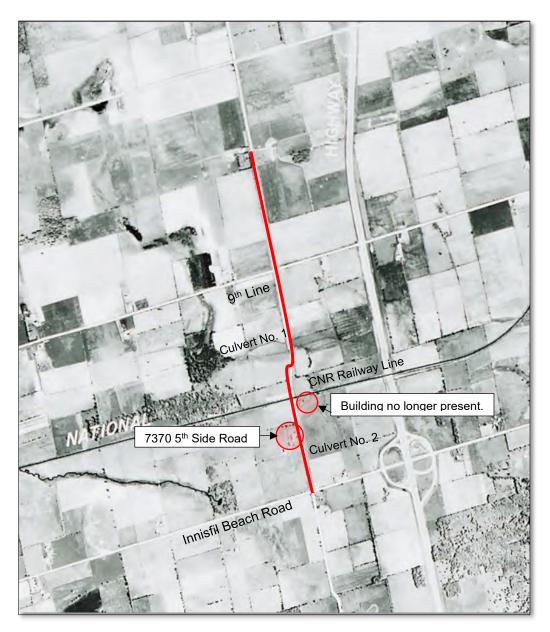
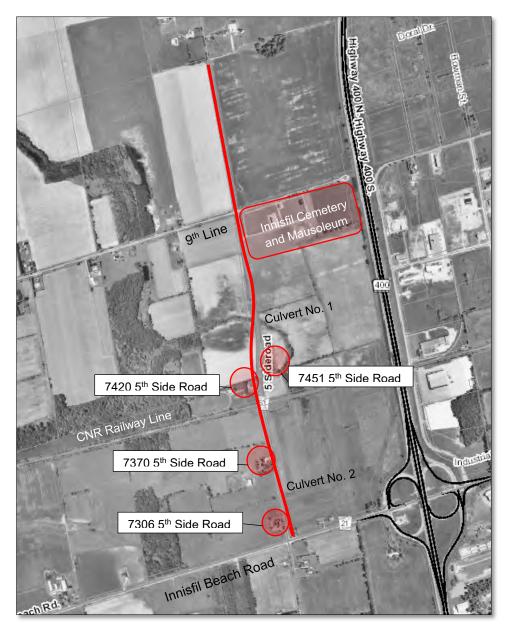


Figure 9: 1954 aerial photograph of study area (Courtesy of the Toronto Map and Data Library).

In 1989, three additional residences appear within an aerial photograph as well as the Innisfil Cemetery and Mausoleum that was established circa 1983. A comparison of the 1954 and 1989 aerial photographs conclude that the properties located at 7306, 7420 and 7451 5<sup>th</sup> Side Road were constructed between 1955 and 1988.



**Figure 10:** 1989 aerial photograph of Simcoe County; detailed view of study area; red line indicates study area; red circles indicate existing buildings (Source: County of Simcoe Interactive Map, 2021)

Georgian Downs opened in November 2001, and is shown on the 2002 aerial photo. Since then, there has been limited alterations to the overall study area.



**Figure 11:** 2002 aerial photograph of Simcoe County; detailed view of study area; red line indicates study area; red circles indicate existing buildings (Source: County of Simcoe Interactive Map, 2021).

# 5.0 Screening of Study Area for Cultural Heritage Value or Interest

### 5.1 Introduction

The following sub-sections identify all potential built heritage resources and cultural heritage landscapes. This includes an initial phase of screening of previously identified cultural heritage resources and a secondary screening included in the field review to confirm the location and existing condition of previously identified cultural heritage resources as well as identify any cultural heritage resources that have not yet been identified on federal, provincial, or municipal databases.

## 5.2 Previously Identified Cultural Heritage Resources

In order to confirm the presence of cultural heritage resources which have been previously identified, several databases were consulted. These databases included available information from the *Innisfil Heritage Registry* and *Innisfil's Designated Properties*, the *Town of Innisfil's Official Plan*, the *Ontario Heritage Act Register (Ontario Heritage Trust)*, the *Canadian Register of Historic Places* (CRHP), and the Simcoe County's Interactive Map.

Having reviewed the above databases, no previously identified heritage resources (including built heritage or cultural heritage landscapes) are located within the study corridor. In addition, there are no listed or designated cultural heritage resource or landscapes (including Heritage Conservation Districts) within 300 metres of the study area.

## 5.3 Description of Potential Cultural Heritage Resources

This section identifies both built and landscape features within or within 300 metres of the study corridor which have potential to be of cultural heritage value or interest.

### 5.3.1 Built Features

### **Buildings**

This sub-section focuses on built features identified in the area including all buildings and structures and provides a brief description.

Feature	Photo	Description
Feature No.1		7306 5 <sup>th</sup> Sideroad One storey bungalow with attached garage and outbuilding to the rear. Construction c. 1960.
Feature No. 2		7370 5 <sup>th</sup> Sideroad Farm complex comprised of a two storey Ontario Gothic Revival farmhouse circa 1885, detached garage, and agricultural outbuildings including a barn. It also includes landscape features such as a tree-lined drive, tree windbreaks, and wooden split-rail fencing.
Feature No. 3		7420 5 <sup>th</sup> Sideroad One storey bungalow with approximately six outbuildings onsite. Construction c. 1960.
Feature No. 4		7451 5 <sup>th</sup> Sideroad One storey bungalow with one outbuilding on-site. Construction c. 1960.

#### Feature No. 5



7485- 5<sup>th</sup> Sideroad Large scale commercial building complex. Construction 2000-2001.

#### Structures

There are two (2) culverts within the study corridor (see **Appendix 'A'**). A culvert (structural) is defined as a structure that forms an opening through soil and a) has a span of 3 metres or more or b) has the sum of the individual spans of 3 metres or more, for adjacent multiple cell culverts, or c) has the sum of individual spans of 3 metres, or more... d) has been designed by the Owner as qualifying as a culvert (MTO, 2008). The study corridor includes two (2) culverts consisting of round, steel culvert pipes one to the north of the corridor approximately 460 metres south of 9<sup>th</sup> Line (see Figures 12 and 13) and another to the south of the corridor approximately 195 metres north of County Road 21 (Innisfil Beach Road) (see Figures 14-17).





**Figures 12 & 13:** (left) Culvert no. 1 at the north end of study corridor looking eastward showing round, steel culvert pipe in winter (Source: MHBC, 2021); (right) Culvert no. 1 at the north end of study corridor looking westward in autumn (Source: Google Earth Pro, 2021).









**Figures 14, 15, 16 & 17:** (above left) Culvert no. 2 at the south end of study corridor looking eastward during autumn; (above right) Culvert no. 2 at the south end of study corridor looking westward showing round, steel culvert pipe (Source: Google Earth Pro, 2021); (below left) Culvert no. 2 looking eastward during winter; (below right) Culvert no. 2 looking eastward during winter; Culvert no. 2 looking westward during winter (Source: MHBC, 2021).

### 5.3.2 Landscape Features

The following section identifies landscape features that have potential to have cultural heritage significance.

### 5.3.2.1 5th Sideroad

A roadscape is typically two-lanes in width with the absence of shoulders or narrow shoulders only, ditches, tree lines, culverts and associated features. The roadscape of 5<sup>th</sup> Sideroad includes two-lanes, narrow shoulders, ditches, some tree lines and two culverts. There is a tree line just north of 7306 5<sup>th</sup> Sideroad and the majority of the roadscape is adjacent to agricultural fields some of which are bound by wire fencing.









**Figures 18, 19, 20 & 21:** (above left) View of 5<sup>th</sup> Sideroad looking north from intersection of County Road 21 during autumn; (above right) View of 5<sup>th</sup> Sideroad looking south from the north end of study corridor during autumn (Source: Google Earth Pro, 2021); (below left) View of 5<sup>th</sup> Sideroad looking north from intersection of County Road 21 during winter; (below right) View of 5<sup>th</sup> Sideroad looking south from the north end of study corridor during winter (Source: MHBC, 2021).

### 5.3.2.2 Thornton Creek

A waterscape includes waterway features that contribute to the overall character of the area and their relation to surrounding historic development or settlement patterns. The Thornton Creek crosses the study area twice. Thornton Creek originates near Thornton and is within the Middle Nottawasaga River subwatershed (Nottawasaga Valley Conservation Authority).



**Figure 22:** View of location of Thornton Creek watercourse looking westward at Culvert no. 1 during autumn (Source: Google Earth Pro, 2021).

### 5.3.2.3 The Thornton Cookstown Trans-Canada Trail (The Great Trail)

A railscape is active or inactive railway lines or railway right of way and associated features. The Thornton Cookstown Trans- Canada Trail is approximately 15.6 kilometres and transverses between the villages of Thornton and Cookstown, Ontario and is based on the former railway line of the Canadian National Railway (formerly the Grand Trunk Railway). The trail is part of the Simcoe County trails and terminates on the west side of 5<sup>th</sup> Side Road approximately 0.6 kilometres from the intersection of 5<sup>th</sup> Sideroad and County Road 21 (Innisfil Beach Road). To the east of 5<sup>th</sup> Sideroad, railway lines appear 212 metres from the road.









**Figures 23, 24, 25 & 26:** (above left) View of Trans-Canada trail parking on west side of the road during autumn; (above right) View of location of former railway line to the east of the road during autumn (Source: Google Earth Pro, 2021); (below left) View of Trans-Canada trail parking on west side of the road during winter; (below right) View of location of former railway line to the east of the road during winter (Source: MHBC, 2021).

### 5.3.2.4 Innisvale Cemetery and Mausoleum

A cemetery is land used for the burial of human remains and can be considered a cultural heritage landscape. The Innisvale Cemetery and Mausoleum was established less than 40 years ago in circa 1983. The property includes a designed landscape and buildings serving for administration and mausoleum which are approximately 200 metres from 5<sup>th</sup> Sideroad.



**Figure 27:** View of Innisvale Cemetery and Mausoleum looking eastward from 5<sup>th</sup> Sideroad (Source: Google Earth Pro, 2021).

# 6.0 Potential Significance of Cultural Heritage Resources

## **6.1** Introduction

A built structure or landscape is identified as having cultural heritage value or interest (CHVI) when it is 1) considered to be 40 years and older and if the resources qualifies for at least one of the criteria of *Ontario Regulation 9/06* (provided in **Appendix 'C'**). The identified built and landscape features within study corridor and surrounding area in Section 4.0 of this report were evaluated under the *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* by the *Ontario Ministry of Tourism, Culture and Sport* (currently the *Ministry of Heritage, Sport, Tourism and Culture Industries*) and preliminarily under Ontario Regulation 9/06. The following sub-sections identify built and landscape features that have potential to be identified as Built Heritage Resource (BHR) or Cultural Heritage Landscape (CHL).

## 6.2 Built Heritage Resources

The properties located at 7306, 7420 and 7541 5<sup>th</sup> Sideroad are older than 40 years constructed around 1960. They are vernacular, one storey homes that were popular during this period of time and not rare, unique or representative of a specific style or particularly linked to the surrounding landscape.

The property located at 7370 5<sup>th</sup> Sideroad includes a two storey house which is representative of an Ontario Gothic Revival farmhouse constructed c. 1885 and is the earliest building existing within the study area. The property is linked to the surrounding agricultural landscape and includes contextual features such as the relationship to the barn as part of a farm complex, tree-lined drive, tree windbreaks and wooden split-rail fencing.

## 6.3 Cultural Heritage Landscapes

The landscape of 5<sup>th</sup> Sideroad has evolved over the generations; the road represents a typical rural route in south-western Ontario and does not have particular features that would warrant its significance as a cultural heritage landscape.

Thornton Creek is within the study area and is a tributary of Nottawasaga River. The Creek intersects 5<sup>th</sup> Sideroad twice but does not appear to have been a significant influential factor to the surrounding settlement.

The Thornton Cookstown Trans-Canada Trail (the Great Trail) follows the Hamilton and North-Western Railway line that merged with the Northern Railway of Canada. The railway later became the Grand Trunk Railway. The planned route of the railway is shown in the 1881 *Simcoe supplement in Illustrated atlas of the Dominion of Canada*. The trail and remains of railway lines to the east of the study represent a historic railscape with historical associations with the surrounding landscape and development of Southern Ontario in the 19<sup>th</sup> century.

The Innisvale Cemetery and Mausoleum was constructed less than 40 years ago and does not include buildings or structures that have significant design value or contextual value.

## **6.4** Summary of Potential Heritage Character

The study area has undergone a preliminary assessment of potential built heritage resources (BHR) or cultural heritage landscapes (CHL), in order to inform the review of an existing proposal for a road-widening. Based on this preliminary review including background research and field review, one (1) built heritage resource and one (1) cultural heritage landscape were identified as having potential cultural heritage value or interest within the study area:

- BHR 1- 7370 5<sup>th</sup> Sideroad
- CHL 1- Thornton Cookstown Trans-Canada Trail (the Great Trail)

These features should be further evaluated so that an appropriate mitigation strategy can be developed and implemented.

# 7.0 Screening for Potential Impacts

## 7.1 Introduction

The impacts of a proposed development or change to a cultural heritage resource may be direct or indirect. They may occur over a short term or long term duration, and may occur during a pre-construction phase, construction phase or post-construction phase. Impacts to a cultural heritage resource may also be site specific or widespread, and may have low, moderate or high levels of severity of impact.

The following sub-sections of this report provide an analysis of the impacts which may occur as a result of development as per *Screening for Impacts to Built Heritage and Cultural Heritage Landscapes* (former MTC, 2010):

- Destruction: of any, or part of any significant heritage attributes or features;
- Alteration: that is not sympathetic, or is incompatible, with the historic fabric and appearance:
- **Shadows:** created that alter the appearance of a *heritage attribute* or change the viability of a natural feature or plantings, such as a garden;
- **Isolation:** of a *heritage attribute* from its surrounding environment, context or a significant relationship;
- **Direct or Indirect Obstruction**: of significant views or vistas within, from, or of built and natural features;
- A change in land use: such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces;
- Land disturbances: such as a change in grade that alters soils, and drainage patterns that adversely affect a cultural heritage resource.

The potential cultural heritage resources identified sub-section 5.4 of this report will require further evaluation under *Ontario Regulation 9/06* and against the criteria in 4.2.11 of the *Town of Innisfil's Official Plan*; if the resources are confirmed to be of cultural heritage value or interest, they will be evaluated against the above criteria which may be

Cultural Heritage Assessment Report (CHAR)
5<sup>th</sup> Sideroad on County Road 53, Town of Innisfil, Simcoe County, ON
Class C Environmental Assessment for Road Widening

include the completion of a Heritage Impact Assessment as Section 4.6.6 of the County's Official Plan.

## 7.2 Potential Impacts to Resources from Proposed Development

The proposed development is the widening of 5<sup>th</sup> Sideroad on County Road 53 which will alter property boundaries. The following are potential impacts to the identified potential cultural heritage resources in sub-section 6.4:

- BHR 1- There is a possibility that the mature tree-lined driveway will be impacted by the removal of some trees or otherwise impacted by land disturbances (destruction of rooting system). There is also the possibility that some of the wood split-fencing will be removed. The house is a reasonable distance from construction but potentially could require mitigation measures for land disturbances.
- CHL 1- The Trans- Canada Trail historically has evolved due to road widenings and other changes in infrastructure. The termination of the trail on the west side of the road includes a parking lot and will likely not be adversely affected. To the east of 5<sup>th</sup> Sideroad, railway lines appear approximately 212 metres from the road and are sufficiently distanced to not anticipate adverse impacts.

The above assessment is preliminary and the identified potential cultural heritage resources will require a complete assessment under *Ontario Regulation 9/06* through a Cultural Heritage Evaluation Report (CHER) and if it is determined that they do have cultural heritage value or interest, a Heritage Impact Assessment (HIA) will likely be required to clarify impacts and appropriate mitigation and conservation measures.

# 8.0 Conclusions and Recommendations

This report concludes that there are potential cultural heritage resources located within the study area. Based on this preliminary review including background research and field review, one (1) built heritage resource and one (1) cultural heritage landscape were identified as having potential cultural heritage value or interest within the study area:

- BHR 1- 7370 5th Sideroad
- CHL 1- Thornton Cookstown Trans-Canada Trail (the Great Trail)

The above-mentioned potential cultural heritage resources will require further evaluation under *Ontario Regulation 9/06* and against the criteria in 4.2.11 of the *Town of Innisfil's Official Plan*; if the resources are confirmed to be of cultural heritage value or interest, they will be evaluated against the above criteria which may be include the completion of a Heritage Impact Assessment as Section 4.6.6 of the County's Official Plan.

## 9.0 Sources

- Archaeoworks Inc. Stage 1 Archaeological Assessment for the Proposed Road Widening and Improvements of County Road 53 (5 Sideroad) From Innisfil Beach Road to the City of Barrie Municipal Limits within Part of Lots 5-6, Concession 8-9 and the Road Allowance between Concession 8 and 9 Geographic Township of Innisfil, Former County of Simcoe, Now the Town of Innisfil, County of Simcoe, Ontario. February 6, 2020 (PDF).
- Blumenson, John. *Ontario Architecture: A Guide to Styles and Building Terms 1784 to the present.* Fitzhenry and Whiteside, 1990.
- Corporation of the Town of Innisfil. *Town of Innisfil Municipal Heritage Register.* (PDF) TOI-Municipal-Heritage-Register-Public-Version.pdf (innisfil.ca)
- Corporation of the Town of Innisfil. *Our Place- Innisfil Official Plan* (2018). (PDF) <a href="https://innisfil.ca/wp-content/uploads/2020/08/2018.10.24-Our-Place-As-Approved-by-the-County-reduced.pdf">https://innisfil.ca/wp-content/uploads/2020/08/2018.10.24-Our-Place-As-Approved-by-the-County-reduced.pdf</a>
- Corporation of the County of Simcoe. Official Plan of the County of Simcoe. (2008) (PDF) SimcoeOfficialPlanText.pdf
- Department of Indian Affairs. *Indian Treaties and Surrenders from 1680 to 1890*. Ottawa: Browns Chamberlin Printers, 1891.
- Government of Canada. Parks Canada. Standards and Guidelines for the Conservation of Historic Places in Canada. 2010.
- Hunter, J. A. *A History of Simcoe County: Volume I, Its Public Affairs*. 1909. Accessed January 30, 2021.https://archive.org/details/localhistory\_2GN/page/n1
- Land Registry of Ontario. LRO #51, Innisfil, Book 93, 94, Concession 8, south half of Lot 5.
- Middleton, J.E. *The Province of Ontario: A History, 1615-1927.* Toronto: Dominion Pub. Co., 1927.
- Ministry of Tourism, Culture and Sport. *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes*. 2016 (PDF).
- McEvoy & Co. *Gazetteer and Directory of the County of Simcoe*. Toronto, Ontario: McEvoy & Co. Publishers, 1866-1867,
- Nottawasaga Valley Conservation Authority. *Nottawasaga Valley Watershed Health Check* 2018. 2018 (PDF) Accessed February 25, 2021. Nottawasaga River Watershed Subwatershed Watershed Health Check 2018 (nvca.on.ca)

- Ontario Ministry of Tourism Culture and Sport. *Ontario Heritage Act Ontario Heritage Act* 2005, R.S.O. 1990, c. 0.18 . Retrieved from the Government of Ontario website: <a href="https://www.ontario.ca/laws/statute/90018">https://www.ontario.ca/laws/statute/90018</a>.
- Ontario Ministry of Affairs and Housing. *Ontario Provincial Policy Statement 2020.* S.3 the Ontario Planning Act R.S.O 1996. Retrieved from the Government of Ontario website: http://www.mah.gov.on.ca/Page215.aspx
- Ontario Ministry of Tourism, Culture and Sport. Ontario Heritage Tool Kit: Heritage Resources in the Land Use Planning Process, InfoSheet #5 Heritage Impact Assessments and Conservation Plans. Queens Printer for Ontario, 2006.
- Parks Canada. Canada's Historic Places. Accessed January 17, 2021. <u>HistoricPlaces.ca-Home</u>
- Ramsden, P.G. The Hurons: Archaeology and Culture History. *The Archaeology of Southern Ontario to A.D. 1650.* London, Ontario: Occasional Publication of the London Chapter, OAS, 1990, pp. 361-384.
- Robinson, P.J. *Toronto during the French Regime: 1615-1793.* Toronto: University of Toronto Press, 1965.
- Toronto and Region Conservation Authority. *Chapter 3: The First Nations.* Accessed March 1, 2021. 37523.pdf (trca.on.ca)
- Township of Innisfil. Innisfil Township Centennial 1850-1950, June 23-24, 1951, A Record of 100 Years Progress, Historical Review with Supplementary Edition to Innisfil Historical Review 1850-1950: Township's Centennial- Two Volumes. Innisfil: Township of Innisfil, 1967.
- Vuckson, H.D. (2017). Death Knell on the Hamilton & North Western Railway. [Online].

  Available at:

  http://nebula.wsimg.com/1eb3333434d4b8152e8d6e1d1570da3d?AccessKeyId=FBBAA 385BCDA1C2C4843&disposition=0&alloworigin=1. [Accessed 15 November 2019].

#### **MAPS**

Aerial photographs of subject property in 1989 and 2002. Courtesy of County of Simcoe Interactive Map. Accessed digitally on February 1, 2021. Interactive Map - County of Simcoe (GIS)

Aerial photograph of subject property in 1954. Courtesy of the University of Toronto Map and Data Library. Accessed February 21, 2021. 1954 Air Photos of Southern Ontario | Map and Data Library (utoronto.ca)

Department of National Defence. *Topographic Map, Ontario, Barrie Sheet No. 105.* 1928. Courtesy of the Ontario Council of University Libraries Historical Topographic Map Digitization Project. Accessed February 20, 2021. https://ocul.on.ca/topomaps/map-images

Google Maps & Google Earth Pro. 5<sup>th</sup> Sideroad, Innisfil, Ontario. Accessed January 15, 2021.

March 4, 2021 MHBC| 36

Cultural Heritage Assessment Report (CHAR)
5<sup>th</sup> Sideroad on County Road 53, Town of Innisfil, Simcoe County, ON
Class C Environmental Assessment for Road Widening

- Hogg, John. *Hogg's Map of the County Simcoe*. 1871. Scale 80 chains to one inch. Courtesy of the Ontario Historical County Maps Project. Accessed February 12, 2021. <a href="https://linear.ncbi.nlm.nc
- Simcoe supplement in Illustrated historical atlas of the Dominion of Canada. Toronto: H. Belden, 1881. Courtesy of the Canadian County Atlas Digital Project of McGill University. Accessed digitally on February 1, 2021. <a href="https://documents.com/repression/linearity-nc-universi
- Unknown. 1842/1877/1930 Patent Plan of the Township of Innisfil. Courtesy of the Archives of Ontario, Patent Plans, RG 1-100.

March 4, 2021 MHBC 37

# APPENDIX A – Location Maps

March 4, 2021 MHBC| 38



**Cultural Heritage Assessment** for Class C **Environmental Assessment** 

**LEGEND** 



**DATE:** March 1,2021

SCALE: 1:12,500

FILE: 20445A

DRN: L.H.B.

K:\20445A - FIFTH SIDE ROAD - INNISFIL\REPORT\STUDY AREA MAP.DWG





Cultural Heritage Assessment for Class C Environmental Assessment

#### **LEGEND**



Study Area

- 1 7306 5th Line
- 2 7370 5th Line
- 3 7420 5th Line
- 4 7451 5th Line
- 5 Culvert 1
- 6 Culvert 2
- 7 Thornton-Cookstown Trans-Canada Trail
- 8 Innisfil Cemetery Mausoleum
- 9 Georgian Downs
- 10 Thornton Creek

**DATE:** March 1,2021

**SCALE:** 1:12,500

**FILE**: 20445A

DRN: L.H.B.

K:\20445A - FIFTH SIDE ROAD - INNISFIL\REPORT\STUDY AREA MAP.DWG



# APPENDIX B - Criteria for Evaluating

# Potential for Built Heritage Resources and Cultural Heritage Landscapes

March 4, 2021 MHBC| 39



#### Ministry of Tourism, Culture and Sport

Programs & Services Branch 401 Bay Street, Suite 1700 Toronto ON M7A 0A7



Print Form

### Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes A Checklist for the Non-Specialist

#### The purpose of the checklist is to determine:

- if a property(ies) or project area:
  - is a recognized heritage property
  - may be of cultural heritage value
- it includes all areas that may be impacted by project activities, including but not limited to:
  - the main project area
  - temporary storage
  - · staging and working areas
  - · temporary roads and detours

#### Processes covered under this checklist, such as:

- Planning Act
- Environmental Assessment Act
- Aggregates Resources Act
- Ontario Heritage Act Standards and Guidelines for Conservation of Provincial Heritage Properties

#### **Cultural Heritage Evaluation Report (CHER)**

If you are not sure how to answer one or more of the questions on the checklist, you may want to hire a qualified person(s) (see page 5 for definitions) to undertake a cultural heritage evaluation report (CHER).

The CHER will help you:

- identify, evaluate and protect cultural heritage resources on your property or project area
- reduce potential delays and risks to a project

#### Other checklists

Please use a separate checklist for your project, if:

- you are seeking a Renewable Energy Approval under Ontario Regulation 359/09 separate checklist
- your Parent Class EA document has an approved screening criteria (as referenced in Question 1)

Please refer to the Instructions pages for more detailed information and when completing this form.

-		Property Name		
•			il. Sim	coe
		Name	-, ~	
Ar	cheov	vorks Inc.	rcheoworks.com  Yes No ad screening checklist, methodology or process in place?  In 2.  In 2.  In 2.  In 3.  In 4.  In 4.  In 4.  In 4.  In 5.  In 5.  In 5.  In 6.  In 6.  In 7.  In 8.  In 8.  In 9.  In 8.  In 9.	
		Contact Information		
Kiı	m Slo	cki, kslocki@archeoworks.com		
Scr	eenir	ng Questions		
			Yes	No
1.	Is the	ere a pre-approved screening checklist, methodology or process in place?		<b>✓</b>
If Y	es, pl	ease follow the pre-approved screening checklist, methodology or process.		
If N	o, coi	ntinue to Question 2.		
Par	t A: S	creening for known (or recognized) Cultural Heritage Value		
			V	
2	Цос 1	the property (or project area) been evaluated before and found <b>not</b> to be of cultural baritage value?	Yes	
	·	o not complete the rest of the checklist.		
The	prop	onent, property owner and/or approval authority will:		
	•	summarize the previous evaluation and		
	•	add this checklist to the project file, with the appropriate documents that demonstrate a cultural heritage evaluation was undertaken		
The	sum	mary and appropriate documentation may be:		
	•	submitted as part of a report requirement		
	•	maintained by the property owner, proponent or approval authority		
If N	Ι <b>ο</b> , coι	ntinue to Question 3.		
			Yes	No
3.	Is the	e property (or project area):		
	a	identified, designated or otherwise protected under the <i>Ontario Heritage Act</i> as being of cultural heritage value?		<b>✓</b>
	b.	a National Historic Site (or part of)?		<b>✓</b>
	C.	designated under the Heritage Railway Stations Protection Act?		<b>✓</b>

**If Yes** to any of the above questions, you need to hire a qualified person(s) to undertake:

d. designated under the Heritage Lighthouse Protection Act?

• a Cultural Heritage Evaluation Report, if a Statement of Cultural Heritage Value has not previously been prepared or the statement needs to be updated

e. identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office (FHBRO)?f. located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World

If a Statement of Cultural Heritage Value has been prepared previously and if alterations or development are proposed, you need to hire a qualified person(s) to undertake:

• a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts

If No, continue to Question 4.

Heritage Site?

0500E (2016/11) Page 2 of 8

Par	t B: So	reening for Potential Cultural Heritage Value		
			Yes	No
4.	Does t	the property (or project area) contain a parcel of land that:		
	a.	is the subject of a municipal, provincial or federal commemorative or interpretive plaque?		<b>~</b>
	b.	has or is adjacent to a known burial site and/or cemetery?		<b>✓</b>
	C.	is in a Canadian Heritage River watershed?		<b>✓</b>
	d.	contains buildings or structures that are 40 or more years old?	<b>✓</b>	
Par	t C: O1	her Considerations		
			Yes	No
5.	. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area):			
	a.	is considered a landmark in the local community or contains any structures or sites that are important in defining the character of the area?		<b>~</b>
	b.	has a special association with a community, person or historical event?		<b>✓</b>
	C.	contains or is part of a cultural heritage landscape?		<b>✓</b>
		ne or more of the above questions (Part B and C), there is potential for cultural heritage resources on the r within the project area.		
You	need	to hire a qualified person(s) to undertake:		
	•	a Cultural Heritage Evaluation Report (CHER)		
		erty is determined to be of cultural heritage value and alterations or development is proposed, you need to lified person(s) to undertake:	•	
	•	a Heritage Impact Assessment (HIA) – the report will assess and avoid, eliminate or mitigate impacts		
	o to all perty.	of the above questions, there is low potential for built heritage or cultural heritage landscape on the		
The	propo	nent, property owner and/or approval authority will:		
	•	summarize the conclusion		
	•	add this checklist with the appropriate documentation to the project file		
The	summ	ary and appropriate documentation may be:		
	•	submitted as part of a report requirement e.g. under the Environmental Assessment Act, Planning Act		

- processes
- maintained by the property owner, proponent or approval authority

0500E (2016/11) Page 3 of 8

#### Instructions

Please have the following available, when requesting information related to the screening questions below:

- a clear map showing the location and boundary of the property or project area
  - large scale and small scale showing nearby township names for context purposes
- the municipal addresses of all properties within the project area
- the lot(s), concession(s), and parcel number(s) of all properties within a project area

For more information, see the Ministry of Tourism, Culture and Sport's <u>Ontario Heritage Toolkit</u> or <u>Standards and Guidelines for Conservation of Provincial Heritage Properties</u>.

In this context, the following definitions apply:

- **qualified person(s)** means individuals professional engineers, architects, archaeologists, etc. having relevant, recent experience in the conservation of cultural heritage resources.
- **proponent** means a person, agency, group or organization that carries out or proposes to carry out an undertaking or is the owner or person having charge, management or control of an undertaking.

#### Is there a pre-approved screening checklist, methodology or process in place?

An existing checklist, methodology or process may already be in place for identifying potential cultural heritage resources, including:

- one endorsed by a municipality
- an environmental assessment process e.g. screening checklist for municipal bridges
- one that is approved by the Ministry of Tourism, Culture and Sport (MTCS) under the Ontario government's Standards & Guidelines for Conservation of Provincial Heritage Properties [s.B.2.]

#### Part A: Screening for known (or recognized) Cultural Heritage Value

#### 2. Has the property (or project area) been evaluated before and found not to be of cultural heritage value?

Respond 'yes' to this question, if all of the following are true:

A property can be considered not to be of cultural heritage value if:

- a Cultural Heritage Evaluation Report (CHER) or equivalent has been prepared for the property with the advice of a qualified person and it has been determined not to be of cultural heritage value and/or
- the municipal heritage committee has evaluated the property for its cultural heritage value or interest and determined that the property is not of cultural heritage value or interest

A property may need to be re-evaluated, if:

- there is evidence that its heritage attributes may have changed
- new information is available
- the existing Statement of Cultural Heritage Value does not provide the information necessary to manage the property
- the evaluation took place after 2005 and did not use the criteria in Regulations 9/06 and 10/06

**Note**: Ontario government ministries and public bodies [prescribed under Regulation 157/10] may continue to use their existing evaluation processes, until the evaluation process required under section B.2 of the Standards & Guidelines for Conservation of Provincial Heritage Properties has been developed and approved by MTCS.

To determine if your property or project area has been evaluated, contact:

- the approval authority
- the proponent
- the Ministry of Tourism, Culture and Sport

# 3a. Is the property (or project area) identified, designated or otherwise protected under the *Ontario Heritage Act* as being of cultural heritage value e.g.:

- i. designated under the Ontario Heritage Act
  - individual designation (Part IV)
  - part of a heritage conservation district (Part V)

0500E (2016/11) Page 4 of 8

#### Individual Designation - Part IV

A property that is designated:

- by a municipal by-law as being of cultural heritage value or interest [s.29 of the Ontario Heritage Act]
- by order of the Minister of Tourism, Culture and Sport as being of cultural heritage value or interest of provincial significance [s.34.5]. **Note**: To date, no properties have been designated by the Minister.

#### Heritage Conservation District - Part V

A property or project area that is located within an area designated by a municipal by-law as a heritage conservation district [s. 41 of the *Ontario Heritage Act*].

For more information on Parts IV and V, contact:

- municipal clerk
- Ontario Heritage Trust
- local land registry office (for a title search)

#### ii. subject of an agreement, covenant or easement entered into under Parts II or IV of the Ontario Heritage Act

An agreement, covenant or easement is usually between the owner of a property and a conservation body or level of government. It is usually registered on title.

The primary purpose of the agreement is to:

- preserve, conserve, and maintain a cultural heritage resource
- prevent its destruction, demolition or loss

#### For more information, contact:

- Ontario Heritage Trust for an agreement, covenant or easement [clause 10 (1) (c) of the Ontario Heritage Act]
- municipal clerk for a property that is the subject of an easement or a covenant [s.37 of the Ontario Heritage Act]
- local land registry office (for a title search)

#### iii. listed on a register of heritage properties maintained by the municipality

Municipal registers are the official lists - or record - of cultural heritage properties identified as being important to the community.

#### Registers include:

- all properties that are designated under the Ontario Heritage Act (Part IV or V)
- properties that have not been formally designated, but have been identified as having cultural heritage value or interest to the community

#### For more information, contact:

- · municipal clerk
- municipal heritage planning staff
- municipal heritage committee

#### iv. subject to a notice of:

- intention to designate (under Part IV of the Ontario Heritage Act)
- a Heritage Conservation District study area bylaw (under Part V of the Ontario Heritage Act)

A property that is subject to a **notice of intention to designate** as a property of cultural heritage value or interest and the notice is in accordance with:

- section 29 of the Ontario Heritage Act
- section 34.6 of the *Ontario Heritage Act.* **Note**: To date, the only applicable property is Meldrum Bay Inn, Manitoulin Island. [s.34.6]

An area designated by a municipal by-law made under section 40.1 of the *Ontario Heritage Act* as a **heritage conservation district study area**.

#### For more information, contact:

- municipal clerk for a property that is the subject of notice of intention [s. 29 and s. 40.1]
- Ontario Heritage Trust

0500E (2016/11) Page 5 of 8

v. included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties

Provincial heritage properties are properties the Government of Ontario owns or controls that have cultural heritage value or interest.

The Ministry of Tourism, Culture and Sport (MTCS) maintains a list of all provincial heritage properties based on information provided by ministries and prescribed public bodies. As they are identified, MTCS adds properties to the list of provincial heritage properties.

For more information, contact the MTCS Registrar at <a href="registrar@ontario.ca">registrar@ontario.ca</a>.

#### 3b. Is the property (or project area) a National Historic Site (or part of)?

National Historic Sites are properties or districts of national historic significance that are designated by the Federal Minister of the Environment, under the *Canada National Parks Act*, based on the advice of the Historic Sites and Monuments Board of Canada.

For more information, see the National Historic Sites website.

#### 3c. Is the property (or project area) designated under the Heritage Railway Stations Protection Act?

The *Heritage Railway Stations Protection Act* protects heritage railway stations that are owned by a railway company under federal jurisdiction. Designated railway stations that pass from federal ownership may continue to have cultural heritage value.

For more information, see the <u>Directory of Designated Heritage Railway Stations</u>.

#### 3d. Is the property (or project area) designated under the Heritage Lighthouse Protection Act?

The *Heritage Lighthouse Protection Act* helps preserve historically significant Canadian lighthouses. The Act sets up a public nomination process and includes heritage building conservation standards for lighthouses which are officially designated.

For more information, see the <u>Heritage Lighthouses of Canada</u> website.

## 3e. Is the property (or project area) identified as a Federal Heritage Building by the Federal Heritage Buildings Review Office?

The role of the Federal Heritage Buildings Review Office (FHBRO) is to help the federal government protect the heritage buildings it owns. The policy applies to all federal government departments that administer real property, but not to federal Crown Corporations.

For more information, contact the Federal Heritage Buildings Review Office.

See a directory of all federal heritage designations.

# 3f. Is the property (or project area) located within a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?

A UNESCO World Heritage Site is a place listed by UNESCO as having outstanding universal value to humanity under the Convention Concerning the Protection of the World Cultural and Natural Heritage. In order to retain the status of a World Heritage Site, each site must maintain its character defining features.

Currently, the Rideau Canal is the only World Heritage Site in Ontario.

For more information, see Parks Canada – World Heritage Site website.

#### Part B: Screening for potential Cultural Heritage Value

# 4a. Does the property (or project area) contain a parcel of land that has a municipal, provincial or federal commemorative or interpretive plaque?

Heritage resources are often recognized with formal plaques or markers.

Plaques are prepared by:

- municipalities
- provincial ministries or agencies
- federal ministries or agencies
- local non-government or non-profit organizations

0500E (2016/11) Page 6 of 8

For more information, contact:

- <u>municipal heritage committees</u> or local heritage organizations for information on the location of plaques in their community
- Ontario Historical Society's <u>Heritage directory</u> for a list of historical societies and heritage organizations
- Ontario Heritage Trust for a <u>list of plaques</u> commemorating Ontario's history
- Historic Sites and Monuments Board of Canada for a list of plaques commemorating Canada's history

# 4b. Does the property (or project area) contain a parcel of land that has or is adjacent to a known burial site and/or cemetery?

For more information on known cemeteries and/or burial sites, see:

- Cemeteries Regulations, Ontario Ministry of Consumer Services for a database of registered cemeteries
- Ontario Genealogical Society (OGS) to <u>locate records of Ontario cemeteries</u>, both currently and no longer in existence; cairns, family plots and burial registers
- Canadian County Atlas Digital Project to <u>locate early cemeteries</u>

In this context, adjacent means contiguous or as otherwise defined in a municipal official plan.

#### 4c. Does the property (or project area) contain a parcel of land that is in a Canadian Heritage River watershed?

The Canadian Heritage River System is a national river conservation program that promotes, protects and enhances the best examples of Canada's river heritage.

Canadian Heritage Rivers must have, and maintain, outstanding natural, cultural and/or recreational values, and a high level of public support.

For more information, contact the Canadian Heritage River System.

If you have questions regarding the boundaries of a watershed, please contact:

- · your conservation authority
- · municipal staff

# 4d. Does the property (or project area) contain a parcel of land that contains buildings or structures that are 40 or more years old?

A 40 year 'rule of thumb' is typically used to indicate the potential of a site to be of cultural heritage value. The approximate age of buildings and/or structures may be estimated based on:

- history of the development of the area
- fire insurance maps
- · architectural style
- · building methods

Property owners may have information on the age of any buildings or structures on their property. The municipality, local land registry office or library may also have background information on the property.

**Note**: 40+ year old buildings or structure do not necessarily hold cultural heritage value or interest; their age simply indicates a higher potential.

A building or structure can include:

- · residential structure
- farm building or outbuilding
- · industrial, commercial, or institutional building
- · remnant or ruin
- engineering work such as a bridge, canal, dams, etc.

For more information on researching the age of buildings or properties, see the Ontario Heritage Tool Kit Guide <u>Heritage Property Evaluation</u>.

0500E (2016/11) Page 7 of 8

#### Part C: Other Considerations

5a. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) is considered a landmark in the local community or contains any structures or sites that are important to defining the character of the area?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has potential landmarks or defining structures and sites, for instance:

- buildings or landscape features accessible to the public or readily noticeable and widely known
- · complexes of buildings
- monuments
- ruins

# 5b. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) has a special association with a community, person or historical event?

Local or Aboriginal knowledge may reveal that the project location is situated on a parcel of land that has a special association with a community, person or event of historic interest, for instance:

- Aboriginal sacred site
- traditional-use area
- battlefield
- birthplace of an individual of importance to the community

# 5c. Is there local or Aboriginal knowledge or accessible documentation suggesting that the property (or project area) contains or is part of a cultural heritage landscape?

Landscapes (which may include a combination of archaeological resources, built heritage resources and landscape elements) may be of cultural heritage value or interest to a community.

For example, an Aboriginal trail, historic road or rail corridor may have been established as a key transportation or trade route and may have been important to the early settlement of an area. Parks, designed gardens or unique landforms such as waterfalls, rock faces, caverns, or mounds are areas that may have connections to a particular event, group or belief.

For more information on Questions 5.a., 5.b. and 5.c., contact:

- Elders in Aboriginal Communities or community researchers who may have information on potential cultural heritage resources. Please note that Aboriginal traditional knowledge may be considered sensitive.
- <u>municipal heritage committees</u> or local heritage organizations
- Ontario Historical Society's "Heritage Directory" for a list of historical societies and heritage organizations in the province

An internet search may find helpful resources, including:

- historical maps
- historical walking tours
- municipal heritage management plans
- cultural heritage landscape studies
- municipal cultural plans

Information specific to trails may be obtained through Ontario Trails.

0500E (2016/11) Page 8 of 8

# APPENDIX C – Ontario Regulation 9/06

March 4, 2021 MHBC| 40

#### **Ontario Heritage Act**

#### **ONTARIO REGULATION 9/06**

# CRITERIA FOR DETERMINING CULTURAL HERITAGE VALUE OR INTEREST

**Consolidation Period:** From January 25, 2006 to the <u>e-Laws currency date</u>.

No amendments.

This is the English version of a bilingual regulation.

#### Criteria

- 1. (1) The criteria set out in subsection (2) are prescribed for the purposes of clause 29 (1) (a) of the Act. O. Reg. 9/06, s. 1 (1).
- (2) A property may be designated under section 29 of the Act if it meets one or more of the following criteria for determining whether it is of cultural heritage value or interest:
  - 1. The property has design value or physical value because it,
    - i. is a rare, unique, representative or early example of a style, type, expression, material or construction method,
    - ii. displays a high degree of craftsmanship or artistic merit, or
    - iii. demonstrates a high degree of technical or scientific achievement.
  - 2. The property has historical value or associative value because it,
    - i. has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community,
    - ii. yields, or has the potential to yield, information that contributes to an understanding of a community or culture, or
    - iii. demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.
  - 3. The property has contextual value because it,
    - i. is important in defining, maintaining or supporting the character of an area,
    - ii. is physically, functionally, visually or historically linked to its surroundings, or
    - iii. is a landmark. O. Reg. 9/06, s. 1 (2).

# APPENDIX D - Curriculum Vitae

March 4, 2021 MHBC| 41



## Dan Currie, MA, MCIP, RPP, CAHP

Dan Currie, a Partner and Managing Director of MHBC's Cultural Heritage Division, joined MHBC Planning in 2009, after having worked in various positions in the public sector since 1997 including the Director of Policy Planning for the City of Cambridge and Senior Policy Planner for the City of Waterloo.

Dan provides a variety of planning services for public and private sector clients including a wide range of cultural heritage policy and planning work including strategic planning, heritage policy, heritage conservation district studies and plans, heritage master plans, heritage impact assessments and cultural heritage landscape studies.

#### PROFESSIONAL ASSOCIATIONS

Full Member, Canadian Institute of Planners
Full Member, Ontario Professional Planners Institute
Professional Member, Canadian Association of Heritage Professionals

#### SELECTED PROJECT EXPERIENCE

Heritage Conservation District Studies and Plans
Alton Heritage Conservation District Study, Caledon (underway)
Port Stanley Heritage Conservation District Plan (underway)
Port Credit Heritage Conservation District Plan, Mississauga
Town of Cobourg Heritage Conservation District Plan updates
Rondeau Heritage Conservation District Study & Plan, Chatham Kent,
Barriefield Heritage Conservation District Plan Update, Kingston
Victoria Square Heritage Conservation District Study, Markham
Bala Heritage Conservation District Study and Plan, Township of Muskoka Lakes
Downtown Meaford Heritage Conservation District Study and Plan
Brooklyn and College Hill Heritage Conservation District Plan, Guelph
Garden District Heritage Conservation District Study and Plan, Toronto

Heritage Master Plans and Management Plans
City of Guelph Cultural Heritage Action Plan
Town of Cobourg Heritage Master Plan
Burlington Heights Heritage Lands Management Plan
City of London Western Counties Cultural Heritage Plan

#### **EDUCATION**

2006 Masters of Arts (Planning) University of Waterloo

1998 Bachelor of Environmental Studies University of Waterloo

1998 Bachelor of Arts (Art History) University of Saskatchewan

#### CONTACT



## Dan Currie, MA, MCIP, RPP, CAHP

#### **Cultural Heritage Evaluations**

MacDonald Mowatt House, University of Toronto
City of Kitchener Heritage Property Inventory Update
Niagara Parks Commission Queen Victoria Park Cultural Heritage Evaluation
Designation of Main Street Presbyterian Church, Town of Erin
Designation of St Johns Anglican Church, Norwich
Cultural Heritage Landscape evaluation, former Burlingham Farmstead, Prince
Edward County

#### **Heritage Impact Assessments**

Heritage Impact Assessments
Heritage Impact Assessment for Pier 8, Hamilton
Homer Watson House Heritage Impact Assessment, Kitchener
Expansion of Schneider Haus National Historic Site, Kitchener
Redevelopment of former industrial facility, 57 Lakeport Road, Port Dalhousie
Redevelopment of former amusement park, Boblo Island
Redevelopment of historic Waterloo Post Office
Redevelopment of former Brick Brewery, Waterloo
Redevelopment of former American Standard factory, Cambridge
Redevelopment of former Goldie and McCullough factory, Cambridge
Mount Pleasant Islamic Centre, Brampton
Demolition of former farmhouse at 10536 McCowan Road, Markham

<u>Heritage Assessments for Infrastructure Projects and Environmental Assessments</u> Heritage Assessment of 10 Bridges within Rockcliffe Special Policy Area, Toronto

Blenheim Road Realignment Collector Road EA, Cambridge

Badley Bridge EA, Elora

Black Bridge Road EA, Cambridge

Heritage and Cultural Heritage Landscape Assessment of Twenty Mile Creek Arch Bridge, Town of Lincoln

Heritage Evaluation of Deer River, Girven, Burnt Dam and MacIntosh Bridges, Peterborough County

#### **Conservation Plans**

Black Bridge Strategic Conservation Plan, Cambridge Conservation Plan for Log house, Beurgetz Ave, Kitchener Conservation and Construction Protection Plan - 54 Margaret Avenue, Kitchener

#### CONTACT



## Dan Currie, MA, MCIP, RPP, CAHP

Tribunal Hearings: Local Planning Appeal Tribunal & Conservation Review Board
Port Credit Heritage Conservation District (LPAT)
Demolition 174 St Paul Street (Collingwood Heritage District) (LPAT)
Brooklyn and College Hill HCD Plan (LPAT)
Rondeau HCD Plan (LPAT)
Designation of 108 Moore Street, Bradford (CRB)
Redevelopment of property at 64 Grand Ave, Cambridge (LPAT)
Youngblood subdivision, Elora (LPAT)
Designation of St Johns Church, Norwich (CRB - underway)
Designation of 27 Prideaux Street, Niagara on the Lake (CRB – underway)

#### MASTER PLANS, GROWTH MANAGEMENT STRATEGIES AND POLICY STUDIES

Town of Frontenac Islands Marysville Secondary Plan
Niagara-on-the-Lake Corridor Design Guidelines
Cambridge West Master Environmental Servicing Plan
Township of West Lincoln Settlement Area Expansion Analysis
Ministry of Infrastructure Review of Performance Indicators for the Growth Plan
Township of Tiny Residential Land Use Study
Port Severn Settlement Area Boundary Review
City of Cambridge Green Building Policy
Township of West Lincoln Intensification Study & Employment Land Strategy
Ministry of the Environment Review of the D-Series Land Use Guidelines
Meadowlands Conservation Area Management Plan
City of Cambridge Trails Master Plan
City of Kawartha Lakes Growth Management Strategy

#### **DEVELOPMENT PLANNING**

Provide consulting services and prepare planning applications for private sector clients for:

- Draft plans of subdivision
- Consent
- Official Plan Amendment
- Zoning By-law Amendment
- Minor Variance
- Site Plan

#### CONTACT



#### **EDUCATION**

2011

Higher Education Diploma

Cultural Development/ Gaelic

Studies

Sabhal Mòr Ostaig, University of the Highlands and Islands

2012

Bachelor of Arts

Joint Advanced Major in Celtic

Studies and Anthropology

Saint Francis Xavier University

2014

Master of Arts

# World Heritage and Cultural Projects for Development

The International Training Centre of the ILO in partnership with the University of Turin, Politecnico di Torino, University of Paris 1 Pantheon- Sorbonne, UNESCO, ICCROM, Macquarie University

www.linkedin.com/in/rachelredshaw

## **CURRICULUMVITAE**

### Rachel Redshaw, MA, H.E. Dipl.

Rachel Redshaw, a Heritage Planer with MHBC, joined the firm in 2018. Ms. Redshaw has a Bachelor of Arts in Anthropology and Celtic Studies and a Master of Arts in World Heritage and Cultural Projects for Development. Ms. Redshaw completed her Master's in Turin, Italy; the Master's program was established by UNESCO in conjunction with the University of Turin and the International Training Centre of the ILO. Rachel is member of the Canadian Association of Heritage Professionals.

Ms. Redshaw provides a variety of heritage planning services for public and private sector clients. Ms. Redshaw has worked for years completing cultural heritage planning in a municipal setting. She has worked in municipal building and planning departments and for the private sector to gain a diverse knowledge of building and planning in respect to how they apply to cultural heritage. Rachel enjoys being involved in the local community and has been involved in the collection of oral history, in English and Gaelic, and local records for their protection and conservation and occasionally lecturers on related topics. Her passion for history and experience in archives, museums, municipal building and planning departments supports her ability to provide exceptional cultural heritage services.

#### PROFESSIONAL ASSOCIATIONS

Intern Member, Canadian Association of Heritage Professionals (CAHP)

#### PROFESSIONAL HISTORY

2018 - Present Heritage Planner,

MacNaughton Hermsen Britton Clarkson Planning Limited

2018 Building Permit Coordinator, (Contract)

Township of Wellesley

2018 Building Permit Coordinator (Contract)

**RSM Building Consultants** 

2017 Deputy Clerk,

Township of North Dumfries

2015-2016 Building/ Planning Clerk

Township of North Dumfries

#### CONTACT



## Rachel Redshaw, MA, H.E. Dipl.

2009-2014 Historical Researcher & Planner

Township of North Dumfries

2012 Translator, Archives of Ontario

2012 Cultural Heritage Events Facilitator (Reminiscence Journey)

and Executive Assistant, Waterloo Region Plowing Match

and Rural Expo

2011 Curatorial Research Assistant

Highland Village Museum/ Baile nan Gàidheal

#### PROFESSIONAL/COMMUNITY ASSOCIATIONS

2019-2020 Intern Member, Canadian Association of Heritage Professionals

Member, AMCTO

2018-2019 Member of Publications Committee, Waterloo Historical

Society

2017-2020

2018 Member, Architectural Conservancy of Ontario- Cambridge

2018 - 2019 Secretary, Toronto Gaelic Society

2012 -2017 Member (Former Co-Chair & Co-Founder), North Dumfries

Historical Preservation Society

2011 - 2014 Member, North Dumfries Municipal Heritage Committee
 2013 Greenfield Heritage Village Sub-committee, Doors Open

Waterloo Region

2012 Volunteer Historical Interpreter, Doon Heritage Village, Ken

Seiling Waterloo Region Museum

2008-2012 Member, Celtic Collections, Angus L. Macdonald Library

2012-2013 Member (Public Relations), Mill Race Folk Society

2011 Member, University of Waterloo Sub-steering Committee for

HCD Study, Village of Ayr, North Dumfries

2010-2011 Member (volunteer archivist), Antigonish Heritage Museum

#### AWARDS / PUBLICATIONS / RECOGNITION

2019 Waterloo Historical Society Publication, *Old Shaw: The Story* 

of a Kindly Waterloo County Roamer

2014 Master's Dissertation, The Rise of the City: Social Business

Incubation in the City of Hamilton

2014 Lecture, A Scot's Nirvana, Homer Watson House and

Gallery

#### CONTACT



## Rachel Redshaw, MA, H.E. Dipl.

2013 Lecture, The Virtual Voice of the Past: The Use of Online

Oral Accounts for a Holistic Understanding of History,

University of Guelph Spring Colloquium

2012-2013 Gaelic Events Facilitator, University of Guelph

2012-2015 Intermediate Gaelic Facilitator, St. Michael's College.

University of Toronto

2012 Nach eil ann tuilleadh: An Nòs Ùr aig nan Gàidheal (BA

Thesis) Thesis written in Scottish Gaelic evaluating disappearing Gaelic rites of passage in Nova Scotia.

Waterloo Historical Society Publication, Harvesting Bees 2012

and Feasting Tables: Fit for the Men, Women and Children of Dickie Settlement and Area, Township of North Dumfries

2007-2012 25 historical publications in the Ayr News (access to some

articles http://ayrnews.ca/recent)

#### PROFESSIONAL DEVELOPMENT COURSES

2020 Condo Director Training Certificate (CAO) 2018 Building Officials and the Law (OBOA Course)

AMCTO Training (MAP 1) 2017-2018

**AODA Training** 2017

Irish Archaeological Field School Certificate 2010

#### COMPUTER SKILLS

- Microsoft Word Office
- Bluebeam Revu 2017
- **ArcGIS**
- Keystone (PRINSYS)
- Municipal Connect
- Adobe Photoshop
- Illustrator
- **ABBYY Fine Reader 11**
- **Book Drive**

#### CONTACT



Rachel Redshaw, MA, H.E. Dipl.

#### **SELECT PROJECT EXPERIENCE 2018-2020**

#### **CULTURAL HERITAGE IMPACT ASSESSMENTS**

- Peterborough Lift Lock and Trent-Severn Waterway (TSW), National Historic Sites, Development for 380 Armour Road, City of Peterborough
- City of Waterloo Former Post Office, Development for 35-41 King Street North, City of Waterloo, Phase II
- Consumers' Gas Station B, Development for 450 Eastern Avenue, City of Toronto
- 82 Weber Street East, City of Kitchener
- 87 Scott Street, City of Kitchener
- · 2348 Sovereign Street, Town of Oakville (Phase I)
- Carriage House Restaurant, 2107-2119 Old Lakeshore Road, City of Burlington
- 34 Manley Street, Village of Ayr, Township of North Dumfries
- Quinte's Isle Campark, 558 Welbanks Road, Prince Edward County (LPAT)
- 174 St. Paul Street, Town of Collingwood (LPAT)
- 30-40 Margaret Avenue, City of Kitchener
- McDougall Cottage and Historic Site, Development for 93 Grand Avenue South, City of Kitchener
- · 60 Broadway, Town of Orangeville
- 45 Duke Street, City of Kitchener
- 383-385 Pearl Street, City of Burlington
- Old Kent Brewery, 197 Ann Street, City of London
- St. Patrick's Catholic Elementary School, (SPCES), 20 East Avenue South, City of Hamilton
- 2325 Sunningdale Road, City of London
- 250 Allendale Road, City of Cambridge
- · 110 Deane Avenue, Town of Oakville
- · 249 Clarence Street, City of Vaughan
- 2-16 Queen Street West, City of Cambridge (Hespeler)

#### Specific for Relocation of Heritage Buildings

- 1395 Main Street, City of Kitchener
- · 10379 & 10411 Kennedy Road, City of Markham
- 50-56 Weber Street West & 107 Young Street, City of Kitchener (temporary relocation of 107 Young St)

#### CONTACT



Rachel Redshaw, MA, H.E. Dipl.

#### **CULTURAL HERITAGE SCREENING REPORT**

Kelso Conservation Area, Halton County

#### **CULTURAL HERITAGE EVALUATION REPORTS**

- 52 King Street North, City of Kitchener
- Sarnia Collegiate Institute and Technical School (SCITS), 275
   Wellington, City of Sarnia (Municipal contingency study)
- · 10536 McCowan Road, City of Markham
- Former Burns Presbyterian Church, 155 Main Street, Town of Erin (Designation Report)
- Former St. Paul's Anglican Church, 23 Dover Street, Town of Otterville, Norwich Township (CRB)
- · 6170 Fallsview Boulevard, City of Niagara Falls

#### **CONSERVATION PLANS**

- City of Waterloo Former Post Office, 35-41 King Street North, City of Waterloo
- 82 Weber Street East, City of Kitchener
- 87 Scott Street, City of Kitchener
- · 107 Young Street, City of Kitchener (Temporary relocation)
- 1395 Main Street, City of Kitchener (Relocation)
- 10379 & 10411 Kennedy Road, City of Markham (Relocation)

Cultural Heritage Conservation Protection Plans (Temporary protection for heritage building during construction)

- 12 & 54 Margaret Avenue, City of Kitchener
- · 45 Duke Street, City of Kitchener
- 82 Weber Street West and 87 Scott Street, City of Kitchener

#### **DOCUMENTATION AND SALVAGE REPORTS**

- 57 Lakeport Road City of St. Catharines
- Gaslight District, 64 Grand Avenue South, City of Cambridge
- 242-262 Queen Street South, City of Kitchener (Photographic Documentation Report)
- 721 Franklin Boulevard, City of Cambridge

#### **HERITAGE PERMIT APPLICATIONS**

 35-41 King Street North, City of Waterloo (Old Post Office), Phase II (alteration to building with a municipal heritage easement, Section 37, OHA)

#### CONTACT



## Rachel Redshaw, MA, H.E. Dipl.

- 50-56 Weber Street West & 107 Young Street, City of Kitchener (demolition and new construction within HCD)
- 30-40 Margaret Avenue, City of Kitchener (new construction within HCD)
- 249 Clarence Street, City of Vaughan (alteration within HCD)
- 174 St. Paul Street, Town of Collingwood (demolition within HCD)

#### MASTER PLANS/ HERITAGE CHARACTER STUDY

Elgin, Central and Memorial Neighbourhoods, Municipality of Clarington

#### CONTACT





KITCHENER WOODBRIDGE LONDON KINGSTON BARRIE BURLINGTON

To: Kim Slocki, Archeoworks Inc.

From: Rachel Redshaw, Heritage Planner, MHBC

Date: November 23, 2022

File: 20445A

Subject: Technical Memorandum- Cultural Heritage Impact Assessment- Widening of 5th

Side Road on County Road 53

#### **Executive Summary**

In 2019, MHBC Planning, Urban Design and Landscape Architecture ("MHBC") was retained by Archeoworks Inc. to prepare a Cultural Heritage Impact Assessment (CHIA) for the road widening of County Road 53, 5th Side Road as part of the assessment is part of a Schedule C Class Environmental Assessment initiated by Simcoe County. The purpose of the CHIA is to: 1) determine the cultural heritage value or interest of potential cultural heritage resources and, 2) assess any potential impact on identified cultural heritage resources and provide mitigation and conservation measures, as necessary.

In summary, both the BHR-1 (7370 5<sup>th</sup> Sideroad) and CHL-1 (Thornton Cookstown Trans-Canada Trail) have been determined to have Cultural Heritage Value or Interest. The impact assessment, based on the identified heritage attributes of the cultural heritage resources, has concluded that impacts are limited to a potential impact of destruction as a result of the possible removal of some of the trees associated with the tree-lined driveway of BHR-1 and potential impact of land disturbances as it relates to this landscape feature. It is recommended that care be taken to minimize damage to these trees located on the subject property which would include avoiding the removal of any of the trees, if feasible, and avoiding the storage of construction equipment and material within the immediate vicinity of the trees.

#### Background

In 2019, MHBC Planning, Urban Design and Landscape Architecture ("MHBC") was retained by Archeoworks Inc. to undertake a Cultural Heritage Assessment Report (CHAR) to screen for potential cultural heritage resources also referred to as a 'screening report'. The assessment is part of a Schedule C Class Environmental Assessment initiated by Simcoe County, for the widening of 5th Sideroad on County Road 53, Town of Innisfil between County Road 21 (Innisfil Beach Road) and the City of Barrie Municipal Limits.

This report concluded that there are potential cultural heritage resources located within the study area. Based on this preliminary review including background research and field review, one (1) built heritage resource (BHR) and one (1) cultural heritage landscape (CHL) were identified as having potential cultural heritage value or interest within the study area:

- BHR 1- 7370 5th Sideroad
- CHL 1- Thornton Cookstown Trans-Canada Trail (the Great Trail)

In order to assess any potential impact to the above identified potential cultural heritage resources, further evaluation under *Ontario Regulation 9/06* and against the criteria in 4.2.11 of the Town of Innisfil's Official Plan of the resources are required. If the resources are confirmed to be of Cultural Heritage Value or Interest, the completion of a Cultural Heritage Impact Assessment will be required in accordance with Section 4.6.6 of the County's Official Plan.

#### Study Area

The study area is on the 5th Sideroad between County Road 21 (Innisfil Beach Road) and the City of Barrie Municipal Limits within the Town of Innisfil, County of Simcoe, Ontario. The study area is east of the Township of Essa and south of the City of Barrie (see **Attachment No.1**). The study area predominately retains the original nineteenth century natural and agricultural landscape. The existing road consists of two-lanes with narrow shoulders and ditches and includes two (2) culverts channelling Thornton Creek below the road. The south end of the study area terminates at the intersection of County Road 21 (Innisfil Beach Road) and 5th Sideroad.

#### **Proposed Road Widening**

The County of Simcoe is proposing to widen and improve County Road 53 (5 Sideroad) from County Road 21 (Innisfil Beach Road) to the southern municipal limits of the City of Barrie which includes a distance of approximately 2.1 kilometres within the Town of Innisfil. The improvements to the road include the extension of the two lane road to a four-lane cross section as in doing so increase capacity, improve entrances and existing asphalt, rectify storm drainage issues and provide lighting and reduce safety issues. This proposal also includes the improvement of the intersections of County Road 53 and the 9<sup>th</sup> Line.

#### **Policy Framework**

The Planning Act and Provincial Policy Statement (PPS) (2020) include several provisions for the conservation of cultural heritage. When addressing cultural heritage planning, the PPS provides for the following:

2.6.1 Significant built heritage resources and significant cultural heritage landscapes shall be conserved.

The PPS also provides definitions for built heritage resources, cultural heritage landscapes, conserved and protected heritage property.

The Ontario Heritage Act, R.S.O, 1990, c.o.18 remains the guiding legislation for the conservation of significant cultural heritage resources in Ontario. Preparation of this report has been guided by the criteria provided with Regulation 9/06 of the Ontario Heritage Act (OHA), which outlines the mechanism for determining cultural heritage value or interest. The regulation sets forth categories of criteria and several sub-criteria. In Section 2.0 of the OHA directs the Ministry of Heritage, Sport, Tourism and Culture Industries to determine policies, priorities and programs for the conservation, protection and preservation of the heritage of Ontario. The Province has published several resources containing information related to cultural heritage resources and guidance for the Ontario Heritage Act, and compiled the information into the Ontario Heritage Toolkit. This compilation is a collection of documents authored by the Ministry of Heritage, Sport, Tourism and Culture Industries, which provide guidance related to a variety of cultural heritage planning matters.

Section 3.7.2 of the Simcoe's County's Official Plan states that the County is "-to encourage maintenance, protection, and restoration of significant natural heritage features and functions and to conserve the built heritage resources and cultural heritage landscapes associated with rural and agricultural areas." The study area is located within a rural, agricultural context and is reviewed within this context. Section 4.6 of the Official Plan outlines policies regarding cultural heritage conservation and states that, "Significant built heritage resources, and significant cultural heritage landscapes, will be conserved." The County is obligated to work with local municipalities to develop and maintain an inventory of significant cultural heritage resources which may include: a) heritage resources designated under Parts IV and V of the OHA; b) sites or areas having historical, archaeological, cultural, scenic, or architectural merit both on land and underwater; c) cemeteries; and d) "other cultural heritage resources of community interest and significance" (Section 4.6.2). Development and site alteration is not permitted on adjacent lands to protected property unless, "-the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved" (Section 4.6.6).

Section 4.2 of the Town of Innisfil Official Plan ("Our Place") outlines policies for the Town's culture and heritage. Section 4.2.7 states that the Town Clerk is obligated to, "-establish and maintain a register of all properties designated by the municipality or by the Minister under Parts IV and V of the Ontario Heritage Act, including built heritage resources and heritage conservation districts that are of cultural heritage value or interest." This register may include resources that are deemed by the Innisfil Council or local heritage committee as having potential cultural heritage value or interest (Section 4.2.9). The Town identifies two categories for cultural heritage resources: historic and architectural value in Section 4.2.12.

#### Historic value is identified as:

- a) Those that serve as an example of the Town's past social, cultural , political or physical development, including cultural heritage landscapes such as landscaping, hedgerows and natural features;
- b) Those that serve as an example of outstanding work by a local or national personality; and,

c) Those that date from an early or significant period in the Town's development as determined to be significant by the Town.

Architectural value is identified as:

- a) Those that serve as a representative example of style, design or period of building;
- b) Those that serve as a representative example of method of construction which was used during a certain time period or rarely used today;
- c) Those that serve as an important Town landmark; and
- d) Those that make and important contribution to the area composition or streetscape of which it forms a part.

In order to conserve the Town's local significant cultural heritage resources in light of development, that Town requires the following:

Development proponents shall retain a heritage consultant to identify, research and document buildings considered to be significant built heritage resources and significant cultural heritage landscapes. In consultation with the Town's Heritage Committee and Town staff, such cultural resources and landscapes shall be conserved and integrated into the development and added to the register (4.2.13).

#### **Cultural Heritage Evaluation**

An evaluation under *Ontario Regulation 9/06* was completed for both potential cultural heritage resources; the evaluation charts and Statements of Cultural Heritage Value or Interest (CHVI) can be viewed in **Attachment No.2** of this memorandum. The conclusions of the evaluation are as follows:

**BHR-1-** The property located at 7370 5<sup>th</sup> Sideroad includes a two-storey house which is representative of an Ontario Gothic Revival farmhouse constructed c. 1874 and is the earliest building in the study area. The house was originally owned by James McLeary who was born in Ireland in 1845 and immigrated to Canada where he was a farmer. The property, however, does not have significant historical/ associative value based on review. The property supports the historic agricultural character of the surrounding area and is physically linked to the barn, tree-lined drive, tree windbreaks and wooden split-rail fencing. The property has architectural value as it serves as a representative example of architecture, but does not meet the other criteria outlined by the Town of Innisfil Official Plan.

Heritage attributes: Original massing of the house, high-pitched centred gable on front façade, original window and door openings, physical relation to the barn, tree-lined drive, tree windbreaks and wooden split-rail fencing.

**CHL-1-** The Trans-Canada Trail started in 1992 and is a national trail connecting the people of Canada and is the longest multi-use trail in the world. The Thornton Cookstown Trans Canada Trail (19.km) is part of the Trans-Canada Trail and follows the Hamilton and North-Western Railway line that merged with the Northern Railway of Canada that later became the Grand Trunk Railway. The trail represents a historic railscape and is associated with the theme of the early development of transportation infrastructure in south-western Ontario in the 19<sup>th</sup> century. The trail has historic value as it serves as an example of the town's past physical development, but does not meet the other criteria outlined by the Town of Innisfil Official Plan.

Heritage Attributes: Delineation of the trail along the former rail line and tree lined pedestrian path.

#### **Cultural Heritage Impact Assessment**

The impacts of a proposed development or change to a cultural heritage resource may occur over a short term or long term duration, and may occur during a pre-construction phase, construction phase or post-construction phase. Impacts to a cultural heritage resource may also be site specific or widespread, and may have low, moderate or high levels of severity of impact. Impacts outlined by the *Ontario Heritage Tool Kit* include: destruction, alteration, shadows, isolation, direct of indirect obstruction of views, a change in land use and land disturbances.

This impact assessment concludes that there are limited anticipated adverse impacts to identified heritage attributes as a result of the proposed road widening as follows:

The house located at 7370 5<sup>th</sup> Sideroad (BHR-1) is approximately 40 metres from the existing right-of-way. The existing house, outbuildings and wood split-fencing are not proposed for destruction or alteration. There is, however, potential that the proposed road widening may remove and/ or cause land disturbances which would affect the existing mature trees on the property associated with the driveway that are within close proximity of the roadway (see Attachment No.3).

There are no anticipated adverse impacts to the Thornton Cookstown Trans Canada Trail (CHL-1). The trail has historically evolved due to road widenings and other changes in infrastructure. The termination of the trail on the west side of the road includes a parking lot which is not considered a heritage attribute of the trail.

#### Mitigation and Conservation Measures

The impact of the proposed road widening is limited to a potential impact of destruction with the possible removal of some of the trees associated with the tree-lined driveway of BHR-1 (located at 7370 5<sup>th</sup> Sideroad) and potential impact of land disturbances as it relates to this landscape feature. It is recommended that care be taken to minimize damage to these trees located on the subject property which would include avoiding the removal of any of the trees, if feasible, and avoiding the storage of construction equipment and material within the immediate vicinity of the trees.

#### **Conclusions**

In summary, both the BHR-1 (7370 5<sup>th</sup> Sideroad) and CHL-1 (Thornton Cookstown Trans Canada Trail) have been determined to have Cultural Heritage Value or Interest. The impact assessment based on the identified heritage attributes of the cultural heritage resources, adverse impacts are limited to a potential impact of destruction as a result of the possible removal of some of the trees associated with the tree-lined driveway of BHR-1 and potential impact of land disturbances as it relates to this landscape feature. It is recommended that care be taken to minimize damage to these trees located on the subject property which would include avoiding the removal of any of the trees, if feasible, and avoiding the storage of construction equipment and material within the immediate vicinity of the trees.

#### Respectfully,

Rachel Redshaw, MA, HE Dipl., CAHP **Senior Heritage Planner, MHBC** 

CC: Dan Currie (Partner and Managing Director of Cultural Heritage, MHBC).

Attachment No.1- Study Area

Attachment No. 2- Ontario Regulation 9/06 Evaluations

Attachment No.3- Images of BHR-1 and CHL-1

#### Attachment No.1



**Cultural Heritage Assessment** for Class C **Environmental Assessment** 

**LEGEND** 



**DATE:** March 1,2021

SCALE: 1:12,500

FILE: 20445A

DRN: L.H.B.

K:\20445A - FIFTH SIDE ROAD - INNISFIL\REPORT\STUDY AREA MAP.DWG





Cultural Heritage Assessment for Class C Environmental Assessment

#### **LEGEND**



Study Area

- 1 7306 5th Line
- 2 7370 5th Line
- 3 7420 5th Line
- 4 7451 5th Line
- 5 Culvert 1
- 6 Culvert 2
- 7 Thornton-Cookstown Trans-Canada Trail
- 8 Innisfil Cemetery Mausoleum
- 9 Georgian Downs
- 10 Thornton Creek

**DATE:** March 1,2021

**SCALE:** 1:12,500

**FILE**: 20445A

DRN: L.H.B.

K:\20445A - FIFTH SIDE ROAD - INNISFIL\REPORT\STUDY AREA MAP.DWG



### Attachment No.2

Ontario	Regulation 9/06	BHR-1- 7370 5 <sup>th</sup> Sideroad, Innisfil
Design/Ph	nysical Value	
i.	Rare, unique, representative or early example of a style, type, expression, material or construction method	Yes.
ii.	Displays high degree of craftsmanship or artistic merit	No.
iii.	Demonstrates high degree of technical or scientific achievement	No.
Historical	/ Associative Value	
iv.	Direct associations with a theme, event, belief, person, activity, organization, institution that is significant	No.
V.	Yields, or has potential to yield information that contributes to an understanding of a community or culture	No.
vi.	Demonstrates or reflects the work or ideas of an architect, artist, builder, designer, or theorist who is significant to the community.	No.
Contextu	al Value	
vii.	Important in defining, maintaining or supporting the character of an area	Yes.
viii.	Physically, functionally, visually, or historically linked to its surroundings	Yes.
ix.	Is a landmark	No.

### Statement of Cultural Heritage Value or Interest

The property located at 7370 5<sup>th</sup> Sideroad includes a two-storey house which is representative of an Ontario Gothic Revival farmhouse constructed c. 1874. The property supports the historic agricultural character of the surrounding area and is physically linked to the barn, tree-lined drive, tree windbreaks and wooden split-rail fencing.

Heritage attributes: Original massing of the house, high-pitched centred gable on front façade, original window and door openings, physical relation to the barn, tree-lined drive, tree windbreaks and wooden split-rail fencing.

Ontario Regulation	1 9/06	CHL-1- Thornton Cookstown Trans Canada Trail
Design/Physical Value		
		No.
ii. Displays high craftsmanshi	degree of o or artistic merit	No.
iii. Demonstrate technical or so achievement	s high degree of cientific	No.
Historical/ Associative V	′alue	
event, belief,	tions with a theme, person, activity, institution that is	Yes.
information t	potential to yield hat contributes to ding of a community	No.
work or ideas artist, builder	s or reflects the of an architect, , designer, or is significant to the	No.
Contextuall Value		
vii. Important maintaining character of a	in defining, or supporting the n area	No.
viii. Physically, fu or historica surroundings	inctionally, visually, Ily linked to its	Yes.
ix. Is a landmark		No.

### Statement of Cultural Heritage Value or Interest

The Thornton Cookstown Trans Canada Trail follows the former Hamilton and North-Western Railway line that merged with the Northern Railway of Canada that later became the Grand Trunk Railway. The trail is associated with the theme of the development of transportation infrastructure in south-western Ontario in the 19<sup>th</sup> century. The trail is physically linked to its surroundings.

Heritage Attributes: Delineation of the trail along the former rail line and tree lined pedestrian path.

### Attachment No.3







### Appendix F: Public Information Centre



Main Line (705) 726 9300 Toll Free 1 866 893 9300 Fax (705) 719 4626 simcoe.ca



### County Road 53 (5th Sideroad) Improvements

County Road 21 to City of Barrie Limits

Municipal Class Environmental Assessment Study

Notice of Online Public Engagement

### **Background**

The County of Simcoe is proposing improvements to County Road 53 (5th Sideroad) from County Road 21 (Innisfil Beach Road) to the City of Barrie south limits. The subject section of road was identified for widening from 2 to 4 lanes in the County's 2014 Transportation Master Plan Update. The proposed works are to resurface and widen the road to increase its capacity, improve existing lane configurations at intersections, upgrade drainage features, review illumination needs and address safety concerns. The improvements are necessary to support the arterial function of the road and accommodate planned growth in the area.

### **Study Process**

The County is proceeding with a Schedule B Municipal Class Environmental Assessment (EA) to consider and address the impacts associated with the proposed improvements.

Online public engagement is being offered to allow interested members of the public an opportunity to review and provide comment on the alternative solutions, the recommendations, and the next steps in the study process. A recorded presentation describing the overall study will be available for viewing on the County's website (**simcoe.ca/cr53**) for a 4-week period from April 27, 2023, to May 25, 2023. Members of the public are encouraged to submit comments by May 25, 2023 (a comment sheet is also available on the County's website).

### **Recommended Alternative Solutions**

The recommended alternative solutions consider the long-term transportation needs to support future growth and development of the area. The recommended alternative solutions are as follows:



source: https://maps.simcoe.ca/public/

- Maintain a 2-lane cross-section with intersection improvements (turn lanes and traffic signals). Upgrade the entire corridor to a County standard cross-section (wider lanes and shoulders)
- Widen the road to a 3-lane cross-section to increase capacity (1 lane per direction with a centre turn lane)
- Widen the road to a 4-lane cross-section to increase capacity (2 lanes per direction, no centre turn lane)

It is noted that these are the recommended solutions only. Upon receipt of agency and public comments, the final preferred alternative solution will be confirmed, and a Notice of Study Commencement issued. A separate notice pertaining to this will be issued at that time.

### **Project Contacts**

Owner

County of Simcoe 1110 Highway 26 Midhurst, ON L0L 1X0 Claire Walker, P.Eng. PMP Project Engineer claire.walker@simcoe.ca 705-726-9300 ext 1168

### Consultant

Tatham Engineering Ltd. 200 Sandford Fleming Dr. #200 Collingwood, ON L9Y 5A6 **John Velick, P.Eng** Project Manager jvelick@tathameng.com (705) 444-2565 x2110



Main Line (705) 726 9300 Toll Free 1 866 893 9300 Fax (705) 719 4626 simcoe.ca



### County Road 53 (5th Sideroad) Improvements

County Road 21 to City of Barrie Limits Municipal Class Environmental Assessment Study Notice of Online Public Engagement

Background

The County of Simcoe is proposing improvements to County Road 53 (5th Sideroad) from County Road 21 (Innisfil Beach Road) to the City of Barrie south limits. The subject section of road was identified for widening from 2 to 4 lanes in the County's 2014 Transportation Master Plan Update. The proposed works are to resurface and widen the road to increase its capacity, improve existing lane configurations at intersections, upgrade drainage features, review illumination needs and address safety concerns. The improvements are necessary to support the arterial function of the road and accommodate planned growth in the area.

Study Process

The County is proceeding with a Schedule B Municipal Class Environmental Assessment (EA) to consider and address the impacts associated with the proposed improvements.

Online public engagement is being offered to allow interested members of the public an opportunity to review and provide comment on the alternative solutions, the recommendations, and the next steps in the study process. A recorded presentation describing the overall study will be available for viewing on the County's website (simcoe.ca/cr53) for a 4-week period from April 27, 2023, to May 25, 2023. Members of the public are encouraged to submit comments by May 25, 2023 (a comment sheet is also available on the County's website).



### Recommended Alternative Solutions

The recommended alternative solutions consider the long-term transportation needs to support future growth and development of the area. The recommended alternative solutions are as follows:

- Maintain a 2-lane cross-section with intersection improvements (turn lanes and traffic signals). Upgrade the entire corridor to a County standard cross-section (wider lanes and shoulders)
- Widen the road to a 3-lane cross-section to increase capacity (1 lane per direction with a centre turn lane)
- Widen the road to a 4-lane cross-section to increase capacity (2 lanes per direction, no centre turn lane)

It is noted that these are the recommended solutions only. Upon receipt of agency and public comments, the final preferred alternative solution will be confirmed, and a Notice of Study Commencement issued. A separate notice pertaining to this will be issued at that time.

### **Project Contacts**

Owner

County of Simcoe 1110 Highway 26 Midhurst, ON LoL 1X0

Claire Walker, P.Eng. PMP

Project Engineer

claire.walker@simcoe.ca

705-726-9300 ext 1168

### Consultant

Tatham Engineering Ltd. 200 Sandford Fleming Dr. #200 Collingwood, ON L9Y 5A6

John Velick, P.Eng

Project Manager

velick@tathameng.com



Main Line (705) 726 9300 Toll Free 1 866 893 9300 Fax (705) 719 4626 simcoe.ca



### County Road 53 (5th Sideroad) Improvements

County Road 21 to City of Barrie Limits Municipal Class Environmental Assessment Study Notice of Online Public Engagement

### Background

The County of Simcoe is proposing improvements to County Road 53 (5th Sideroad) from County Road 21 (Innisfil Beach Road) to the City of Barrie south limits. The subject section of road was identified for widening from 2 to 4 lanes in the County's 2014 Transportation Master Plan Update. The proposed works are to resurface and widen the road to increase its capacity, improve existing lane configurations at intersections, upgrade drainage features, review illumination needs and address safety concerns. The improvements are necessary to support the arterial function of the road and accommodate planned growth in the area.

### Study Process

The County is proceeding with a Schedule B Municipal Class Environmental Assessment (EA) to consider and address the impacts associated with the proposed improvements.

Online public engagement is being offered to allow interested members of the public an opportunity to review and provide comment on the alternative solutions, the recommendations, and the next steps in the study process. A recorded presentation describing the overall study will be available for viewing on the County's website (simcoe.ca/cr53) for a 4-week period from April 27, 2023, to May 25, 2023. Members of the public are encouraged to submit comments by May 25, 2023 (a comment sheet is also available on the County's website).



### Recommended Alternative Solutions

The recommended alternative solutions consider the long-term transportation needs to support future growth and development of the area. The recommended alternative solutions are as follows:

- Maintain a 2-lane cross-section with intersection improvements (turn lanes and traffic signals). Upgrade the entire corridor to a County standard cross-section (wider lanes and shoulders)
- Widen the road to a 3-lane cross-section to increase capacity (1 lane per direction with a centre turn lane)
- Widen the road to a 4-lane cross-section to increase capacity (2 lanes per direction, no centre turn lane)

It is noted that these are the recommended solutions only. Upon receipt of agency and public comments, the final preferred alternative solution will be confirmed, and a Notice of Study Commencement issued. A separate notice pertaining to this will be issued at that time.

### **Project Contacts**

Owner

County of Simcoe 1110 Highway 26 Midhurst, ON LOL 1X0

Claire Walker, P.Eng. PMP

Project Engineer

claire.walker@simcoe.ca

705-726-9300 ext 1168

### Consultant

Tatham Engineering Ltd. 200 Sandford Fleming Dr. #200 Collingwood, ON L9Y 5A6 John Velick, P.Eng

Project Manager

velick@tathameng.com



Main Line (705) 726 9300 Toll Free 1 866 893 9300 Fax (705) 719 4626 simcoe.ca



### County Road 53 (5th Sideroad) Improvements

County Road 21 to City of Barrie Limits Municipal Class Environmental Assessment Study Notice of Online Public Engagement

Background

The County of Simcoe is proposing improvements to County Road 53 (5th Sideroad) from County Road 21 (Innisfil Beach Road) to the City of Barrie south limits. The subject section of road was identified for widening from 2 to 4 lanes in the County's 2014 Transportation Master Plan Update. The proposed works are to resurface and widen the road to increase its capacity, improve existing lane configurations at intersections, upgrade drainage features, review illumination needs and address safety concerns. The improvements are necessary to support the arterial function of the road and accommodate planned growth in the area.

### Study Process

The County is proceeding with a Schedule B Municipal Class Environmental Assessment (EA) to consider and address the impacts associated with the proposed improvements.

Online public engagement is being offered to allow interested members of the public an opportunity to review and provide comment on the alternative solutions, the recommendations, and the next steps in the study process. A recorded presentation describing the overall study will be available for viewing on the County's website (simcoe.ca/cr53) for a 4-week period from April 27, 2023, to May 25, 2023. Members of the public are encouraged to submit comments by May 25, 2023 (a comment sheet is also available on the County's website).



### **Recommended Alternative Solutions**

The recommended alternative solutions consider the long-term transportation needs to support future growth and development of the area. The recommended alternative solutions are as follows:

- Maintain a 2-lane cross-section with intersection improvements (turn lanes and traffic signals). Upgrade the entire corridor to a County standard cross-section (wider lanes and shoulders)
- Widen the road to a 3-lane cross-section to increase capacity (1 lane per direction with a centre turn lane)
- Widen the road to a 4-lane cross-section to increase capacity (2 lanes per direction, no centre turn lane)

It is noted that these are the recommended solutions only. Upon receipt of agency and public comments, the final preferred alternative solution will be confirmed, and a Notice of Study Commencement issued. A separate notice pertaining to this will be issued at that time.

### **Project Contacts**

Owner

County of Simcoe 1110 Highway 26 Midhurst, ON LOL 1X0

Claire Walker, P.Eng. PMP

Project Engineer claire.walker@simcoe.ca 705-726-9300 ext 1168

### Consultant

Tatham Engineering Ltd. 200 Sandford Fleming Dr. #200 Collingwood, ON L9Y 5A6 John Velick, P.Eng Project Manager jvelick@tathameng.com



Main Line (705) 726 9300 Toll Free 1 866 893 9300 Fax (705) 719 4626 simcoe.ca



### County Road 53 (5th Sideroad) Improvements

County Road 21 to City of Barrie Limits Municipal Class Environmental Assessment Study Notice of Online Public Engagement

Background

The County of Simcoe is proposing improvements to County Road 53 (5th Sideroad) from County Road 21 (Innisfil Beach Road) to the City of Barrie south limits. The subject section of road was identified for widening from 2 to 4 lanes in the County's 2014 Transportation Master Plan Update. The proposed works are to resurface and widen the road to increase its capacity, improve existing lane configurations at intersections, upgrade drainage features, review illumination needs and address safety concerns. The improvements are necessary to support the arterial function of the road and accommodate planned growth in the area.

### Study Process

The County is proceeding with a Schedule B Municipal Class Environmental Assessment (EA) to consider and address the impacts associated with the proposed improvements.

Online public engagement is being offered to allow interested members of the public an opportunity to review and provide comment on the alternative solutions, the recommendations, and the next steps in the study process. A recorded presentation describing the overall study will be available for viewing on the County's website (simcoe.ca/cr53) for a 4-week period from April 27, 2023, to May 25, 2023. Members of the public are encouraged to submit comments by May 25, 2023 (a comment sheet is also available on the County's website).



### Recommended Alternative Solutions

The recommended alternative solutions consider the long-term transportation needs to support future growth and development of the area. The recommended alternative solutions are as follows:

- Maintain a 2-lane cross-section with intersection improvements (turn lanes and traffic signals). Upgrade the entire corridor to a County standard cross-section (wider lanes and shoulders)
- Widen the road to a 3-lane cross-section to increase capacity (1 lane per direction with a centre turn lane)
- Widen the road to a 4-lane cross-section to increase capacity (2 lanes per direction, no centre turn lane)

It is noted that these are the recommended solutions only. Upon receipt of agency and public comments, the final preferred alternative solution will be confirmed, and a Notice of Study Commencement issued. A separate notice pertaining to this will be issued at that time.

### **Project Contacts**

Owner

County of Simcoe 1110 Highway 26 Midhurst, ON LOL 1X0 Claire Walker, P.Eng. PMP

Project Engineer

claire.walker@simcoe.ca

705-726-9300 ext 1168

### Consultant

Tatham Engineering Ltd. 200 Sandford Fleming Dr. #200 Collingwood, ON L9Y 5A6

John Velick, P.Eng

Project Manager

ivelick@tathameng.com

County Road 53 EA								1		
County of Simcoe										
MUNICIPAL CLASS EA										
CONSULTATION MAILING LIST										
TATHAM PROJECT NO. 419376										
Last Updated: April 12, 2023										
Marianalitia	Job Title	Contact Suffix	Contact First	Contact Last	Address	Mailian	Cit.	PC	Dhana	Email
Municipalities		Contact Surfix	Name	Name		Mailing	City		Phone	
County of Simcoe	County Clerk	Mr.	John	Daly	Administration Centre	1110 Highway #26	MIDHURST	L9X 1N6	705-726-9300 ext. 1623	john.daly@simcoe.ca
City of Barrie	Chief Administrative Officer	Mr.	Michael	Prowse	City Hall	70 Collier Street	Barrie	L4M 4T5	705-739-4220	michael.prowse@barrie.ca
Town of Innisfil	Chief Administrative Officer	Mr.	Oliver	Jerschow	Town of Innisfil	2101 Innisfil Beach Road	Innisfil	L9S 1A1	705-436-3710 ext. 1202	kshea@innisfil.ca
Local Agencies	Job Title	Contact Suffix	Contact First Name	Contact Last Name	Address	Mailing	City	PC	Phone	Email
Simcoe County District School Board	Manager of Planning	Mr.	Andrew	Keuken	1170 Highway 26		MIDHURST	LOL 1X0	705-734-6363 ext. 11513	akeuken@scdsb.on.ca
Simcoe County District School Board	Planner, Planning & Enrolment	Ms.	Kandas	Bondarchuk	1170 Highway 26		MIDHURST	L9X 1N6	249-388-3083	kbondarchuk@scdsb.on.ca
Simcoe Muskoka Catholic District School Board	Manager of Planning and Properties	Ms.	Christine	Hyde	46 Alliance Boulevard		BARRIE	L4M 5K3	705-722-3555 ext. 351	chyde@smcdsb.on.ca
Lake Simcoe Region Conservation Authority	Director, Regulations, Planning & Development	Ms.	Ashlea	Brown	120 Bayview Parkway	Box 282	NEWMARKET	L3Y 4X1	905-895-1281 ext. 224	a.brown@lsrca.on.ca
Nottawasaga Conservation Authority	Chief Administrative Officer	Mr.	Doug	Hevenor	John Hix Conservation Administration Centre	8195 8th Line	Utopia	L0M 1T0	705-424-1479 xt. 225	dhevenor@nvca.on.ca
Simcoe Muskoka District Health Unit	Medical Officer of Health	Mr.	Charles	Gardner	15 Sperling Drive		BARRIE	L4M 6K9	705-721-7520 ext. 6515	Charles.Gardner@smdhu.org
Simcoe County Student Transportation Consortium				Sir/Madam	64 Cedar Pointe Drive	Suite 1403	BARRIE	M4N 5R7	705-733-8965	transportation@scstc.ca
Emergency Services	Job Title	Contact Suffix	Contact First	Contact Last	Address	Mailing	City	PC	Phone	Email
Ontario Provincial Police - Central Region Headquarters	Deputy Commissioner - Traffic Safety & Operational Support	Ms.	Name Rose	Name Dimarco	1 Hurtubise Drive		ORILLIA	L3V 0C8	705-330-3700	
Barrie Fire & Emergency Services	Fire Chief	Mr	Cory	Mainprize	155 Dunlop Street West		Barrie	L4N 1A9	705-728-3199	cory.mainprize@barrie.ca
Simcoe County Paramedic Services	Director and Chief	Me	Sarah	Mille	Administration Centre	1100 Highway 26	MIDHURST	L9X 1N6	705-726-9300 ext. 1231	sarah.mills@simcoe.ca
Provincial Agencies	Job Title	Contact Suffix	Contact First	Contact Last	Address	Mailing	City	PC PC	Phone	Email
Ministry of the Environment, Conservation and Parks - Barrie		Contact Surrix	Name	Name						·
District Office	Manager	Ms.	Cindy	Hood	54 Cedar Pointe Drive	Unit 1201	BARRIE	L4N 5R7	705-309-5874	cindy.hood@ontario.ca
Ministry of the Environment, Conservation and Parks - Barrie District Office	Supervisor	Ms.	Sheri	Broeckel	54 Cedar Pointe Drive	Unit 1201	BARRIE	L4N 5R7	705-716-3712	Sheri.Broeckel@ontario.ca
Ministry of the Environment, Conservation and Parks	Regional Environmental Planner - Central Region	Ms.	Chunmei	Liu	135 St Clair Ave W	1st Floor	TORONTO	M4V 1P5	416 314-8001	chunmei.liu@ontario.ca
Ministry of Municipal Affairs and Housing	Team Lead, Community Planning and Development	Mr.	Aldo	Ingraldi	8 Estate Lane		KINGSTON	K7M 9A8	613-545-2119	aldo.ingraldi@ontario.ca
Ministry of Northern Development, Mines, Natural Resources and Forestry - Midhurst District	District Manager	Mr.	Dan L.	Thompson	2284 Nursery Road		MIDHURST	L9X 1N8	226-974-5882	dan.l.thompson@ontario.ca
Ministry of Transportation	Corridor Management Section, Central Region	Mr.	Peter	Dorton	159 Sir William Hearst Ave	7th Floor	TORONTO	M3M 0B7	437-833-9396	Peter.Dorton@ontario.ca
Ministry of Transportation - Legal Services	Director	Ms.	Mary	Gersht	159 Sir William Hearst Ave	7th Floor	TORONTO	M3M 0B7	416-235-4406	mary.gersht@ontario.ca
Ministry of Indigenous Affairs - Indigenous Relations and	Executive Advisor		Ayn	Cooney	160 Bloor St E	4th Floor	TORONTO	M7A 2E6	416-325-1067	ayn.cooney@ontario.ca
Programs Division  Ministry of Health - Communications Branch	Director (Acting)		Paola	Gemmiti	438 University Ave.	8th Floor	TORONTO	M5G 2K8	416-606-3752	paola.gemmiti@ontario.ca
Ministry of Heritage, Sport, Tourism and Culture - Regional and	Assistant Deputy Minister	Ms	Melody	Robinson	400 University Ave.	2nd Floor	TORONTO	M7A 2R9	416-566-6011	melody.robinson@ontario.ca
Corporate Services Division	Chief Executive Officer		Beth	Hanna	10 Adelaide Street E	1st Floor	TORONTO	M5C 1J3	416-301-2843	beth.hanna@heritagetrust.on.ca
Ontario Heritage Trust		MS.								
Infrastructure Ontario	President, Real Estate	Mr.	Toni Contact First	Rossi Contact Last	1 Dundas Street West	Suite 2000	TORONTO	M5G 1Z3	416-314-0314	toni.rossi@infrastructureontario.ca
Federal Agencies	Job Title	Contact Suffix	Name	Name	Address	Mailing	City	PC	Phone	Email
Indigenous Services Canada - Sustainable Infrastructure Planning, Regional	Program Manager	Mr.	Derek	Nadeau	10 Wellington Street, North Tower, 18th floor		Gatineau, QC	K1A 0H4	613-608-8637	derek.nadeau@sac-isc.gc.ca derek.nadeau@canada.ca
Environment and Climate Change Canada	Manager	Mr.	Rob	Dobos	867 Lakeshore Road	Box 5050	BURLINGTON	L7S 1A1	905-336-4953	rob.dobos@canada.ca
Impact Assessment Agency of Canada - Ontario Office	Director (Ontario Region)	Ms.	Anjala	Puvananathan	600-55 York Street	6th Floor	TORONTO	M5J 1R7	416-952-1576	anjala.puvananathan@canada.ca iaac.ontarioregion- regiondontario.aeic@canada.ca
Fisheries and Oceans Canada, Eastern Ontario District - Small Craft Harbours	Regional Manager	Ms.	Chantal	Larochelle	867 Lakeshore Rd.		BURLINGTON	L7S 1A1	905-315-5285	chantal.larochelle@dfo-mpo.gc.ca
Transport Canada - Ontario Region, Programs (Airports, Harbours and Ports, and Environmental Services)				Sir/Madam	4900 Yonge Street		NORTH YORK	M2N 6A5	416-952-0490	questions@tc.gc.ca
Utilities	Job Title	Contact Suffix	Contact First	Contact Last	Address	Mailing	City	PC	Phone	Email
Alectra Inc.	Vice President - Asset Strategy and Operations	Mr.	Mike	Matthews	2185 Derry Road West		Mississauga	L5N 7A6		
Hydro One				Sir/Madam	483 Bay Street	10th Floor Reception	TORONTO	M5G 2P5	416-345-6799	community.relations@hydroone.com
Bell Canada	Manager	Ms.	Angela	Taylor	136 Bayfield Street	2nd Floor	BARRIE	L4M 3B1	705-722-2442	angela.taylor@bell.ca
Enbridge Gas			3	Sir/Madam	500 Consumer Road		NORTH YORK	M2J 1P8	877-362-7434	customercare@enbridge.com
				Sir/Madam			BARRIE	I 4M 6B8	552 7454	
Rogers Cable Inc				oir/ madam	1 Sperling Drive	1	DAKKIE	L4M 6B8		

County Road 53 EA										
County of Simcoe					+	+				
MUNICIPAL CLASS EA										
CONSULTATION MAILING LIST										
TATHAM PROJECT NO. 419376										
Last Updated: April 12, 2023										
First Nations	Title	Contact Suffix	Contact First Name	Contact Last Name	Address	Mailing	City	PC	Phone	Email
Alderville First Nation	Chief		Dave	Mowat	11696 Second Line Rd		ALDERVILLE	K0K 2X0	905-352-3000	dmowat@alderville.ca
Beausoleil First Nation	Chief		Joanne P.	Sandy- McKenzie	11 O'Gemaa Miikaans		CHRISTIAN ISLAND	LOK1CO	705-247-2251	bfnchief@chimnissing.ca
Chippewas of Georgina Island	Chief		Donna	Big Canoe	R.R. #2	P.O. Box N-13	SUTTON WEST	LOE 1RO	705-437-1337	donna.bigcanoe@georginaisland.com
Chippewas of Mnjikaning First Nation (Rama)	Chief		Ted	Williams	5884 Rama Road	Suite 200	RAMA	L3V 6H6	705-325-3611	chief@ramafirstnation.ca
Curve Lake First Nation	Chief		Emily	Whetung- MacInnes	22 Winookeeda Road		CURVE LAKE	K0L 1R0	705-657-8045	EmilyW@curvelake.ca
Hiawatha First Nation	Chief		Laurie	Carr	123 Paudash Street		HIAWATHA	K0L 2G0	705-295-4421	chiefcarr@hiawathafn.ca
Mississaugas of Scugog Island First Nation	Chief		Kelly	LaRocca	22521 Island Road	RR# 5	PORT PERRY	L9L 1B6	905-441-4836	klarocca@scugogfirstnation.com
Moose Deer Point First Nation	Chief		Rhonda	Williams-Lovett	3719 Twelve Mile Bay Road	PO BOX 119	MACTIER	P0C 1H0	705-375-5209	Rhonda.Williams-Lovett@mdpfn.com
Wahta Mohawk Territory	Chief		Blaine	Commandant	2664 Muskoka Rd #38	PO BOX 260	BALA	P0C 1A0	705-762-2354	blaine.commandant@wahtamohawkscouncil.ca
Wasauksing First Nation	Chief		Warren	Tabobondung	PO Box 250	1508 Lane "G" Geewadin Road	PARRY SOUND	P2A 2X4	705-746-2531	chief@wasauksing.ca
Georgian Bay Métis Council	President	Mr.	Greg	Garratt	355 Cranston Crescent	PO BOX 4	MIDLAND	L4R 4K6	705-526-6335	greggarratt@gmail.com
Moon River Métis Council	President	Mrs.	Erin	Hadaway	385A Bethune Drive North		GRAVENHURST	P1P 1B8	705-681-0782	erin.hadaway05@gmail.com
Williams Treaty First Nation	Coordinator/Barrister, Solicitor	Ms.	Karry	Sandy- McKenzie	8 Creswick Court		BARRIE	L4M 2J7	705-792-5087	k.a.sandy-mckenzie@rogers.com
Metis National Council				Sir/Madam	340 MacLaren Street	#3	OTTAWA	K2P 0M6	613-232-3216	info@metisnation.ca
Saugeen Ojibway Nation Environment Office	Acting Manager	Ms.	Emily	Martin	25 Maadookii Subdivision		NEYAASHIINIGMIING	N0H 2T0	519-534-5507	emily.martin@saugeenojibwaynation.ca; juanita.meekins@saugeenojibwaynation.ca
Huron-Wendat Nation					255 Chef-Michel Laveau Rue		Wendake	G0A 4V0		administration@cnhw.qc.ca
Metis Nation of Ontario - Lands & Resources Dept - copy to Region 7 Councillor David Dusome					66 Slater St.	Suite 1100	Ottawa	K1P 5H1	613-798-1006	info@mnoregistry.ca
Metis Nation of Ontario	Director, Lands, Resources and Consultations	Ms.	Linda	Norheim	311-75 Sherbourne St.		Toronto	M5A 2P9	416-977-9881, Ext. 102	consultations@metisnation.org
Additions Through the Class EA Process	Title	Contact Suffix	Contact First Name	Contact Last Name	Address	Mailing	City	PC	Phone	Email
Town of Innisfil	Manager of Capital Engineering									jjenkins@innisfil.ca
Town of Innisfil	Director of Planning and Growth									aleigh@innisfil.ca
Town of Innisfil	Manager of Planning									bcorreia@innisfil.ca
Town of Innisfil	Acting Manager of Development Engineering									dmohamed@innisfil.ca
Town of Innisfil	Capital Planning Engineering Associate									ccautillo@innisfil.ca
Town of Innisfil	Operations Manager									bseed@innisfil.ca
Town of Innisfil	Director of Operations									nbowman@innisfil.ca
City of Barrie	Senior Project Manager - Transportation Planning, Development Services		Brett	Gratrix					705-790-4518	Brett.Gratrix@barrie.ca

7214 5TH SIDEROAD INNISFIL ON L9S 3S5
6600 10TH LINE RR 3 THORNTON ON L0L 2N0 INNISFIL TOWN 2101 INNISFIL BEACH RD
INNISFIL ON L9S 1A1
31 MCGILLIVRAY AVE NORTH YORK ON M5M 2X9
PO BOX 1070 THORNTON ON LOL 2N0
23 EUPHRASIA DR NORTH YORK ON M6B 3V8
30 FLORAL PKY SUITE 300 CONCORD ON L4K 4R1
16766 TRANSCANADIENNE RTE SUITE 500 KIRKLAND QC H9H 4M7
7485 5TH SIDEROAD INNISFIL ON L9S 3S1
88 WILDWOOD TRAIL BARRIE ON L4N 7Z8
PO BOX 2003 THORNTON ON LOL 2N0
7451 5TH SIDEROAD INNISFIL ON L9S 3S1
13775 COMMERCE PKY 200 RICHMOND BC V6V 2V4
7485 5TH SIDEROAD INNISFIL ON L9S 3S1 BARRIE CITY
70 COLLIER ST PO BOX 400 STN MAIN BARRIE ON L4M 4T5



## COUNTY ROAD 53 IMPROVEMENTS

County Road 21 to City of Barrie Limits
Class Environmental Assessment

PUBLIC ENGAGEMENT



# STUDY PURPOSE & PROCESS

- PROBLEM OR OPPORTUNITY
- 3 ALTERNATIVE SOLUTIONS & RECOMMENDATIONS
- NEXT STEPS



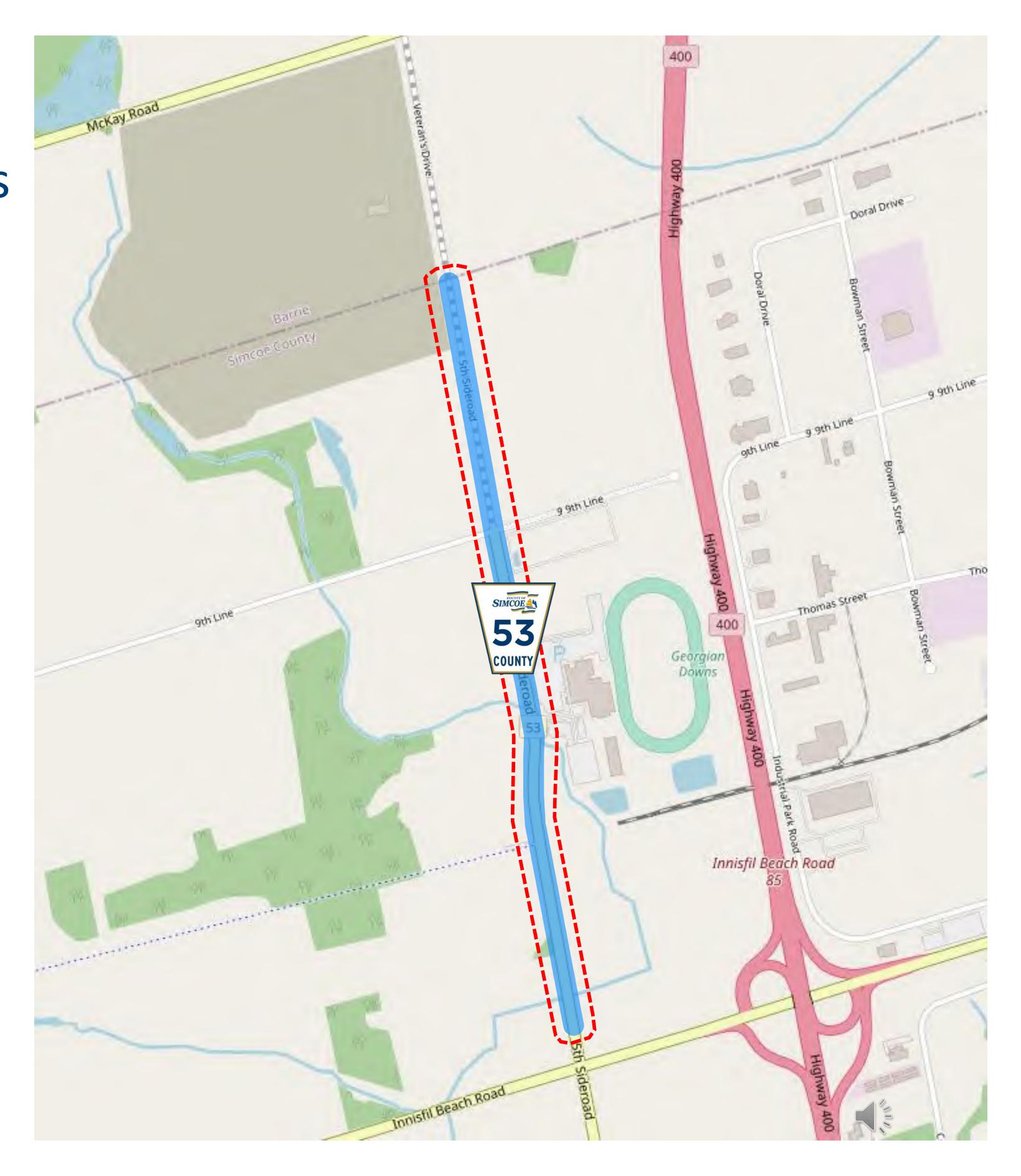


## STUDY AREA

County Road 21 to City of Barrie limits

## BACKGROUND

- County Road 53 (formerly 5<sup>th</sup> Sideroad) was transferred to the County in 2011
- The 2014 County of Simcoe
   Transportation Master Plan (TMP)
   Update identified the need for increased capacity along the road
- As a former Town road, County Road
   53 requires upgrading to County standards



## The **OBJECTIVE** of this study is to:

- identify and facilitate the implementation of improvements to County Road 53 in consideration of
  - the natural, socio-economic & heritage environments
  - the intended function of a county road
  - the needs of road users
  - the County's current road standards



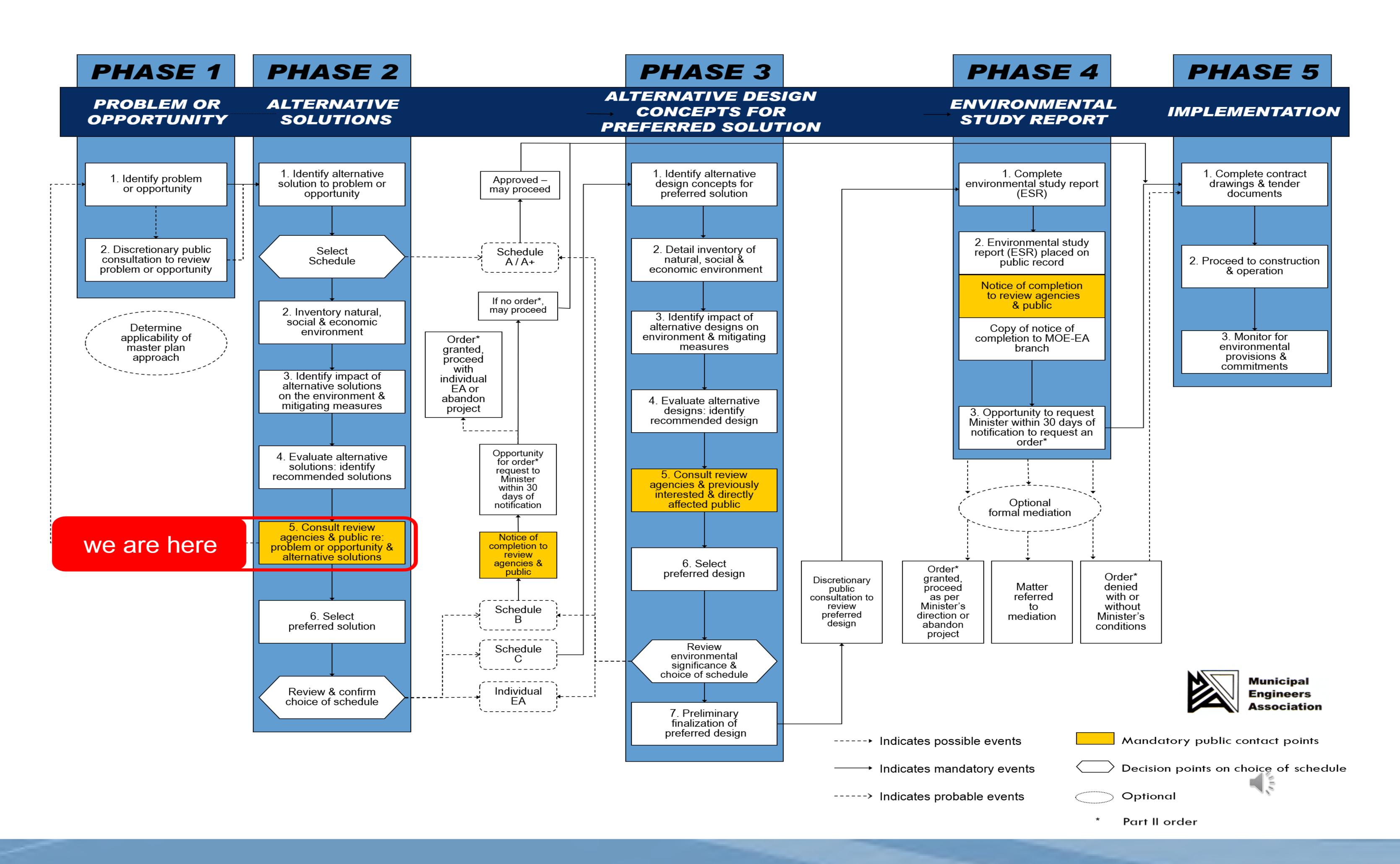
## The PURPOSE of this study is to:

 develop alternative solutions to accommodate future traffic demands

 identify the location, extent and sensitivity of affected environments

- assess the alternatives given potential environmental impacts
- identify a preferred solution
- establish measures to mitigate impacts
- satisfy the Class EA requirements









## County Road 53 Improvements: Schedule B

## Phase 1

Identify & describe the problem or opportunity

## Phase 2

Identify & assess alternative solutions to solve the problem

Establish the Preferred Solution

Confirm Class EA Schedule

Schedules Schedules A, A+, B & C B & C

## Phase 3

Identify & assess alternative designs for the Preferred Solution

Establish the Preferred Design

Schedule C

## Phase 4

Prepare an Environmental Study Report

Schedule C

## Phase 5

Design & Construction

Schedules A, A+, B & C

## The purpose of PUBLIC ENGAGEMENT is to:

- initiate the public engagement process
- identify the study area, study objective and purpose
- present the need and justification for the study
- identify the alternative solutions and potential environmental impacts

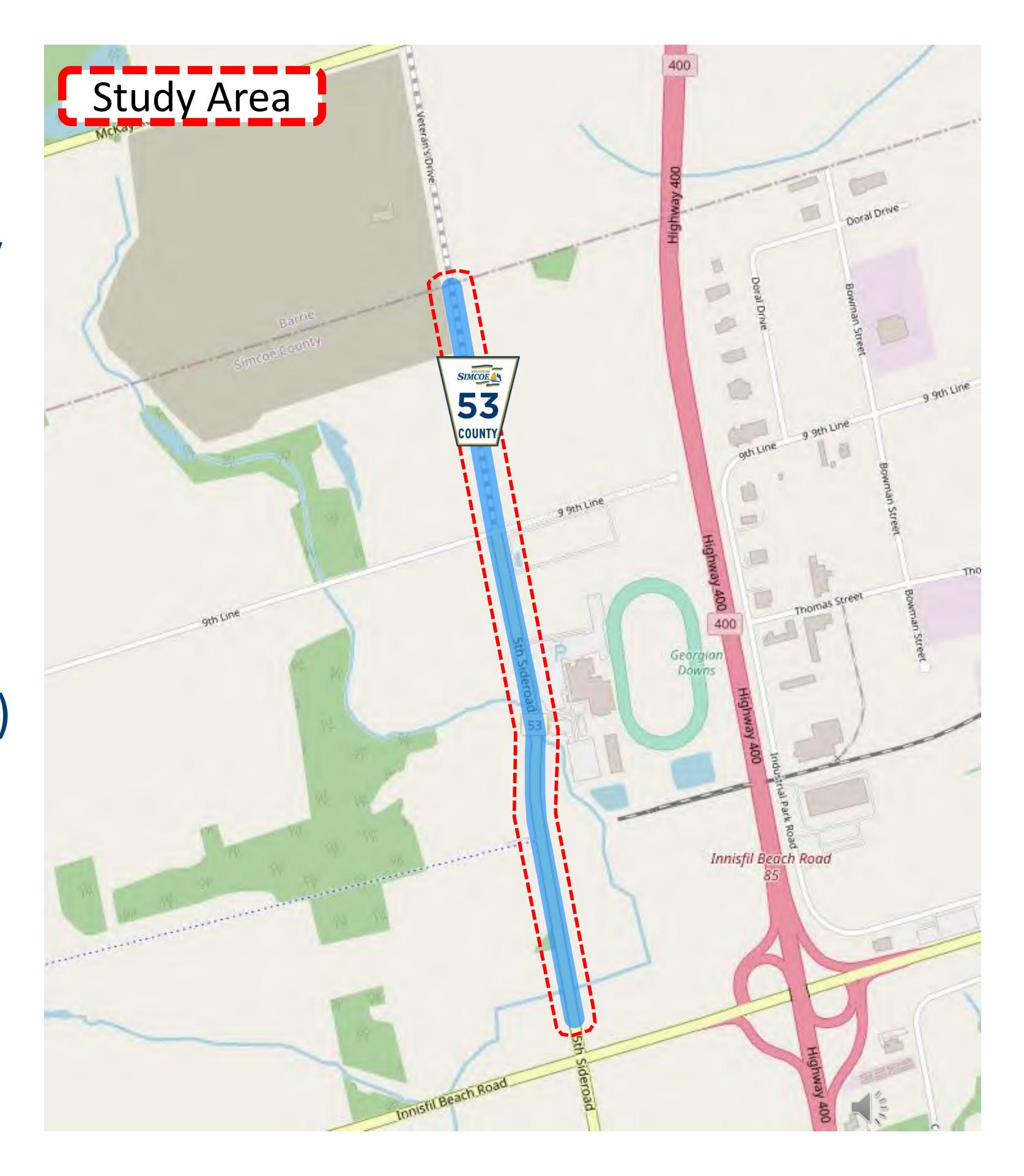
seek input and comments for consideration in the selection of the preferred options





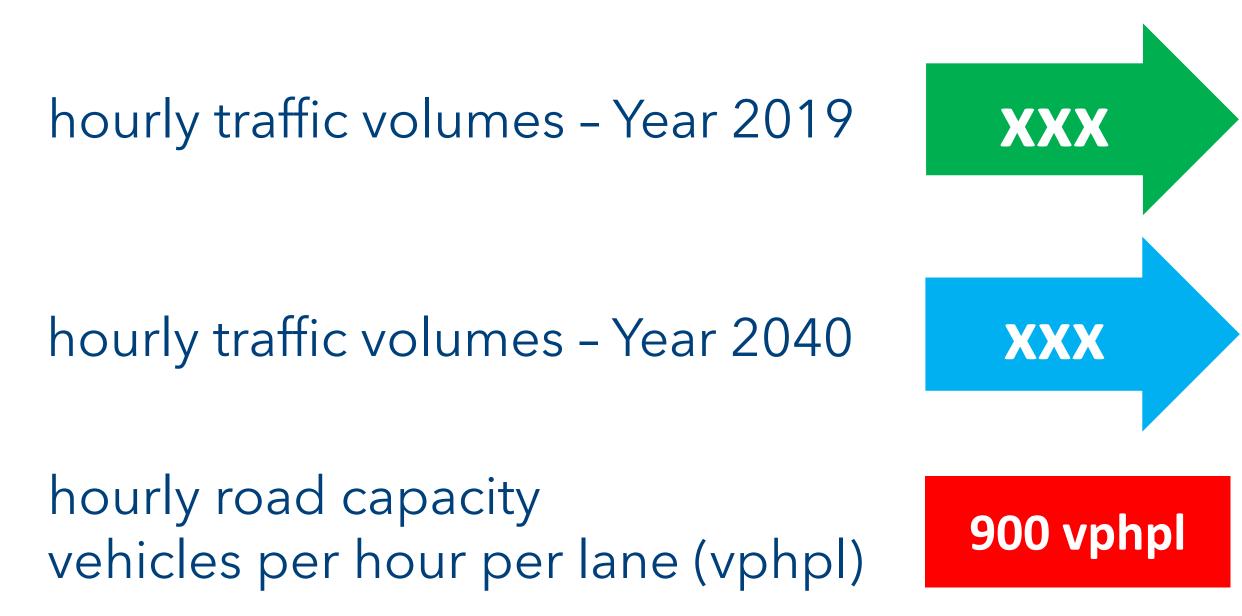
## BACKGROUND

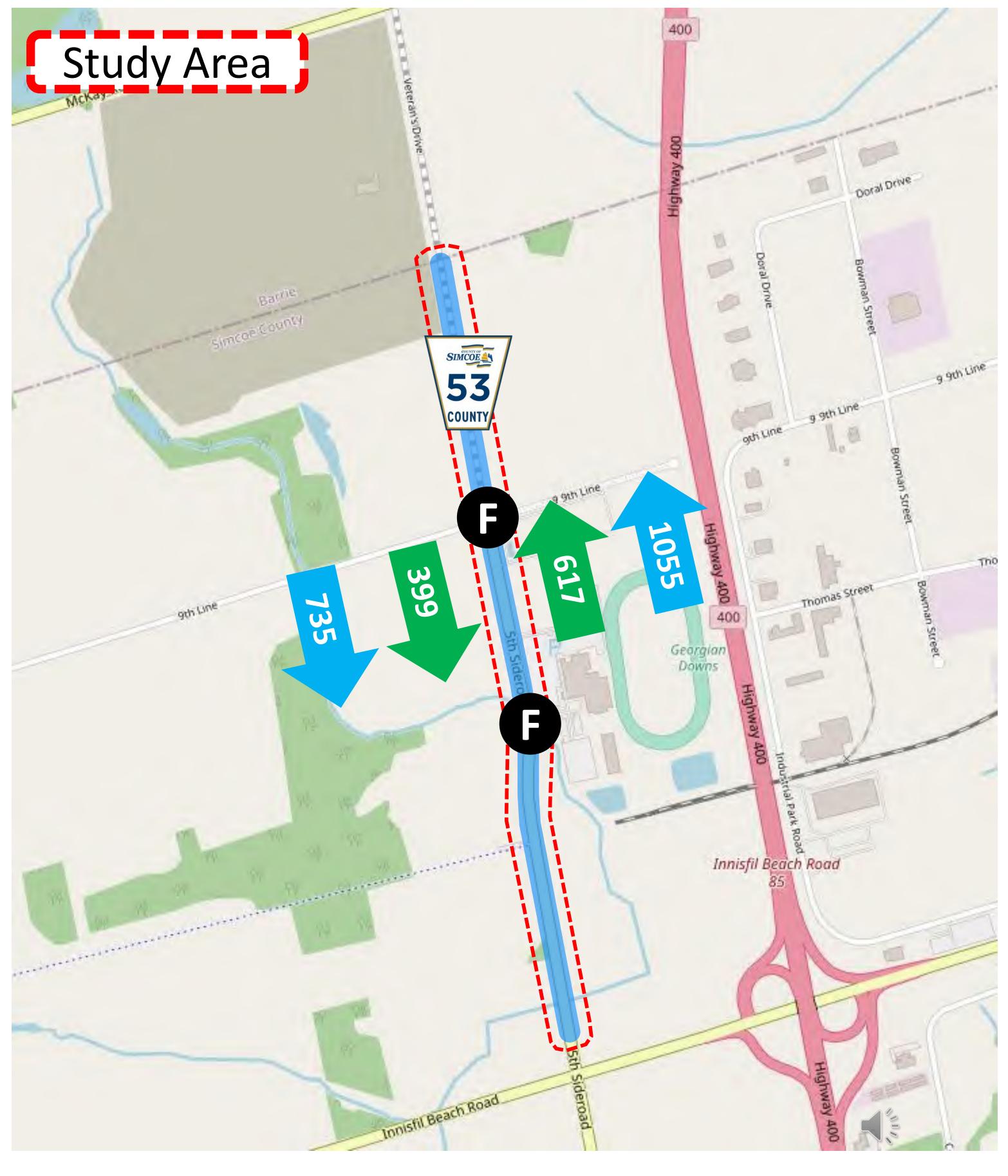
- Transferred to the County in 2011 and does not currently satisfy County road standards
- County of Simcoe Official Plan
  - ROW width of 40 metres identified
  - existing ROW varies between 20 and 54 metres, with a predominant ROW of 26 metres
- County of Simcoe TMP Update (2014)
  - recommended additional capacity



## TRAFFIC OPERATIONS

- Traffic Operations Assessment
  - traffic projections established for 2030 and 2040 horizons
  - consideration given to impacts associated with proposed Hwy 400/McKay Road interchange
  - volumes exceed available capacity by 2040
  - intersection operations fail by 2040





That improvements necessary to support the intended arterial function of County Road 53 be addressed in an environmentally sound manner in consideration of:

- future traffic needs
- current County standards
- surface drainage requirements

The overall intent being the delivery of a County road facility that provides

SAFE and EFFICIENT

travel for its users.





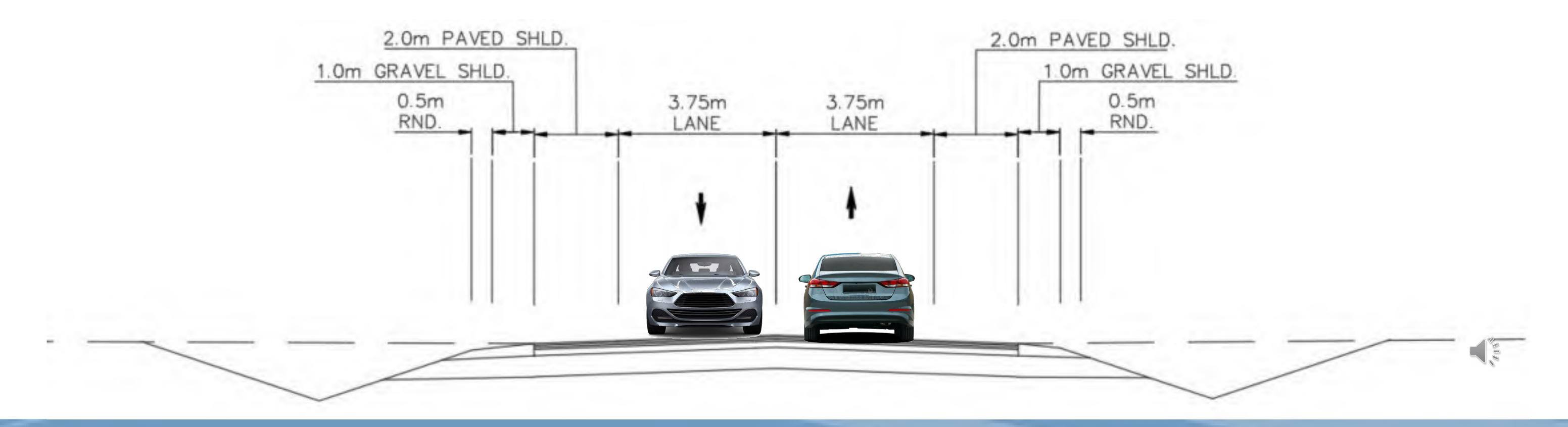
## DO NOTHING

- maintain existing conditions with no improvements
- 3.5 metre lanes and 1.5 metre shoulders

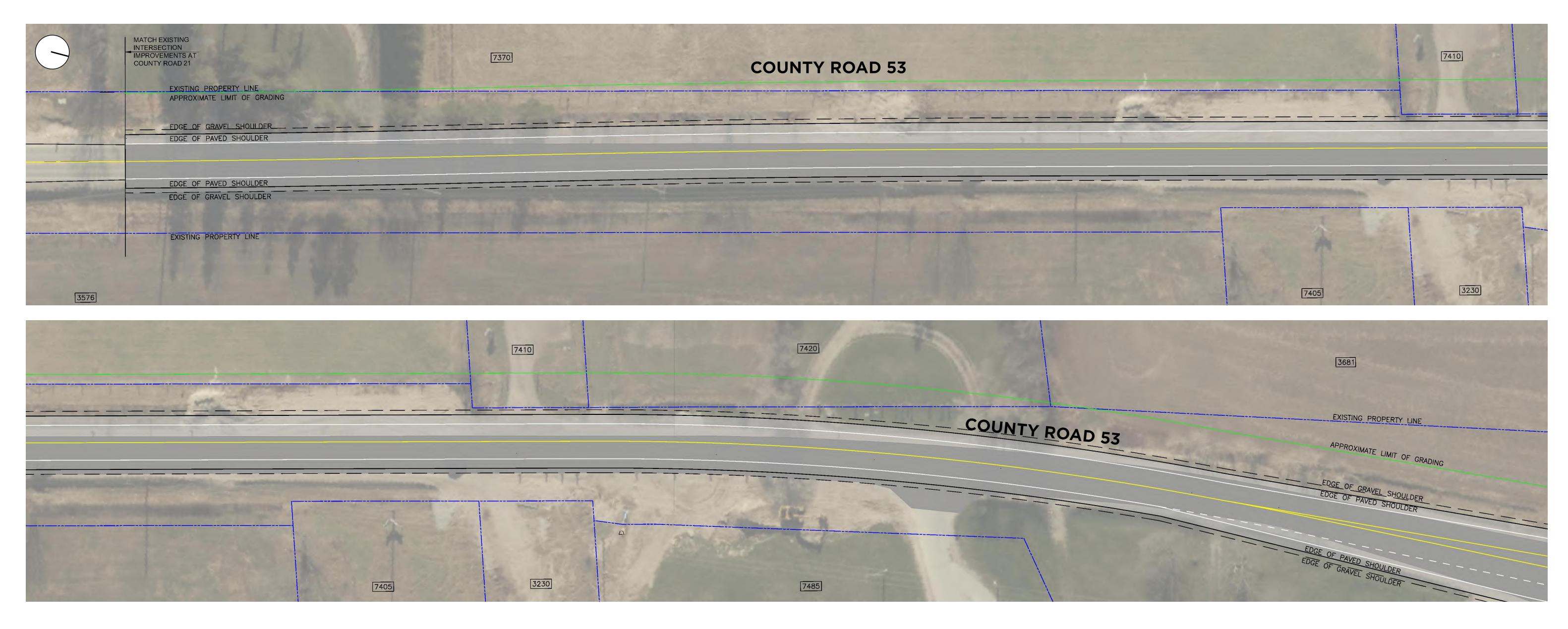


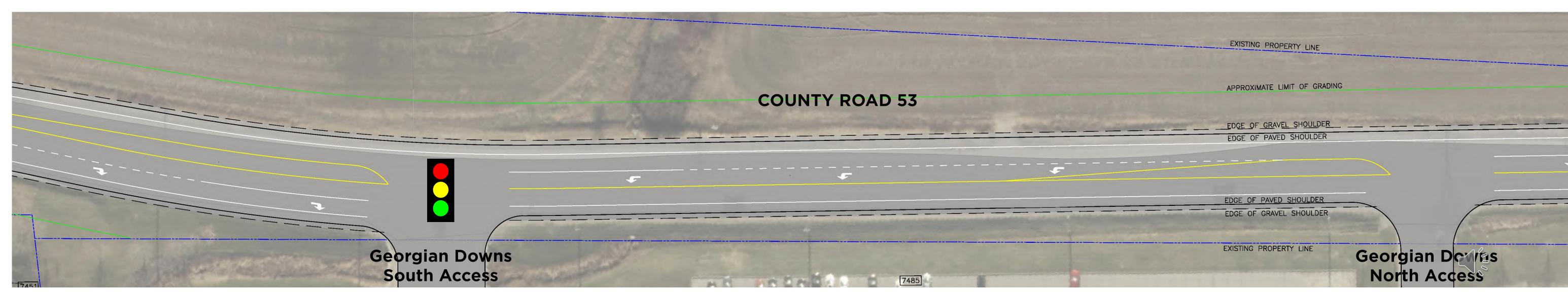
## ALTERNATIVE A: OPERATIONAL IMPROVEMENTS

- maintain 2-lane cross-section with intersection improvements (turn lanes and traffic signals)
- upgrade cross-section to County standard (wider lanes and wider shoulders)
- hold east edge of shoulder
- widen ROW to the west as needed to accommodate intersection improvements and improved drainage (widening to east constrained due to Innisvale Cemetery, buried gas main, and hydro poles)

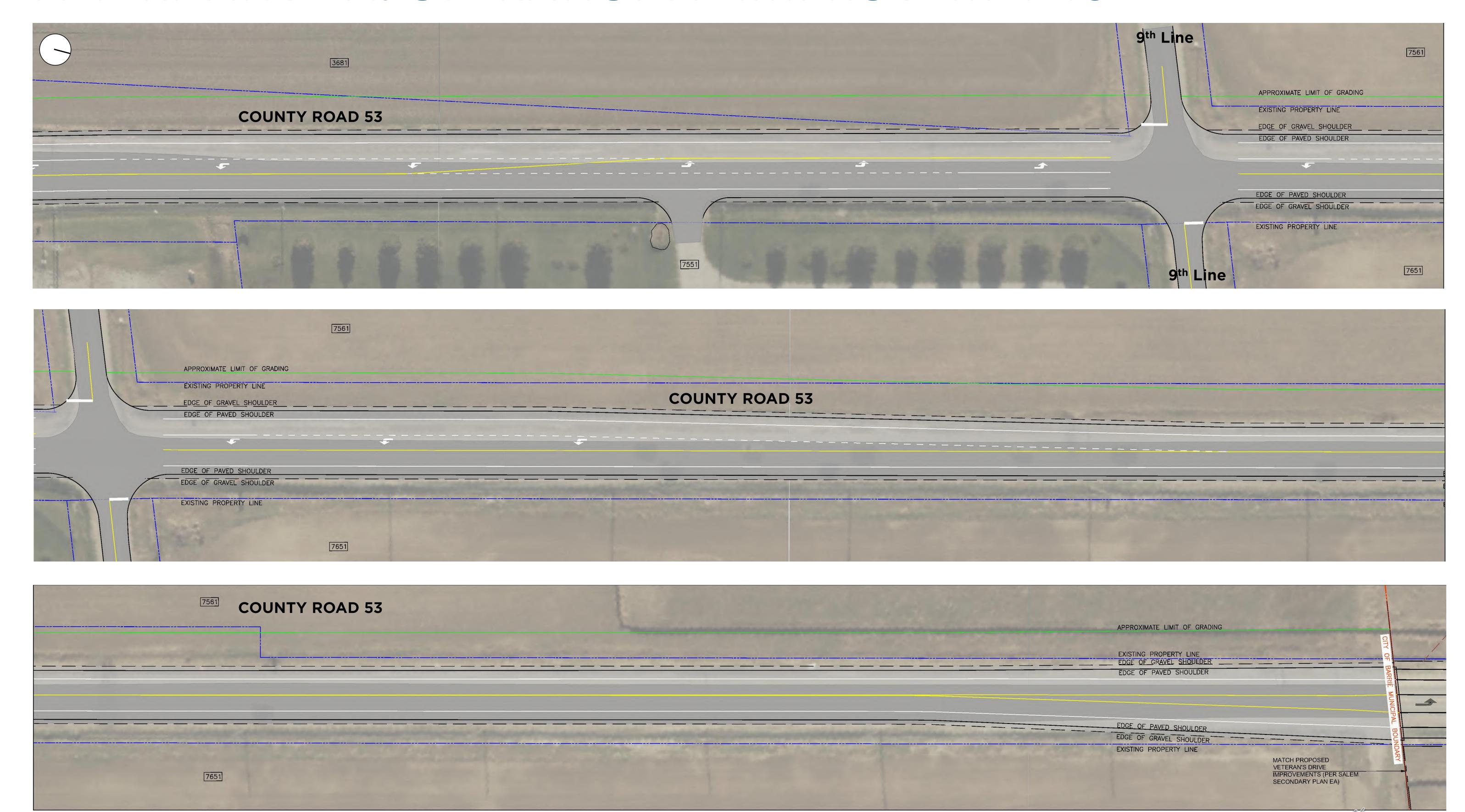


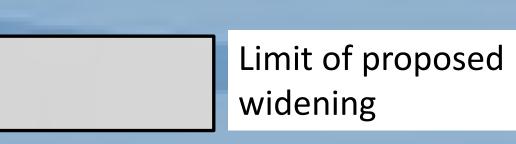
## ALTERNATIVE A: OPERATIONAL IMPROVEMENTS





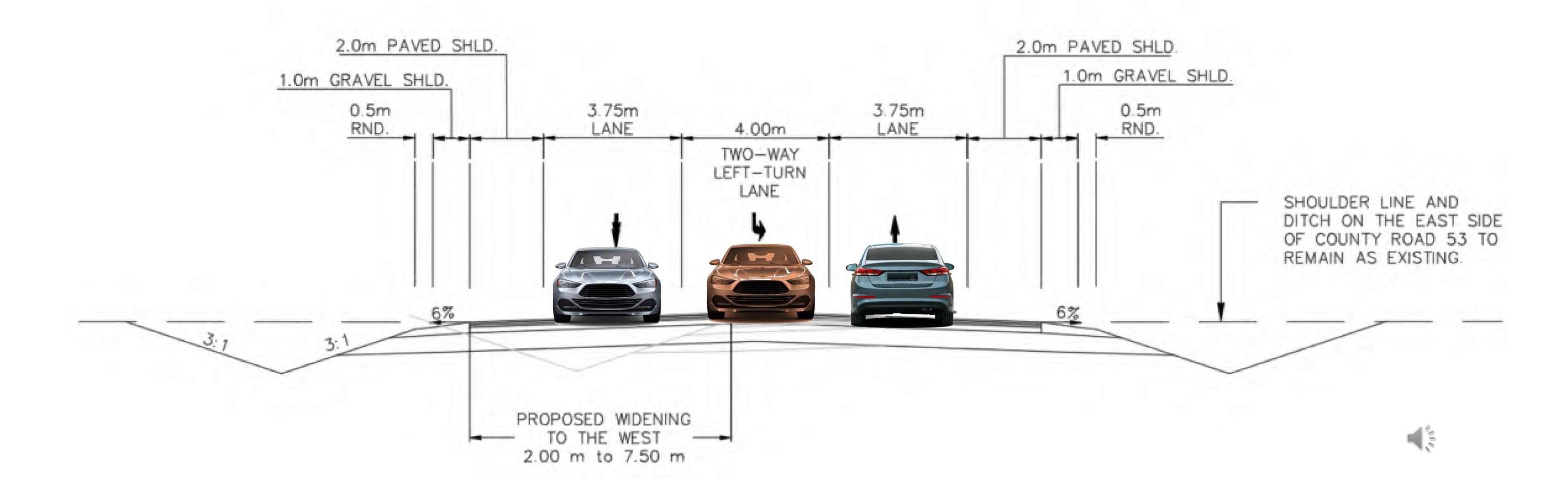
## ALTERNATIVE A: OPERATIONAL IMPROVEMENTS



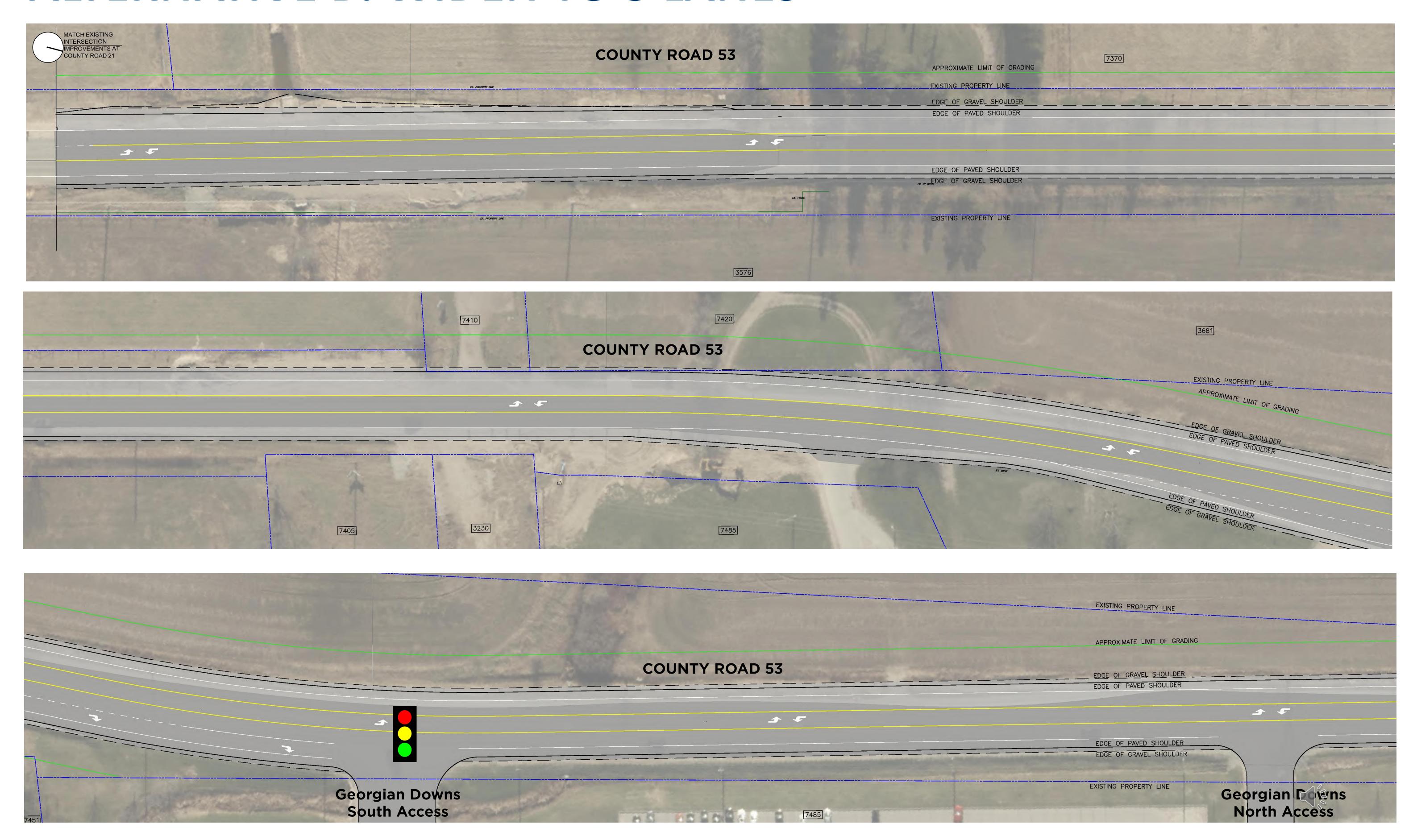


## ALTERNATIVE B: WIDEN TO 3 LANES

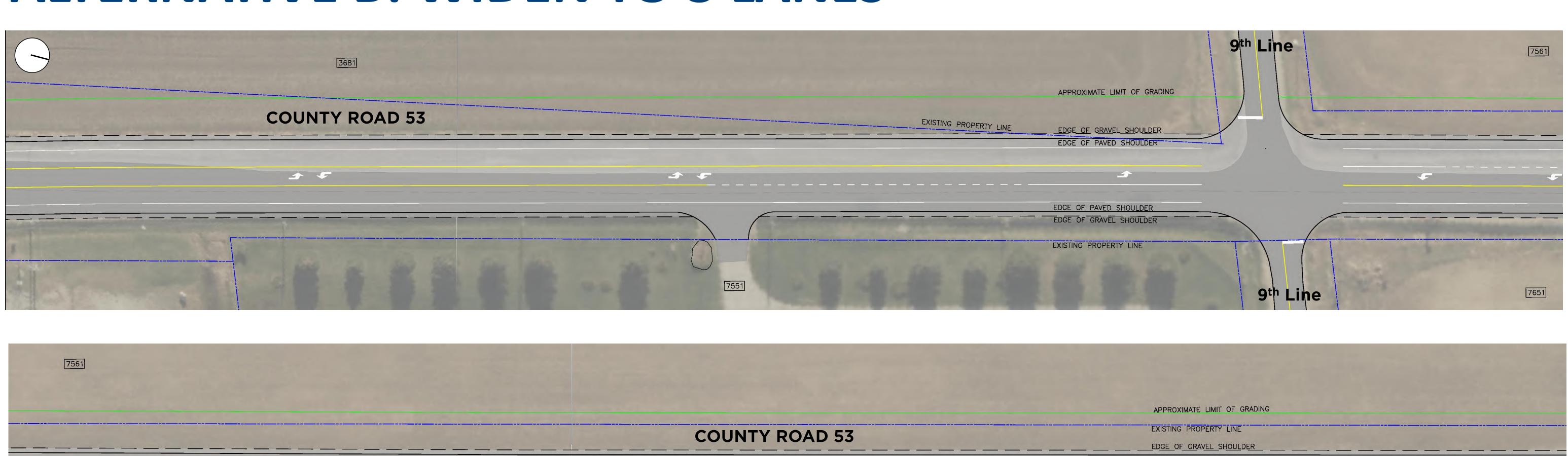
- widen road to 3-lane cross-section to increase capacity (1 lane per direction + centre turn lane)
- improve lane configurations at intersections with traffic signals as needed
- widen ROW to the west as needed to accommodate 3-lanes and improved drainage
   (widening to east constrained due to Innisvale Cemetery, buried gas main, and hydro poles)

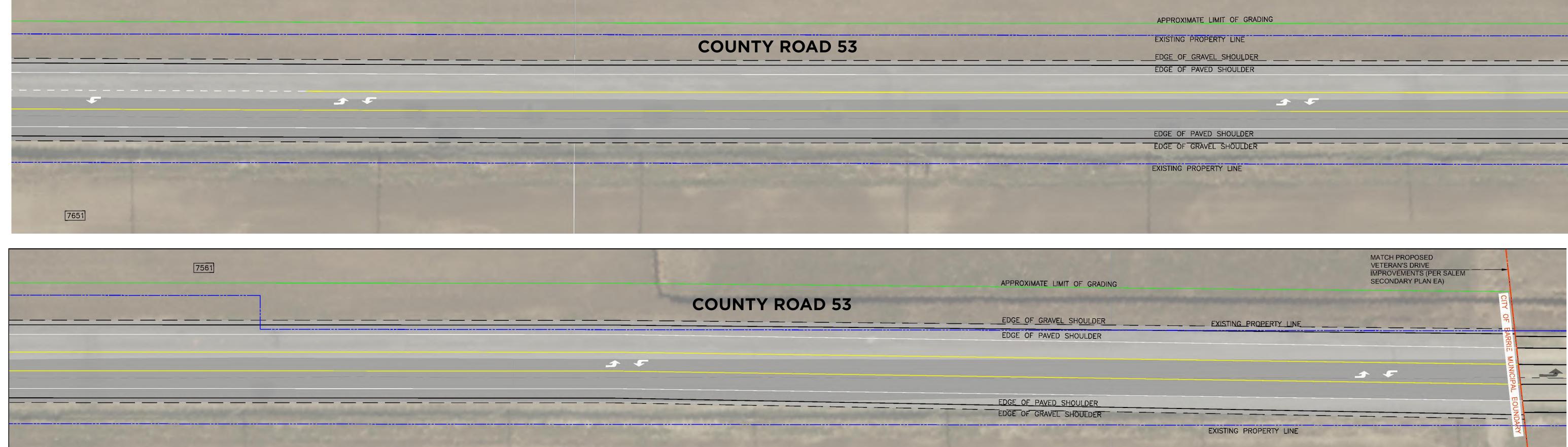


## ALTERNATIVE B: WIDEN TO 3 LANES



## ALTERNATIVE B: WIDEN TO 3 LANES



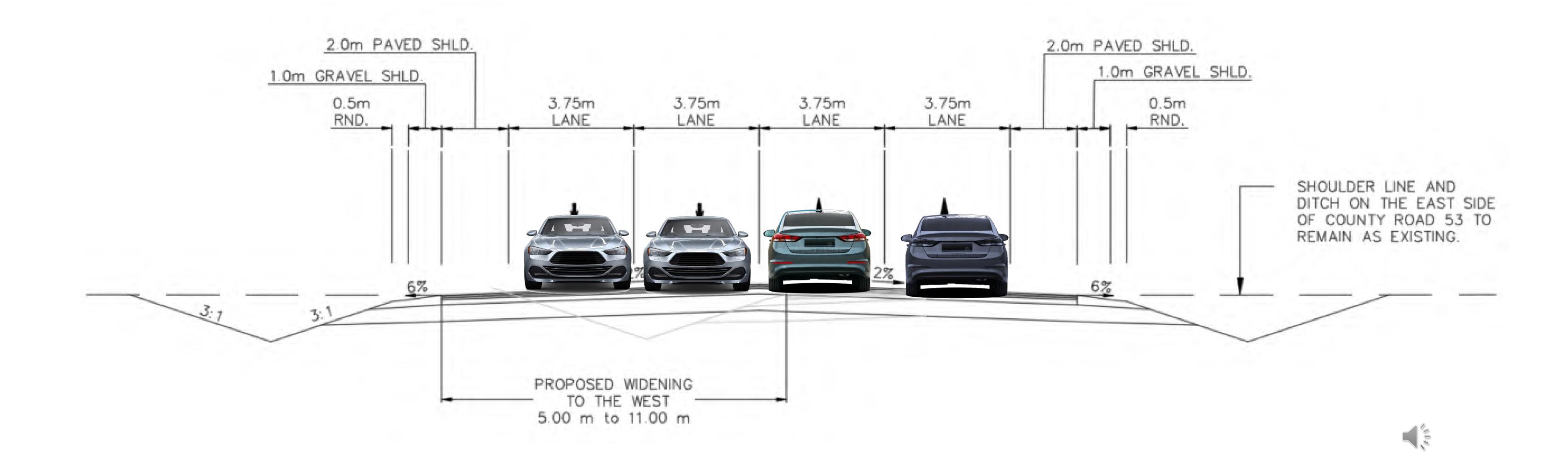




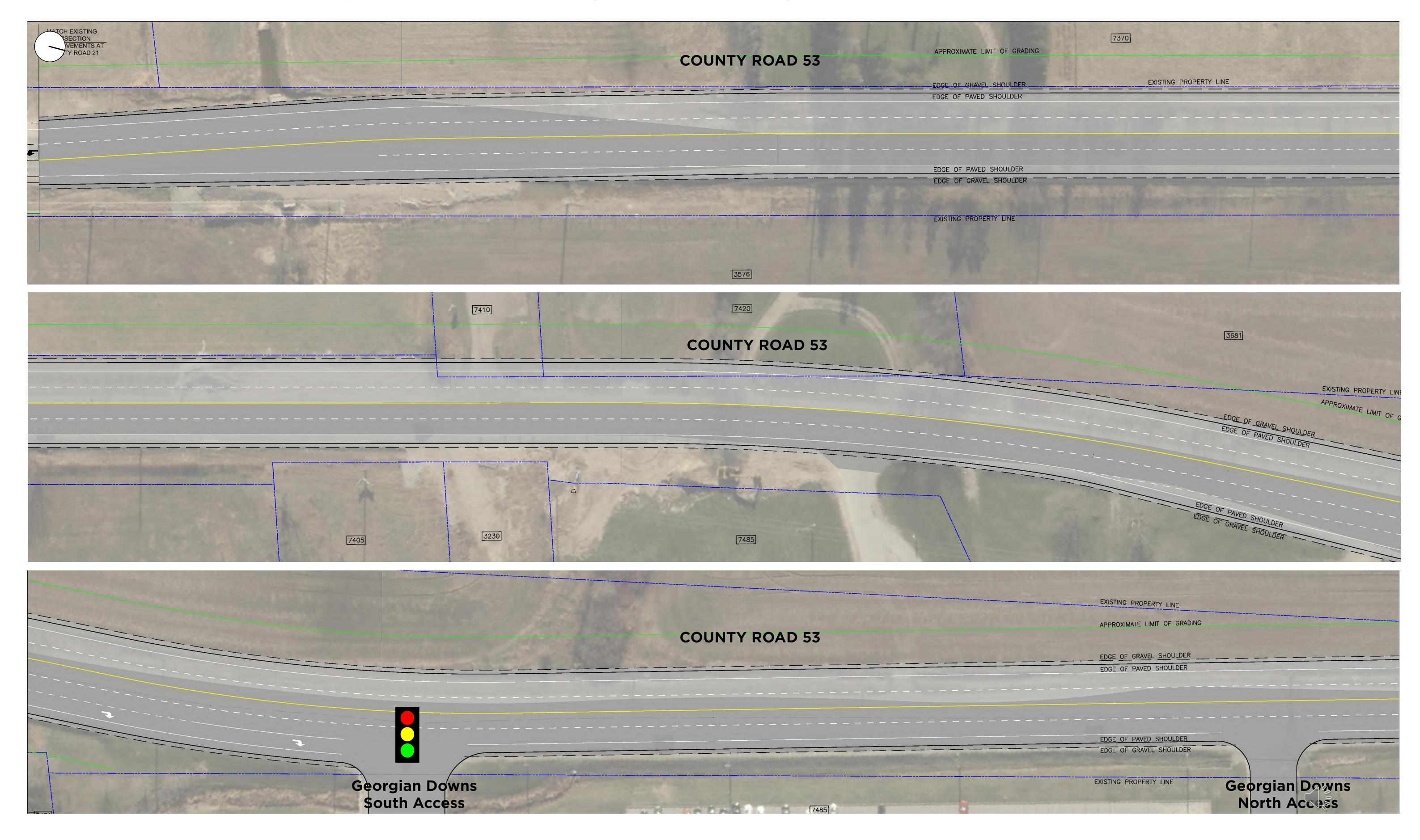
7651

## ALTERNATIVE C: WIDEN TO 4 LANES

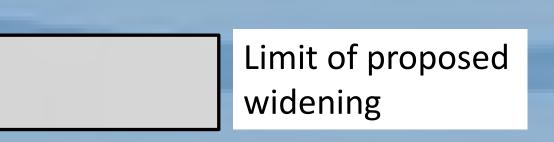
- widen road to 4-lane cross-section to increase capacity
   (2 lanes per direction, no centre turn lane)
- widen ROW to west as required to accommodate 4-lane cross section and improved drainage
   (widening to east constrained due to Innisvale Cemetery, buried gas main, and hydro poles)



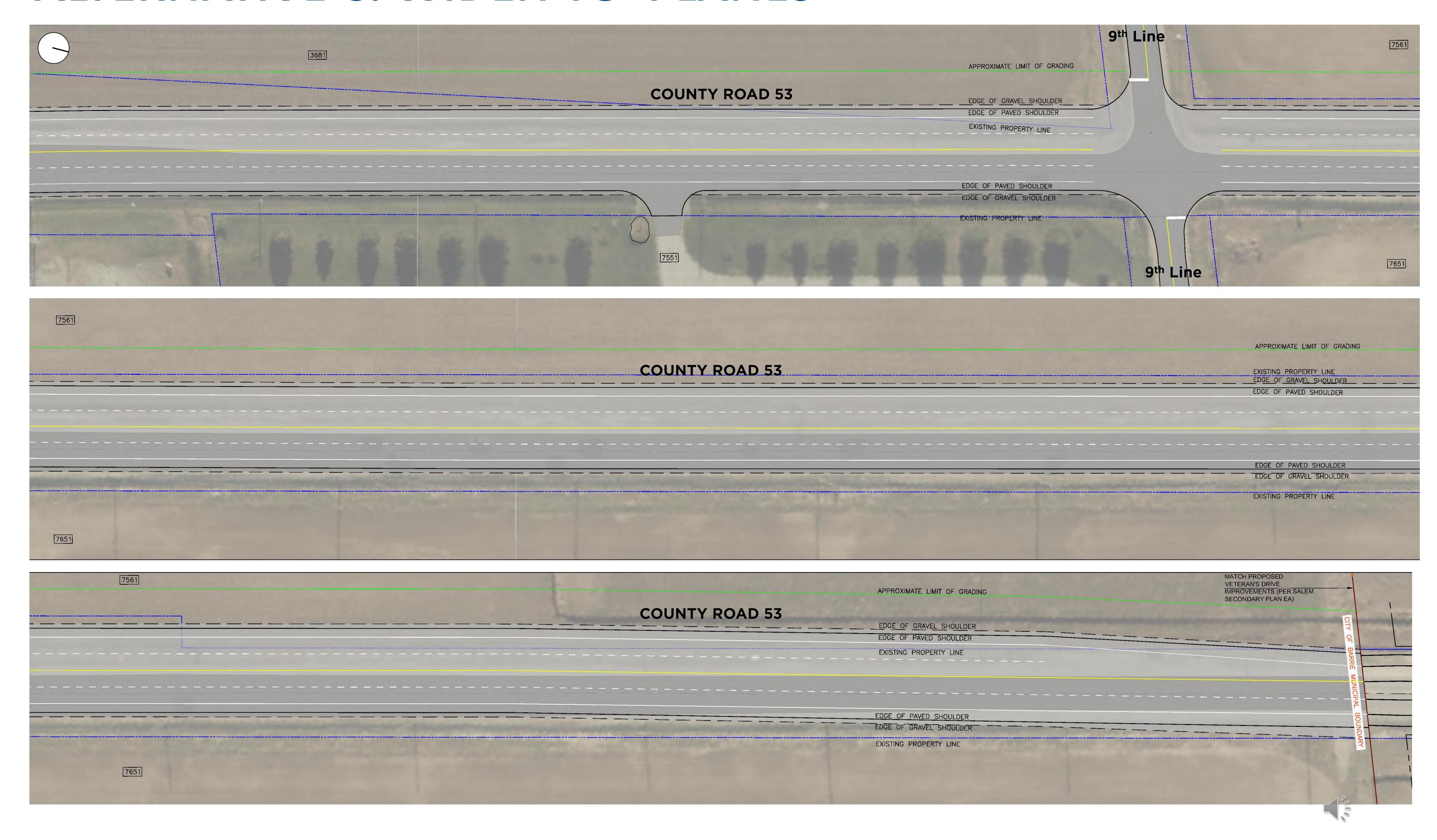
## ALTERNATIVE C: WIDEN TO 4 LANES



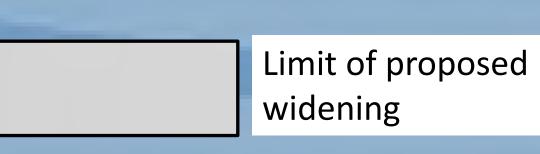




### ALTERNATIVE C: WIDEN TO 4 LANES



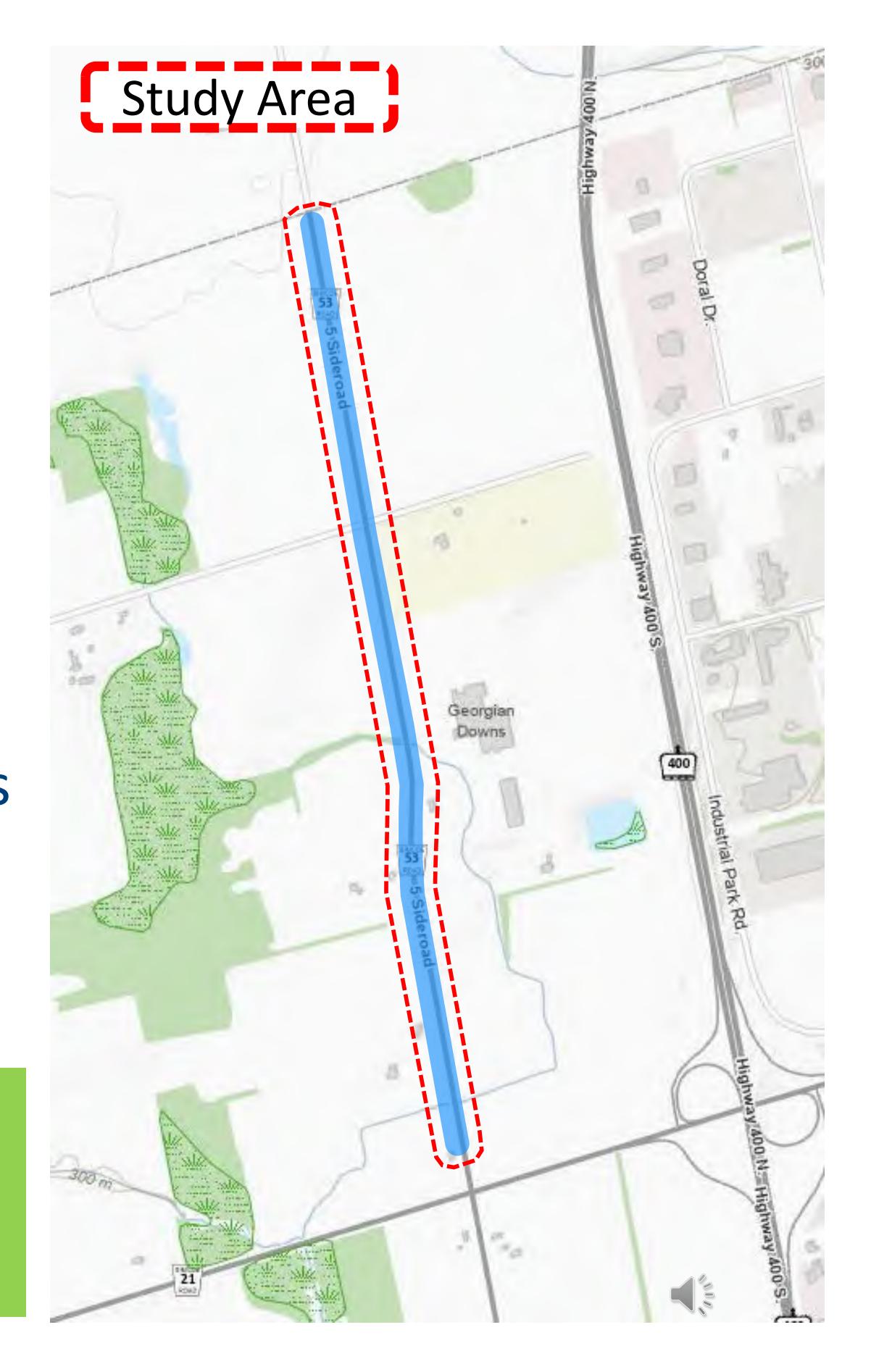




### NATURAL ENVIRONMENT

- Study area consists of active agricultural lands, residential lots, Gateway Casino and Innisvale Cemetery/Crematorium
- Key Natural Heritage Features (KNHF) include:
  - wetland & woodland
  - significant wildlife habitat
  - fish habitat
  - habitat for endangered and threatened species
- No significant valleyland or Areas of Natural and Scientific Interest within study area

Mitigate impacts through Best Management Practices



### CULTURAL HERITAGE

- Cultural Heritage Assessment Report identified the following for further investigation:
  - Built Heritage Resource 7370 County Road 53
  - Cultural Heritage Landscape Thornton
     Cookstown Trans-Canada Trail
- Cultural Heritage Impact Assessment concluded the following:
  - limited anticipated adverse impacts to heritage attributes at 7370 County Road 53
  - potential for loss of mature trees
  - no anticipated adverse impacts to Thornton Cookstown Trans Canada Trail.

### Best Management Practices

recommended to mitigate impact to mature trees at 7370 County Road 53.



### ARCHAEOLOGICAL

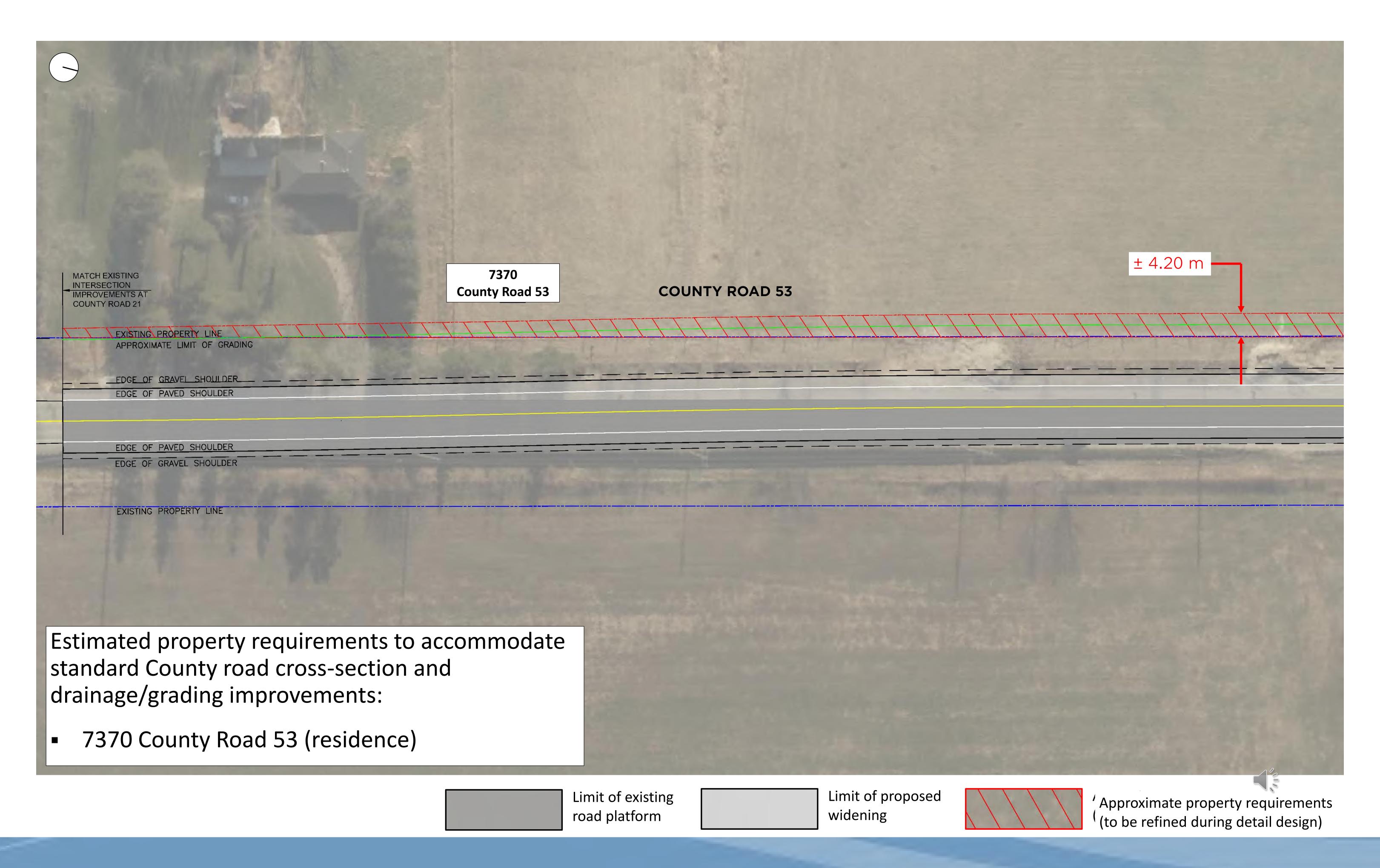
- assessment based on current Stage I Archaeological Assessment and historical Stage I and II Archaeological Assessments conducted along the study area
- portions of study area identified as having no or low archaeological potential and are exempt from requiring additional investigation
- areas identified as retaining archaeological potential are subject to Stage II investigation at detail design and prior to construction

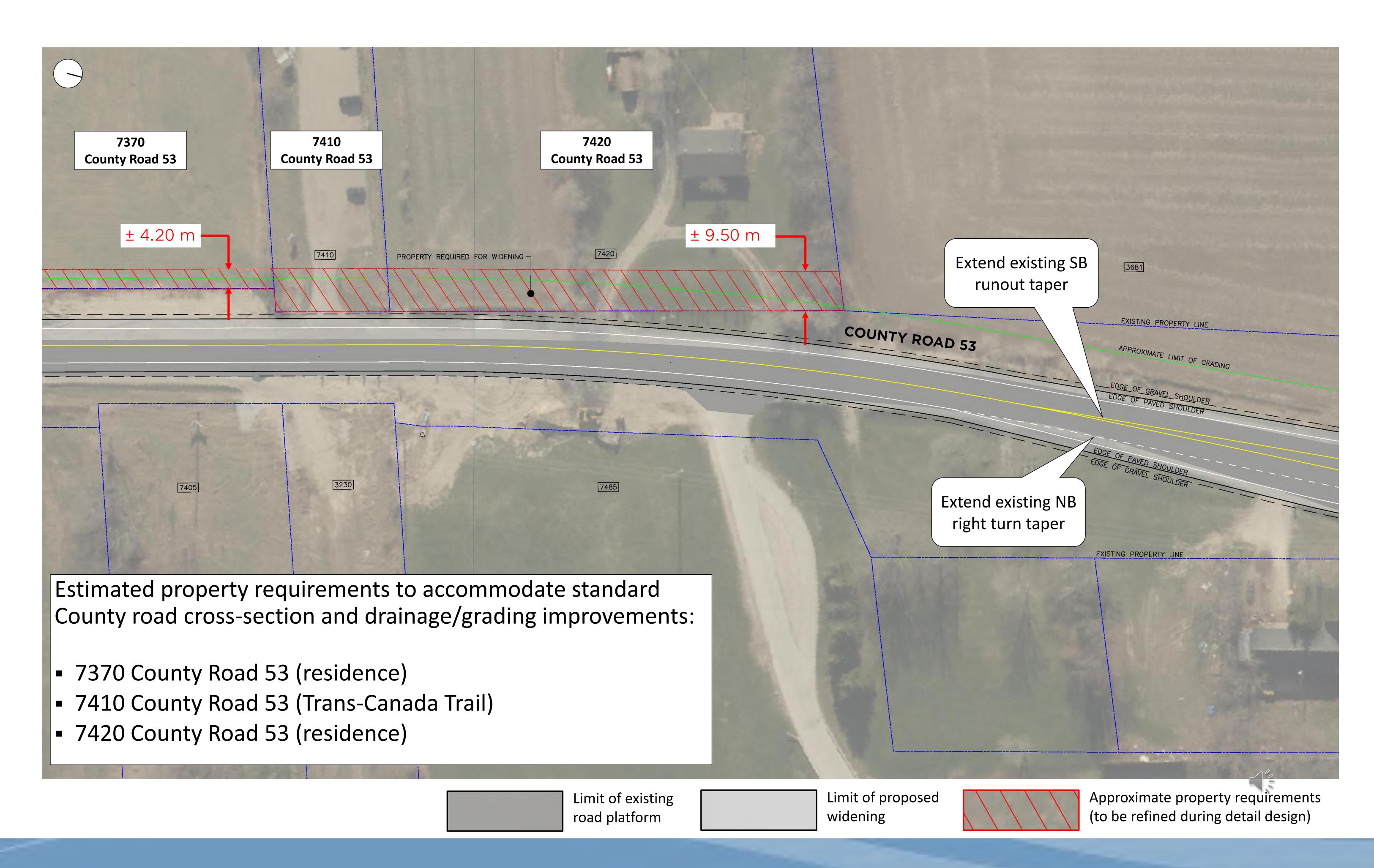
# No known impacts

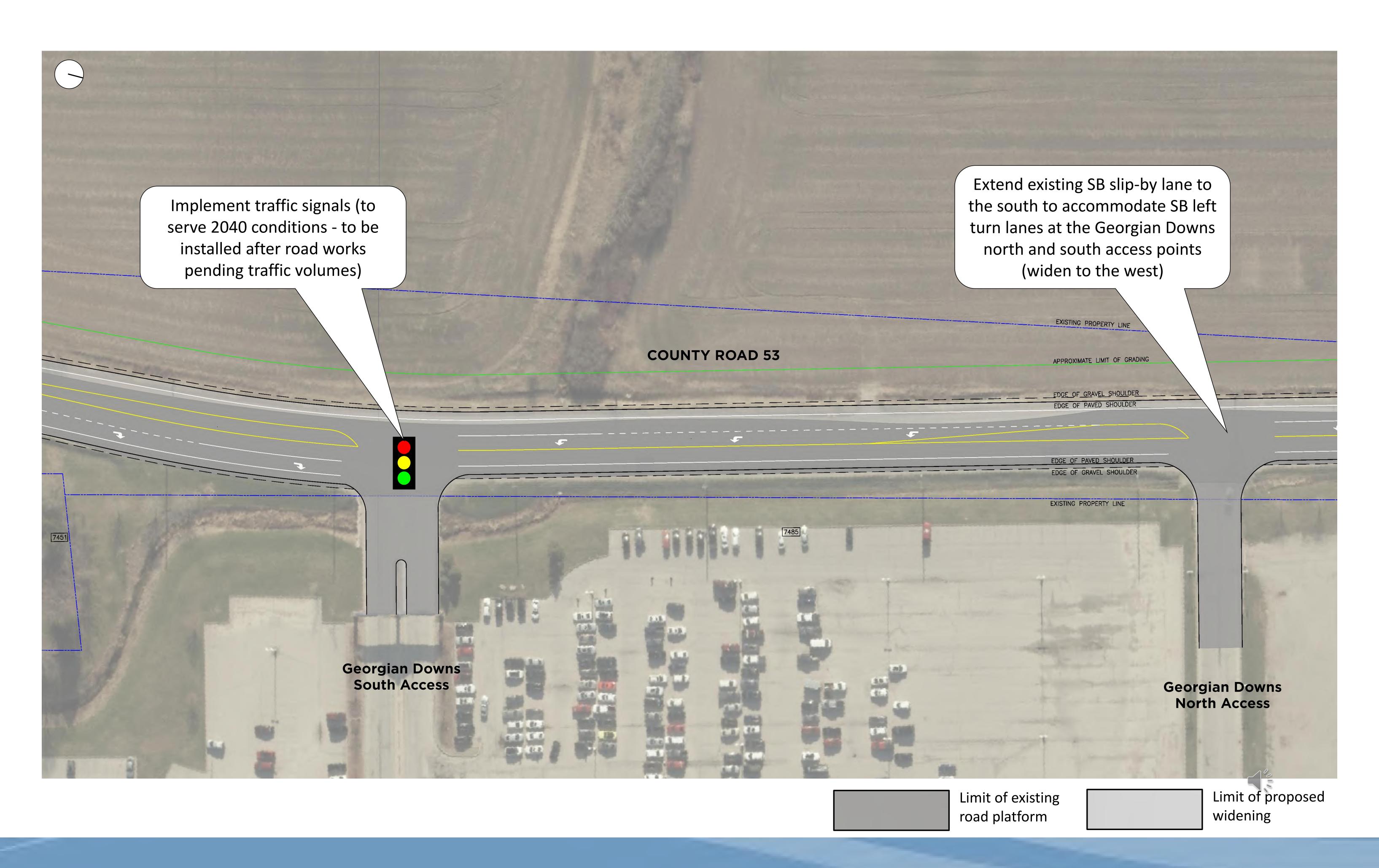
Stage II assessment required at detail design for areas identified as retaining archaeological potential.

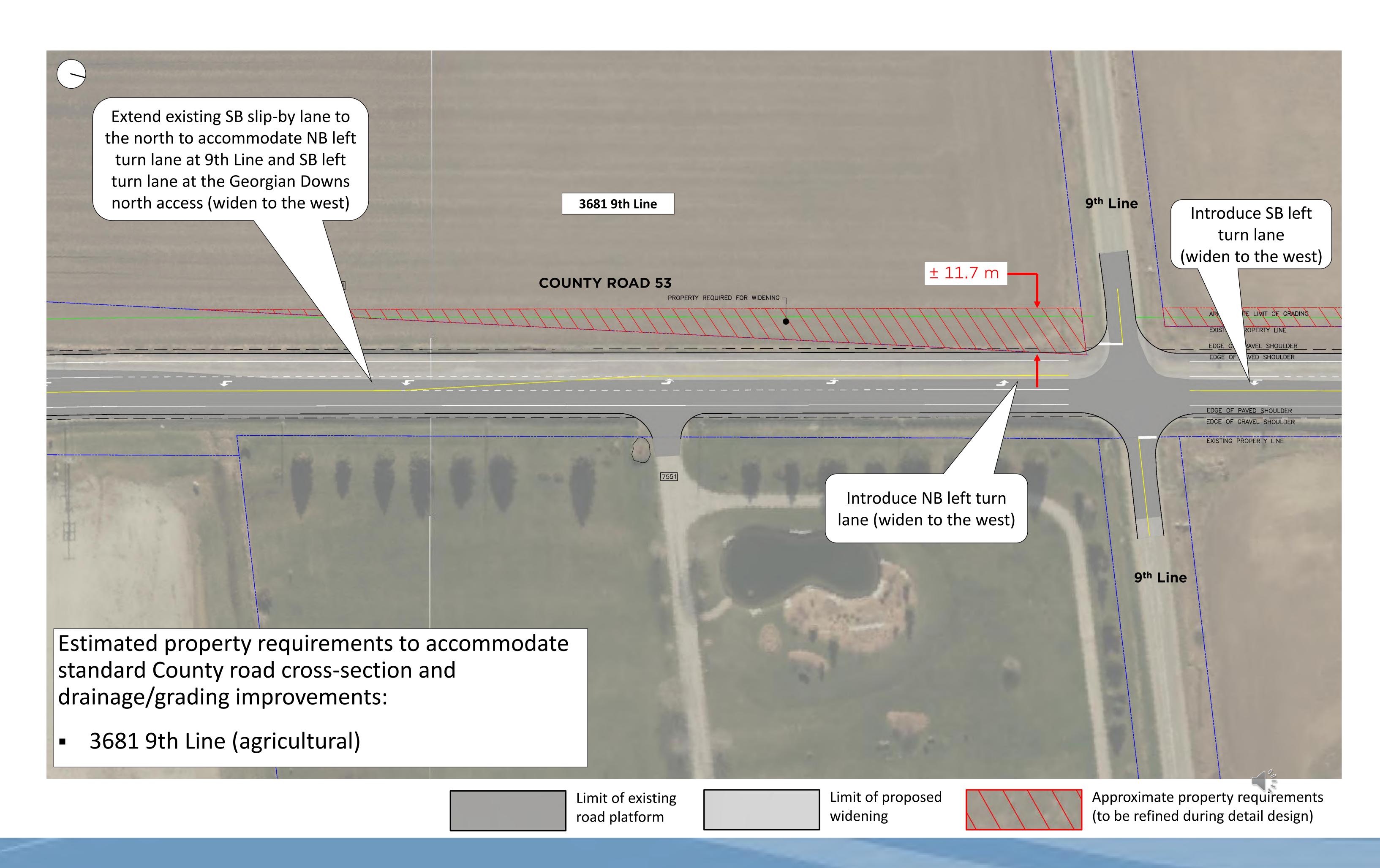


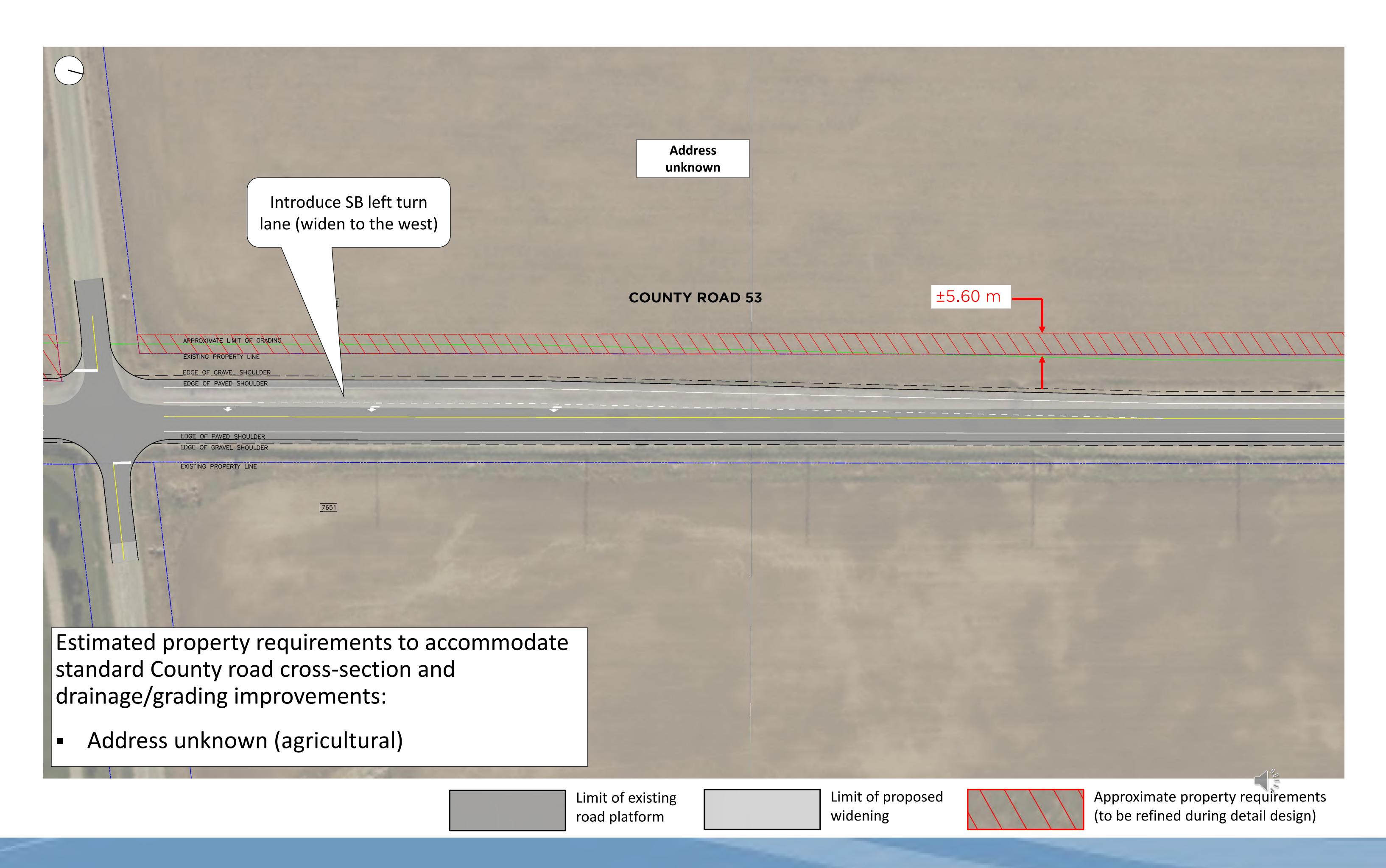
ASSESSMENT CRITERIA	Alternative A Operational Improvements	Alternative B Widen to 3-Lanes	Alternative C Widen to 4-Lanes
Natural Environment			
Cultural Heritage/Archaeological			
Social Environment			
Economic Environment			
Transportation Needs			
RECOMMENDATION	Alternative A	- Operational In	nprovements
GOOD	BETT	-ER	BEST

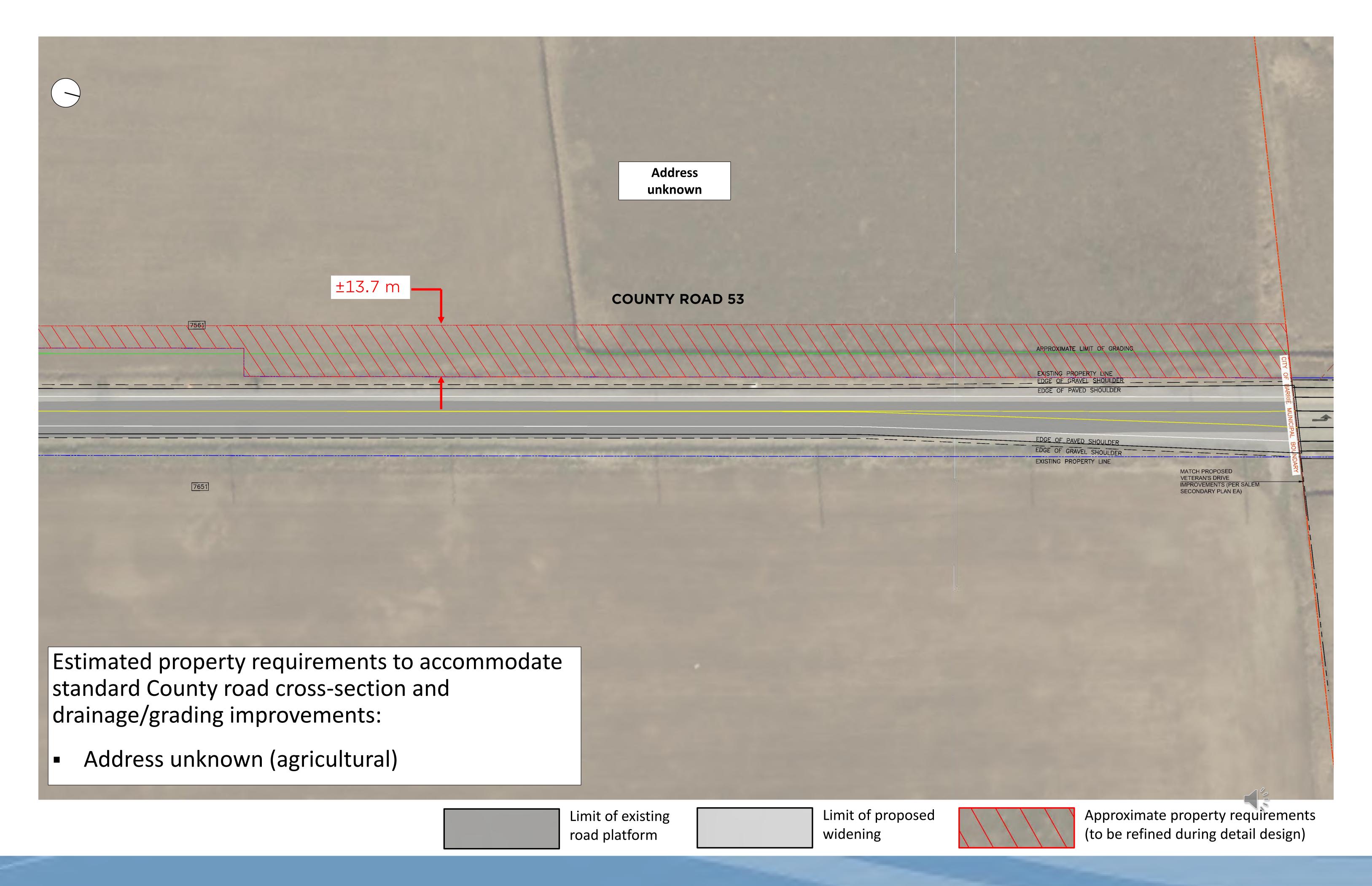








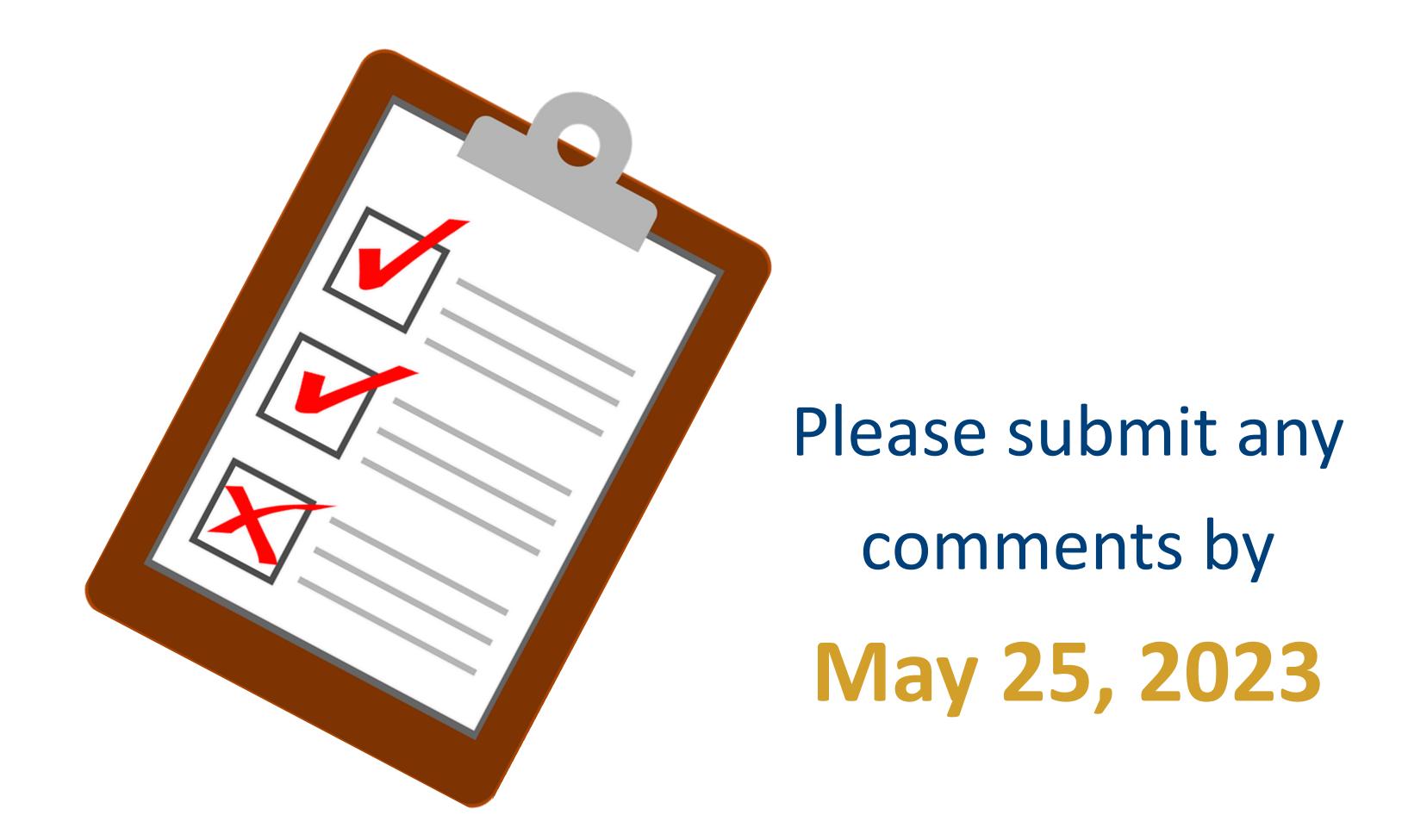






## The following are available on the County's website:

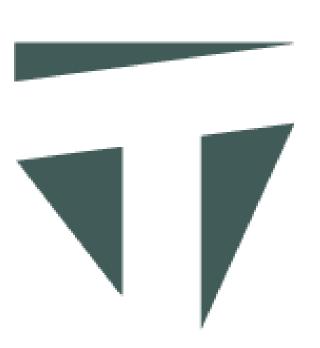
- presentation
- comment sheet





County of Simcoe
Claire Walker, P.Eng., PMP

Project Engineer
Claire.Walker@simcoe.ca
(705) 726-9300 x1168



Tatham Engineering Limited John Velick, P.Eng.

Project Manager jvelick@tathameng.com (705) 444-2565 x2110





### Phase 1

WE ARE HERE



### Phase 2

### **NEXT STEPS**

Establish the Preferred Solution

Confirm Class EA Schedule

### Schedule B

- Notice of Completion
- proceed to Phase 5

### Phase 3

Identify & assess alternative designs for the Preferred Solution

Establish the Preferred Design

### Phase 4

Prepare an Environmental Study Report

### Phase 5

Design & Construction





### **David Perks**

From: Brett Gratrix < Brett.Gratrix@barrie.ca>

**Sent:** Monday, May 8, 2023 1:24 PM

To:Claire.Walker@simcoe.ca; John VelickSubject:CR53 Class EA - PIC 1 Comments

CAUTION: This email originated from outside of Tatham Engineering or Envision-Tatham. Do not click on links or open attachments unless you know the sender and have verified the sender's email address and know the content is safe.

Dear Ms. Walker and Mr. Velick,

The following comments from the City of Barrie Transportation Planning Branch are in response to the County Road 53 Municipal Class Environmental Assessment Notice of Online Public Engagement Received April 27, 2023.

### **Capacity, Land Use and Transition**

- 1. The 2040 traffic volumes outlined in the presentation slides indicate a peak hour volume exceeding capacity provided by the recommended solution.
- 2. The adjacent land use is identified in the County of Simcoe's Official Plan as *Strategic Settlement Employment Areas* and *Economic Employment Districts*. How has the recommended solution been developed in consideration of the designated land use and supportive of the designated land use? What assumptions have been made regarding trip generation rates for these lands?
- 3. In consideration of the designated land use, is there a need to consider an urbanized cross-section with active transportation facilities, transit facilities and streetlighting to support and/or attract the type of economic development desired for that area and resultant multi-modal transportation needs.
- 4. The City of Barrie is designated to grow to a population of 298,000 and employment of 150,000 by 2051. The City's Transportation Master Plan identifies a 5-lane cross-section for Veteran's Drive to the City's boundary for the 2041 horizon, which also aligns with the 4-lane recommendation in the County's in-effect 2014 Transportation Master Plan.
  - a. Does the County's Transportation Master Plan update project concur with the 2-lane recommendation for the 2051 horizon?
  - b. The City's ESR for the Salem Secondary Plan indicating a 3-lane cross-section was completed in 2017 based on the 2031 planning horizon. A more recent traffic study completed for development on the west side of Veteran's Drive indicate a need to extend the 5-lane cross-section to the City's boundary to accommodate the Walker Drive intersection.

### **Overall Comments**

In consideration of planned land use, initial traffic forecasts and additional growth associated with the 2051 planning horizon, will the recommended 2-lane rural cross-section provide long-term capacity and multi-modal level of service needs? Is there a need to consider an interim 2-lane and ultimate 4-lane configuration?

In consideration of City transportation network needs, that additional discussions occur between the City and County to plan a 5-lane to 2-lane transition extending south from the Walker Drive intersection if the County proceeds with a 2-lane cross-section as well as consideration for the northbound left turn lane requirements for the Walker Drive intersection. The supplied TIS provides forecasted turning movement counts for this intersection.

### **Active Transportation**

 County Road 53 forms part of the Trans-Canada Trail from the Thornton-Cookstown Trail to the City boundary. The City is planning cycling and pedestrian infrastructure on Veteran's Drive to the City's southern boundary. The implementation of active transportation facilities by the County to complete this link would be advantageous. Additionally, providing connectivity to the lands designated as Strategic Settlement Employment Areas and Economic Employment Districts would provide an AT linkage to the City's residential areas.

The City looks forward to future conversations on the Class EA project.

Best Regards,

**Brett Gratrix, P.Eng.** 

Senior Project Manager – Transportation Planning, Development Services The City of Barrie Mobile 705-790-4518

### **David Perks**

From: John Velick

**Sent:** Wednesday, May 24, 2023 5:13 PM

**To:** Brett Gratrix

Cc: Claire Walker; David Perks; Barrie File; Michael Cullip

**Subject:** RE: CR53 Class EA - PIC 1 Comments 419376

Hi Brett,

Below are responses to your PIC comments. Let me know if you have any questions.

Thank you,

John

From: Brett Gratrix < Brett. Gratrix@barrie.ca>

**Sent:** Monday, May 8, 2023 1:24 PM

To: Claire.Walker@simcoe.ca; John Velick < jvelick@tathameng.com >

**Subject:** CR53 Class EA - PIC 1 Comments

CAUTION: This email originated from outside of Tatham Engineering or Envision-Tatham. Do not click on links or open attachments unless you know the sender and have verified the sender's email address and know the content is safe.

Dear Ms. Walker and Mr. Velick,

The following comments from the City of Barrie Transportation Planning Branch are in response to the County Road 53 Municipal Class Environmental Assessment Notice of Online Public Engagement Received April 27, 2023.

### **Capacity, Land Use and Transition**

- 1. The 2040 traffic volumes outlined in the presentation slides indicate a peak hour volume exceeding capacity provided by the recommended solution. While the northbound volumes are expected to surpass the available capacity in 2040 during the PM peak hour, additional lane capacity is not considered necessary given the otherwise excellent operating conditions at the proposed signalized intersection in 2040. Intersections reflect the pinch points of the study area road network, and as they operate acceptably without additional through capacity, the mid-block operations will be similar.
- 2. The adjacent land use is identified in the County of Simcoe's Official Plan as *Strategic Settlement Employment Areas* and *Economic Employment Districts*. How has the recommended solution been developed in consideration of the designated land use and supportive of the designated land use? What assumptions have been made regarding trip generation rates for these lands? Innisfil zoning by-law and Simcoe County OP both designate lands to the west as rural or agricultural. To the east, there are no planned developments, so no trip generation has been assigned, and would be considered premature to do so. It is noted that the growth rates applied in the assessment were

established with consideration of the Innisfil Heights Employment lands, although a majority of the Innisfil Heights Employment lands are located south of Innisfil Beach Road or east of Highway 400, with the predominant flow of traffic expected to be to/from Highway 400 rather than County Road 53.

- 3. In consideration of the designated land use, is there a need to consider an urbanized cross-section with active transportation facilities, transit facilities and streetlighting to support and/or attract the type of economic development desired for that area and resultant multi-modal transportation needs. It is considered premature to consider this type of infrastructure given the current rural nature of the area and the lack of proposed development (especially considering the rural/agricultural designation on the west side).
- 4. The City of Barrie is designated to grow to a population of 298,000 and employment of 150,000 by 2051. The City's Transportation Master Plan identifies a 5-lane cross-section for Veteran's Drive to the City's boundary for the 2041 horizon, which also aligns with the 4-lane recommendation in the County's in-effect 2014 Transportation Master Plan. It is noted that the 2014 TMP did not consider the impact of the McKay Road interchange, which will impact volumes on the subject section of County Road 53.
  - a. Does the County's Transportation Master Plan update project concur with the 2-lane recommendation for the 2051 horizon? The planning horizon for this project aligns with the current County TMP (i.e. 2030 and 2040). TMPs are considered high level documents, the results of which are refined during Environmental Assessments. Exact alignment with the results of the TMP are not considered necessary.
  - b. The City's ESR for the Salem Secondary Plan indicating a 3-lane cross-section was completed in 2017 based on the 2031 planning horizon. A more recent traffic study completed for development on the west side of Veteran's Drive indicate a need to extend the 5-lane cross-section to the City's boundary to accommodate the Walker Drive intersection. TIS update for Watersands Residential indicates a 3-lane section at Walker Street. As per the Watersands Development TIS Addendum (dated Sept 3/20), only 3% of the Watersands development traffic and 1% of the Crisdawn and DiPoce development traffic is assigned to/from the south along CR53 largely due to the McKay Rd/Hwy 400 interchange. The northbound volumes provided in the TIS addendum suggest that the 5-lane cross-section is required north of Walker Street rather than south of Walker Street. It was not anticipated that the 5-lane section be extended south of the Barrie limits. Left turn lanes required for this development should be constructed by the developer or included in the Veteran's Drive widening project.

### **Overall Comments**

In consideration of planned land use, initial traffic forecasts and additional growth associated with the 2051 planning horizon, will the recommended 2-lane rural cross-section provide long-term capacity and multi-modal level of service needs? Is there a need to consider an interim 2-lane and ultimate 4-lane configuration? 2030 and 2040 horizons selected for this project are in accordance with County TMP horizons. As previously noted, a majority of proposed development traffic within Barrie is directed to the north and the McKay Rd interchange will further alleviate some of the existing volumes on County Road 53. Widening the road to 4 lanes within the County limits is not considered necessary given the horizon years considered.

In consideration of City transportation network needs, that additional discussions occur between the City and County to plan a 5-lane to 2-lane transition extending south from the Walker Drive intersection if the County proceeds with a 2-lane cross-section as well as consideration for the northbound left turn lane requirements for the Walker Drive intersection. The supplied TIS provides forecasted turning movement counts for this intersection. Left turn lanes required for this development should be constructed by the developer or included in the Veteran's Drive widening project.

### **Active Transportation**

 County Road 53 forms part of the Trans-Canada Trail from the Thornton-Cookstown Trail to the City boundary. The City is planning cycling and pedestrian infrastructure on Veteran's Drive to the City's southern

boundary. The implementation of active transportation facilities by the County to complete this link would be advantageous. Additionally, providing connectivity to the lands designated as *Strategic Settlement Employment Areas and Economic Employment Districts* would provide an AT linkage to the City's residential areas. The County will include 3.0 m paved shoulders north of the Trans Canada Trail.

The City looks forward to future conversations on the Class EA project.

Best Regards,

### **Brett Gratrix, P.Eng.**

Senior Project Manager – Transportation Planning, Development Services
The City of Barrie
Mobile 705-790-4518
Please consider the environment before printing this email.

	Town of Innisfil - comments (submitted by C	Carolina Cautillo	on behalf of Capital Engineering, Town of Innisfil ccautillo@innisfil.ca)	
	`			
			Road 53 Widening s (video / powerpoint slides)	
			nty of Simcoe	
No.	Reference	Reviewer	Comment	Response
	s://www.simcoe.ca/TransportationEngineering/Pages/c			
Powerpoint 1	t: https://www.simcoe.ca/TransportationEngineering/D General Comment	JJ - Cap Eng	Appear to be using out-of-date information from old County and Town TMPs, old	The study was initiated in 2010 and the needs and justification assessment
	General Comment	JJ - Cap Eng	Appear to be using out-or-date information from our county and fown fine's, old boundary for Innisfil Heights, etc. Please also confirm that up-to-date information from MTO /City of Barrie are being used for McKAy Rd interchange, and Barrie Master Plans / EAs / Developments/ OP, etc.	The study was initiated in 2019 and the needs and justification assessment completed in May 2022. As such, the study considered the information available at the time. The current Innisfil TMP was completed in January 2023, and thus was not considered in the assessment. However, the study did consider impacts associated with the Salem Secondary Plan Area and the future McKay Road/Hwy 400 interchange. It is noted that the County's 2014 TMP, which recommended additional capacity on County Road 53, was completed prior to the announcement of the McKay Road interchange. The County Road 53 study has considered the interchange and the impacts of such on future traffic volumes and patterns.
2	Streetlights	MG-Cap Eng	Innpower on behalf of the Town recently completed the infrastructure improvements to put intersection lights along 5th Sideroad at the intersections- how would the widening affect the hyrdo poles - streetlights are planning to go in for 2023/2024- 5th/3rd, 5th/5th, 5th/7th, 5th/14th, 5th/15th	Hydro poles are currently on the east side (including the future upgrade). Widening is proposed to occur entirely on the west side, so no pole impacts are anticipated. The listed intersections for future lighting are outside the project limits.
3	Municipal Drain	Operations	Cross culverts in between 9th Line and Innisifl Beach Road are part of an existing Municipal Drain. Keep this in mind during design.	Noted.
4	Alternative A	JJ - Cap Eng	Will Alternative A be sufficient to address future capacity needs? Problem Statement includes both safe and "efficient" travel for users so want to confirm that this Alternative will address the efficiency piece and be sufficent from a capacity standpoint.	While the northbound volumes under Option A are expected to surpass the available capacity in 2040 during the PM peak hour, additional lane capacity is not considered necessary given the otherwise excellent operating conditions at the proposed signalized intersection in 2040. Intersections reflect the pinch points of the study area road network, and as they operate acceptably without additional through capacity, the mid-block operations will be similar.
5	Utilities	JJ - Cap Eng	Please ensure that both InnPower and InnServices are consulted on this project.	Acknowledged. InnServices has commented below. We have been in contact with InnPower regarding their future line upgrade so they are aware of the project.
6	Water & Wastewater	InnServices	Opportunity to include InnServices servicing works on County Road 53 (5 Sideroad), north of Innisfil Beach Road. Potential projects to include are the following, which should be further discussed with InnServices staff:  -Gravity sanitary sewer on 5 Sideroad to future Innisfil Heights Sewage Pumping Station 1 which is planned on 5 Sideroad, north of Innisil Beach Road  -Watermain extension on 5 Sideroad, to service potential development lands north of the Gateway Casino  -Sanitary forcemain from future Innisfil Heighst Sewage Pumping Station 1 to Innisfil Beach Road	The County is willing to work with InnServices to coordinate any planned infrastructure upgrades with the County Road 53 work if timing allows. The County will follow up with InnServices to discuss the required work to see if integration is possible.
7	General Comment	Planning	- CR 53 is identified on Schedule C of the Town's Official Plan as a County Arterial Road (36-40 metre ROW width) - Official Plan section 5.1.3 encourages the Town and County to work together to implement complete streets and these policies on County Roads, where appropriate and feasible. OP Section 5.1.4 outlines streetscape design policies to achieve complete streets including the provision for safety and ease of use of multiple means of transportation including vehicular, pedestrian, bicycle and transit. Consideration of these policies is encouraged.	Innisfil zoning by-law and Simcoe County OP both designate lands to the west as rural or agricultural. To the east, there are no planned developments. As such, a rural cross section has been applied to this section of County Road 53. To provide linkages with the Trans Canada Trail, the County will be providing 3 m paved shoulders north of the Trail.

### **David Perks**

From:

Sent: Friday, May 5, 2023 12:57 PM
To: claire.walker@simcoe.ca

Cc: John Velick

**Subject:** County Road 53 (5th sideroad) improvements

CAUTION: This email originated from outside of Tatham Engineering or Envision-Tatham. Do not click on links or open attachments unless you know the sender and have verified the sender's email address and know the content is safe.

### Hello Claire,

I read the recommended alternative solutions to County Road 53 in our local newspaper. I was disappointed that there was no mention of bicycle lanes in the recommendations. The cross Canada Trail ends just north of the 8th line and there are many cyclists on this trail. Adding a bicycle lane would allow these people to safely travel into Barrie.

Adding bicycle lanes to the recommendations would show that Simcoe County is serious about making changes that are a win for everyone. If the lanes aren't added now it'll probably never get done which would be a real shame.

Thank you

### **David Perks**

From:

Sent: Tuesday, May 23, 2023 9:06 AM

To: Claire Walker; John Velick

Subject: County Road 53 Improvements

CAUTION: This email originated from outside of Tatham Engineering or Envision-Tatham. Do not click on links or open attachments unless you know the sender and have verified the sender's email address and know the content is safe.

Hello. Thank you for the opportunity to provide comments on road improvements to County Road 53-Veterans Drive-5th Sideroad between Barrie City limits to Innisfil Beach Road.

My recommendation to you is that the road be widened only to create a centre lane for left turns (and occasional passing of traffic).

I do understand that there will eventually be industrial development between 5th Sideroad and Highway 400, but I do not see enough other urbanization to warrant more than that for some decades, unless major policy changes are approved that enable more suburbanization.

On a different topic, Innisfil is continuing the development of its TMP to evaluate the possibility of creating scheduled fixed-route transit services. I have recommended to the Town that one of these transit lines be one that enables Innisfil residents to connect to key destinations in Barrie, operating from the future Innisfil GO Station to Yonge Street to Mapleview Drive, and from there northward on **Veterans Drive** to Essa Road to Highway 400, and from there on Highway 400 to intersect with Barrie Transit at Dunlop Street, Bayfield Street and Duckworth Street, at which point the route would continue along Georgian Drive to Georgian College and the Royal Victoria Regional Hospital.

In this regard, I invite you to examine the need for relatively minor road improvements to Highway 400 southbound on-ramps at Essa Road and Dunlop Street, perhaps joint provincial-municipal responsibility, to maximize speed of services for what I hope will be an important future bus service.







File 419376

June 5, 2023



Re: County Road 53 Improvements, City of Barrie

Public Information Centre

Dear :

You had left a comment regarding the County Road 53 Public Information Session, asking to speak further about the Trans Canada Trail Connection located within the project limits. However, there was no email address provided. If you wish to discuss the project further, please contact me at 705-441-4090, or <a href="mailto:jvelick@tathameng.com">jvelick@tathameng.com</a>.

Yours truly,
Tatham Engineering Limited

John Velick, P.Eng.

Manager - Transportation

JV:rlh

O:\Barrie\2019 PROJECTS\419376 - County Road 53 Class EA & Final Design\Documents\Public Consultation\PIC\PIC Comments\L - Response to comments.docx







May 25, 2023

### Via Email

David Sunday
Direct +1 519 575 7513
david.sunday@gowlingwlg.com
File no. 02445397

Claire Walker
Project Engineer
County of Simcoe
1110 Highway 26
Midhurst, ON L9X 1N6
Claire.Walker@simcoe.ca

John Velick
Project Manager
Tatham Engineering Limited
115 Sandford Fleming Drive
Suite 200
Collingwood, ON L9Y 5A6
jvelick@tathameng.com

Dear Ms. Walker & Mr. Velick:

Re: County Road 53 (5th Sideroad) Improvements: County Road 21 to City of Barrie Limits
Our clients: Harry & Violet Gust

Property: 7370 5th Sideroad, Innisfil

We are the lawyers for Mr. Harry and Mrs. Violet Gust, who are the owners of the property municipally known as 7370 5th Sideroad, Innisfil (the "Gust Property"). The Gust Property is a farm property which includes a residence.

We understand that the County is now proposing improvements to County Road 53 from County Road 21 (Innisfil Beach Road) to the City of Barrie south limits (the "**Project**"). In that regard, we also understand that County staff are recommending preferred design "Alternative A" to further widen County Road 53 in order to accommodate intersection and drainage improvements.

The County previously expropriated part of the Gust Property in 2019 for the purpose of road and intersection improvements to County Road 21 and County Road 53 (the "2019 Expropriation"). Part 2 on registered expropriation plan SC1645637 resulted in a taking of 419.1 metres in length and 5.2 metres in depth along our Client's frontage on County Road 53.

The extent of the prior taking was significant and has resulted in significant adverse impacts to the Gust Property. Specifically, the 2019 Expropriation has or will result in the permanent loss of a dense row of mature trees that screened the Gust Property from public view, resulting in a loss of privacy, amenity, and sound attenuation. The 2019 Expropriation will also increase traffic volume, speed, and noise impacts to the Gust Property. The already existing impacts are expected to continue to worsen as the County completes additional works.



Having already endured the 2019 Expropriation, our clients are extremely disappointed to learn that the County is now considering taking up to an additional 4.2 meters in depth along the Gust Property. It is frustrating that the County's full land requirements were not properly identified prior to the 2019 Expropriation and that the County is only seeking to accommodate its land requirements from the west side of County Road 53. Infrastructure, including municipal water servicing and hydrants as well as numerous fibre optic and communications cables, has recently been installed on the west side of County Road 53 within the lands expropriated from our clients.

The County's proposed new taking and the additional roadworks will only further aggravate the adverse impacts already noted, including further worsening of the loss of privacy, amenity, and sound attenuation.

On behalf of our clients, we urge the County to reconsider the necessity of acquiring additional lands in connection with the Project and to explore alternatives beyond what is currently contemplated. In the event that Alternative A is the final preferred recommended solution, we submit that fairness and equity dictates that the required lands should be acquired from the east side of County Road 53. If Alternative B or C is chosen as the final preferred recommended solution for further improvements or widening of County Road 53, we request that the additional lands be taken equally from both sides of County Road 53, and the 5.2 metre depth taken in the 2019 Expropriation be included in the equalization calculations.

We appreciate your attention to our Clients' concerns and welcome further dialogue on the matter.

Sincerely,

Gowling WLG (Canada) LLP

(

DocuSigned by:

David Sunday

DS:kd

cc: Matthew Owen-King (Scargall Owen-King LLP) - Matthew.Owen-King@sokllp.com Clients

ID	Sta		npletion time Email	Name	Full name	Mailing address	Town/city	Postal code	Representing	Comments
	2	4/13/23 11:35:40 5/1/23 10:33:56	4/13/23 11:35:43 anonymous 5/1/23 10:41:52 anonymous						Trans Canada Trail	This pertains to the TCT routing and I would like to chat with a contact to discuss and stay involved with the project.
	3	5/18/23 9:56:22	5/18/23 10:20:33 anonymous		Dan Hardy	26 East John Street	Cookstown	LOL1LO	Innisfil Tax Payers	It is ridiculous how long and costly this project is to tax payers and residents. The vast majority of all roads in Ontario were paved from the 50's to 70's. This small project of 4km has already taken at least 2 years and just now are asking how to proceed, you don't even know how to proceed! If all road paving took this long we would still be driving on dirt paths in Ontario. Get the job done in a timely manner without wasting any more tax payer money and closing roads.
										Please see a variety of comments submitted here: https://innisfilca-my.sharepoint.com/:x:/g/personal/ccautillo_inni sfil_ca/EXGSSkZ4GMhLu9w8yVD-RpUB3tNrNCYysng2EGkGYPtqXw?e=xXEIVg
										Please contact me at ccautillo@innisfil.ca if you have any questions or cannot open the comment sheet.
	4	5/25/23 8:54:59	5/25/23 8:58:14 anonymous		Carolina Cautillo on b	eh: 2101 Innisfil Beach Ro	ad Innisfil, ON	L9S 1A1	Town of Innisfil	Note that I think the "withhold name and address" below is checked but I can't uncheck it; please feel free to include our comments under "Town of Innisfil" - thanks!

Appendix G: Preferred Solution



Appendix H: Notice of Completion



County of Simcoe
Transportation and
Engineering
1110 Highway 26,
Midhurst, Ontario L9X 1N6

Main Line (705) 726 9300 Toll Free 1 866 893 9300 Fax (705) 719 4626 simcoe.ca



### County Road 53 (5th Sideroad) Improvements

County Road 21 to City of Barrie Limits

Municipal Class Environmental Assessment Study

Notice of Study Completion

### **Background**

The County of Simcoe is proposing improvements to County Road 53 (5<sup>th</sup> Sideroad) from County Road 21 (Innisfil Beach Road) to the City of Barrie south limits. The subject section of road was identified for widening from 2 to 4 lanes in the County's 2014 *Transportation Master Plan Update*. The proposed works are to resurface and widen the road to increase its capacity, improve existing lane configurations at intersections, upgrade drainage features, review illumination needs and address safety concerns. The improvements are necessary to support the arterial function of the road and accommodate planned growth in the area.

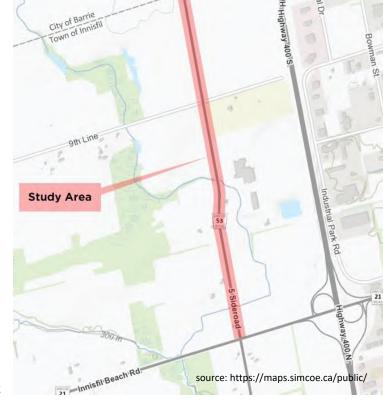
### **Study Process**

The County proceeded with a Schedule B Municipal Class Environmental Assessment (EA) to consider and address the impacts associated with the proposed improvements. The resulting recommendations and preferred solutions consider the long-term transportation needs to support future growth and development of the area and reflect public and agency comment and input, in addition to the requirements of the Town.

### **Preferred Solution**

The preferred solution is as follows:

- Maintain a 2-lane cross-section with intersection improvements (turn lanes and traffic signals) at select intersections.
- Upgrade the entire corridor to a County standard cross-section (with wider lanes and shoulders).



Study Area

### **Study Report**

The Class EA process, the development and evaluation of the options, and derivation of the preferred solution, have been documented in a Class EA report. The report is available for review on the County's website (**simcoe.ca/cr53**). Interested persons are encouraged to review the report and provide written comments within the 30-day review period from August 1, 2023 to August 31, 2023, directed to the project contacts below.

If concerns arise regarding this project, which cannot be resolved in discussion with the County, you may request that the Minister of the Environment Conservation and Parks 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. Requests are to be submitted to the Minister, and copied to the County, before the end of the review period. If there is not a request received by August 31, 2023, the project may proceed based on the identified preferred solution.

### The Honourable David Piccini

minister.mecp@ontario.ca Minister of the Environment Conservation and Parks 5775 Yonge Street, 5<sup>th</sup> Floor Toronto, Ontario M2M 4J1

### **Project Contacts**

### Owner

County of Simcoe 1110 Highway 26 Midhurst, ON L0L 1X0 Claire Walker, P.Eng. PMP Project Engineer claire.walker@simcoe.ca (705) 726-9300 x1168

### Consultant

Tatham Engineering Limited 200 Sandford Fleming Drive, Suite 200 Collingwood, ON L9Y 5A6 **John Velick, P.Eng** Project Manager jvelick@tathameng.com (705) 444-2565 x2110

County Road 53 EA		1				1			1	
County of Simcoe										
MUNICIPAL CLASS EA										
CONSULTATION MAILING LIST										
TATHAM PROJECT NO. 419376										
Last Updated: April 12, 2023										
Marie Company	Job Title	Contact Suffix	Contact First	Contact Last	Address		an.	PC	D1	Email
Municipalities		Contact Surfix	Name	Name		Mailing	City		Phone	
County of Simcoe	County Clerk	Mr.	John	Daly	Administration Centre	1110 Highway #26	MIDHURST	L9X 1N6	705-726-9300 ext. 1623	john.daly@simcoe.ca
City of Barrie	Chief Administrative Officer	Mr.	Michael	Prowse	City Hall	70 Collier Street	Barrie	L4M 4T5	705-739-4220	michael.prowse@barrie.ca
Town of Innisfil	Chief Administrative Officer	Mr.	Oliver	Jerschow	Town of Innisfil	2101 Innisfil Beach Road	Innisfil	L9S 1A1	705-436-3710 ext. 1202	kshea@innisfil.ca
Local Agencies	Job Title	Contact Suffix	Contact First Name	Contact Last Name	Address	Mailing	City	PC	Phone	Email
Simcoe County District School Board	Manager of Planning	Mr.	Andrew	Keuken	1170 Highway 26		MIDHURST	LOL 1X0	705-734-6363 ext. 11513	akeuken@scdsb.on.ca
Simcoe County District School Board	Planner, Planning & Enrolment	Ms.	Kandas	Bondarchuk	1170 Highway 26		MIDHURST	L9X 1N6	249-388-3083	kbondarchuk@scdsb.on.ca
Simcoe Muskoka Catholic District School Board	Manager of Planning and Properties	Ms.	Christine	Hyde	46 Alliance Boulevard		BARRIE	L4M 5K3	705-722-3555 ext. 351	chyde@smcdsb.on.ca
Lake Simcoe Region Conservation Authority	Director, Regulations, Planning & Development	Ms.	Ashlea	Brown	120 Bayview Parkway	Box 282	NEWMARKET	L3Y 4X1	905-895-1281 ext. 224	a.brown@lsrca.on.ca
Nottawasaga Conservation Authority	Chief Administrative Officer	Mr.	Doug	Hevenor	John Hix Conservation Administration Centre	8195 8th Line	Utopia	L0M 1T0	705-424-1479 xt. 225	dhevenor@nvca.on.ca
Simcoe Muskoka District Health Unit	Medical Officer of Health	Mr.	Charles	Gardner	15 Sperling Drive		BARRIE	L4M 6K9	705-721-7520 ext. 6515	Charles.Gardner@smdhu.org
Simcoe County Student Transportation Consortium				Sir/Madam	64 Cedar Pointe Drive	Suite 1403	BARRIE	M4N 5R7	705-733-8965	transportation@scstc.ca
Emergency Services	Job Title	Contact Suffix	Contact First	Contact Last	Address	Mailing	City	PC	Phone	Email
Ontario Provincial Police - Central Region Headquarters	Deputy Commissioner - Traffic Safety & Operational Support	Ms.	Name Rose	Name Dimarco	1 Hurtubise Drive		ORILLIA	L3V 0C8	705-330-3700	
Barrie Fire & Emergency Services	Fire Chief	Mr	Cory	Mainprize	155 Dunlop Street West		Barrie	L4N 1A9	705-728-3199	cory.mainprize@barrie.ca
Simcoe County Paramedic Services	Director and Chief	Me	Sarah	Mille	Administration Centre	1100 Highway 26	MIDHURST	L9X 1N6	705-726-9300 ext. 1231	sarah.mills@simcoe.ca
Provincial Agencies	Job Title	Contact Suffix	Contact First	Contact Last	Address	Mailing	City	PC PC	Phone	Email
Ministry of the Environment, Conservation and Parks - Barrie		Contact Surrix	Name	Name						·
District Office	Manager	Ms.	Cindy	Hood	54 Cedar Pointe Drive	Unit 1201	BARRIE	L4N 5R7	705-309-5874	cindy.hood@ontario.ca
Ministry of the Environment, Conservation and Parks - Barrie District Office	Supervisor	Ms.	Sheri	Broeckel	54 Cedar Pointe Drive	Unit 1201	BARRIE	L4N 5R7	705-716-3712	Sheri.Broeckel@ontario.ca
Ministry of the Environment, Conservation and Parks	Regional Environmental Planner - Central Region	Ms.	Chunmei	Liu	135 St Clair Ave W	1st Floor	TORONTO	M4V 1P5	416 314-8001	chunmei.liu@ontario.ca
Ministry of Municipal Affairs and Housing	Team Lead, Community Planning and Development	Mr.	Aldo	Ingraldi	8 Estate Lane		KINGSTON	K7M 9A8	613-545-2119	aldo.ingraldi@ontario.ca
Ministry of Northern Development, Mines, Natural Resources and Forestry - Midhurst District	District Manager	Mr.	Dan L.	Thompson	2284 Nursery Road		MIDHURST	L9X 1N8	226-974-5882	dan.l.thompson@ontario.ca
Ministry of Transportation	Corridor Management Section, Central Region	Mr.	Peter	Dorton	159 Sir William Hearst Ave	7th Floor	TORONTO	M3M 0B7	437-833-9396	Peter.Dorton@ontario.ca
Ministry of Transportation - Legal Services	Director	Ms.	Mary	Gersht	159 Sir William Hearst Ave	7th Floor	TORONTO	M3M 0B7	416-235-4406	mary.gersht@ontario.ca
Ministry of Indigenous Affairs - Indigenous Relations and	Executive Advisor		Ayn	Cooney	160 Bloor St E	4th Floor	TORONTO	M7A 2E6	416-325-1067	ayn.cooney@ontario.ca
Programs Division  Ministry of Health - Communications Branch	Director (Acting)		Paola	Gemmiti	438 University Ave.	8th Floor	TORONTO	M5G 2K8	416-606-3752	paola.gemmiti@ontario.ca
Ministry of Heritage, Sport, Tourism and Culture - Regional and	Assistant Deputy Minister	Ms	Melody	Robinson	400 University Ave.	2nd Floor	TORONTO	M7A 2R9	416-566-6011	melody.robinson@ontario.ca
Corporate Services Division			-		<u> </u>					
Ontario Heritage Trust	Chief Executive Officer	Ms.	Beth	Hanna	10 Adelaide Street E	1st Floor	TORONTO	M5C 1J3	416-301-2843	beth.hanna@heritagetrust.on.ca
Infrastructure Ontario	President, Real Estate	Mr.	Toni Contact First	Rossi Contact Last	1 Dundas Street West	Suite 2000	TORONTO	M5G 1Z3	416-314-0314	toni.rossi@infrastructureontario.ca
Federal Agencies	Job Title	Contact Suffix	Name	Name	Address	Mailing	City	PC	Phone	Email
Indigenous Services Canada - Sustainable Infrastructure Planning, Regional	Program Manager	Mr.	Derek	Nadeau	10 Wellington Street, North Tower, 18th floor		Gatineau, QC	K1A 0H4	613-608-8637	derek.nadeau@sac-isc.gc.ca derek.nadeau@canada.ca
Environment and Climate Change Canada	Manager	Mr.	Rob	Dobos	867 Lakeshore Road	Box 5050	BURLINGTON	L7S 1A1	905-336-4953	rob.dobos@canada.ca
Impact Assessment Agency of Canada - Ontario Office	Director (Ontario Region)	Ms.	Anjala	Puvananathan	600-55 York Street	6th Floor	TORONTO	M5J 1R7	416-952-1576	anjala.puvananathan@canada.ca iaac.ontarioregion- regiondontario.aeic@canada.ca
Fisheries and Oceans Canada, Eastern Ontario District - Small Craft Harbours	Regional Manager	Ms.	Chantal	Larochelle	867 Lakeshore Rd.		BURLINGTON	L7S 1A1	905-315-5285	chantal.larochelle@dfo-mpo.gc.ca
Transport Canada - Ontario Region, Programs (Airports, Harbours and Ports, and Environmental Services)				Sir/Madam	4900 Yonge Street		NORTH YORK	M2N 6A5	416-952-0490	questions@tc.gc.ca
Utilities	Job Title	Contact Suffix	Contact First	Contact Last	Address	Mailing	City	PC	Phone	Email
Alectra Inc.	Vice President - Asset Strategy and Operations	Mr.	Mike	Matthews	2185 Derry Road West		Mississauga	L5N 7A6		
Hydro One				Sir/Madam	483 Bay Street	10th Floor Reception	TORONTO	M5G 2P5	416-345-6799	community.relations@hydroone.com
Bell Canada	Manager	Ms	Angela	Taylor	136 Bayfield Street	2nd Floor	BARRIE	L4M 3B1	705-722-2442	angela.taylor@bell.ca
Enbridge Gas		. 146	gc.u	Sir/Madam	500 Consumer Road	2.30 1 1001	NORTH YORK	M2J 1P8	877-362-7434	customercare@enbridge.com
							BARRIE		077-302*7434	cascomer care@enunage.com
Rogers Cable Inc				Sir/Madam	1 Sperling Drive	1	BARRIE	L4M 6B8		

County Road 53 EA										
County of Simcoe					+	+				
MUNICIPAL CLASS EA										
CONSULTATION MAILING LIST										
TATHAM PROJECT NO. 419376										
Last Updated: April 12, 2023										
First Nations	Title	Contact Suffix	Contact First Name	Contact Last Name	Address	Mailing	City	PC	Phone	Email
Alderville First Nation	Chief		Dave	Mowat	11696 Second Line Rd		ALDERVILLE	K0K 2X0	905-352-3000	dmowat@alderville.ca
Beausoleil First Nation	Chief		Joanne P.	Sandy- McKenzie	11 O'Gemaa Miikaans		CHRISTIAN ISLAND	LOK1CO	705-247-2251	bfnchief@chimnissing.ca
Chippewas of Georgina Island	Chief		Donna	Big Canoe	R.R. #2	P.O. Box N-13	SUTTON WEST	LOE 1RO	705-437-1337	donna.bigcanoe@georginaisland.com
Chippewas of Mnjikaning First Nation (Rama)	Chief		Ted	Williams	5884 Rama Road	Suite 200	RAMA	L3V 6H6	705-325-3611	chief@ramafirstnation.ca
Curve Lake First Nation	Chief		Emily	Whetung- MacInnes	22 Winookeeda Road		CURVE LAKE	K0L 1R0	705-657-8045	EmilyW@curvelake.ca
Hiawatha First Nation	Chief		Laurie	Carr	123 Paudash Street		HIAWATHA	K0L 2G0	705-295-4421	chiefcarr@hiawathafn.ca
Mississaugas of Scugog Island First Nation	Chief		Kelly	LaRocca	22521 Island Road	RR# 5	PORT PERRY	L9L 1B6	905-441-4836	klarocca@scugogfirstnation.com
Moose Deer Point First Nation	Chief		Rhonda	Williams-Lovett	3719 Twelve Mile Bay Road	PO BOX 119	MACTIER	P0C 1H0	705-375-5209	Rhonda.Williams-Lovett@mdpfn.com
Wahta Mohawk Territory	Chief		Blaine	Commandant	2664 Muskoka Rd #38	PO BOX 260	BALA	P0C 1A0	705-762-2354	blaine.commandant@wahtamohawkscouncil.ca
Wasauksing First Nation	Chief		Warren	Tabobondung	PO Box 250	1508 Lane "G" Geewadin Road	PARRY SOUND	P2A 2X4	705-746-2531	chief@wasauksing.ca
Georgian Bay Métis Council	President	Mr.	Greg	Garratt	355 Cranston Crescent	PO BOX 4	MIDLAND	L4R 4K6	705-526-6335	greggarratt@gmail.com
Moon River Métis Council	President	Mrs.	Erin	Hadaway	385A Bethune Drive North		GRAVENHURST	P1P 1B8	705-681-0782	erin.hadaway05@gmail.com
Williams Treaty First Nation	Coordinator/Barrister, Solicitor	Ms.	Karry	Sandy- McKenzie	8 Creswick Court		BARRIE	L4M 2J7	705-792-5087	k.a.sandy-mckenzie@rogers.com
Metis National Council				Sir/Madam	340 MacLaren Street	#3	OTTAWA	K2P 0M6	613-232-3216	info@metisnation.ca
Saugeen Ojibway Nation Environment Office	Acting Manager	Ms.	Emily	Martin	25 Maadookii Subdivision		NEYAASHIINIGMIING	N0H 2T0	519-534-5507	emily.martin@saugeenojibwaynation.ca; juanita.meekins@saugeenojibwaynation.ca
Huron-Wendat Nation					255 Chef-Michel Laveau Rue		Wendake	G0A 4V0		administration@cnhw.qc.ca
Metis Nation of Ontario - Lands & Resources Dept - copy to Region 7 Councillor David Dusome					66 Slater St.	Suite 1100	Ottawa	K1P 5H1	613-798-1006	info@mnoregistry.ca
Metis Nation of Ontario	Director, Lands, Resources and Consultations	Ms.	Linda	Norheim	311-75 Sherbourne St.		Toronto	M5A 2P9	416-977-9881, Ext. 102	consultations@metisnation.org
Additions Through the Class EA Process	Title	Contact Suffix	Contact First Name	Contact Last Name	Address	Mailing	City	PC	Phone	Email
Town of Innisfil	Manager of Capital Engineering									jjenkins@innisfil.ca
Town of Innisfil	Director of Planning and Growth									aleigh@innisfil.ca
Town of Innisfil	Manager of Planning									bcorreia@innisfil.ca
Town of Innisfil	Acting Manager of Development Engineering									dmohamed@innisfil.ca
Town of Innisfil	Capital Planning Engineering Associate									ccautillo@innisfil.ca
Town of Innisfil	Operations Manager									bseed@innisfil.ca
Town of Innisfil	Director of Operations									nbowman@innisfil.ca
City of Barrie	Senior Project Manager - Transportation Planning, Development Services		Brett	Gratrix					705-790-4518	Brett.Gratrix@barrie.ca

7214 5TH SIDEROAD INNISFIL ON L9S 3S5
6600 10TH LINE RR 3 THORNTON ON L0L 2N0 INNISFIL TOWN 2101 INNISFIL BEACH RD
INNISFIL ON L9S 1A1
31 MCGILLIVRAY AVE NORTH YORK ON M5M 2X9
PO BOX 1070 THORNTON ON LOL 2N0
23 EUPHRASIA DR NORTH YORK ON M6B 3V8
30 FLORAL PKY SUITE 300 CONCORD ON L4K 4R1
16766 TRANSCANADIENNE RTE SUITE 500 KIRKLAND QC H9H 4M7
7485 5TH SIDEROAD INNISFIL ON L9S 3S1
88 WILDWOOD TRAIL BARRIE ON L4N 7Z8
PO BOX 2003 THORNTON ON LOL 2N0
7451 5TH SIDEROAD INNISFIL ON L9S 3S1
13775 COMMERCE PKY 200 RICHMOND BC V6V 2V4
7485 5TH SIDEROAD INNISFIL ON L9S 3S1 BARRIE CITY
70 COLLIER ST PO BOX 400 STN MAIN BARRIE ON L4M 4T5