



**C.C. Tatham & Associates Ltd.**  
Consulting Engineers

## **MOSLEY STREET URBANIZATION**

### **45<sup>th</sup> Street to Beachwood Road**

**Schedule C Class EA**  
**Environmental Study Report**

prepared by:

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prepared for

Town of Wasaga Beach

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# Executive Summary

## Study Purpose

The Town of Wasaga Beach initiated a Class Environmental Assessment (Class EA) to examine improvements to Mosley Street, between 45<sup>th</sup> Street and Beachwood Road, in the Town of Wasaga Beach. C.C. Tatham and Associates Ltd. were retained to undertake the study on behalf of the Town, in accordance with the planning and design process for a Schedule C project as outlined in the *Municipal Engineers Association Municipal Class Environmental Assessment* document (2000, revised in 2007, 2011 and 2015).

## Class EA Phases 1 & 2

Phases 1 and 2 of the Class EA process include defining the problem, development of alternative solutions, identification of the preferred solution, and formulation of measures to mitigate identified impacts. In consideration of the existing conditions, the Problem Statement, which sets the framework for the study, is as follows:

*That existing traffic and infrastructure needs and deficiencies along the subject length of Mosley Street (from Beachwood Road to 45<sup>th</sup> Street) be addressed in an environmentally sound manner, in consideration of future traffic needs, current Town standards, active transportation opportunities and surface drainage requirements, with the objective of providing safe and efficient travel for all road users.*

Alternative solutions to address the Problem Statement include the following:

- Alternative A: Do nothing (maintain existing conditions)
- Alternative B: Reduce travel demands on Mosley Street
- Alternative C: Establish/designate alternative routes to Mosley Street
- Alternative D: Operational improvements on Mosley Street
- Alternative E: Widen Mosley Street to 3 lanes
- Alternative F: Widen Mosley Street to 4 lanes

## Preferred Solution

At the conclusion of Phases 1 and 2 of the Municipal Class EA process (which included a presentation of the noted alternatives at Public Information Centre 1), the widening of Mosley Street was identified as the preferred solution (Alternatives E and F).

## **Class EA Phases 3 & 4**

### **Design Alternatives**

Following the identification of the preferred solution, a number of alternative design concepts were developed to implement the solution, based on Town of Wasaga Beach design standards and the Town's Active Transportation Plan. To mitigate the impacts of the road widening and to address other constraints, modifications to the Town's standards were considered. These modifications primarily involve the right-of-way width and/or the cross-section design (ie. on road versus off road active transportation facilities). Regardless of the modifications, all of the design concepts considered either a 3-lane or 4-lane urbanized road cross section with active transportation elements. The following alternative design concepts for the preferred solution were considered:

- Design Alternative 3A: Lanes, Bike Lanes & Sidewalks
- Design Alternative 3B: Lanes, Sidewalk & Multi-Use Trail
- Design Alternative 4A: 4 Lanes, Bike Lanes & Sidewalks
- Design Alternative 4B: 4 Lanes, Sidewalk & Multi-Use Trail
- Design Alternative 4C: 4 Lanes & Multi-Use Trail

### **Recommended Design Alternative & Improvements**

The design alternatives were assessed in terms of the impacts to the various environments as well as the potential to mitigate such impacts. The primary impacts identified relate to property requirements and impacts to the adjacent land uses. Impacts to the natural environment associated with the widening of Mosley Street can be appropriately mitigated through the design and implementation process. The results of the evaluation process revealed that a combination of the design alternatives represent the best approach to implementing increased road capacity and active transportation measures, recognizing that the available rights-of-way are not consistent throughout the study area and that the Town does not wish to pursue property acquisition.

In addition to the road improvements to Mosley Street, consideration was also given to the provision of additional controlled pedestrian crossings of Mosley Street, to ensure those wishing to cross to access the beach can do so in a safe manner. In context of the anticipated traffic volumes, pedestrian volumes, presence of signalized crossings at 45<sup>th</sup> and 58<sup>th</sup> Streets, and key beach access points (via 50<sup>th</sup> and 62<sup>nd</sup> Streets) Intersection Pedestrian Signals (IPS) are recommended at the following intersections:

- 51<sup>st</sup> Street South; and
- 62<sup>nd</sup> Street.

## Preferred Design Alternatives & Improvements

The recommended design alternatives and recommendations for IPS were presented to the public at Public Information Centre 2. The road sections considered, and a summary of the preferred design alternatives for each are detailed below:

Road Section	Length		Preferred Design
Beachwood Road to 57 <sup>th</sup> Street	1,225 m	Alternative 3B	<ul style="list-style-type: none"><li>▪ maintain existing ROW</li><li>▪ implement urban cross section</li><li>▪ 3 lanes (including centre turn lane)</li><li>▪ sidewalk on north side</li><li>▪ multi-use trail on south side</li></ul>
57 <sup>th</sup> Street to 45 <sup>th</sup> Street	1,280 m	Alternative 4B	<ul style="list-style-type: none"><li>▪ maintain existing ROW</li><li>▪ implement urban cross section</li><li>▪ 4 lanes (2 per direction)</li><li>▪ sidewalk on north side</li><li>▪ multi-use trail on south side</li></ul>

The IPS were well received by the public. Further to comments received, and a further review of anticipated pedestrian travel demands and desire lines, the preferred locations are at 51<sup>st</sup> Street North (shifted from 51<sup>st</sup> Street South) and 62<sup>nd</sup> Street.

## Final Notice & Stakeholder Review

A Notice of Study Completion will be posted on the Town's website and in the local newspapers. Members of the public, stakeholders, special interest groups and external agencies who have expressed an interest and a desire to stay involved will also be provided with a copy of the Notice.

Further to the Notice of Study Completion, the Environmental Study Report (ESR) will be placed on public record for the mandatory 30 calendar day public review period. If concerns are raised during the review period which cannot be resolved in discussion with the Town, a person may request that the Minister of the Environment 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 must be received by the Minister at the address below within 30 days of publication of the Notice of Study Completion. A copy of the request must also be sent to the Town. If no request is received, the project may proceed to Phase 5 Implementation (design and construction).

The Honourable Chris Ballard  
Minister of the Environment & Climate Change  
77 Wellesley Street West, 11<sup>th</sup> Floor, Ferguson Block  
Toronto, Ontario M7A 2T5

# 1 Introduction

The Town of Wasaga Beach initiated a Class Environmental Assessment (Class EA) to examine improvements to Mosley Street, between 45<sup>th</sup> Street and Beachwood Road. C.C. Tatham and Associates Ltd. were retained to complete the study on behalf of the Town, in accordance with the Municipal Class Environmental Assessment guidelines.

## 1.1 Class Environmental Assessment Process

The Class Environmental Assessment process is defined in the *Municipal Class Environmental Assessment* document (2000, revised in 2007, 2011 and 2015). Applying to all municipal road improvement projects, a number of study categories or 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.

### 1.1.1 Class EA Schedules

#### **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 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. As there is the potential for some adverse environmental impacts, the municipality is required to conduct a screening process whereby members of the public and review agencies are informed of the project and are given the opportunity to provide comment. 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.

## **Schedule C**

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

### **1.1.2 Class EA Terminology**

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

#### **New Road**

Means the construction of an improved surface for vehicular traffic on a new right-of-way where the right-of-way is entirely separate from any previous right-of-way. Also refers to the construction of a road on a road allowance whereby no road surface previously existed.

#### **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 and 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 of 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.

### **1.1.3 Selected Schedule**

The reconstruction of Mosley Street, including the addition of bicycle lanes, would be classified as a Schedule A+ project provided there are no changes to the road's purpose, use, capacity or location (which would be the case if the number of travel lanes was maintained and the road simply reconstructed to its existing width). However, should the road require widening to address traffic operations (ie. the provision of additional travel lanes, including a centre turn lane), the road capacity would be increased and hence a Schedule B or C undertaking would apply, based on the overall cost of work.

A Schedule B process is applicable when the construction value is less than \$2.4 million, whereas a Schedule C process applies when the value exceeds \$2.4 million. Given the length of road and extent of widening that could result (if such was identified as the preferred solution), the cost will exceed \$2.4 million and hence the study has been planned in accordance with the Schedule C requirements. The

proponent of a Schedule C project is required to undertake a process involving mandatory contact with the directly affected public and with relevant government agencies to ensure that they are aware of the project and that their concerns are addressed. Public consultation is to be conducted regarding the alternative solutions and the alternative design concepts (in Phases 2 and 3 of the Class EA process).

The Town's timeline for implementation has not been established and may be dependant upon the nature of the preferred design. Therefore, Phase 5 (Implementation) of the Class EA process is not considered part of this assignment.

## **1.2 Objectives of the Environmental Study Report**

The overall objective of this report is to document the planning process undertaken during the Class EA process related to the development and evaluation of alternative solutions and designs. Specifically, the objectives of this report are as follows:

- to prepare a detailed description of the problem;
- to establish alternatives to address the problem;
- 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;
- to establish mitigative measures to minimize potential environmental effects;
- to establish alternative designs to address the problem in accordance with the preferred solution;
- to evaluate the alternative designs and select a preferred design; and
- to outline the remaining steps involved in the planning and design for the urbanization of Mosley Street to complete the Municipal Class Environmental Assessment process.

## **1.3 Format of the Environmental Study Report**

The Environmental Study 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 first point of public consultation - 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 such to be considered in the subsequent evaluation;
- Chapter 6 details the evaluation of the alternative solutions in context of the manner in which they satisfy the problem statement and potential impacts to the environments;
- Chapter 7 addresses the second point of public consultation - Public Information Centre 1;
- Chapter 8 identifies the preferred solution, considering the initial evaluation and comments received from Public Information Centre 1;
- Chapter 9 details the alternative design concepts developed in accordance with the preferred solution;
- Chapter 10 provides a detailed environmental inventory building on the inventory prepared in the earlier phase;
- Chapter 11 details the evaluation of the alternative designs based on their ability to satisfy the problem statement and their potential impacts to the environment;
- Chapter 12 considers opportunities for improved pedestrian crossings of Mosley Street to complement future road improvements;
- Chapter 13 addresses the third point of public consultation – Public Information Centre 2;
- Chapter 14 identifies the preferred design, considering the initial evaluation and comments received from Public Information Centre 2;
- Chapter 15 addressed the last point of stakeholder consultation - Notice of Study Completion; and
- Chapter 16 outlines the remaining tasks in the Municipal Class EA process, including Phase 5 Implementation (eg. design and construction), which is not part of this assignment.

## 2 Needs & Justification

The purpose of this Class EA study is to identify the most appropriate improvement strategy to address the existing needs along the subject section of Mosley Street. In doing so, it is first necessary to establish/understand the existing conditions, from which the needs are 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 (refer to Figure 1).

The widening of the subject length of Mosley Street from 2 lanes to 3 or 4 lanes was identified as part of the recommended Town road network improvements in the *Town of Wasaga Beach 2012 Transportation Study Update*<sup>1</sup>. The inclusion of active transportation facilities within the same corridor have been identified in the *Active Transportation Plan for the Town of Wasaga Beach*<sup>2</sup>.

### 2.1 Study Area

The study area, as illustrated in Figure 2, has been defined to include Mosley Street from Beachwood Road to 45<sup>th</sup> Street, and the immediately abutting lands recognizing that such could be impacted through the improvement strategy. The total length of subject road is approximately 2.6 kilometres.

### 2.2 Existing Conditions

The need for road improvements results from the existing conditions, as detailed below and illustrated through site photographs presented in Figure 3.

#### 2.2.1 Road Classification

As per the *Town of Wasaga Beach 2012 Transportation Study Update* and the *Active Transportation Plan for the Town of Wasaga Beach* (excerpts of which are provided in Figure 4), Mosley Street is classified as an arterial road and a bicycle route. In this regard, Mosley Street is intended to accommodate high volumes and all types of traffic and to provide an active transportation travel route across the town.

#### 2.2.2 Road Platform

Mosley Street is typically a 2-lane road (1 lane per direction), with an asphalt surface (approximately 7.0 metres in width), a paved shoulder on the south side (approximately 2.0 metres in width), gravel shoulders on both sides (approximately 1.0 to 1.5 metres in width), and a rural cross-section with open

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<sup>1</sup> *Town of Wasaga Beach 2012 Transportation Study Update*. Ainley Group., January 2013.

<sup>2</sup> *Active Transportation Plan for the Town of Wasaga Beach*. Meridian Planning Consultants Inc., August 2008.



ditches. At Beachwood Road and the 45<sup>th</sup> Street intersections, the platform widens to accommodate additional turn lanes as necessary.

### 2.2.3 Speed Limit & Design Speed

The posted speed limit on the subject length of Mosley Street is 50 km/h, reflective of the level and type of development.

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. Typically, 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 50 km/h posted speed, a design speed of 70 km/h has been employed.

### 2.2.4 Right-of-Way (ROW)

As per GIS information from Simcoe Maps, and as illustrated in Figure 5, the existing right-of-way on Mosley Street increases from 20 metres (Beachwood Road to 57<sup>th</sup> Street) to 23 metres (56<sup>th</sup> Street to 51<sup>st</sup> Street) to 26 metres (51<sup>st</sup> Street to 47<sup>th</sup> Street). Transitions occur from 57<sup>th</sup> to 56<sup>th</sup> Street, and from 47<sup>th</sup> to 45<sup>th</sup> Street. In all cases, it appears that the noted widenings (eg. from 20 to 23 metres and from 23 to 26 metres) occur on the south side. In consideration of the concept cross-sections established in the *Active Transportation Plan* and provisions for standard width boulevards and/or utility corridors, the existing rights-of-way may not be sufficient throughout the subject length.

### 2.2.5 Intersecting Roads

As illustrated in Figure 5, there are 34 intersections along Mosley Street within the study area; the corresponding intersection configurations, controls and spacings are provided in Table 1. At the unsignalized intersections, the intersecting side streets (those running north-south) are stop controlled.

Table 1: Mosley Street Intersections

	Intersection	Control	Configuration	Distance to Adjacent Intersection	
				to west	to east
1	Beachwood Road	roundabout	4-leg	700 m	105 m
2	71 <sup>st</sup> Street North/South	unsignalized	4-leg	105 m	55 m
3	70 <sup>th</sup> Street North	unsignalized	3-leg (no south leg)	55 m	75 m
4	69 <sup>th</sup> Street North	unsignalized	3-leg (no south leg)	75 m	77 m
5	68 <sup>th</sup> Street North	unsignalized	3-leg (no south leg)	77 m	85 m
6	67 <sup>th</sup> Street North	unsignalized	3-leg (no south leg)	85 m	82 m

	Intersection	Control	Configuration	Distance to Adjacent Intersection	
				to west	to east
7	66 <sup>th</sup> Street North	unsignalized	3-leg (no south leg)	82 m	103 m
8	65 <sup>th</sup> Street North	unsignalized	3-leg (no south leg)	103 m	97 m
9	64 <sup>th</sup> Street North	unsignalized	3-leg (no south leg)	97 m	78 m
10	63 <sup>rd</sup> Street North	unsignalized	3-leg (no south leg)	78 m	70 m
11	62 <sup>nd</sup> Street North/South	unsignalized	4-leg	70 m	98 m
12	61 <sup>st</sup> Street North/South	unsignalized	4-leg	98 m	104 m
13	60 <sup>th</sup> Street South	unsignalized	3-leg (no north leg)	104 m	42 m
14	60 <sup>th</sup> Street North	unsignalized	3-leg (no south leg)	42 m	63 m
15	59 <sup>th</sup> Street South	unsignalized	3-leg (no north leg)	63 m	73 m
16	58 <sup>th</sup> Street North	unsignalized	3-leg (no south leg)	73 m	32 m
17	58 <sup>th</sup> Street South	unsignalized	3-leg (no north leg)	32 m	105 m
18	57 <sup>th</sup> Street North/South	unsignalized	4-leg	105 m	118 m
19	56 <sup>th</sup> Street South	unsignalized	3-leg (no north leg)	118 m	107 m
20	55 <sup>th</sup> Street South	unsignalized	3-leg (no north leg)	107 m	107 m
21	54 <sup>th</sup> Street South	unsignalized	3-leg (no north leg)	107 m	107m
22	53 <sup>rd</sup> Street South	unsignalized	3-leg (no north leg)	107 m	107 m
23	52 <sup>nd</sup> Street South	unsignalized	3-leg (no north leg)	107 m	107 m
24	51 <sup>st</sup> Street South	unsignalized	3-leg (no north leg)	107m	51 m
25	51 <sup>st</sup> Street North	unsignalized	3-leg (no south leg)	51 m	57 m
26	50 <sup>th</sup> Street South	unsignalized	3-leg (no north leg)	57 m	39 m
27	50 <sup>th</sup> Street North	unsignalized	3-leg (no south leg)	39 m	68 m
28	49 <sup>th</sup> Street South	unsignalized	3-leg (no north leg)	68 m	27 m
29	49 <sup>th</sup> street North	unsignalized	3-leg (no south leg)	27 m	80 m
30	48 <sup>th</sup> Street South	unsignalized	3-leg (no north leg)	80 m	16 m
31	48 <sup>th</sup> Street North	unsignalized	3-leg (no south leg)	16 m	95 m
32	47 <sup>th</sup> Street North/South	unsignalized	4-leg	95 m	95 m
33	46 <sup>th</sup> Street North	unsignalized	3-leg (no south leg)	9 5m	120 m
34	45 <sup>th</sup> Street North/South	signalized	4-leg	120 m	-

## 2.2.6 Driveway Access

Further to the intersections, there are numerous commercial and residential driveways along Mosley Street (the number and density of such reflect the level of development). These are somewhat evident in the aerial photographs provided in Figure 5 and are further summarized in Table 2.

Table 2: Mosley Street Driveways

Road Section			Length (km)	Number of Driveways			Density (per km)
				North	South	Total	
Beachwood Road	to	71 <sup>st</sup> Street N/S	0.11	0	0	0	0
71 <sup>st</sup> Street N/S	to	70 <sup>th</sup> Street	0.06	0	1	1	18
70 <sup>th</sup> Street N	to	69 <sup>th</sup> Street N	0.08	1	0	1	13
69 <sup>th</sup> Street N	to	68 <sup>th</sup> Street N	0.08	0	1	1	13
68 <sup>th</sup> Street N	to	67 <sup>th</sup> Street N	0.09	0	0	0	0
67 <sup>th</sup> Street N	to	66 <sup>th</sup> Street N	0.08	2	0	2	24
66 <sup>th</sup> Street N	to	65 <sup>th</sup> Street N	0.10	2	2	4	39
65 <sup>th</sup> Street N	to	64 <sup>th</sup> Street N	0.10	0	0	0	0
64 <sup>th</sup> Street N	to	63 <sup>rd</sup> Street N	0.08	0	0	0	0
63 <sup>rd</sup> Street N	to	62 <sup>nd</sup> Street N/S	0.07	0	2	2	29
62 <sup>nd</sup> Street N/S	to	61 <sup>st</sup> Street N/S	0.10	3	0	3	31
61 <sup>st</sup> Street N/S	to	60 <sup>th</sup> Street S	0.10	5	0	5	48
60 <sup>th</sup> Street S	to	60 <sup>th</sup> Street N	0.04	1	0	1	24
60 <sup>th</sup> Street N		59 <sup>th</sup> Street S	0.06	3	1	4	63
59 <sup>th</sup> Street S	to	58 <sup>th</sup> Street N	0.07	2	1	3	41
58 <sup>th</sup> Street N	to	58 <sup>th</sup> Street S	0.03	0	0	0	0
58 <sup>th</sup> Street S	to	57 <sup>th</sup> Street N/S	0.11	6	3	9	86
57 <sup>th</sup> Street N/S	to	56 <sup>th</sup> Street S	0.12	2	2	4	34
56 <sup>th</sup> Street S	to	55 <sup>th</sup> Street S	0.11	0	0	0	0
55 <sup>th</sup> Street S	to	54 <sup>th</sup> Street S	0.11	0	0	0	0
54 <sup>th</sup> Street S	to	53 <sup>rd</sup> Street S	0.11	0	1	1	9
53 <sup>rd</sup> Street S	to	52 <sup>nd</sup> Street S	0.11	0	0	0	0

Road Section		Length (km)	Number of Driveways			Density (per km)
			North	South	Total	
52 <sup>nd</sup> Street S	to 51 <sup>st</sup> Street S	0.10	0	3	3	28
51 <sup>st</sup> Street S	to 51 <sup>st</sup> Street N	0.05	0	0	0	0
51 <sup>st</sup> Street N	to 50 <sup>th</sup> Street S	0.06	0	0	0	0
50 <sup>th</sup> Street S	to 50 <sup>th</sup> Street N	0.04	0	0	0	0
50 <sup>th</sup> Street N	to 49 <sup>th</sup> Street S	0.07	0	1	1	15
49 <sup>th</sup> Street S	to 49 <sup>th</sup> Street N	0.03	0	0	0	0
49 <sup>th</sup> Street N	to 48 <sup>th</sup> Street S	0.08	0	0	0	0
48 <sup>th</sup> Street S	to 48 <sup>th</sup> Street N	0.02	0	0	0	0
48 <sup>th</sup> Street N	to 47 <sup>th</sup> Street N/S	0.10	0	3	3	32
47 <sup>th</sup> Street N/S	to 46 <sup>th</sup> Street N	0.10	1	2	3	32
46 <sup>th</sup> Street N	to 45 <sup>th</sup> Street N/S	0.12	2	2	4	33
<b>Total</b>		<b>2.65</b>	<b>30</b>	<b>25</b>	<b>55</b>	<b>21</b>

### 2.2.7 Horizontal & Vertical Alignment

The horizontal alignment of Mosley Street through the study area is generally straight with 3 horizontal curves.

The vertical alignment is generally flat with grades approaching 0.5% in some locations.

### 2.2.8 Roadside Protection

No elements of roadside protection are found along Mosley Street in the study area.

### 2.2.9 Traffic Volumes

To establish current summer traffic volumes (given the seasonal/recreational nature of the area) and to determine varying demands through the study area, traffic counts were completed between June 20, 2016 and July 7, 2016 at the following locations:

- west of 58<sup>th</sup> Street; and
- east 58<sup>th</sup> Street.

A summary of the compiled data is provided in Table 3, whereas additional details are provided in Appendix A.

**Table 3: 2016 Traffic Volumes on Mosley Street**

Road Section & Lanes per Direction	Average Weekday <sup>1</sup> AM Peak Volume			Average Weekday <sup>1</sup> PM Peak Volume			Average Weekday	Average Weekend	
	EB	WB	Total	EB	WB	Total			
Beachwood Road to 58 <sup>th</sup> Street	1	536	603	1139	698	544	1242	14,793	15,338
58 <sup>th</sup> Street to 45 <sup>th</sup> Street	1	563	711	1274	728	595	1323	16,037	16,281

<sup>1</sup> reflects average weekday data recorded in June, which is considered typical

In considering the average summer weekend days, they served in the order of 2 to 4% greater volumes over the course of the day, as compared to the average summer weekday. However, in considering the peak hour volumes, it is noted that the peak directional volumes (eastbound in the AM peak hour and westbound in the PM peak hour) were in the order of 20 to 30% greater on weekends, which is expected.

### 2.2.10 Roadside Drainage

Mosley Street between 45<sup>th</sup> Street and 71<sup>st</sup> Street currently has a rural cross-section, utilizing infiltration, overland flow, ditches, catch basins and corrugated steel and concrete culverts to manage stormwater run-off. Several roadside ditches and culverts running under driveways require clean out or replacement to allow for proper drainage flow along Mosley Street. Overall, the existing drainage system appears to be functioning as intended and hence a rural cross-section could be maintained for the improvement alternatives except where curb and gutter is present under existing conditions or where right-of-way constraints necessitate an urban cross-section.

### Water Crossings

There are 6 significant water crossings passing underneath Mosley Street between 45<sup>th</sup> Street and 71<sup>st</sup> Street, as summarized in Table 4.

**Table 4: Water Crossings**

Culvert & Location	Culvert Material
1 between 46 <sup>th</sup> and 47 <sup>th</sup> Street	1.2 m corrugated steel culvert
2 between 48 <sup>th</sup> and 49 <sup>th</sup> Street	2 x 750 mm corrugated steel culverts
3 between 53 <sup>rd</sup> and 54 <sup>th</sup> Street	750 mm corrugated steel culvert
4 between 61 <sup>st</sup> and 62 <sup>nd</sup> Street	approximate 3.5 x 1.2 m concrete box culvert
5 just west of 71 <sup>st</sup> Street	1.0 m concrete culvert
6 beneath Mosley Street roundabout	approximate 4.5 x 2.5 m concrete box culvert and 1.5 m concrete culvert parallel to each other

As noted, all of the crossings consist of steel or concrete culverts. Culvert 4 passes under Mosley between 61<sup>st</sup> and 62<sup>nd</sup> Street and drains into a natural watercourse running north of Mosley Street, parallel to Byrnes Lane.

### **Proposed Work**

A study is underway to determine where the stormwater drainage from the Bay Sands Development Area will cross Mosley Street. There are two proposed development alternatives:

- First Alternative: Urbanization of 62<sup>nd</sup> Street complete with a storm crossing at the 62<sup>nd</sup> Street intersection.
- Second Alternative: Urbanization of 67<sup>th</sup> Street complete with a storm crossing at the 67<sup>th</sup> Street intersection.

The second alternative was identified as the recommended solution, and is to include the following:

- a large diameter storm sewer on 67<sup>th</sup> Street will be constructed to connect with a proposed drainage easement that will convey flow from the Bay Sands Development Area to Mosley Street;
- urbanization of 67<sup>th</sup> Street is to be completed to accommodate overland flow that exceeds the capacity of the storm sewer; and
- the 67<sup>th</sup> Street storm sewer will connect to the existing 1800 mm x 900 mm box culvert at Shore Lane which has sufficient capacity to accommodate all contributing lands.

However, it was discovered that not all the drainage from 62<sup>nd</sup> Street can be directed to the outlet at 67<sup>th</sup> Street. Therefore, the preferred solution was determined to be an outlet at 62<sup>nd</sup> Street.

#### **2.2.11 Utilities**

There are overhead utility services along both sides of Mosley Street. In this regard, it is expected that some utility poles will have to be relocated, pending the final alignment and road configuration of any recommended improvements.

Throughout the study area buried utilities including telecommunications, watermains, sanitary sewers and a natural gas pipeline are prevalent.

### **2.3 Future Conditions**

The need for improvements has also been considered in context of future conditions - namely traffic volumes and expected operations.

### 2.3.1 Future Traffic Volumes

Traffic volumes were forecast for the horizon years of 2021, 2026 and 2036. As per Average Annual Daily Traffic (AADT) projections provided in the *Town of Wasaga Beach 2012 Transportation Study Update*<sup>3</sup>, traffic volumes on the subject section of Mosley Street are anticipated to grow 2.77% per year over the 5-year period 2017 to 2022 (which reflects anticipated development within the Town over the noted period). For purposes of this assessment, this growth rate has been maintained through to 2026 recognizing that the *Transportation Study Update* identified significant development to occur post 2022 and that the additional vehicle trips per day established for the 6-10 year period are comparable to those established for the 1-5 year period. Beyond 10 years, a 2% annual increase has been assumed to 2036.

In considering the evaluation and assessment of a road system, peak hour volumes are the primary consideration in that road capacity is typically defined as vehicles per hour per lane (as opposed to daily volumes). In this regard, the future projections reflect the peak hour peak directional volumes anticipated in each horizon year (the peak directions are typically eastbound in the AM peak hour and westbound in the PM peak hour - into Town during the morning and out of Town in the afternoon). The resulting peak hour volumes are summarized in Table 5, as are the resulting volume to capacity ratios (v/c). A lane capacity of 800 vehicles per hour per direction has been assumed, reflective of existing conditions with no widening or other substantial modifications to the road (ie. 1 lane per direction is maintained).

**Table 5: Future Traffic Volumes on Mosley Street**

Road Section & Lanes per Direction			Capacity <sup>1</sup>		Peak Hour Volume		Volume to Capacity	
			EB	WB	EB	WB	EB	WB
Mosley Street	Beachwood Road to 58 <sup>th</sup> Street	1	800	800	698	603	0.87	0.75
	58 <sup>th</sup> Street to 45 <sup>th</sup> Street	1	800	800	728	711	0.91	0.89
Mosley Street	Beachwood Road to 58 <sup>th</sup> Street	1	800	800	800	691	1.00	0.86
	58 <sup>th</sup> Street to 45 <sup>th</sup> Street	1	800	800	835	814	1.04	1.02
Mosley Street	Beachwood Road to 58 <sup>th</sup> Street	1	800	800	917	792	1.15	0.99
	58 <sup>th</sup> Street to 45 <sup>th</sup> Street	1	800	800	957	934	1.20	1.17
Mosley Street	Beachwood Road to 58 <sup>th</sup> Street	1	800	800	1118	965	1.40	1.21
	58 <sup>th</sup> Street to 45 <sup>th</sup> Street	1	800	800	1166	1138	1.46	1.42

<sup>1</sup> Capacity is denoted as vehicles per hour per direction, reflective of 1 lane per direction

<sup>3</sup> *Town of Wasaga Beach 2012 Transportation Study Update*. Ainley Group, January 2013.

As noted, the assumed capacity will be fully utilized (ie.  $v/c \geq 1.0$ ) as early as 2021. By 2026, traffic volumes in the eastbound direction are expected to exceed the available capacity by 15 to 20% whereas those in the westbound direction will exceed capacity east of 58<sup>th</sup> Street (volumes west of 58<sup>th</sup> Street will operate at capacity). With the additional increase anticipated through to 2036, operations will be in the order of 20 to 46% over capacity.

In consideration of the above, it can be concluded that under the assumed growth scenarios, the existing 2-lane road will not be able to properly accommodate future anticipated demands and thus additional road capacity will be required.

## **2.4 Problem Statement**

In consideration of the existing conditions, projected future traffic volumes and corresponding operating levels, a Problem Statement has been defined. The Problem Statement, which sets the framework for the remainder of the study, is as follows:

*That existing traffic and infrastructure needs and deficiencies along the subject length of Mosley Street (from Beachwood Road to 45<sup>th</sup> Street) be addressed in an environmentally sound manner, in consideration of future traffic needs, current Town standards, active transportation opportunities and surface drainage requirements, with the objective of providing safe and efficient travel for all road users.*



### 3 Consultation - Study Commencement

As per the Class EA process (refer to Figure 1), there are a number of points of stakeholder contact. The first point of contact, as discussed in this chapter, is the Notice of Study Commencement which is used to inform the general public and stakeholders of the start of the study. The Notice of Study Commencement is a discretionary point of contact, whereas the remaining are mandatory, as further discussed in the report following the chronological order in which they occurred.

#### 3.1 Notification

A Notice of Study Commencement was issued to all property owners along Mosley Street within the study area during the week of November 7, 2016. A notice was also published in the Wasaga Sun newspaper during the weeks of November 7, 2016 and November 14, 2016. The notice 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 design and completion. A copy of the Notice of Study Commencement is provided in Appendix B.

Similar notices were also submitted to the appropriate review agencies, stakeholder groups and special interest groups, a listing of which is provided in Appendix B.

#### 3.2 Public Comments

Input was received from stakeholders in response to the Notice of Study Commencement. A total of 2 letters and emails were received (included in Appendix B). A summary of the comments received and their responses is given in Table 6.

**Table 6: Public Comments - Study Commencement**

No.	Public Comments	Response to Comments
1	<ul style="list-style-type: none"><li>▪ Mosley Street traffic is continuous, making it difficult for those attempting to turn or cross the street as pedestrians exceedingly difficult</li><li>▪ Excessive speeds are already present and the addition of more lanes will add to this problem</li></ul>	<ul style="list-style-type: none"><li>▪ Opportunities to improve traffic and pedestrian operations will be considered during the study.</li><li>▪ Impacts to traffic will be evaluated throughout the course of the study.</li></ul>
2	<ul style="list-style-type: none"><li>▪ Widen Mosley Street to four lanes and provide sidewalk on both sides of the street in a similar fashion as completed in the Schoonertown Bridge project.</li></ul>	<ul style="list-style-type: none"><li>▪ Various alternatives, including widening, will be evaluated throughout the course of the study.</li></ul>

### 3.3 Agency Comments

Letters and emails were received from 5 agencies in response to the Notice of Study Commencement, copies of which are provided in Appendix B and summarized in Table 7.

**Table 7: Agency Comments - Study Commencement**

No.	Agency	Agency Comments
1	Chippewas of Rama First Nation	<ul style="list-style-type: none"> <li>Have advised that the notice has been reviewed and shared with Council, and that the information has been forward to Karry Sandy McKenzie, Williams Treaties First Nation Process Co-ordinator/Negotiator.</li> <li>Provided updated contact information</li> </ul>
2	Nottawasaga Valley Conservation Authority	<ul style="list-style-type: none"> <li>A preliminary review indicates that portions of the study area are regulated by the NVCA for flood and erosion hazards and as well wetlands and the associated buffers. Depending on the nature of the proposed works permitting may be required and can be addressed during the design phase.</li> </ul>
3	Ministry of Tourism, Culture and Sport	<ul style="list-style-type: none"> <li>Outlined MTCS's interests in the Mosley Street Environmental Assessment and its mandate of conserving Ontario's cultural heritage which includes, archaeological resources, built heritage resources, and cultural heritage landscapes.</li> </ul>
4	Infrastructure Ontario	<ul style="list-style-type: none"> <li>A preliminary review indicates that it is unclear at this time if lands under the control of the Ministry of Infrastructure (MOI) will be required for the proposed project. Should MOI land use be required coordination with Infrastructure Ontario (IO) will be required.</li> </ul>
5	Ministry of Environment and Climate Change	<ul style="list-style-type: none"> <li>Acknowledges the commencement of a Schedule C Municipal Class Environmental Assessment to urbanize and widen Mosley Street. Provided "Areas of Interest" document which provides guidance regarding the ministry's interest with respect to the Class EA process.</li> </ul>

## 4 Alternative Solutions

A number of reasonable and feasible solutions to address the Problem Statement were developed and are otherwise addressed in this chapter.

### 4.1 Alternative A - Do Nothing

The Do Nothing alternative corresponds to the existing conditions and serves as a benchmark to confirm 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. While this would not satisfy the objectives of the Town to improve traffic operations, a Do Nothing alternative is suggested for consideration as an alternative in the Class EA guidelines for comparative purposes. A decision to do nothing would typically be made when the costs of all other alternatives, either financial and/or environmental, significantly outweigh the benefits.

### 4.2 Alternative B - Reduce Travel Demands

Rather than increase road capacity, this alternative focuses on reducing the overall travel demands on Mosley Street, thus negating the need for road capacity based improvements. Means to achieve this include increased use of non-auto based travel (ie. transit, cycling and walking), increased occupancy and ridesharing (ie. more occupants per car, which translates to fewer trips), telecommuting (ie. working from home which eliminates vehicle trips) and flex hours (ie. shifting working hours to avoid the need to travel during the peak hours). To accommodate such, additional initiatives would have to be introduced (ie. improved transit service, extended pedestrian linkages, etc.).

### 4.3 Alternative C - Alternative Travel Route

Alternative C would entail utilizing reserve road capacity on alternate travel routes to Mosley Street to accommodate existing and future travel demands.

### 4.4 Alternative D - Operational Improvements

This alternative would attempt to address the road capacity deficiencies and operational issues by constructing improvements at intersections, whilst maintaining the existing 2-lane road. Mosley Street would however be reconstructed to an urban 2-lane cross section with active transportation facilities and drainage improvements. Examples of potential intersection improvements that might be considered include:

- new or extended left and/or right turn lanes;

- right turn channelization;
- changes to the intersection control (eg. changing from two-way stop control to all-way stop control, or from stop control to traffic signal control; or implementation of roundabout control);
- at signalized intersections, revised signal timings or the addition of new signal phases (eg. protected left turn or advanced green); and
- minor changes to the horizontal and/or vertical alignments through the intersection.

#### **4.5 Alternative E - Widen Mosley Street to 3 lanes**

This alternative would entail widening Mosley Street to a 3-lane urban cross-section (1 lane per direction with a centre turn lane) by increasing the platform and pavement width of the existing road thereby increasing road capacity and improving operations. The urbanization of the road would improve drainage and would also provide opportunities for active transportation facilities in the form of multi-use trails, bicycle lanes, sidewalks or a combination of these elements (to be constructed where the road shoulders and/or ditches currently exist).

As per the Town's *Active Transportation Plan*, a 3-lane configuration with active transportation measures would require a minimum right-of-way of 18.1 metres (as noted in Figure 6). It is noted however, that this does not allow for above ground utilities or service corridors (all of which would have to be placed below ground). With planting/utility corridors, the right-of-way requirement would increase to 23.1 metres (an increase of 5 metres).

#### **4.6 Alternative F - Widen Mosley Street to 4 lanes**

This alternative is similar to Alternative E, with the exception that the road would be further widened and reconstructed to accommodate a 4-lane urban cross-section, complete with active transportation facilities.

As per the Town's *Active Transportation Plan*, this configuration would require a minimum right-of-way of 19.8 to 21.6 metres depending on the type and configuration of the active transportation measures (as noted in Figure). Once again however, this provides no allowance for above ground utilities or service corridors. With planting/utility corridors, the right-of-way requirement would increase by 5 metres.

## 5 Environment Inventories - Alternative Solutions

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

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

In accordance with the Class EA framework (as per Figure 1), detailed investigations and analyses with respect to the environment inventories were not required at this point in the study. Rather, data was obtained based on a number of 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 as it pertains to this study includes Mosley Street between Beachwood Road and 45<sup>th</sup> Street. Details with respect to the road system were previously provided in Section 2.2.

There are overhead utility services along this section of Mosley Street and thus it is expected that some poles will have to be relocated, pending the final alignment and road configuration. In addition, there is a natural gas pipeline within the right-of-way that may conflict with certain alternatives. Due to the cost of relocating these hydro poles and natural gas pipeline, the impacts to the utilities may have a significant impact on the final alternative chosen for the widening.

The majority of the subject length of Mosley Street utilizes open ditches and surface flows as a storm drainage system. There are limited sections of storm sewers at select intersections.

### 5.2 Natural Environment

An assessment of the natural heritage conditions was completed by Azimuth Environmental Consulting Inc. (Azimuth) and is provided in Appendix C. The report documented the natural environmental features

and functions present within and adjacent to the study area. It also presents the environmental factors to be considered in preparation of the engineering design alternatives during Phase 3 of the Class EA process.

Azimuth's study approach included a review of pertinent background information and was augmented with field reconnaissance investigations of the study area to identify natural environmental features, characterized aquatic habitat conditions at water crossings and completed a habitat assessment for Species at Risk (SAR). Their approach also included the overlay of information onto aerial photography, identified potential constraints and recommended mitigation measures.

The existing Natural Environmental Resource conditions within the study area were evaluated under the various classifications. A brief summary of the findings and the classifications presented within the report are listed below:

### **Vegetation Species and Vegetation Communities**

- No butternut trees were observed within the study area.
- None of the vegetation communities are considered to be provincially rare.
- None of the species observed are considered to be provincially endangered, threatened or of special concern.

### **Wetlands**

- No wetlands which have been identified as Provincially or locally significant were present.
- Small unevaluated wetland communities appear to be located adjacent to the study area.

### **Wildlife**

- The assessment was completed at a screening level to identify potential for Significant Natural Heritage Features (SNHF). Incidental wildlife observations were collected.

### **Species at Risk**

- While none of the SAR species being considered were observed within the study area, the following were identified as having potential to exist within the study area based on habitat requirements:
  - reptiles and amphibians: snapping turtle;
  - birds: barn swallow, chimney swift, eastern wood-pewee, and wood thrush;
  - mammals: brown myotis, northern long-eared myotis, and tri-coloured bat;
  - plants: butternut; and
  - insects: monarch butterfly.

## **Fisheries and Aquatic Resources**

- There are no aquatic SAR known to be found within the study area. Of the 7 areas of potential aquatic habitat, 1 (Brock's Beach Creek) is likely to provide potential year-round direct fish habitat.

### **5.3 Social Environment**

A review of the social environment focused on existing residential dwellings and/or commercial properties that could be impacted by the alternative solutions. In addition, potential impacts to public institutions and service facilities were also considered. Land use designations for the study area, as per the *Town of Wasaga Beach Official Plan*, are illustrated in Figure 7.

The main impact expected to residential dwellings along Mosley Street will be the widening of the road platform (affecting boulevards, driveways, trees, etc.). In cases where the proposed road platform widening would adversely impact an existing property, the cross-section of the proposed road could be altered to avoid any impacts (ie. consider narrower lanes or shoulders, etc.).

There are several commercial properties within the subject area as follows:

- Cedar Grove Mini Golf (north side of Mosley Street on the corner of 71<sup>st</sup> North);
- Lorna Dune Ice Cream (south side of Mosley Street between 69<sup>th</sup> and 70<sup>th</sup> Streets);
- commercial plaza located between 57<sup>th</sup> and 58<sup>th</sup> Street on the south side of Mosley Street; and
- commercial properties at the intersection of Mosley Street with 45<sup>th</sup> Street (north and south sides).

These businesses and their customers will be temporarily affected by proposed road works and any associated road closures and/or detours. However, these will be short term impacts and any alternative proposing widening of Mosley Street will impact commercial properties equally.

With regards to institutional buildings, the Wasaga Beach Fire Department Fire Station No. 2 is located on the north side of Mosley Street just east of 57<sup>th</sup> Street. Similar to the commercial and residential impacts, the main impact to institutional land uses will be associated with the widening of the road platform.

### **5.4 Cultural/Heritage Environment**

This environment encompasses archaeological sites and built heritage interest.

A Stage 1 archaeological assessment was conducted by Archaeological Research Associates Ltd (ARA), and is provided in Appendix D. The assessment encompassed the entirety of the proposed project lands, comprising the Mosley Street right of way and the adjacent lands that may be required depending on the preferred alternative.

The Stage 1 assessment conducted by ARA determined that the study area was comprised of a mixture of areas of archaeological potential and areas of no archaeological potential. ARA recommends that all identified areas of archaeological potential that could be impacted by the project be subject to a Stage 2 property assessment in advance of construction. The identified areas of no archaeological potential were not recommended for further assessment.

ARA similarly conducted a Built Heritage and Cultural Heritage Landscape Assessment of the study area (also provided in Appendix D). As a result of consultation and field survey, the following Built Heritage Resources were identified as having potential cultural heritage value or interest (the heritage attributes are largely defined by intrinsic values (ie. those rooted in the architecture of the buildings or in their association with key individuals or communities) and these values will continue to exist with or without the urbanization/upgrading of Mosley Street):

- 2115 Mosley Street (BHR 1);
- 2121 Mosley Street (BHR 2);
- 3057 Mosley Street (BHR 3);
- 3091 Mosley Street (BHR 4);
- 66 58<sup>th</sup> Street North (BHR 6);
- 3116 Mosley Street (BHR 6);
- 3130 Mosley Street (BHR 7) and
- 3267 Mosley Street (BHR 8).

An analysis of the impacts of the proposed Mosley Street Urbanization project found that there are no anticipated direct impacts to the identified BHRs. However, there may be some indirect impacts to the BHRs during construction activities, and minor changes to the character of the existing frontage of properties along Mosley Street due to the “urbanization” related activities.

No Cultural Heritage Landscapes were identified in the study area.

## **5.5 Economic Environment**

With respect to the economic environment, this considers the associated costs to be incurred in implementing the alternative solutions. The costs have been considered in relation to the extent of existing road requiring upgrades/reconstruction and/or the extent of new road construction required. For the purpose of the preliminary assessments, the costs were considered on a qualitative basis only (eg. least costly, most costly).



In addition, impacts to abutting lands have also been considered as part of the economic environment given the associated costs to obtain any required lands. However, no value has been associated with such acquisition.

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 development option during implementation (resulting from detours, restricted access, etc.).

## 6 Evaluation of Alternative Solutions

This section will discuss the evaluation of the alternative solutions as previously described, the results of which are considered preliminary at this point in the Class EA process given the need to solicit agency and public input. The evaluation is descriptive or qualitative in nature allowing for a comparative evaluation of the pros and cons associated with each alternative solution.

### 6.1 Initial Screening

In order to limit the list of alternatives to those that are most practical, certain alternatives were pre-screened and not carried forward through the formal evaluation. They have been included in this report to demonstrate that multiple approaches were considered in addressing the Problem Statement

The following alternatives were not carried forward in the evaluation process for reasons described in the discussion below.

- Alternative A - Do Nothing is not considered appropriate in that it does not address the problem statement - road capacity deficiencies will otherwise persist and worsen with time. These in turn will lead to other detrimental impacts as previously noted - increased congestion, traffic noise, travel delays, etc.
- While Alternative B - Reduce Travel Demands is expected to have positive benefits, the extent of such is not considered sufficient to address the noted capacity deficiencies.
- Under Alternative C - Alternative Travel Routes, while some motorists are likely to seek out alternative travel routes as congested conditions arise on Mosley Street, this is not considered a feasible solution given the additional travel required and capacity constraint issues on available alternative routes. Furthermore, the most obvious alternative routes (Shore Lane to the north and Ramblewood Drive to the south) are both considered primarily residential roads with direct residential frontage and are lower tier roads (Shore Lane is a local road and Ramblewood Drive is a collector) as compared to Mosley Street (an arterial). As such, diversion onto these routes is not likely to result in a significant time savings for drivers and therefore would not be used to a high degree. Furthermore, increased use of these alternative routes may create negative spillover effects as the additional congestion induces the drivers on those routes to divert to avoid congestion themselves. For these reasons, Alternative C does not address the needs identified in the problem statement and is therefore not carried forward.

### 6.2 Evaluation Criteria

In completing the evaluation, a number of criteria were considered. Criteria have been divided into 5 major groups: Physical Environment, Natural Environment, Social Environment, Cultural/Heritage Environment and Economic Environment. The effects of the alternatives are identified based on the criteria within each group. Groups and criteria are outlined below.

### **Physical Environment**

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

### **Natural Environment**

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

### **Social Environment**

- property/development impacts
- noise impacts

### **Cultural/Heritage Environment**

- archaeological impacts
- built heritage impacts
- First Nations impacts

### **Economic Environment**

- construction costs
- land acquisition costs

## **6.3 Environmental Impacts**

The potential impacts associated with those alternatives carried forward are noted in Table 8 and discussed in further detail below. It is noted that the natural environment impact evaluations were derived from *Natural Environmental Existing Conditions Report* by Azimuth Environmental Consulting, included as Appendix C. Similarly, the cultural/heritage impact evaluations were derived from *Built Heritage and Cultural Heritage Landscape Assessment, Mosley Street Urbanization and Stage 1 Archaeological Assessment, Mosley Street Urbanization, 45<sup>th</sup> Street to Beachwood Road*, both of which were completed by Archaeological Research Associates Ltd. and are included as Appendix D.

## **6.4 Recommended Solution**

Based on the evaluation of the noted alternatives, the recommended solution is to widen Mosley Street within the study area. Alternative E (widen to 3 lanes) and Alternative F (widen to 4 lanes) shall be carried forward into Phase 3 of the Class EA process based on their technical ability to address the problem statement.

Table 8: Evaluation of Alternative Solutions

Alternatives	Physical Environment	Natural Environment	Social Environment	Cultural/Heritage Environment	Economic Environment
<b>Alternative D 2 Lanes with Operational Improvements</b>	<ul style="list-style-type: none"> <li>✓ urbanization provides opportunity to implement active transportation elements (bicycle lanes and sidewalks)</li> <li>✓ eliminates road side ditches and ensures the proper conveyance of stormwater flows</li> <li>✓ least impact to abutting existing hydro/utility poles</li> <li>* road capacity will not adequately accommodate future travel demands</li> </ul>		<ul style="list-style-type: none"> <li>✓ no impacts to existing abutting lands</li> <li>✓ no change to noise impacts as road remains in original location</li> </ul>	<ul style="list-style-type: none"> <li>✓ no known archaeological or cultural/heritage impacts as all works with the existing ROW or within previously disturbed/constructed areas</li> </ul>	<ul style="list-style-type: none"> <li>✓ least overall construction costs</li> <li>✓ least cost for relocation of hydro/utility poles</li> </ul>
<b>Alternative E Widen to 3 Lanes</b>	<ul style="list-style-type: none"> <li>✓ urbanization provides opportunity to implement active transportation elements (bicycle lanes and sidewalks)</li> <li>✓ eliminates road side ditches and ensures the proper conveyance of stormwater flows</li> <li>* greater impacts to abutting existing hydro/utility poles</li> <li>* road capacity will be increased, but not sufficient to accommodate long-term travel demands</li> </ul>	<ul style="list-style-type: none"> <li>✓ no appreciable impacts from either alternative given built nature of area</li> </ul>	<ul style="list-style-type: none"> <li>✓ no impacts to existing abutting lands</li> <li>* greater noise impacts as travelled road lanes shift closer to property lines through implementation of opposing left turn lanes</li> </ul>	<ul style="list-style-type: none"> <li>✓ additional studies to be undertaken as necessary</li> </ul>	<ul style="list-style-type: none"> <li>* greater overall construction cost</li> <li>* greater cost for relocation of hydro/utility poles</li> </ul>
<b>Alternative F Widen to 4 Lanes</b>	<ul style="list-style-type: none"> <li>✓ urbanization provides opportunity to implement active transportation elements (bicycle lanes and sidewalks)</li> <li>✓ eliminates road side ditches and ensures the proper conveyance of stormwater flows</li> <li>* greatest impact to abutting existing hydro/utility poles</li> <li>✓ increased road capacity will adequately accommodate future travel demands</li> </ul>	<ul style="list-style-type: none"> <li>* potential for impacts in areas that may be widened beyond existing right-of-way (dependant on final road corridor configuration)</li> </ul>	<ul style="list-style-type: none"> <li>* potential for impacts to abutting commercial and residential lands dependent on final road corridor configuration</li> <li>* greatest noise impacts as travelled road lanes shift closer to property lines with an additional travel lane in each direction</li> </ul>	<ul style="list-style-type: none"> <li>* greater potential for pre-contact and Euro-Canadian archaeological materials should works extend beyond existing ROW or previously disturbed/constructed areas</li> <li>✓ additional studies to be undertaken as necessary</li> </ul>	<ul style="list-style-type: none"> <li>* greatest overall construction cost</li> <li>* greatest cost for relocation of hydro/utility poles</li> </ul>

## 7 Stakeholder Consultation - PIC 1

Further to the Notice of Study Commencement, which is considered a discretionary point of contact, in completing a Schedule C Class EA, there are 3 points of mandatory stakeholder contact. These points of contact include (refer also to Figure 1):

- the 1<sup>st</sup> point occurs towards the end of Phase 2 when a notice is issued inviting stakeholder comment and input via a Public Information Centre (referred to as PIC 1);
- the 2<sup>nd</sup> second point occurs towards the end of Phase 3 when a second Public Information Centre is held (PIC 2); and
- the 3<sup>rd</sup> point of contact is upon completion of the planning process at which time a Notice of Completion is provided.

In keeping with the chronological order in documenting events in the order that they occurred, the first point of mandatory contact is discussed in this chapter; the remaining points of contact will be addressed in Chapter 11.2 and Chapter 0.

### 7.1 Purpose

The purpose of Public Information Centre 1 was to provide information to the public and agencies and seek their input with respect to the following:

- identification of the problem;
- development of alternative solutions to the problem;
- general inventory of the affected environments;
- potential impacts of each alternative solutions to the environments considered;
- evaluation of the alternative solutions and identification of the recommended solution; and
- discussion of remaining tasks to be undertaken in completing the Class EA.

### 7.2 Notification

In accordance with the Municipal Class EA guidelines, a notification of the Public Information Centre was issued inviting stakeholder comment and input. Stakeholders include review agencies, the public and other municipalities and thus notices were directed to each, in the same manner in which the Notice of Commencement was disseminated. Notices were also delivered to the area residents on November 22, 2016, advertised on the Town's website, and published in the Wasaga Sun on 2 separate occasions

preceding the public information centres. A PIC notice and corresponding distribution list are provided in Appendix E.

### **7.3 Public Information Centre 1**

Public Information Centre 1 was held on November 29, 2016 from 7:00 PM to 9:00 PM at the Wasaga Stars Arena Auditorium, 425 River Road West. No formal presentation was made but rather people were welcome to drop in during the above hours to review the materials and ask questions. Representatives from the Town of Wasaga Beach and C.C. Tatham & Associates were in attendance to answer any questions and provide assistance as necessary.

Various display boards were prepared for viewing by the public, a copy of which was made available on the Town's website following the meeting (as provided in Appendix E.). Display boards addressed the following:

- study purpose and introduction which described the reasoning behind the undertaking;
- the Municipal Class EA process and those tasks relevant to this study;
- a review of the existing conditions;
- problem identification detailing the travel demand (both existing and future) and operational issues necessitating the need for improvements;
- alternative solutions for the Mosley Street corridor;
- an inventory of the natural environment;
- preliminary assessment and identification of the recommended option;
- the remaining steps to completion; and
- contact details for additional information.

Twenty-six people attended the Public Information Centre based on the sign-in sheets (a copy of which is provided in Appendix E).

### **7.4 Public Comments**

Input was received from stakeholders either at PIC 1 or shortly thereafter via the comment sheets provided. A total of 14 comment sheets were returned (included in Appendix E.). These comment sheets provided opportunity for stakeholders to comment, as well as provide responses to the following questions:

1. Do you feel that Mosley Street should be widened from Beachwood Road to 45<sup>th</sup> street to address future travel needs? Why?
2. Do you feel that bicycle lanes should implemented on Mosley Street from Beachwood Road to 45<sup>th</sup> Street? Why?
3. Do you feel that sidewalks or other active transportation facilities (ie. multi-use trails, bicycle paths, etc.) should be implemented on Mosley Street from Beachwood Road to 45<sup>th</sup> Street? Why?

In addition to the comment sheets received, 2 emails were received pertaining to the public information centre. One of these was from individuals unable to attend the PIC1 and the other requesting that they be added to the contact list.

A summary of the comments received and appropriate responses is provided in Table 10.

## 7.5 Agency Comment

Comment letters were received from 2 agencies, copies of which are provided in Appendix E. and summarized in Table 9 below.

**Table 9: Agency Comments - PIC 1**

No.	Agency	Agency Comments'
1	Chippewas of Rama First Nation	<ul style="list-style-type: none"> <li>▪ Have advised that the notice has been reviewed and shared with Council.</li> <li>▪ The information has been forward to Karry Sandy McKenzie, Williams Treaties First Nation Process Co-ordinator/Negotiator.</li> </ul>
2	Ministry of Environment and Climate Change	<ul style="list-style-type: none"> <li>▪ Southwestern Region has confirmed project is responsibility of MOECC Central Region.</li> </ul>

Table 10: Public Comments - PIC 1

No.	Question 1: Widen to Accomodate Future Travel?	Question 2: Add Bicycle Lanes?	Question 3: Add Sidewalks/ Active Transportation?	Response to Comments
1	<ul style="list-style-type: none"> <li>Widening should be reviewed and discussed with property owners most affected.</li> <li>Just considering traffic is short sighted.</li> </ul>	<ul style="list-style-type: none"> <li>Bicycle lanes should be considered only under the 3-lane option.</li> <li>Balance needed between accommodating tourists and residents.</li> </ul>	<ul style="list-style-type: none"> <li>Plans are vague, hope to see finalized plans and design as to how property is impacted.</li> <li>Sidewalks are fine, but 3 lanes vs 4 lanes with bicycle lanes will negatively impact existing residents.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> <li>Once the preferred alternative has been chosen, the project will advance to a stage where a more detailed approach is required. There will be a second PIC dealing with design alternatives and the resident will be notified.</li> </ul>
2	<ul style="list-style-type: none"> <li>Yes, increased traffic requires more lanes to accommodate traffic and maintain a reasonable speed.</li> </ul>	<ul style="list-style-type: none"> <li>Raised concerns with designated bicycle lanes as many cyclists abuse their right of way and are difficult to maneuver by in high density traffic.</li> <li>Night time can be very dangerous when cyclists are not equipped with lights, reflectors or bright clothing.</li> </ul>	<ul style="list-style-type: none"> <li>Progress and reality must be considered and bicycle lanes, trails etc. are current activities for the younger families.</li> <li>Including trails and bike lanes will be good policy for Wasaga Beach promotion.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternative acknowledged.</li> </ul>
3	<ul style="list-style-type: none"> <li>Liked the 3-lane option.</li> <li>Turning lane should only exist before 45<sup>th</sup> Street.</li> <li>Concerned with speeding and land acquisition.</li> </ul>	<ul style="list-style-type: none"> <li>Perhaps bicycle lanes could be implemented as they have noted many bikes along the road.</li> </ul>	<ul style="list-style-type: none"> <li>Definitely, for safety reasons.</li> </ul>	<ul style="list-style-type: none"> <li>It is not the Town's intent to acquire property.</li> <li>Once the preferred alternative has been chosen, the project will advance to a stage where a more detailed approach is required, including consideration for curbs, storm sewers, bicycle lanes and land acquisition requirements (if necessary), etc. There will be a second PIC dealing with design alternatives and the resident will be notified.</li> </ul>
4	<ul style="list-style-type: none"> <li>Yes, to add sidewalks for pedestrian travel needs, and storm sewers to avoid flooding.</li> </ul>	<ul style="list-style-type: none"> <li>No, feel that Shore Lane is a much safer route and is also more scenic for travellers.</li> </ul>	<ul style="list-style-type: none"> <li>Definitely, sidewalks should be implemented. Bike lanes are felt to be not necessary. With Shore Lane and Carly Patterson trail it would make more sense to promote trails already available to residents and visitors to the beach.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> </ul>
5	<ul style="list-style-type: none"> <li>Yes, because of traffic congestion.</li> </ul>	<ul style="list-style-type: none"> <li>No, lane expansion is the number one priority.</li> </ul>	<ul style="list-style-type: none"> <li>No, use Shore Lane, forget bike paths.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> </ul>
6	<ul style="list-style-type: none"> <li>There needs to be an official crosswalk somewhere in front of Lorna Dune and somewhere between 68<sup>th</sup> and 70<sup>th</sup> Streets with flashing lights and painted lines etc.</li> <li>Ban the noisy mufflers from our Town. Can't even hear ourselves have a conversation inside our cottage. Also, no 18 wheelers (noise, fumes, dust).</li> </ul>	<ul style="list-style-type: none"> <li>Can never turn left onto Mosley from 69<sup>th</sup> Street. Have waited up to 10 minutes to get out.</li> </ul>		<ul style="list-style-type: none"> <li>Comment regarding ban on noisy mufflers and truck traffic fall outside the scope of this project have been forwarded to the Town for review.</li> </ul>
7	<ul style="list-style-type: none"> <li>Yes, due to heavy traffic (3 lanes only).</li> </ul>	<ul style="list-style-type: none"> <li>No. Room on one side (south side) only if necessary. Shore Lane can be used.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, on the south side only.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> </ul>
8	<ul style="list-style-type: none"> <li>Feels that a three-lane widening of Mosley would be a way to continue to allow flow of traffic and not create a speed way.</li> <li>Exiting from the side streets is difficult now, and would be more challenging with a 4-lane expressway.</li> </ul>	<ul style="list-style-type: none"> <li>Feels bicycle lanes are needed on both sides of Mosley, cyclists currently share the road without paved shoulders on the north side of the road and share the paved lane to the south side of Mosley with pedestrians.</li> </ul>	<ul style="list-style-type: none"> <li>Sidewalks should be on both sides of the road; pedestrian traffic has a difficult time beside a busy road.</li> <li>Both bicycle lanes and sidewalks make exercise safer.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> </ul>



No.	Question 1: Widen to Accomodate Future Travel?	Question 2: Add Bicycle Lanes?	Question 3: Add Sidewalks/ Active Transportation?	Response to Comments
	<ul style="list-style-type: none"> <li>With 4 lanes of continuous traffic flowing access to driveways and side street becomes difficult. Reversing from parking spots onto Mosley will be more difficult.</li> </ul>	<ul style="list-style-type: none"> <li>Fitness is encouraged with bicycle lanes in place.</li> </ul>	<ul style="list-style-type: none"> <li>Summertime beach seekers from the south side of Mosley may be at an increased risk of injury trying to cross Mosley Street.</li> </ul>	
9	<ul style="list-style-type: none"> <li>This is the major feeder road to the Town of Wasaga Beach from Collingwood and Hwy 26 roundabout. Currently give the impression that the Town of Wasaga is low end. Not a good first impression (promote business and residents).</li> <li>Preference would be 3-lane option.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, provide some safety for those using this mode of travel.</li> </ul>	<ul style="list-style-type: none"> <li>Sidewalks a must.</li> <li>Safety for pedestrians and residents in area.</li> <li>Necessary upgrade to Town.</li> <li>Long Overdue.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> </ul>
10	<ul style="list-style-type: none"> <li>Yes. Too much traffic, especially with tourists in the summer.</li> <li>Noise, fumes racing motorcycles along Mosley is very dangerous. Can't hear outside because of excessive noise from the traffic.</li> </ul>	<ul style="list-style-type: none"> <li>Not necessarily.</li> </ul>	<ul style="list-style-type: none"> <li>No, other recreational facilities are available at the other end of the beach. Not at the beginning of Mosley Street.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> </ul>
11	<ul style="list-style-type: none"> <li>Yes, with sidewalks, bike lane and passing lane.</li> <li>When walking the dog, almost got run over when a driver decided to go to side of road for cell phone, scary.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, will help them not go on sidewalk and allow elderly with their scooters.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, defiantly need sidewalks.</li> <li>Also, have a way to get to trails, paths etc.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> </ul>
12	<ul style="list-style-type: none"> <li>Yes, to ease long term summer congestion.</li> <li>To keep up improvements with the rest of the Town so the west end doesn't get orphaned for improvements.</li> </ul>	<ul style="list-style-type: none"> <li>Maybe only on the south side, not both. This provides continuity from the existing path on the south side.</li> </ul>	<ul style="list-style-type: none"> <li>No, not enough room.</li> <li>Maybe only on one side (south side).</li> <li>Side Notes: Perhaps Town could book an appointment with owner to discuss selling property.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> </ul>
13	<ul style="list-style-type: none"> <li>Yes, the traffic volume is choked at peak times.</li> <li>The adversity caused by volume negatively affects our business at peak times and the four lanes will definitely improve flow and removes road rage.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, more and more people are living on south side of Mosley and travel up and down road to access beach and commercial area at 45<sup>th</sup> Street and Mosley Street.</li> </ul>	<ul style="list-style-type: none"> <li>Yes, having grown up on 70<sup>th</sup> Street it has long been a concern and safety issue walking along Mosley Street.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> </ul>
14	<ul style="list-style-type: none"> <li>Definitely!! This should have been done a short time after Mosley east of 45<sup>th</sup> was widened. Has anyone in this study ever seen the back up of traffic on weekend mornings coming into the Beach?</li> </ul>	<ul style="list-style-type: none"> <li>Again Definitely!! We are a tourist destination and we should do everything possible to have the tourists leave their cars where they are staying and encourage them to use other transportation whether it be bicycles, buses or even shuttle trams. ATV's are even allowed now.</li> </ul>	<ul style="list-style-type: none"> <li>This stretch of road should only be two lanes with a centre turn lane, bike lanes and sidewalks. Two lanes would keep the speed limit down.</li> <li>Further notes provided in email dated December 10, 2016.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> </ul>
15	<p>Via email dated November 12, 2106</p> <ul style="list-style-type: none"> <li>Applaud the proposal of bike lanes along Mosley Street</li> <li>Preventative measure be taken to stem the flow of heavy delivery along Queensdale Avenue and north up to 47<sup>th</sup> Street to reach Home Hardware</li> <li>Queensdale lacks sidewalks and ask that Mosley urbanization project include improvement of the stormwater drainage along Queensdale Avenue.</li> </ul>			<ul style="list-style-type: none"> <li>Preference for bicycle lanes acknowledged.</li> <li>Queensdale Avenue presently falls outside the scope and limits of this project. Comments have been forwarded to the Town for review.</li> </ul>
16	<p>Via email dated December 2, 2016</p> <ul style="list-style-type: none"> <li>Requested email added to contact list</li> </ul>			<ul style="list-style-type: none"> <li>Email added to communication plan.</li> </ul>

## **8 Preferred Solution**

### **8.1 Preferred Solution**

Based on the evaluation of the alternative solutions, which considered several technical criteria, the widening of Mosley Street has been identified as the recommended solution. Both Alternatives E and F address the traffic capacity issues that have been identified along Mosley Street, albeit in varying ways and to varying degrees. Similarly, both will provide opportunity to implement active transportation facilities and address drainage issues throughout the study area.

It is further noted that comments received in response to PIC 1 indicated that widening and urbanization was preferred over the other alternatives.

Therefore, a widening of Mosley Street from 45<sup>th</sup> Street to Beachwood Road is the preferred solution to addressing the problem statement.

### **8.2 Confirmation of EA Schedule**

As noted previously, the Class EA guidelines for a Schedule C undertaking apply to new facilities or major expansions to existing facilities where the cost of construction would exceed \$2.4 million. In Section 1.1.3 it was noted that the Mosley Street Urbanization project would follow the Schedule C process. The preferred solution to widen the road is a major expansion project that will incur an overall construction cost in excess of \$2.4 million. As such, a Schedule C undertaking is confirmed as appropriate.

## 9 Alternative Design Concepts for the Preferred Solution

Alternative design concepts for the preferred solution (ie. manner in which the preferred solution can be implemented) have been prepared to illustrate how the road is to be urbanized and how opportunities for active transportation elements are integrated into the corridor. The design concepts are provided in Figure 8 through Figure 12, and described below.

### 9.1 Design Alternative 3A - 3 Lanes, Bike Lanes & Sidewalks

This alternative, as illustrated in Figure 8, considers the urbanization and widening of Mosley Street to provide:

- 3 lanes of vehicular traffic from Beachwood Road to 45<sup>th</sup> Street (1 lane per direction + centre turn lane);
- bike lanes on both sides; and
- sidewalks on both sides.

The road would be widened to a 13.5 metre width (measured edge of asphalt to edge of asphalt), consisting of two 3.5 metre vehicular travel lanes (one per direction), a 3.5 metre continuous two-way left turn lane, and 1.5 metre bicycle lanes. Other infrastructure improvements include a 1.0 metre boulevard (measured from the back of curb to front of sidewalk) on the north side within the 20 metre right-of-way section, which increases to 1.75 metres within the 23 and 26 metre right-of-way sections (as the widening occurs on the north side, the configuration on the north side is not affected). Along the south side, a curb side sidewalk is proposed in the 20 metre right-of-way. Within the 23 metre right-of-way, a 1.75 metre boulevard is proposed, which increases to 4.75 metres within the 26 metre right-of-way. A 1.5 metre centre line shift of the road would occur in the 26 metre right-of-way, as the north property line remains consistent between the 23 metre and 26 metre rights-of-way as noted earlier.

### 9.2 Design Alternative 3B - 3 Lanes, Sidewalk & Multi-Use Trail

Alternative 3B, as illustrated in Figure 9, considers the urbanization and widening of Mosley Street to provide:

- 3 lanes of vehicular traffic from Beachwood Road to 45<sup>th</sup> Street (1 lane per direction + centre turn lane);
- a sidewalk on the north side; and
- a 3.0 metre multi-use trail on the south side.

The road would be widened to 10.5 metres, consisting of two 3.5 metre vehicular travel lanes (one per direction), and a 3.5 metre continuous two-way left turn lane. Other infrastructure improvements include a 1.0 metre boulevard (measured from the back of curb to front of sidewalk) on the north and south side within the 20 metre right-of-way section. These boulevards increase to 2.5 metres within the 23 metre right-of-way section, 2.5 and 5.5 metres on the north and south sides respectively within the 26 metre right-of-way. A 0.75 metre centre line shift of the road would occur in the 20 metre and 23 metre right-of-way, which then increases to 2.25 metres in the 26 metre right-of-way (ie. the road will not be centred in the right-of-way).

### **9.3 Design Alternative 4A - 4 Lanes, Bike Lanes & Sidewalks**

Alternative 4A, as illustrated in Figure 10, considers the urbanization and widening of Mosley Street to provide:

- 4 lanes of vehicular traffic from Beachwood Road to 45<sup>th</sup> Street (2 lanes per direction);
- bike lanes on both sides; and
- sidewalks on both sides.

To accommodate the four 3.5 metre vehicular travel lanes (two per direction), and 1.2 metre bicycle lanes, the road would be widened to 16.4 metres. Other infrastructure improvements include a 3.3 metre boulevard (measured from the back of curb to front of sidewalk) on the south side within the 26 metre right-of-way section. The remainder of the sidewalk is curb side throughout. A 1.5 metre centre line shift of the road would occur in the 26 metre right-of-way.

### **9.4 Design Alternative 4B - 4 Lanes, Sidewalk & Multi-Use Trail**

Alternative 4B, as illustrated in Figure 11, considers the urbanization and widening of Mosley Street to provide:

- 4 lanes of vehicular traffic from Beachwood Road to 45<sup>th</sup> Street (2 lanes per direction);
- a sidewalk on the north side; and
- a 3.0 metre multi-use trail on the south side.

To accommodate the four 3.5 metre vehicular travel lanes, the road would be widened to 14.0 metres. Other infrastructure improvements include a 0.9 metre boulevard (measured from the back of curb to front of sidewalk) on the north side and a 0.6 metre boulevard on the south side within the 23 metre right-of-way section. The south side boulevard increases to 3.6 metres within the 26 metre right-of-way. A 0.6 metre centre line shift of the road would occur in the 20 and 23 metre rights-of-way, which increases to 2.10 metres in the 26 metre right-of-way.

## 9.5 Design Alternative 4C - 4 Lanes & Multi-Use Trail

Alternative 4C is similar to that of 4B except multi-use trails are considered on both sides as follows:

- a 3.0 metre multi-use trail on the northside; and
- a 3.0 metre multi-use trail on the south side for the eastern portion of the road (where it can be accommodated within the 26.0 metre right-of-way).

The corresponding cross-section is illustrated in Figure 12, and includes a 14.0 metre road width (four 3.5 metre vehicular travel lanes), a 1.5 metre boulevard on the north side and a 1.5 to 2.5 metre boulevard on the south side (reduced in the 26 metre right-of-way to accommodate the provision of the trail). A 1.50 metre centre line shift of the road would occur in the 20 and 23 metre rights-of-way.

## 10 Environment Inventories - Alternative Design Concepts

The description of the study area as provided in Section 2.2 (Existing Conditions) and Chapter 5 (Environment Inventories - Alternative Solutions) is consistent with the study area to be considered with respect to the alternative design concepts of the preferred solution. Implementing the preferred solution (ie. widening of Mosley Street from Beachwood Road to 45<sup>th</sup> Street) will not impact any environment features that have not otherwise been documented in this report. As such, the environmental inventory provided in Chapter 5 of this report is considered comprehensive.

A summary of the environmental inventories is provided below.

### **Physical Environment**

- open ditch drainage system
- hydro poles & utility pedestals
- water main
- water crossing structures

### **Natural Environment**

- watercourses
- fish habitat
- wildlife (species at risk - birds, turtles, etc.)
- vegetative communities

### **Social Environment**

- residential properties
- commercial properties
- institutional properties
- noise impacts

### **Cultural/Heritage Environment**

- no areas of archaeological significance within study area

### **Economic Environment**

- construction costs
- land acquisition costs

### 10.1 Physical Environment

With respect to the physical environment of the study area, primary consideration is given to the existing utility and service infrastructure along Mosley Street (ie. hydro poles, utility pedestals, hydrants, etc.) and the potential relocation of such. Furthermore, the existing open ditch drainage along Mosley Street will be replaced with curb and gutter.

### 10.2 Natural Environment

As previously noted, an assessment of the natural heritage conditions was completed by Azimuth Environmental Consulting Inc. (Azimuth) and is provided in Appendix C. The report not only documents the natural environmental features and functions present within, and adjacent to the study area (as summarized in Chapter 5), but also presents mitigation measures to be considered in the preparation, and evaluation of the engineering design alternatives.

With respect to means of mitigation to minimize impacts, the following recommendations are provided.

### **Naturalized Areas**

Significant natural heritage features within the study area are largely associated with naturalized areas, including the two forest communities where bird and bat habitat may be present, and areas of the right-of-way that may provide breeding habitat for amphibian species. Future design of the project should take these areas into consideration and provide an avoidance plan if appropriate. Should avoidance of these areas not be possible, mitigation measures will be needed to be implemented to minimize any ecological impacts that may occur as a result of the works.

### **Species at Risk**

The report notes that the absence of a protected species within the study area does not suggest that they will never occur within the area. Given the dynamic character of the natural environment, there is a constant variation in habitat use. The report represents a point in time assessment of the potential impact, and changes to policy, or the natural environment could result in the redesignation of species or the addition of new species to the SAR in Ontario list. A review of the assessment provided in Appendix C should be sufficient to provide appropriate advice at the time of the onset of future site works.

When working on culverts which are identified in areas with potential species at risk, or species at risk habitat in the area, care should be taken to ensure workers are trained to ensure no contraventions of the ESA.

Works should be avoided within the identified potential maternity roosting habitat for endangered bat species. Should works be proposed within the habitat, an additional field survey would be required to evaluate the significance of habitat.

### **Migratory Breeding Birds**

Activities involving the removal of vegetation should be restricted from occurring during the breeding season. Migratory birds, nest, and eggs are protected by the Migratory Birds Convention Act, and the Fish and Wildlife Conservation Act. Environment Canada outlines dates when activities in any region have potential to impact nests. If work requires that vegetation clearing is required between these dates, screening by an ecologist with knowledge of bird species present in the area should be undertaken to ensure that the vegetation has been confirmed to be free of nests prior to clearing.

### **Turtle Nesting**

While no legislative requirement is in place, best practice recommendations in areas in which turtle nesting may occur include the provision of silt fencing along the limits of work or right-of-way, daily inspection of the silt fence, and a detailed sediment and erosion plan to be completed prior to

construction which considers the needs for both the mitigation of impacts to fish habitat and the exclusion of turtles from the work area.

### **Timing Restrictions**

Any potential works involving the flowing road side ditches and specifically the tributary to, and Brock's Beach Creek should not be conducted at times when the flows are elevated due to local rain events, storms or seasonal flood or freshets. Works involving the ditches or other drainage features should be completed "in the dry", during low water levels, or by means of temporary diversions. Based on the thermal classification, the timing windows for in water works will require confirmation from regulatory agencies for any potential works required on the tributary of, and Brock's Beach Creek.

### **Sediment & Erosion Controls**

The diligent application of erosion and sediment control measure will be of the utmost importance, recognizing the existing fish habitat located in the "receiving" watercourses (Brock's Beach Creek and Georgian Bay). All construction activities occurring in or around the watercourse and ditches must be completed using best management practices to minimize the extent of accidental or unavoidable impacts to fish habitat, and to alleviated the risk of sediment entering the receiving waterbodies. All sediment controls are to be maintained until vegetation has been re-established to sufficiently stabilize any disturbed soils.

### **Culvert & Sewer Design**

It is recommended that any proposed new culverts and or replacement culverts for the tributary crossing be installed with a minimum 20% embedment below the existing channel invert or design bottom of the tributary. If feasible, it should provide a similar bottom width as the existing structure.

Permanent summer base flow is present within the described aquatic habitat locations hosting indirect fish habitat along Mosley Street, indication that ground water contributions potentially occur to some degree at these locations. The Nottawasaga Valley Conservation Authority (NVCA) typically requires that this contribution be maintained in order to protect the existing water quality, therefore any ditch enclosure (piping) should be perforated to maintain and capture ground water seepage at these locations.

### **Site Restoration**

All area disturbed during construction should be restored immediately following the completion of the works. Site restoration should include immediate site stability methods (erosion control blankets, silt fencing, etc.), of all excavated and erodible soils to minimize the potential for erosion, combined with a planting plan (where, and if deemed required) that utilizes native material deemed acceptable to the NVCA.



## **Operations**

All maintenance activities required during construction must be conducted away from the flowing roadside ditches and aquatic habitat features to protect them from any accidental spillage of deleterious substances that may harm the aquatic environment, both locally and down stream.

### **10.3 Social Environment**

The primary impact to the social environment will be the acquisition of property along the Mosley Street corridor as may be required to establish the desired right-of-way. The impacts will vary based on the respective right-of-way requirements for each design alternative (albeit it is noted that the Town will not pursue acquisition of additional land to accommodate right-of-way widenings).

Other features of the social environment (ie. access to adjacent residential/commercial/institutional properties, pedestrian/cyclist activities, air quality, etc.) will be impacted equally by the design alternatives.

The noise study completed by R. Bouwmeester and Associates (provided in Appendix F) indicated that the acoustic implications of the widening were found to be acceptable (the perceived noise impacts were noted as nil to slight). Noise mitigation is not warranted based on MOE and MTO standards.

### **10.4 Cultural/Heritage Environment**

As previously noted, the Stage 1 assessment conducted by ARA determined that the study area was comprised of a mixture of areas of archaeological potential and areas of no archaeological potential. ARA recommended that all identified areas of archaeological potential that could be impacted by the project be subject to a Stage 2 property assessment in advance of construction. The identified areas of no archaeological potential were not recommended for further assessment.

The subsequent Stage 2 archaeological assessment encompassed the subject portion of the Mosley Street right-of-way, as it had been determined that the preferred design would not require additional adjacent lands. Legal permission to enter and conduct all necessary fieldwork activities within the assessed lands was granted. The study area comprised the Mosley Street right-of-way with its road platform, shoulders, ditches and grassed areas. The Stage 2 assessment did not result in the identification of any archaeological material. Archaeological Research Associates Ltd. recommended that no further assessment be required within the project lands. Should archaeological/heritage remains be found during site preparation or construction, the Ministry of Culture should be notified immediately and an appropriate course of action established. The Stage 2 archaeological assessment is provided in Appendix D.

## 10.5 Economic Environment

Each of the design alternatives for the preferred solution are similar in that they all include construction of a widened road cross section with concrete curb and gutter, storm sewers, and active transportation facilities. However, given the variance in cross sectional elements that make up the widened road corridor and the manner in which they are implemented (ie. on road versus off road bicycle facilities) the general costs of construction and maintenance are expected to vary slightly between design concepts.

The overall property acquisition costs will vary based on the right-of-way requirements for each respective design alternative, the existing right-of-way available along any given section of Mosley Street., and the prevailing land uses (recognizing that commercial land is more costly than residential lands).

Economic impacts to existing commercial businesses (ie. access impacts) located along Mosley Street will be short term and of equal magnitude regardless of the alternative design concept implemented. A breakdown of benchmark costs for each design alternative can be found in Appendix G.

# 11 Evaluation of Alternative Design Concepts

This chapter will discuss the evaluation of the alternative designs as previously described. The evaluation is descriptive or qualitative in nature allowing for a comparative evaluation of the pros and cons associated with each alternative design. As each alternative design concept varies in its composition of cross sectional elements, from 3 to 4 lanes, the incorporation of active transportation components either on road or off, the incorporation of pedestrian facilities and varying impacts to adjacent properties each one of the evaluation criteria have been weighted to reflect its associated level of importance. The evaluation is focussed on the ability of the alternative design concepts to adequately address the problem statement and, in doing so, provide a solution that provides a safe and efficient road corridor for all users.

## 11.1 Environmental Impacts

As previously noted, there were supplementary investigations conducted for the study area to evaluate specific environments. The reports documenting these investigations have been used to inform the assessment of the alternative design concepts. The reports include:

- *Natural Environmental Existing Conditions Report*, Azimuth Environmental Consulting (Appendix C);
- *Stage 1 Archaeological Assessment Mosley Street Urbanization*, Archaeological Research Associates Ltd. (Appendix D);
- *Stage 2 Archaeological Assessment Mosley Street Urbanization*, Archaeological Research Associates Ltd. (Appendix D);
- *Built Heritage and Cultural Heritage Landscape Assessment Mosley Street Urbanization*, Archaeological Research Associates Ltd. (Appendix D); and
- *Traffic Noise Impact Study, Proposed Road Improvements, Municipal Class Environmental Assessment "Mosley Street"*, R. Bouwmeester & Associates (Appendix F).

An assessment of the potential impacts associated with each design alternative by road section is provided in Table 11. It is noted that the Town design standard for a 2 lane collector road with on road bicycle lanes (as published in the Town of Wasaga Beach Engineering Standards) warrants a 23 metre right-of-way. As noted previously, the right-of-way widths vary within the study area from 20 to 26 metres, and the acquisition of property by the Town is not desirable. The evaluation of the design alternatives identifies areas where property impacts exist and are weighted in a negative fashion.

Improvements or changes to the roundabout at Beachwood Road do not fall within the scope of the Mosley Street Urbanization Class EA process and thus have not been considered in this study. Any works that may be required within the Ministry of Transportation Ontario's jurisdictional limits of Mosley Street would be subject to applicable approvals from the ministry.

Table 11: Evaluation of Alternative Design Concepts

Evaluation Criteria & Weight	How Criteria is Being Assessed	Alternative 3A 3 lanes Bike Lanes & Sidewalks		Alternative 3B 3 Lanes Sidewalk & Multi-Use Trail		Alternative 4A 4 lanes Bike Lanes & Sidewalks		Alternative 4B 4 Lanes Sidewalk & Multi-Use Trail		Alternative 4C 4 Lanes Multi-Use Trail		
		Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	
<b>Traffic Operations</b>	<b>10</b>	Impact to intersection operations & road capacity (based on results of Traffic Operations Assessment)	2	<ul style="list-style-type: none"> <li>3 lanes provide capacity for 5 10 years</li> <li>Centre turn lane improves left turn operations</li> </ul>	2	<ul style="list-style-type: none"> <li>3 lanes provide capacity for 5 10 years</li> <li>Centre turn lane improves left turn operations</li> </ul>	4	<ul style="list-style-type: none"> <li>4 lanes provide ample capacity</li> <li>Will accommodate traffic demands beyond 2036</li> </ul>	4	<ul style="list-style-type: none"> <li>4 lanes provide ample capacity</li> <li>Will accommodate traffic demands beyond 2036</li> </ul>	4	<ul style="list-style-type: none"> <li>4 lanes provide ample capacity</li> <li>Will accommodate traffic demands beyond 2036</li> </ul>
<b>Cycling Operations</b>	<b>5</b>	Impact to cycling facilities along study corridor	2	<ul style="list-style-type: none"> <li>Provides cycling facilities designed to desired standards as per ATP recommendations</li> </ul>	3	<ul style="list-style-type: none"> <li>Provides off road cycling facilities on one side of the road only</li> </ul>	1	<ul style="list-style-type: none"> <li>Provides cycling facilities designed to minimum standards (narrow lanes)</li> </ul>	3	<ul style="list-style-type: none"> <li>Provides off road cycling facilities on one side of the road only</li> </ul>	4	<ul style="list-style-type: none"> <li>Provides off road cycling facilities on one side of the road in 20m and 23m ROW</li> <li>Provides off road cycling facilities on both sides of the road in 26m ROW</li> </ul>
<b>Pedestrian Operations</b>	<b>5</b>	Impact to pedestrian facilities along study corridor	4	<ul style="list-style-type: none"> <li>Continuous sidewalk to be provided on the north and south sides of the road</li> </ul>	3	<ul style="list-style-type: none"> <li>Continuous sidewalk to be provided on the north side and a multi-use trail to be provided on the south side of the road</li> </ul>	4	<ul style="list-style-type: none"> <li>Continuous sidewalk to be provided on the north and south sides of the road</li> </ul>	3	<ul style="list-style-type: none"> <li>Continuous sidewalk to be provided on the north side and a multi-use trail to be provided on the south side of the road</li> </ul>	2	<ul style="list-style-type: none"> <li>Provides multi-use facilities on one side of the road in 20m and 23m ROW</li> <li>Provides multi-use facilities on both sides of the road in 26m ROW</li> </ul>
<b>Transit Operations</b>	<b>2</b>	Impact to transit service	3	<ul style="list-style-type: none"> <li>Transit infrastructure to remain as currently exists</li> <li>Left turn traffic no longer impacts buses</li> </ul>	3	<ul style="list-style-type: none"> <li>Transit infrastructure to remain as currently exists</li> <li>Left turn traffic no longer impacts buses</li> </ul>	4	<ul style="list-style-type: none"> <li>Transit infrastructure to remain as currently exists</li> <li>4-lane road mitigates delays by providing 1 additional lanes per direction for vehicles to navigate around stopped buses</li> </ul>	4	<ul style="list-style-type: none"> <li>Transit infrastructure to remain as currently exists</li> <li>4-lane road mitigates delays by providing 1 additional lanes per direction for vehicles to navigate around stopped buses</li> </ul>	4	<ul style="list-style-type: none"> <li>Transit infrastructure to remain as currently exists</li> <li>4-lane road mitigates delays by providing 1 additional lanes per direction for vehicles to navigate around stopped buses</li> </ul>
<b>Driveway Operations</b>	<b>2</b>	Impact to driveway operations	4	<ul style="list-style-type: none"> <li>Centre turn lane will assist with access to/from driveways</li> </ul>	4	<ul style="list-style-type: none"> <li>Centre turn lane will assist with access to/from driveways</li> </ul>	3	<ul style="list-style-type: none"> <li>Left turns to/from driveways across 2 lanes</li> </ul>	3	<ul style="list-style-type: none"> <li>Left turns to/from driveways across 2 lanes</li> </ul>	3	<ul style="list-style-type: none"> <li>Left turns to/from driveways across 2 lanes</li> </ul>
<b>Stormwater Management System</b>	<b>2</b>	Extent of SWM upgrades	-3	<ul style="list-style-type: none"> <li>Similar Requirements to Alternative 4B and 4C</li> </ul>	-1	<ul style="list-style-type: none"> <li>Least SWM requirements</li> </ul>	-4	<ul style="list-style-type: none"> <li>Greatest SWM requirements</li> </ul>	-3	<ul style="list-style-type: none"> <li>Similar Requirements to Alternative 3A and 4C</li> </ul>	-3	<ul style="list-style-type: none"> <li>Similar Requirements to Alternative 3A and 4B</li> </ul>
<b>Utilities</b>	<b>1</b>	Impact to utilities (ie. relocation)	-2	<ul style="list-style-type: none"> <li>Relocation of underground utilities required</li> <li>Limited relocation of overhead utilities</li> </ul>	-4	<ul style="list-style-type: none"> <li>Full relocation of utilities required</li> </ul>	-4	<ul style="list-style-type: none"> <li>Full relocation of utilities required</li> </ul>	-4	<ul style="list-style-type: none"> <li>Full relocation of utilities required</li> </ul>	-4	<ul style="list-style-type: none"> <li>Full relocation of utilities required</li> </ul>

Evaluation Criteria & Weight	How Criteria is Being Assessed	Alternative 3A 3 lanes Bike Lanes & Sidewalks		Alternative 3B 3 Lanes Sidewalk & Multi-Use Trail		Alternative 4A 4 lanes Bike Lanes & Sidewalks		Alternative 4B 4 Lanes Sidewalk & Multi-Use Trail		Alternative 4C 4 Lanes Multi-Use Trail		
		Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	
<b>Fisheries/ Aquatic Impacts</b>	2	Impact to wildlife species within study area	0	<ul style="list-style-type: none"> <li>Minimal impacts to fisheries/Aquatic – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Minimal impacts to fisheries/Aquatic – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Minimal impacts to fisheries/Aquatic – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Minimal impacts to fisheries/Aquatic – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Minimal impacts to fisheries/Aquatic – same for all alternatives</li> </ul>
<b>Wildlife/ Terrestrial Impacts</b>	2	Impact to wildlife species within study area Impact on SAR's and endangered species	0	<ul style="list-style-type: none"> <li>Minimal impacts to wildlife – same for all alternatives</li> <li>No species at risk were documented within the study corridor</li> <li>No negative impacts – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Minimal impacts to wildlife – same for all alternatives</li> <li>No species at risk were documented within the study corridor</li> <li>No negative impacts – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Minimal impacts to wildlife – same for all alternatives</li> <li>No species at risk were documented within the study corridor</li> <li>No negative impacts – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Minimal impacts to wildlife – same for all alternatives</li> <li>No species at risk were documented within the study corridor</li> <li>No negative impacts – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Minimal impacts to wildlife – same for all alternatives</li> <li>No species at risk were documented within the study corridor</li> <li>No negative impacts – same for all alternatives</li> </ul>
<b>Vegetation Impacts</b>	2	Impact to vegetation communities on adjacent properties (ie. trees, shrubs, plants, etc.)	0	<ul style="list-style-type: none"> <li>No federal or provincially rare species or vegetation communities were identified within the development footprint</li> <li>No negative impacts – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>No federal or provincially rare species or vegetation communities were identified within the development footprint</li> <li>No negative impacts – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>No federal or provincially rare species or vegetation communities were identified within the development footprint</li> <li>No negative impacts – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>No federal or provincially rare species or vegetation communities were identified within the development footprint</li> <li>No negative impacts – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>No federal or provincially rare species or vegetation communities were identified within the development footprint</li> <li>No negative impacts – same for all alternatives</li> </ul>
<b>Land Use</b>	3	Impact of proposed works on surrounding land use (ie. are improvements consistent with surrounding land-uses)	0	<ul style="list-style-type: none"> <li>Improvements consistent with existing land use</li> <li>No negative impacts – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Improvements consistent with existing land use</li> <li>No negative impacts – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Improvements consistent with existing land use</li> <li>No negative impacts – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Improvements consistent with existing land use</li> <li>No negative impacts – same for all alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Improvements consistent with existing land use</li> <li>No negative impacts – same for all alternatives</li> </ul>
<b>Property / Development Impacts</b>	5	Impacts to property based on widening of road platform and/or ROW	0	<ul style="list-style-type: none"> <li>No anticipated impacts to adjacent properties</li> </ul>	0	<ul style="list-style-type: none"> <li>No anticipated impacts to adjacent properties</li> </ul>	-4	<ul style="list-style-type: none"> <li>Property and easement required within the 20m ROW to accommodate sidewalks, utilities and snow storage</li> </ul>	-2	<ul style="list-style-type: none"> <li>Easement required within the 20m ROW to accommodate utilities and snow storage</li> </ul>	-2	<ul style="list-style-type: none"> <li>Easement required within the 20m ROW to accommodate utilities and snow storage</li> </ul>
<b>Aesthetics</b>	2	Visual impacts	1	<ul style="list-style-type: none"> <li>Limited opportunity to enhance aesthetics due to limited boulevard width</li> </ul>	2	<ul style="list-style-type: none"> <li>Greatest opportunity to enhance aesthetics due to desired boulevard width</li> </ul>	1	<ul style="list-style-type: none"> <li>Limited opportunity to enhance aesthetics due to limited boulevard width</li> </ul>	1	<ul style="list-style-type: none"> <li>Limited opportunity to enhance aesthetics due to limited boulevard width</li> </ul>	1	<ul style="list-style-type: none"> <li>Limited opportunity to enhance aesthetics due to limited boulevard width</li> </ul>
<b>Noise Impacts</b>	2	Impacts to adjacent properties through construction phase	0	<ul style="list-style-type: none"> <li>No significant difference between alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>No significant difference between alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>No significant difference between alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>No significant difference between alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>No significant difference between alternatives</li> </ul>
<b>Construction Impacts</b>	1	Impacts to adjacent properties through construction phase	0	<ul style="list-style-type: none"> <li>No significant difference between alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>No significant difference between alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>No significant difference between alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>No significant difference between alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>No significant difference between alternatives</li> </ul>

Evaluation Criteria & Weight	How Criteria is Being Assessed	Alternative 3A 3 lanes Bike Lanes & Sidewalks		Alternative 3B 3 Lanes Sidewalk & Multi-Use Trail		Alternative 4A 4 lanes Bike Lanes & Sidewalks		Alternative 4B 4 Lanes Sidewalk & Multi-Use Trail		Alternative 4C 4 Lanes Multi-Use Trail		
		Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	
<b>Archaeological &amp; Heritage Impacts</b>	<b>1</b>	Impacts to the cultural and heritage features as per the results of the Stage 1 Archaeological Assessment completed for the study corridor and Built Heritage and Cultural Heritage Landscape Assessment	0	<ul style="list-style-type: none"> <li>Limited areas identified as retaining archaeological potential – Stage II assessment required</li> <li>Impacts to the cultural and heritage environment are similar for all design alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Limited areas identified as retaining archaeological potential – Stage II assessment required</li> <li>Impacts to the cultural and heritage environment are similar for all design alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Limited areas identified as retaining archaeological potential – Stage II assessment required</li> <li>Impacts to the cultural and heritage environment are similar for all design alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Limited areas identified as retaining archaeological potential – Stage II assessment required</li> <li>Impacts to the cultural and heritage environment are similar for all design alternatives</li> </ul>	0	<ul style="list-style-type: none"> <li>Limited areas identified as retaining archaeological potential – Stage II assessment required</li> <li>Impacts to the cultural and heritage environment are similar for all design alternatives</li> </ul>
<b>Construction Costs</b>	<b>3</b>	Costs to construct individual alternatives	-3	▪ \$8.2M	-2	▪ \$7.4M	-4	▪ \$8.9M	-3	▪ \$8.2M	-3	▪ \$8.0M
<b>Maintenance Costs</b>	<b>1</b>	Future maintenance requirements	-3	▪ Second most cost to maintain	-1	▪ Least Cost to maintain	-4	▪ Most cost to maintain	-3	▪ 2nd most cost to maintain	-2	▪ 2nd least cost to maintain
<b>Land Acquisition Costs</b>	<b>3</b>	Total land acquisition costs	0	▪ No land acquisitions were identified	0	▪ No land acquisitions were identified	-2	▪ Land acquisitions were identified in the 20 m ROW	-2	▪ Land acquisitions were identified in the 20 m ROW	0	▪ No land acquisitions were identified
<b>Total Score</b>			5		9		-5		1		4	
<b>Weighted Score</b>			46		55		27		48		55	
<b>Rank</b>			4 <sup>th</sup>		1 <sup>st</sup>		5 <sup>th</sup>		2 <sup>nd</sup>		1 <sup>st</sup>	

Weight: 1 to 10 to reflect importance of criteria

Score: -4 to +4 to reflect negative or positive impact in relation to existing conditions

## 11.2 Recommended Design

In consideration of the resulting evaluations, and the Town's intent not to acquire property to widen the existing road rights-of-way, it is apparent that there is no single design alternative that is preferred for each road section. Rather, the recommendations are premised on the following:

- in consideration of transportation needs:
  - 3 lanes are preferred to 2 lanes to meet the immediate travel demands
  - 4 lanes are preferred to 3 lanes to meet the long-term travel demands
- in consideration of pedestrian needs:
  - sidewalks are preferred on both sides of the road as opposed to one side only
  - sidewalks set back from the edge of pavement are preferred to curb-face sidewalks
- in consideration of cyclist needs:
  - off-road multi-use trails are preferred to on-road bike lanes to better accommodate all possible users and skill levels

In consideration of the above, the recommended design concept is intended to maximize the number of travel lanes whilst providing off-road trails and sidewalks where such can be readily implemented. In this regard, the following are recommended:

- Alternative 3B for the 20 metre right-of-way; and
- Alternative 4B for the 23 and 26 metre rights-of-way.

## 12 Improved Pedestrian Crossings

Further to the development and evaluation of the alternative design solutions to address capacity issues and the provision of active transportation measures along Mosley Street, the Town requested that the study also include a review of the need for improved pedestrian crossing opportunities of Mosely Street in context of the pedestrian activities related to access to the beach.

### 12.1 Town Review

In July 2015, the Town undertook vehicle and pedestrian counts on Mosley Street between 46<sup>th</sup> Street North and 57<sup>th</sup> Street, to determine if pedestrian control measures are required. Traffic volumes were recorded immediately west of 51<sup>st</sup> Street from Thursday July 9, 2015 to Thursday July 16, 2015 (a 1 week period). In addition, pedestrian volumes were counted at the same location on Friday July 10, 2015 between the hours of 8:00 and 16:00. The average daily volume was 15,319, whereas the average 8-hour vehicle volume (8:00 to 16:00) was 8333, and the 8-hour pedestrian volume was 75 persons.

The Town concluded, based on the warrants of Ontario Traffic Manual Book 12 (considering both vehicle and pedestrian traffic), that a controlled pedestrian crossing was not warranted. The corresponding staff memo, which details the review and resulting recommendations, is provided in Appendix H.

### 12.2 Public Comments

Through the Notice of Study Commencement and the Public Information Centre 1, a number of comments were received from area residents expressing concerns with the difficulty in crossing Mosley Street, and the limited number of controlled and protected crossing opportunities (via the signals at 58<sup>th</sup> Street and 45<sup>th</sup> Street). Specific submitted comments include:

- Mosley Street traffic is continuous, making it difficult for those attempting to turn or cross the street as pedestrians exceedingly difficult; and
- summertime beach seekers from the south side of Mosley may be at an increased risk of injury trying to cross Mosley Street.

### 12.3 Ontario Traffic Manual Book 15

In June 2016, Ontario Traffic Manual Book 15: Pedestrian Crossing Treatments was released, which included updated warrants and guidelines for pedestrian crossovers, recognizing that the Highway Traffic Act had been amended to provide a greater range of pedestrian crossing types at which vehicles must stop and yield the right-of-way to a pedestrian waiting to cross.

The corresponding warrants for traffic signals and pedestrian crossovers are illustrated in Figure 13.



## **Traffic Signals**

In considering the 8-hour vehicle and pedestrian volumes as reported by the Town, a traffic signal is not warranted (refer to the left side chart of Figure 13).

## **Pedestrian Crossovers**

The warrants for pedestrian crossovers were also reviewed (refer to the right side chart of Figure 13) given the same volumes and considering a possible 3-lane or 4-lane configuration of Mosley Street (corresponding to the design alternatives). With a 3-lane cross-section, a Level 2 Type B crossover is warranted (which entails signs, pavement markings and flashing beacons to alert motorist of an impending pedestrian crossing). With a 4-lane cross-section, the pedestrian crossover warrant table indicates that a pedestrian crossover is not recommended given the combination of travel lanes and traffic volumes; rather a traffic signal is typically warranted.

## **12.4 Recommendation**

In consideration of the resident comments and concerns relating to existing crossing opportunities of Mosley Street, and recognizing that traffic volumes will increase as will the crossing distance with any future road widening, the provision of additional controlled pedestrian crossing opportunities is recommended (and supported by the Town).

Given existing signals at 45<sup>th</sup> and 58<sup>th</sup> Streets and recognizing the location of the beach access and pedestrian desire lines, crossings at 51<sup>st</sup> and 62<sup>nd</sup> Streets are recommended. As illustrated in Figure 14, these locations ensure ready crossing opportunities for the most of the residential areas south of Mosley Street, particularly in consideration of the future provision of sidewalks and/or trails and provide connectivity to the beach via established access points.

The provision of Intersection Pedestrian Signals (IPS) is recommended at both locations to ensure consistency to both the users and the motorists, given their proximity (as opposed to an IPS at 51<sup>st</sup> Street at which a 4 lane cross-section is recommended, and a pedestrian crossover at 62<sup>nd</sup> Street at which a 3 lane cross-section is recommended). IPS are also recommended given the proximity to the existing signals (thus ensuring consistency in traffic control throughout the corridor) and the ability to expand them to full intersection signals should such be warranted in the future (as was the case with the existing signals at 58<sup>th</sup> Street, which were initially installed as an IPS).

## 13 Stakeholder Consultation - PIC 2

As previously noted, there are 3 points of mandatory stakeholder contact (refer also to Figure 1):

- the 1<sup>st</sup> point occurs towards the end of Phase 2 when a notice is issued inviting stakeholder comment and input via a Public Information Centre (referred to as PIC 1 and discussed in Chapter 7);
- the 2<sup>nd</sup> second point occurs towards the end of Phase 3 when a second Public Information Centre is held (PIC 2), which is the subject of this chapter; and
- the 3<sup>rd</sup> point of contact is upon completion of the planning process at which time a Notice of Completion is provided (discussed in Chapter 0).

### 13.1 Purpose

The purpose of Public Information Centre 2 was to provide information to the public and agencies and seek their input with respect to the following:

- review the preferred solution from Phases 1 and 2 of the Class EA process;
- present the design concept alternatives under consideration to implement the preferred solution;
- seek input and comments for consideration in the selection of the preferred design alternative; and
- provide opportunities for the public to ask questions.

### 13.2 Notification

In accordance with the Municipal Class EA guidelines, a notification of Public Information Centre 2 was issued inviting stakeholder comment and input. Stakeholders include review agencies, the public and other municipalities and thus notices were directed to each, in the same manner in which the Notice of Commencement and Notice of Public Information Centre 1 were disseminated. Notices were also mailed to area residents during the week of August 30, 2017, emailed to concerned parties and residents who provided email addresses through prior consultation, and published in the Wasaga Sun on 2 separate occasions preceding the public information centres. A PIC notice and corresponding distribution lists are provided in Appendix I.

### 13.3 Public Information Centre 2

The Public Information Centre was held September 12, 2017 from 7:00 PM to 9:00 PM at the Wasaga Beach RecPlex, Oakview Room, 1724 Mosley Street. No formal presentation was made but rather people were welcome to drop in during the above hours to review the materials and ask questions.

Representatives from the Town of Wasaga Beach and C.C. Tatham & Associates were in attendance to answer any questions and provide assistance as necessary.

Various display boards were prepared for viewing by the public, a copy of which was made available on the Town's website following the meeting (as provided in Appendix I). Display boards addressed the following:

- study purpose and introduction which described the reasoning behind the undertaking;
- the Municipal Class EA process and those tasks relevant to this study;
- a review of the preferred solution selected at the end of Phase 2 of the Municipal Class EA process;
- alternative design concepts and typical cross-sections of the preferred solution;
- assessment of the alternative design concepts;
- the remaining steps to completion; and
- contact details for additional information.

Twenty-two people attended the Public Information Centre based on the sign-in sheets (a copy of which is provided in Appendix I).

### **13.4 Public Comments**

Input was received from stakeholders either at PIC 2 or shortly thereafter via the comment sheets provided. A total of 8 comment sheets were returned (provided in Appendix I). These comment sheets provided opportunity for stakeholders to comment, as well as posing the following questions:

1. Do you feel that the recommended Alternative Design Concept from Beachwood Road to 57<sup>th</sup> Street (3 lanes with 1.5 m sidewalk on the north side and 3 m trail on the south side) is an appropriate solution? Why?
2. Do you feel that the recommended Alternative Design Concept from 57<sup>th</sup> Street to 45<sup>th</sup> Street (4 lanes with 1.5 m sidewalk on the north side and 3 m trail on the south side) is an appropriate solution? Why?
3. Do you feel that the intersection pedestrian signals recommended at 51<sup>st</sup> and 62<sup>nd</sup> Street will meet pedestrian travel demands? Why?

In addition to the comment sheets received, 3 emails were received pertaining to the public information centre. One of these was from an individual regarding drainage issues at 55<sup>th</sup> Street, another inquiry pertained to noise buffers along Mosley Street, and lastly, an email regarding pedestrian crossings and concerns with a potential widened road. A summary of the comments received and appropriate responses is provided in Table 12.

Table 12: Public Comments - PIC 2

No.	Question 1: Beachwood Road to 57 <sup>th</sup> Street – 3 lanes with 1.5 m sidewalk and 3 m trail?	Question 2: 57 <sup>th</sup> Street to 45 <sup>th</sup> Street – 4 lanes with 1.5 m sidewalk and 3 m trail?	Question 3: Add pedestrian signals at 51 <sup>st</sup> Street and 62 <sup>nd</sup> Street?	Response to Comments
1	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>No, a centre turn lane is needed</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> <li>55<sup>th</sup> Street has some drainage issues and ponding which needs to be resolved.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternative acknowledged.</li> <li>The proposed widening to a 4-lane configuration will increase capacity and ease left turn operations between 57<sup>th</sup> Street and 45<sup>th</sup> Street (ie. through traffic will be able to manoeuvre around left turning traffic via the outside lane).</li> <li>Once the project advances to the design stage a more detailed evaluation of the stormwater facilities and their incorporation into the urbanization of Mosley Street will take place. In the interim, the comment has been forward to the Town for review.</li> </ul>
2	<ul style="list-style-type: none"> <li>Yes, not to intrusive to residents and will meet needs</li> </ul>	<ul style="list-style-type: none"> <li>No, not necessary. Keep it the same as Beachwood Road to 57<sup>th</sup> Street – 3 lanes.</li> <li>Do we need sidewalk and trails?</li> </ul>	<ul style="list-style-type: none"> <li>Not necessary at this point, maybe crosswalks</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> <li>The installation of sidewalks and trails will facilitate the movement of pedestrians and bicycles in a safe and convenient manner</li> <li>The installation of pedestrian signals improves pedestrian safety compared to the installation of crosswalks only.</li> </ul>
3	<ul style="list-style-type: none"> <li>Yes, if any change were to occur, 3-lanes would be best.</li> </ul>	<ul style="list-style-type: none"> <li>One lane would be more than efficient to meet the needs of commuters and residents</li> </ul>	<ul style="list-style-type: none"> <li>Sure</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> <li>The existing road is reaching its capacity. The 3-lane configuration would provide capacity for 5-10 years, whereas the 4-lane configuration would accommodate traffic demands beyond 2036.</li> </ul>
4	<ul style="list-style-type: none"> <li>Yes, 3 lanes are appropriate. Can still safely cross the road.</li> <li>Make the sidewalk and bike lanes multi-use for both.</li> <li>With left lane easier to turn left.</li> </ul>	<ul style="list-style-type: none"> <li>No, 4 lanes are to many</li> <li>Will not be able to cross road to the other side safely</li> <li>To far to go to 57<sup>th</sup> or 45<sup>th</sup> Street to cross.</li> <li>No where to turn left</li> </ul>	<ul style="list-style-type: none"> <li>No, not if you go to 4 lanes. You won't be able to cross the street.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternative acknowledged.</li> <li>The proposed widening to a 4-lane configuration will increase capacity and ease left turn operations between 57<sup>th</sup> Street and 45<sup>th</sup> Street (ie. through traffic will be able to manoeuvre around left turning traffic via the outside lane).</li> <li>The recommended intersection pedestrian signals at 51<sup>st</sup> and 62<sup>nd</sup> are intended to provide improved pedestrian crossing opportunities and supplement existing crossing points.</li> </ul>
5	<ul style="list-style-type: none"> <li>Yes, if you take it through to 45<sup>th</sup> Street.</li> <li>Standing water issue on 55<sup>th</sup> Street</li> </ul>	<ul style="list-style-type: none"> <li>Please restrict traffic and encourage public transit.</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternative acknowledged.</li> <li>Once the project advances to the design stage a more detailed evaluation of the stormwater facilities and their incorporation into the urbanization of Mosley Street will take place. In the interim, the comment has been forwarded to the Town for review.</li> </ul>
6	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>No, I feel it would not be safe if walking and you have bicycles and scooters on the walking trail.</li> <li>It should be 3 lanes with sidewalks and trails on both sides with a centre turn lane</li> <li>3 lanes for ease of left turn off side street.</li> </ul>	<ul style="list-style-type: none"> <li>No, we need one in between so that more people can get to the beach</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternative acknowledged.</li> <li>The proposed widening to a 4-lane configuration will increase capacity and ease left turn operations between 57<sup>th</sup> Street and 45<sup>th</sup> Street (ie. through traffic will be able to manoeuvre around left turning traffic via the outside lane) while accommodating a sidewalk and multi-use trail within the available right of way.</li> </ul>

No.	Question 1: Beachwood Road to 57 <sup>th</sup> Street – 3 lanes with 1.5 m sidewalk and 3 m trail?	Question 2: 57 <sup>th</sup> Street to 45 <sup>th</sup> Street – 4 lanes with 1.5 m sidewalk and 3 m trail?	Question 3: Add pedestrian signals at 51 <sup>st</sup> Street and 62 <sup>nd</sup> Street?	Response to Comments
				<ul style="list-style-type: none"> <li>The recommended intersection pedestrian signals at 51<sup>st</sup> and 62<sup>nd</sup> are intended to provide improved pedestrian crossing opportunities and supplement existing crossing points.</li> </ul>
7	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Yes, to decrease congestion</li> </ul>	<ul style="list-style-type: none"> <li>Absolutely yes. Need one on 51<sup>st</sup> Street for access to Park Beach Area 6 (to cross highway from south side to north of Mosley).</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> </ul>
8	<ul style="list-style-type: none"> <li>It's a solution</li> <li>Would like a roundabout to slow traffic down</li> </ul>	<ul style="list-style-type: none"> <li>No comments provided</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> <li>Important as lots of walkers to the beach and no parking for driving to the north side.</li> </ul>	<ul style="list-style-type: none"> <li>Preferred alternatives acknowledged.</li> </ul>
9	<p>Via email dated September 6, 2017</p> <ul style="list-style-type: none"> <li>Concerned with water that currently flows down 55<sup>th</sup> Street.</li> <li>There is water in ditch on Mosley Street all year long a concern with resident and neighbours</li> <li>If the ditch on Mosley is filled or has pipes and catch basins installed, is 55<sup>th</sup> Street going to be tied into any of the pipes on Mosley Street?</li> </ul>			<ul style="list-style-type: none"> <li>Once the project advances to the design stage a more detailed evaluation of the stormwater facilities and their incorporation into the urbanization of Mosley Street will take place. In the interim, the comment has been forwarded to the Town for review.</li> </ul>
10	<p>Via email dated September 13, 2017</p> <ul style="list-style-type: none"> <li>Widening of Mosley Street is not a great idea</li> <li>People on the south side have a hard time getting across 2 lanes of traffic in the summer, and our mailbox is on the north side.</li> <li>Crosswalks will not be noticed at first due to the rate of speed people travel</li> <li>What about people trying to drive off their side streets? Have seen many near accidents when people get impatient waiting and pull out</li> <li>Hardly ever a police presence</li> <li>Opinion that it is a very dangerous idea and needs a lot of thought.</li> </ul>			<ul style="list-style-type: none"> <li>A 3 or 4 lane configuration will increase capacity and ease left turn operations.</li> <li>The additional capacity garnered through widening will likely increase the number of gaps in the traffic flow, thus easing enter/exit movements.</li> <li>Comment regarding lack of police presence falls outside the scope of this report and has been forwarded to the Town for review.</li> <li>The recommended intersection pedestrian signals at 51<sup>st</sup> and 62<sup>nd</sup> are intended to provide improved pedestrian crossing opportunities and supplement existing crossing points.</li> </ul>
11	<p>Via email dated September 14, 2017</p> <ul style="list-style-type: none"> <li>Is there a plan for a buffer along Mosley Street for the streets from Beachwood Road to 45<sup>th</sup> Street due to increased traffic noise?</li> </ul>			<ul style="list-style-type: none"> <li>A traffic noise impact study for the proposed alternatives was completed and indicated that predicted noise levels will remain below the threshold for which the feasibility of providing noise barriers is investigated and that the proposed improvements will not result in sound level increases and future sound levels that warrant noise mitigation.</li> </ul>

## 13.5 Agency Comment

Comment letters were received from 2 agencies, copies of which are provided in Appendix I and summarized in Table 13.

Table 13: Agency Comments - PIC 2

No.	Agency	Agency Comments
1	Nation Huronne-Wendat	<ul style="list-style-type: none"><li>Inquired as to the progress of the project's archaeological assessments. Requested copies of the Stage 1 and Stage 2 Archaeological Assessment when completed. (Copies of both reports were forwarded as requested.)</li></ul>
2	Ministry of Transportation Ontario:	<ul style="list-style-type: none"><li>Public Information Centre 2 materials were forwarded to the Ministry for review.</li><li>The MTO has no concerns in principle with the proposed urbanization. The MTO noted that any works within MTO jurisdictional limits on Mosley Street would be subject to encroachment permit approvals.</li></ul>

## 14 Preferred Design

### 14.1 Mosley Street Widening

The preferred design was confirmed following Public Information Centre 2, receipt and review of all public and review agency comments and in consideration of the environmental impact assessment of the preferred solution alternatives. The resulting preliminary design drawings are provided in Appendix J. It is noted that these are considered preliminary and subject to further change through the detail design process. The preferred design is summarized by road section in Table 14.

Table 14: Preferred Design

Road Section	Length	Preferred Design	
Beachwood Road to 57 <sup>th</sup> Street	1,225 m	Alternative 3B	<ul style="list-style-type: none"><li>▪ maintain existing ROW</li><li>▪ implement urban cross section</li><li>▪ 3 lanes (including centre turn lane)</li><li>▪ sidewalk on north side</li><li>▪ multi-use trail on south side</li></ul>
57 <sup>th</sup> Street to 45 <sup>th</sup> Street	1,280 m	Alternative 4B	<ul style="list-style-type: none"><li>▪ maintain existing ROW</li><li>▪ implement urban cross section</li><li>▪ 4 lanes (2 per direction)</li><li>▪ sidewalk on north side</li><li>▪ multi-use trail on south side</li></ul>

### 14.2 Pedestrian Crossings

The implementation of Intersection Pedestrian Signals (IPS) are recommended at the following locations to provide enhance and controlled pedestrian crossing opportunities of Mosley Street (in consideration of existing and future traffic and pedestrian volumes, and the proposed road cross-sections):

- 51<sup>st</sup> Street North; and
- 62<sup>nd</sup> Street.

It is noted that the recommendation for IPS as presented at PIC 2 was at 52<sup>nd</sup> Street South, which is located approximately 55 metres west of 51<sup>st</sup> Street North. The latter location is preferred it that it provides slightly better desire lines for the contributing streets on the south side of Mosley Street.

## 15 Stakeholder Consultation - Study Completion

This represents the third mandatory point of stakeholder consultation in the Schedule C 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.

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

- mailed to each of the review agencies, municipality agencies and other stakeholder groups as previously contacted (posted March 14 2018);
- mailed to the area residents (posted March 14, 2018);
- mailed/emailed to those in attendance at Public Information Centres 1 and 2 (March 14, 2018); and
- advertised in the local newspapers on 2 separate occasions, in accordance with the Class EA guidelines.



## 16 Completion of Municipal Class EA Process

This chapter details the steps remaining to complete the Schedule C Class Environmental Assessment process and to proceed to Phase 5: Implementation, which entails completion of the engineering drawings and construction.

### 16.1 Submission to the Town of Wasaga Beach

This Environmental Study Report was submitted to the Town of Wasaga Beach and the preferred solution endorsed by Town staff.

### 16.2 30-Day Review Period

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

If concerns arise regarding this study, which cannot be resolved in discussion with the Town or the Project Team, the public can request that the Minister of the Environment 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 Town before the end of the 30-day review period.

If there is no request for a Part II Order, the project may proceed based on the identified preferred improvements.

### 16.3 Phase 5 - Implementation

Phase 5 of the Municipal Class EA process pertains to the implementation of the preferred design solution as previously presented. Phase 5 is not part of this study. The Town's timeline for implementation has not been established, it will likely be pursued as travel demands dictate and funds become available.

Phase 5 includes the following key tasks:

- complete contract drawings and tender documents;
- proceed to construction and operation; and
- monitor for environmental provisions and commitments.

### **16.3.1 Design, Permits & Approvals**

Drawings will be submitted to the Town, MTO, MOECC and the NVCA to obtain the necessary approvals and permits prior to construction.

As part of the design process and in accordance with the limits of the preferred solutions, a geotechnical investigation is recommended to confirm the underlying soil stratigraphy and to provide recommendations with respect to any construction works.

### **16.3.2 Impact Mitigation**

The Municipal Class EA guidelines recommend that significant features and impacts should be avoided where possible. However, where they cannot be avoided, every effort should be made to mitigate the adverse impacts. Manners in which impacts are to be mitigated, as part of the detail design and implementation, are noted below.

#### **Stormwater Management**

As the existing rural cross section will be replaced with the proposed urban cross section, the existing ditches will be replaced with curb, gutter and storm drains. Stormwater collected along these sections will be conveyed to the storm sewer systems and crossing points on adjacent streets. Enhanced stormwater quality control for these sections will be provided (as deemed necessary) through the use oil/grit separators, or approved equal, at the downstream reach of the drainage system prior to discharging runoff to the existing outlets.

#### **Impacts to Private Wells & Septic Systems**

Impacts to private wells and septic systems are not anticipated due to residences and businesses in the area being serviced by municipal water and wastewater facilities.

#### **Impacts to Residential Property**

The existing right-of-way has been maintained throughout the study area and the varying cross-sectional elements have been proposed in order to mitigate the impact to the adjacent residential properties in terms of land acquisition and impacts related to stormwater requirements.

#### **Summary**

The identified environmental concerns associated with the construction of the project are summarized in Table 15 as are mitigation measures where they have been recommended to minimize or eliminate changes to the environmental conditions described in this report.

**Table 15: Mitigating Measures**

Potential Negative Effect	Mitigating Measures
Traffic Safety	<ul style="list-style-type: none"> <li>▪ follow Ontario Traffic Manual for proper signing and pavement markings</li> </ul>
Impact on Road Capacity During Construction	<ul style="list-style-type: none"> <li>▪ Ontario Traffic Manual shall be followed to ensure safe lane closures/ temporary conditions</li> <li>▪ one lane of traffic per direction to be maintained at all times</li> </ul>
Major Services/ Utility Conflicts	<ul style="list-style-type: none"> <li>▪ coordinate with utility companies in identifying services and possible conflicts and relocation strategies</li> <li>▪ all affected utility companies will be circulated on the design drawings in order to plan any necessary removals or relocations</li> </ul>
Fisheries & Aquatic Habitat	<ul style="list-style-type: none"> <li>▪ stage work to non-critical times</li> <li>▪ stage work to avoid spawning periods</li> <li>▪ restore stream substrate</li> <li>▪ if required, construct temporary creek diversion</li> <li>▪ seasonal constraints</li> <li>▪ delineate no-touch zone using construction fencing</li> <li>▪ implement worker training to ensure no contraventions of the esa</li> </ul>
Wildlife Habitat	<ul style="list-style-type: none"> <li>▪ maintain vegetated corridors</li> <li>▪ re-vegetate disturbed areas with wildlife beneficial plantings</li> <li>▪ stage work to avoid bird and turtle breeding periods</li> <li>▪ conduct additional field surveys as required</li> <li>▪ install silt fencing along limits of right-of-way/work area</li> </ul>
Vegetation	<ul style="list-style-type: none"> <li>▪ revegetation of disturbed areas with native seed mix immediately following final grading</li> <li>▪ delineate tree/vegetation protection areas using construction fencing</li> <li>▪ minimize site clearing activities</li> <li>▪ minimize road dedication</li> </ul>
Groundwater Resources	<ul style="list-style-type: none"> <li>▪ delineate and properly prepare refuelling areas to prevent soil contamination due to fuel spills</li> <li>▪ identify and protect groundwater upwelling/source areas from contamination and flow disturbance</li> <li>▪ creek crossings must be designed to minimize disruption of the discharge features of the banks</li> </ul>
Water Quality/ Stormwater Management	<ul style="list-style-type: none"> <li>▪ provision for spill control in construction contract</li> <li>▪ fast, accurate reporting of spills to ministry of the environment</li> <li>▪ pollution prevention and source control by best management land use practices and best management stormwater practices</li> <li>▪ equipment maintenance and refuelling away from watercourses</li> <li>▪ temporary stockpiling of materials away from watercourses</li> <li>▪ implementation of erosion and sedimentation controls and regular monitoring and reporting of maintenance after every major rainfall event</li> <li>▪ revegetation of disturbed areas immediately following final grading</li> <li>▪ development of a stormwater quality management plan to minimize entry of contaminants into the watercourse</li> </ul>

Potential Negative Effect	Mitigating Measures
Archaeological/ Cultural Heritage Resources	<ul style="list-style-type: none"> <li>the Stage 1 &amp; 2 archaeological studies did not identify any areas of concern</li> <li>if archaeological or cultural heritage features are encountered during construction, work will cease immediately and the Ministry of Tourism, culture &amp; Sport is to be contacted</li> </ul>
Impact on Existing Residents & Businesses	<ul style="list-style-type: none"> <li>notify public agencies and adjacent owners of construction scheduling</li> <li>ensure access is maintained as well as garbage, recycling and green bin pickup</li> </ul>
Nuisance Concerns	<ul style="list-style-type: none"> <li>dust levels monitored and road watering/sweeping completed as necessary</li> <li>construction limited to typical work hours (ie. 7:00 AM to 7:00 PM)</li> </ul>

### 16.3.3 Monitoring

Monitoring objectives include:

- monitoring of individual measures and issues (ie. erosion and sedimentation control, traffic control, waste management, 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 measures described in this report and in the subsequent construction contract document provisions are carried out effectively. The timing and frequency of these visits will coincide with the schedule of the construction operations and will be adjusted to reflect the sensitivity of site concerns and the development of unforeseen environmental problems during and after construction. The construction inspectors will maintain daily records which will detail any concerns, corrective actions and further actions required.

During short-term and long-term intervals of construction activity, 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 environmental performance for the project may be undertaken. Such an audit may include:

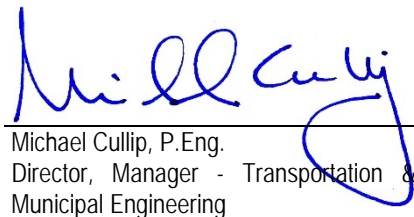
- the review of long-term effectiveness of mitigation measures;
- the review of inspection reports, notes and the resolution of noted concerns;
- the review of comments and concerns received from regulatory agencies and public interest groups and how these issues were addressed; and
- recommended modifications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

### 16.3.4 Stakeholder Consultation

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



\_\_\_\_\_  
Authored by: Sean Sexsmith, A.Sc.T.  
Technologist, Project Manager



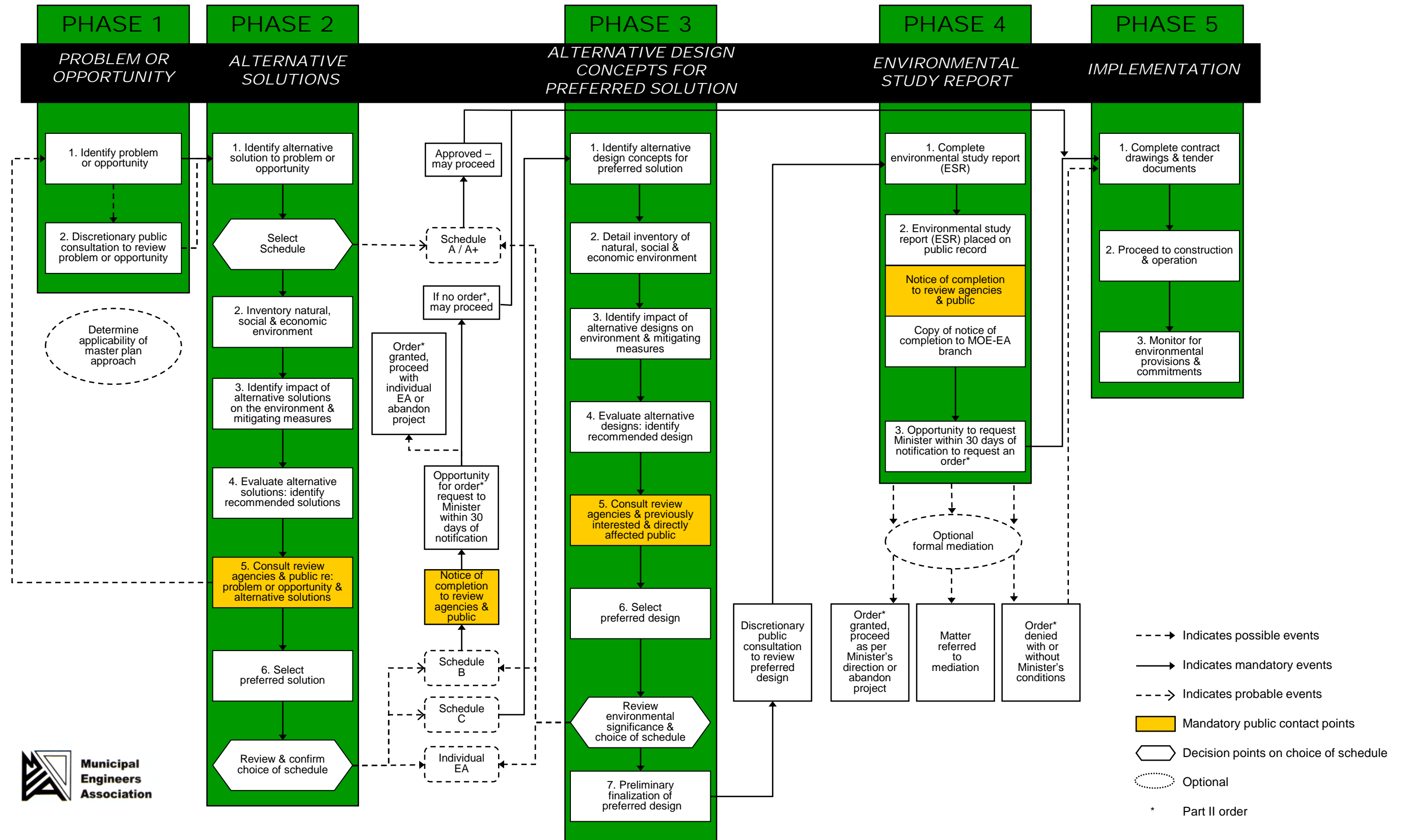
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Authored by: Michael Cullip, P.Eng.  
Director, Manager - Transportation &  
Municipal Engineering

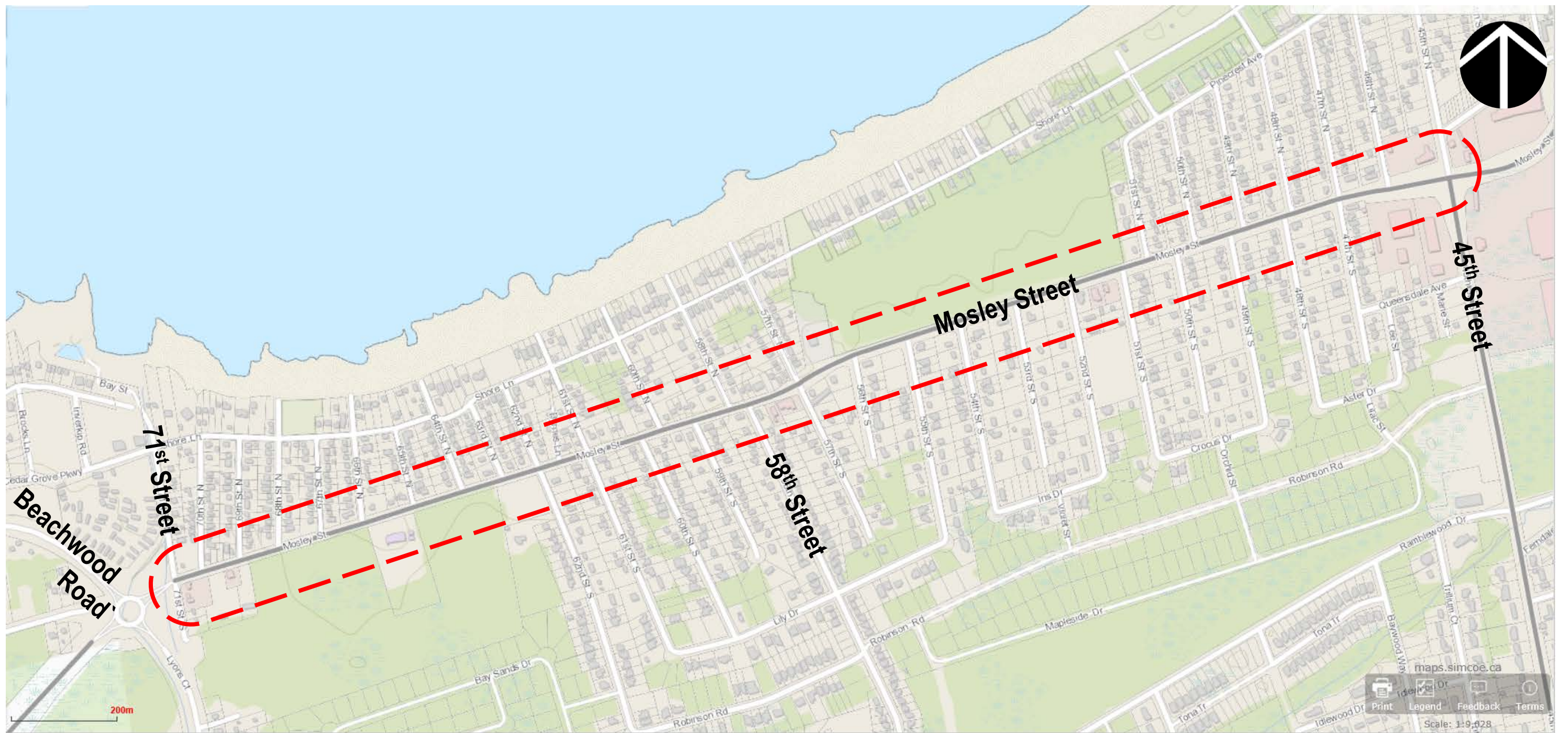
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STUDY AREA

source: maps.simcoe.ca



Looking west toward roundabout at Beachwood Rd



Looking east along Mosley St from 65<sup>th</sup> St



Looking east along Mosley St from 58<sup>th</sup> St



Looking east along Mosley St toward Fire Station Entrance



Looking east along Mosley St from 55<sup>th</sup> St



Looking east along Mosley St from 53<sup>rd</sup> St



Looking east along Mosley St from 51<sup>st</sup> St N



Looking east along Mosley St from 47<sup>th</sup> St



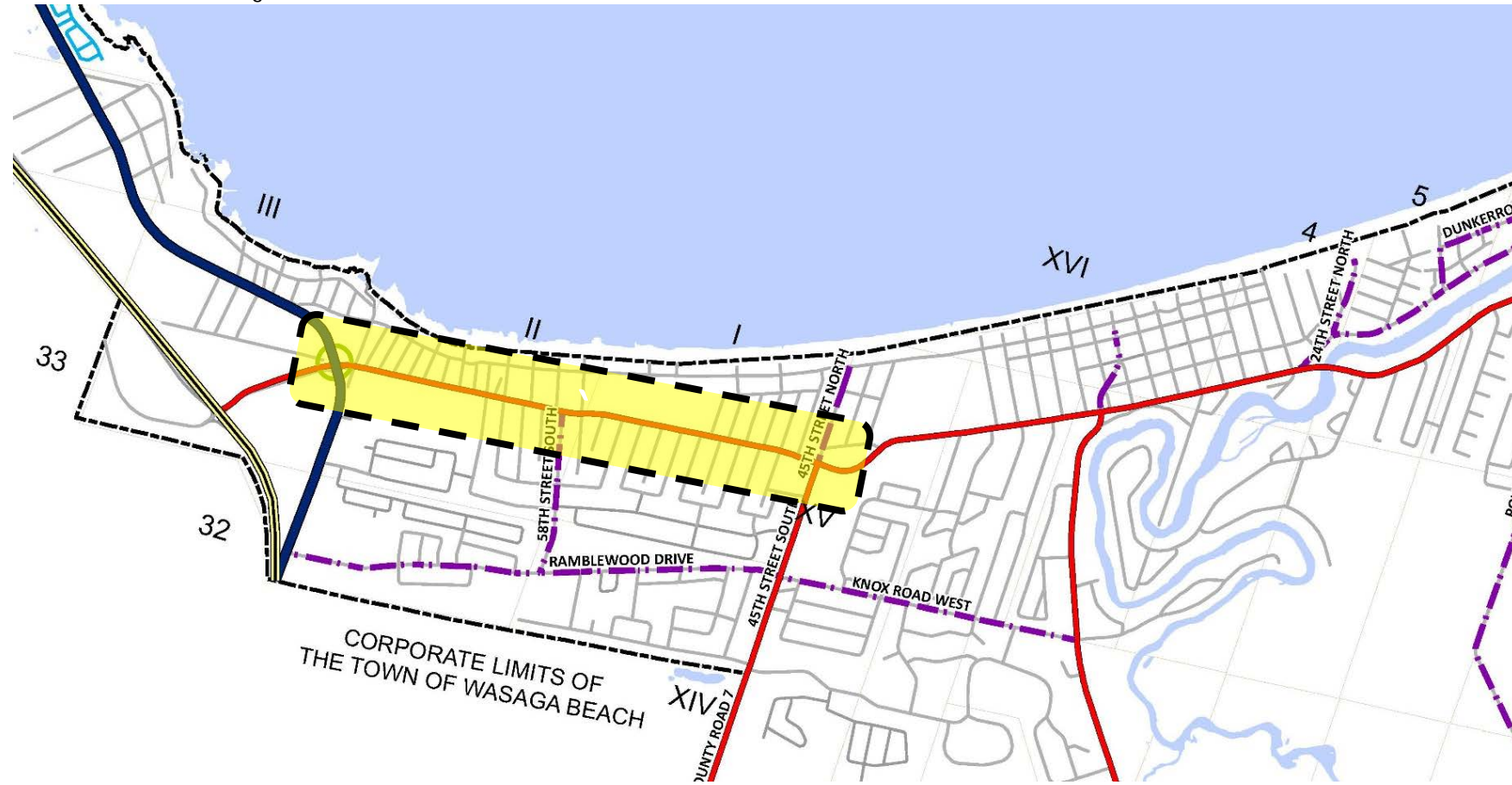
Looking east along Mosley St toward 45<sup>th</sup> St



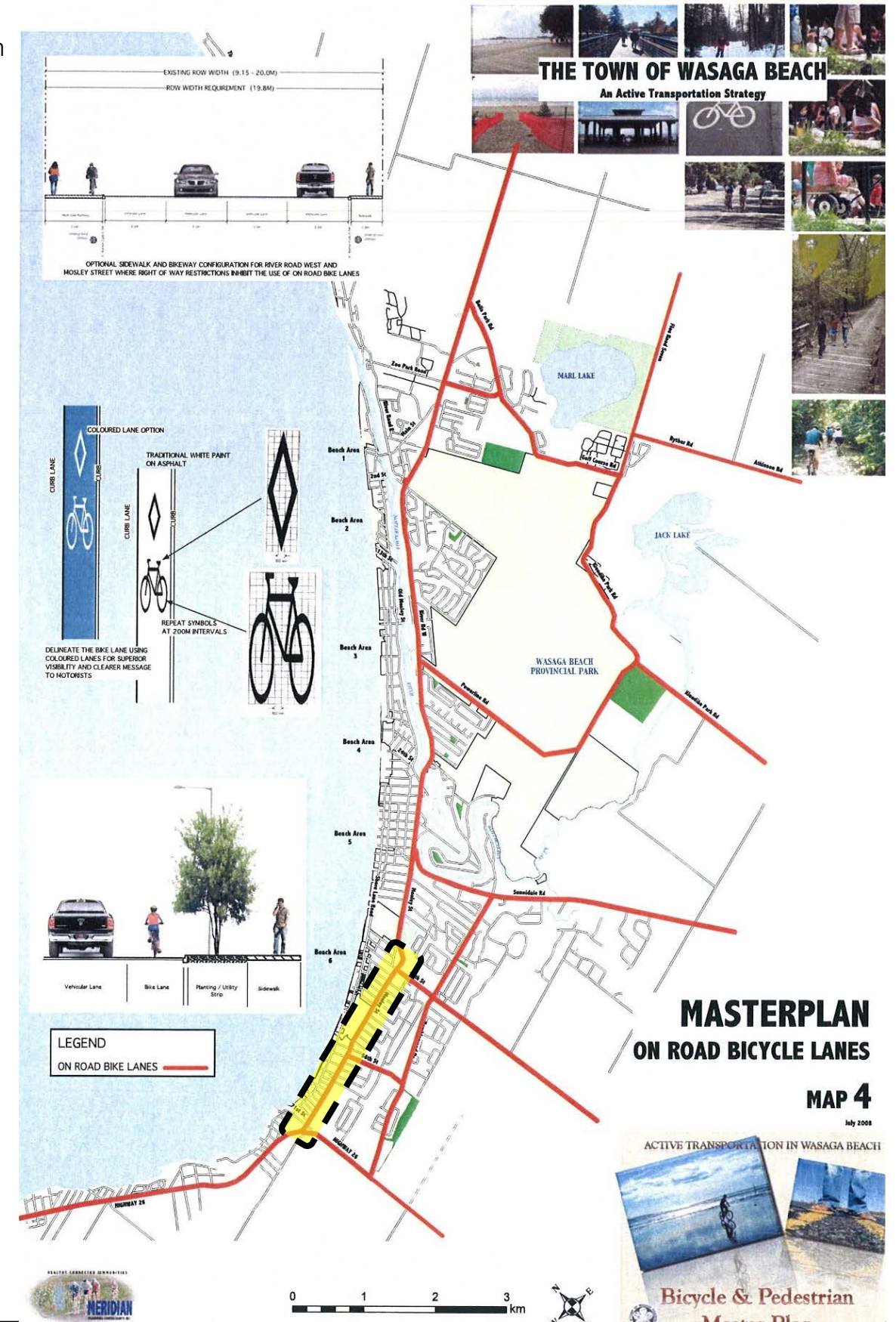
source: Town of Wasaga Beach Active Transportation Plan

**STUDY AREA**

source: Town of Wasaga Beach Official Plan



- Legend**
- Provincial Highway/Future Collector Road
  - Provincial Highway 26
  - Planned Interchange
  - Controlled Access
  - Arterial Road
  - Collector Road
  - Planned Collector Road (Not Built)
  - Future Road Linkage
  - Local Municipal Road
  - Private Local Road



Mosley Street Urbanization Class EA

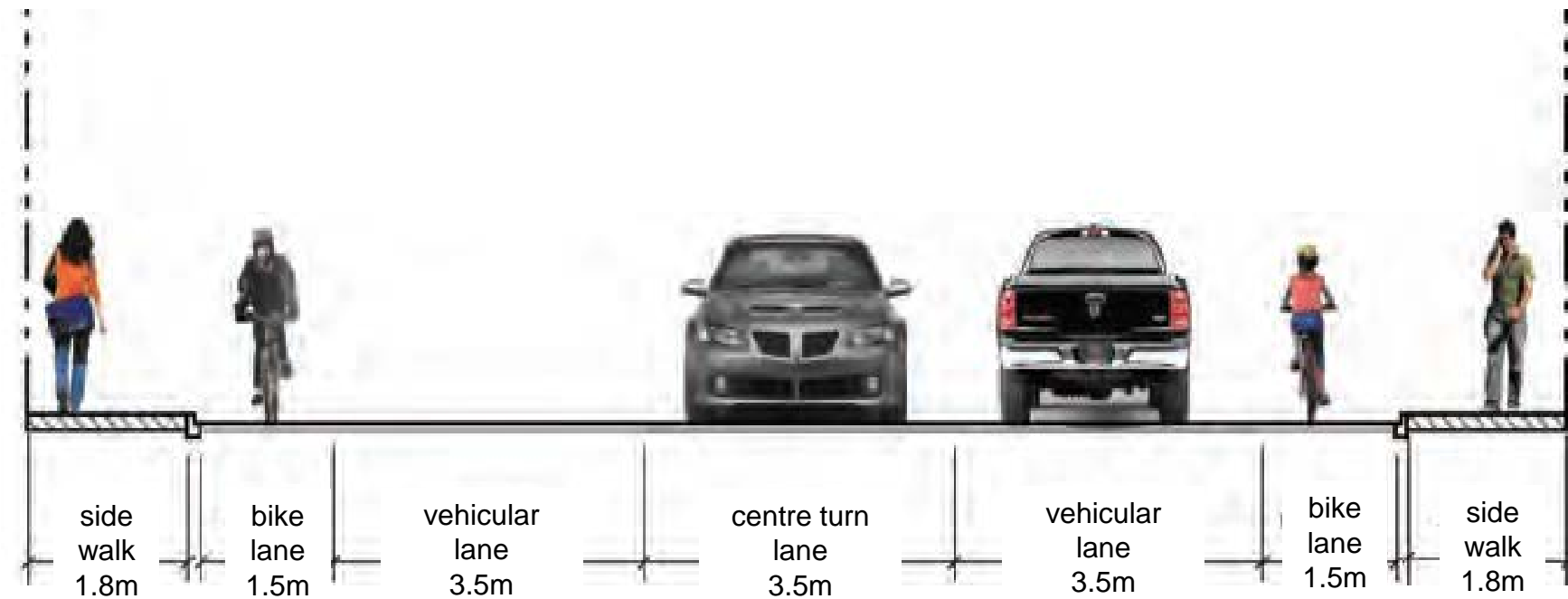
**Town of Wasaga Beach – Road Network & Active Transportation Systems**

Figure



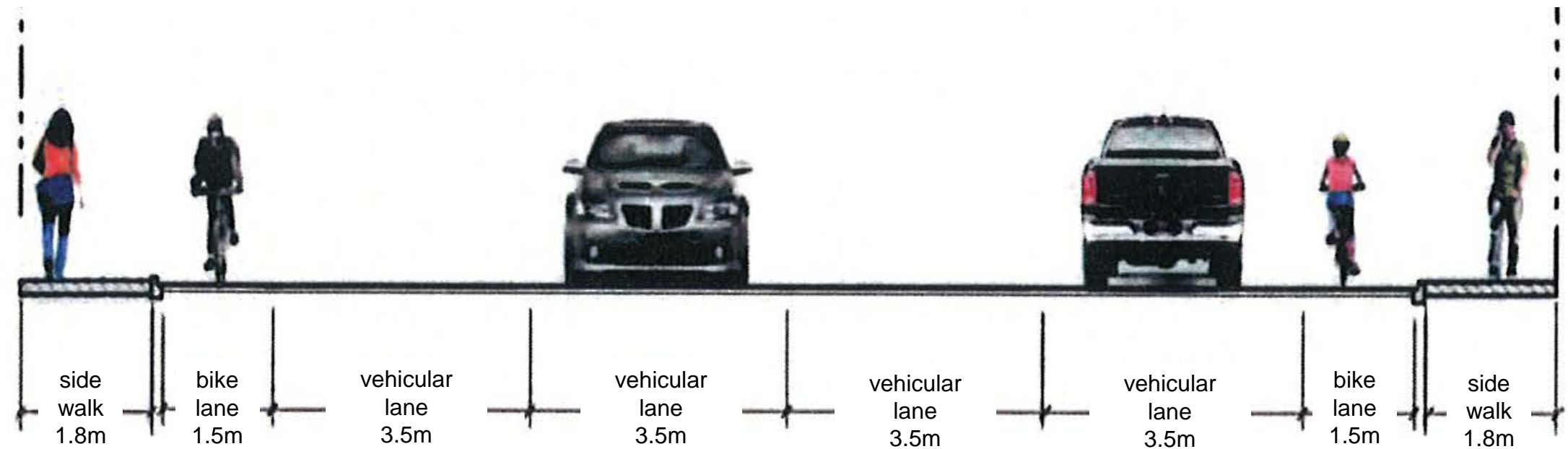
source: County of Simcoe Mapping

3-Lane Urban Section  
18.1m ROW

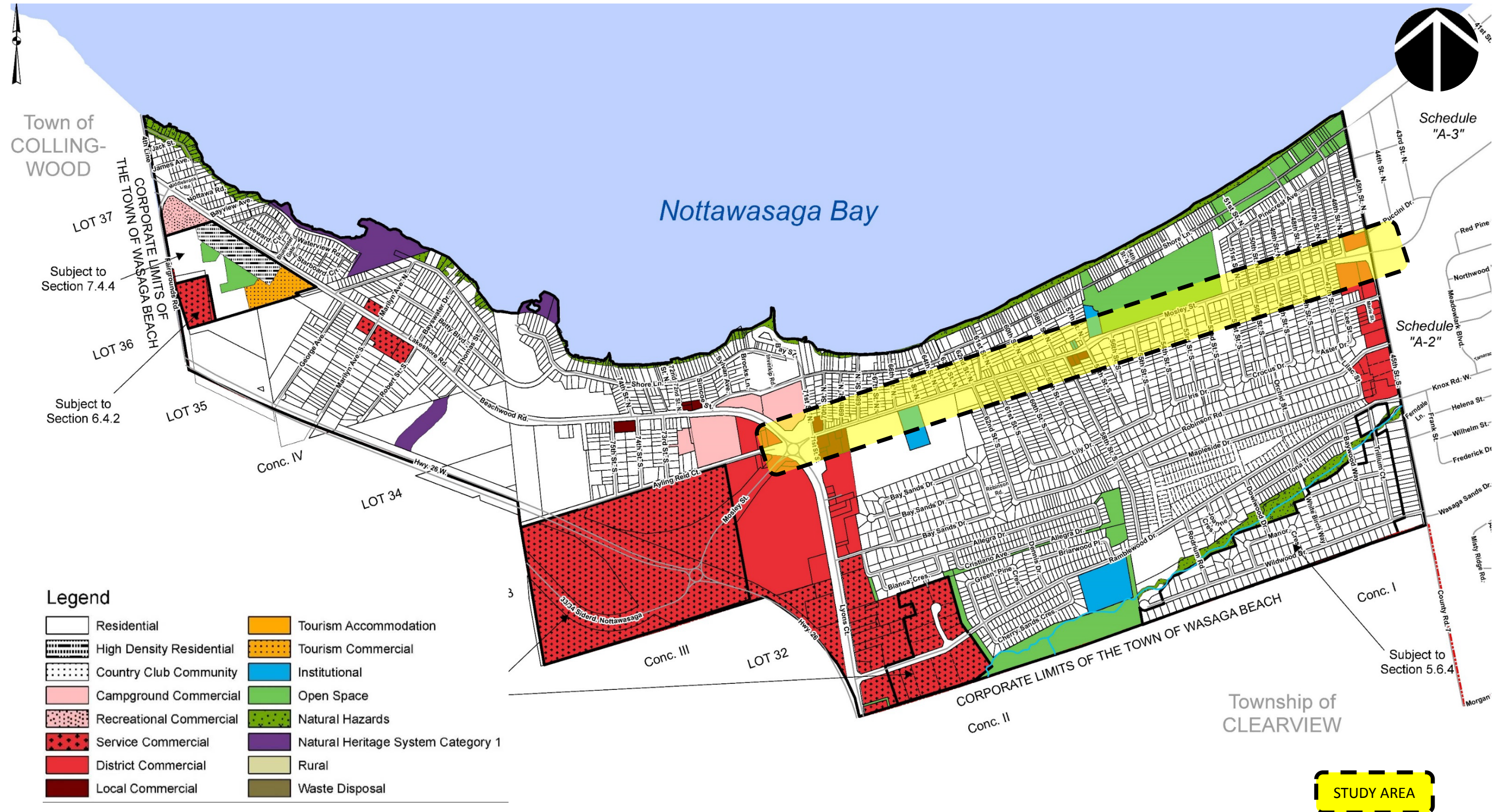


4-Lane Urban Section  
21.6m ROW

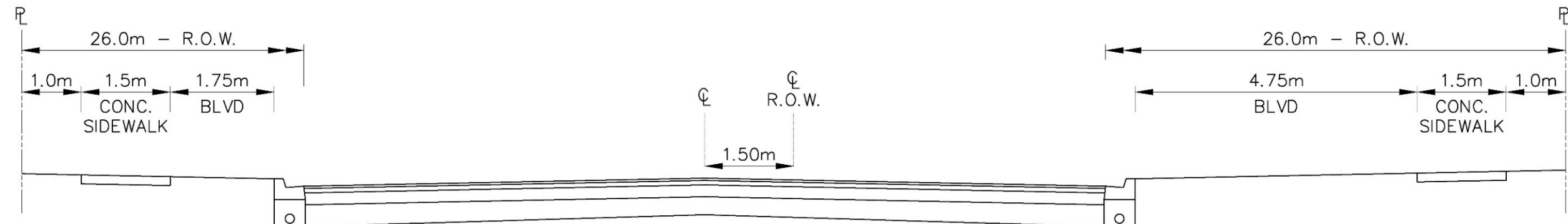
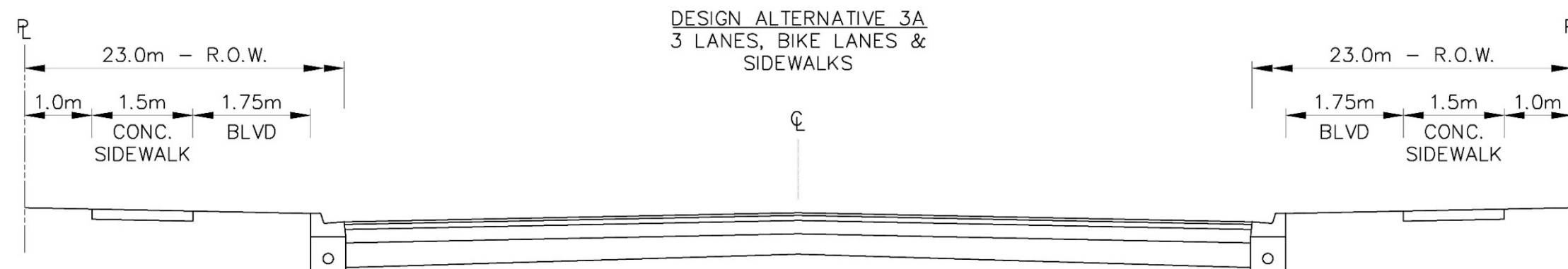
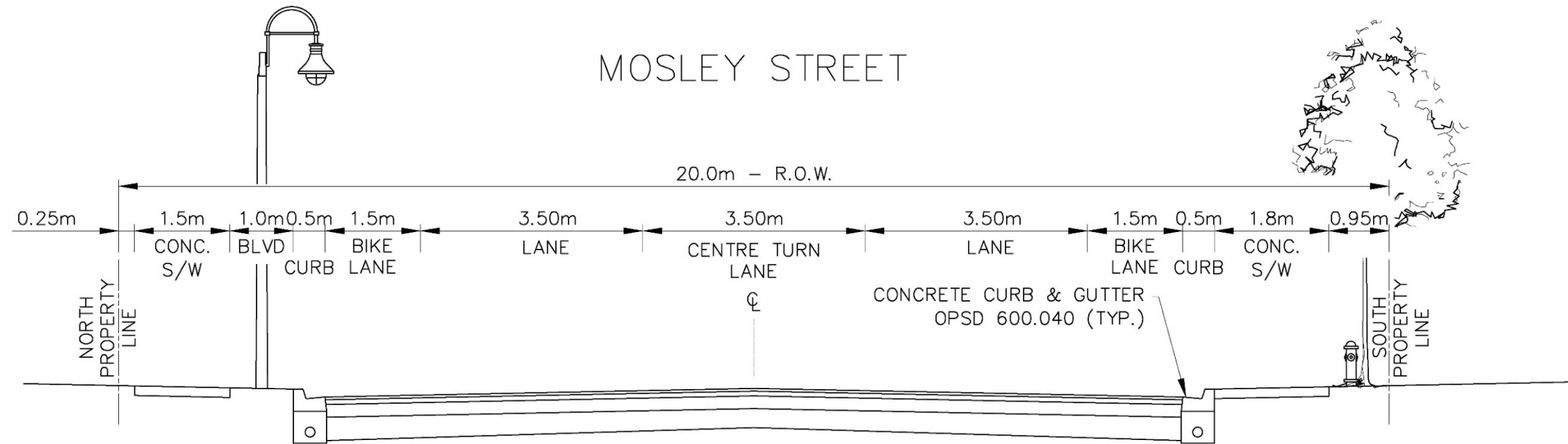
Note: 19.8m ROW can be achieved if bike lanes replaced with multi-use trail on one-side

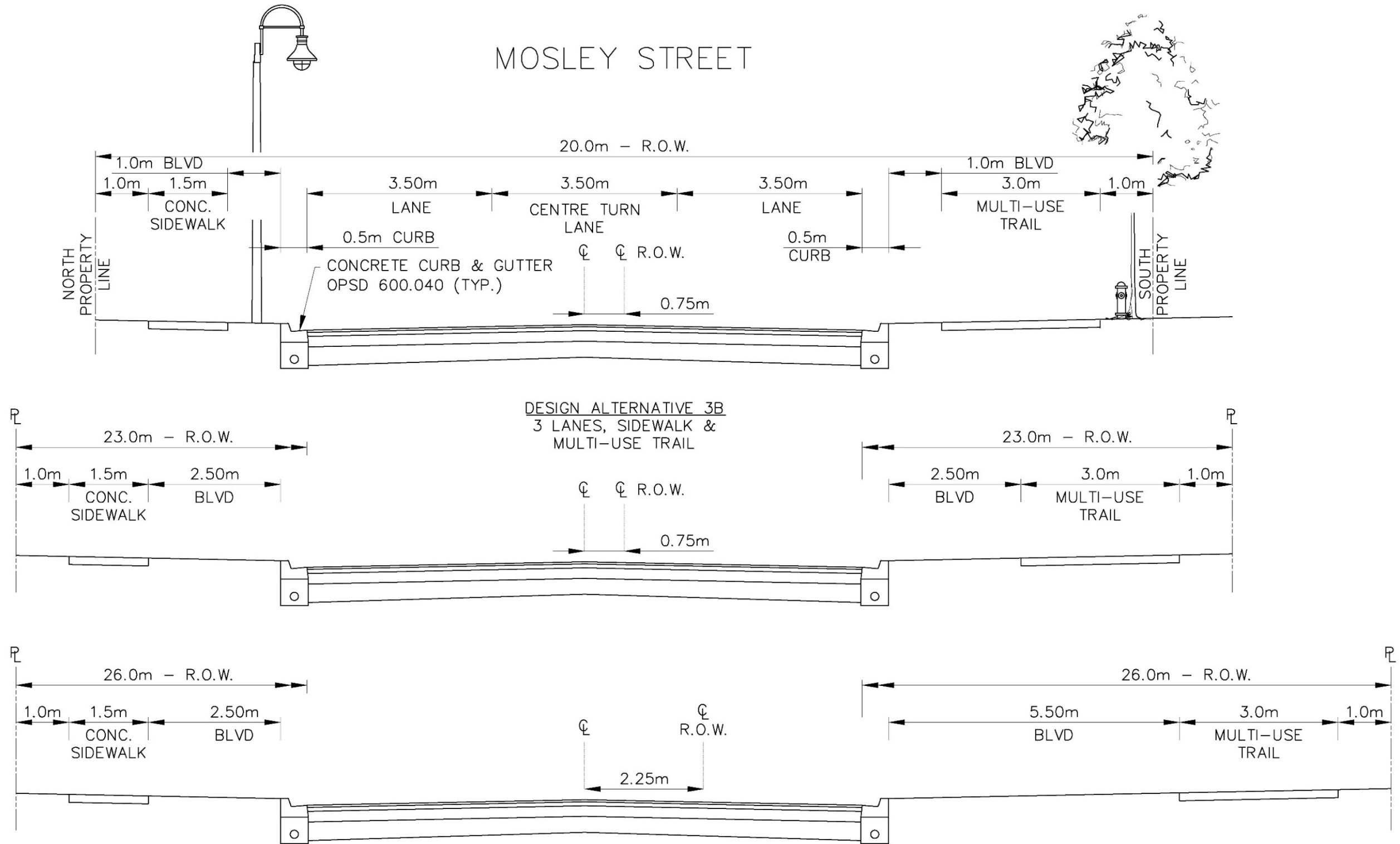


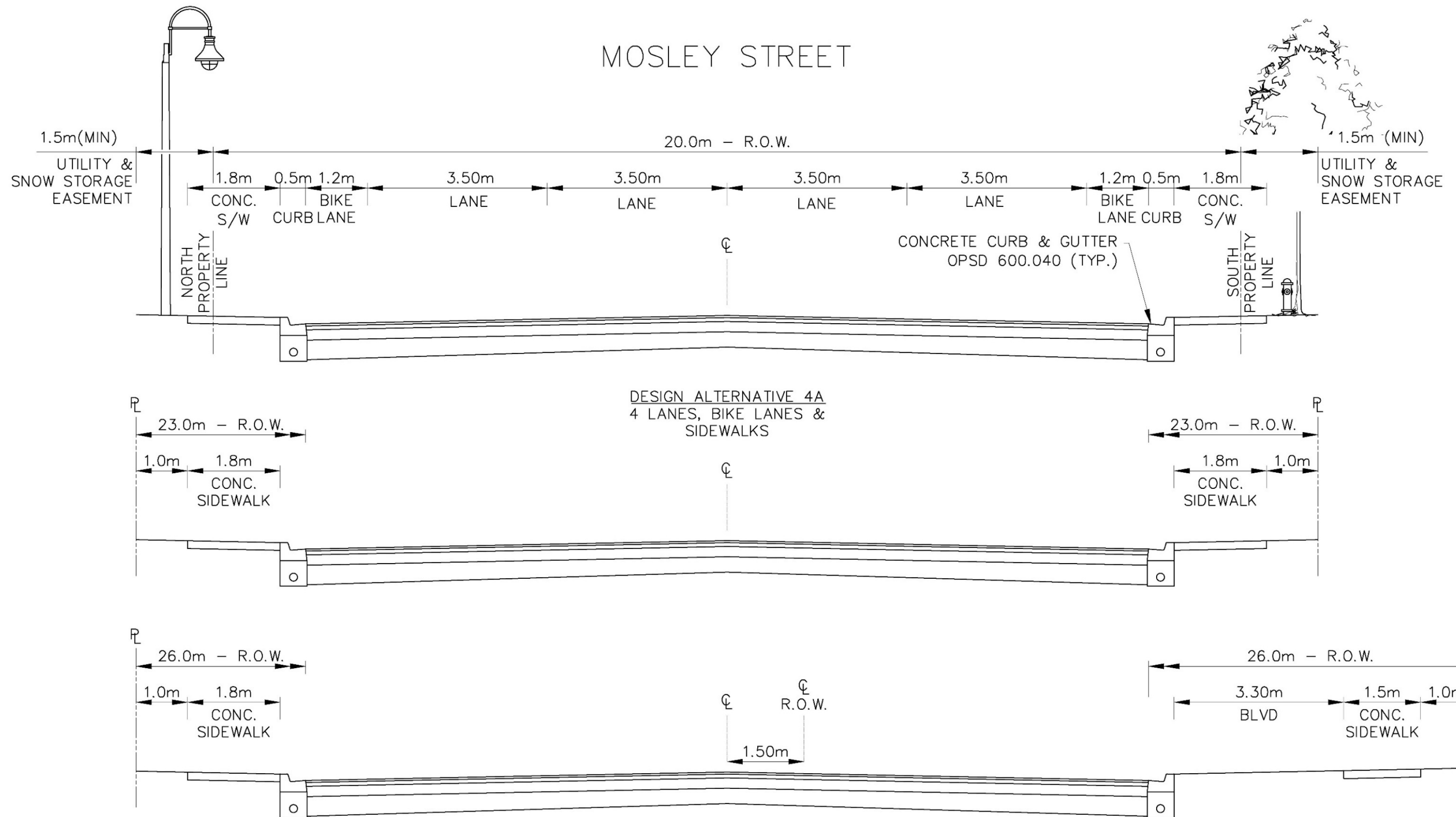
source: Town of Wasaga Beach Active Transportation Plan

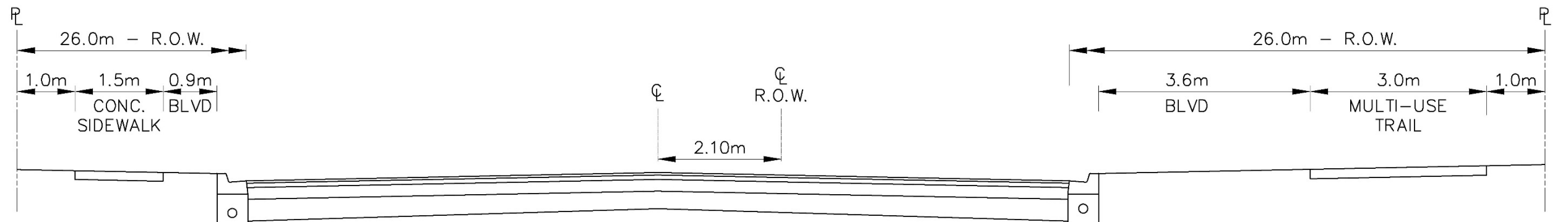
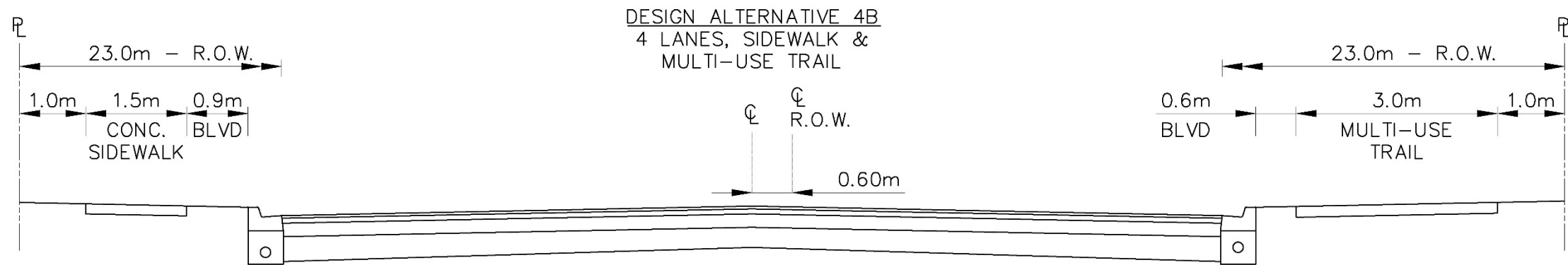
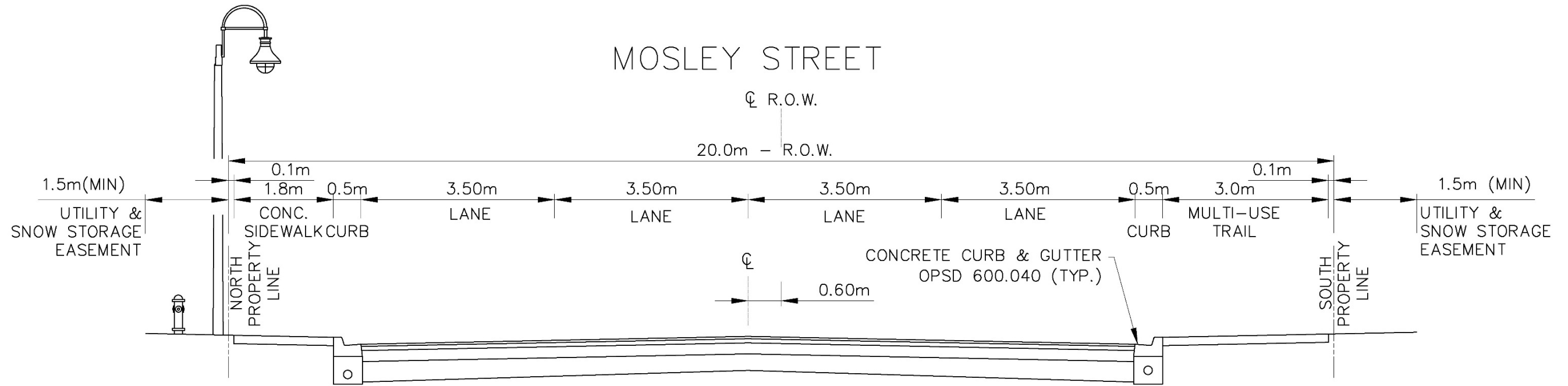


source: Town of Wasaga Beach Official Plan

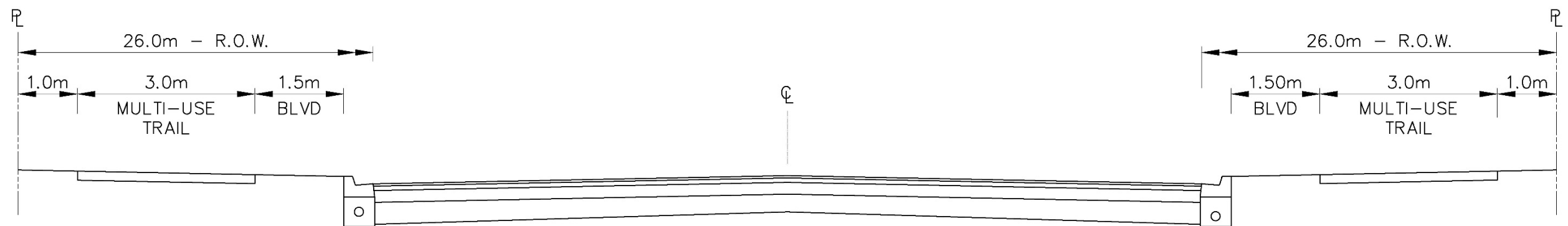
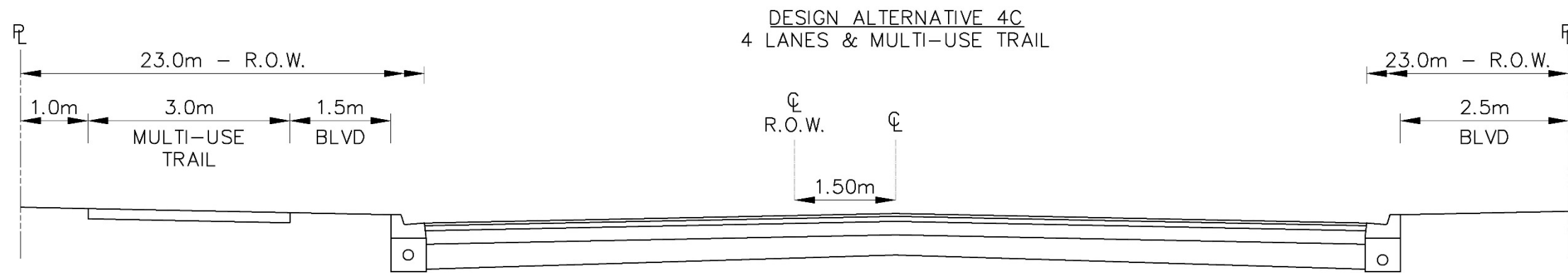
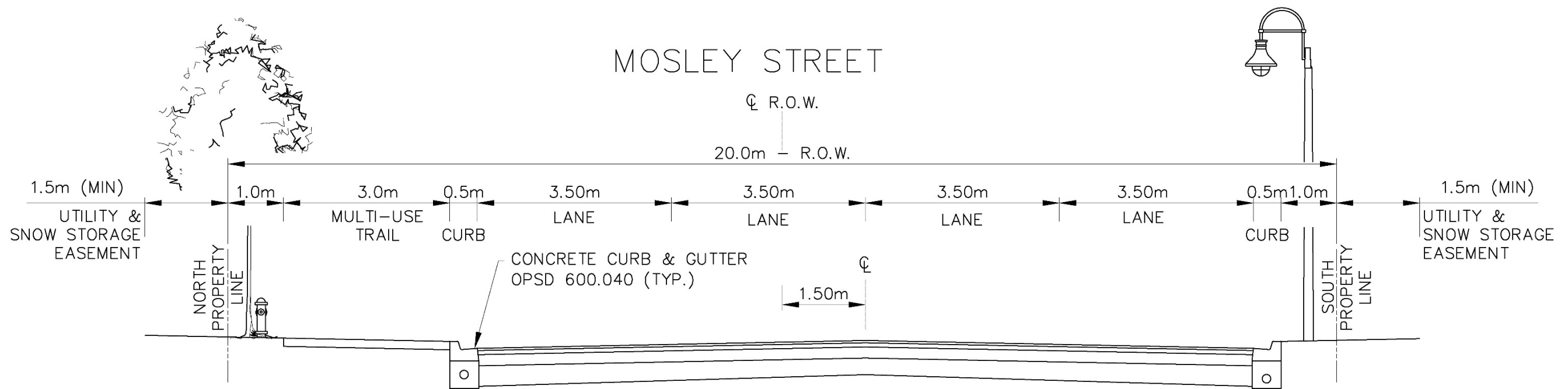












**Table 7: Pedestrian Crossover Selection Matrix**

Two-way Vehicular Volume			Posted Speed Limit (km/h)	Total Number of Lanes for the Roadway Cross Section <sup>1</sup>			
Time Period	Lower Bound	Upper Bound		1 or 2 Lanes	3 lanes	4 lanes w/raised refuge	4 lanes w/o raised refuge
8 Hour	750	2,250	≤50	Level 2 Type D	Level 2 Type C <sup>3</sup>	Level 2 Type D <sup>2</sup>	Level 2 Type B
4 Hour	395	1,185		Level 2 Type C	Level 2 Type B	Level 2 Type C <sup>2</sup>	Level 2 Type B
8 Hour	2,250	4,500	≤50	Level 2 Type D	Level 2 Type B	Level 2 Type D <sup>2</sup>	Level 2 Type B
4 Hour	1,185	2,370		Level 2 Type C	Level 2 Type B	Level 2 Type C <sup>2</sup>	Level 2 Type B
8 Hour	2,250	4,500	60	Level 2 Type B	Level 2 Type B	Level 2 Type C <sup>2</sup>	Level 2 Type B
4 Hour	1,185	2,370		Level 2 Type B	Level 2 Type B	Level 2 Type C <sup>2</sup>	Level 2 Type B
8 Hour	4,500	6,000	60	Level 2 Type B	Level 2 Type B	Level 2 Type C <sup>2</sup>	Level 2 Type B
4 Hour	2,370	3,155		Level 2 Type B	Level 2 Type B	Level 2 Type C <sup>2</sup>	Level 2 Type B
8 Hour	6,000	7,500	≤50	Level 2 Type B	Level 2 Type B	Level 2 Type C <sup>2</sup>	Level 1 Type A
4 Hour	3,155	3,950		Level 2 Type B	Level 2 Type B	Level 2 Type C <sup>2</sup>	Level 1 Type A
8 Hour	6,000	7,500	60	Level 2 Type B	Level 2 Type B	Hatched	Hatched
4 Hour	3,155	3,950		Level 2 Type B	Level 2 Type B	Hatched	Hatched
8 Hour	7,500	17,500	≤50	Level 2 Type B	Level 2 Type B	Hatched	Hatched
4 Hour	3,950	9,215		Level 2 Type B	Level 2 Type B	Hatched	Hatched
8 Hour	7,500	17,500	60	Level 2 Type B	Hatched	Hatched	Hatched
4 Hour	3,950	9,215		Level 2 Type B	Hatched	Hatched	Hatched

Type A
  Type B
  Type C
  Type D

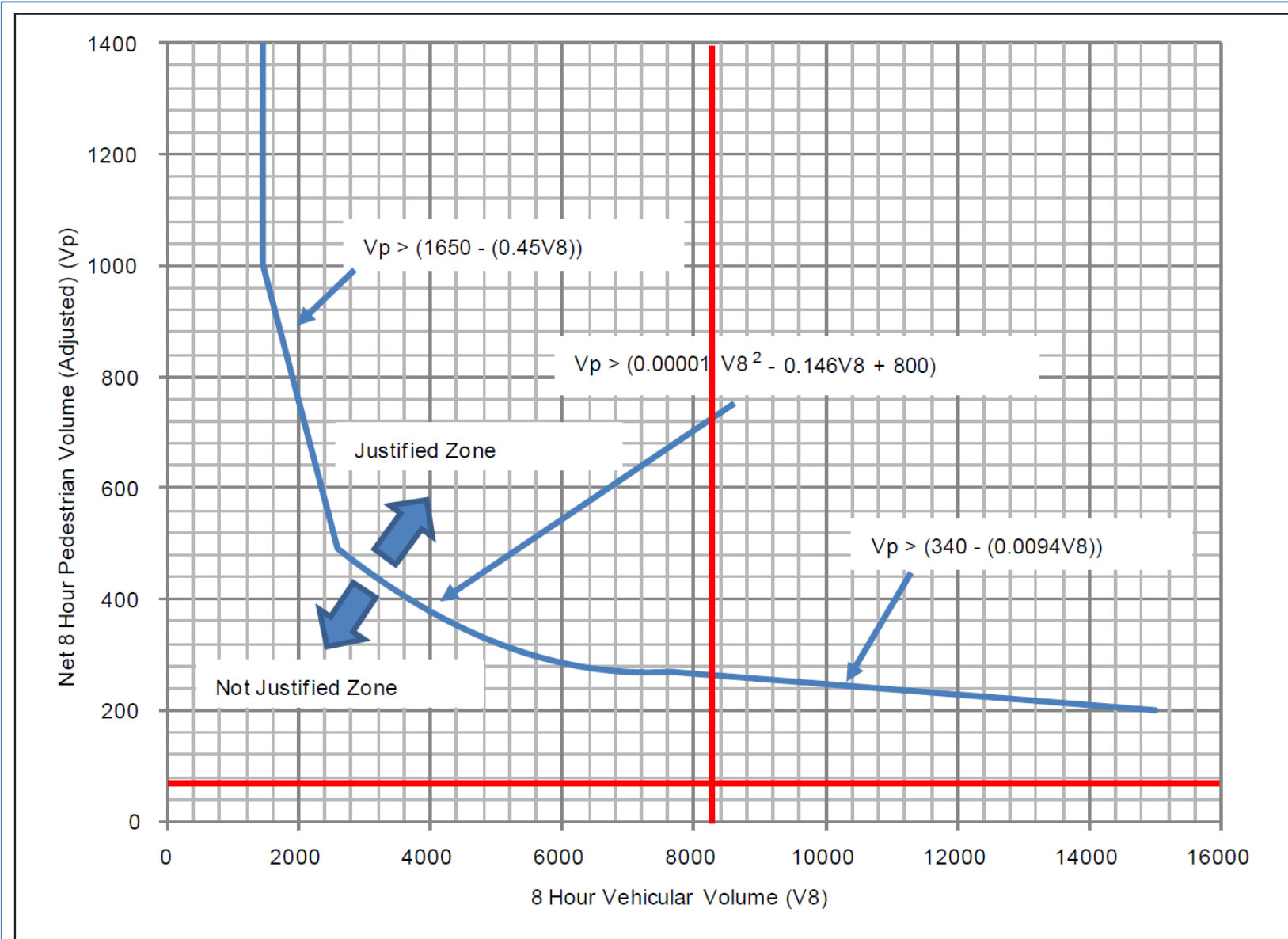
Approaches to roundabouts should be considered a separate roadways.

<sup>1</sup>The total number of lanes is representative of crossing distance. The width of these lanes is assumed to be between 3.0 m and 3.75 m according to MTO Geometric Design Standards for Ontario Highways (Chapter D.2). A cross sectional feature (e.g. bike lane or on-street parking) may extend the average crossing distance beyond this range of lane widths.

<sup>2</sup>Use of two sets of side mounted signs for each direction (one on the right side and one on the median)

<sup>3</sup>Use Level 2 Type B PXO up to 3 lanes total, cross section one-way.

The hatched cells in this table show that a PXO is not recommended for sites with these traffic and geometric conditions. Generally a traffic signal is warranted for such conditions.



**Figure 3: OTM Book 12 Justification 6 - Pedestrian Volume**

July 2015 count

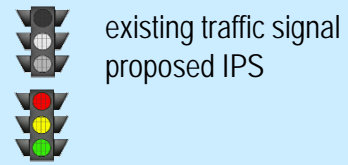
8-hour vehicle volume: 8333

8-hour pedestrian volume: 75

source: Ontario Traffic Manual Book 15



source: maps.simcoe.ca



Note: as per the final review and assessment, the IPS is to be located at 51<sup>st</sup> Street North