



Enhancing our communities



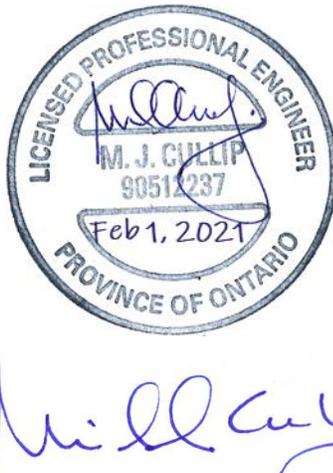
Main Street and Beach Areas 1 & 2 Improvements

ENVIRONMENTAL STUDY REPORT

Town of Wasaga Beach

Document Control

File:	Prepared by:	Prepared for:
119067	Tatham Engineering Limited 115 Sandford Fleming Drive, Suite 200 Collingwood, Ontario L9Y 5A6 T 705-444-2565 tathameng.com	Town of Wasaga Beach 30 Lewis Street Wasaga Beach, Ontario L9Z 1A1
Date:		
February 1, 2021		

Authored by:	Reviewed by:
	
Michael Cullip B.Eng. & Mgmt., M.Eng., P.Eng. Vice President Head Office Operations	David Perks M.Sc., PTP Transportation Planner, Project Manager

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

Issue	Date	Description
1	February 1, 2021	Issue final report



Document Contents

1	Introduction.....	1
1.1	Class Environmental Assessment Process.....	1
1.2	Objectives of the Environmental Study Report.....	6
1.3	Format of the Environmental Study Report	6
2	Need & Justification.....	8
2.1	Study Area.....	8
2.2	Existing Conditions.....	8
2.3	Future Conditions.....	15
2.4	Needs Assessment	24
2.5	Problem/Opportunity Statement	27
3	Stakeholder Consultation - Study Commencement.....	28
3.1	Notification	28
3.2	Public Comments.....	28
3.3	Agency Comments.....	28
4	Alternative Solutions.....	30
4.1	Elements of the Alternative Solutions	30
4.2	Main Street.....	32
4.3	Mosley Street.....	35
4.4	Beach Drive.....	36
5	Alternative Solutions - Environment Inventories.....	38
5.1	Physical Environment.....	38
5.2	Natural Environment	40
5.3	Social Environment.....	44
5.4	Cultural/Heritage Environment.....	44



5.5	Economic Environment	47
6	Alternative Solutions - Evaluation	48
6.1	Evaluation Criteria	48
6.2	Environmental Impacts.....	49
6.3	Recommended Solutions	49
7	Stakeholder Consultation - PIC 1.....	57
7.1	Purpose.....	57
7.2	Notification	58
7.3	Stakeholder Engagement.....	58
7.4	Public Comments.....	59
7.5	Agency Comments	60
8	Preferred Solutions	62
8.1	Preferred Solutions.....	62
8.2	Confirmation of Class EA Schedule	64
9	Alternative Design Concepts for the Preferred Solutions	66
9.1	Main Street.....	66
9.2	Mosley Street.....	69
9.3	Beach Drive.....	72
10	Alternative Design Concepts - Environment Inventories	79
10.1	Physical Environment	79
10.2	Natural Environment	80
10.3	Social Environment.....	84
10.4	Cultural/Heritage Environment.....	87
10.5	Economic Environment	88



11 Alternative Design Concepts – Evaluation.....89

11.1 Environmental Impacts..... 89

11.2 Recommended Alternative Design Concepts..... 99

12 Other Traffic Considerations..... 102

12.1 Intersection Operations..... 102

12.2 Roundabouts 104

12.3 River Avenue Crescent & Glenwood Drive 107

13 Stakeholder Consultation - PIC 2..... 111

13.1 Purpose..... 111

13.2 Notification 111

13.3 Stakeholder Engagement..... 112

13.4 Public Comments..... 113

13.5 Agency Comments 116

14 Preferred Design Concepts 119

14.1 Main Street..... 119

14.2 Mosley Street 120

14.3 Beach Drive..... 121

14.4 Roundabouts 122

14.5 River Avenue Crescent & Glenwood Drive 123

15 Stakeholder Consultation - Study Completion.....125

16 Completion of the Class EA Process 126

16.1 Submission to the Town..... 126

16.2 30-Day Review Period 126

16.3 Phase 5 - Implementation..... 126



Tables

Table 1: 2019 Road Section Operations	12
Table 2: 2019 Intersection Operations.....	14
Table 3: Trip Estimates - DDMP Development.....	18
Table 4: 2026 Road Section Operations	18
Table 5: 2031 Road Section Operations	19
Table 6: 2041 Road Section Operations	20
Table 7: 2026 Intersection Operations.....	21
Table 8: 2031 Intersection Operations.....	22
Table 9: 2041 Intersection Operations.....	23
Table 9: Evaluation Criteria.....	48
Table 10: Evaluation of Alternative Solutions – Main Street.....	51
Table 11: Evaluation of Alternative Solutions – Mosley Street.....	53
Table 12: Evaluation of Alternative Solutions – Beach Drive.....	55
Table 13: Evaluation of Alternative Designs – Main Street Alignment	90
Table 14: Evaluation of Alternative Designs – Main Street Cross-Sections.....	91
Table 15: Evaluation of Alternative Designs – Mosley Street Alignment Nottawasaga River to 2nd Street.....	93
Table 16: Evaluation of Alternative Designs – Mosley Street Alignment 2nd Street to 6th Street.....	94
Table 17: Evaluation of Alternative Designs – Mosley Street Cross-Sections.....	95
Table 18: Evaluation of Alternative Designs – Beach Drive Alignment.....	96
Table 19: Evaluation of Alternative Designs – Beach Drive Cross-Sections	98
Table 20: Mitigating Measures	129



Figures

Figure 1: Municipal Class EA Process	132
Figure 2: Study Area	133
Figure 3: Official Plan Transportation System.....	134
Figure 4: Main Street Rights-of-Way	135
Figure 5: Mosley Street Rights-of-Way	137
Figure 6: Beach Drive Rights-of-Way	138
Figure 7: Traffic Counts	139
Figure 8: 2019 Traffic Volumes	140
Figure 9: Future Development.....	141
Figure 10: 2026 Traffic Volumes	142
Figure 11: 2031 Traffic Volumes	143
Figure 12: 2041 Traffic Volumes	144
Figure 13: Active Transportation Networks	145
Figure 14: Lake Huron Water Levels 2010 to 2020	147
Figure 15: Beach Area 1 Water Levels	148
Figure 16: Alternative Solution Elements	149
Figure 17: Main Street Alternative Solutions.....	151
Figure 18: Mosley Street Alternative Solutions	152
Figure 19: Beach Drive Alternative Solutions.....	153
Figure 20: Official Plan Land Use Designations.....	154
Figure 21: PIC 1 Summary - Importance of Facilities	155
Figure 22: PIC 1 Summary - Supported Options.....	156
Figure 23: Preferred Solutions	157
Figure 24: Main Street Alignment & Widening - River Road West to West of Stonebridge Boulevard	158
Figure 25: Main Street Alignment & Widening - West of Stonebridge to Nottawasaga River	159
Figure 26: Main Street Alternative Design Concepts	160
Figure 27: Mosley Street Alignment & Widening - Nottawasaga River to 2 nd St.	162
Figure 28: Mosley Street Alignment & Widening - 2 nd Street to 6 th Street.....	164
Figure 29: Mosley Street Alternative Design Concepts	165



Figure 30: Impacts of Water Level on Beach Drive 167

Figure 31: Beach Drive Hazard Mapping 168

Figure 32: Beach Area Sections 170

Figure 33: Beach Drive Alignment & Widening 171

Figure 34: Beach Drive Alternative Design Concepts 173

Figure 35: Main Street Areas of Archaeological Potential 175

Figure 36: Mosley Street & Beach Drive Areas of Archaeological Potential 177

Figure 37: Key Intersections 179

Figure 38: 2026 Traffic Volumes with Recommended Solutions 180

Figure 39: 2031 Traffic Volumes with Recommended Solutions 181

Figure 40: 2041 Traffic Volumes with Recommended Solutions 182

Figure 41: Key Intersection Operations with Recommended Solutions 183

Figure 42: Roundabout Locations & Operations with Recommended Solutions. 184

Figure 43: Main Street Roundabouts 185

Figure 44: Mosley Street Roundabouts 187

Figure 45: River Avenue Cres & Glenwood Drive Existing Conditions 188

Figure 46: River Avenue Cres & Glenwood Drive Alternative Configurations 189

Figure 47: PIC 2 Summary - Main Street 192

Figure 48: PIC 2 Summary - Mosley Street 193

Figure 49: PIC 2 Summary - Beach Drive 194

Figure 50: PIC 2 Summary - Other Considerations 195

Figure 51: Preferred Design Concepts 196



Appendices

Appendix A: Traffic Counts

Appendix B: Existing Traffic Operations

Appendix C: Future Development

Appendix D: Future Traffic Operations

Appendix E: Study Commencement

Appendix F: Utility Master Plan

Appendix G: Natural Environment Reports

Appendix H: Stage 1 Archaeological Assessment

Appendix I: Cultural Heritage Assessment

Appendix J: Public Information Centre 1

Appendix K: Natural Hazard Study

Appendix L: Traffic Noise Impact Study

Appendix M: Benchmark Costs

Appendix N: Key Intersection Operations

Appendix O: Public Information Centre 2

Appendix P: Study Completion



1 Introduction

The Town of Wasaga Beach initiated a Class Environmental Assessment (Class EA) to examine improvements to the following road corridors:

- Main Street from River Road West to Mosley Street;
- Mosley Street from Main Street to 6th Street; and
- Beach Drive from Spruce Street to 3rd Street.

Tatham Engineering Limited was retained to complete the study on behalf of the Town.

1.1 CLASS ENVIRONMENTAL ASSESSMENT PROCESS

The Class EA process is defined in the *Municipal Class Environmental Assessment*¹ document. Applying to all municipal road improvement projects, a number of study categories or schedules have been established recognizing the range of potential 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 projects, as deemed relevant to this undertaking, include:

¹ *Municipal Class Environmental Assessment*. Municipal Engineers Association, October 2000 as amended in 2007, 2011 & 2015



- construction or removal of sidewalks or multi-purpose paths or cycling facilities within existing or protected rights-of-way; and
- installation, construction or reconstruction of traffic control devices (eg. signing or signalization) provided the construction value is less than \$10.3M.

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 A+ projects, as deemed relevant to this undertaking, include:

- urban road resurfacing with no changes to the horizontal alignment;
- streetscaping (eg. decorative lighting, sidewalk improvements, benches, landscaping not part of another project);
- construction of localized operational improvements at specific locations;
- reconstruction where the reconstructed road will be for the same purpose, use, capacity and at the same location (eg. addition or reduction of cycling lanes/facilities or parking lanes, provided no change in the number of motor vehicle lanes);
- redesignation of linear paved facility through signage or pavement marking modifications (ie. not requiring physical construction beyond localized operational improvements) such as:
 - addition or removal of parking or turning lane markings on an existing roadway;
 - conversion of one-way or two-way streets;
 - redesignation of existing general purpose lanes or on-street parking to cycling lanes/facilities or vice versa;
 - addition or removal of cycling lanes/facilities; and



- new construction or removal of sidewalks, multi-purpose paths or cycling facilities including water crossings outside of existing right-of-way; and
- retirement of existing roads.

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 proponent is required to conduct a screening process whereby members of the public and review agencies are informed of the project and given the opportunity to provide comment. 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 or Phase 1 & 2 Report shall be prepared to demonstrate that the appropriate steps have been followed. The Project File/Phase 1 & 2 Report is to be submitted for review by the public and review agencies.

Schedule B projects, as deemed relevant to this undertaking, include:

- installation, construction or reconstruction of traffic control devices (eg. signing or signalization) when the construction value is greater than \$10.3M;
- reconstruction or widening where the reconstructed road will not be for the same purpose, use, capacity or at the same location (eg. additional motor vehicle lanes, continuous centre turn lane) provided the construction value is less than \$2.6M; and
- construction of new roads provided the construction value is less than \$2.6M.

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.

Schedule C projects, as deemed relevant to this undertaking, include:

- reconstruction or widening where the reconstructed road will not be for the same purpose, use, capacity or at the same location (eg. additional motor vehicle lanes, continuous centre turn lane) when the construction value is greater than \$2.6M; and
- construction of new roads when the construction value is less than \$2.6M.

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:

Localized Operational Improvement

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

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.

Retirement

Means the taking out of operation, abandonment, removal, demolition or disposal of a road for which approval under the EA Act would have been necessary for its establishment.

Road Capacity

Means capacity defined in terms of travel lanes and does not differentiate between various land widths to accommodate different volumes of traffic.



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

In considering improvements to the noted road corridors, a number of elements will be addressed including:

- streetscape and landscape improvements;
- pedestrian facilities;
- cycling facilities;
- on-street parking;
- travel lanes; and
- intersection operations.

Given the scope of the noted improvements, the potential impacts of such to the study area environments, the associated construction values and the objective to provide increased opportunity for public engagement, a Schedule C undertaking is considered appropriate. 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. Stakeholder consultation is to be conducted regarding the alternative solutions and the alternative design concepts (in Phases 2 and 3 of the Class EA process respectively).



The Town's timeline for implementation has not been established and may be dependant upon the nature of the preferred design and overall development/redevelopment within the study area. 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 design concepts. 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 alternative designs to address the problem in accordance with the preferred solution;
- to evaluate the alternative designs and select a preferred design;
- to establish mitigative measures to minimize potential environmental effects; and
- to outline the remaining steps involved in the planning and design for the project 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 stakeholder consultation - 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 solutions, 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 solutions
- Chapter 10 ▪ provides a detailed environmental inventory building on the inventory prepared in the earlier phase
- Chapter 11 ▪ details the evaluation of the alternative design concepts based on their ability to satisfy the problem statement and their potential impacts to the environment
- Chapter 12 ▪ considers other traffic matters including operations at key intersections, consideration for roundabouts and orientation of River Avenue Crescent and Glenwood Drive
- Chapter 13 ▪ addresses the third point of public consultation - Public Information Centre 2
- Chapter 14 ▪ identifies the preferred design concepts, considering the initial evaluation and comments received from Public Information Centre 2
- Chapter 15 ▪ addresses the last point of stakeholder consultation - Study Completion
- 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 Need & Justification

The purpose of this Class EA study is to identify the most appropriate improvement strategy to address the existing needs within the subject Main Street, Mosley Street and Beach Drive corridors. In doing so, it is first necessary to 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 (see Figure 1).

2.1 STUDY AREA

The study area, as illustrated in Figure 2, has been defined to include:

- Main Street from River Road West to Mosley Street;
- Mosley Street from Main Street to 6th Street; and
- Beach Drive from Spruce Street to 3rd Street.

In addition to the above, the study will address traffic operations along River Avenue Crescent and Glenwood Drive.

2.2 EXISTING CONDITIONS

The need for road improvements results from the existing conditions, as detailed below.

2.2.1 Road Classification

As per the *Town of Wasaga Official Plan*², the study area roads are designated as follows:

- Main Street - arterial road;
- Mosley Street and Beach Drive - collector roads; and
- River Avenue Crescent and Glenwood Drive - collector roads.

² *Official Plan of the Town of Wasaga Beach*. Office Consolidation: February 29, 2016.



Mapping from the Town of Wasaga Official Plan, illustrating the corresponding road designations, is provided in Figure 3.

2.2.2 Rights-of-Way

The existing rights-of-way (ROW) along the subject road corridors are illustrated in Figure 4 through Figure 6, which indicate the following:

- Main Street has a 30 metre (or greater) right-of-way from River Road West to Beck Street, which then narrows to 20 metres until River Road East;
- the Mosley Street right-of-way is 13 to 15 metres between the Nottawasaga River and 2nd Street, beyond which it widens to 20 metres (albeit it is configured in an irregular, “saw-tooth” fashion); and
- Beach Drive has a right-of-way of 15 to 20 metres (as measured to the Ontario Parks Boundary which is taken as the curb line along the water side of the road).

2.2.3 Road Platforms

The existing road platforms are as follows:

- Main Street has an urban cross-section with 2 lanes per direction from River Road West to Glenwood Drive, and 1 lane eastbound and 2 lanes westbound from Glenwood Drive to the Nottawasaga River;
- Mosley Street continues the 3-lane urban cross-section from the Nottawasaga River to 2nd Street, beyond which it reverts to a 2-lane urban road to 3rd Street and then a 2-lane rural road to 6th Street; and
- Beach Drive has a 2-lane urban cross-section, providing 2 westbound lanes from Spruce Street to 1st Street, and 1 lane per direction beyond Spruce Street.

2.2.4 Speed Limits & Design Speeds

Posted speed limits are as follows:

- Main Street has a 50 km/h speed limit from River Road West to approximately 50 metres in advance of the River Avenue Crescent/River Road East intersection at which point it is reduced to 40 km/h (this speed reduction was



recently implemented in consideration of the horizontal curve and limited sight lines upon approach to the intersection);

- Mosley Street has a 40 km/h speed limit from the Nottawasaga River to 6th Street; and
- Beach Drive has a 40 km/h speed.

Design speed, which 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, dictate the posted speed limit (in most instances.) Typically, to provide a factor 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 (10 km/h in excess for lower speed roads and 20 km/h for higher speed roads).

2.2.5 Traffic Volumes

Traffic Counts

Existing traffic volumes were determined from traffic counts obtained from the Town (conducted on Wednesday June 28, 2017 and Thursday June 29, 2017 in support of the *Town of Wasaga Beach 2017 Transportation Study Update*³) and supplementary traffic counts conducted on Wednesday June 19, 2019. The counts captured the weekday AM and PM peak hour volumes, and given the timing of the counts, the volumes are considered to reflect typical summer weekday peak conditions. The corresponding AM and PM peak hour traffic volumes are presented in Figure 7; additional details pertaining to the counts are provided in Appendix A.

Weekday Peak Hours

As the PM peak hour volumes reflect the critical of the AM and PM peak periods (as evident from the traffic count data), only the weekday PM peak hour has been considered in the assessment of existing and future conditions (recognizing that improvements required to address the PM peak hour conditions will readily address the AM peak hour conditions).

³ *Town of Wasaga Beach 2017 Transportation Study Update*. Ainley Group. December 2017.



Summer Weekend Peak Hour

Consideration has also been given to the summer weekend peak hour conditions given the characteristics of the beach area (ie. ultimate peak conditions occur during the summer weekend peak). It is noted however, that while the summer weekend peak hour has been considered in the assessment, any road improvements recommended to address existing and/or future operational issues are only intended to address those issues associated with the summer weekday PM peak hour. While summer weekend traffic levels may reflect the ultimate peak conditions, it is not considered prudent to design the road network to accommodate such volumes, recognizing that they only occur 6 to 8 weekends a year. This approach is consistent with that of Town's *2017 Transportation Study Update* (and previous Transportation Studies). The intent of assessing the summer weekend peak hour is to illustrate the extent to which the improvements recommended to address the weekday PM peak hour can accommodate the summer weekend operations.

As intersection traffic counts were not completed during the summer weekends, corresponding volumes have been estimated. The summer weekday PM peak hour volumes were adjusted by seasonal factors ranging from 1.10 to 1.55 (ie. weekend peak hour volumes are estimated to be 10 to 55% greater than the weekday PM peak hour volume). These factors were determined through an analysis of weekday and weekend peak hour volumes as recorded on Main Street, Mosley Street and Spruce Street via automatic traffic recorders (ATRs) as part of the *2017 Transportation Study Update*. These additional ATR counts are also included in Appendix A.

Adjustment to 2019

To reflect 2019 volumes, the observed 2017 volumes were adjusted by a background growth rate of 0.5% per annum. Additional discussion on growth projections is provided in Section 2.3.2. The resulting 2019 weekday PM and Saturday peak hour traffic volumes are presented in Figure 8.



2.2.6 Road Section Operations

In assessing the road section operations for Mosley Street and Main Street, the following lane capacities were assumed based on the functional classification of each road:

- Mosley Street (collector) - 700 vehicles per hour per lane (vphpl); and
- Main Street (arterial) - 800 vphpl.

The 2019 road section operations (summer weekday PM peak hour) for Mosley Street and Main Street are summarized in Table 1. As noted, the road network is currently operating at 62% of capacity or less ($v/c \leq 0.62$), indicating that there is adequate capacity to accommodate the existing conditions.

Table 1: 2019 Road Section Operations

ROAD & SECTION		LANES	CAPACITY		VOLUMES (VPH)		VOLUME TO CAPACITY	
			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
Mosley Street	3rd St to 2nd St	1 NB 2 SB	700	1400	326	257	0.47	0.18
	2nd St to 1st St	1 NB 2 SB	700	1400	396	283	0.57	0.20
	1st St to Spruce St	1 NB 2 SB	700	1400	431	273	0.62	0.20
Main Street	Spruce St to River Rd E	1 EB 2 WB	800	1600	397	397	0.50	0.25
	River Rd E to Beck St	2 EB 2 WB	1600	1600	246	364	0.15	0.23
	Beck St to Stonebridge	2 EB 2 WB	1600	1600	272	354	0.17	0.22
	Stonebridge to River Road W	2 EB 2 WB	1600	1600	183	277	0.11	0.17



2.2.7 Intersection Operations

While road section operations can be an indicator of capacity constraints, the true capacity, and hence operations, of a road system is effectively dictated by its intersections. The existing operating conditions will provide the baseline from which the future traffic volumes and operations can be assessed.

The analysis of existing traffic operations is based on the weekday traffic volumes at the intersections, the existing intersection configurations and control, and procedures outlined in the *2000 Highway Capacity Manual*⁴ (using Synchro v.10 software). For signalized intersections, the operating levels of service and delays pertain to the overall approach, whereas the volume to capacity ratio reflects the most critical movement (ie. through movement, left turn or right turn). For unsignalized intersections, the assessment considers the same metrics, albeit for the individual stop control movements. LOS A corresponds to the best operating condition with minimal delays whereas LOS F corresponds to unacceptable operations resulting from high intersection delays. A v/c ratio of less than 1.0 indicates the intersection movement/approach is operating at less than capacity (v/c of 1.0 indicates capacity has been reached).

A summary of the analysis is provided in Table 2 in the form of average delay (measured in seconds), level of service (LOS) and volume to capacity ratio (v/c). Detailed worksheets are included in Appendix B.

Based on the results presented in Table 2, there are no operational difficulties at the key study area intersections given the existing volumes, intersection control and lane configurations. Intersection approaches will operate at a level of service B or better, with delays of 19 seconds or less.

⁴ *Highway Capacity Manual*. Transportation Research Board, Washington DC, 2000.



Table 2: 2019 Intersection Operations

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
			delay	LOS	v/c	delay	LOS	v/c
Mosley St & 3rd St	EB	stop	10	B	0.08	12	B	0.19
Mosley St & 2nd St	EB	stop	11	B	0.02	15	B	0.19
Mosley St & 1st St	EB	stop	11	B	0.03	15	B	0.11
River Ave Cres/River Rd E & Main St	SB	stop	11	B	0.15	15	B	0.24
River Rd E & Beck St	WB	stop	9	A	0.03	9	A	0.03
Main St & Beck St	NB	stop	10	B	0.05	13	B	0.12
	SB	stop	11	B	0.01	14	B	0.04
Main St & Stonebridge Blvd	EB	signal	2	A	0.07	3	A	0.16
	WB	signal	2	A	0.07	3	A	0.14
	NB	signal	19	B	0.46	17	B	0.46
	SB	signal	17	B	0.23	16	B	0.30
	overall	signal	9	A	0.13	8	A	0.22
Main St/Ansley Rd & River Rd W	EB	signal	8	A	0.14	8	A	0.30
	WB	signal	12	B	0.04	13	B	0.05
	NB	signal	16	B	0.38	16	B	0.40
	SB	signal	15	B	0.25	15	B	0.35
	overall	signal	15	B	0.25	14	B	0.37



2.3 FUTURE CONDITIONS

2.3.1 Development

Downtown Development Master Plan

The improvements within and along the subject road corridors are largely required to support and facilitate the future redevelopment of the study area. In 2017, the Town undertook the *Downtown Development Master Plan*⁵ (DDMP), with the goal of creating a “pragmatic and sustainable plan for the future of Downtown Wasaga Beach.” As per the DDMP:

The DDMP is designed to promote the evolution of a livable, compact, accessible, sustainable downtown for the entire community. This will enhance the economic competitiveness of Wasaga Beach to not only improve the Town’s tourism economy (currently the only industry) but will also plant the seeds for economic diversification. Rebranding Wasaga Beach to shake the “party-town” image and replacing the brand with a more sophisticated, diversified and inclusive approach is important to the future economic success of the town. The creation of a town-centre (heart for the community) will help attract new residents, businesses and jobs and will assist in making Wasaga Beach more resilient to future economic fluctuations.

As part of the DDMP, a development program was established to define development parcels, associated land uses and corresponding development limits. The parcels reflect “existing property lines, existing and proposed streets, and the anticipated land uses and building format”. While not intended to represent the ultimate development potential and details, the parcels do allow for the potential of the plan to be addressed. Excerpts from the DDMP development program are provided in Appendix C.

⁵ *Downtown Development Master Plan*. FORREC Limited, March 2017.



Town Rationalization

The DDMP development program was further reviewed and scrutinized with Town staff as it relates to residential densities and forecasts, with adjustments made to reflect staff input. Figure 9 illustrates the overall development areas and assumed development levels in consideration of residential and commercial land uses; additional details for each development area are provided in Appendix C, allocated on a block by block basis for ease of reference.

Phasing & Horizons

Recognizing that the realization of the DDMP reflects the long-term vision of the Town, a 20 year horizon has been considered based on projections from the Town Planning Department, with the following horizon year targets:

- 25% development by 2026;
- 50% development by 2031; and
- 100% development by 2041.

2.3.2 Traffic Volumes

In establishing future traffic volumes for the study area, consideration was given to general background growth and development specific growth (ie. DDMP development as discussed above).

Background Growth

The *2017 Transportation Study Update* considered the following growth rates in projecting traffic volumes for the subject road network through the 2027 horizon:

- Main Street (Mosley Street to River Road West): 2.6% per annum;
- Mosley Street (3rd Street to Spruce Street): 0.15% per annum; and
- Beach Drive: 0%.

It is noted that the *2017 Transportation Study Update*, while considering several developments within the Town, did not consider redevelopment of the beach area or the Main Street corridor. The projected growth for the study area network is



also lower than the historic growth experienced within the Town. As per the 2016 Census data, the Town's population has experienced annual growth in the order of 3.3% between 2011 (17,537 persons) and 2016 (20,675 persons).

For the purpose of this study, a general background growth rate of 0.5% per annum has been applied to the 2019 volumes. While this may be considered low in context of historic population growth, it recognizes that significant growth associated with the DDMP development has been considered separately (as described below).

DDMP Development Growth

Traffic volumes associated with the future development of the area have been estimated based on the DDMP development program and levels supplemented with additional input from Town staff, with application of trip generation rates provided in the *ITE Trip Generation Manual, 10th Edition* for appropriate commercial and residential land uses. The trip estimates for each area (Beach Area, Downtown Core and Downtown Gateway as illustrated in Figure 9) are provided in Table 3 and reflect trip generation for the weekday PM peak hour and Saturday peak hour conditions. As indicated, the DDMP development program, as assumed in this study, will generate 2398 new trips during the weekday PM peak hour and 2649 new trips during the Saturday peak hour period.

The DDMP trips were assigned to the study area road network based on distribution patterns observed in the various traffic counts with additional consideration given to the proximity of the study area to potential destinations/origins (ie. other population and employment centres) and anticipated travel routes.

Future Traffic Volumes

As previously noted, development of the DDMP has been phased with 25% assumed complete by 2026, 50% by 2031 and 100% by 2041. The future traffic 2026, 2031 and 2041 volumes, which reflect the 2019 volumes adjusted to reflect background growth of 0.5% per annum and the phased development of the DDMP area, are illustrated in Figure 10, Figure 11 and Figure 12 respectively.



Table 3: Trip Estimates - DDMP Development

DEVELOPMENT AREA & LAND-USE		WEEKDAY PM PEAK HOUR			SATURDAY PEAK HOUR		
		In	Out	Total	In	Out	Total
Beach Area	Commercial	259	280	539	331	306	637
	Residential	279	178	457	224	233	457
	Sub-Total	538	458	996	555	539	1094
Downtown Core	Commercial	393	398	791	474	431	905
	Residential	174	111	285	140	145	285
	Sub-Total	567	509	1076	614	576	1190
Downtown Gateway	Commercial	100	109	209	129	119	248
	Residential	71	46	117	57	60	117
	Sub-Total	171	155	326	186	179	365
DDMP Total		1276	1122	2398	1355	1294	2649

2.3.3 Road Section Operations

The road section operations were assessed considering the future traffic volumes, the results of which are summarized in Table 4 through Table 6.

Table 4: 2026 Road Section Operations

ROAD & SECTION		LANES	CAPACITY		VOLUMES (VPH)		VOLUME TO CAPACITY	
			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
Mosley Street	3rd St to 2nd St	1 NB 2 SB	700	1400	507	397	0.72	0.28
	2nd St to 1st St	1 NB 2 SB	700	1400	544	426	0.78	0.30
	1st St to Spruce St	1 NB 2 SB	700	1400	609	387	0.87	0.28



ROAD & SECTION		LANES	CAPACITY		VOLUMES (VPH)		VOLUME TO CAPACITY	
			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
Main Street	Spruce St to River Rd E	1 EB 2 WB	800	1600	554	546	0.69	0.34
	River Rd E to Beck St	2 EB 2 WB	1600	1600	382	528	0.24	0.33
	Beck St to Stonebridge	2 EB 2 WB	1600	1600	427	526	0.27	0.33
	Stonebridge to River Road W	2 EB 2 WB	1600	1600	323	437	0.20	0.27

Table 5: 2031 Road Section Operations

ROAD & SECTION		LANES	CAPACITY		VOLUMES (VPH)		VOLUME TO CAPACITY	
			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
Mosley Street	3rd St to 2nd St	1 NB 2 SB	700	1400	653	534	0.93	0.38
	2nd St to 1st St	1 NB 2 SB	700	1400	688	567	0.98	0.40
	1st St to Spruce St	1 NB 2 SB	700	1400	784	498	1.12	0.36
Main Street	Spruce St to River Rd E	1 EB 2 WB	800	1600	697	692	0.87	0.43
	River Rd E to Beck St	2 EB 2 WB	1600	1600	515	688	0.32	0.43
	Beck St to Stonebridge	2 EB 2 WB	1600	1600	580	694	0.36	0.43
	Stonebridge to River Road W	2 EB 2 WB	1600	1600	462	594	0.29	0.37



Table 6: 2041 Road Section Operations

ROAD & SECTION		LANES	CAPACITY		VOLUMES (VPH)		VOLUME TO CAPACITY	
			NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
Mosley Street	3rd St to 2nd St	1 NB 2 SB	700	1400	946	808	1.35	0.58
	2nd St to 1st St	1 NB 2 SB	700	1400	977	848	1.40	0.61
	1st St to Spruce St	1 NB 2 SB	700	1400	1133	721	1.62	0.51
Main Street	Spruce St to River Rd E	1 EB 2 WB	800	1600	982	984	1.23	0.61
	River Rd E to Beck St	2 EB 2 WB	1600	1600	782	1010	0.49	0.63
	Beck St to Stonebridge	2 EB 2 WB	1600	1600	886	1032	0.55	0.65
	Stonebridge to River Road W	2 EB 2 WB						

As indicated, Mosley Street will essentially operate at capacity by 2031 (reflecting 50% build-out of the DDMP area) and will surpass capacity by 2041. Main Street will remain below capacity through 2041, with the exception of the short eastbound section between Spruce Street and River Road East which will operate above capacity in 2041.

2.3.4 Intersection Operations

The study area intersections were again analyzed to consider the projected future traffic volumes. The existing configurations and control have been maintained in order to identify required improvements. The results are summarized in Table 7 through Table 9, whereas detailed worksheets are provided in Appendix D.



While all of the intersections will provide acceptable operations through 2026 during the weekday PM peak hour (the critical design hour), operational concerns begin to surface in 2031 and further deteriorate through the 2041 horizon.

Table 7: 2026 Intersection Operations

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY PM PEAK HOUR			SATURDAY PEAK HOUR		
			delay	LOS	v/c	delay	LOS	v/c
Mosley St & 3rd St	EB	stop	16	C	0.28	18	C	0.38
Mosley St & 2nd St	EB	stop	25	D	0.41	36	E	0.58
Mosley St & 1st St	EB	stop	21	C	0.31	27	D	0.44
River Ave Cres/River Rd E & Main St	SB	stop	28	D	0.50	52	F	0.72
River Rd E & Beck St	WB	stop	9	A	0.03	9	A	0.04
Main St & Beck St	NB	stop	22	C	0.36	34	D	0.54
	SB	stop	22	C	0.13	30	D	0.20
Main St & Stonebridge Blvd	EB	signal	4	A	0.26	5	A	0.35
	WB	signal	4	A	0.22	4	A	0.30
	NB	signal	18	B	0.50	18	B	0.48
	SB	signal	17	B	0.34	17	B	0.33
	overall	signal	8	A	0.31	8	A	0.38
Main St/Ansley Rd & River Rd W	EB	signal	8	A	0.46	9	A	0.55
	WB	signal	15	B	0.06	14	B	0.06
	NB	signal	19	B	0.50	20	B	0.56
	SB	signal	18	B	0.42	18	B	0.45
	overall	signal	16	B	0.51	16	B	0.60



Table 8: 2031 Intersection Operations

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY PM PEAK HOUR			SATURDAY PEAK HOUR		
			delay	LOS	v/c	delay	LOS	v/c
Mosley St & 3rd St	EB	stop	24	C	0.44	36	E	0.62
Mosley St & 2nd St	EB	stop	78	F	0.84	211	F	1.25
Mosley St & 1st St	EB	stop	44	E	0.68	96	F	1.02
River Ave Cres/River Rd E & Main St	SB	stop	125	F	1.01	418	F	1.70
River Rd E & Beck St	WB	stop	9	A	0.04	9	A	0.04
Main St & Beck St	NB	stop	89	F	0.91	320	F	1.50
	SB	stop	49	E	0.38	120	F	0.68
Main St & Stonebridge Blvd	EB	signal	5	A	0.38	6	A	0.48
	WB	signal	4	A	0.31	5	A	0.39
	NB	signal	19	B	0.47	19	B	0.51
	SB	signal	18	B	0.34	19	B	0.41
	overall	signal	8	A	0.40	9	A	0.48
Main St/Ansley Rd & River Rd W	EB	signal	10	B	0.65	13	B	0.75
	WB	signal	15	B	0.06	15	B	0.07
	NB	signal	20	B	0.55	21	C	0.63
	SB	signal	18	B	0.43	19	B	0.47
	overall	signal	16	B	0.67	18	B	0.76



Table 9: 2041 Intersection Operations

INTERSECTION, MOVEMENT & CONTROL			WEEKDAY PM PEAK HOUR			SATURDAY PEAK HOUR		
			delay	LOS	v/c	delay	LOS	v/c
Mosley St & 3rd St	EB	stop	143	F	1.05	441	F	1.77
Mosley St & 2nd St	EB	stop	>500	F	3.19	500+	F	5.65
Mosley St & 1st St	EB	stop	483	F	2.63	500+	F	4.52
River Ave Cres/River Rd E & Main St	SB	stop	>500	F	4.70	500+	F	11.02
River Rd E & Beck St	WB	stop	9	A	0.04	9	A	0.04
Main St & Beck St	NB	stop	>500	F	5.88	500+	F	32.79
	SB	stop	>500	F	4.29	500+	F	>50.00
Main St & Stonebridge Blvd	EB	signal	8	A	0.67	12	B	0.79
	WB	signal	6	A	0.48	6	A	0.54
	NB	signal	19	B	0.51	29	C	0.60
	SB	signal	19	B	0.47	30	C	0.65
	overall	signal	9	A	0.63	14	B	0.76
Main St/Ansley Rd & River Rd W	EB	signal	19	B	0.88	33	C	0.96
	WB	signal	18	B	0.07	29	C	0.10
	NB	signal	34	C	0.81	38	D	0.82
	SB	signal	29	C	0.52	31	C	0.63
	overall	signal	25	C	0.91	33	C	0.96



2.4 NEEDS ASSESSMENT

The following sections detail the various infrastructure needs established within the study area, premised on background studies previously completed by the Town or additional analyses completed in support of this Class EA.

2.4.1 Traffic Operations

The following improvements are required to address the road section capacity and intersection operational concerns anticipated in 2031 and 2041 to accommodate the projected future growth in the area. In consideration of the future traffic volumes and resulting operations, the following improvement strategy is recommended.

2026 Horizon

- No improvements are required as road sections and intersections will provide acceptable operations

2031 Horizon

- Increase road capacity in the northbound direction on Mosley Street between 1st Street and Spruce Street (ie. widen to 2 lanes)
- Improve intersection operations at the intersections of Main Street with Beck Street and River Avenue Crescent/River Road East (ie. traffic signal control or roundabout)
- Improve intersection operations at the intersections of Mosley Street with 1st Street and 2nd Street (ie. traffic signal control or roundabout)

2041 Horizon

- Increase road capacity in the northbound direction on Mosley Street between 3rd Street and 1st Street (ie. widen to 2 lanes)
- Increase road capacity in the eastbound direction on Main Street between Spruce Street and Beck Street (ie. widen to 2 lanes)



- Improve intersection operations at the intersections of Mosley Street with 3rd Street

2.4.2 Active Transportation

As per the *Active Transportation Plan for the Town of Wasaga Beach*⁶ and illustrated in Figure 13, a number of active transportation systems and networks are recommended to serve the study area, including multi-use and recreational trails, sidewalks and on-road bicycle lanes.

2.4.3 Water Levels & Beach Access

As has been evident over the past year, the water levels within Georgian Bay have a significant impact on not only the beach area, but also the adjacent road and development. The water levels within Lake Huron and hence Georgian Bay have changed considerably over the years with record highs at present moment. At the start of 2010, the water level was recorded at 176.15 metres and was maintained at this level on average over the course of 2010. As evident in the graph of Figure 14, over the past 10 years there has been a general increasing trend, with water levels in July and August 2020 peaking at 177.45 metres, which represents a 1.3 metre increase over the past 10 years.

Figure 10 illustrates various aerial images from Google Earth corresponding to summers in 2006, 2011, 2013, 2015 and 2020, and the extent of migration of the water levels and hence reduction in the overall beach area. This clearly illustrates how the beach area has shifted and the current limited beach area that is available.

2.4.4 Municipal Infrastructure

Stormwater Management

Given the requirements of a Municipal Class EA in context of this project, it is not required nor deemed necessary to undertake a detailed stormwater management study. The existing drainage systems and measures are to be reviewed and

⁶ *Active Transportation Plan for the Town of Wasaga Beach*. Meridian Planning Consultants, August 2008.



integrated where appropriate with the future works with consideration for the following:

- all of the subject roads will be urbanized, and storm drainage requirements addressed during the design stage of the project; and
- the stormwater management requirements of the beach area are to be addressed as the area redevelops through the Town's site plan approval process.

Wastewater Servicing

In conjunction with the DDMP, the Town undertook a review the wastewater servicing requirements to support the planned development under the DDMP proposal⁷. As per the wastewater servicing review, the following recommendations were noted:

- replace approximately 750 metres of the existing 250mm diameter sanitary sewer on Mosley Street from 1st Street to Sewage Pump Station 4 with a 350mm sewer;
- replace approximately 250 metres of the existing 200mm diameter sanitary sewer on Beach Drive with a 250mm sewer;
- construct a new sewage pump station to replace (and increase the capacity of) Sewage Pump Station 4; and
- construct a new sewage pump station to replace (and increase the capacity of) Sewage Pump Station 10.

Water Servicing

Similarly, the Town undertook a review of the water servicing requirements to support the DDMP⁸, the findings of which noted:

⁷ *Servicing of Wastewater from the Planned Development under the DDMP*. Ainley Group, June 2017.

⁸ *Water Servicing Assessment for Planned Development under the Downtown Development Master Plan*. Ainley Group, June 2017.



- the existing water supply will be adequate to service the proposed development;
- the existing water storage with the proposed West End storage reservoir will be adequate to service the proposed development; and
- the existing water distribution network is capable of supplying water at adequate pressures and available fire flows.

2.4.5 Time of Need

It is noted that the servicing strategies and/or requirements as noted above will be subject to further review and confirmation of need and timing subject to future development and proposed densities.

2.5 PROBLEM/OPPORTUNITY STATEMENT

The Town of Wasaga Beach has identified the beachfront and surrounding area, consisting of the Main Street, Mosley Street and Beach Drive corridors, as an integral component of the Town's vision to develop a livable, accessible and sustainable all-season town-center for the entire community, including existing and future residents and visitors. In consideration of the existing road and infrastructure conditions, and in context of the requirements to support future growth with respect to traffic volumes (vehicular, cycling, pedestrian and transit) and municipal services, a Problem/Opportunity Statement has been defined.

The Problem/Opportunity 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 lengths of Main Street (from River Road West to Mosley Street), Mosley Street (from Main Street to 6th Street) and Beach Drive be addressed in an environmentally sound manner, in consideration of future traffic needs, current Town standards, active transportation opportunities and municipal infrastructure requirements, with the objective of facilitating future growth while providing safe and efficient travel for all road users.



3 Stakeholder 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 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 on July 11, 2019 and published in the local newspaper and posted on the Town's website. 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 E.

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

A summary of the stakeholder events and associated dates is also provided in Appendix E, starting with the Notice of Study Commencement.

3.2 PUBLIC COMMENTS

No comments from the public were received in response to the Notice of Study Commencement.

3.3 AGENCY COMMENTS

Comments were received from the following agencies.



3.3.1 Ministry of the Environment, Conservation and Parks

MECP acknowledged the commencement of a Schedule C Municipal Class Environmental Assessment to improve the subject road corridors and provided an “Areas of Interest” document which provides guidance regarding the ministry’s interest with respect to the Class EA process.



4 Alternative Solutions

Alternative Solutions have been developed to address the Problem/Opportunity Statement, in particular the need to implement improved transportation infrastructure to meet future demands relating to automobile, bicycle and pedestrian travel. Recognizing that there are numerous potential alternative solutions possible when considering the alternative modes of transportation, each mode has been addressed separately and a preferred solution identified for each, the combination of which yields the overall preferred solution. The requirements along Main Street, Mosley Street and Beach Drive have been considered separately in context of their varying environments and development concepts.

Alternative solutions have not been considered for municipal infrastructure and servicing in that such are not considered necessary in context of the Class EA framework. Rather, it is expected that municipal infrastructure will be implemented, as required, in accordance with applicable municipal standards and in consideration of the requirements of the studies completed to date and the ultimate servicing demands of the DDMP development. With respect to stormwater drainage, it is expected that all roads will be constructed to urban standards, complete with appropriate curb, gutter and storm sewer systems to adequately collect and convey surface runoff.

4.1 ELEMENTS OF THE ALTERNATIVE SOLUTIONS

Various elements considered in the development of the alternative solutions are presented below, with additional information for each summarized in Figure 16. As further detailed, consideration has been given to the requirements of the Town's *Official Plan (OP)*, the *Downtown Wasaga Beach Urban Design Guidelines*⁹ (UDG) and the *Downtown Development Master Plan (DDMP)*.

⁹ *Downtown Wasaga Beach Urban Design Guidelines*. WSP Canada Group Limited, June 2018.



4.1.1 Right-of-Way

The right-of-way refers to the minimum right-of-way desired within which the solutions are to be developed. The recommendations as per the Town's OP and UDG have been carried forward reflective of the recommended cross-sections as per the DDMP and UDG. Rights-of-way considered include:

- Main Street 30 metres proposed vs 20 to 30+ metres existing;
- Mosley Street 23 metres proposed vs 13 to 20 metres existing; and
- Beach Drive 23 metres proposed vs 15 to 20 metres existing.

4.1.2 Travel Lanes

Travel lanes refers to the number of lanes that should be provided with consideration for:

- 2 lanes (ie. 1 per direction);
- 3 lanes (ie. 1 per direction with a centre turn lane); and
- 4 lanes (ie. 2 per direction).

4.1.3 On-Street Parking

With respect to the provision of on-street parking, the following have been considered:

- no on-street parking (ie. parking is to be provided via off-street parking lots);
- parallel parking;
- angle parking; or
- perpendicular parking.

As indicated in Figure 16, perpendicular parking will offer the greatest number of parking spaces along the road section, albeit it typically requires additional right-of-way to accommodate the orientation of vehicles.

4.1.4 Bicycle Provisions

Provision for cyclists can be provided through the following:



- within existing travel lanes or on sidewalks (ie. no exclusive bicycle facilities);
- shared travel lanes (ie. wider lanes shared with automobile traffic);
- on-road bike lanes;
- separate cycle tracks located within the boulevard (one direction of travel on each side of the road); and
- combined cycle track (serving both directions of travel on one side of the road).

4.1.5 Pedestrian Provisions

Pedestrians are to be accommodated via:

- traditional, standard 1.5 metre sidewalks;
- wider sidewalks of 3.0 to 5.0 metres in width; or
- multi-use trails of 3.0 to 4.0 metres in width.

4.1.6 Retail/Commercial Support

Further to the provision of means to accommodate various modes of travel within the study area, consideration has also been given to the provision of wider boulevards to allow for increased commercial zones (thereby accommodating outdoor sales, signs, patios, etc.). Such can be provided via a dedicated area, or integrated/shared with the pedestrian facilities provided the latter are sized accordingly. The provision of on-street parking in close proximity to retail/commercial establishments will also be beneficial.

4.2 MAIN STREET

4.2.1 Right-of-Way

A 30 metre right-of-way has been assumed as per recommendation of the UDG and indicated in the Town's OP. Through areas in which the existing right-of-way is only 20 metres, additional widenings will be required.



4.2.2 Travel Lanes

While the traffic volumes on Main Street are projected to exceed 1000 vehicles per hour per direction during the 2031 and 2041 peak hour, thus warranting 2 lanes per direction, the alternatives only consider the provision of 2 or 3 lanes. This recognizes the direction of the Town's OP to redevelop Main Street in context of a "complete street" hence considering the needs of all users of the Main Street road corridor, including motorists, cyclists, pedestrians and businesses. A 4-lane road is not desired within the future downtown area as such is not considered conducive to the type of development and environment that is sought. Rather, with consideration for only 2 or 3 lanes, traffic volumes will be restricted/controlled, there will be additional availability within the right-of-way to accommodate other amenities (eg. bike lanes, wider sidewalks, etc.) and the overall road and intersection footprints will be reduced, thereby improving pedestrian safety and overall experience. In all cases, 3.5 metre travel lanes have been assumed. The centre turn lane will increase the overall road capacity in that left turns can be made from the centre lane, thereby reducing impacts to through traffic. The centre turn lane will also better serve abutting developments and provide opportunity for left turn lanes at intersections (which in turn will increase the intersection capacity).

4.2.3 Parking

Given the commercial nature of Main Street and in consideration of the potential redevelopment of commercial parking lots in the immediate area to non-parking uses, the provision of on-street parking is desired (such may not be required from River Road West to Stonebridge Boulevard given the "big box" nature of the commercial development and the provision of dedicated and ample parking lots). Given the limited right-of-way and the desire to accommodate as many other elements as possible, parallel parking is the preferred option for Main Street as compared to angle or perpendicular parking. A 2.5 metre parking bay has been assumed.

At intersections or through select areas, the parking lanes can be removed to further reduce the overall road width and create additional opportunity for boulevard enhancements and/or features.



4.2.4 Bicycle Provisions

Bicycle provisions have been considered given the recommendations of the Town's *Active Transportation Plan*. Consideration has been given to the provision of shared multi-use trail (shared between pedestrians and cyclists), on-road bike lanes and separated cycle tracks. Given the nature of cyclist activity anticipated within the area (most likely recreational vs utilitarian), the range of cycling skills and abilities, and the likelihood for increased family and children cycling, the provision of dedicated facilities is preferred (as opposed to a shared lane with automobile traffic).

4.2.5 Pedestrian Provisions

Further to the provision of the above, the remaining right-of-way has been allocated to pedestrian and retail/commercial use.

4.2.6 Alternative Solutions

The resulting Main Street alternative solutions are illustrated in Figure 17 as developed based on the above and in consultation with Town staff and in consideration of the recommendations from the Town's *Active Transportation Plan* (with respect to pedestrian, cyclist and parking facilities) and the *Urban Design Guidelines*. It is noted that these solutions are intended to illustrate the desired elements within the ultimate Main Street cross-section and the overall relationship of each. The configuration and composition of the boulevards (which are to include buffer space, amenity zones, pedestrian through zones and retail/commercial zones) are for illustration purposes only. The next phase of the study will advance the Preferred Solution for Main Street and develop Alternative Design Concepts for it, with greater details as to dimensions, arrangements, landscape and streetscape, materials, etc. What is presented here are only preliminary representations.



4.3 MOSLEY STREET

4.3.1 Right-of-Way

The Town's OP and UDG recommends a 23 metre right-of-way which has been adopted for all options. In achieving such, widenings of up to 10 metres will be required through some areas.

4.3.2 Travel Lanes

While increased traffic volumes will also result along Mosley Street given the increased development levels and densities (much of which is focused within the beach area), 2 or 3 lane options have again been considered for the same reasons as noted previously. As with Main Street, the provision of a centre turn lane will assist with left turns to/from the intersecting side streets and developments with direct driveway access to Mosley Street.

4.3.3 Parking

The provision of on-street parallel parking has been considered given the commercial/recreational nature of the area. However, it is expected that off-street parking will be provided in the immediate areas and hence alternatives with no parking have also been considered, and the right-of-way allocation attributed to other uses.

4.3.4 Bicycle Provisions

As with Main Street, options for bicycle provisions include a multi-purpose trail, bike lanes and a cycle track. Given other trails and facilities in and through the area (eg. Shore Lane and Beach trails), several alternatives exclude dedicated facilities for cyclists.

4.3.5 Pedestrian Provisions

Pedestrian provisions will utilize the remaining right-of-way.

4.3.6 Alternative Solutions

The resulting Mosley Street alternative solutions are illustrated in Figure 18.



4.4 BEACH DRIVE

4.4.1 Right-of-Way

For Beach Drive, both the Town's OP and UDG recommend a 23 metre right-of-way, which has been considered. A 20 metre right-of-way has also been considered to reduce any property takings and increase the developable area along the beach.

4.4.2 Travel Lanes

Two travel lanes have been assumed along Beach Drive as per the UDG; under Option 1 the lane widths remain at 3.5 metres whereas under Option 2 they have been reduced to 3.0 metres in context of the local nature of the road and the need to accommodate other facilities with the right-of-way. The orientation of travel has not been resolved; rather the noted options can be configured to provide 1 lane per direction, or 2 lanes in a single direction, operating either clockwise or counter-clockwise.

Under Option 3, vehicular travel on Beach Drive would be prohibited and the corridor would be configured to provide greater opportunity and enhancements for other users and further promote and support the abutting developments. As illustrated in the Option 3 graphic, notwithstanding the elimination of the motoring public on Beach Drive, the provision of a 6.0 metre hard surface public/event spaces is recommended to facilitate emergency access, deliveries and special events (eg. car shows, art shows, pop-up facilities, etc.).

4.4.3 Parking

With the provision of off-street parking within the area, there is no need to provide for on-street parking along Beach Drive. This will effectively reduce the overall road footprint and thus provide increased space for other uses, which is considered of great importance along Beach Drive given its relation to the beach area and the abutting developments.



4.4.4 Bicycle Provisions

Bicycles will be accommodated via a multi-use trail (to be shared with pedestrians) or a separate cycle track. Given the significance of the Beach Drive corridor in serving the neighbouring trail systems, all options facilitate bicycle activity.

4.4.5 Pedestrian Provisions

Pedestrian provisions will utilize the remaining right-of-way.

4.4.6 Alternative Solutions

The resulting Beach Drive alternative solutions are illustrated in Figure 19.



5 Alternative Solutions - Environment Inventories

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 whereas additional information is provided in the referenced and appended reports (as appropriate).

5.1 PHYSICAL ENVIRONMENT

The physical environment pertains to the transportation, utility and infrastructure systems within the study area.

5.1.1 Transportation System

Roads

The transportation network as it pertains to this study includes the road corridors as previously provided in Section 2.2: Existing Conditions, namely:

- Main Street from River Road West to Mosley Street;
- Mosley Street from Main Street to 6th Street; and



- Beach Drive from Spruce Street to 3rd Street.

On-Street Parking

Angled, on-street parking is provided on the east side of Beach Drive along its entirety. On-street parking is not otherwise provided along Main Street or Mosley Street.

Sidewalks & Pedestrian Crossings

There are sidewalks along the following road sections:

- on both sides of Main Street along its full length;
- on both sides of Mosley Street from the Nottawasaga River to just south of 3rd Street (beyond which there are paved shoulders on both sides of the road); and
- on the east side of Beach Drive along its full length (there is a paved shoulder along the west side of the road, delineated from the travel lane via concrete curb stops).

There are dedicated and protected pedestrian crossings at the following locations:

- on all approaches at the signalized intersection of Main Street and River Road West;
- on all approaches at the signalized intersection of Main Street and Stonebrook Boulevard;
- on Mosley Street just west of Spruce Street, north of 1st Street and north of 3rd Street (all pedestrian crossovers with overhead flashing lights and signs); and
- all on intersecting side streets along Main Street and Mosley Street (ie. painted crosswalks at stop signs).

5.1.2 Utility & Infrastructure Systems

An overall Utility Master Plan (including municipal infrastructure) is provided in Appendix F for the Beach Areas 1 and 2, with additional details noted below.



Utilities

There are overhead utility services along the following road sections:

- south side of Main Street from approximately 200 metres west of River Road West to 75 metres east of River Avenue Crescent;
- west side of Mosley Street from just north of 2nd Street to beyond 6th Street; and
- east side of Beach Drive from Spruce Street to 2nd Street.

There are a number of below grade utilities within sections of the subject road corridors including gas, hydro, telephone and other communications.

Municipal Infrastructure

There are municipal sanitary and storm sewers and watermain along both Main Street and Mosley Street; sections of Beach Drive also have sanitary sewers and watermain.

5.2 NATURAL ENVIRONMENT

5.2.1 Natural Heritage

An assessment of the natural heritage conditions was completed by Azimuth Environmental Consulting Inc. (Azimuth) and is provided in Appendix G. 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 augmented with field reconnaissance investigations of the study area to identify natural environmental features, characterize aquatic habitat conditions at water crossings and complete a habitat assessment for Species at Risk (SAR). Their approach also included the overlay of information onto aerial photography, identification of potential constraints and recommendation of mitigation measures.



General Site Description

The study area is largely located within areas that have been heavily urbanized and repeatedly subjected to development and anthropogenic disturbances. Very little natural tree cover or other habitat remains along the majority of Main Street. Similarly, along Mosley Street and Beach Drive, there is little to no natural vegetation between Spruce Street and 3rd Street. Rather, the abutting areas are comprised of stores, accommodations, tourism and other businesses, paved parking lots, etc. Between 3rd Street and 6th Street, there is minimal vegetation.

Vegetation Communities

Virtually all the lands within the study area have been impacted and influenced by human development and other activities. The study area includes 6 vegetation community types and 11 natural areas. Most of these are small in size and do not officially qualify for vegetation community status under applicable protocols.

The Provincial and County mapping resources indicate woodland to the west of Mosley Street, adjacent on either side of 6th Street. However, the majority of the treed areas lie outside of the right-of-way and in-field investigations revealed that the mature trees within this area are canopy-only, with no associated understory, shrub or ground layer. As such, these small areas do not comprise a natural woodland vegetation community.

One of the vegetation communities identified within the study area (SBTD1-2) is considered to be provincially rare and of provincial significance, and thus warrants protection. However, very little natural form or function remains in the portion within the right-of-way. As it is removed from the remainder of the community by over 40 metres, loss of such a small portion of the community should not affect its overall function (should the redevelopment required the corresponding land).

Vascular Plants

A total of 111 vascular plant species were recorded in the study area on October 29, 2019, 64 of which (58%) are native to Ontario, while 46 (42%) are non-native and/or horticultural cultivars. Several are considered highly invasive, with many



listed as noxious weeds. None of the vascular plant species recorded are considered to be rare or of local, regional or provincial significance. No vascular plant SAR was recorded during the survey.

No Butternut trees were located during the targeted survey.

Wildlife

Wildlife species utilizing the study area were identified from direct observation and through interpretation of sign (ie. tracks, scats and vocalizations) as a matter of course while conducting the survey. No unusual or unexpected wildlife were observed as incidental encounters. While a number of mammals are presumed to be present in the study area (including coyote, racoon, beaver, squirrels, etc.), none are considered rare or designated SAR.

Species at Risk

The following SAR were identified, based on habitat requirements or known presence (albeit none were observed during the site visit):

- reptiles and amphibians: Northern Map Turtle, Snapping Turtle, Eastern Hog-nosed Snake;
- birds: Barn Swallow, Piping Plover;
- mammals: Little Brown Myotis, Northern Long-eared Myotis, and Tri-coloured Bat; and
- fish: Lake Sturgeon.

Fisheries & Aquatic Resources

The study area contains the main branch of the Nottawasaga River, flowing under the Main Street bridge in a north-easterly direction before discharging into Nottawasaga Bay, the southern extent of the greater Georgian Bay. The Nottawasaga River provides important recreational opportunities for the community of Wasaga Beach including boating, fishing and hosting a diverse fish community that includes migratory Chinook Salmon, Rainbow Trout, gamefish and aquatic SAR.



Conclusion of Study

Based on the preliminary information reported within the Azimuth report, the improvements such as road widening, intersection improvements, roundabouts and pedestrian and cycling facilities within the study area are considered feasible from an environmental perspective. Environmental impacts to SAR, Significant Wildlife Habitat or other significant natural heritage features, should they occur, are expected to be readily mitigated through proper project planning and rehabilitation initiatives.

5.2.2 Ontario Parks

Beach Areas 1 and 2 are under the jurisdiction of Ontario Parks, with the boundary between Ontario Parks and Town property generally coinciding with the water side of Beach Drive (ie. Ontario Parks has jurisdiction over the sand beach areas extending from Beach Drive to the water).

As per the natural heritage review, the open sand beach areas and associated dunes extend from Beach Areas 1 and 2 westward along the Nottawasaga Bay shore to the western limits of Wasaga Beach, and is part of the Mineral Open Shore Ecosite vegetation community. Beach Area 1, which extends from 3rd Street to the mouth of the Nottawasaga River, is largely an open, flat sand beach within the study area, abutting Beach Drive. Beach Area 2, which extends from 3rd Street to 16th Street (well south of the study area) has similar characteristics albeit in lieu of Beach Drive, it is comprised of treed foredunes (the initial dunes inland from the beach), which have been heavily impacted by significant human use for picnicking, parking, beach access and other purposes and park amenities over many years.

Both beach areas are considered dynamic in nature, in that they are continually undergoing changes (from hours or days to years) in response to changing wave, wind and water level conditions. In consideration of their dynamic natures, the beaches fronting the study area are graded on a regular basis by Ontario Parks.



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. Land use designations for the study area, as per the *Town of Wasaga Beach Official Plan*, are illustrated in Figure 20.

As noted, the majority of the lands are designed:

- Downtown Gateway;
- Downtown Core; or
- The Beach.

Within the Beach and the Downtown Core areas, those properties fronting the subject roads are expected to redevelop in conjunction with the DDMP. Recognizing that this development is likely to occur over 20+ years, there is the potential for impacts to existing properties and developments, as related to the need to secure the recommended rights-of-way.

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 thus any alternative proposing road reconstruction will impact commercial properties equally.

5.4 CULTURAL/HERITAGE ENVIRONMENT

This environment encompasses archaeological sites and built heritage interest.

5.4.1 Archaeology

A Stage 1 archaeological assessment was conducted by Archaeological Research Associates Ltd (ARA), and is provided in Appendix H. The assessment encompassed the entirety of the proposed project lands, comprising the Main Street (River Road West to Mosley Street), Mosley Street (Main Street to 6th Street) and Beach Drive corridors and portions of cross-streets and the adjacent lands that may be required depending on the preferred alternative.



A visual inspection, coupled with the analysis of historical sources and digital environmental data, resulted in the identification of multiple areas of “no archaeological potential” within the study area. Specifically, deep land alterations have resulted in the removal of archaeological potential from the municipal parking lots, Main Street Market, roadway platforms, shoulders and road side ditches associated with Main Street, Mosley Street, Beach Drive and others. These areas had clearly been impacted by past earthmoving/construction activities (eg. general grading below topsoil, underground services installation and major landscaping), resulting in the disturbance of the original soils to a significant depth and severe damage to the integrity of any archaeological resources. Four permanently wet areas were also identified and 2 areas of previously assessed lands were photo-documented. The identified areas of no archaeological potential and previously assessed lands of no further concern do not require any additional assessment.

The remainder of the study area has “potential for Indigenous and Euro-Canadian archaeological materials” or requires test pit surveys to confirm the presence/extent of any subsurface disturbances. The areas of archaeological potential include grassed and treed areas and portions of the sandy beach along Beach Drive (refer to Images 15 to 24 in the corresponding report).

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 accordance with Section 2.1 of the 2011 *Standards and Guidelines for Consultant Archaeologists*. Given that there are still outstanding archaeological concerns within the subject lands, no ground alterations or development of any kind may occur until a Stage 2 assessment is complete, a recommendation that the lands require no further archaeological assessment is made, and the associated report is entered into the Ontario Public Register of Archaeological Reports.

5.4.2 Cultural Heritage

ARA similarly conducted a Cultural Heritage Assessment of structures and landscapes with the potential to be impacted by the proposed project, a copy of which is provided in Appendix I. As a result of consultation and field survey, the



following Built Heritage Resources were identified (additional details and photos of which are provided in the appended report):

- 25, 72, 88 and 220 Main Street;
- 183, 208 and 227 Mosley Street;
- Main Street Bridge;
- 52 River Avenue Crescent;
- 35 River Road East;
- 44, 112, 116, 128 and 136 Beck Street;
- 9 4th Street; and
- 15 Willow Street.

A number of Cultural Heritage Landscapes were also identified in the area, including:

- the Beach;
- Beck Square;
- the Entertainment District;
- the Nottawasaga River; and
- Snake Island.

While detailed designs or plans for the road corridor improvements were not available at the time of the Cultural Heritage Assessment Report, it is not anticipated that the heritage attributes of the above listed locations and landscapes will be directly impacted, with the exception of the Main Street Bridge and the Beach.

There may also be some indirect impacts to the identified resources during construction activities and minor changes to the character of the existing frontage of properties along Main Street and Mosley Street due to the reconstruction/revitalization related activities. Some of these indirect impacts may in fact prove to be positive. As the aesthetic of the streetscape is improved,



opportunities to remove more recent infrastructure in order to restore original views to identified cultural heritage resources are identified, and/or efforts can be undertaken to interpret cultural heritage resources (ie. with plaques or public art)

5.5 ECONOMIC ENVIRONMENT

With respect to the economic environment, this considers the associated costs to be incurred in implementing the alternative solutions. 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 Alternative Solutions - Evaluation

This chapter 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 EVALUATION CRITERIA

In completing the evaluation, a number of criteria were considered reflective of the noted environments. For the Physical Environment, focus is on accommodating the transportation needs in that utility and infrastructure needs are to be addressed in conjunction with area redevelopment.

Table 10: Evaluation Criteria

ENVIRONMENT	CRITERIA	BASIS FOR ASSESSMENT
Physical	Vehicles	Ability to accommodate future traffic volumes
	Parking	Ability to service abutting retail/commercial
	Cyclists	Cycling operation and safety
	Pedestrians	Pedestrian operation and safety along study corridor
	Active Transportation	Likelihood to promote and foster Active Transportation use
Natural	Fisheries / Aquatic Impacts	Impact to fish habitat and other aquatic features
	Wildlife / Terrestrial Impacts	Impact to wildlife species
	Vegetation Impacts	Impact to vegetation communities on adjacent properties



ENVIRONMENT CRITERIA		BASIS FOR ASSESSMENT
Social	Property Impacts	Impacts to property based on widening of road platform and/or right-of-way
	Construction Impacts	Future impacts to adjacent properties
Cultural Heritage	Archaeological & Heritage Impacts	Impacts to cultural and heritage features
Economic	Construction Costs	Costs to construct individual options
	Maintenance Costs	Future maintenance requirements
	Land Acquisition Costs	Total land acquisition costs
	Economic Opportunities	Retail & Commercial Enhancements

6.2 ENVIRONMENTAL IMPACTS

The potential impacts associated with the alternative solutions are referenced as follows:

- Main Street Table 11;
- Mosley Street Table 12; and
- Beach Drive Table 13.

It is noted that the natural environment impact evaluations were derived from the *Natural Environmental Existing Conditions Report* included as Appendix G. Similarly, the cultural/heritage impact evaluations were derived from the *Stage 1 Archeological Assessment Main Street Reconstruction & Downtown Revitalization* and the *Cultural Heritage Assessment Report* included as Appendix H and Appendix I respectively.

6.3 RECOMMENDED SOLUTIONS

Based on the evaluation of the noted alternatives, the recommended solutions are as follows:



- Main Street Option 3B (30m ROW with 3 lanes + on-street parking + cycle track);
- Mosley Street Option 2 (23m ROW with 3 lanes); and
- Beach Drive Option 3 (20m ROW with 0 lanes + cycle track).

At this stage, these are only recommended solutions, to be presented to the public and stakeholders for consideration and comment.



Table 11: Evaluation of Alternative Solutions – Main Street

ENVIRONMENT & EVALUATION CRITERIA		BASIS FOR ASSESSMENT	OPTION 1 (UDG) 30m ROW 2 lanes + on-street parking + multi-use trail	OPTION 2A 30m ROW 2 lanes + on-street parking + bike lanes	OPTION 2B 30m ROW 2 lanes + on-street parking + cycle track	OPTION 3A 30m ROW 3 lanes + on-street parking + bike lanes	OPTION 3B 30m ROW 3 lanes + on-street parking + cycle track
Physical	Vehicles	Ability to accommodate future traffic volumes	<ul style="list-style-type: none"> Lower capacity as compared to 3-lane options 	<ul style="list-style-type: none"> Lowest capacity due to 2-lane profile & on-road bike lanes 	<ul style="list-style-type: none"> Lower options capacity as compared to 3-lane 	<ul style="list-style-type: none"> Greater capacity as compared to 2-lane options 	<ul style="list-style-type: none"> Greatest capacity due to 3-lane profile & separated cycle track
	Parking	Ability to service abutting retail/ commercial	<ul style="list-style-type: none"> On-street parallel parking provided 	<ul style="list-style-type: none"> On-street parallel parking provided 	<ul style="list-style-type: none"> On-street parallel parking provided 	<ul style="list-style-type: none"> On-street parallel parking provided 	<ul style="list-style-type: none"> On-street parallel parking provided
	Cyclists	Cycling operation and safety	<ul style="list-style-type: none"> Better operations/safety as compared to on-street bike lanes Potential conflict with other users of multi-use trail 	<ul style="list-style-type: none"> Good operations/safety as compared to no facilities 	<ul style="list-style-type: none"> Best operations/safety given separated and dedicated cycle track 	<ul style="list-style-type: none"> Good operations/safety as compared to no facilities 	<ul style="list-style-type: none"> Best operations/safety given separated and dedicated cycle track
	Pedestrians	Pedestrian operation and safety along study corridor	<ul style="list-style-type: none"> Wider sidewalks provide best accommodation for increased ped volumes Increased potential for conflict with cyclists on multi-use trail 	<ul style="list-style-type: none"> Wider sidewalks provide best accommodation for increased pedestrian volumes 	<ul style="list-style-type: none"> Wider sidewalks provide best accommodation for increased pedestrian volumes 	<ul style="list-style-type: none"> Wider sidewalks provide best accommodation for increased pedestrian volumes 	<ul style="list-style-type: none"> Wider sidewalks provide best accommodation for increased pedestrian volumes
	Active Transportation	Likelihood to promote and foster Active Transportation use	<ul style="list-style-type: none"> Better potential to promote Active Transportation 	<ul style="list-style-type: none"> Good potential to promote Active Transportation 	<ul style="list-style-type: none"> Best potential to promote Active Transportation 	<ul style="list-style-type: none"> Good potential to promote Active Transportation 	<ul style="list-style-type: none"> Best potential to promote Active Transportation
Natural	Fisheries / Aquatic Impacts	Impact to fish habitat and other aquatic features	<ul style="list-style-type: none"> Impacts to natural environment to be similar for all alternatives 				
	Wildlife / Terrestrial Impacts	Impact to wildlife species	<ul style="list-style-type: none"> Impacts to natural environment to be similar for all alternatives 				
	Vegetation Impacts	Impact to vegetation communities on adjacent properties	<ul style="list-style-type: none"> Impacts to natural environment to be similar for all alternatives 				



ENVIRONMENT & EVALUATION CRITERIA	BASIS FOR ASSESSMENT	OPTION 1 (UDG)	OPTION 2A	OPTION 2B	OPTION 3A	OPTION 3B	
		30m ROW 2 lanes + on-street parking + multi-use trail	30m ROW 2 lanes + on-street parking + bike lanes	30m ROW 2 lanes + on-street parking + cycle track	30m ROW 3 lanes + on-street parking + bike lanes	30m ROW 3 lanes + on-street parking + cycle track	
Social	Property Impacts	<ul style="list-style-type: none"> Impacts to be similar for all alternatives 30m ROW consistent for all options 					
	Construction Impacts	<ul style="list-style-type: none"> Future impacts to adjacent properties Impacts similar across all options Minor, short-term, impacts during construction 					
Cultural Heritage	Archaeological & Heritage Impacts	<ul style="list-style-type: none"> Impacts similar across all options No anticipated archaeological or cultural/heritage impacts as the work will be largely within the existing right-of-way or abutting lands which have likely been previously disturbed No anticipated impacts to the Main Street Bridge (no works anticipated) 					
Economic	Construction Costs	Costs to construct individual options	<ul style="list-style-type: none"> Greater cost to construct as compared to other 2-lane options 	<ul style="list-style-type: none"> ✓ Lowest cost to construct 	<ul style="list-style-type: none"> ✓ Lowest cost to construct 	<ul style="list-style-type: none"> × Greatest cost to construct 	<ul style="list-style-type: none"> × Greatest cost to construct
	Maintenance Costs	Future maintenance requirements	<ul style="list-style-type: none"> Lower cost to maintain 	<ul style="list-style-type: none"> Low cost to maintain 	<ul style="list-style-type: none"> ✓ Lowest cost to maintain 	<ul style="list-style-type: none"> × Greatest cost to maintain 	<ul style="list-style-type: none"> Greater cost to maintain
	Land Acquisition Costs	Total land acquisition costs	<ul style="list-style-type: none"> Land acquisition costs similar for all options 30m ROW consistent for all options 				
	Economic Opportunities	Retail & Commercial Enhancements	<ul style="list-style-type: none"> ✓ Greatest opportunity for commercial engagement with public due to wider boulevards (comparable to Option 2B) 	<ul style="list-style-type: none"> Good opportunity for commercial engagement with public due to wide boulevards 	<ul style="list-style-type: none"> ✓ Greatest opportunity for commercial engagement with public due to wider boulevards (comparable to Option 1) 	<ul style="list-style-type: none"> × Least opportunity for commercial engagement with public due 	<ul style="list-style-type: none"> Good opportunity for commercial engagement with public due to wider boulevards



Table 12: Evaluation of Alternative Solutions - Mosley Street

ENVIRONMENT & EVALUATION CRITERIA		BASIS FOR ASSESSMENT	OPTION 1 (UDG) 23m ROW 2 lanes + multi-use trail	OPTION 2 23m ROW 3 lanes	OPTION 3 23m ROW 3 lanes + parking	OPTION 4A 23m ROW 3 lanes + bike lanes	OPTION 4B 23m ROW 3 lanes + cycle track
Physical	Vehicles	Ability to accommodate future traffic volumes	× Lowest capacity as compared to 3-lane options	✓ Greatest capacity given omission of on-street parking and bike lanes	▪ Lower options capacity as compared to 3-lane	▪ Greater capacity as compared to 2-lane options	✓ Greatest capacity given omission of on-street parking and separated cycle track
	Parking	Ability to service abutting retail/ commercial	× No on-street parallel parking provided	▪ Parking bays may be possible in select areas within the boulevard	✓ On-street parallel parking provided	× No on-street parallel parking provided	× No on-street parallel parking provided
	Cyclists	Cycling operation and safety	✓ Best operations/safety given separated and dedicated cycle track	▪ No provision for cyclists on Mosley St, rather they would be diverted to the Shore Lane Trail north of Mosley St through the beach area	▪ No provision for cyclists on Mosley St, rather they would be diverted to the Shore Lane Trail north of Mosley St through the beach area	▪ Good operations/safety as compared to no facilities	✓ Better operations/safety given separated and dedicated cycle track ▪ Narrow buffer reduces safety
	Pedestrians	Pedestrian operation and safety along study corridor	▪ Wide sidewalks provide good accommodation for increased pedestrian volumes	✓ Wider sidewalks provide best accommodation for increased pedestrian volumes	× Narrow sidewalks limit accommodation for increased pedestrian volumes	▪ Wide sidewalks provide good accommodation for increased pedestrian volumes	▪ Wide sidewalks provide good accommodation for increased pedestrian volumes
	Active Transportation	Likelihood to promote and foster Active Transportation use	✓ Best potential to promote Active Transportation	▪ Average potential to promote Active Transportation	× Least potential to promote Active Transportation	▪ Good potential to promote Active Transportation	▪ Good potential to promote Active Transportation
Natural	Fisheries / Aquatic Impacts	Impact to fish habitat and other aquatic features	▪ Impacts to natural environment to be similar for all alternatives				
	Wildlife / Terrestrial Impacts	Impact to wildlife species	▪ Impacts to natural environment to be similar for all alternatives				
	Vegetation Impacts	Impact to vegetation communities on adjacent properties	▪ Impacts to natural environment to be similar for all alternatives				



ENVIRONMENT & EVALUATION CRITERIA	BASIS FOR ASSESSMENT	OPTION 1 (UDG)	OPTION 2	OPTION 3	OPTION 4A	OPTION 4B
		23m ROW 2 lanes + multi-use trail	23m ROW 3 lanes	23m ROW 3 lanes + parking	23m ROW 3 lanes + bike lanes	23m ROW 3 lanes + cycle track
Social	Property Impacts	<ul style="list-style-type: none"> Impacts similar across all options 23m ROW consistent for all options 				
	Construction Impacts	<ul style="list-style-type: none"> Impacts similar across all options Minor, short-term, impacts during construction 				
Cultural Heritage	Archaeological & Heritage Impacts	<ul style="list-style-type: none"> Impacts similar across all options Some potential impacts to adjacent built heritage, additional studies may be required to ensure appropriate mitigation No anticipated impacts to the Main Street Bridge (no works anticipated) 				
Economic	Construction Costs	<ul style="list-style-type: none"> Lower cost to construct as compared to other 2-lane options 	✓ Lowest cost to construct	<ul style="list-style-type: none"> Low cost to construct 	× Greatest cost to construct	× Greatest cost to construct
	Maintenance Costs	<ul style="list-style-type: none"> Lower cost to maintain 	✓ Lowest cost to maintain	<ul style="list-style-type: none"> Low cost to maintain 	× Greatest cost to maintain	× Greatest cost to maintain
	Land Acquisition Costs	<ul style="list-style-type: none"> Land acquisition costs similar for all options 23m ROW consistent for all options 				
	Economic Opportunities	Retail & Commercial Enhancements	<ul style="list-style-type: none"> Good opportunity for commercial engagement with public due to wide boulevards 	✓ Greatest opportunity for commercial engagement with public due to wider boulevards	<ul style="list-style-type: none"> Least opportunity for commercial engagement with public due to narrow boulevards 	× Least opportunity for commercial engagement with public due to narrow boulevards



Table 13: Evaluation of Alternative Solutions - Beach Drive

ENVIRONMENT & EVALUATION CRITERIA		BASIS FOR ASSESSMENT	OPTION 1 (UDG) 23m ROW 2 lanes + multi-use trail	OPTION 2 20m ROW 2 lanes + cycle track	OPTION 3 20m ROW 0 lanes + cycle track
Physical	Vehicles	Ability to accommodate future traffic volumes	✓ Will accommodate future volumes	✓ Will accommodate future volumes	▪ No vehicular access
	Parking	Ability to service abutting retail/ commercial	× No on-street parallel parking provided	× No on-street parallel parking provided	× No on-street parallel parking provided
	Cyclists	Cycling operation and safety	▪ Good operations/safety given separated and dedicated cycle track	▪ Good operations/safety given separated and dedicated cycle track	✓ Best operations/safety for cyclists given closure of Beach Drive to vehicular traffic
	Pedestrians	Pedestrian operation and safety along study corridor	▪ Wider sidewalks provide good accommodation for increased pedestrian volumes	▪ Wide sidewalks provide good accommodation for increased pedestrian volumes	✓ Best operations/safety for cyclists given closure of Beach Drive to vehicular traffic
	Active Transportation	Likelihood to promote and foster Active Transportation use	▪ Good potential to promote Active Transportation	▪ Good potential to promote Active Transportation	✓ Greatest potential to promote Active Transportation
Natural	Fisheries / Aquatic Impacts	Impact to fish habitat and other aquatic features	▪ Impacts to natural environment to be similar for all alternatives		
	Wildlife / Terrestrial Impacts	Impact to wildlife species	▪ Impacts to natural environment to be similar for all alternatives		
	Vegetation Impacts	Impact to vegetation communities on adjacent properties	▪ Impacts to natural environment to be similar for all alternatives		
Social	Property Impacts	Impacts to property based on widening of road platform and/or ROW	× Greatest impact to store front properties due to 23m ROW	▪ Least impact to store front properties due to 20m ROW	▪ Least impact to store front properties due to 20m ROW
	Construction Impacts	Future impacts to adjacent properties	▪ Impacts similar across all options ▪ Minor, short-term, impacts during construction		
Cultural Heritage	Archaeological & Heritage Impacts	Impacts to cultural and heritage features	<ul style="list-style-type: none"> ▪ Good opportunity to enhance Beach Area ▪ No anticipated impacts to the Beach (all work will be outside of the beach area) 	<ul style="list-style-type: none"> ▪ Good opportunity to enhance Beach Area ▪ No anticipated impacts to the Beach (all work will be outside of the beach area) 	<ul style="list-style-type: none"> ✓ Best opportunity to enhance Beach Area and increase access ✓ No anticipated impacts to the Beach (all work will be outside of the beach area)



ENVIRONMENT & EVALUATION CRITERIA	BASIS FOR ASSESSMENT	OPTION 1 (UDG)			OPTION 2	OPTION 3
			23m ROW 2 lanes + multi-use trail		20m ROW 2 lanes + cycle track	20m ROW 0 lanes + cycle track
Economic	Construction Costs	Costs to construct individual options	× Greatest cost to construct as compared to other 2-lane options	▪ Lower cost to construct	✓ Lowest cost to construct	
	Maintenance Costs	Future maintenance requirements	× Greatest cost to maintain	▪ Lower cost to maintain	✓ Lowest cost to maintain	
	Land Acquisition Costs	Total land acquisition costs	× Greatest land acquisition costs due to 23m ROW	✓ Least land acquisition costs (comparable to Option 3)	✓ Least land acquisition costs (comparable to Option 2)	
	Economic Opportunities	Retail & Commercial Enhancements	▪ Good opportunity for commercial engagement with public due to wide boulevards	▪ Good opportunity for commercial engagement with public due to wide boulevards	✓ Greatest opportunity for commercial engagement with public due to closure to vehicular traffic and increased pedestrian activity	



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 additional points of mandatory stakeholder contact. These points of contact include (refer also to Figure 1):

- the 1st point occurs towards the end of Phase 2 when a notice is issued inviting stakeholder comment and input via the first Public Information Centre (referred to as PIC 1);
- the 2nd second point occurs towards the end of Phase 3 when a second Public Information Centre is held (PIC 2); and
- the 3rd 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 13: Stakeholder Consultation - PIC 2 and Chapter 15: Stakeholder Consultation - Study Completion.

7.1 PURPOSE

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

- identification of the problem/opportunity;
- development of alternative solutions to address the problem/opportunity;
- general inventory of the affected environments;
- potential impacts of the 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 PIC was issued inviting stakeholder comment and input. Stakeholders include review agencies, the public and other municipalities. Notices were advertised on the Town's website and published in the Wasaga Sun on 2 separate occasions preceding PIC 1. The PIC 1 notice and corresponding distribution list are provided in Appendix J.

7.3 STAKEHOLDER ENGAGEMENT

PIC 1 was held on Thursday February 6, 2020 from 7:00 PM to 9:00 PM at the Wasaga Beach RecPlex, 1724 Mosley Street. As per the event register, PIC 1 was attended by 97 people. A formal presentation was provided at the start of the session, followed by an open house format during which stakeholders were welcome to review the display boards and ask further questions. Display boards, as provided in Appendix J, addressed the following:

- study background, object and purpose which presented the reasoning behind the undertaking;
- the purpose of PIC and the role of public in the study;
- a review of the existing conditions;
- existing and future traffic volumes, travel demands and operating levels of service;
- details pertaining to the future redevelopment potential and overall downtown vision;
- problem/opportunity identification necessitating the need for improvements;
- the Municipal Class EA process and those tasks relevant to this study;
- alternative solutions for each of the Main Street, Mosley Street and Beach Drive corridors;
- preliminary assessment and identification of the recommended alternative solutions;
- the remaining steps to completion; and
- contact details for additional information.



The display boards were subsequently made available on the Town's website following PIC 1 for further review.

Representatives from the Town of Wasaga Beach and Tatham Engineering were in attendance throughout PIC 1 answer any questions and provide assistance as necessary.

7.4 PUBLIC COMMENTS

Input was received from stakeholders either at PIC 1 or shortly thereafter via the comment sheets provided. A total of 25 comment sheets were returned in addition to several other comment submissions, all of which are included in Appendix J, along with an overall compilation of responses.

7.4.1 Importance of Pedestrian, Cyclist and Parking Facilities

The comment sheets requested the public to respond to the following questions pertaining to their support for pedestrian, cyclist and on-street parking facilities:

- How important to you is it to have enhanced pedestrian facilities (eg. wider sidewalks or boulevards) on Main Street? Mosley Street? Beach Drive?
- How important to you is it to have dedicated cyclist facilities (eg. bike lanes or cycle tracks) on Main Street? Mosley Street? Beach Drive?
- How important to you is it to have on-street parking on Main Street? Mosley Street? Beach Drive?

A summary of the responses is provided below and illustrated in Figure 21:

- pedestrian facilities are considered important or very important by all respondents for Main Street and Mosley Street and the majority of respondents (96%) for Beach Drive;
- dedicated cyclist facilities are considered important or very important by the majority of respondents (88% for Main Street, 65% for Mosley Street and 68% for Beach Drive); and
- on-street parking is not considered important by the majority of respondents (65% for Main Street, 95% for Mosley Street and 75% for Beach Drive).



7.4.2 Closure of Beach Drive

The majority of respondents (81%) indicated support to close Beach Drive to motor vehicles, as illustrated in Figure 21.

7.4.3 Supported Solutions

Respondents were also asked to indicate which of the alternative solutions they felt was most appropriate for each of Main Street, Mosley Street and Beach Drive. The results are presented in Figure 22 and include the following:

- Main Street: 43% (10 of 23) support Option 3B (3 lanes + on-street parking + cycle track) – it is noted that of the 8 respondents who indicated Other, 3 suggested Option 3B without on-street parking and 3 suggested Option 3A without on-street parking;
- Mosley Street: 33% (8 of 24) support Option 2 (3 lanes) whereas 29% (7 of 24) support Option 4A (3 lanes + bike lanes); and
- Beach Drive: 75% (18 of 24) support Option 3 (0 lanes + cycle track) – it is noted that of the 3 respondents who suggested Other, 1 was to consider a boardwalk only and 1 was to close it in the summer only.

7.5 AGENCY COMMENTS

Comment letters were received from 3 agencies, copies of which are provided in Appendix J and summarized below.

7.5.1 Infrastructure Ontario

IO identified several properties owned by the Minister of Government and Consumer Services that might be within or adjacent to the study area.

7.5.2 Ministry of Natural Resources and Forestry

MNRF indicated a desire to be kept informed as the project progresses and be circulated on materials for review and comment.



7.5.3 Ontario Parks

Ontario Parks indicated a desire to be kept informed as the project progresses and be circulated on materials for review and comment; they are particularly interested in potential impacts to the Wasaga Beach Provincial Park. Upon review of the PIC 1 material, Ontario Parks noted that the study area is near or abuts part of the Wasaga Beach Provincial Park and thus impacts to the park lands must be carefully considered. It was noted that some of the options have the potential to affect access to the park. Furthermore, they indicated that the introduction of any shoreline protection along Beach Drive has the potential to affect the park directly. In this regard, consideration should be given to natural shoreline protection features (eg. vegetated sand dunes) wherever possible.



8 Preferred Solutions

Following PIC 1, the preliminary assessment was revisited to consider comments and input received from the various stakeholders. All comments received were reviewed with Town staff in context of the preliminary assessment undertaken.

8.1 PREFERRED SOLUTIONS

The preferred solutions are detailed below and illustrated in Figure 23. As previously noted, these solutions are intended to illustrate the desired elements within the ultimate road corridors and the overall relationship of each. The configuration and composition of the boulevards (which are to include buffer space, amenity zones, pedestrian through zones and retail/commercial zones) are for illustration purposes only. The next phase of the study will advance the Preferred Solutions and develop corresponding Alternative Design Concepts for each, with greater details as to dimensions, arrangements, landscape and streetscape, materials, etc.

8.1.1 Main Street

Option 3B: 30m ROW with 3 lanes + on-street parking + cycle track

- The provision of a centre turn lane will increase the overall road corridor capacity by better accommodating left turn lanes and minimizing the impacts of such to through traffic. The centre turn lane will also improve safety for left turns to/from Main Street.
- On-street parking is desired in consideration of future redevelopment and the desire to establish a downtown core along Main Street. In addition, it is likely that surface parking areas currently provided may be better utilized for development (and hence redeveloped for commercial and/or residential uses). Through areas in which parking is not required (ie. from River Road West to Stonebridge Boulevard where the abutting commercial developments provide ample parking) and upon approach to intersections, the on-street parking can be removed in favour of wider boulevards.



- A cycle track, which will provide a separated cyclist facility, is preferred over bike lanes to better accommodate cyclists of all ages and skill, and provided an increased level of safety. A dual direction cycle track is recommended to minimize the associated footprint and allow for better integration of the cycle track with other cycling facilities beyond Main Street.

As per public comment, this option (including deviations of it without on-street parking) were supported by 56% (13 of 23) of the respondents.

8.1.2 Mosley Street

Option 2: 23m ROW with 3 lanes

- The provision of a centre turn lane will increase the overall road corridor capacity by better accommodating left turn lanes and minimizing the impacts of such to through traffic. The centre turn lane will also improve safety for left turns to/from Mosley Street.
- Parking is expected to be provided in private and/or public parking lots within the beach area and thus on-street parking was not deemed necessary along this corridor. Furthermore, given the limited right-of-way, on-street parking could not be accommodated whilst ensuring appropriate boulevards for other users. Notwithstanding, should development and space permit, on-street parking bays can be considered in select locations.
- No dedicated cycling facilities are proposed along Mosley Street. Rather, provisions will be provided along Beach Drive which will be integrated with the existing boardwalk and the Shore Lane trail system.

As per public comment, Option 2 was supported by 33% (8 of 24) respondents, closely followed by Option 4B which also has 3 lanes and no-on-street parking, but provides a cycle track.

8.1.3 Beach Drive

Option 3: 20m ROW with 0 lanes + cycle track



- While the Town’s OP and UDG indicated a 23 metre right-of-way for Beach Drive, a 20 metre width is considered appropriate in context of the form and function of the corridor (ie. catering to non-automotive modes of travel). Furthermore, this minimizes the overall road corridor footprint and thus maximizes the remaining lands available for redevelopment (which is required to support the overall downtown and beach areas).
- Vehicular access to Beach Drive is not considered necessary. In its current form, it is a “loop road” and thus is primarily used to access the beach and abutting development, or to simply “cruise”. Access can be readily maintained without Beach Drive and the desired “cruising” should emphasis pedestrian and cyclist activity.
- A cycle track is recommended to separate cyclists from pedestrians and provide each with dedicated space. As previously noted, this facility will connect to others in the area (eg. Shore Lane and Main Street) to provide a contiguous system.

As per public comment, 81% of respondents (17 of 21) favour closing Beach Drive to motor vehicles and 75% (18 of 24) support Option 3.

8.2 CONFIRMATION OF CLASS EA SCHEDULE

In considering the preferred alternative solutions, the following Class EA schedules apply:

- | | |
|-------------|---|
| Schedule A | ▪ addition of cycle tracks |
| Schedule A+ | ▪ landscaping and streetscaping
▪ addition of on-street parking
▪ redesignation of existing lanes (ie. reduction from 4 lanes to 3 lanes)
▪ retirement (closure) of a road |
| Schedule B | ▪ reconstruction or widening of a road (ie. from 2 to 3 lanes) where the value will be less than \$2.6M |
| Schedule C | ▪ reconstruction or widening of a road (ie. from 2 to 3 lanes) where the value will be more than \$2.6M |



Given the overall project limits and objectives, the anticipated widening and reconstruction of Main Street and Mosley Street, and recognizing that a project cannot be separated into smaller pieces to consider lesser Class EA schedules, a Schedule C undertaking is confirmed as appropriate.

Furthermore, completing the study in accordance with the Schedule C guidelines affords additional opportunity for stakeholder review and input, which is desired by the Town given the significance of the project.



9 Alternative Design Concepts for the Preferred Solutions

Alternative design concepts for the preferred solutions have been prepared to illustrate how the preferred elements of each road corridor can be arranged and integrated to achieve the desired outcome for all road users. Prior to detailing the concept cross-sections, the manner in which the cross-sections can be accommodated within the existing road allowance must be identified and the need for required widenings/property takings established. This will define the limits within which the travel lanes, parking lanes, pedestrian walkways and cyclist facilities as required are to be located.

9.1 MAIN STREET

9.1.1 Alignment & Widening

Existing Conditions

In considering Main Street from River Road West to Stonebridge Blvd, the existing right-of-way as illustrated in Figure 24, is 30 metres or more, and thus can accommodate the desired 30 metre cross-section as per the preferred alternative solution. In this regard, the existing right-of-way is sufficient and no additional widenings are required through this section. Similarly, from Stonebridge Boulevard to Beck Street, the existing right-of-way is 30 metres and thus deemed sufficient without the need for any additional road widening (refer to Figure 25).

From Beck Street to River Avenue Crescent, the existing right-of-way is only 20 metres, which is not sufficient to accommodate the desired road cross-section. In this regard, a widening of 10 metres is required to achieve the desired 30 metre right-of-way. From River Avenue Crescent to the Nottawasaga River, a widening of 3 to 4 metres has been previously secured on the south side.

Alternative Alignment

In consideration of the existing 30 metre rights-of-way and the desire to maintain a consistent and uniform right-of-way along the entirety of Main Street, under this



alignment option the road is to be widened by 5 metres on both sides between Beck Street and River Avenue Crescent, thus balancing the property takings. This approach to the widening is also consistent with the Town's *Official Plan* and Community Improvement Program policies. As evident in Figure 25, there is a horizontal curve through this area, which is currently defined by an angular right-of-way. This will be remedied through the new right-of-way and implementation of appropriate curvature. Similarly, the widening beyond River Avenue Crescent is to respect the widening to the east.

9.1.2 Design Concepts

Various design concepts have been prepared for Main Street as illustrated in Figure 26, all of which are premised on the following as per the preferred solution:

- 30 metre right-of-way;
- 3 travel lanes (1 per direction + centre turn lane);
- on-street parking; and
- 2-lane cycle track.

It is noted that the sections and plans are considered representative of the overall road length. Intersection and/or mid-block “bump-outs” can be provided to facilitate pedestrian crossings, additional public amenities, seasonal displays, and public art, particularly in areas where on-street parking is not required and upon approach to intersections.

Concept 1

Key elements of Concept 1 include:

- typical urban street configuration;
- roadway with 3.5 metre travel and centre turn lanes;
- standard 2.5 metre on-street parking provided on both sides;
- wide 2.45 metre pedestrian walkways and urban street tree plantings on both sides;



- 0.6 metre wide building-side retail area (that can accommodate sandwich boards, narrow displays, etc.) on both sides;
- 3.0 metre cycle track (minimum recommended width) provided on the north side to facilitate the easiest and safest connection to Beach Drive (if the cycle track were provided on the south side, a crossing of Main Street would be required);
- 1.0 metre buffer along the curb which separates the cycle track from the on-street parking thus avoiding issues with opening car doors; and
- 1.8 metre treed amenity zone which separates the cycle track from the pedestrian walkway to minimize conflicts between cyclists and pedestrians.

Concept 2

Concept 2 is similar to Concept 1 but adds provision for patios on the south side through a reduction in some of the cross-section aspects. Key elements include:

- travel lanes reduced from 3.5 to 3.25 metres (minimum desired lane width is 3.25 metres from a traffic operations perspective);
- centre turn lane maintained at 3.5 metres (the wider width will better accommodate turning vehicles particularly those that are opposing one another);
- pedestrian walkways reduced from 2.45 to 2.15 metres on both sides;
- treed amenity zone, which separates the cycle track from the pedestrian walkway, reduced from 1.8 to 1.5 metres; and
- 2.4 metre patio/outdoor retail zone established on the south side (opposite side to the cycle track).

Concept 3

Concept 3 is similar to Concept 2 with the primary exception of provision for flexible space along the south side. Key elements include:

- travel lanes reduced from 3.5 to 3.25 metres (minimum desired lane width is 3.25 metres from a traffic operations perspective);



- centre turn lane maintained at 3.5 metres;
- standard 2.5 metre on-street parking provided on the north side;
- 2.5 metre flexible zone provided within the south boulevard that can be used for parking, patios, outdoor retail, or additional pedestrian space (via moveable bollards);
- wide 2.75 metre pedestrian walkways and urban street tree plantings on both sides;
- 0.6 metre building-side retail area (that can accommodate sandwich boards, narrow displays, etc.) on both sides;
- 3.0 metre cycle track (minimum recommended width) provided on the north side to facilitate a connection to Beach Drive;
- 1.0 metre buffer along the curb which separates the cycle track from on-street parking; and
- 1.8 metre treed amenity zone which separates the cycle track from the pedestrian walkway.

With respect to the flexible zones, the bollards can be located adjacent to the amenity zone, thereby designating the flexible zone for on-street parking. Alternatively, they can be placed curbside, thus increasing the overall boulevard space for enhanced use (including introduction of boulevard patios).

9.2 MOSLEY STREET

9.2.1 Alignment & Widening - Nottawasaga River to 2nd Street

Existing Conditions

In considering the section of Mosley Street from Spruce Street to 2nd Street, the existing right-of-way is predominantly 13 or 15 metres wide and thus does not provide sufficient space to accommodate the desired 23 metre cross-section. In this regard a widening of the existing right-of-way is required, and a number of options have been considered to achieve this, as illustrated in Figure 27 and detailed below.



Alignment 1

Under Alignment 1, the required widening to achieve a 23 metre right-of-way would occur on the east side of Mosley Street (ie. towards the river). Impacts to existing buildings and property, and future development potential, would therefore be limited to the east side.

Alignment 2

Alignment 2 incorporates a widening on the west side of Mosley Street (ie. towards the beach). Associated impacts would therefore be restricted to the west side of the road. Any existing right-of-way that would otherwise fall outside of the proposed right-of-way would be deemed surplus.

Alignment 3

Alignment 3 to achieve the 23 metre right-of-way is to widen on both sides of Mosley Street. To the extent possible, the intent would be to balance the additional land requirements on both sides, thus ensuring impacts are equitable, but such may be challenging given the irregularity of the existing right-of-way.

Alignment 4

One last option to implementing the Mosley Street right-of-way is to consider a realignment between 2nd Street and effectively Spruce Street as indicated. Under this option, all impacts would be on the east side of the existing Mosley Street, resulting in a significant reduction to the remaining development area between the road and the river.

9.2.2 Alignment & Widening -2nd Street to 6th Street**Existing Conditions**

Continuing westerly from 2nd Street to 6th Street, the existing right-of-way is only 20 metres. In addition, as illustrated in Figure 28, the right-of-way is not uniform and somewhat misaligned.



Alternative Alignment

The proposal is to widen the right-of-way to the required 23 metres and introduce a realignment which respects the existing conditions to the extent possible and both minimizes and balances impacts on both sides of the road (refer to Figure 28).

9.2.3 Design Concepts

Various design concepts have been prepared for Mosley Street as illustrated in Figure 29, all of which are premised on the following as per the preferred solution:

- 23 metre right-of-way; and
- 3 travel lanes (1 per direction + centre turn lane).

Concept 1

Key elements of Concept 1 include:

- typical urban street configuration;
- roadway with 3.5 metre travel lanes and a 3.5 metre centre turn lane;
- no on-street parking;
- wide 3.0 metre pedestrian walkways and urban street tree plantings on both sides;
- 0.6 metre wide building-side retail zone (sandwich boards, narrow display, etc.) on both sides; and
- 1.5 metre treed amenity zone roadside to buffer the pedestrian walkway from the travel lanes.

Concept 2

Concept 2 introduces patio space on Mosley Street through the reduction of some of the other aspects. Key elements include:

- travel lanes reduced to 3.25 metres;
- centre turn lane maintained at 3.5 metres;
- pedestrian walkways reduced to 1.8 metres; and



- 2.4 metre wide patio/outdoor retail zone adjacent to the buildings on both sides.

Under this option, pedestrians will have in excess of 4.2 metres of walking space in normal conditions (ie. where patios are not present).

Concept 3

Concept 3 for Mosley Street is similar to that of Concept 2 with the exception that:

- the treed amenity zone is reduced to 1.2 metres and shifted to a more central location; and
- the pedestrian walkways are increased to 2.0 metres given that they are located adjacent to the road and a greater buffer between pedestrian and automobile traffic is desired.

9.3 BEACH DRIVE

As previously noted in Section 2.4.3, water levels at Beach Areas 1 and 2 have changed considerably over the years, which has a direct impact on the extent of beach that is available for use. Recognizing that the sand beach effectively extends to Beach Drive, any desired increase in beach area in response to current water levels, will require a shift in Beach Drive. In addition, the water levels have a direct impact and bearing on the use of Beach Drive given the impacts of wave uprush and sand migration in the area. Even if the beach were to remain in its current state, the resulting conditions on Beach Drive do not facilitate its continued use in the manners desired.

9.3.1 Impacts of Changing Water Levels to Beach Drive

Water Levels

The changing water levels and implications to Beach Drive are illustrated through the photos of Figure 30. The average elevation for Beach Drive is approximately 177.7 metres whereas water levels fluctuate as follows.

- in June 2015, the road was 1.0 metre above water level;



- in November 2019, the water level increased to 177.63 metres and given storm activity, it extended out onto Beach Drive; and
- in August 2020, the water level had receded slightly, but the prior storm impacts and overall increased water levels significantly changed the beach and the extent of it, resulting in the subsequent closure of Beach Drive over the past year (of note, there was approximately 0.3 metres of sand on Beach Drive at the south end of the beach and approximately 0.7 metres at the north end of the beach).

Natural Hazard Study

To aid in establishing an appropriate alignment and location for Beach Drive in context of the water levels and associated storm events, a *Natural Hazard Study* was undertaken (which is provided in Appendix K). The goals of the study were to:

- identify the location of the flood hazard areas, erosion hazard areas and dynamic beach hazard areas recognizing that the beach does change with prevailing weather conditions; and
- determine the appropriate setbacks from these features to facilitate future development of the beach one and two areas.

Based on a topographic survey of the area including the beach and water levels, and modeling of wave and storm events, the study established a 100 year flood level which is the level at which flooding would occur once in 100 years. Any development beyond this limit would not be prone to the typical flooding.

In considering the associated 100 year storm and the implications of the wave uprush, a “no structure flood hazard limit” was also established. Any development beyond this limit would be located outside of the flood and storm hazard and would not require flood proofing.

Lastly the study identified the Nottawasaga Valley Conservation Authority (NVCA) regulated area which is intended to guard against risks associated with natural



hazards. This has been established as 15 metres beyond the limit of the natural hazards.

The 100 year flood level, the “no structure flood hazard limit” and the NVCA regulated area are illustrated in Figure 31.

These limits are not to suggest that development cannot occur within the beach area, but rather should development occur within the noted zones that certain conditions must be met including compliance with flood proofing and access standards to ensure the protection of the buildings and also the public.

Considering the impacts of storm events on Beach Drive, the *Natural Hazard Study* sought to address what would be required to facilitate future development without concern for flood and or storm hazards.

- A wall could be constructed along Beach Drive to meet the flood proofing standard and hence eliminate potential for flooding beyond the wall. However, it is noted that a 0.8 metre wave hitting a vertical wall under the flood proofing design condition will produce impulsive overtopping, which is a sudden and violent uprushing jet of water. As water is thrown high into the air, overtopping can occur even with very high structures. A wall designed to prevent overtopping would need to be in the order of 4 metres higher than Beach Drive. This is not considered practical due to the height of the wall in context of the storm events and associated wave uprush activity, and the forces that are associated with both
- The Beach Drive road corridor could also be raised as part of future redevelopment in order to simplify any resulting flood proofing. Depending on the form of barrier between the raised road and the beach, the road would need to be raised in the order of 3 metres to keep the wave uprush below the flood elevation, under flood proofing design conditions. Again, this is not considered practical.
- One further option would be a combination of raising the road and providing some type of stepped revetment along the shoreline between the road and the beach. The study identified an increase in grade of 1.2 metres in conjunction



with some type of shore protection along the beach and subsequent flood proofing of adjacent buildings. While some overtopping would occur under the 100-year design wave and water level conditions, such is not expected to cause any significant issues to either people or property.

The most practical approach is to combine an increase in the overall grade of Beach Drive and hence any development beyond it with a form of shoreline protection. Figure 32 illustrates several cross-sections along Beach Drive in context of the road and a required increase in grade of 1.2 metres.

9.3.2 Alignment & Widening

Prior to reviewing the cross-section of Beach Drive, consideration has been given to its alignment and more specifically its location in context of the *Natural Hazard Study*. Existing conditions and proposed alignments are detailed below and illustrated in Figure 33.

Existing Conditions

The existing road allowance is typically 18 meters from the building face to the barrier curb along the water side of Beach Drive, which is effectively considered the boundary between Town property and Ontario Parks property.

Alignment 1

Alignment 1 maintains Beach Drive in its existing condition but considers a widening of 2 metres into Ontario Parks property to provide a 20 metre right-of-way. This would be subject to further consultation and study with Ontario Parks. Alternatively, the existing right-of-way could be maintained, and the cross-section adjusted accordingly.

Alignment 2

Under Alignment 2 for Beach Drive, the preferred 20 metre right-of-way would be shifted approximately 7.5 metres to the east or inland to recover beach area and provide further buffer between Town and Ontario Parks lands. The 7.5 metre shift was established in conjunction with Town staff and thought to be the minimum



additional usable beach area required as evident through the measures and practices implemented during the summer of 2020. This shift would also ensure any shore protection and associated facilities (such as stairs, ramps, guards, etc.) could be implemented wholly within Town land (thus avoiding direct impacts to Ontario Parks lands).

Adjacent development would have to be carefully considered with respect to flood proofing requirements in conjunction with Beach Drive redevelopment.

Alignment 3

Alignment 3 entails shifting Beach Drive inland to correspond to the 100 year flood line which translates to a shift of approximately 22 metres. While this would position the road and subsequent development outside of the flood line, flood proofing would still be required given the impacts of wave uprush during storm events. As is evident, as the road is shifted inland the amount of beach area increases albeit at the expense of the development lands and redevelopment potential to the east of Beach Drive. As evident in the sections of Figure 32, a shift of 22 metres would be accompanied by an increase in the elevation of Beach Drive given the natural topography of the area.

Alignment 4

The final alignment considered for Beach Drive corresponds to the no structure flood hazard limit which requires a shift of approximately 44 metres. Under this alignment and based on the findings of the *Natural Hazard Study* and modeling completed to date, development would not require flood proofing measures. Similarly, a shift of 44 metres in the Beach Drive alignment will result in an increased road elevation, thereby assisting with shoreline protection (refer to Figure 32).

9.3.3 Design Concepts

Various design concepts have been prepared for Beach Drive as illustrated in Figure 34, all of which are premised on the following as per the preferred solution:

- 20 metre right-of-way;
- closed to vehicular traffic; and



- 2-lane cycle track.

Concept 1

Under Concept 1, Beach Drive would encompass the following key elements:

- generous 3.0 metre pedestrian walkway provided along buildings/businesses;
- 0.6 metre wide building-side retail zone (that can accommodate sandwich boards, narrow display, etc.);
- patios provided on private property;
- 6.0 metre events plaza which expands the pedestrian space during day-to-day use to 9.0 metres, while allowing room for the placement of tents, displays, stages, etc. during events;
- 2.8 metre naturalized landscape buffer to separate the events plaza from the cycle track;
- buffer includes low-maintenance Georgian Bay shoreline plantings with trees, benches and other public amenities to support both the events plaza and bikeway/promenade or boardwalk;
- wide 4.0 metre cycle track (3.0 metre width otherwise recommended on Main Street) to accommodate expected higher volume of cyclists along the beach strip; and
- 3.0 metre promenade or boardwalk that runs along the beach and is separated from the cycle track by bollards.

As noted, the cycle track has been increased from 3.0 to 4.0 metres in anticipation of its greater use, particularly by younger cyclists and families.

Concept 1 illustrates Beach Drive being level with the beach. The need to raise the road and/or construct shoreline protection with stairs, ramps and guards will be dictated by the final alignment and design of Beach Drive.



Concept 2

Concept 2 is similar in nature to Concept 1 with the exception of 2 amenity or landscape buffers:

- 1.5 metre amenity zone with urban tree planting/public amenity strip that borders the events plaza and the cycle track to create delineation and separation; and
- 1.9 metre naturalized landscape buffer that separates the cycle track from the promenade or boardwalk.

Concept 2 illustrates the promenade or boardwalk raised above the beach and is accessed by stairs/ramps at controlled points (but could also be level with the beach depending on the final location/relation with the beach).

Concept 3

Concept 3 is similar to Concept 2 with the exception of the buffer zone placement. In this concept, buffers would be provided between the walkway and the event space and between the cycle track and the promenade or boardwalk

Concept 3 also illustrates the promenade or boardwalk raised above the beach but it could also be level with the beach depending on the final location/ relation with the beach.



10 Alternative Design Concepts – Environment Inventories

The description of the study area as provided in Section 2.2: Existing Conditions and Chapter 5: Alternative Solutions - Environment Inventories is largely consistent with the study area to be considered with respect to the alternative design concepts of the preferred solutions. In this regard, implementing the preferred solutions 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 largely comprehensive.

The only exceptions are those areas of potential impacts as they relate to the realignment/relocation of Beach Drive and Mosley Street (ie. where an alternative design concept deviates from the existing right-of-way).

10.1 PHYSICAL ENVIRONMENT

With respect to the physical environment of the study area, the alternative design concepts for Main Street respect the existing 30 metre road right-of-way with the exception of the short section, which is only 20 metres, thus warranting a widening to 30 metres (5 metres on either side to match the widened rights-of-way along the corridor).

Along Mosley Street, a widening of the existing right-of-way, which varies from 13 to 20 metres, is also required to achieve a desired 23 metre width.

Beach Drive is to be widened to 20 metres should it remain along its existing alignment. Alternatively, a new 20 metre corridor is to be established.

In all cases, a full urban road cross-section is recommended with consideration for replacement of above ground and below ground infrastructure as warranted by age and condition.



10.2 NATURAL ENVIRONMENT

An assessment of the natural heritage conditions was completed by Azimuth Environmental Consulting Inc. and is provided in Appendix G. The report not only documents the natural environmental features and functions present within, and adjacent to the study area (as summarized in Chapter 5), and the potential impacts to such resulting from the alternative design concepts, but also presents mitigation measures to be considered in the preparation, and evaluation of the engineering design alternatives.

10.2.1 Areas of Road Widening or Realignment

Where the existing road alignments are proposed to deviate from existing, either through a widening or a realignment (refer to Figure 25 for Main Street, Figure 27 and Figure 28 for Mosley Street and Figure 33 for Beach Drive), the impacted areas are largely developed (eg. manicured lawns, parking or driveway areas, or buildings) and thus do not present additional concern from the perspective of the natural environment.

10.2.2 Impact Assessment

Impacts resulting from the proposed road system improvements are summarized below and should be considering in conjunction with the mitigating measures as detailed in the following section.

Wetlands

While there are wetlands in the area (outside of the study area), such will not be impacted in that they are in excess of 150 metres removed from the study area rights-of-way.

Woodlands

Remnant woodlands are present in and adjacent to the study area. In regard to the small fringe of woodlands in the study area (north of Main Street and east of Wood Avenue), the proposed preferred road improvements would not involve changes in road alignment or footprint. This woodland fringe is also in a highly urbanized area



and the extent of encroachment as a result of road improvements is anticipated to be minimal. As a result, impacts to woodlands in regard to loss of ecological function are not anticipated.

Significant Wildlife Habitat

The Nottawasaga Bay beach area northwest of Beach Drive has the potential to function as habitat for migratory shorebirds. The preferred design would not involve additional encroachment of the right-of-way into the beach beyond existing conditions. Consequently, direct impacts to this feature would not be anticipated.

The Balsam Poplar Treed Sand Dune proximal to Beach Drive is considered a provincially rare vegetation community and is of provincial significance. The preferred design proposed for Beach Drive will be outside of (but adjacent to) this vegetation community. Direct environmental impacts would not be anticipated.

There are 3 rare or of special concern species with the potential to occur in and/or adjacent to the study area: Northern Map Turtle; Snapping Turtle and Silver Lamprey. These species have potential to be found in the Nottawasaga River, specifically in the portion of the study area at the Main Street Bridge. Any proposed works in the existing right-of-way proximal to the river have the potential to impact, directly or indirectly, these species. However, as the project will not involve in-water works, direct impacts would not be anticipated.

Habitat of Threatened & Endangered Species

Barn Swallows may nest in the study area. They are a well-adapted bird species to human presence, and are found regularly nesting in/on anthropogenic structures that are proximal to people. Providing mitigation measures are followed, direct and indirect impacts to Barn Swallows would be considered minimal.

Piping Plovers have nested historically on the open beach along Beach Drive. The section of the beach where the species has nested in the past is at least 50 metres outside of the study area. Consequently, the proposed preferred road improvements along Beach Drive would not be expected to impact Piping Plovers



or their nesting habitat, provided that construction equipment and personnel remain outside this 50 metre buffer.

The field survey resulted in observations of some low quality potential bat roost locations within the ROW in the study area (eg. single snag trees, some old buildings). Mitigation measures are recommended to address the potential risks of the proposed works to endangered bats and their habitat.

Providing the development has regard for encountering any reptiles in the study area throughout construction, the risk to the Restricted Species is considered minimal and mitigable.

Improvements to Main Street and Mosley Street proximal to the Main Street Bridge have the potential to impact Lake Sturgeon in the Nottawasaga River in the absence of mitigation. Provided there are no in-water works near the bridge, direct impacts to Lake Sturgeon can likely be mitigated.

Fisheries & Aquatic Habitat

Any project work required for road improvements within 30 metres of the Nottawasaga River and Georgian Bay shoreline should consider strategies for minimizing disturbance to the riparian corridor to maintain riparian vegetation integrity, work area isolation, scheduling of work to avoid sensitive life stages of fish and any project activity that involves management of surface runoff and dewatering. Stormwater controls will be required during road improvements, and any dewatering will be required to identify management of discharge before entering any waterway, to ensure that water quality criteria is met for the protection of fish and fish habitat.

10.2.3 Means of Mitigation

With respect to means of mitigation to minimize impacts, the following recommendations are provided (additional details are provided in the natural heritage reports of Appendix G and Section 16.3.2).



Operations

Construction staging and refuelling areas should avoid natural areas, which include lands up to 30 metres from the Nottawasaga River, wetlands, woodlands and a number of vegetation communities including the beach areas.

Naturalized Areas

Natural heritage features within the study area are largely associated with naturalized areas and areas of the right-of-way that may provide breeding habitat for birds, bats and amphibian species. The 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 need to be implemented to minimize any ecological impacts that may occur as a result of the works (ie. restricting time of construction, implementation of sediment and erosion control measures, etc.).

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 be 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.

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 G should be sufficient to provide appropriate advice at the time of the onset of future site works.

Works should be avoided within 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. Timing restrictions for disturbance of confirmed or potential bat habitat will help mitigate potential disturbance to SAR bats.

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.

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 (Nottawasaga River and Georgian Bay). All construction activities occurring in or around the river must be completed using best management practices to minimize the extent of accidental or unavoidable impacts to fish habitat, and to alleviate 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.

10.3 SOCIAL ENVIRONMENT

10.3.1 Property Requirements

The primary impact to the social environment will be the acquisition of property along the respective road corridors as may be required to establish the desired right-of-way. The impacts will vary based on the desired rights-of-way and associated requirements.



With respect to the widening and/or realignment of Mosley Street and Beach Drive, it is expected that the associated property requirements will be obtained through the future development of the area and thus will not likely result in impacts to existing development (ie. the road improvements are expected to occur in concert with redevelopment of the beachfront area). Property acquisition may be necessary should the reconstruction of the roads be desired in advance of the development of the abutting areas.

10.3.2 Noise Impacts

A *Traffic Noise Impact Study* was prepared by R. Bouwmeester and Associates and is provided in Appendix L. The purpose of the study is to assess the impact of future traffic noise on lands adjacent to the subject road corridors, as resulting from the proposed road system improvements.

Study Basis

The study acknowledges that over the long-term, in accordance with the downtown redevelopment and guiding principles, most of the existing development within the study area will be replaced with new development. Recognizing that the future traffic projections are premised on the development levels achieved (25% redevelopment by 2026, 50% by 2031 and 100% by 2041), and that the primary noise source within the study area is future traffic, the noise study is based on the 2041 horizon.

Along Main Street and Mosley Street, the future road cross-section considers 1 lane per direction with a centre turn lane. This represents a reduction in the number of lanes along much of Main Street and a section of Mosley Street (in that they provide 2 travel lanes per direction through select sections). Beach Drive will be closed to vehicular traffic and thus associated noise levels will decrease.

Predicted Sound Levels

A noise impact is deemed to occur only if noise levels increase as a direct result of the proposed improvements, not simply as a result of normal traffic growth. Hence the need to compare future sound levels under the 'do nothing' and 'proposed'



scenarios. Generally, there is no impact if the number of lanes and centreline alignment remains unchanged. In this case, the number of lanes decreases.

Even without changes in traffic volume, changes in alignment can increase/decrease sound levels. Under the various alternative design concepts, the centreline of the road varies (positioned to accommodate the various elements of the boulevards on either side of the road). The impacts of these shifts have been examined and concluded that any resulting increase in noise levels will be below 5 dBA and thus do not warrant the investigation of mitigation options. In fact, to realize a 5 dBA increase, a receptor must be located within the road right-of-way.

Conclusions

Based on the analysis of future traffic noise levels along Main Street and Mosley Street, the predicted noise level increases are expected to exceed the allowable 5 dBA in certain areas. However, this threshold for mitigation does not apply because the existing receptors will be replaced by new development (MECP and MTO noise policies and protocol are intended to protect only existing noise-sensitive areas and outdoor living areas and not the future development of noise-sensitive uses). Also, the increased traffic will not materialize without redevelopment of the area.

Residential areas beyond the area to be redeveloped will benefit from traffic sound level reductions due to shielding provided by the density of the proposed 'wall' of buildings along the study corridors, particularly along Main Street.

10.3.3 Other Impacts

Other features of the social environment (ie. access to adjacent properties, pedestrian/cyclist activities, air quality, etc.) will be impacted equally by the design alternatives associated with each road corridor given the subtle changes between them.



10.4 CULTURAL/HERITAGE ENVIRONMENT

10.4.1 Archaeology

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, areas of no archaeological potential and previously assessed lands of no further concern. 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 or those areas that were previously assessed and deemed of no further concern do not require any additional assessment.

The areas of archaeological potential, as identified through the Stage 1 assessment and detailed in the corresponding report provided in Appendix D, are highlighted in Figure 35 for Main Street and Figure 36 for Mosley Street and Beach Drive (largely encompassing undisturbed areas within or immediately adjacent to the road rights-of-way). In all cases, the potential impacts will be the same for the various alternative design concepts for each of Main Street, Mosley Street and Beach Drive. However, when considering the alignment options as presented for Mosley Street and Beach Drive, the extent of potential impacts could vary. No ground alterations or development of any kind may occur until the Stage 2 assessment is complete of the identified areas corresponding to the preferred design concepts.

10.4.2 Cultural Heritage

As previously noted, while a number of Built Heritage Resources and Cultural Heritage Landscapes were identified, their heritage impacts are not expected to be impacted. For the Beach and the Beck Square resources, a Heritage Impact Assessment should be completed to ensure that their identified heritage attributes are not impacted as a result of reconstruction or revitalization associated with the preferred design concept. Similarly, should any improvements be considered for the Main Street Bridge (none are being proposed as part of this study), a Cultural Heritage Evaluation Report should be completed.



10.5 ECONOMIC ENVIRONMENT

Each of the design alternatives for each road corridor are similar in that they all include construction of similar features and facilities (ie. driving lane, parking lane, bike lane, sidewalks, trails, etc.). However, given the variance in cross-sectional elements that make up each concept 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 be the same for each alternative design concept for each of Main Street, Mosley Street and Beach Drive. Any variation will only result from the extent of property to be acquired, which is dependent on the preferred alignment of Mosley Street and Beach Drive (recognizing that any deviation from the existing rights-of-way will warrant property acquisition and hence associated costs). While some property is required along Main Street, the extent of such is identical for each alternative in that only a single alignment has been deemed appropriate.

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 M.



11 Alternative Design Concepts – Evaluation

This chapter will discuss the evaluation of the alternative design concepts 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. 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 safe and efficient road corridors 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 – Appendix G;
- Stage 1 Archaeological Assessment – Appendix H;
- Cultural Heritage Assessment – Appendix I;
- Natural Hazard Study – Appendix K; and
- Traffic Noise Impact Study – Appendix L.

The potential impacts associated with the alternative design concepts and alignments are referenced as follows:

- Main Street Table 14 and Table 15;
- Mosley Street Table 16 to Table 18; and
- Beach Drive Table 19 and Table 20.



Table 14: Evaluation of Alternative Designs – Main Street Alignment

ENVIRONMENT & EVALUATION CRITERIA	BASIS FOR ASSESSMENT	DO NOTHING		ALTERNATIVE	
		maintain existing		extend existing 30m ROW widen equally on both sides	
Physical	Right-of-way	Ability to accommodate the alternative design concept road cross-section	<ul style="list-style-type: none"> ▪ Majority of Main Street has a 30m or greater ROW and thus is sufficient (widened 5m or more on both sides) × The ROW from Beck Street to River Avenue Crescent is only 20m and thus not sufficient × The ROW from River Avenue Crescent to the river is only 23-24m and thus not sufficient (has been widened on the south side only) 	<ul style="list-style-type: none"> ▪ Widen to 30m × Widening the 20m ROW from Beck Street to River Avenue Crescent by 5m on both sides will match the existing 30m ROW to the east × Widening the ROW from River Avenue Crescent to the River on the north side by 5m will maintain a consistent north limit ✓ This approach to the widening is also consistent with the Town's Official Plan and Community Improvement Program policies 	
Natural	Fisheries / Aquatic Impacts	Impact to fish habitat and other aquatic features	✓ No further impacts	✓ Minimal if any impacts; areas of widenings are largely developed	
	Wildlife / Terrestrial Impacts	Impact to wildlife species	✓ No further impacts	✓ Minimal if any impacts; areas of widenings are largely developed	
	Vegetation Impacts	Impact to vegetation communities on adjacent properties	✓ No further impacts	✓ Minimal if any impacts; areas of widenings are largely developed	
Social	Property Impacts	Impacts to property based on widening of road platform and/or ROW	✓ No further impacts	× Additional property (maximum 5m widening) will be required from 12 to 13 properties	
Cultural Heritage	Archaeological & Heritage Impacts	Impacts to cultural and heritage features	✓ No further impacts	<ul style="list-style-type: none"> ✓ No anticipated archaeological or cultural/heritage impacts as abutting lands have been previously disturbed (Stage 2 investigations will be necessary within some areas) ✓ No anticipated impacts to the Main Street Bridge (no works anticipated) 	
Economic	Land Acquisition Costs	Total land acquisition costs	✓ No further costs	× Some costs could potentially be incurred (ideally lands are acquired through the site plan process as properties are redeveloped)	



Table 15: Evaluation of Alternative Designs – Main Street Cross-Sections

ENVIRONMENT & EVALUATION CRITERIA	BASIS FOR ASSESSMENT	CONCEPT 1	CONCEPT 2	CONCEPT 3
		3 lanes + on-street parking both sides + cycle track north side	3 narrow lanes + on-street parking both sides + cycle track north side	3 narrow lanes + on-street parking north side + cycle track north side + flexible space south side
Physical	Vehicles	<ul style="list-style-type: none"> Ability to accommodate future traffic volumes <ul style="list-style-type: none"> ▪ 3.5m travel lanes + 3.5m centre lane ✓ All concepts provide the same number of travel lanes and hence same accommodation of traffic 	<ul style="list-style-type: none"> 3.25m travel lanes + 3.5m centre lane ✓ While travel lanes are narrower, no appreciable impacts to traffic operations will result ✓ Narrower lanes will reduce traffic speeds 	<ul style="list-style-type: none"> 3.25m travel lanes + 3.5m centre lane ✓ While travel lanes are narrower, no appreciable impacts to traffic operations will result ✓ Narrower lanes will reduce traffic speeds
	Parking	<ul style="list-style-type: none"> Ability to service abutting retail/ commercial <ul style="list-style-type: none"> ▪ 2.5m parking lanes provided on both sides ✓ Greatest parking accommodation through on-street parking on both sides 	<ul style="list-style-type: none"> 2.5m parking lanes provided on both sides ✓ Greatest parking accommodation through on-street parking on both sides 	<ul style="list-style-type: none"> 2.5 parking lane provided on north side ▪ Flexible parking lane provided on the south side * Not as great accommodation for parking as flexible space can also be used for patio or other retail uses as opposed to parking
	Cyclists	<ul style="list-style-type: none"> Cycling operation and safety <ul style="list-style-type: none"> ▪ 3m cycle track ▪ 1.8m buffer to pedestrian walkway ▪ 1.0m buffer to parking lane ✓ Greatest buffers for cyclists 	<ul style="list-style-type: none"> 3m cycle track ▪ 1.5m buffer to pedestrian walkway ▪ 1.0m buffer to parking lane ✓ Buffers slightly narrower, albeit still acceptable 	<ul style="list-style-type: none"> 3m cycle track ▪ 1.8m buffer to pedestrian walkway ▪ 1.0m buffer to parking lane ✓ Greatest buffers for cyclists
	Pedestrians	<ul style="list-style-type: none"> Pedestrian operation and safety along study corridor <ul style="list-style-type: none"> ▪ 2.45m walkways on both sides 	<ul style="list-style-type: none"> Walkways reduced to 2.15m to accommodate patio provision on south side * Narrowest of all options 	<ul style="list-style-type: none"> Walkways increased to 2.75m on both sides ✓ Greatest width of all options
	Landscape	<ul style="list-style-type: none"> Accommodation of landscape features and amenities <ul style="list-style-type: none"> ▪ Urban planting on both sides 	<ul style="list-style-type: none"> Urban planting on both sides 	<ul style="list-style-type: none"> Urban planting on both sides
	Streetscape	<ul style="list-style-type: none"> Accommodation of streetscape features and amenities <ul style="list-style-type: none"> ▪ 1.8m amenity area on both sides * Least opportunity for amenities as compared to other options 	<ul style="list-style-type: none"> 1.5m amenity area on north side ▪ 2.4m patio/amenity area on the south side 	<ul style="list-style-type: none"> 1.8m amenity area on the north side ▪ 1.2m amenity area on the south side ▪ 2.5m flexible space for patio/amenity space ✓ Greatest opportunity
	Social	<ul style="list-style-type: none"> Construction Impacts Future impacts to adjacent properties <ul style="list-style-type: none"> ▪ Impacts similar across all options ▪ Minor, short-term, impacts during construction 		



ENVIRONMENT & EVALUATION CRITERIA	BASIS FOR ASSESSMENT	CONCEPT 1			CONCEPT 2			CONCEPT 3		
		3 lanes + on-street parking both sides + cycle track north side			3 narrow lanes + on-street parking both sides + cycle track north side			3 narrow lanes + on-street parking north side + cycle track north side + flexible space south side		
Economic	Construction Costs	Costs to construct individual options	<ul style="list-style-type: none"> ▪ \$9.7M (not including property or utility relocation costs) 	<ul style="list-style-type: none"> ▪ \$9.9M (not including property or utility relocation costs) 	<ul style="list-style-type: none"> ▪ \$10.6M (not including property or utility relocation costs) × Greatest cost due to flexible space 					
	Maintenance Costs	Future maintenance requirements	<ul style="list-style-type: none"> ▪ Lowest cost to maintain 	<ul style="list-style-type: none"> ▪ Lowest cost to maintain 	<ul style="list-style-type: none"> × Slightly higher cost to maintain due to flexible street provision 					
	Economic Opportunities	Retail & Commercial Enhancements	<ul style="list-style-type: none"> ✓ Good opportunity for commercial engagement with public due to wide boulevards × Boulevard space insufficient to accommodate patios or outdoor retail 	<ul style="list-style-type: none"> ✓ Better opportunity for commercial engagement with public due to wider amenity/patio space 	<ul style="list-style-type: none"> ✓ Best opportunity for commercial engagement with public due to wider boulevards and flexible space 					



Table 16: Evaluation of Alternative Designs – Mosley Street Alignment Nottawasaga River to 2nd Street

ENVIRONMENT & EVALUATION CRITERIA	BASIS FOR ASSESSMENT	DO NOTHING	ALIGNMENT 1	ALIGNMENT 2	ALIGNMENT 3	ALIGNMENT 4	
		maintain existing	widen on east side	widen on west side	widen on both sides	realign	
Physical	Right-of-way	Ability to accommodate the alternative design concept road cross-section	<ul style="list-style-type: none"> ▪ Existing ROW from Nottawasaga River to 2nd Street is largely 13 to 15m × Not sufficient to accommodate desired cross-sections (need 23m ROW) 	<ul style="list-style-type: none"> ▪ Widen to 23m largely on the east (south) side × Widening of 8 to 10m required on one side 	<ul style="list-style-type: none"> ▪ Widen to 23m largely on the west (north) side × Widening of 8 to 10m required on one side 	<ul style="list-style-type: none"> ▪ Widen to 23m on both sides × Widening of 0 to 5m on both sides 	<ul style="list-style-type: none"> ▪ Realign Mosley Street to eliminate the horizontal curves × New 23m corridor to be established
Natural	Fisheries / Aquatic Impacts	Impact to fish habitat and other aquatic features	✓ No further impacts	✓ Minimal if any impacts; areas of widenings are largely developed			
	Wildlife / Terrestrial Impacts	Impact to wildlife species	✓ No further impacts	✓ Minimal if any impacts; areas of widenings are largely developed			
	Vegetation Impacts	Impact to vegetation communities on adjacent properties	✓ No further impacts	✓ Minimal if any impacts; areas of widenings are largely developed			
Social	Property Impacts	Impacts to property based on widening of road platform and/or ROW	<ul style="list-style-type: none"> ✓ No further impacts ✓ Maximum property available for redevelopment 	<ul style="list-style-type: none"> × Additional property required and reduction in redevelopment potential ▪ Comparable to Alignments 2 and 3 	<ul style="list-style-type: none"> × Additional property required and reduction in redevelopment potential ▪ Comparable to Alignments 1 and 3 	<ul style="list-style-type: none"> × Additional property required and reduction in redevelopment potential ▪ Comparable to Alignments 1 and 2 	<ul style="list-style-type: none"> × Greatest property requirements given new alignment ✓ Significantly increases redevelopment potential on north side of road × Significantly reduces redevelopment potential on south side of road
Cultural Heritage	Archaeological & Heritage Impacts	Impacts to cultural and heritage features	✓ No further impacts	<ul style="list-style-type: none"> ✓ No anticipated archaeological or cultural/heritage impacts as abutting lands have been previously disturbed (Stage 2 investigations will be necessary within some areas) ✓ No anticipated impacts to the Main Street Bridge (no works anticipated) 			
Economic	Land Acquisition Costs	Total land acquisition costs	✓ No further costs	<ul style="list-style-type: none"> × Some costs could potentially be incurred (ideally lands are acquired through the site plan process as properties are redeveloped) 			<ul style="list-style-type: none"> × Greatest potential for land acquisition costs



Table 17: Evaluation of Alternative Designs – Mosley Street Alignment 2nd Street to 6th Street

ENVIRONMENT & EVALUATION CRITERIA	BASIS FOR ASSESSMENT	DO NOTHING		ALTERNATIVE	
		maintain existing		best fit existing & widen on both sides	
Physical	Right-of-way	Ability to accommodate the alternative design concept road cross-section	<ul style="list-style-type: none"> ▪ Existing ROW from 2nd Street to 6th Street is largely 20m × ROW is not consistent; rather jagged or angled × Not sufficient to accommodate desired cross-sections (need 23m) 	<ul style="list-style-type: none"> × Widen to 23m via best fitting existing ROW, straighten and align ROW to the east of 2nd Street ▪ Balance widenings on both sides to the extent possible 	
Natural	Fisheries / Aquatic Impacts	Impact to fish habitat and other aquatic features	✓ No further impacts	✓ Minimal if any impacts; areas of widenings are largely developed	
	Wildlife / Terrestrial Impacts	Impact to wildlife species	✓ No further impacts	✓ Minimal if any impacts; areas of widenings are largely developed	
	Vegetation Impacts	Impact to vegetation communities on adjacent properties	✓ No further impacts	✓ Minimal if any impacts; areas of widenings are largely developed	
Social	Property Impacts	Impacts to property based on widening of road platform and/or ROW	✓ No further impacts	× Additional property (typically 0 to 5 metres) will be required from 20-22 properties (in some cases, a land swamp might be possible)	
Cultural Heritage	Archaeological & Heritage Impacts	Impacts to cultural and heritage features	✓ No further impacts	✓ No anticipated archaeological or cultural/heritage impacts as abutting lands have been previously disturbed (Stage 2 investigations will be necessary within some areas)	
Economic	Land Acquisition Costs	Total land acquisition costs	✓ No further costs	× Some costs could potentially be incurred (ideally lands are acquired through the site plan process as properties are redeveloped)	



Table 18: Evaluation of Alternative Designs – Mosley Street Cross-Sections

ENVIRONMENT & EVALUATION CRITERIA	BASIS FOR ASSESSMENT	CONCEPT 1	CONCEPT 2	CONCEPT 3
		3 lanes	3 narrow lanes + patio/retail zone	3 narrow lanes + patio/retail zone
Physical	Vehicles	<ul style="list-style-type: none"> ▪ Ability to accommodate future traffic volumes ▪ 3.5m travel lanes + 3.5m centre lane ▪ All concepts provide the same number of travel lanes and hence same accommodation of traffic 	<ul style="list-style-type: none"> ▪ 3.25m travel lanes + 3.5m centre lane ✓ While travel lanes are narrower, no appreciable impacts to traffic operations will result ✓ Narrower lanes will reduce traffic speeds 	<ul style="list-style-type: none"> ▪ 3.25m travel lanes + 3.5m centre lane ✓ While travel lanes are narrower, no appreciable impacts to traffic operations will result ✓ Narrower lanes will reduce traffic speeds
	Pedestrians	<ul style="list-style-type: none"> ▪ Pedestrian operation and safety along study corridor ▪ 3.0m walkways on both sides ✓ Greatest of all options ✓ 1.5m amenity area between travel lanes and walkway to serve as a buffer 	<ul style="list-style-type: none"> ▪ Walkways reduced to 1.8m to accommodate retail/patio provision on both sides ▪ Walkways are adjacent to retail/patio space and thus 4.2m available to pedestrians if no patio × Narrowest of all options ✓ 1.5m amenity area between travel lanes and walkway to serve as a buffer 	<ul style="list-style-type: none"> ✓ Walkways increased to 2.0m on both sides ✓ Greatest width of all options × Pedestrian walkways adjacent to the travel lane (no buffer)
	Landscape	<ul style="list-style-type: none"> ▪ Accommodation of landscape features and amenities ▪ Urban planting on both sides 	<ul style="list-style-type: none"> ▪ Urban planting on both sides 	<ul style="list-style-type: none"> ▪ Urban planting on both sides
	Streetscape	<ul style="list-style-type: none"> ▪ Accommodation of streetscape features and amenities ▪ 1.5m amenity area on both sides × No retail/patio area × Least opportunity for amenities as compared to other options 	<ul style="list-style-type: none"> ▪ 1.8m amenity area on both sides ▪ 2.4m retail/patio area on both sides ✓ Greatest opportunity for amenities 	<ul style="list-style-type: none"> ▪ 1.2m amenity area on both sides ▪ 2.4m retail/patio area on both sides ✓ Greater opportunity for amenities
Social	Construction Impacts	<ul style="list-style-type: none"> ▪ Future impacts to adjacent properties ▪ Impacts similar across all options ▪ Minor, short-term, impacts during construction 		
Economic	Construction Costs	<ul style="list-style-type: none"> ▪ Costs to construct individual options ▪ \$5.4M (not including property or utility relocation costs) 	<ul style="list-style-type: none"> ▪ \$5.8M (not including property or utility relocation costs) 	<ul style="list-style-type: none"> ▪ \$5.8M (not including property or utility relocation costs)
	Maintenance Costs	<ul style="list-style-type: none"> ▪ Future maintenance requirements ▪ Costs will be comparable 		
	Economic Opportunities	<ul style="list-style-type: none"> ▪ Retail & Commercial Enhancements × Least opportunity for commercial engagement with public due to wide boulevards 	<ul style="list-style-type: none"> ✓ Greatest opportunity for commercial engagement with public due to wider amenity/patio space 	<ul style="list-style-type: none"> ✓ Greatest opportunity for commercial engagement with public due to wider boulevards and flexible space



Table 19: Evaluation of Alternative Designs – Beach Drive Alignment

ENVIRONMENT & EVALUATION CRITERIA	BASIS FOR ASSESSMENT	DO NOTHING	ALIGNMENT 1	ALIGNMENT 2	ALIGNMENT 3	ALIGNMENT 4	
		maintain existing	maintain existing alignment widen on west side	recover minimum beach shift 7.5m	100 year flood line shift 22m	no structure flood hazard shift 44m	
Physical	Right-of-way	Ability to accommodate the alternative design concept road cross-section	<ul style="list-style-type: none"> ▪ Existing ROW is primarily 18m × Not sufficient to accommodate desired cross-sections (need 20m ROW) 	<ul style="list-style-type: none"> ▪ Widen to 20m on the west side ▪ Hold property line at building face 	<ul style="list-style-type: none"> ▪ Shift inland 7.5m and provide 20m ROW ▪ To recover minimum amount of desired beach 	<ul style="list-style-type: none"> ▪ Shift inland 22m and provide 20m ROW ▪ To respect the 100 year flood line 	<ul style="list-style-type: none"> ▪ Shift inland 44m and provide 20m ROW ▪ To respect the “no structure flood hazard limit”
Natural	Fisheries / Aquatic Impacts	Impact to fish habitat and other aquatic features	✓ No further impacts	✓ Minimal if any impacts; areas of widenings are largely developed			
	Wildlife / Terrestrial Impacts	Impact to wildlife species	✓ No further impacts	✓ Minimal if any impacts; areas of widenings are largely developed			
	Vegetation Impacts	Impact to vegetation communities on adjacent properties	✓ No further impacts	✓ Minimal if any impacts; areas of widenings are largely developed			
Social	Property Impacts	Impacts to property based on widening of road platform and/or ROW	<ul style="list-style-type: none"> ✓ No further impacts ✓ Maximum property available for redevelopment 	<ul style="list-style-type: none"> × Additional property required × Maximum property available for redevelopment × Impacts to Ontario Parks boundary 	<ul style="list-style-type: none"> × Additional property required and reduction in redevelopment potential 	<ul style="list-style-type: none"> × Additional property required and reduction in redevelopment potential 	<ul style="list-style-type: none"> × Additional property required and reduction in redevelopment potential × Least redevelopment potential of options
	Beach Area	Increase in public beach area	<ul style="list-style-type: none"> ▪ No change to existing 	<ul style="list-style-type: none"> ▪ No change to existing 	<ul style="list-style-type: none"> ▪ 7.5m additional beach to be provided (minimum amount as based on actual use) 	<ul style="list-style-type: none"> ▪ 22m additional beach to be provided 	<ul style="list-style-type: none"> ▪ 44m additional beach to be provided ✓ Greatest increase in beach area of options
Cultural Heritage	Archaeological & Heritage Impacts	Impacts to cultural and heritage features	✓ No further impacts	<ul style="list-style-type: none"> ✓ No anticipated archaeological or cultural/heritage impacts as abutting lands have been previously disturbed ✓ No anticipated impacts to the Beach 			



ENVIRONMENT & EVALUATION CRITERIA		BASIS FOR ASSESSMENT		DO NOTHING	ALIGNMENT 1	ALIGNMENT 2	ALIGNMENT 3	ALIGNMENT 4
				maintain existing	maintain existing alignment widen on west side	recover minimum beach shift 7.5m	100 year flood line shift 22m	no structure flood hazard shift 44m
Economic	Land Acquisition Costs	Total land acquisition costs	<ul style="list-style-type: none"> ▪ No further costs 		<ul style="list-style-type: none"> × Some costs could potentially be incurred (ideally lands are acquired through the site plan process as properties are redeveloped) 	<ul style="list-style-type: none"> × Increased potential for land acquisition costs 	<ul style="list-style-type: none"> × Increased potential for land acquisition costs 	<ul style="list-style-type: none"> × Greatest potential for land acquisition costs



Table 20: Evaluation of Alternative Designs - Beach Drive Cross-Sections

ENVIRONMENT & EVALUATION CRITERIA		BASIS FOR ASSESSMENT	CONCEPT 1	CONCEPT 2	CONCEPT 3
Physical	Cyclists	Cycling operation and safety	<ul style="list-style-type: none"> 4m cycle track 2.8m buffer to event space 0.6m buffer with bollards to promenade/boardwalk 	<ul style="list-style-type: none"> 4m cycle track 1.5m buffer to event space 1.9m buffer to promenade/boardwalk 	<ul style="list-style-type: none"> 4m cycle track 0m buffer to event space 1.9m buffer to promenade/boardwalk * no buffer between cyclists and event space
	Pedestrians	Pedestrian operation and safety along study corridor	<ul style="list-style-type: none"> 3.0m walkway 6.0m event space 	<ul style="list-style-type: none"> 3.0m walkway 6.0m event space 	<ul style="list-style-type: none"> 3.0m walkway 6.0m event space
	Landscape & Streetscape	Accommodation of landscape and streetscape features and amenities	<ul style="list-style-type: none"> 2.8m planted buffer/amenity area ✓ area is of sufficient width to plant trees without need for underground tree infrastructure 	<ul style="list-style-type: none"> 2 planted zones 1.9m planted buffer/amenity area 1.5m planted buffer/amenity area 	<ul style="list-style-type: none"> 2 planted zones 1.9m planted buffer/amenity area 1.5m planted buffer/amenity area
Social	Construction Impacts	Future impacts to adjacent properties	<ul style="list-style-type: none"> Impacts similar across all options Minor, short-term, impacts during construction 		
Economic	Construction Costs	Costs to construct individual options	<ul style="list-style-type: none"> \$4.2M (not including property or utility relocation costs or shore protection measures) shoreline protection (\$9,000 to \$12,000 per metre of shoreline) assuming a concrete wall, armour stone wall or similar 	<ul style="list-style-type: none"> \$4.8M (not including property or utility relocation costs or shore protection measures) shoreline protection (\$9,000 to \$12,000 per metre of shoreline) assuming a concrete wall, armour stone wall or similar * Greater cost due to need for tree infrastructure 	<ul style="list-style-type: none"> \$4.8M (not including property or utility relocation costs or shore protection measures) shoreline protection (\$9,000 to \$12,000 per metre of shoreline) assuming a concrete wall, armour stone wall or similar * Greater cost due to need for tree infrastructure
	Maintenance Costs	Future maintenance requirements	<ul style="list-style-type: none"> Costs will be comparable 		
	Economic Opportunities	Retail & Commercial Enhancements	<ul style="list-style-type: none"> ✓ Opportunities will be comparable 		



11.2 RECOMMENDED ALTERNATIVE DESIGN CONCEPTS

The recommended alignments and cross-sections, stemming from the evaluations undertaken by the project team, are summarized in this section. At this stage, these are only recommendations to be presented to the public and stakeholders for consideration and comment.

11.2.1 Main Street

Alignment

Given the existing conditions and relatively short sections of Main Street that require a widening to 30 metres, the recommended alignment is to maintain a uniform and consistent approach to widening along the full length of road (ie. widen on both sides equally).

Cross-Section

Design Concept 3 is the recommended option for Main Street given its reduced lane width which will reduce travel speeds, the provision of the widest pedestrian walkways and the flexibility that it provides for improved patio opportunities.

11.2.2 Mosley Street

Alignment

In considering the noted options, the recommended option to widen Mosley Street from Spruce Street to 2nd Street is Alignment 3 which entails the widening on both sides. This is considered the more equitable and fairest approach, balancing and minimizing impacts on both sides of the road. Alignments 1 and 4 have increased impacts to the east side of the road and hence would hinder development and or redevelopment potential through the area. Similarly, Alignment 2 has increased impacts on the north side which is not preferred.

From 2nd Street to 6th Street, the recommended option is to widen the right-of-way to the required 23 meters and introduce a realignment which respects the existing to the extent possible and both minimizes and balances impacts on both sides of the road, as embodied in Alignment 1 for this section.



Cross-Section

The recommended option for Mosley Street is Design Concept 2 in that it employs reduced width travel lanes thereby reducing travel speeds and maximizing boulevard opportunity and provides an amenity zone that will buffer the pedestrian activity from the travel lanes. In addition, by having the patio and outdoor retail zones adjacent to the walkway space, the overall benefits of this combined area can be maximized.

11.2.3 Beach Drive

Alignment

While the desire would be to ensure the protection of the public and associated development to the greatest possible extent, as achieved through Alignments 3 and 4, they result in significant impacts to the development and redevelopment areas to the east of Beach Drive. The recommended option is therefore Alignment 2 which provides an increased amount of beach area during high water periods, maximizes development potential to the south and respects the Ontario Parks boundary. Through appropriate engineering design of both Beach Drive and adjacent buildings in conjunction with shoreline protection or revetment, impacts of flooding and storm events can be mitigated.

Cross-Section

The recommended cross-section for Beach Drive is Design Concept 2 in that it provides buffer zones on either side the cycle track distinguishing it from the adjacent promenade/boardwalk and event space where pedestrian activity will be increased. These buffers while still allow permeability for cyclists to access businesses and offer bike parking, wayfinding, benches and other destination amenities. The double row of trees aligning the cycle track will also provide increased shade/wind protection and enhance the active transportation experience.

Again, as outlined in the *Natural Hazard Study*, it is recommended that the elevation of Beach Drive be increased by 1.2 metres to 178.9 metres. It is also



recommended that Beach Drive be constructed with a stepped revetment between the boardwalk/promenade and the beach, as per the preferred cross-section. The *Natural Hazard Study* further notes that detailed design of the solution should include modelling of this solution to confirm the final elevation and configuration of the shoreline protection.



12 Other Traffic Considerations

Further to the development and evaluation of the alternative design concepts to improve the subject road corridors and implement enhanced streetscape, landscape and active transportation measures, consideration has also been given to the following:

- operations at key intersections with consideration for the recommended solutions and design concepts (in that they will affect traffic patterns and volumes through the area given the closure of Beach Drive);
- consideration for the implementation of roundabouts; and
- configuration and operations on River Avenue Crescent and Glenwood Drive.

12.1 INTERSECTION OPERATIONS

To identify intersection improvements required to accommodate existing and future travel demands, operations of the study area key intersections as noted in Figure 37 were reviewed in consideration of:

- future traffic projections;
- the recommended 3-lane configurations on both Main Street and Mosley Street;
- the closure of Beach Drive and reallocation of traffic volumes; and
- existing intersection control namely stop signs or traffic signals.

In reviewing the traffic operations, the focus is on the PM peak hour which typically corresponds to the greatest traffic volumes over the course of the day, as people return home from employment.

12.1.1 2026 Operations

In context of the future redevelopment of the study area and recognizing that it is a long term build, 25% completion has been assumed for the 2026 horizon (corresponding traffic volumes are noted in Figure 38).



The resulting traffic operations indicate acceptable levels of service will be provided (refer to Figure 41). Levels of service are defined as A through F, with A being of the best level of service (minimal delays) and F being unacceptable (higher delays). Under the 2026 projected traffic volumes, operations will be level of service A through C, all of which are considered acceptable. In this regard, no improvements would be required to support the proposed road network and assumed development levels. Detailed worksheets are provided in Appendix N.

12.1.2 2031 Operations

As development continues through to the 2031 horizon year, assuming 50% buildout, traffic volumes will increase (volumes are noted in Figure 39) and hence levels of service will deteriorate somewhat. As indicated in Figure 41, an increased number of intersections will experience a level of service C with several moving into levels of service D through F suggesting improvements are warranted. Detailed worksheets are provided in Appendix N.

In particular, improvements would be warranted at the Beck Street intersection which could include traffic signals or roundabout control.

12.1.3 2041 Operations

Under the 2041 horizon, 100% buildout of future development is anticipated and hence traffic volumes will be increased further yet (volumes are noted in Figure 40). As noted in Figure 41, a number of intersections will experience poor levels of service warranting further improvements. Detailed worksheets are provided in Appendix N.

In addition to the Beck Street intersection traffic signals or other intersection control, improvements will be required at the River Avenue Crescent/River Road East intersection with Main Street and should be considered at the Mosley Street intersections with Spruce Street and 1st Street.



12.2 ROUNDABOUTS

12.2.1 Advantages

While traffic signals are the traditional form of intersection control, roundabouts have been given due consideration given their many advantages which include :

- increased safety including a significant decrease in severe accidents, less conflict points than a standard intersection and lower speeds which reduces the severity of accidents;
- greater capacity than a signal or all-way stop control intersection operating at the same level of service;
- reduced travel delays;
- traffic calming effect;
- environmental benefits given a reduction in stop and go traffic which reduces emissions, fuel consumption and noise; and
- unaffected by power outages.

In addition, roundabouts provide an opportunity to establish a gateway or landmark feature which will help define the downtown redevelopment area.

12.2.2 Disadvantages

Roundabouts do however require an increased amount of land as compared to a typical intersection and can be challenging for pedestrians and cyclists, particularly those with either visual impairments as they do not have the same auditory cues that are provided with traffic signals, and nor would they have dedicated crossing opportunities. That being said, separate pedestrian walkways and a cycle track are being proposed along the Main Street corridor. Furthermore:

- dual or multi-lane roundabouts can result in increased accidents albeit non-injury types;
- they do not provide for emergency vehicle priority; and
- they can disrupt vehicle platoons if placed along a signal coordinated corridor.



12.2.3 Candidate Locations

In consideration of the anticipated future traffic operations, roundabouts have been reviewed at the following intersections (illustrated in Figure 42):

- Main Street and River Road East;
- Main Street and Stonebridge Boulevard;
- Main Street and Beck Street;
- Mosley Street and Spruce Street;
- Mosley Street and 1st Street; and
- Mosley Street and 3rd Street.

Preliminary roundabout configurations have been prepared for each candidate location to illustrate the overall design approach, roundabout footprint and the associated property impacts, from which the viability of a roundabout at each intersection has been based. Additional design and consideration for any resulting impacts would be necessary. In all cases, a single lane roundabout has been considered with the exception of the River Road West approaches at Main Street which provide for two inbound and two outbound lanes given that River Road West is a 4-lane road through the intersection.

Main Street Roundabouts

The Main Street roundabouts are illustrated in Figure 43. At River Road West, the 4-lane configuration of River Road West has been maintained through the roundabout. An oval configuration is suggested to minimize property impacts on the northwest and southeast corners given that both are currently developed or have development plans in place (property impacts are also noted in Figure 43).

The roundabouts at Stonebridge Boulevard and Beck Street are both suggested as single lane roundabouts with a smaller overall size and footprint. The Beck Street roundabout has an oval configuration given the skewed alignment of the intersection and requirement to achieve certain design parameters with respect to vehicle entry speeds.



Mosley Street Roundabouts

The Mosley Street roundabouts are illustrated in Figure 44. In all cases, each of Spruce Street, 1st Street and 3rd Street intersect Mosley Street at T intersections. Minimum roundabout sizes have been employed to reduce impacts to the abutting properties, the extents of which are also indicated in Figure 44.

12.2.4 Traffic Operations

Traffic operations at the candidate intersection locations were investigated based on the preliminary roundabout configurations. As illustrated in Figure 42, all roundabouts are expected to provide good levels of service, LOS A or B, which represent improvements as compared to what would otherwise be expected under existing conditions (detailed worksheets are provided in Appendix N).

Should traffic signals be considered in lieu of roundabouts, the roundabouts would provide equal or better levels of service.

12.2.5 Evaluation & Recommendation

As the Main Street corridor redevelops, it is recommended that the Town take the necessary steps to protect for the potential for roundabouts at the following intersections:

- River Road West;
- Stonebridge Boulevard; and
- Beck Street.

The corresponding suggested configurations and resulting property requirements are illustrated in Figure 43.

Roundabouts, while beneficial, are not considered necessary along Mosley Street given the recommended closure of Beach Drive, the expected redevelopment of the area and the resulting changes to the road system. Consideration for standard intersections is considered appropriate and will further maximize redevelopment potential of the area.



12.3 RIVER AVENUE CRESCENT & GLENWOOD DRIVE

12.3.1 Existing Conditions

Under existing conditions, both River Avenue Crescent and Glenwood Drive operate in one-way fashion, southbound on River Avenue Crescent and northbound on Glenwood Drive (refer to Figure 45). Given the available width of River Avenue Crescent (recognizing that it is wide enough to accommodate two-way travel) and the one-way configuration, bicycle lanes have also been implemented.

As the intersection of Main Street and River Avenue Crescent is located just beyond a reduced radius horizontal curve, there are restricted sightlines for several movements at the intersection approaching from both directions. In addition, reduced levels of service and poor operations are expected in the future as development occurs and traffic volumes increase beyond existing levels. While the proposed 3-lane cross-sections on Main Street and Mosley Street will provide opportunity for exclusive left turn lanes at the River Avenue Crescent intersection and the implementation of traffic signals will improve operations, sight line restrictions will remain due to the alignment of the road.

12.3.2 Improvement Options

In consideration of the existing one-way operations and the sight line limitations, options for area system improvements have been considered as illustrated in Figure 46.

Configuration 1

Under Configuration 1, the existing conditions are maintained, with the expectation that a centre turn lane would be provided on Main Street as would traffic signal control at the Main Street intersection with River Avenue Crescent/River Road East (required to address 2041 traffic operations as discussed in Section 12.1).



Configuration 2

Configuration 2 maintains the existing one-way operations but seeks to restrict the following movements at the intersection of River Avenue Crescent with Main Street:

- left turns from Main Street to both River Avenue Crescent and River Road East;
- left turn from River Avenue Crescent to Main Street; and
- through movement from River Road East to River Avenue Crescent.

In essence, the intersection of River Avenue Crescent and River Road East with Main Street would be converted to a right-in/right-out only to eliminate sight line issues and concerns relating to turning and crossing movements.

This configuration is likely to result in changes in travel patterns through the area including diversion of traffic from River Road East to Beck Street for those wishing to access Main Street to the east.

Configuration 3

Under Configuration 3, River Avenue Crescent would be converted to two-way operations, which can be facilitated on the existing road through the elimination of the dedicated bike lanes. The conversion to two-way traffic is expected to alter travel patterns through the area (likely an increase in volumes on River Avenue Crescent and potentially a decrease in volumes on Glenwood Drive) and thus traffic signal control is expected to be required at the Main Street intersection by 2031. While traffic signal control will address some of the issues at the Main Street intersection, the sight lines associated with turning movements and opposing oncoming vehicles will still be restricted.

Configuration 4

Under Configuration 4, River Avenue Crescent would be converted to two-way operations and the turn restrictions as per Configuration 2 would be implemented at the Main Street intersection via the introduction of a center median on Main Street in lieu of a centre turn lane. Therefore, the River Avenue Crescent and River Road East intersection with Main Street would operate as a right-in/right-out only.



To allow for inbound left turns from Main Street to the River Avenue Crescent and Glenwood Drive area, Glenwood Drive would be reversed to operate one-way in the southbound direction.

This configuration is also likely to result in changes in travel patterns through the area including diversion of traffic from River Road East to Beck Street for those wishing to access Main Street to the east.

It is noted that the future construction of roundabouts along Main Street at Beck Street and/or Stonebridge Boulevard will provide opportunities for motorists to turn around as may be required should they wish to head to the beach given that left turns from River Avenue Crescent and Glenwood Drive would not be permitted. In absence of these roundabouts, motorists in the River Avenue Crescent and Glenwood Drive area wanting to access the beach would be required to travel east on Main Street, north on Beck Street and then south on River Road East to access Main Street and ultimately the beach, therefore increasing traffic volumes on these road sections.

Configuration 5

Configuration 5 is similar to Configuration 4 as it relates to two-way travel on River Avenue Crescent and turn restrictions at its intersection with Main Street. However, with Configuration 5, Glenwood Drive would be converted to two-way operations also and its full moves intersection at Main Street would be maintained this allowing all movement directions. Provision of two-way travel on Glenwood Drive and the ability to complete all turning movements at its intersection with Main Street would readily accommodate the area travel demands and those displaced from River Avenue Crescent.

Given the existing width of Glenwood Drive, a minor widening of the paved surface would be required to provide a minimum road width of 6.5 metres to accommodate 1 lane per direction. While the right-of-way along Glenwood Drive is limited to 15 metres (as opposed to the standard 20 metre right-of-way for local roads), no widening of the right-of-way and hence no property takings are recommended. Rather, the Town's standard road cross-section would be modified as required to



facilitate the provision of 2 lanes and appropriate pedestrian measures through the corridor.

12.3.3 Evaluation & Recommendation

The recommended configuration and operation of River Avenue Crescent and Glenwood Drive is that of Configuration 5 which would see the conversion of both noted road sections to 2-way operations with turn restrictions at the intersection of River Avenue Crescent and Main Street in light of the existing restricted sightlines and alignment of Main Street. While this option would remove the bike lanes on River Avenue Crescent, cyclists would still be permitted to ride on this road and those others in the area.

As previously noted, a widening of Glenwood Drive will be required to accommodate two-way travel and to ensure pedestrian traffic can also be safely accommodated (ie. provision of separate pedestrian facilities).

If the recommended configuration is not implemented, the River Avenue Crescent intersection will require traffic signals by 2041 to accommodate the increased traffic volumes.



13 Stakeholder Consultation - PIC 2

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

- the 1st 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: Stakeholder Consultation - PIC 1);
- the 2nd 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 3rd point of contact is upon completion of the planning process at which time a Notice of Completion is provided (discussed in Chapter 15: Stakeholder Consultation - Study Completion).

13.1 PURPOSE

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

- the preferred solutions from Phases 1 and 2 of the Class EA process;
- the alternative design concepts under consideration to implement the preferred solutions;
- the evaluation of the alternative design concepts and recommended options; and
- other traffic operations matters (key intersection operations, roundabout operations, and River Avenue Crescent and Glenwood Drive operations).

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 interest groups 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. In addition, notices were:

- mailed to owners of properties fronting on the subject sections of Main Street, Mosley Street, Beach Drive, River Avenue Crescent and Glenwood Drive;
- emailed to concerned parties and residents who provided email addresses through prior consultation;
- posted in the local newspaper on 2 occasions; and
- posted on the Town's website.

A PIC notice and corresponding distribution lists are provided in Appendix O.

13.3 STAKEHOLDER ENGAGEMENT

Due to the COVID-19 pandemic, PIC 2 was held in a virtual setting – no in-person session was convened. A presentation video and display boards were posted on the Town's website (as referenced in the circulated notices) for stakeholders to view at their leisure. These materials, as provided in Appendix O, addressed the following:

- study purpose and objectives which described the reasoning behind the undertaking;
- the Downtown vision and background studies completed to date to help set the framework;
- the Municipal Class EA process and those tasks completed to date;
- existing conditions along each road corridor;
- a review of the preferred solutions established at the end of Phase 2 of the Municipal Class EA process;
- alternative design concepts, alignments and typical cross-sections corresponding to the preferred solutions for each of Main Street, Mosley Street and Beach Drive;
- an assessment of the alternative design concepts;



- additional traffic considerations including operations at key intersections, implementation of roundabouts and orientation/operation of River Avenue Crescent and Glenwood Drive;
- the remaining steps to completion; and
- contact details for additional information.

The noted materials were posted on the Town's website for a 2-week period (September 24, 2020 to October 8, 2020). This was subsequently extended to November 1, 2020, providing for a 5-week public review period. A comment sheet was also posted to facilitate submission of stakeholder comments.

13.4 PUBLIC COMMENTS

Input was received from stakeholders in response to PIC 2 via the comment sheets provided. A total of 13 comment sheets were returned as provided in Appendix O. The comment sheet put forth a number of questions specific to each study element to solicit input and opinion, as detailed in the following sections with a summary of the public comments also provided in Appendix O.

13.4.1 Main Street

Respondents were also asked to indicate which of the alignments and design concepts they felt were most appropriate for Main Street. The results are presented in Figure 47 and include:

- 92% (12 of 13 respondents) support the proposed widening to 30 metres and the manner in which such is to be implemented (ie. widening on both sides); and
- 69% (9 of 13) identified Option 3 as their preferred design concept (Option 3 is the recommended design concept).

13.4.2 Mosley Street

For the Mosley Street corridor, the responses are illustrated in Figure 48 and summarized below:



- 77% (10 of 13 respondents) support Alignment 3 to establish a 23 metre right-of-way on Mosley Street from the Nottawasaga River to 2nd Street (Option 3 is the recommended alignment);
- 92% (12 of 13 respondents) support the proposed alignment to establish a 23 metre right-of-way on Mosley Street from 2nd Street to 6th Street; and
- 67% (8 of 12) identified Option 2 as their preferred design concept (Option 2 is the recommended design concept).

13.4.3 Beach Drive

For the Beach Drive corridor, the responses are illustrated in Figure 49 and summarized below:

- 38% (5 of 13 respondents) support Alignment 2 to establish a 20 metre right-of-way for Beach Drive, shifting the road corridor inland approximately 7.5 metres (Alignment 2 is the recommendation);
- 46% (6 of 13 respondents) support Alignment 3 to establish a 20 metre right-of-way for Beach Drive, shifting the road corridor inland approximately 22 metres to the 100 year flood limit; and
- 54% (7 of 13) identified Option 2 as their preferred design concept (Option 2 is the recommended design concept).

13.4.4 Roundabouts

With respect to support for roundabouts at select locations, the following responses were provided (refer also to Figure 50):

- 77% (10 of 13 respondents), 54% (7 of 13) and 62% (8 of 13) are in favour of roundabouts at the intersections of Main Street with River Road West, Stonebridge Boulevard and Beck Street respectively; and
- 45% (5 of 11 respondents), 67% (8 of 12) and 58% (7 of 12) are in favour of roundabouts at the intersections of Mosley Street with Spruce Street 1st Street and 3rd Street respectively.



13.4.5 River Avenue Crescent & Glenwood Drive

In considering the various configuration options for the operations of River Avenue Crescent and Glenwood Drive, the responses are illustrated in Figure 43 and summarized below:

- 69% (9 of 13 respondents) identified Option 5 as their preferred configuration, which entails converting both River Avenue Crescent and Glenwood Drive to two-way operations with turn restrictions at the intersection of River Avenue Crescent/River Road East with Main Street (Option 5 is the recommended design concept) .

13.4.6 Additional Comments

In addition to the comment sheets, a number of additional emails/comments were received pertaining to the information presented at PIC 2. These additional comments are provided in Appendix O and summarized below.

- The Town should revisit the Blue Beach development proposal previously presented to the Town back in 2007/2008.
- Disagree with the removal of cars from Beach Drive. “The main drag should remain open to cars.....It is what it is for”
- Need to consider multi-modal requirements, centre medians/landscape medians, wider sidewalks and urban tree plantings.
- Consideration for centre medians to provide a more inviting environment by “splitting” the road. Medians could also be landscaped and allow for additional street trees. Consider removal of street parking on Main Street to allow for increased boulevards and pedestrian spaces.
- Concern with roundabout operations as they pertain to pedestrian and cyclist travel. Traffic signals will better accommodate these modes of travel.
- Consideration for maintaining the existing configuration of River Avenue Crescent and Glenwood Drive, but consider a traffic light at River Avenue Crescent/Main Street with left turn priority. To address restricted sightlines, acquire additional property and remove any obstructions.



- Identification of possible challenges and difficulties in widening Glenwood Drive to accommodate two-way traffic relating to storm sewers, impacts to mature trees, relocation of above ground and below ground utilities, safety pedestrian and cyclist provisions.
- Questions regarding future cross-section of Glenwood Drive and where widening would occur (north side, south side or both sides).

13.5 AGENCY COMMENTS

The following agency comments were received, copies of which are provided in Appendix O.

13.5.1 Ministry of Transportation

The MTO confirmed that as Main Street and Beach Areas 1 and 2 are beyond MTO's permit control, they have no comments.

13.5.2 Ministry of Heritage, Sport, Tourism and Culture Industries

MHSTCI provided comments outlining their interests in the Class EA study and its mandate of conserving Ontario's cultural heritage which includes, archaeological resources, built heritage resources, and cultural heritage landscapes. Such interests have been addressed through the completion of the archaeological assessment and cultural heritage assessment studies.

13.5.3 Ontario Parks, Ministry of the Environment, Conservation and Parks

Ontario Parks noted that Wasaga Beach Provincial Park protects nationally, provincially, and regionally significant natural, cultural, and recreational values. The undertakings as proposed may have direct and indirect impacts on Wasaga Beach Provincial Park related to the park boundary; access for park visitors, staff and equipment; storm water management and drainage to the bay; natural heritage features; as well as beach management (eg. sand management, detritus management, beach raking). All undertakings within the park, including disposition of park land, are subject to the *Provincial Parks and Conservation Reserves Act*,



Class Environmental Assessment for Provincial Parks and Conservation Reserves, and Environmental Bill of Rights.

Further to the noted comments, a meeting was held between representatives of Ontario Parks, MECP, the Town and the consultant team to discuss the project and potential impacts. During the meeting the following were noted:

- the boundary between the Town and Ontario Parks is the beginning and end of jurisdictions - the *Provincial Parks and Conservation Reserves Act* and the Class Environmental Assessment for Provincial Parks and Conservation Reserves will apply should any works or improvements be proposed with Ontario Parks property;
- if all proposed works are outside of Ontario Parks boundary, the noted process will not apply, but Ontario Parks will still want to be consulted as a stakeholder;
- notwithstanding boundary implications, operational impacts must also be considered as they relate to access to the beach for Ontario Parks equipment, any impacts to the natural evolution of the beach (eg. erosion, deposition, etc.) and stormwater runoff;
- access to the beach area will be maintained, mostly likely at Spruce Street and 3rd Street;
- with the proposed shift of Beach Drive by 7.5 metres inland, any change due to beach levels due to waves bouncing off the shore protection will most likely occur within the 7.5 metres and thus will not impact Ontario Parks lands;
- during low water levels, the shore protection will reduce the amount of wind blown sand within the Beach Drive corridor (thus keeping it on the beach);
- at present, all of the beach is effectively Ontario Parks property whereas with the proposed shift of Beach Drive, there would be 7.5 metres of Town beach which should be addressed in relation to operations, enforcement and jurisdiction (recognizing that both are currently the responsibility of Ontario Parks);



- consideration must be given to stormwater, drainage and overland flows to minimize impacts to the beach (ideally, flows should be collected and directed away from the beach via overland or underground conveyance);
- access will need to be maintained to the Wasaga Beach Provincial Park via Spruce Street as will access to the beach – the roundabout proposed at the Spruce Street intersection could be beneficial to accessing the park and beach areas; and
- some property impacts are expected at the Ontario Parks Information Centre on Mosley Street resulting from the new alignment – preference is to avoid any impacts to avoid any additional requirements or studies.



14 Preferred Design Concepts

The preferred design concepts have been established following PIC 2, receipt and review of all public and review agency comments, and in consideration of the environmental impact assessment of the various alternatives. Further details are provided below with the corresponding cross-sections illustrated in Figure 51.

14.1 MAIN STREET

14.1.1 Alignment & Widening

A widening of the Main Street right-of-way is only required from Beck Street to the Nottawasaga River (otherwise the existing right-of-way is 30 metres or greater). To maintain consistency with the previous widenings and ensure a consistent and uniform right-of-way, balanced widenings are to be implemented on both sides of the road. This approach to the widening is also consistent with the Town's *Official Plan* and *Community Improvement Program* policies.

It is expected that the Town will pursue the acquisition of the necessary property in conjunction with future development.

14.1.2 Cross-Section

Design Concept 3 is the preferred option for Main Street given its reduced lane width which will reduce travel speeds, the provision of the widest pedestrian walkways and the programable and flexible patios and outdoor retail opportunities for businesses along the south boulevard (through the transformation of the flexible parking lane into boulevard space).

At intersections and at select mid-block locations, the parking lane and/or flexible space can be eliminated in favour of bump-outs to provide a reduced road width and wider boulevards (at intersections, this will aid in pedestrian crossings). This can also be considered along sections where on-street parking may not be required (eg. from River Road West to Stonebridge Boulevard, where the abutting developments are largely big box retail, thus not requiring street parking).



Similarly, should the centre turn lane not be required along the entirety of Main Street (eg. should the abutting developments be provided access off the side streets as opposed to Main Street), opportunity for a landscape median can be considered.

14.2 MOSLEY STREET

14.2.1 Alignment & Widening

Between the Nottawasaga River and 2nd Street, the preferred alignment and widening provision (23 metre right-of-way) for Mosley Street is that of Alignment 3 which is premised on widening on both sides of the existing right-of-way, thus balancing impacts on both sides.

From 2nd Street to 6th Street, the preferred option is to introduce a consistent and uniform 23 metre right-of-way premised on the existing, balancing property needs on both sides. Widening on one side of the other, while limited property acquisition to one side, would result in surplus property on the other, thus resulting in greater overall impacts. The balancing of property needs is considered the most fair and equitable approach, as preferred by the Town. To the extent possible, the cross-section should be modified across the frontage of the Ontario Parks Information Centre on Mosley Street to avoid any property impacts (which could potentially trigger additional studies and requirements under the *Provincial Parks and Conservation Reserves Act* and the Class Environmental Assessment for Provincial Parks and Conservation Reserves). Further consultation with Ontario Parks is recommended in this regard.

As with Main Street, the required property along Mosley Street is expected to be acquired in concert with redevelopment of the area and thus immediate impacts to existing development and businesses is not anticipated.

14.2.2 Cross-Section

The preferred design concept for Mosley Street is Option 2 in that it maintains the narrower lane widths thus allowing wider boulevards and helping to reduce travel speeds, and is configured such that the amenity zone will provide a buffer between



the travel lanes and the pedestrian zones. In addition, the side-by-side location of the walkway space and retail space, will allow greater opportunity for utilization of this congruent space.

Through areas in which the centre turn is not required, curb bump-outs can be introduced to provide further enhancements to the pedestrian and retail realms.

14.3 BEACH DRIVE

14.3.1 Alignment & Widening

In considering the realignment of Beach Drive, there is a desire to further protect against the increased water levels and wave uprush during storm events from a development perspective. In doing so, the preferred option would be to locate the Beach Drive corridor beyond the “no structure flood hazard limit” or at a minimum beyond the 100 year flood level. However, in doing so, the road would be shifted inland by approximately 22 to 44 metres, which has a significant impact on the remaining developable area. Given that the redevelopment of Beach Area 1 and Beach Area 2 will be the catalyst for the overall area redevelopment, including that of Main Street, there is a desire to maximize the development potential, with the understanding that additional measures can be implemented through the design of the Beach Drive corridor to better safeguard against hazards resulting from the higher water levels.

Equally as important however is the provision of a suitable beach area, given its role and significance to the recreational and tourism draw of the area. In this regard, an inland shift of the road corridor is desired in that such will allow the beachfront area to be increased, thus combatting the negative impacts of the higher water levels.

In consideration of the competing objectives – maximum development area and maximize beach area – Option 2 is considered the preferred option. Under this option, the Beach Drive corridor will be shifted inland 7.5 metres and widened to 20 metres, thus providing additional opportunity for beach front during periods of high water levels. This option also limits the impacts to the abutting development properties and ensures that all shore protection and associated facilities such as



stairs, ramps and guards can be implemented wholly within Town property and thus will not infringe upon Ontario Parks lands (the boundary between Ontario Parks and Town property is along the west edge of the existing Beach Drive). Given the prevailing grades in the area, the inland shift of Beach Drive will result in a natural increase in elevation along the corridor, thus providing some additional protection against high water levels.

14.3.2 Cross-Section

The preferred cross-section for Beach Drive is Design Concept 2 as it provides amenity zones/landscape areas on both sides of the cycle track, thus providing buffer zones between cyclists and pedestrians increasing their levels of comfort.

In addition to the noted cross-section, as per the *Natural Hazard Study*, the following measures have been identified as necessary to safeguard future development:

- increase the elevation of Beach Drive by 1.2 metres over the existing elevation;
- implement some type of shore protection along the beach; and
- ensure appropriate flood proofing of adjacent buildings.

The above should be considered in concert with Design Concept 2. As illustrated in Figure 44, Design Concept 2 illustrates the promenade or boardwalk raised above the beach and is accessed by stairs/ ramps at controlled points.

14.4 ROUNDABOUTS

While the majority of respondents stemming from PIC 2 indicated support for roundabouts at most locations, the preferred locations include the intersections of Main Street with:

- River Road West (which will also offer an opportunity for a gateway feature);
- Stonebridge Boulevard (which could also accommodate a gateway feature in that it represents the transition from big-box retail to street front commercial); and
- Beck Street.



In addition to the above and further to input and consultation with Ontario Parks, the Town should protect for a possible roundabout at the intersection of Mosley Street with Spruce Street to ensure ready access to the Wasaga Beach Provincial Park and Spruce Street (for maintenance, delivery and perhaps pedestrian pick-up/drop-off facilities at the foot of Spruce Street). As the area is redeveloped and existing surface parking lots are eliminated, a greater demand for parking within the Provincial Park is expected and hence the provision of safe and efficient access is critical.

As previously noted, roundabouts at the 1st Street and 3rd Street intersections with Mosley Street are not recommended at this time given the associated property impacts resulting from their increased footprint and the expected reconfiguration/reallocation of the local road system given the recommended closure of Beach Drive.

The suggested roundabout configurations, footprints and associated property requirements are illustrated in Figure 43 and Figure 44.

14.5 RIVER AVENUE CRESCENT & GLENWOOD DRIVE

The preferred option for River Avenue Crescent and Glenwood Drive is Configuration 5 which entails introduction of two-way operations on both roads in addition to turn restrictions at the River Avenue Crescent intersection with Main Street.

As previously noted, River Avenue Crescent has a 20 metre right-of-way and an existing road platform that is conducive to two-way travel (would require the elimination of the dedicated cycle lanes with the expectation that cyclists would simply share the road with motorists). Sidewalks are currently provided on the east side along the entire length of River Avenue Crescent.

Glenwood Drive has a 15 metre right-of-way and thus does not conform to the Town's current road standard requiring a 20 metre right-of-way. However, there is no intention by the Town to acquire additional property at this time. Rather all works will be contained within the existing right-of-way, employing modified road standards as appropriate. It is noted that the section of Glenwood Drive from



Access Road to River Avenue Crescent, which also has a 15 metre right-of-way, accommodates 1 lane per direction with a sidewalk and asphalt boulevard on the north side - a similar cross-section is recommended for the remainder of Glenwood Drive. This would likely require road/sidewalk improvements on both sides of the existing road to provide a minimum 6.5 metre travel surface, curb and gutter and a sidewalk on one side of the road (1.8 metre sidewalk if located adjacent to the back of curb, otherwise 1.5 metre sidewalk with a boulevard between the sidewalk and curb).



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 Class 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 P). The notice was distributed as follows:

- mailed to each of the review agencies and other stakeholder groups as previously contacted;
- mailed to the area residents;
- mailed/emailed to those in attendance at PIC 1 or PIC 2;
- posted on the Town's website; and
- advertised in the local newspapers on 2 separate occasions, in accordance with the Class EA guidelines.



16 Completion of the 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

This Environmental Study Report was submitted to the Town of Wasaga Beach and the preferred solutions and design concepts 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 solutions and design concepts 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 redevelopment of the Main Street and Beach Areas 1 and 2 occurs.



Phase 5 includes the following key tasks:

- complete additional engineering studies including:
 - a Stage 2 archaeological study for the noted areas, prior to any disturbance of lands;
 - a shoreline revetment review; and
 - additional geotechnical investigations to support the road work and/or shoreline work (as necessary);
- complete engineering design drawings and tender documents for required road, infrastructure and shoreline revetment work;
- 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, MECP, Ontario Parks and NVCA to obtain the necessary approvals and permits prior to construction.

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, with additional details provided in the natural environment reports provided in Appendix G.

Stormwater Management

All new roads are expected to be constructed to urban standards and thus stormwater collected along these sections will be conveyed to storm sewer systems and discharged to the Nottawasaga River. Within the Beach Drive corridor, best efforts will be made to collect surface water and direct it towards the river as opposed to the beach and bay to minimize any potential erosion impacts



to the beach area. Enhanced stormwater quality control 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 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

Property acquisition is required along Main Street and Mosley Street to establish 30 and 23 metre rights-of-way respectively. A new 20 metre corridor is to be established for Beach Drive (shifted 7.5 metres from its existing location) which will also require property.

Erosion & Sediment Control

Prior to any land clearing/earth works, the Town should develop and implement an erosion and siltation control (ESC) plan to avoid/minimize risk of sediment transport or deposition of any exposed material into any sensitive natural heritage features identified. Established ESCs should isolate the limit of disturbance during all phases of construction and ensure that runoff from the study area does not impact nearby features. Erosion and sediment control measures should be monitored regularly for proper function and be maintained until improvements are complete.

Other

The identified environmental concerns associated with the construction of the project are summarized in Table 21 as are mitigation measures where they have been recommended to minimize or eliminate changes to the environmental conditions described in this report.



Table 21: Mitigating Measures

IMPACTS	MITIGATING MEASURES
Traffic Safety	<ul style="list-style-type: none"> ▪ follow Ontario Traffic Manual for proper signing and pavement markings
Impact on Road Capacity During Construction	<ul style="list-style-type: none"> ▪ Ontario Traffic Manual shall be followed to ensure safe lane closures/ temporary conditions ▪ one lane of traffic per direction to be maintained at all times
Major Services/ Utility Conflicts	<ul style="list-style-type: none"> ▪ coordinate with utility companies in identifying services and possible conflicts and relocation strategies ▪ all affected utility companies will be circulated on the design drawings in order to plan any necessary removals or relocations
Fisheries & Aquatic Habitat	<ul style="list-style-type: none"> ▪ stage work to non-critical times ▪ stage work to avoid spawning periods ▪ restore stream substrate ▪ if required, construct temporary creek diversion ▪ seasonal constraints ▪ delineate no-touch zone using construction fencing (30 metres from the Nottawasaga River and Georgian Bay) ▪ implement worker training to ensure no contraventions of the ESA
Wildlife Habitat	<ul style="list-style-type: none"> ▪ maintain vegetated corridors ▪ re-vegetate disturbed areas with wildlife beneficial plantings ▪ stage work to avoid breeding periods for birds (April 1 to August 31), bats (April 1 to October 31) and turtles (April 1 to October 31) ▪ conduct additional field surveys as required ▪ install silt fencing along limits of right-of-way/work area
Vegetation	<ul style="list-style-type: none"> ▪ revegetation of disturbed areas with native seed mix immediately following final grading ▪ delineate tree/vegetation protection areas using construction fencing ▪ minimize site clearing activities ▪ minimize road dedication



IMPACTS	MITIGATING MEASURES
Groundwater Resources	<ul style="list-style-type: none"> ▪ delineate and properly prepare refuelling areas to prevent soil contamination due to fuel spills ▪ identify and protect groundwater upwelling/source areas from contamination and flow disturbance ▪ creek crossings must be designed to minimize disruption of the discharge features of the banks
Water Quality/ Stormwater Management	<ul style="list-style-type: none"> ▪ provision for spill control in construction contract ▪ fast, accurate reporting of spills to ministry of the environment ▪ pollution prevention and source control by best management land use practices and best management stormwater practices ▪ equipment maintenance and refuelling away from watercourses ▪ temporary stockpiling of materials away from watercourses ▪ implementation of erosion and sedimentation controls and regular monitoring and reporting of maintenance after every major rainfall event ▪ revegetation of disturbed areas immediately following final grading ▪ development of a stormwater quality management plan to minimize entry of contaminants into the watercourse
Archaeological/ Cultural Heritage Resources	<ul style="list-style-type: none"> ▪ conduct Stage 2 archaeological study for noted areas, prior to any disturbance of lands ▪ if archaeological or cultural heritage features are encountered during construction, work will cease immediately and the Ministry of Tourism, culture & Sport is to be contacted
Impact on Existing Residents & Businesses	<ul style="list-style-type: none"> ▪ notify public agencies and adjacent owners of construction scheduling ▪ ensure access is maintained as well as garbage, recycling and green bin pickup
Nuisance Concerns	<ul style="list-style-type: none"> ▪ dust levels monitored and road watering/sweeping completed as necessary ▪ construction limited to typical work hours (ie. 7:00 AM to 7:00 PM)



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.

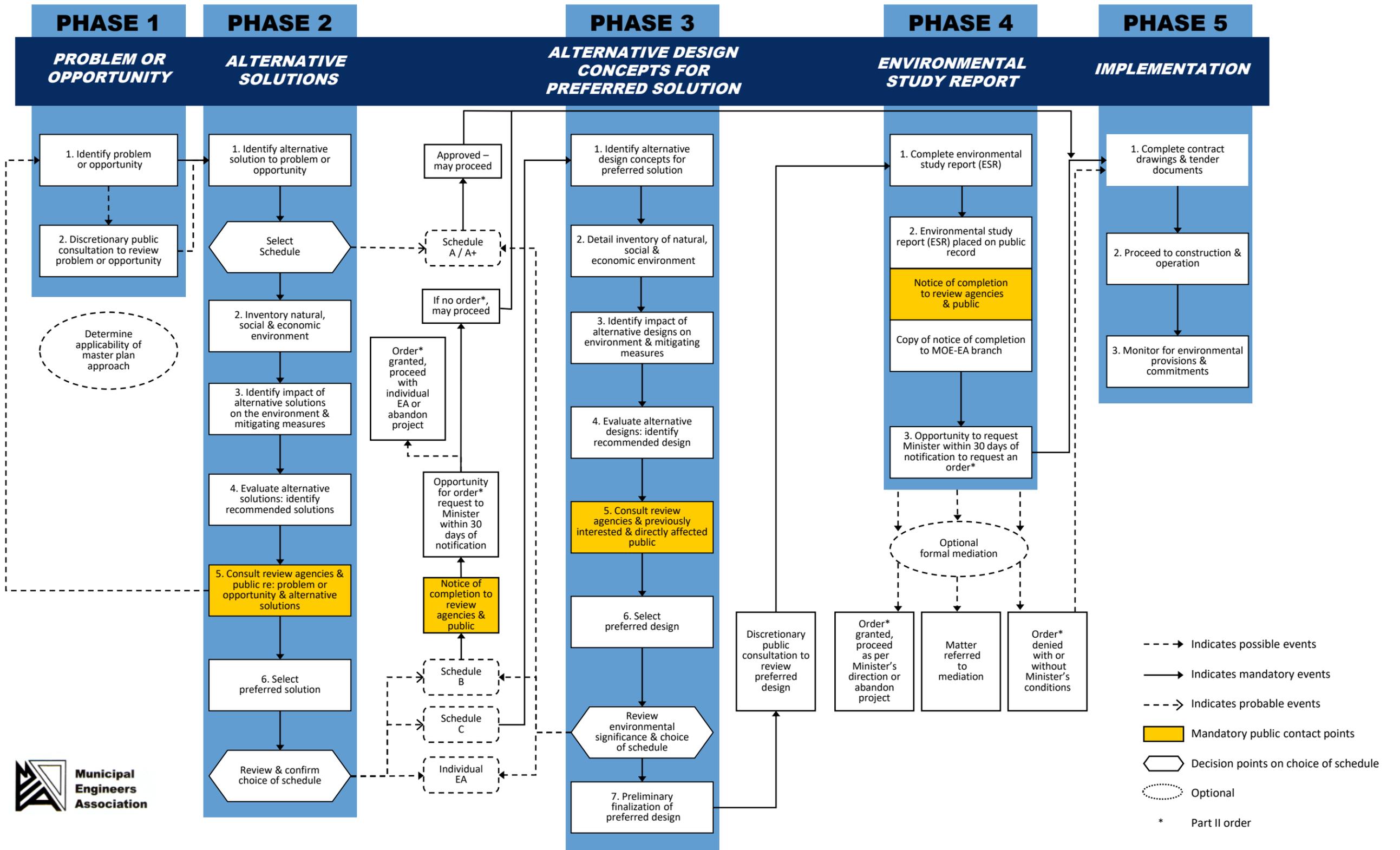
In addition to the site specific monitoring requirements, an audit of environmental performance for the project may be undertaken. Such an audit may include:

- 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).

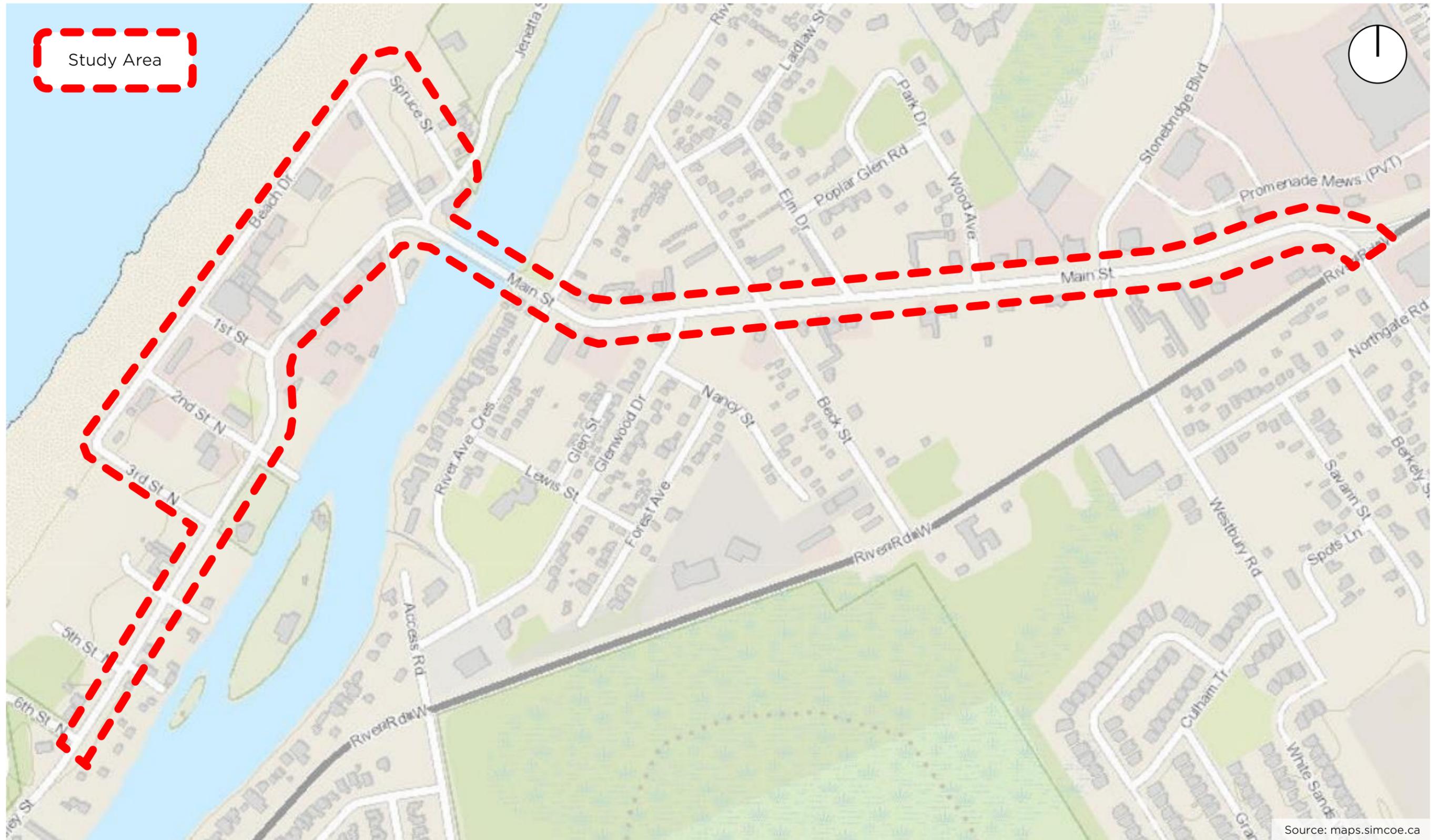




MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 1: Municipal Class EA Process





MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 2: Study Area

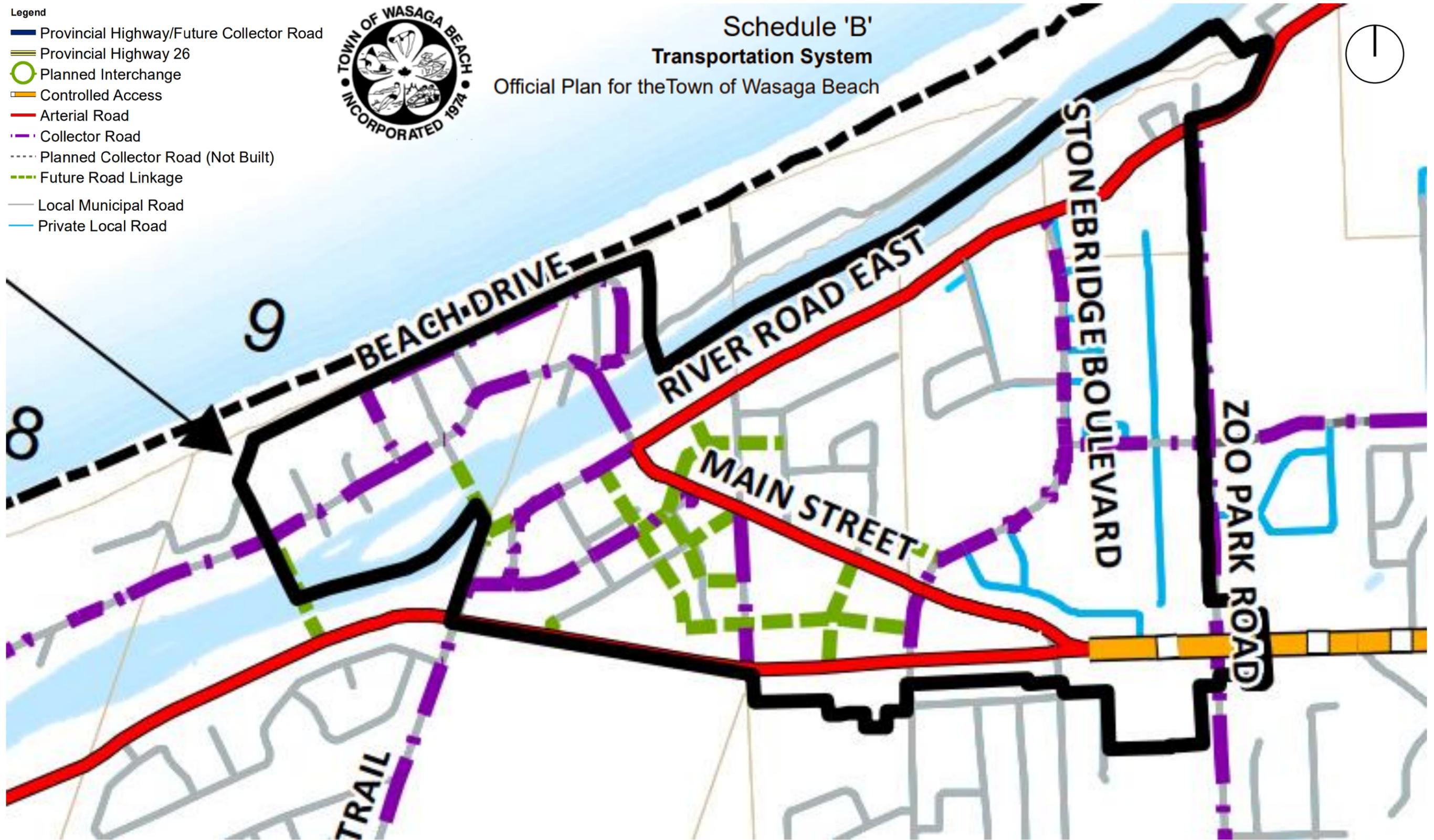


Legend

- 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



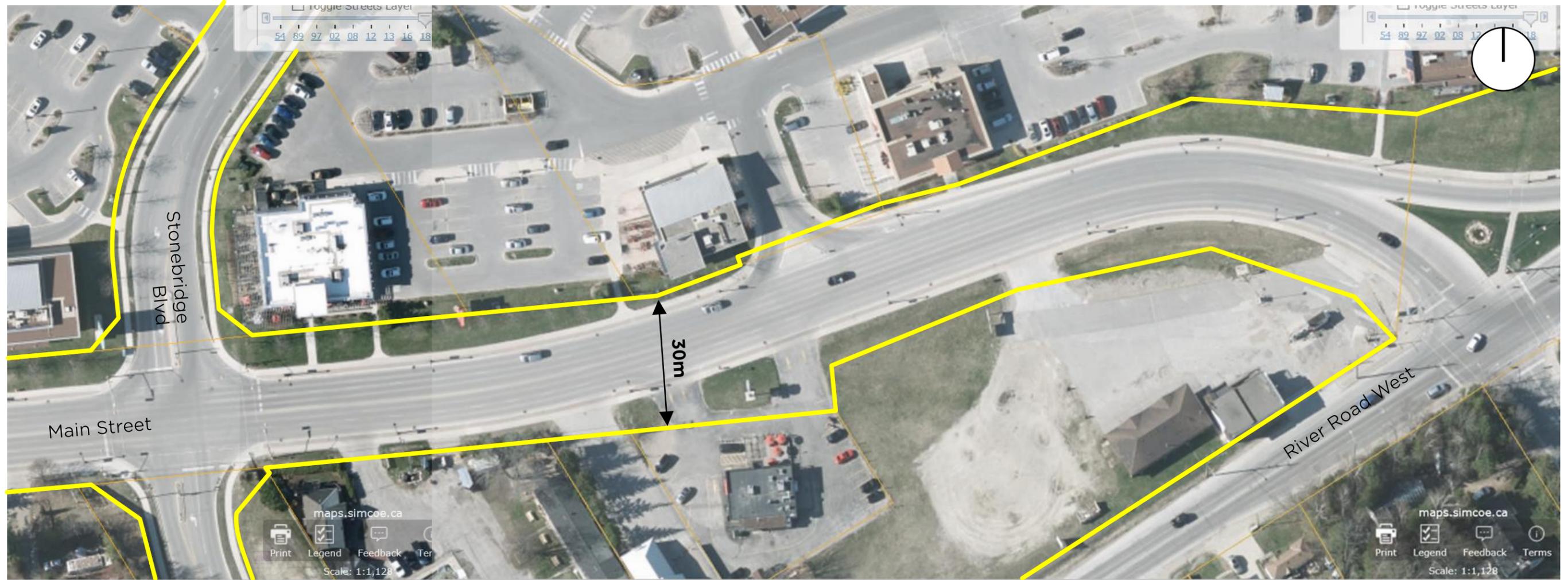
Schedule 'B'
Transportation System
Official Plan for the Town of Wasaga Beach



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 3: Official Plan Transportation System





MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

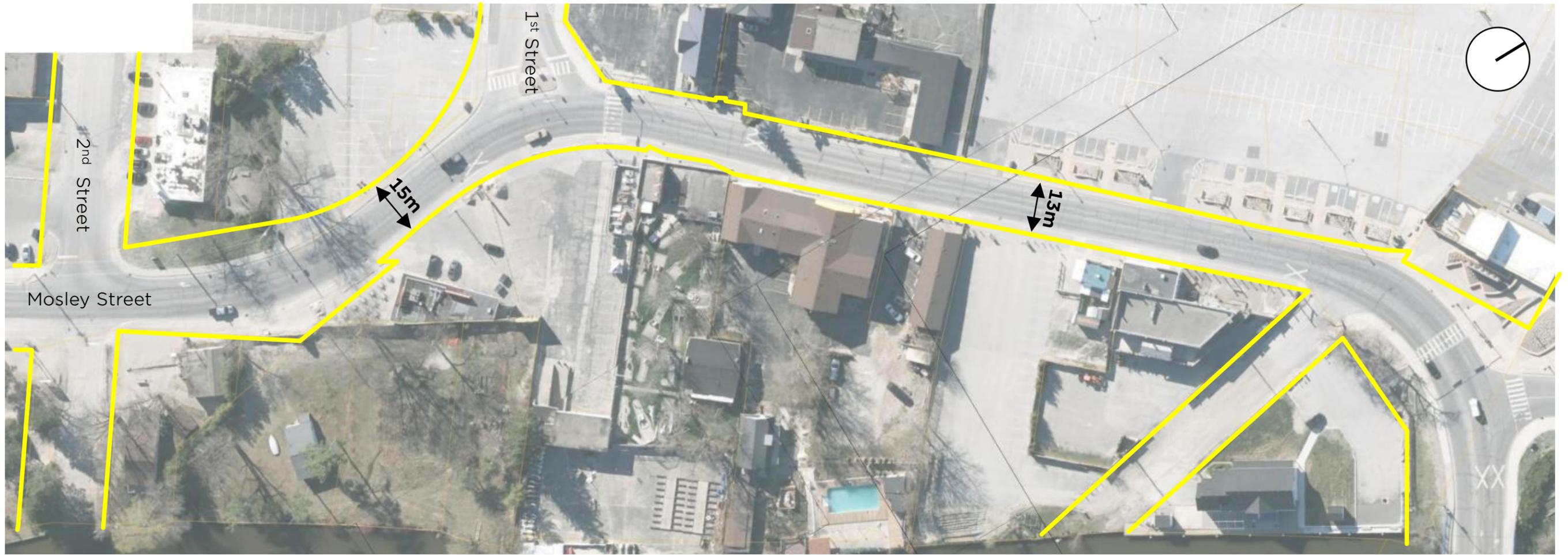
Figure 4A: Main Street Rights-of-Way





MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
Figure 4B: Main Street Rights-of-Way





Source: maps.simcoe.ca

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 5: Mosley Street Rights-of-Way

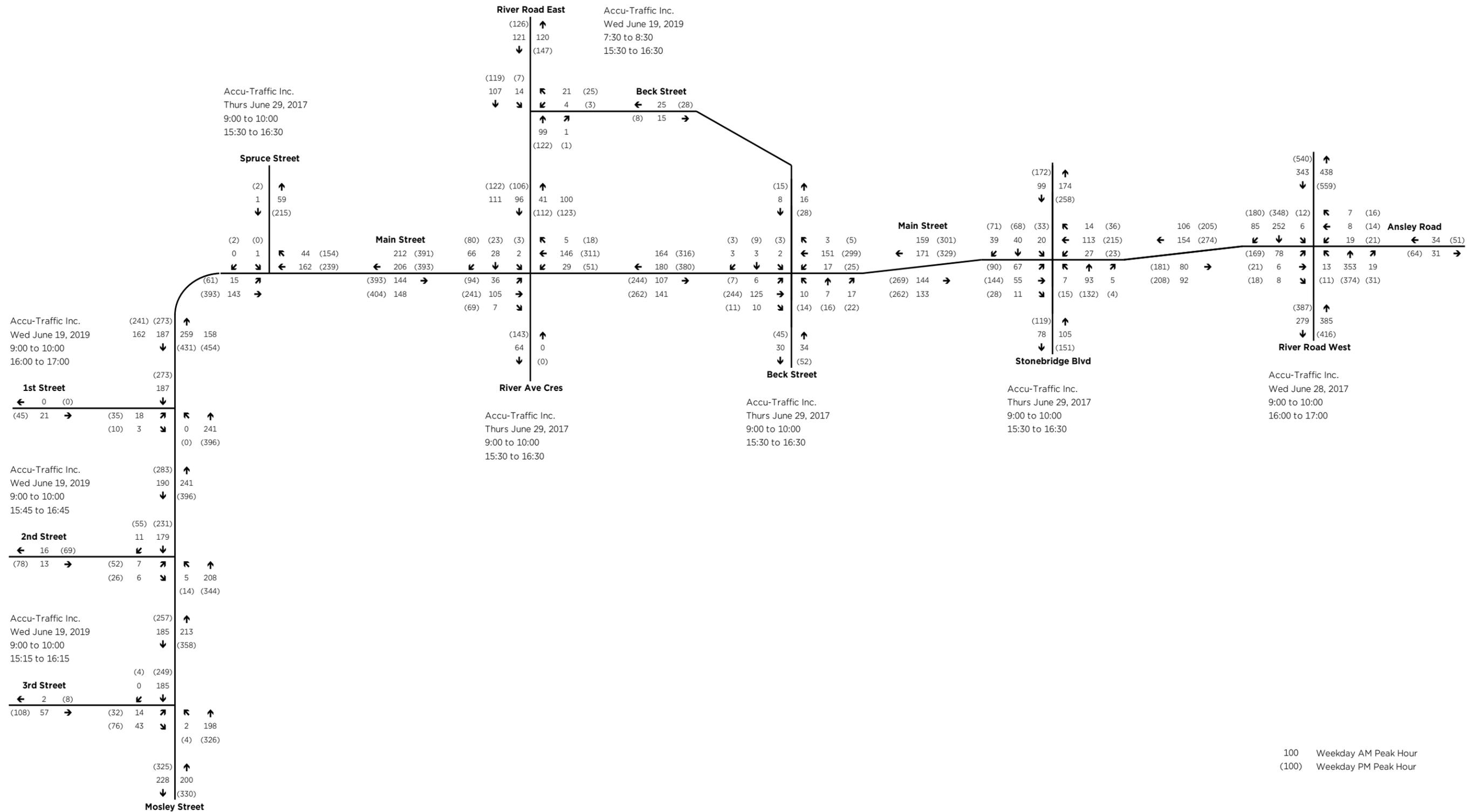




MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

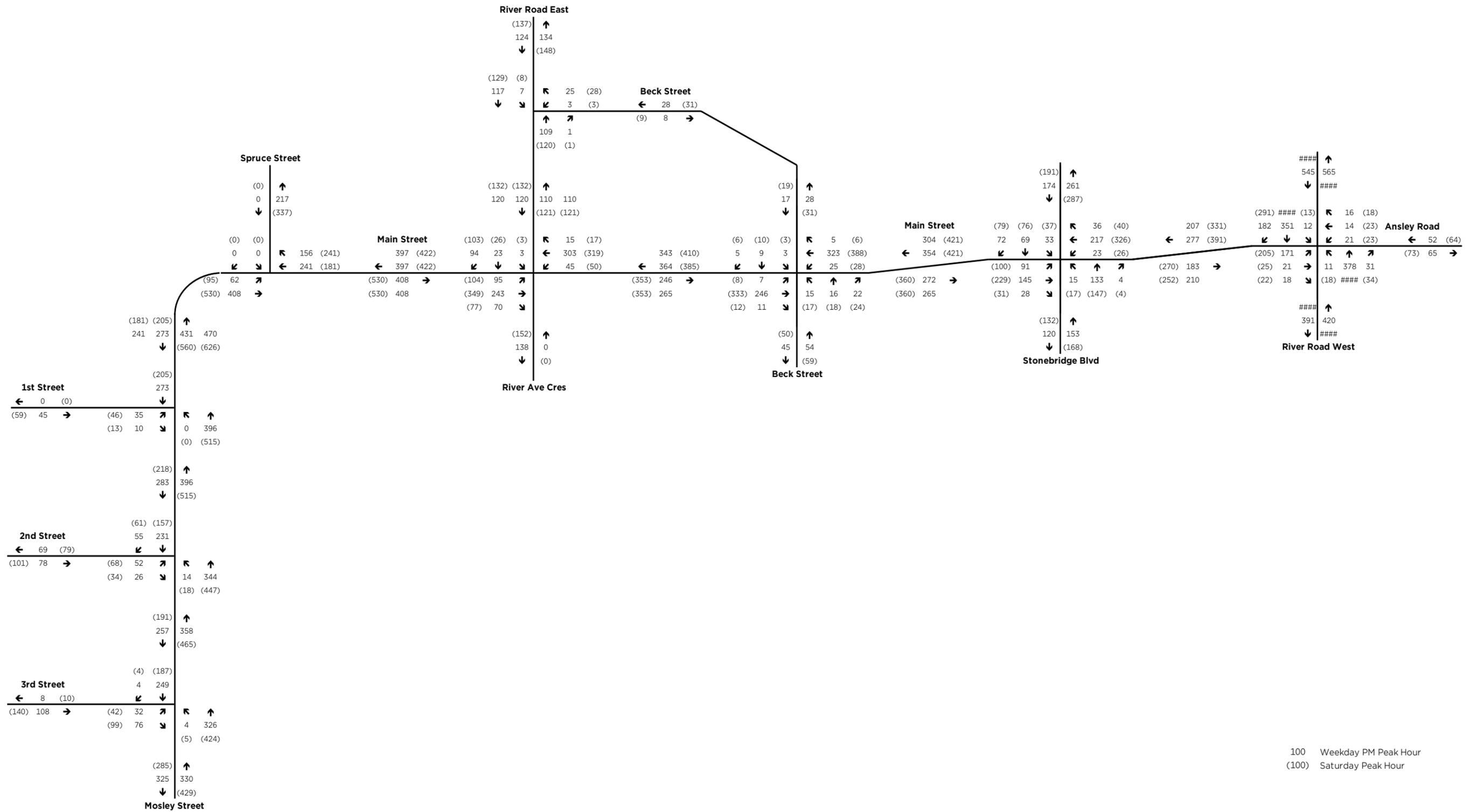
Figure 6: Beach Drive Rights-of-Way





MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
 Figure 7: Traffic Counts

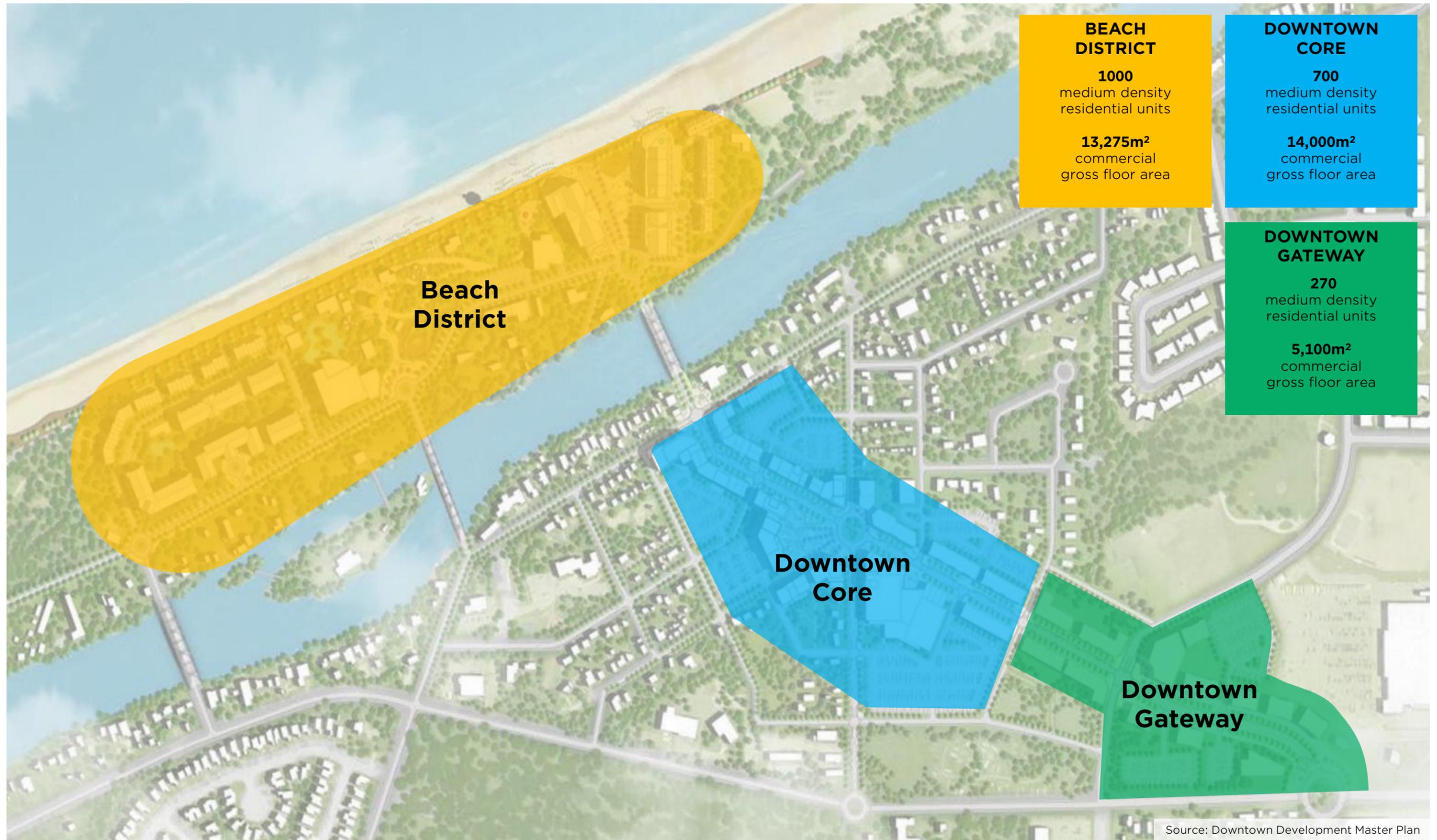




MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 8: 2019 Traffic Volumes



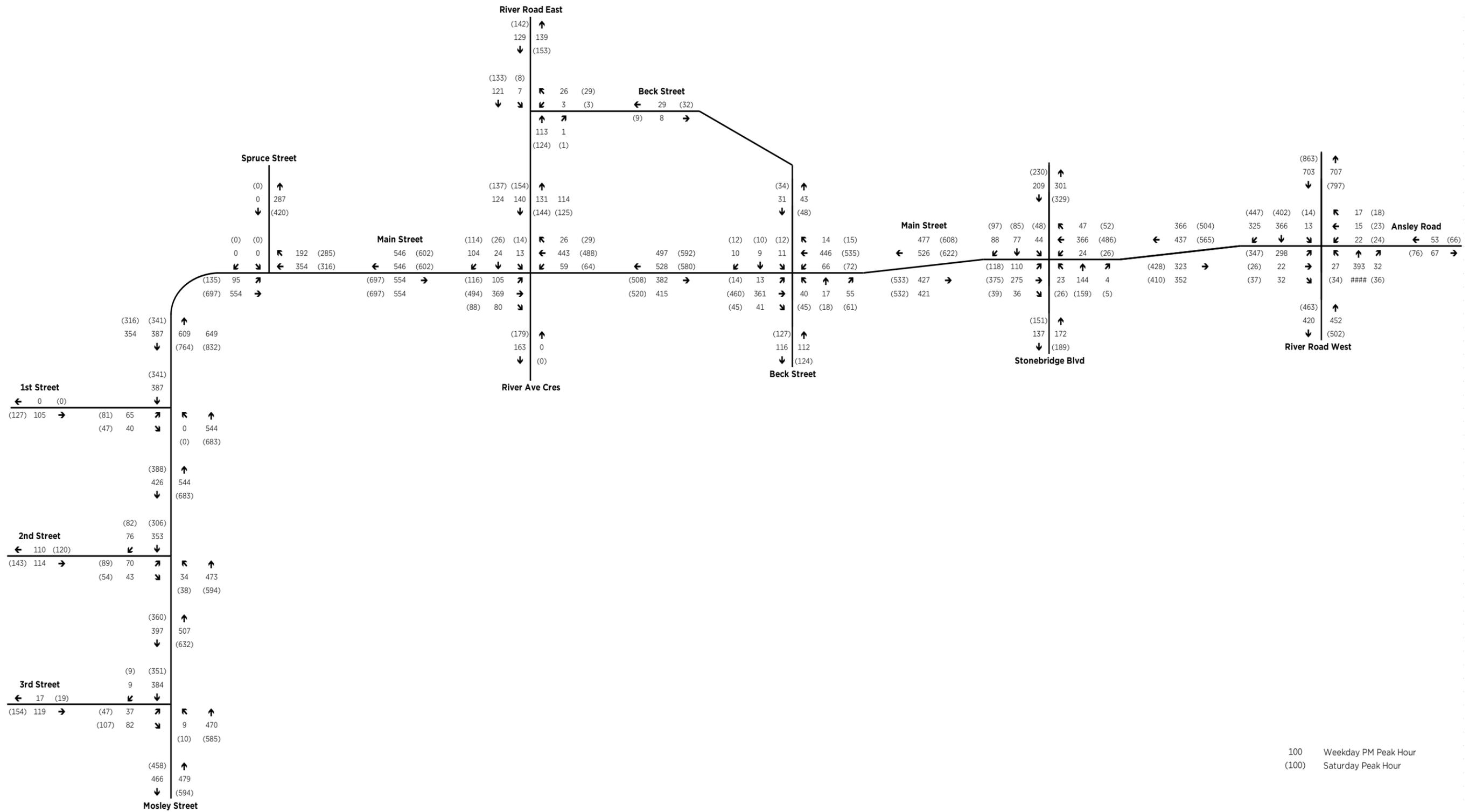


Source: Downtown Development Master Plan

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 9: Future Development

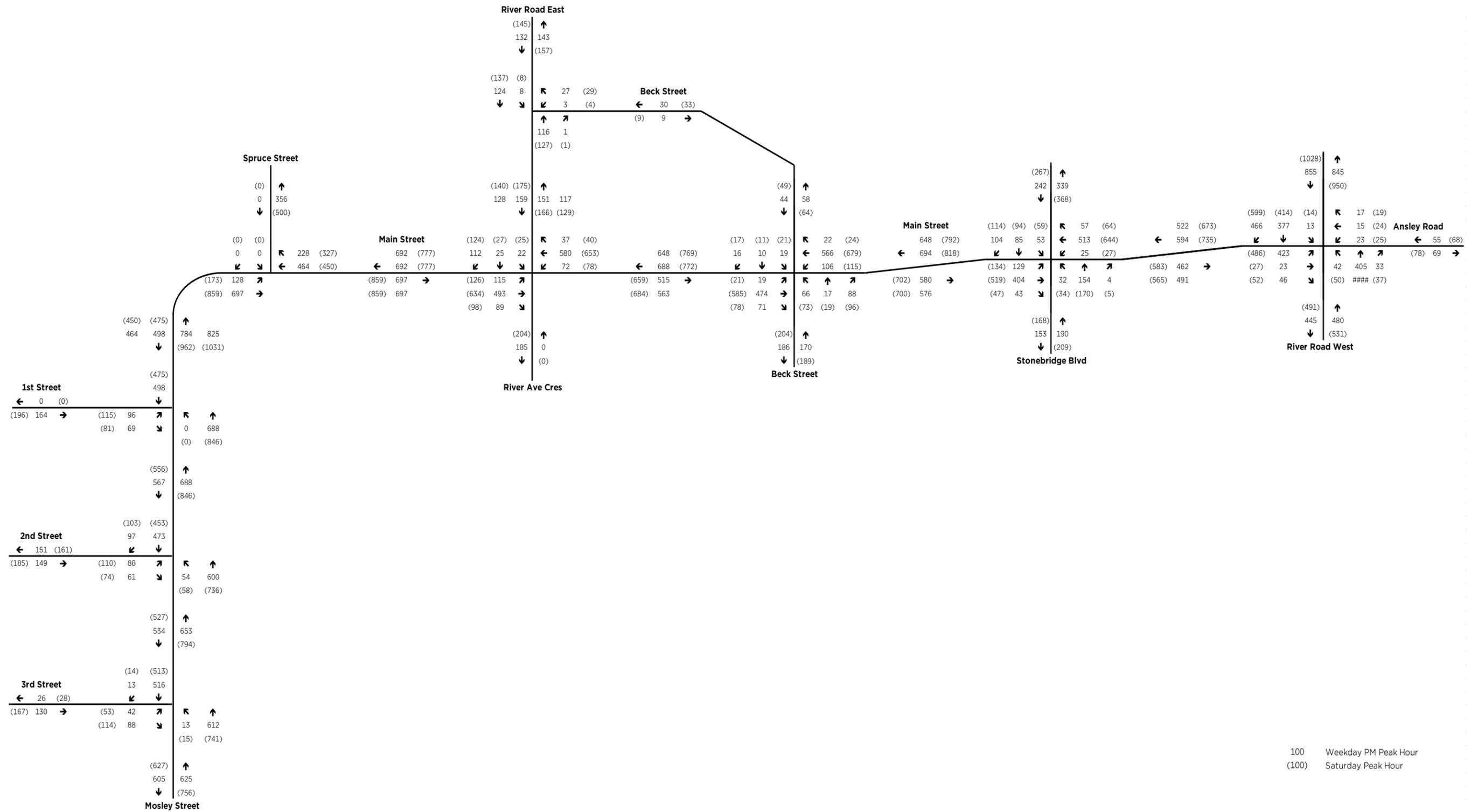




MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

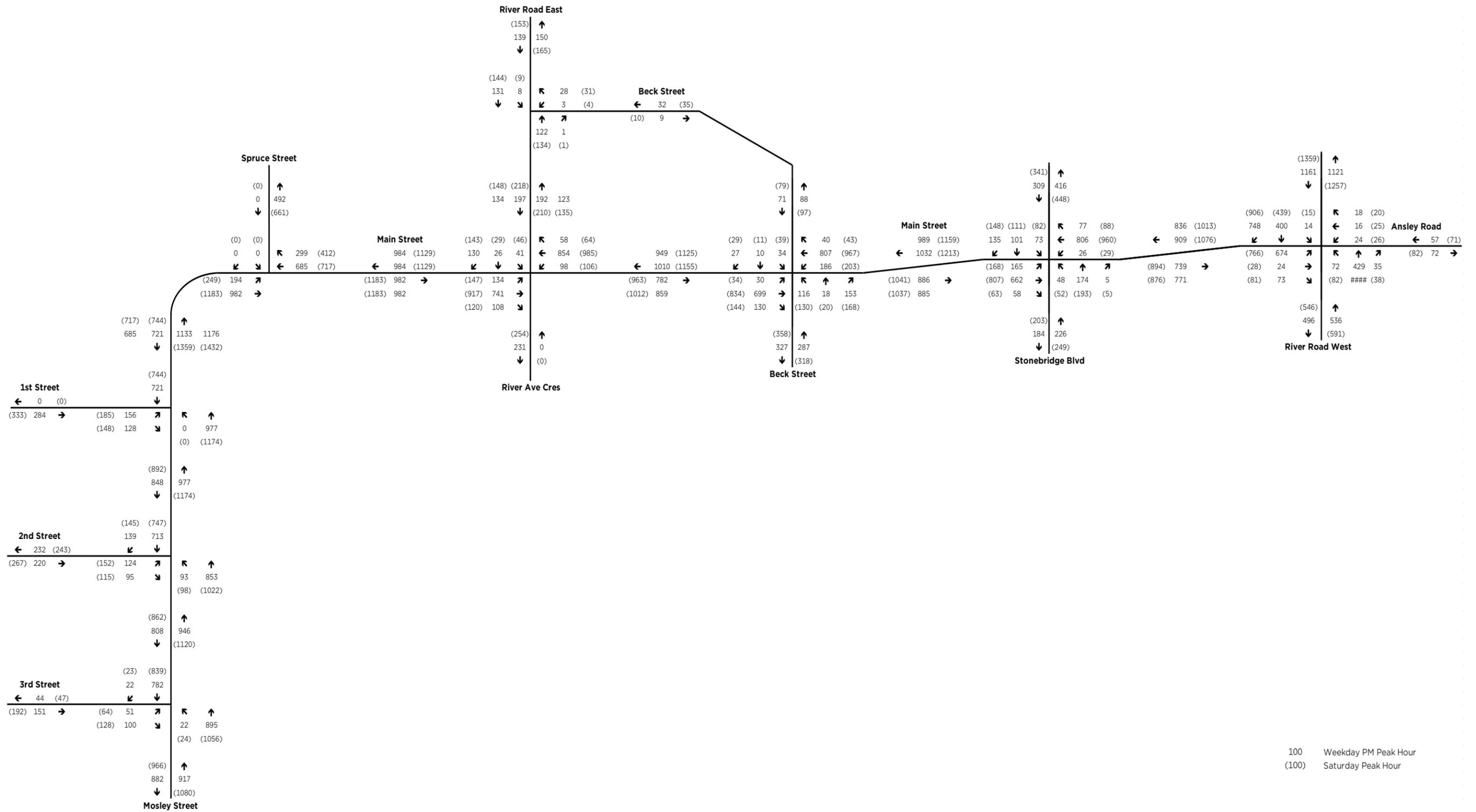
Figure 10: 2026 Traffic Volumes





MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
 Figure 11: 2031 Traffic Volumes

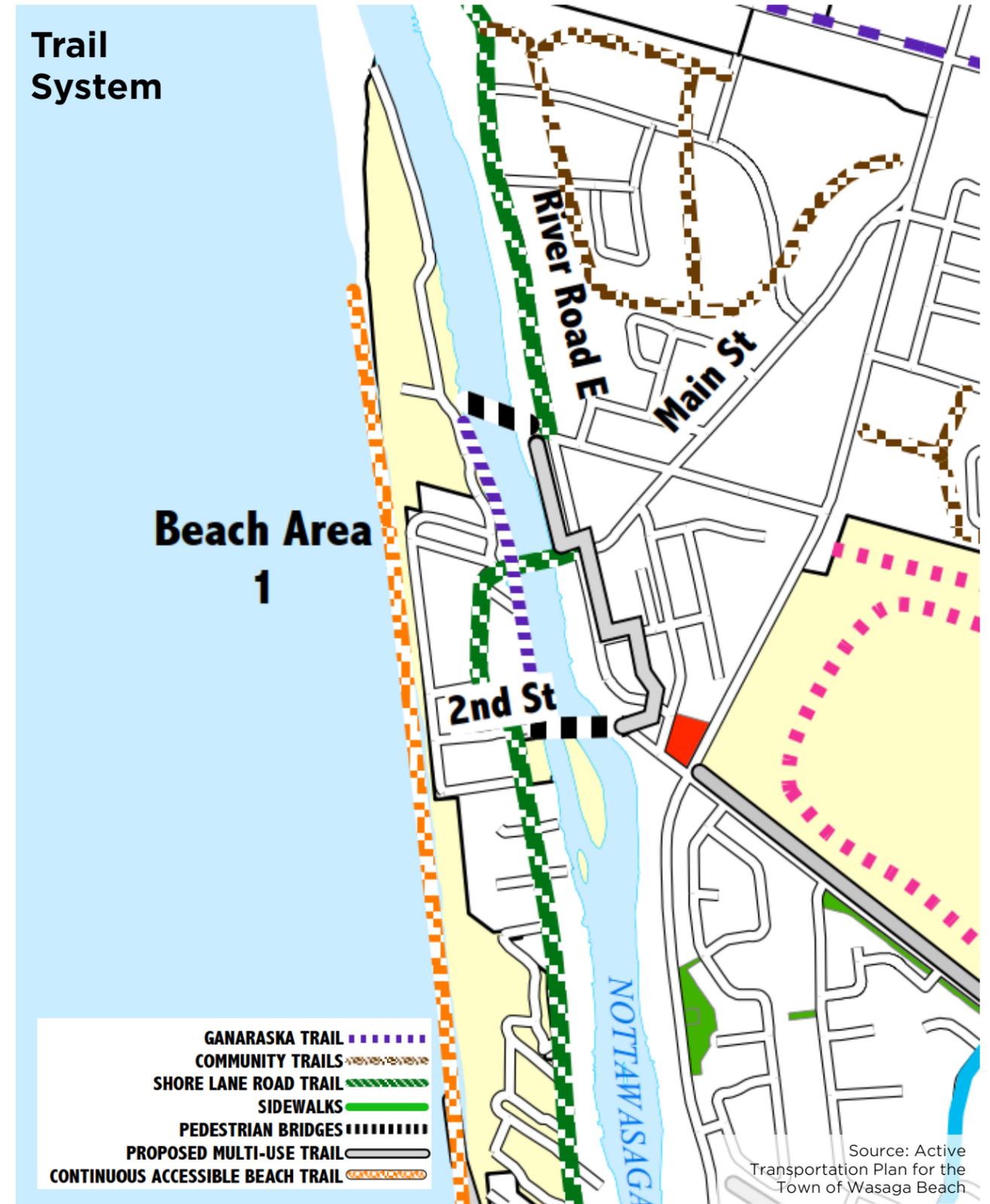
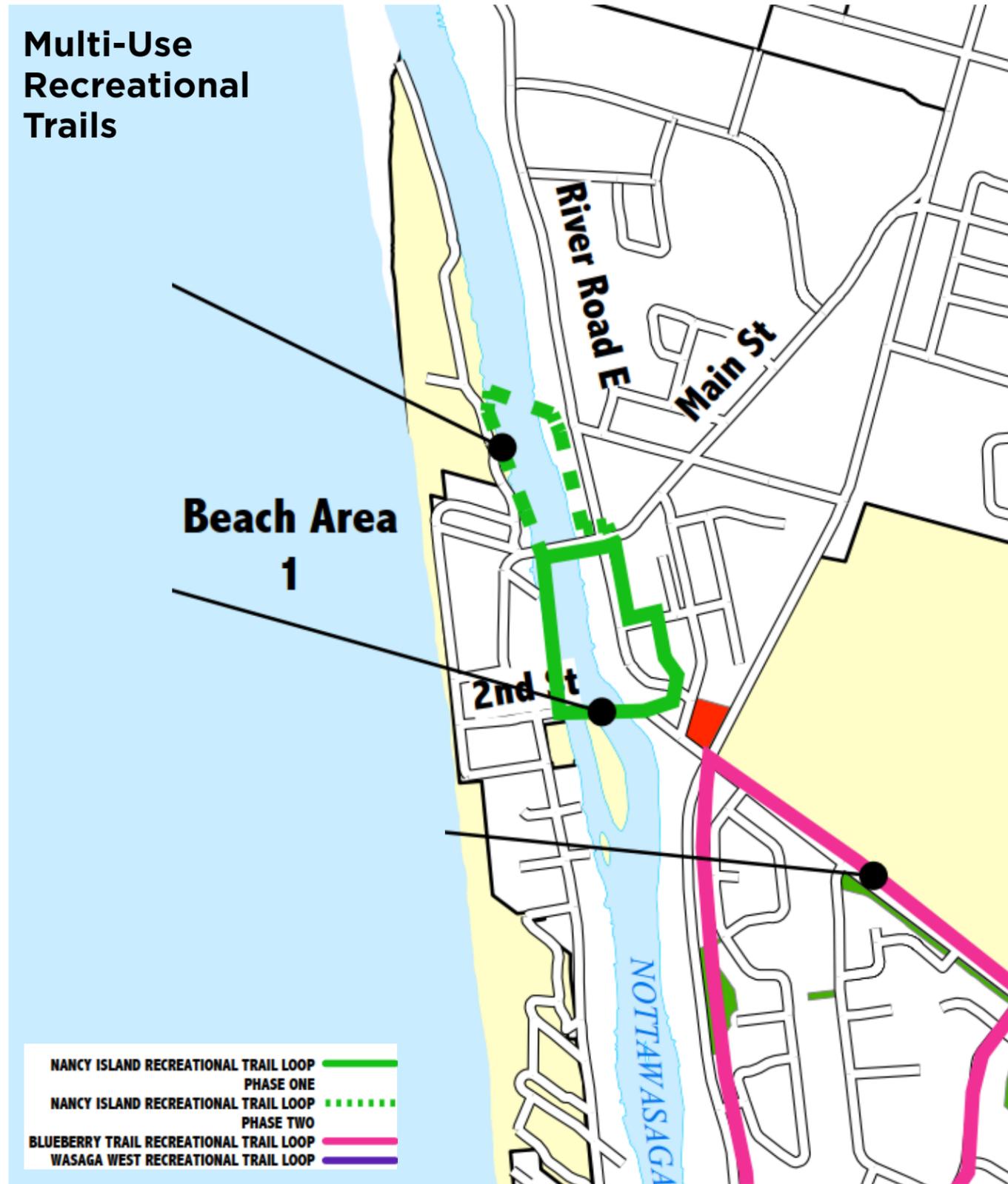




MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 12: 2041 Traffic Volumes

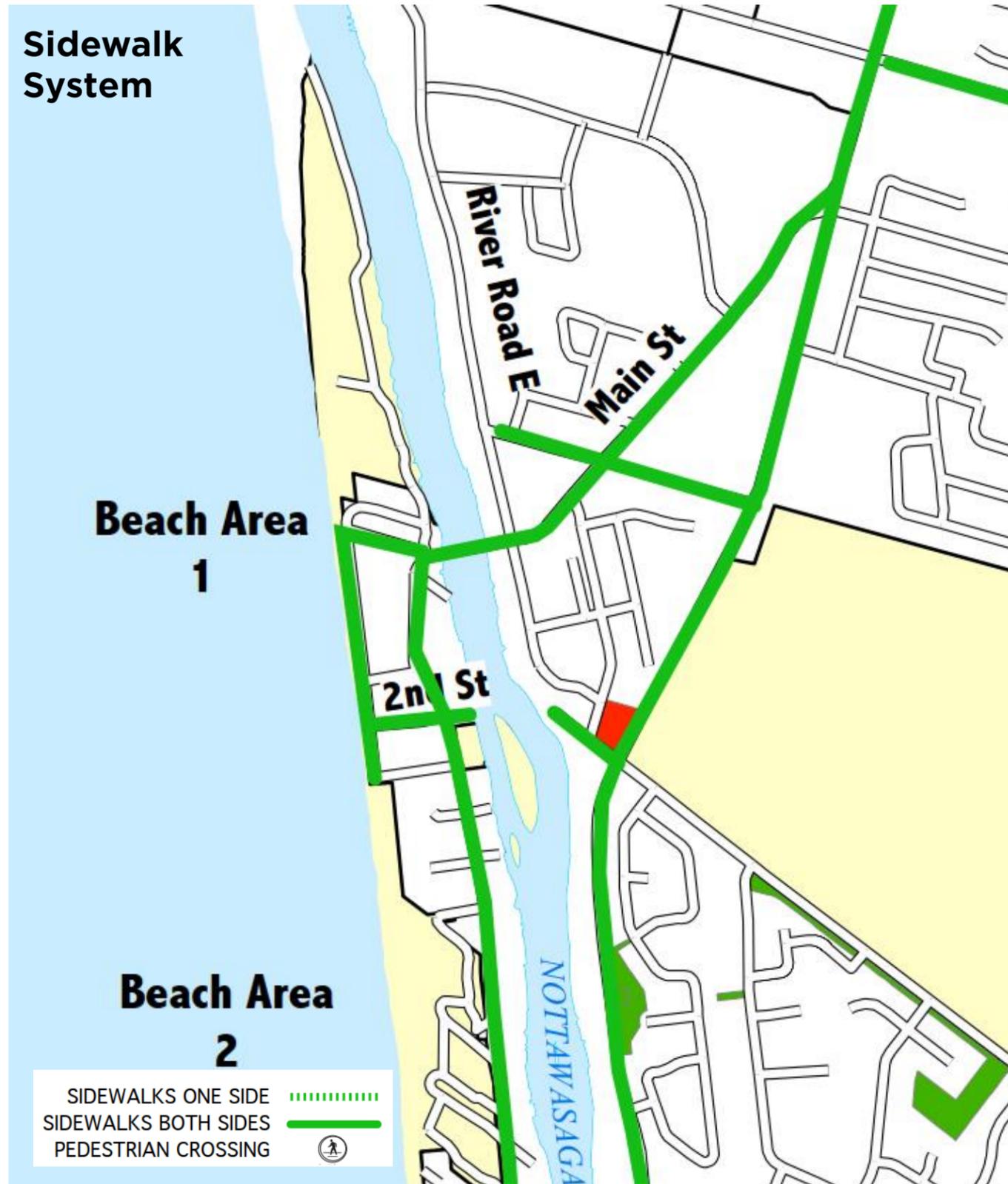




MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 13A: Active Transportation Networks





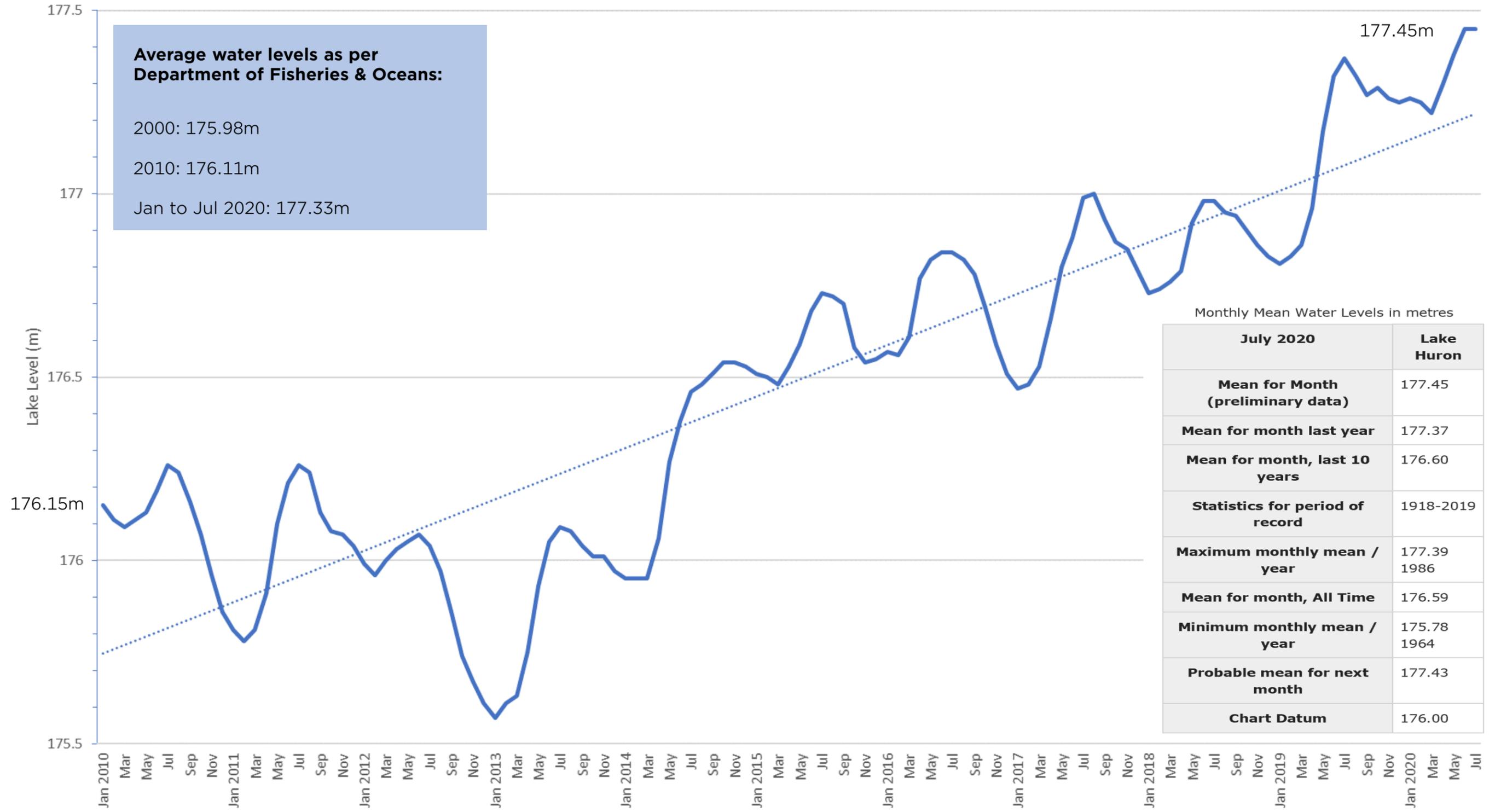
Source: Active Transportation Plan for the Town of Wasaga Beach

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 13B: Active Transportation Networks



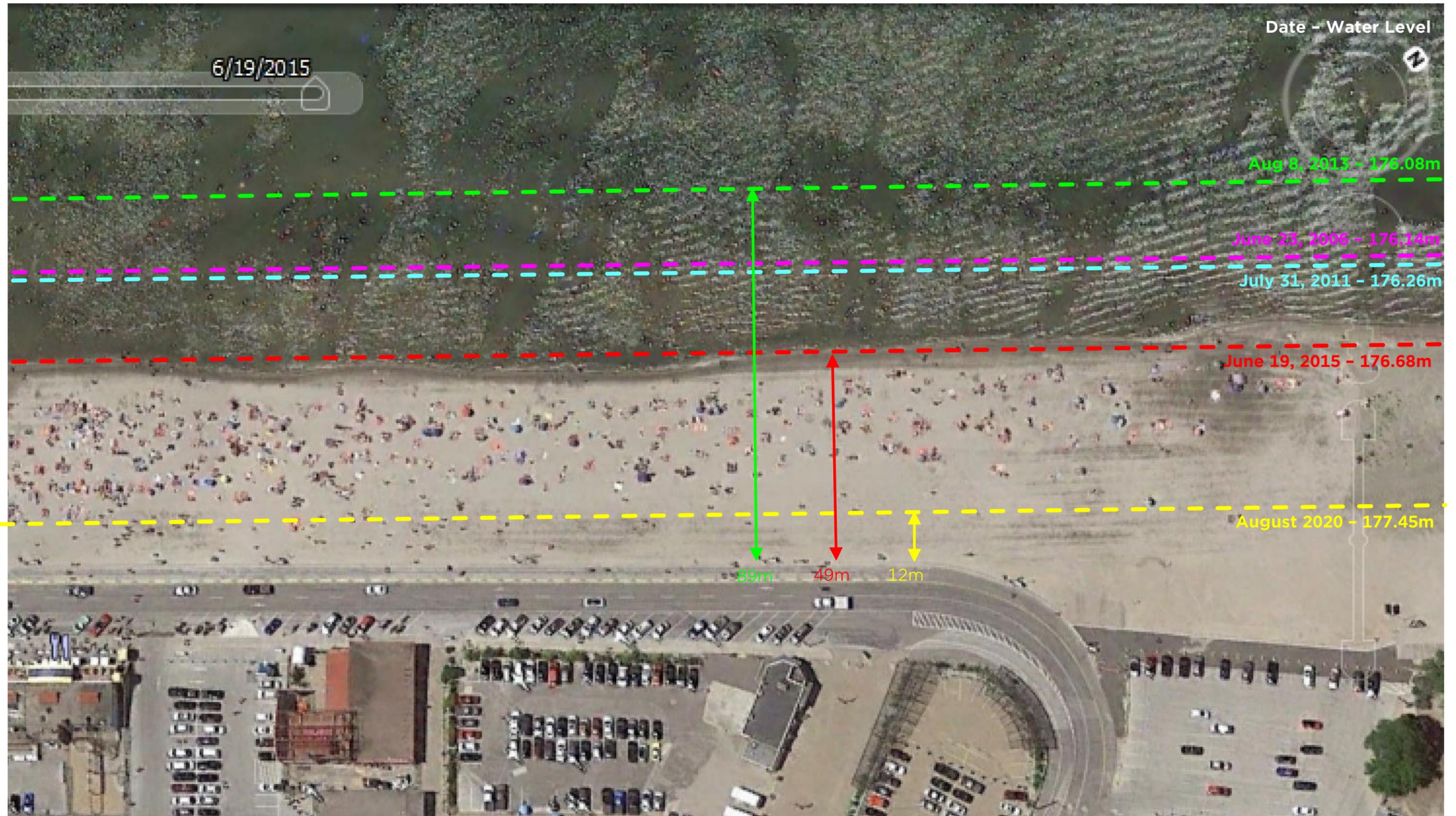
Lake Huron Water Levels by Month, 2010 to 2020



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 14: Lake Huron Water Levels 2010 to 2020





Source: Google Earth

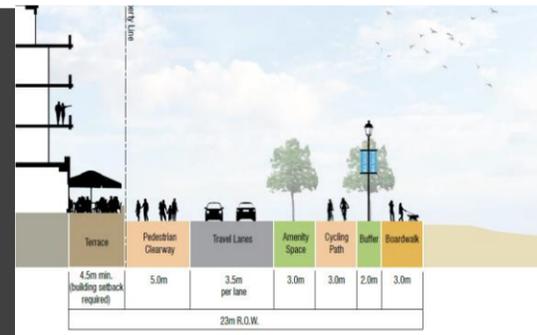
MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 15: Beach Area 1 Water Levels



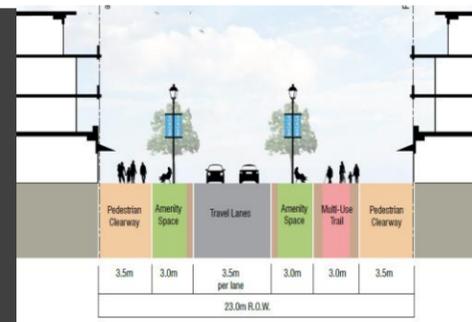
RIGHT-OF-WAY

What is the available road right-of-way within which the improvements must be assembled?



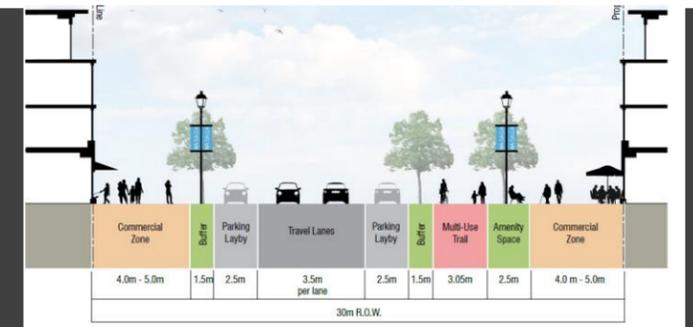
Beach Drive

- 15 to 20m existing ROW
- 23m proposed as per UDG



Mosley Street

- 13 to 20m existing ROW
- 23m proposed as per UDG

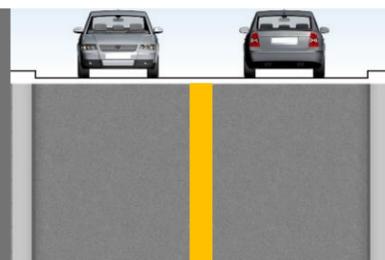


Main Street

- 20 to 30m existing ROW
- 30m proposed as per UDG

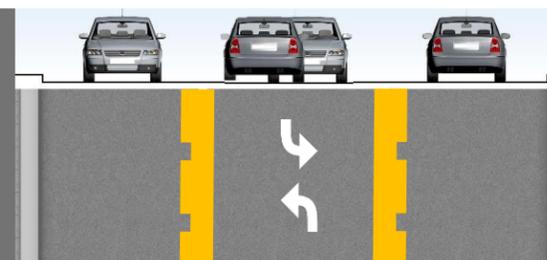
VEHICLES

What is the most appropriate manner to address more vehicle travel demands?



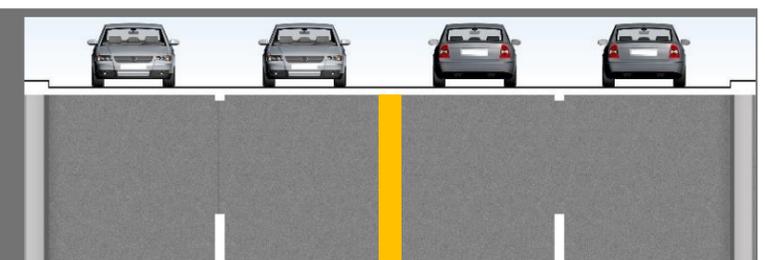
2 Lanes

- 3.25 to 3.5m widths
- lowest capacity
- least footprint



3 Lanes (2+ TWLTL)

- 3.25 to 3.5m thru widths
- 3.5 to 5.0m centre turn lane
- centre lane aids with left turns and increases capacity



4 Lanes

- 3.25 to 3.5m thru widths
- maximum capacity through provision of additional lanes
- maximum footprint

PARKING

What is the most appropriate manner to accommodate demands for parking?



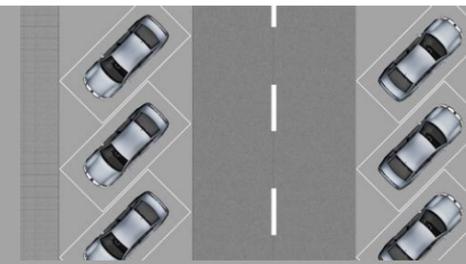
No Parking

- must provide parking elsewhere
- impacts to commercial / retail operations



Parallel Parking

- 2.2 to 2.5m width
- least footprint
- common arrangement
- ease of egress



45° Angle Parking

- 5.8m width
- greater footprint
- reverse movement can be difficult



90° Angle Parking

- 6.0m width
- greatest footprint
- maximizes parking count
- difficult reverse

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 16A: Alternative Solution Elements

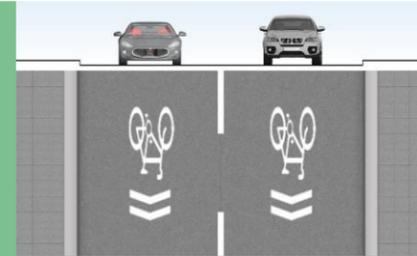


BICYCLES

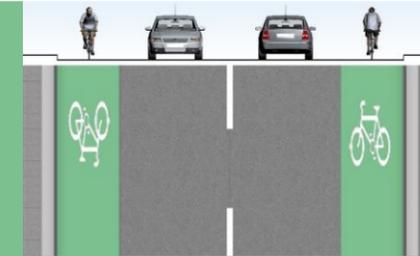
What is the most appropriate manner to address bicycle travel demands?



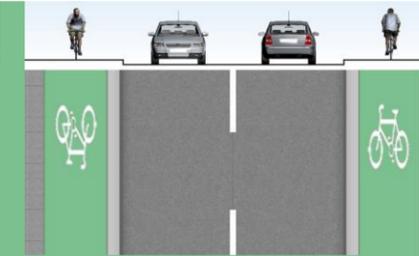
- No Bicycles**
- no specific bicycle facilities provided
 - cyclists to travel on lanes or sidewalk



- Shared Lanes**
- 4.0 to 4.50m lanes
 - no designated area specific to cyclists



- Bike Lanes**
- 1.5 to 2.0m
 - 0.5 to 1.0m buffer if adjacent to parking



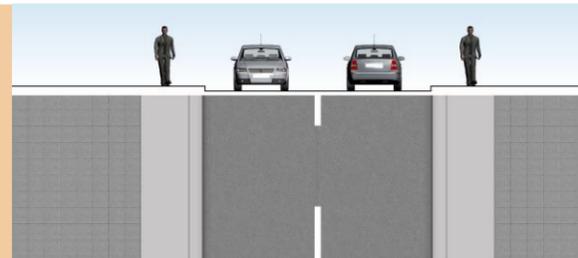
- Cycle Tracks**
- 1.5 to 2.0m
 - 1.0m buffer if adjacent to parking



- Cycle Tracks**
- 2.0 to 4.0m
 - 1.0m buffer if adjacent to parking

PEDESTRIANS

What is the most appropriate manner to address pedestrian travel demands?



- Standard Sidewalks**
- 1.5 to 2.0m sidewalks
 - minimum configuration



- Wide Sidewalks**
- 3.0m sidewalks
 - better accommodation of increased volumes and types of users



- Wider Sidewalks**
- 4.0 to 5.0m sidewalks
 - best accommodation of increased volumes and types of users



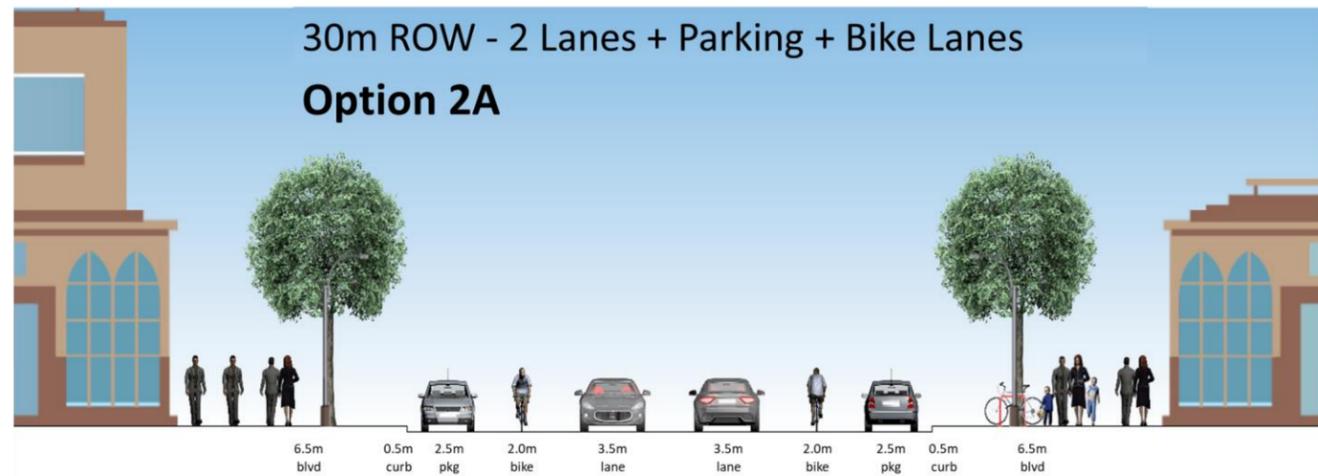
- Multi-Use Trails**
- 3.0 to 4.0m trails
 - for cyclists and peds
 - increased potential for conflict

RETAIL / COMMERCIAL

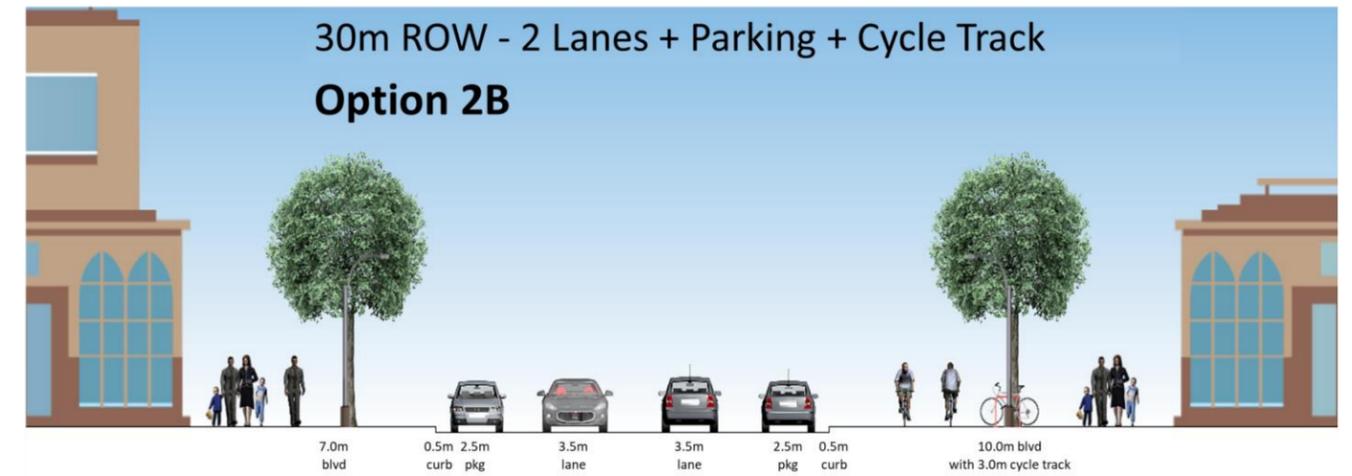
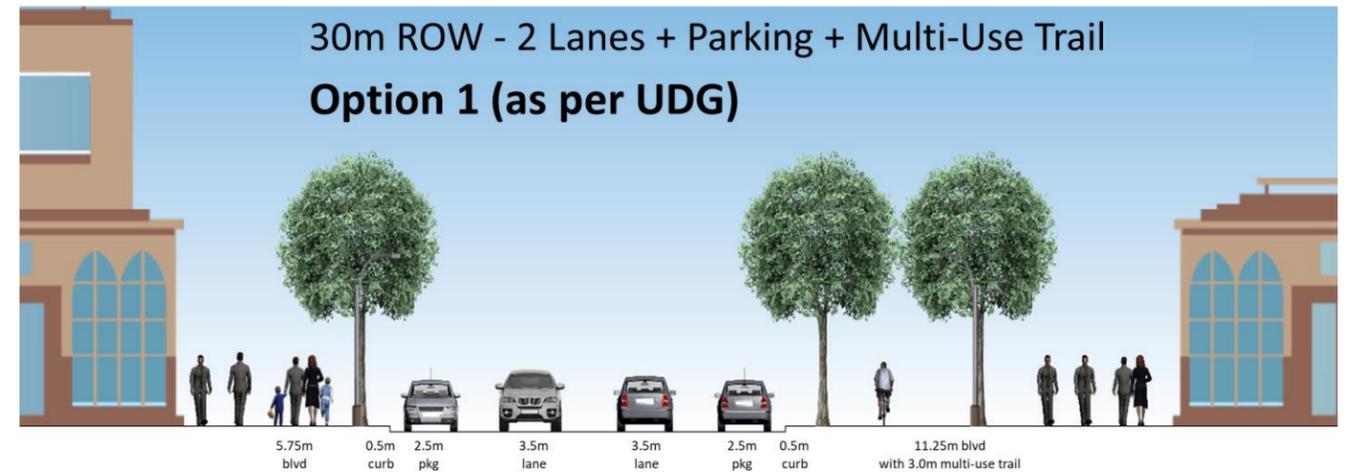
What opportunities can be provided to support retail / commercial development?

- Commercial Zones**
- 3.0 to 5.0m desired to allow for commercial activities
 - can include sandwich boards, outdoor sales, etc.

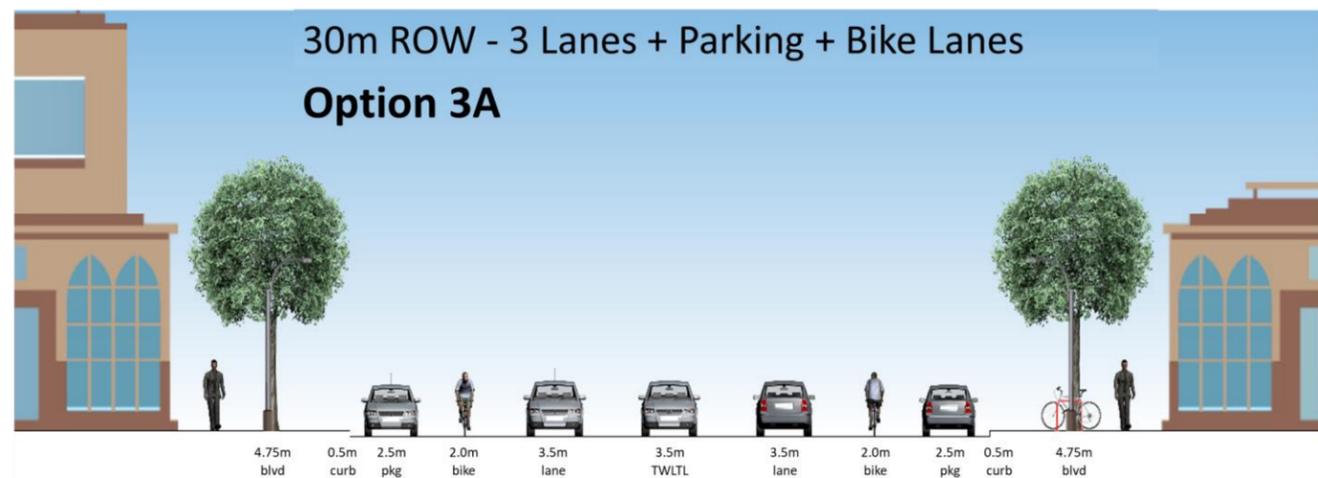




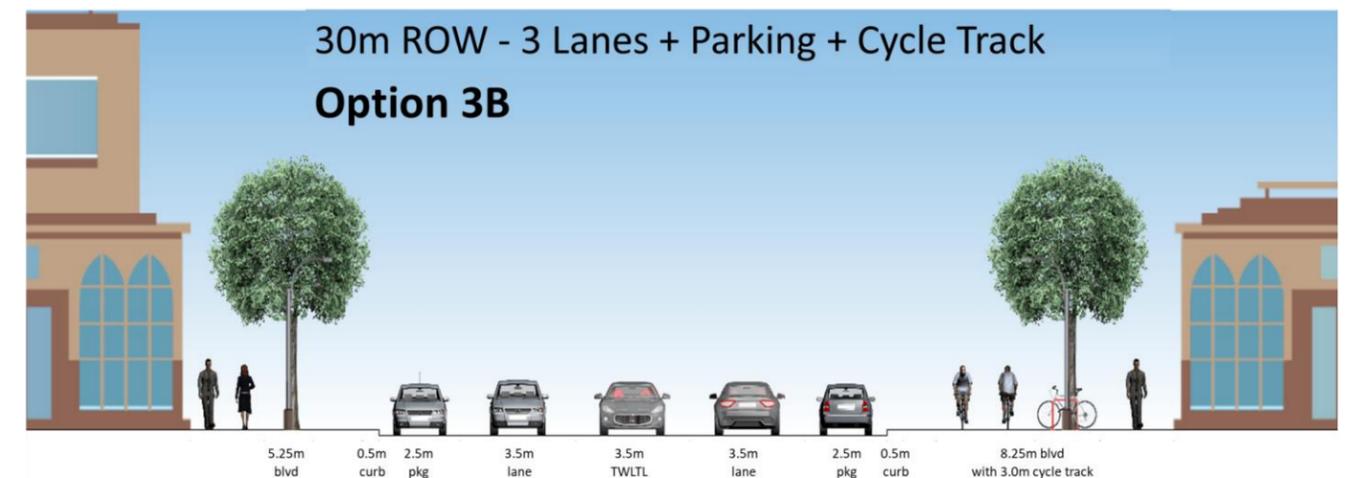
Note: parking lanes can be converted to bump-outs at intersections or at select mid-block locations to increase boulevard space and public realm opportunities



Note: parking lanes can be converted to bump-outs at intersections or at select mid-block locations to increase boulevard space and public realm opportunities



Note: parking lanes can be converted to bump-outs at intersections or at select mid-block locations to increase boulevard space and public realm opportunities

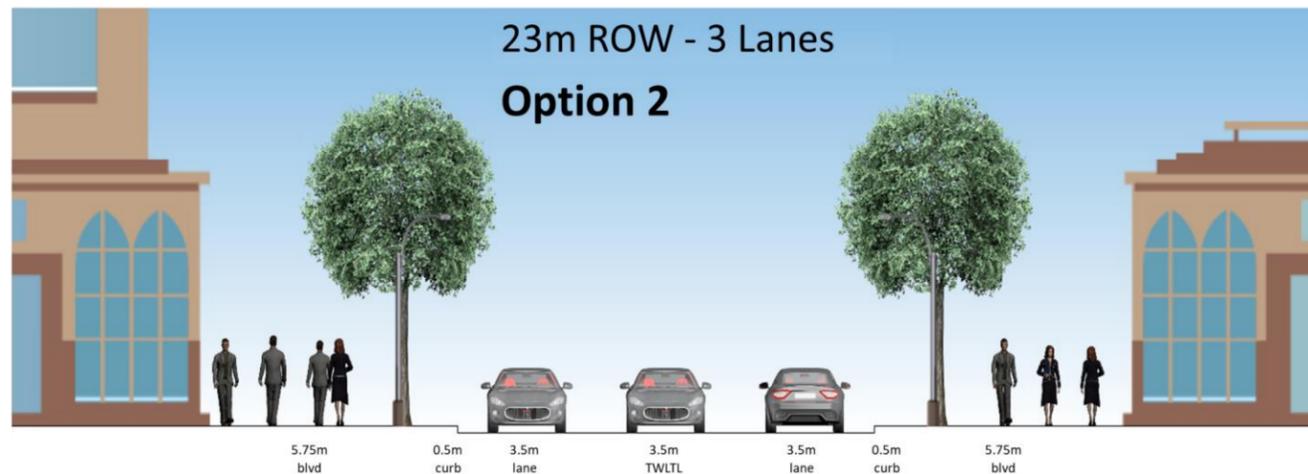


Note: parking lanes can be converted to bump-outs at intersections or at select mid-block locations to increase boulevard space and public realm opportunities

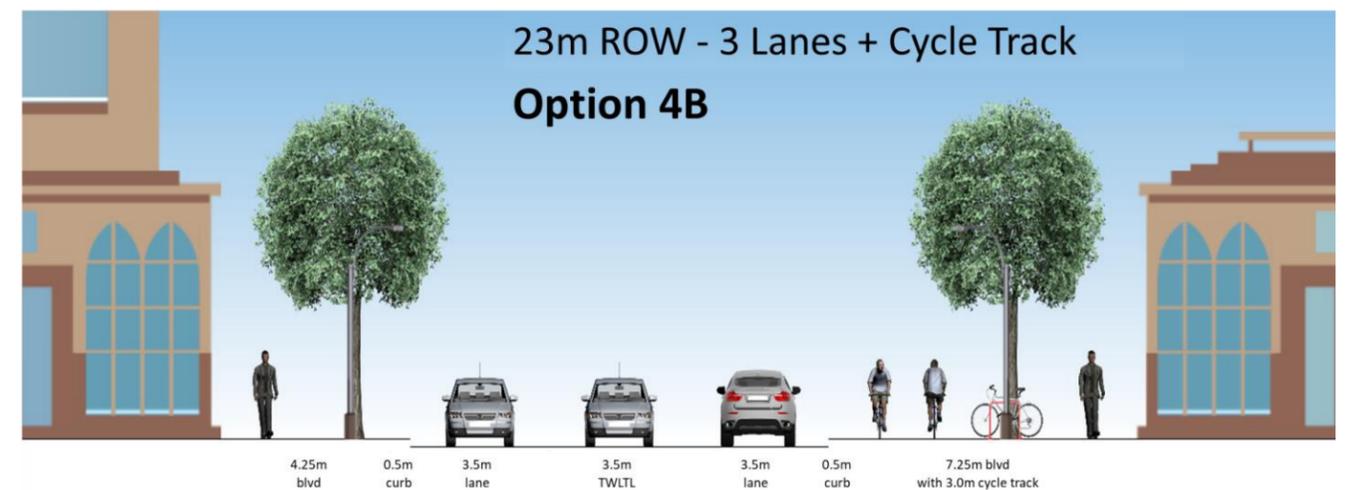
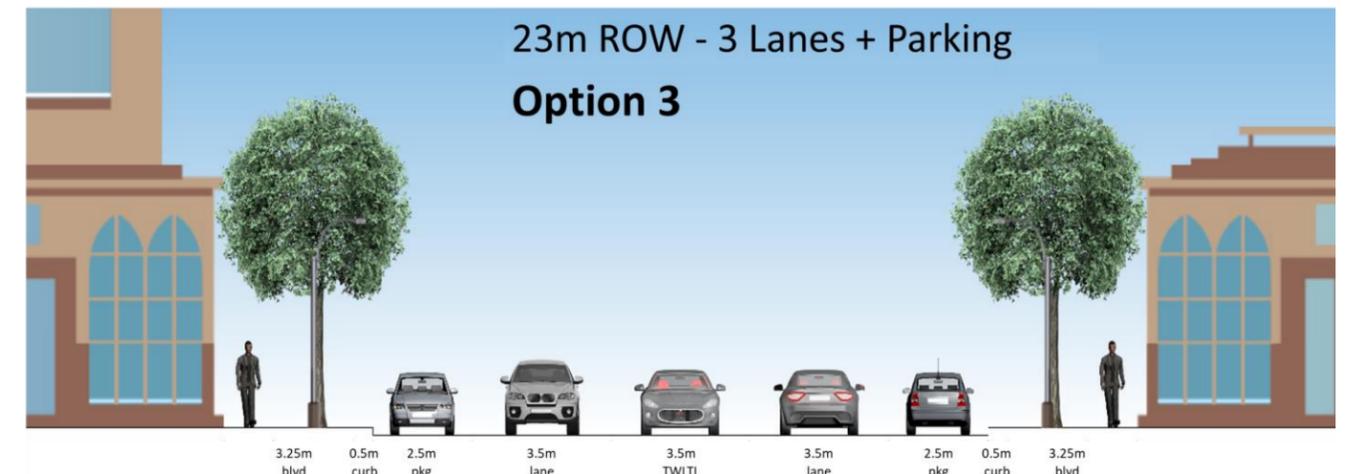
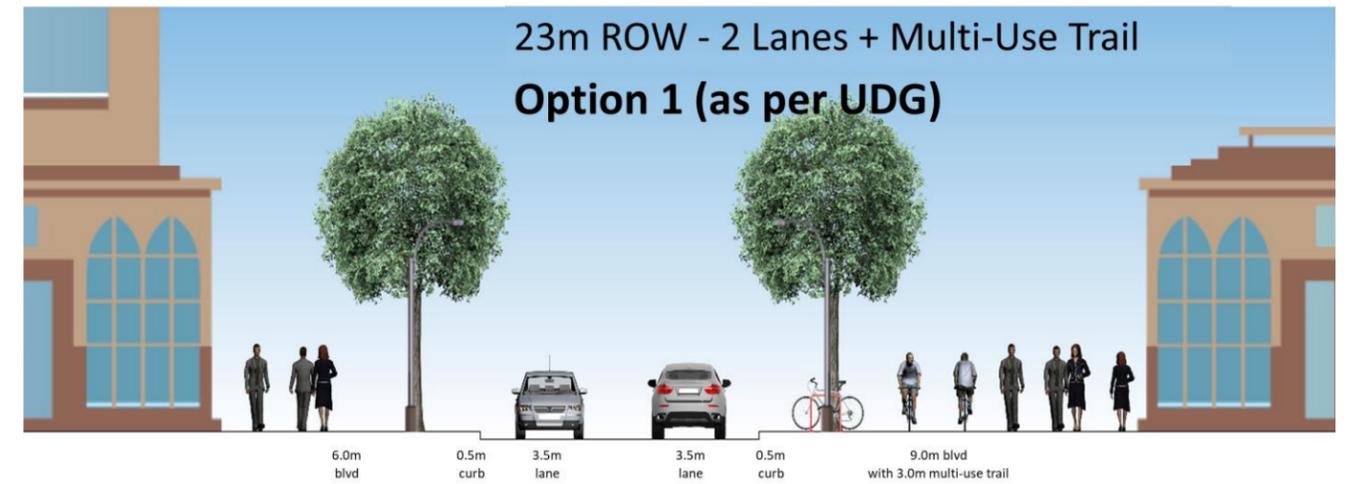
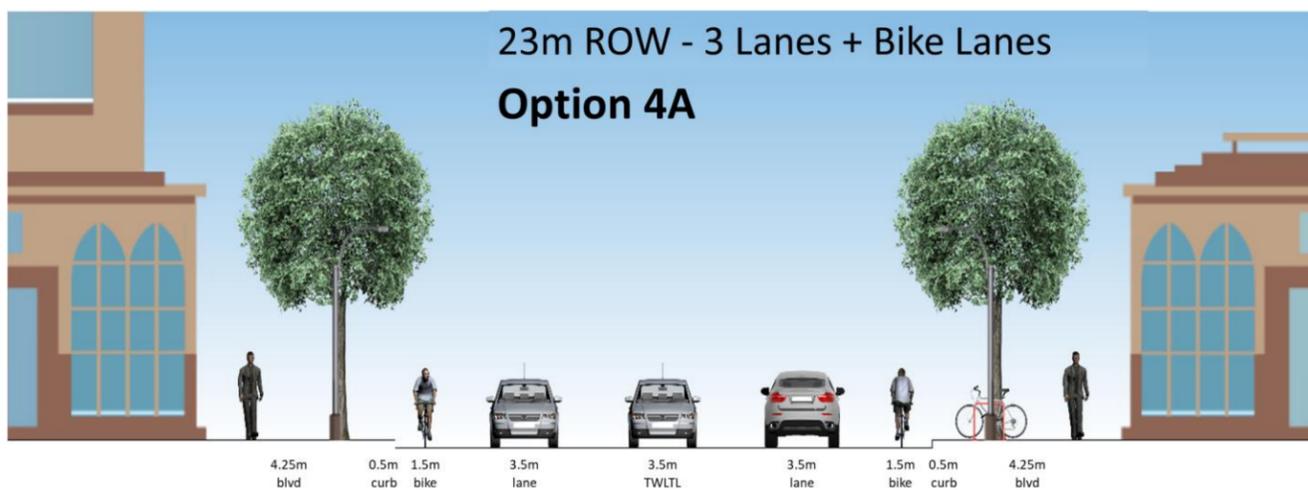
MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 17: Main Street Alternative Solutions





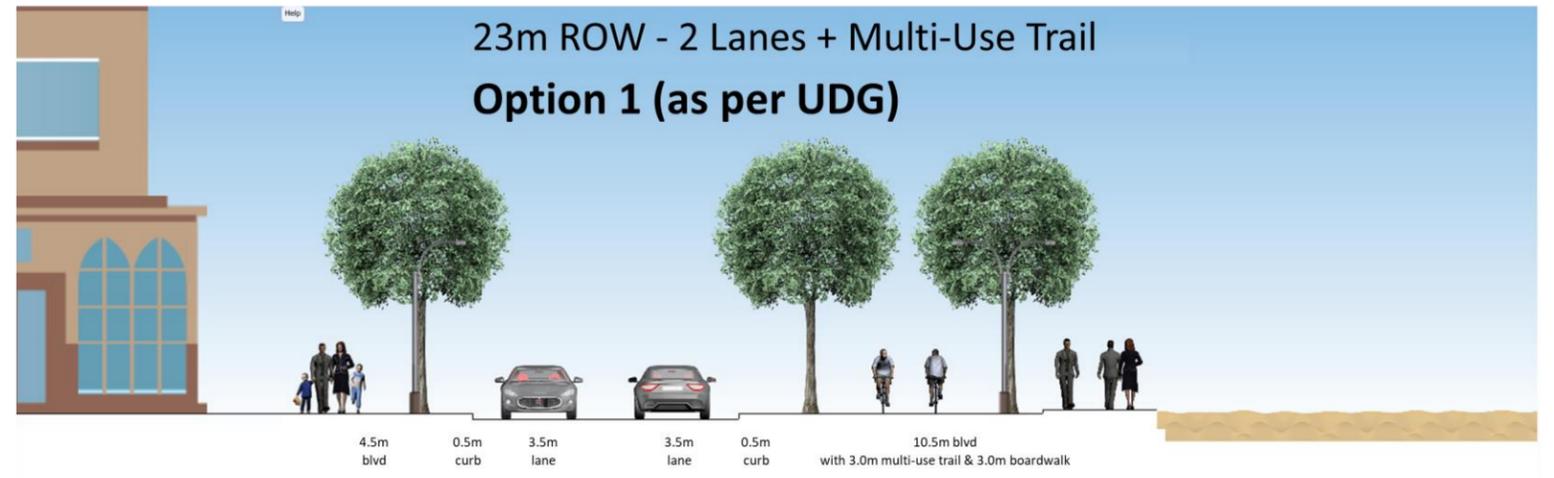
Note: parking bays can be provided within the boulevards on either side through select areas where development and space permit



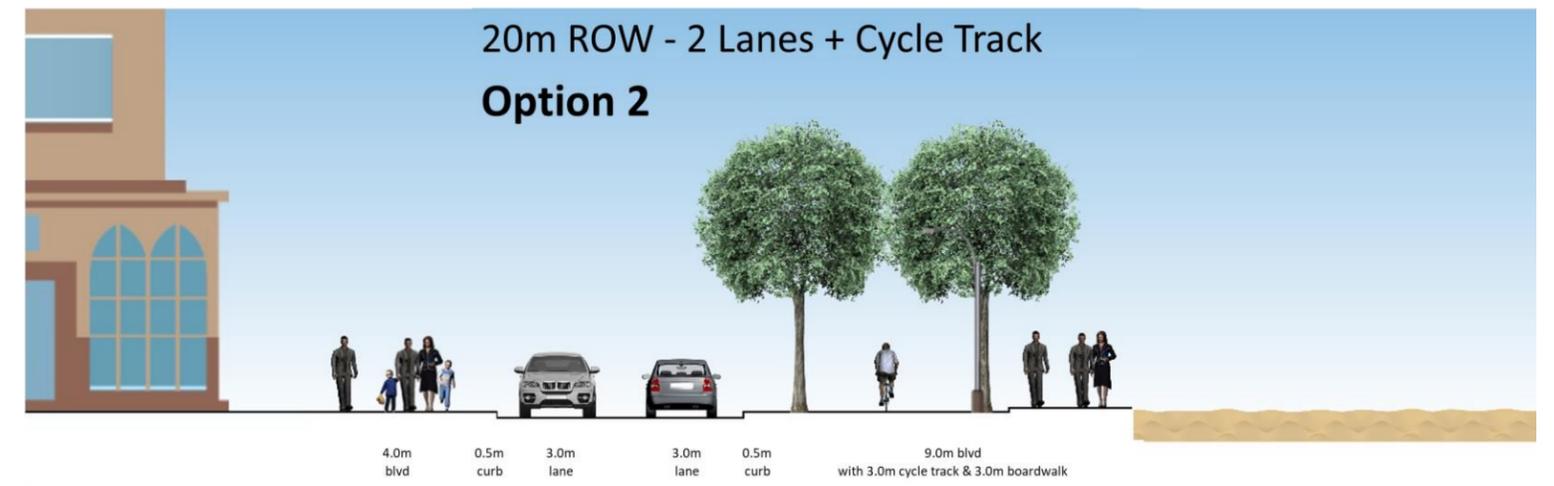
MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 18: Mosley Street Alternative Solutions

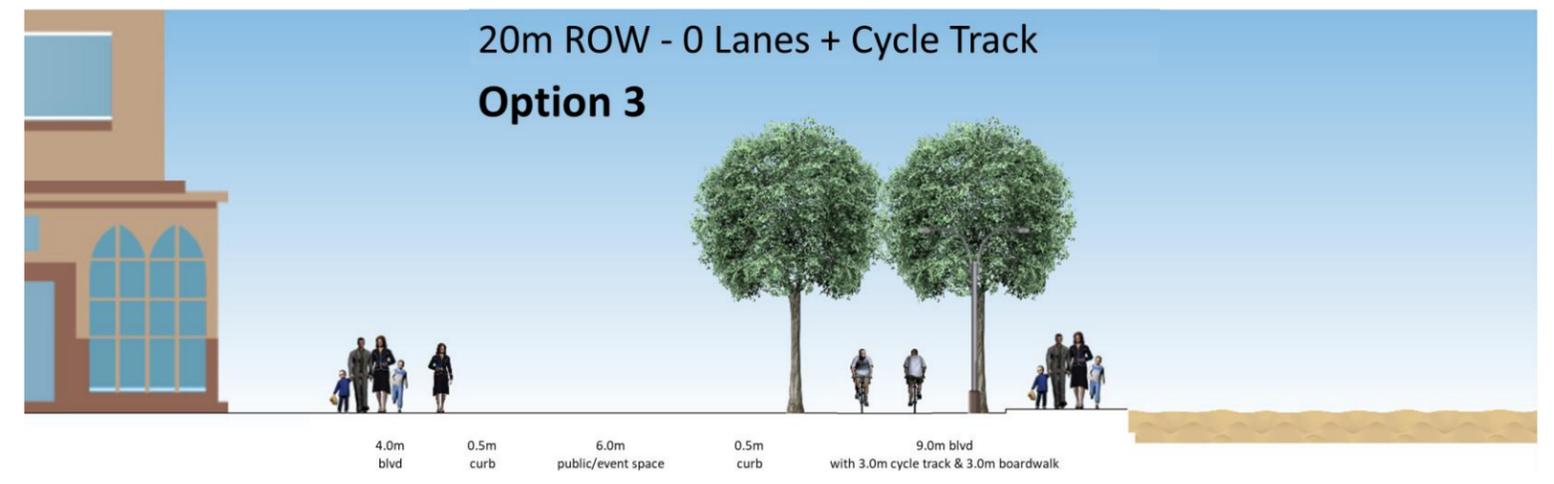




Note: the need for and type of shoreline protection to be confirmed



Note: the need for and type of shoreline protection to be confirmed; minimum right-of-way to be confirmed

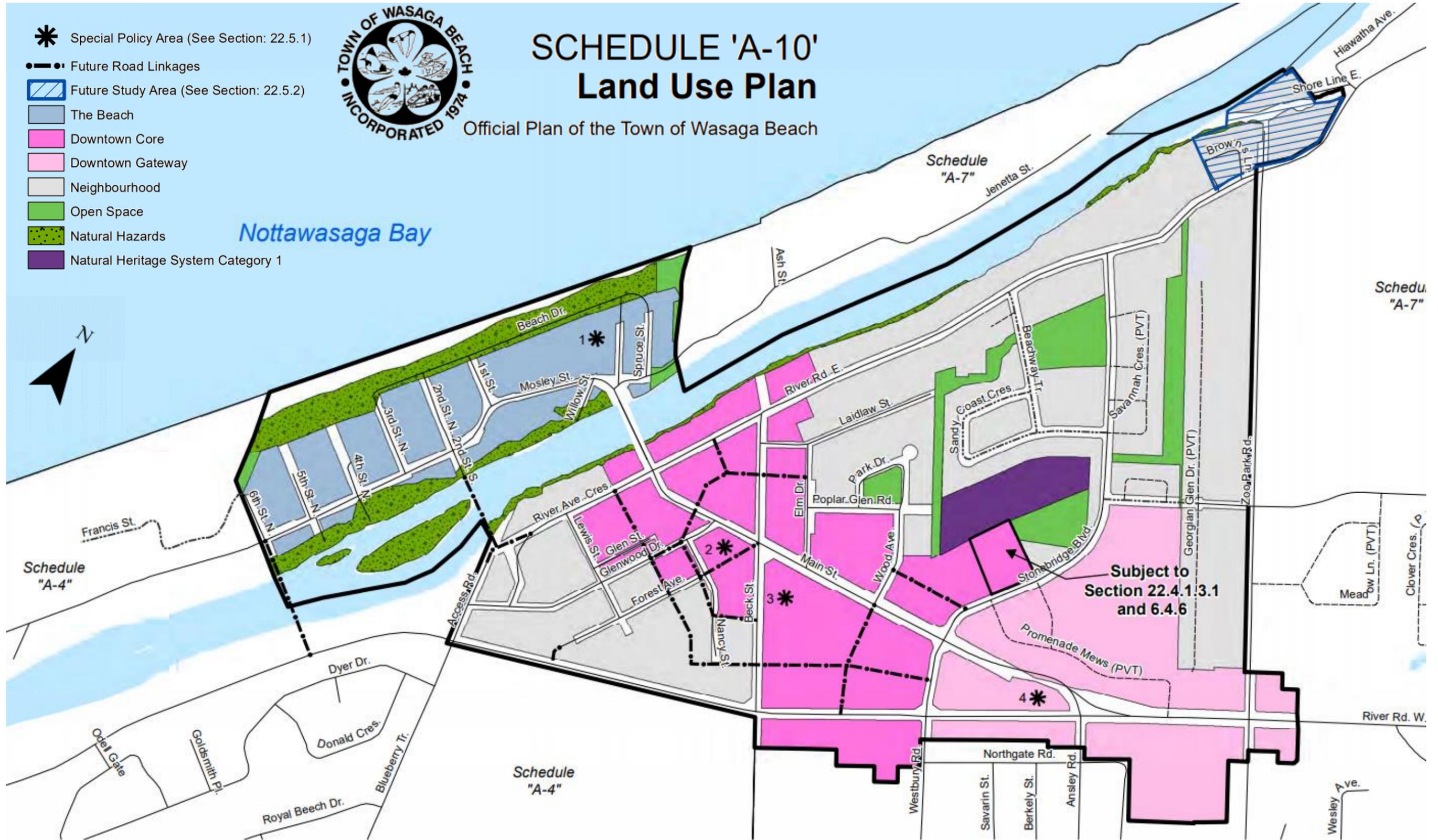


Note: the need for and type of shoreline protection to be confirmed; minimum right-of-way to be confirmed

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 19: Beach Drive Alternative Solutions



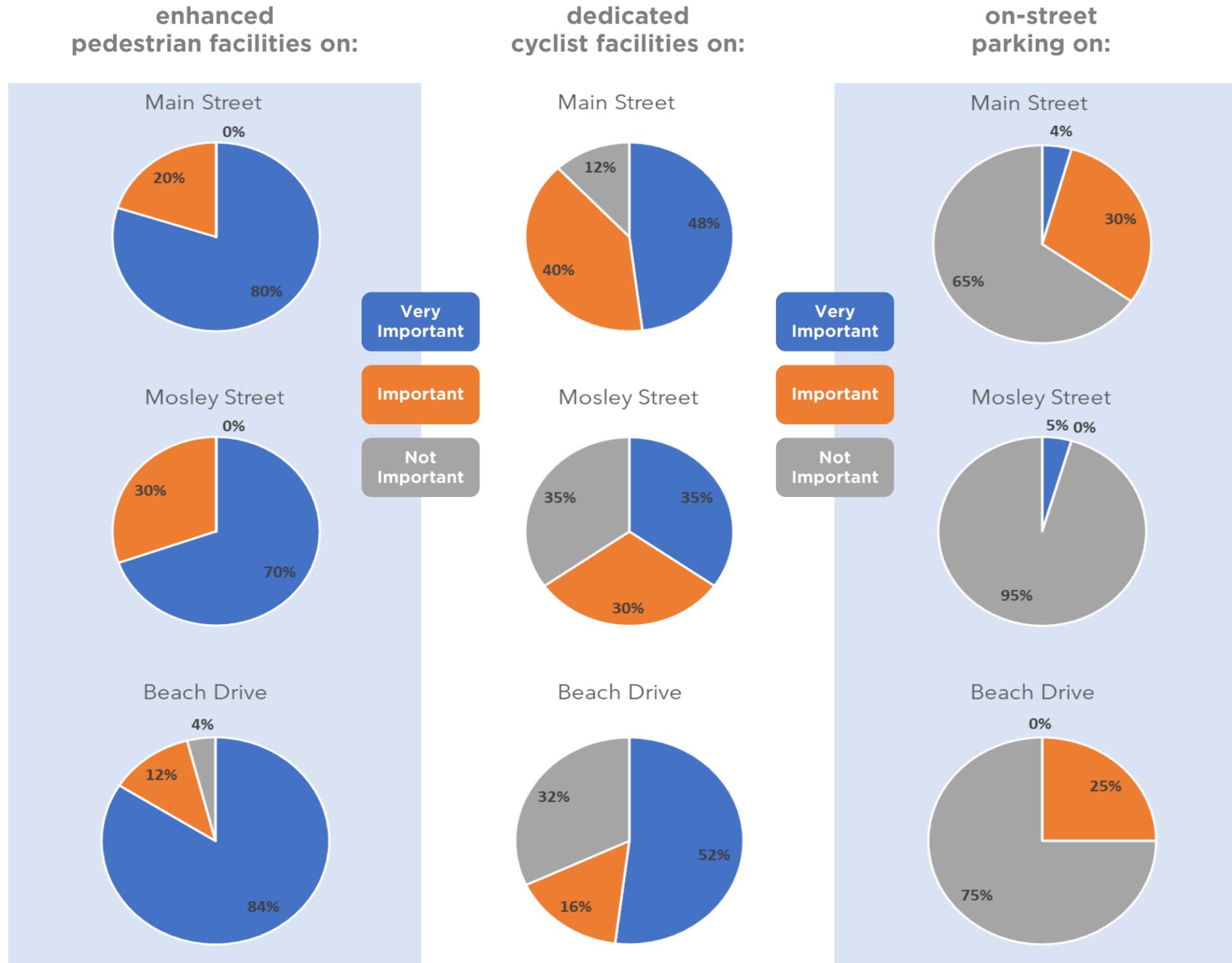


MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

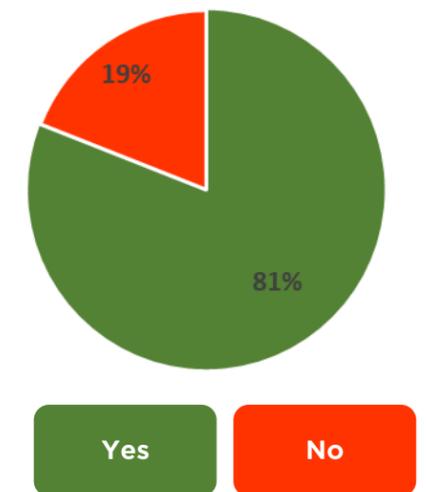
Figure 20: Official Plan Land Use Designations



How important is it for you to have ...



Should Beach Drive be closed to motor vehicles?

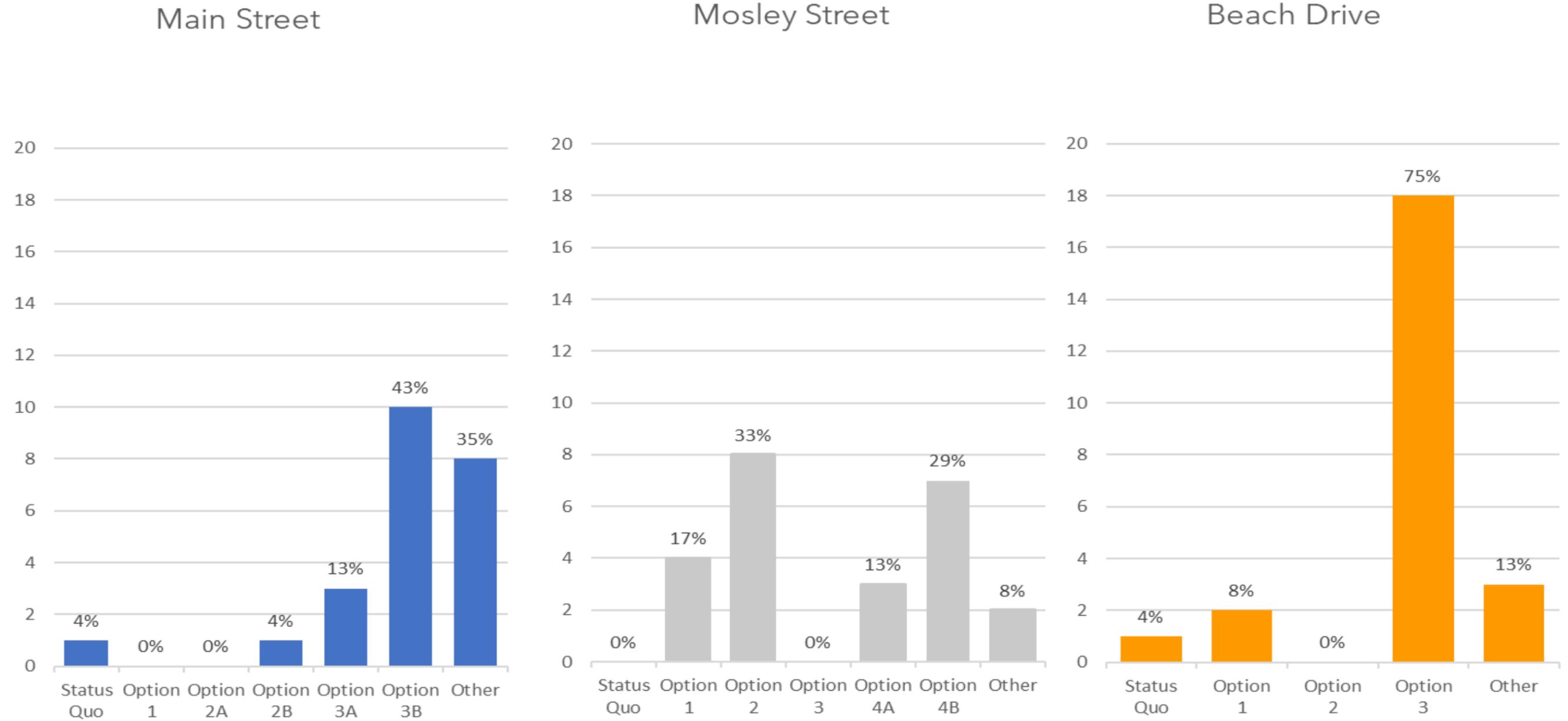


MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 21: PIC 1 Summary - Importance of Facilities



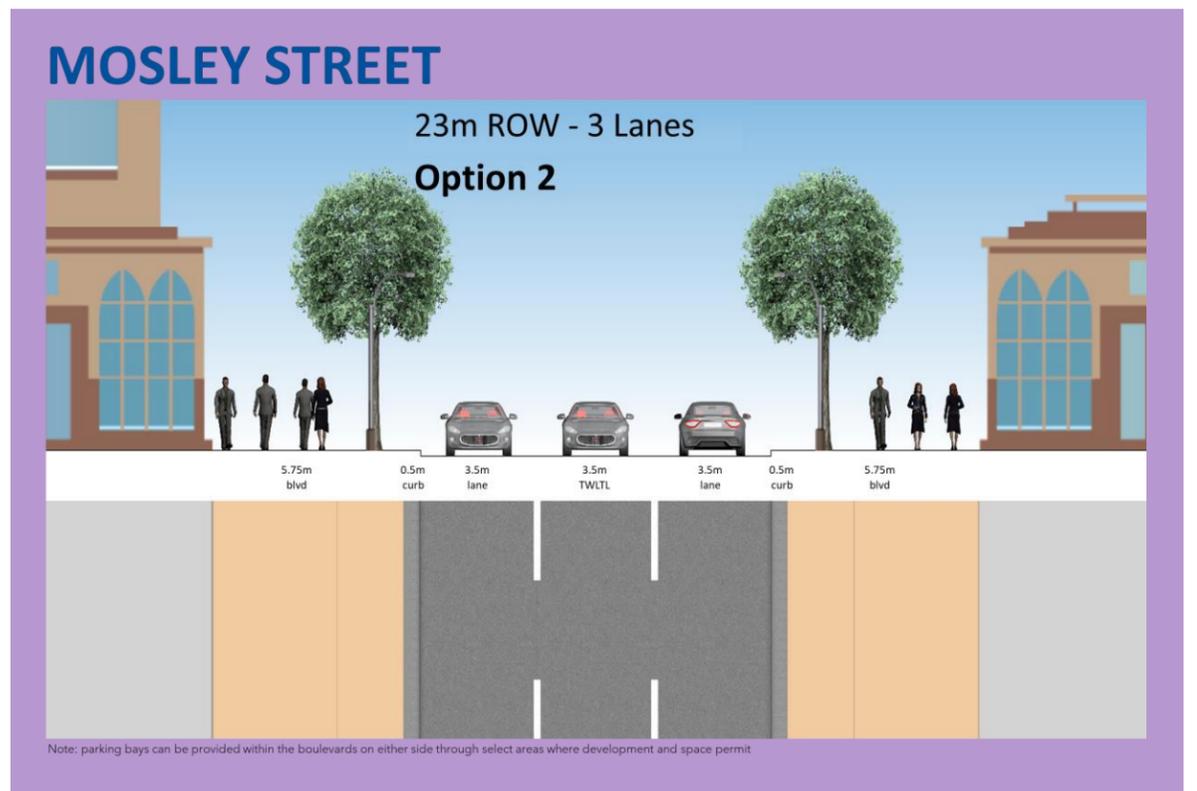
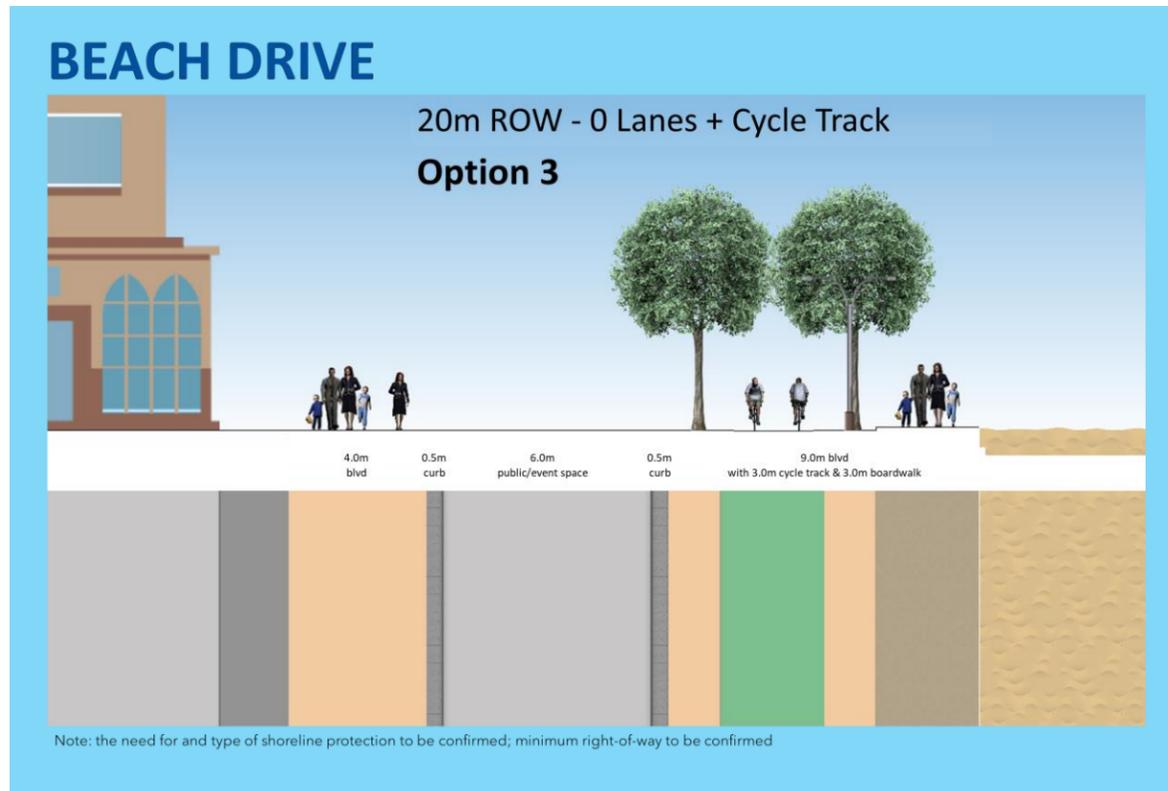
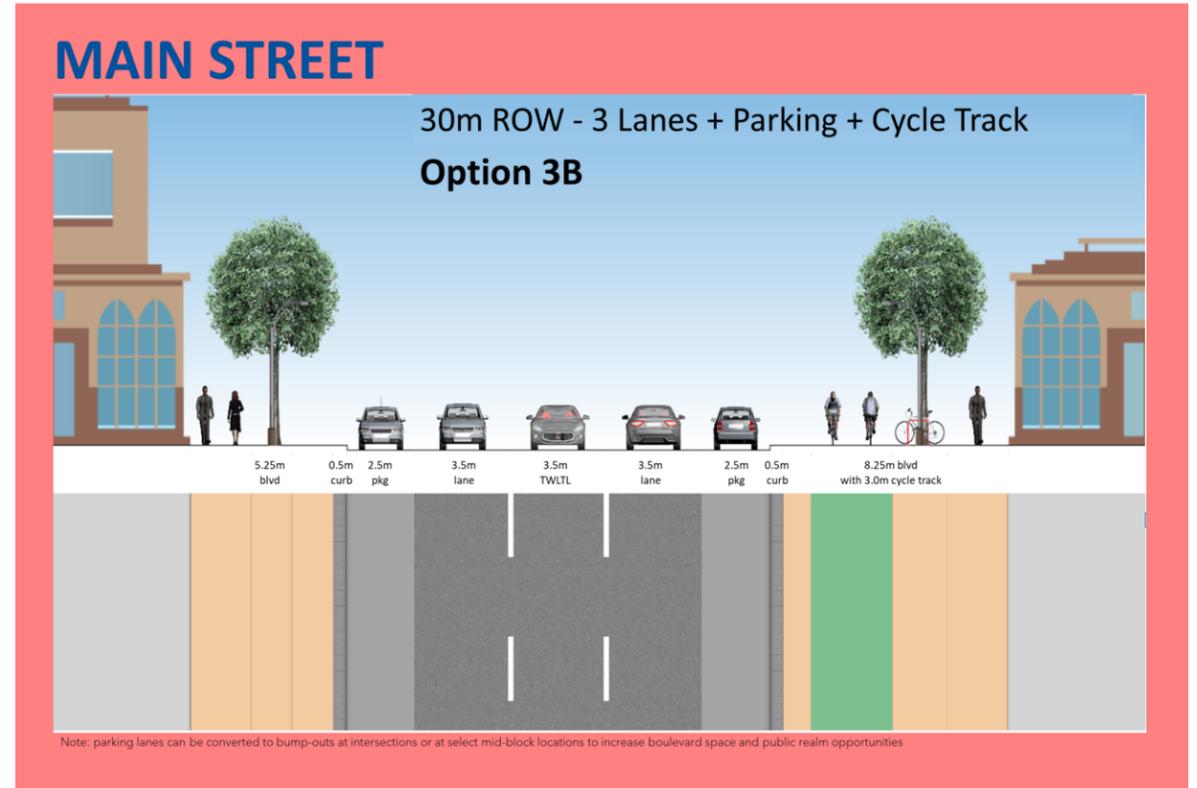
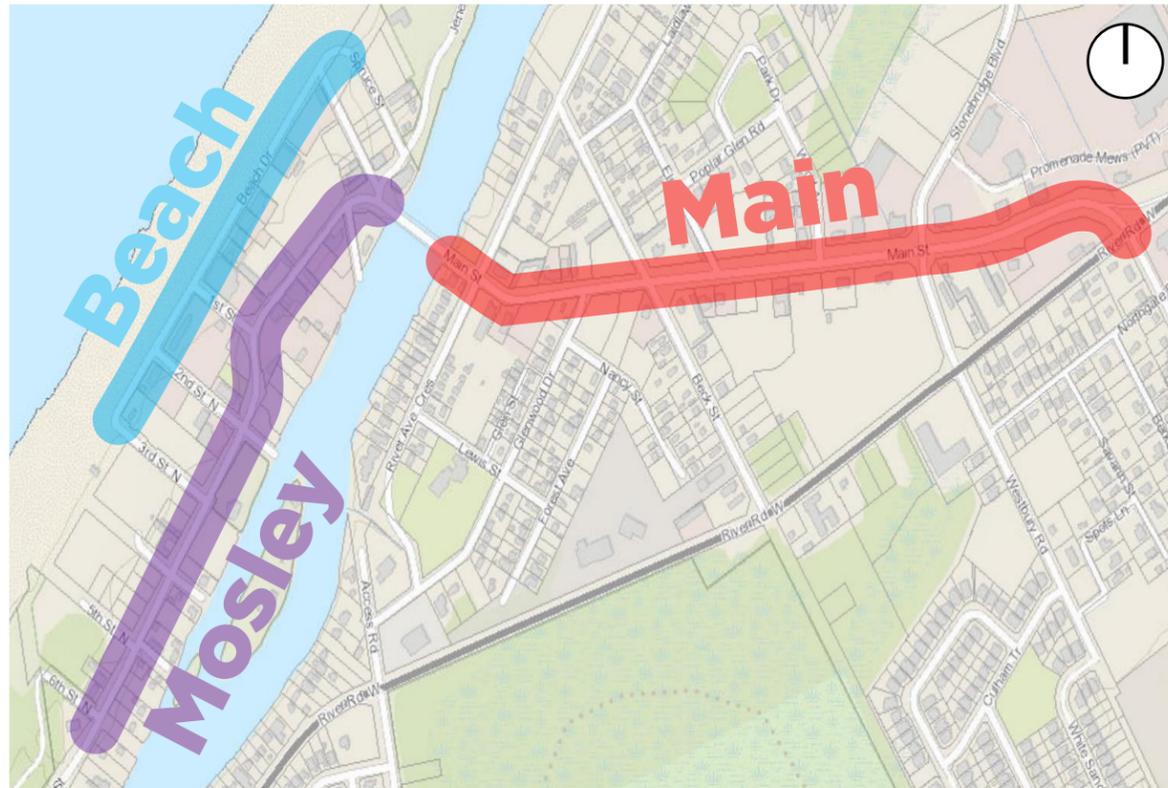
While alternative solution do you support?



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 22: PIC 1 Summary - Supported Options





MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 23: Preferred Solutions





Alignment 1: Extend Existing 30m ROW



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 24: Main Street Alignment & Widening – River Road West to West of Stonebridge Boulevard





Alignment 1: Extend Existing 30m ROW

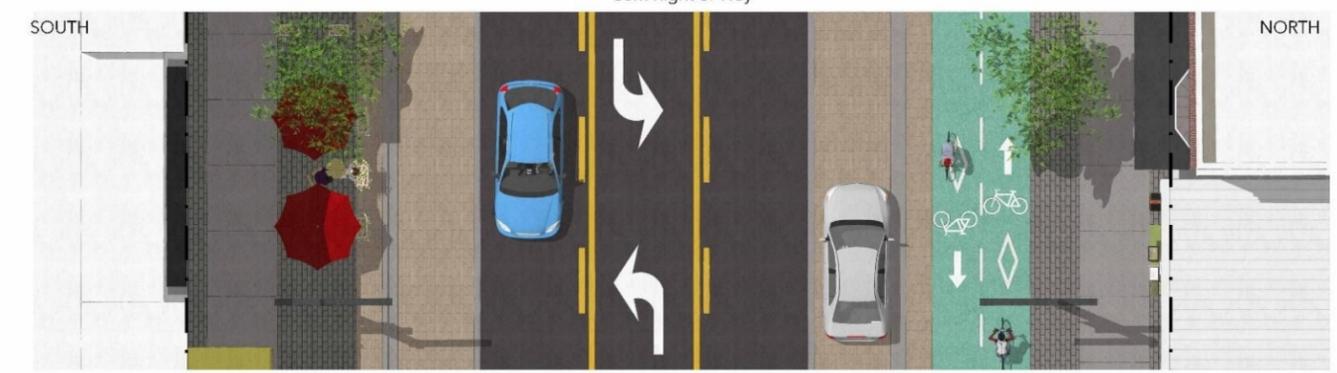
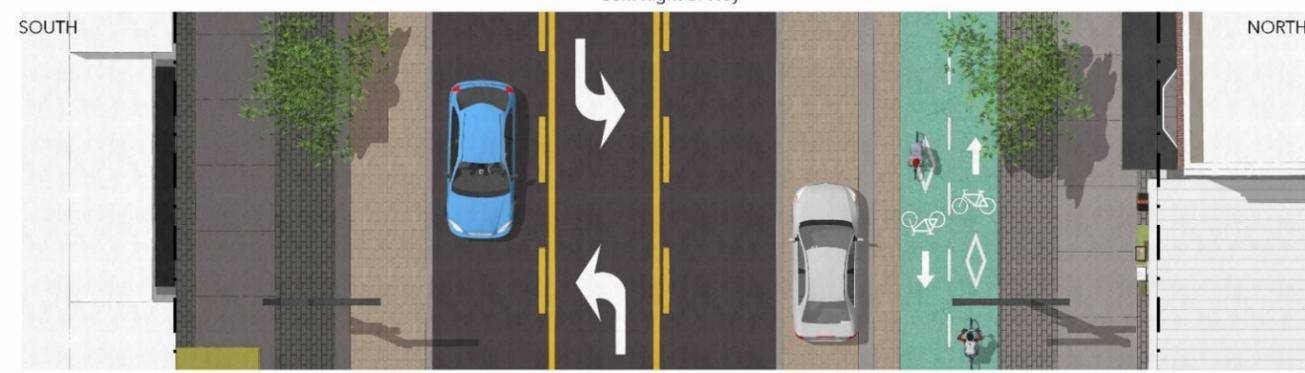
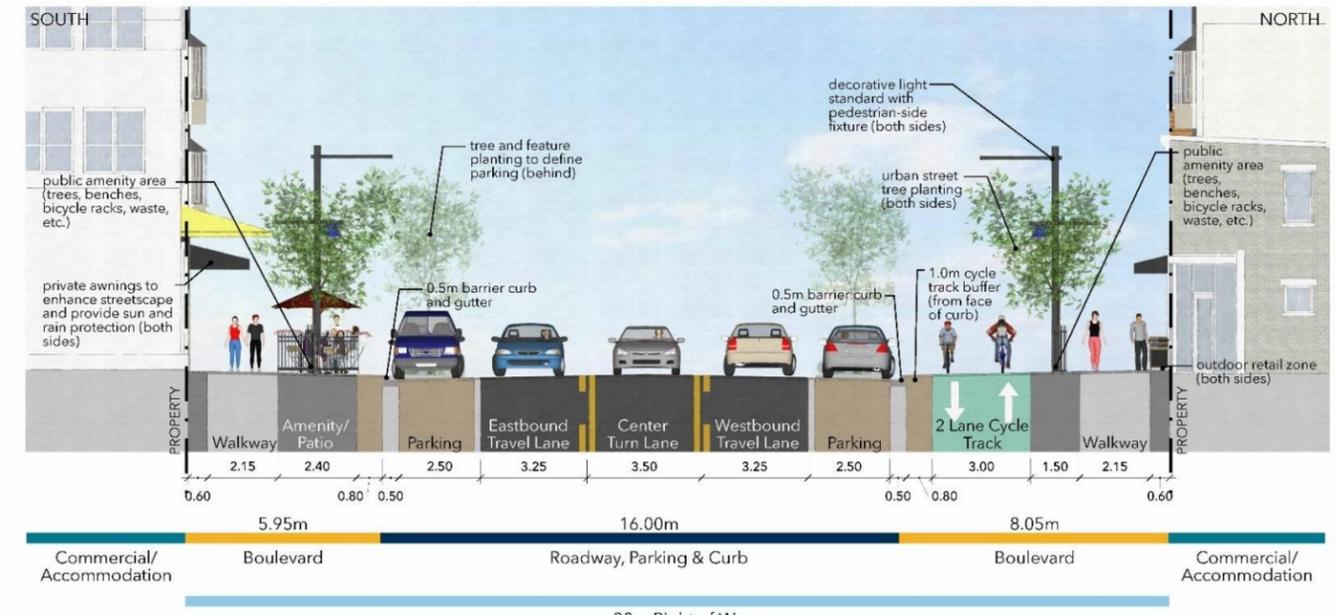
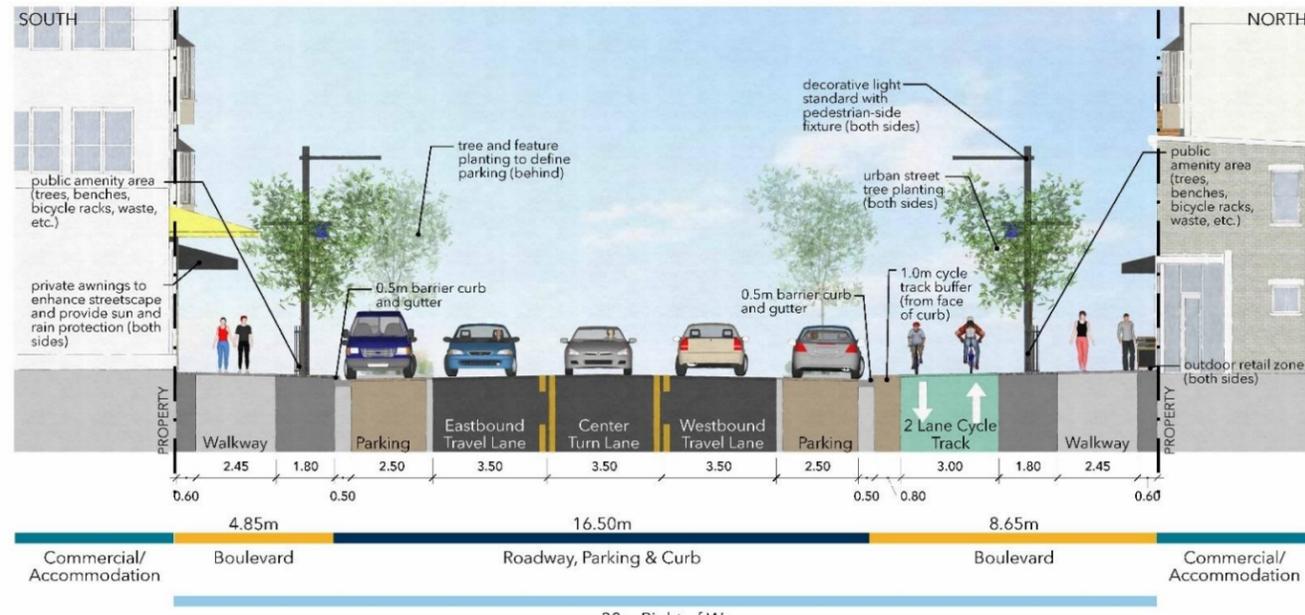
— existing right-of-way — proposed 30m right-of-way



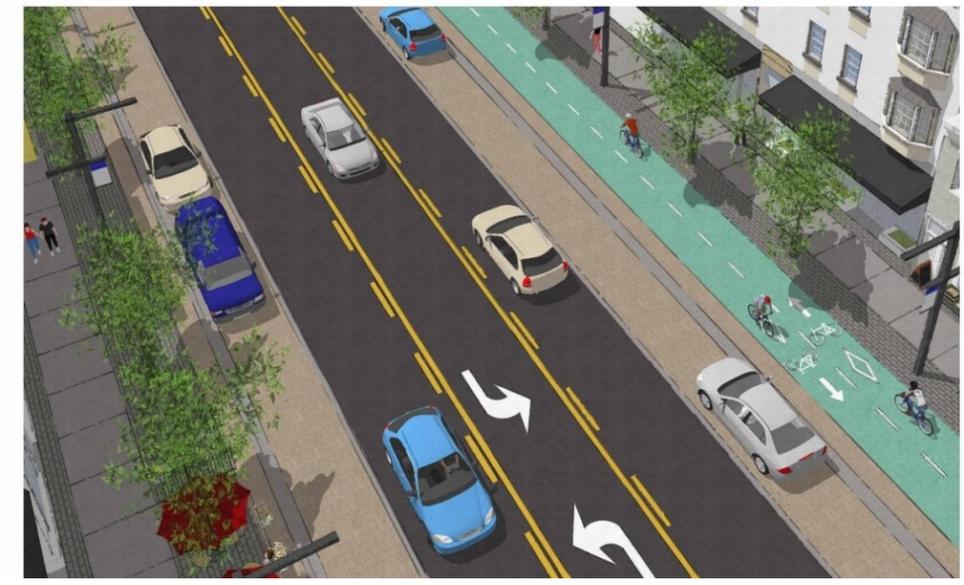
MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 25: Main Street Alignment & Widening – West of Stonebridge Boulevard to Nottawasaga River





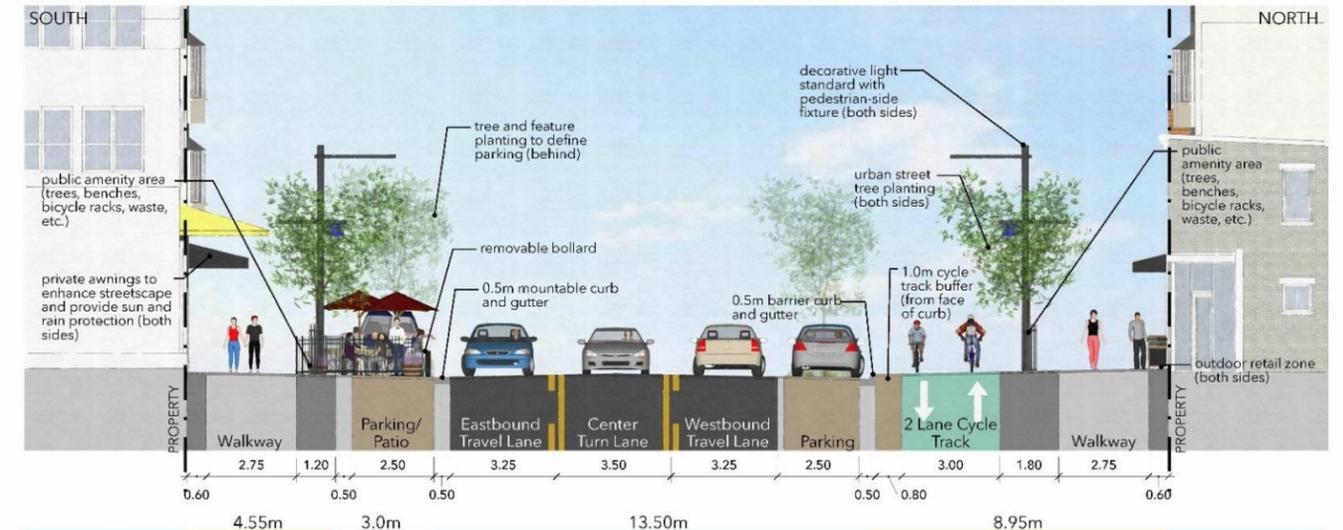
**Design
Concept
1**



**Design
Concept
2**

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
Figure 26A: Main Street Alternative Design Concepts





**Design
Concept
3**

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 26B: Main Street Alternative Design Concepts



Alignment 1: Widen on East Side



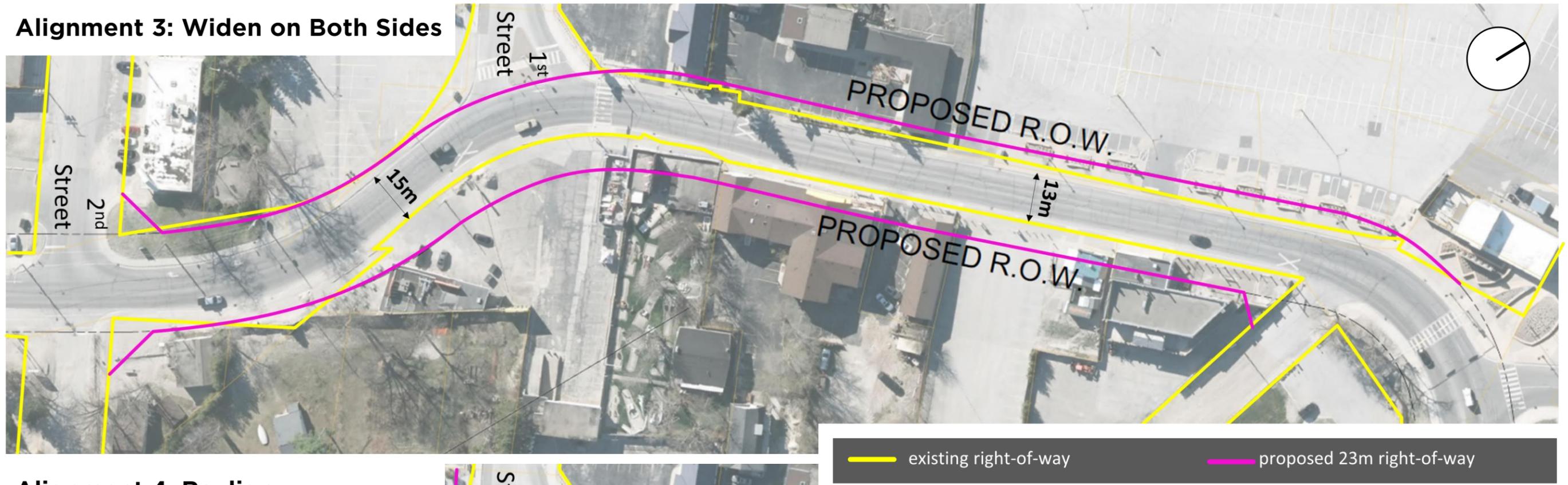
Alignment 2: Widen on West Side



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
Figure 27A: Mosley Street Alignment & Widening - Nottawasaga River to 2nd Street



Alignment 3: Widen on Both Sides

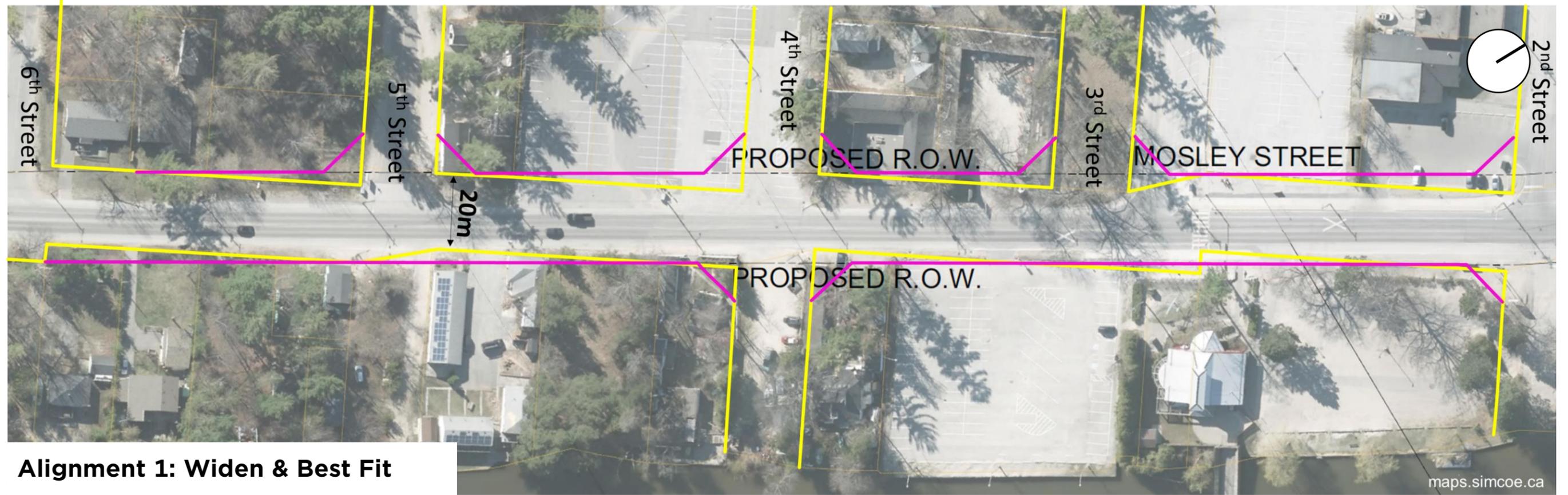


Alignment 4: Realign



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
Figure 27B: Mosley Street Alignment & Widening - Nottawasaga River to 2nd Street





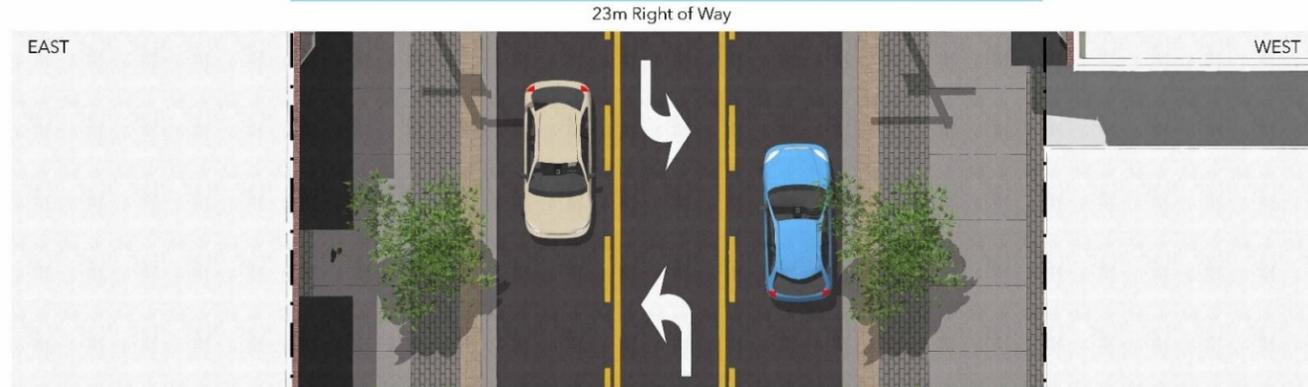
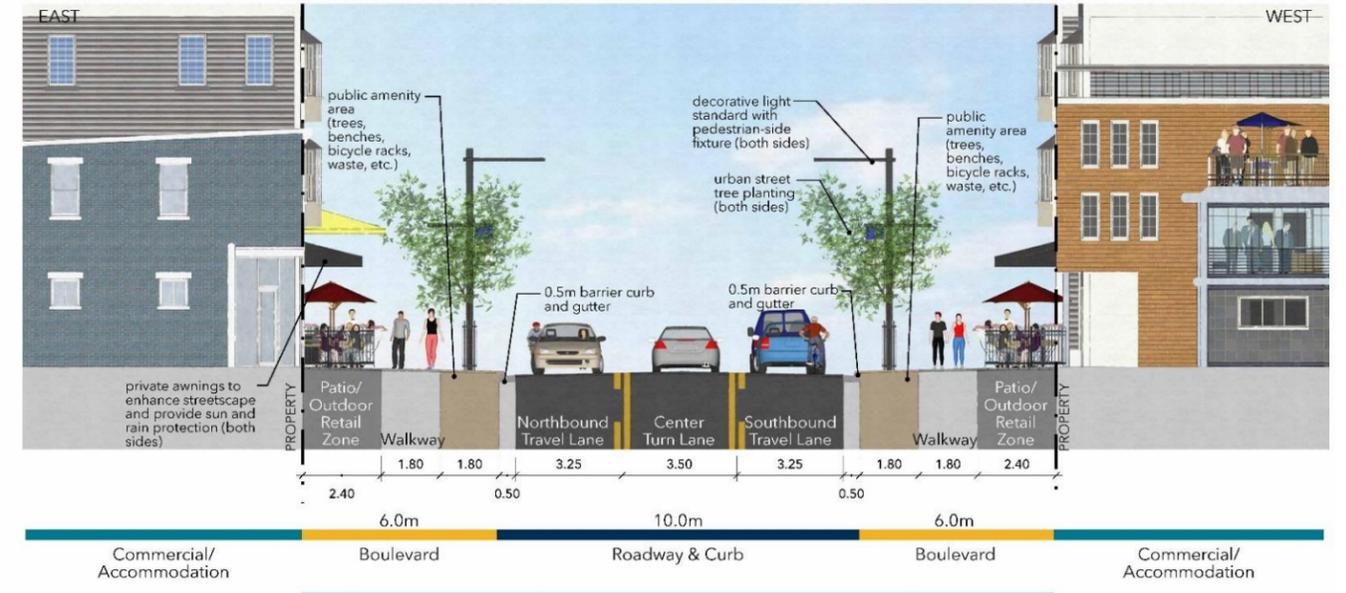
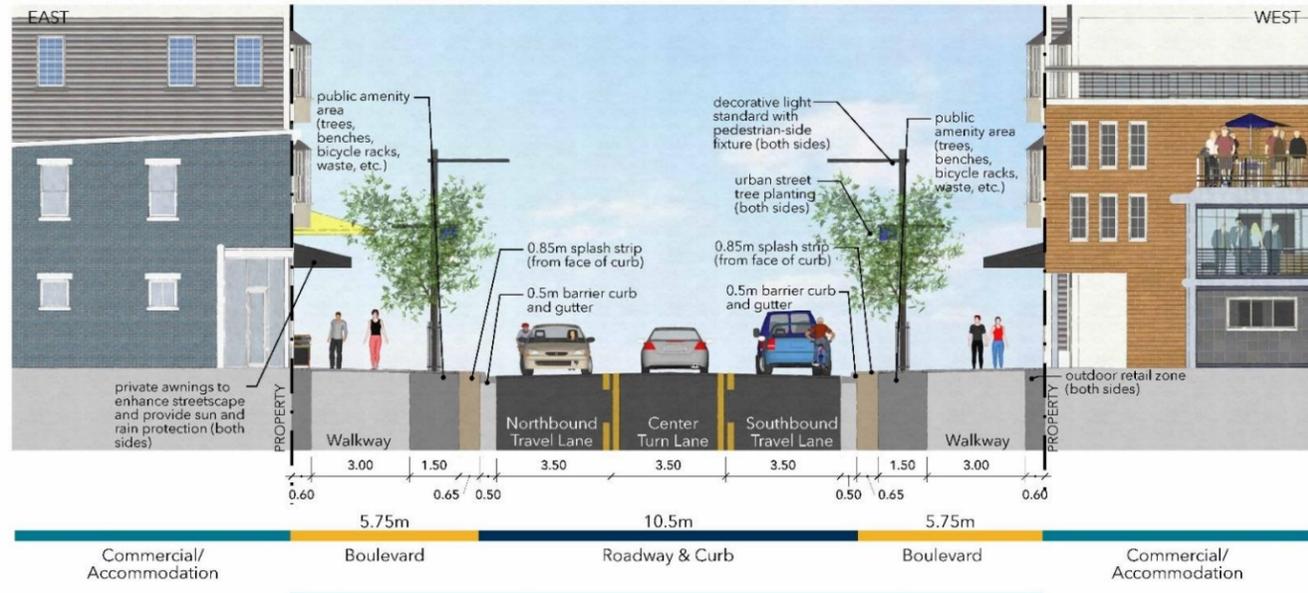
Alignment 1: Widen & Best Fit



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 28: Mosley Street Alignment & Widening -2nd Street to 6th Street





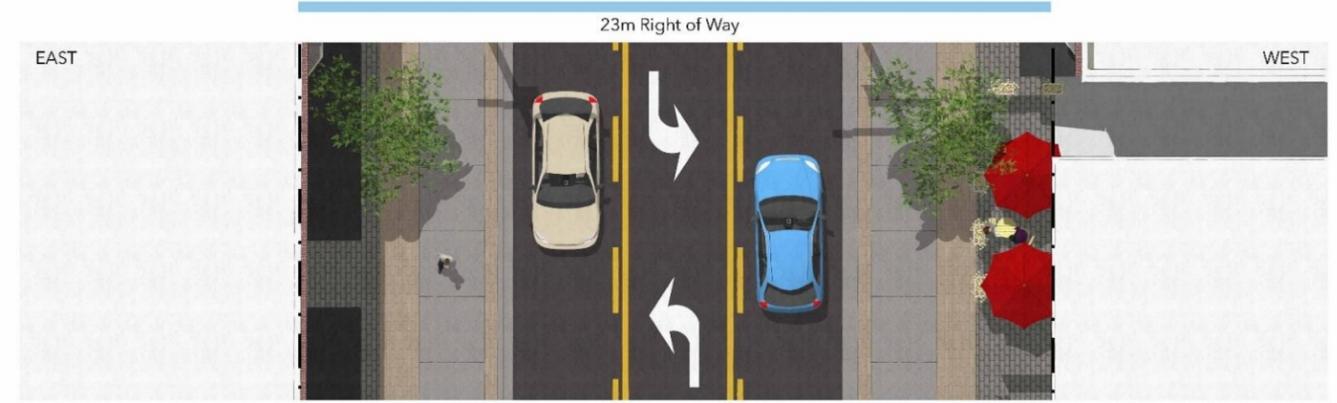
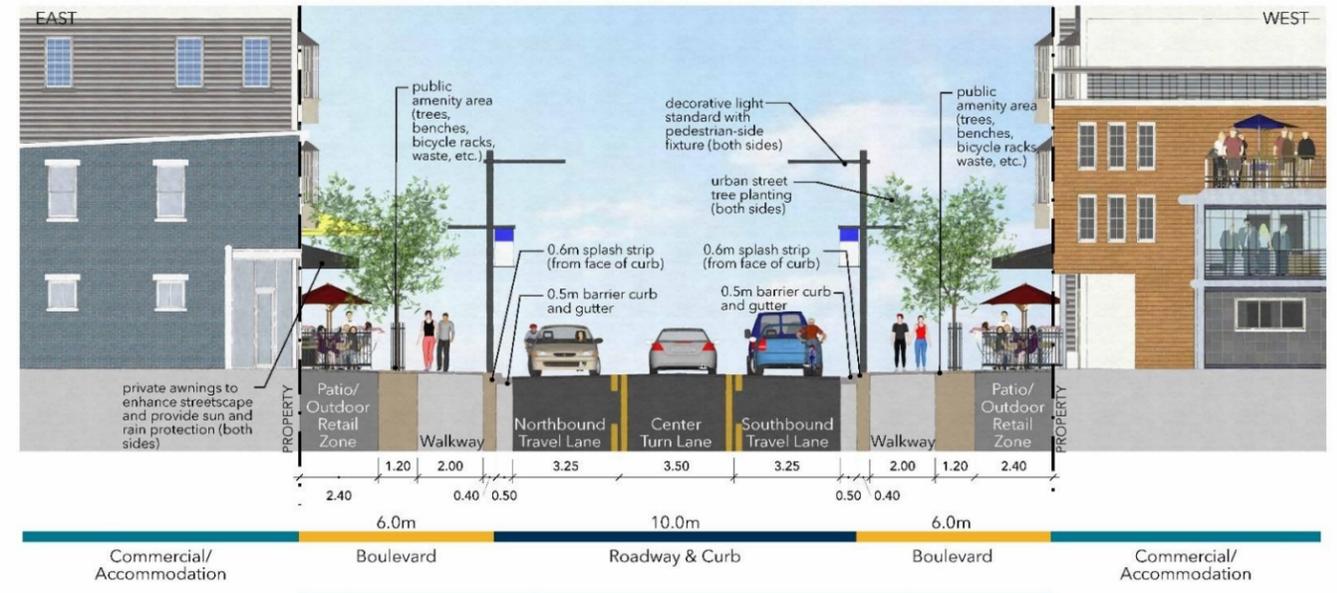
Design Concept 1



Design Concept 2

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
Figure 29A: Mosley Street Alternative Design Concepts





**Design
Concept
3**

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
Figure 29B: Mosley Street Alternative Design Concepts





MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
 Figure 30: Impacts of Water Level on Beach Drive

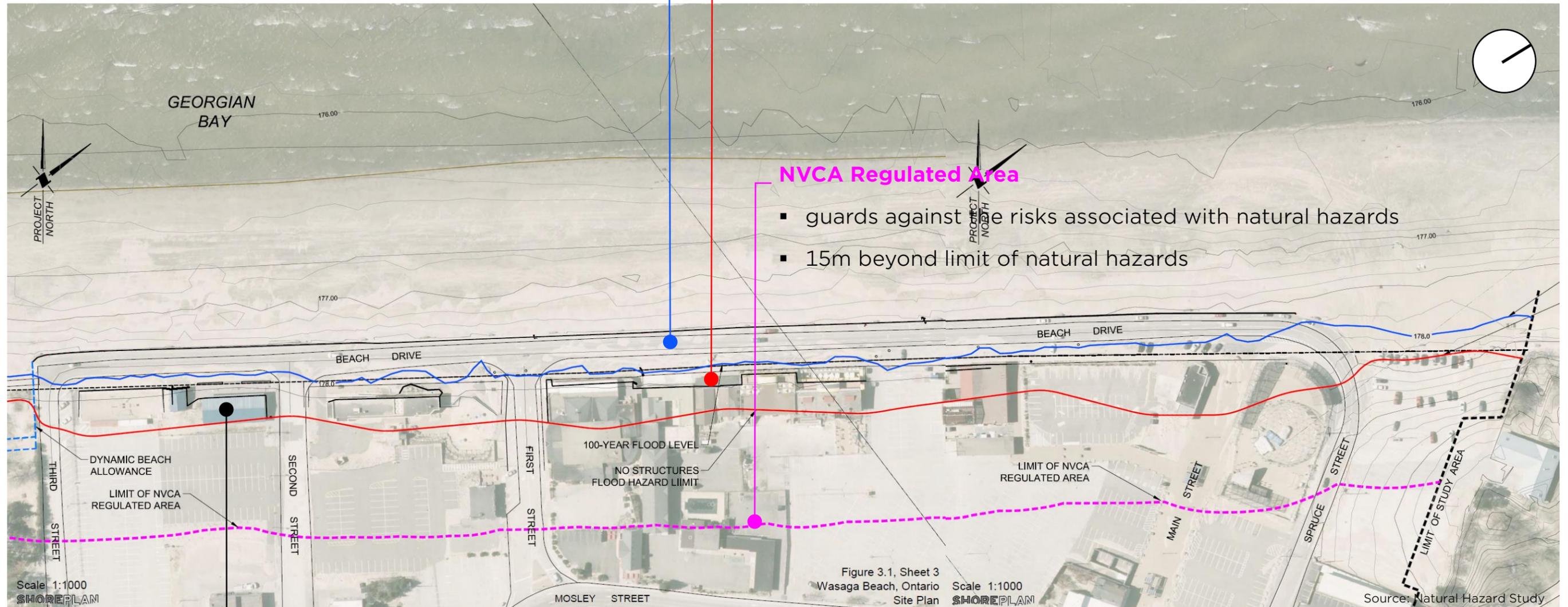


100-Year Flood Level

- the water level having a 1% probability of occurrence in any given year

No Structures Flood Hazard

- 100-year storm + consideration for wave uprush
- development beyond this limit is outside the flood hazard and hence would not require floodproofing



NVCA Regulated Area

- guards against the risks associated with natural hazards
- 15m beyond limit of natural hazards

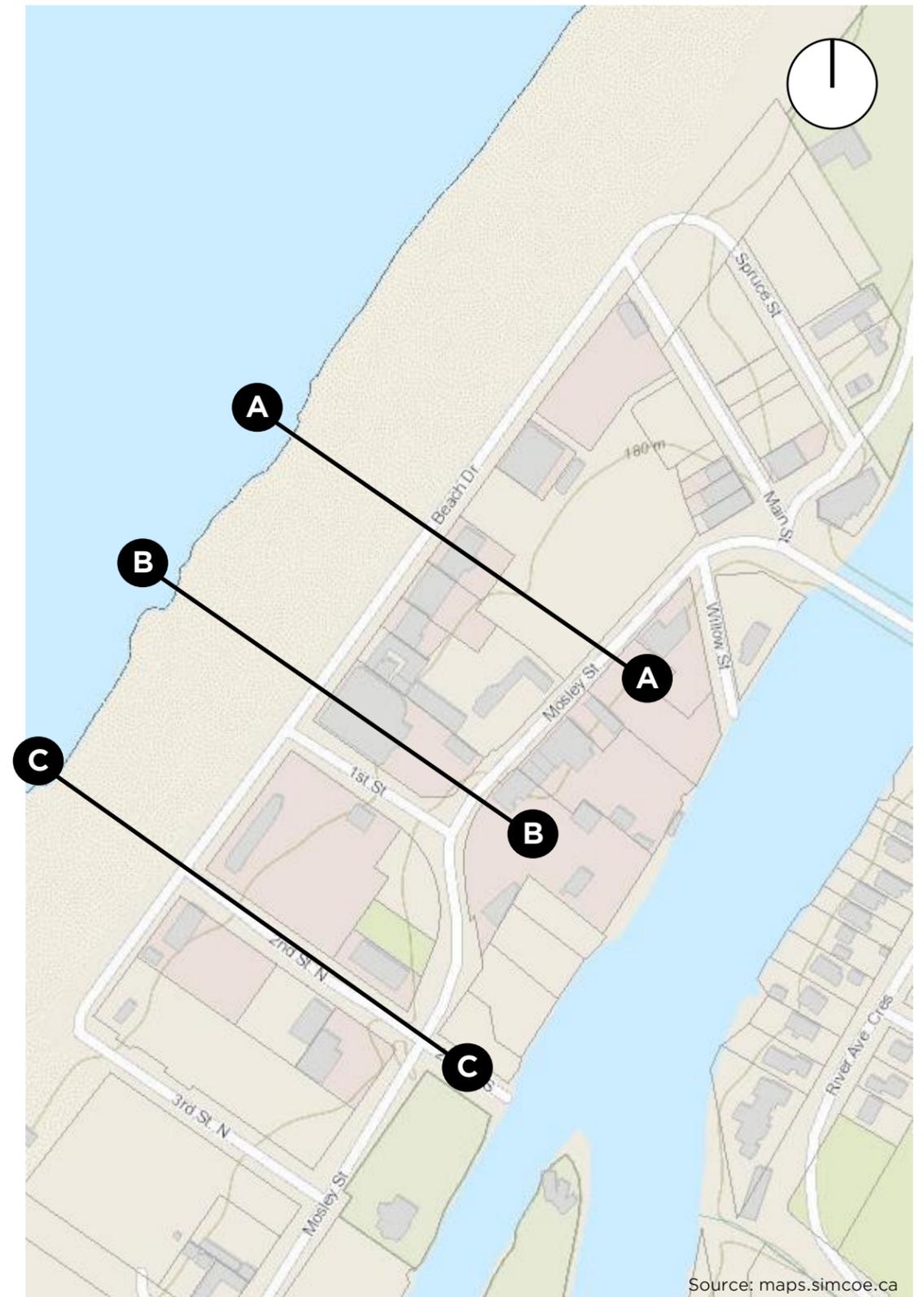
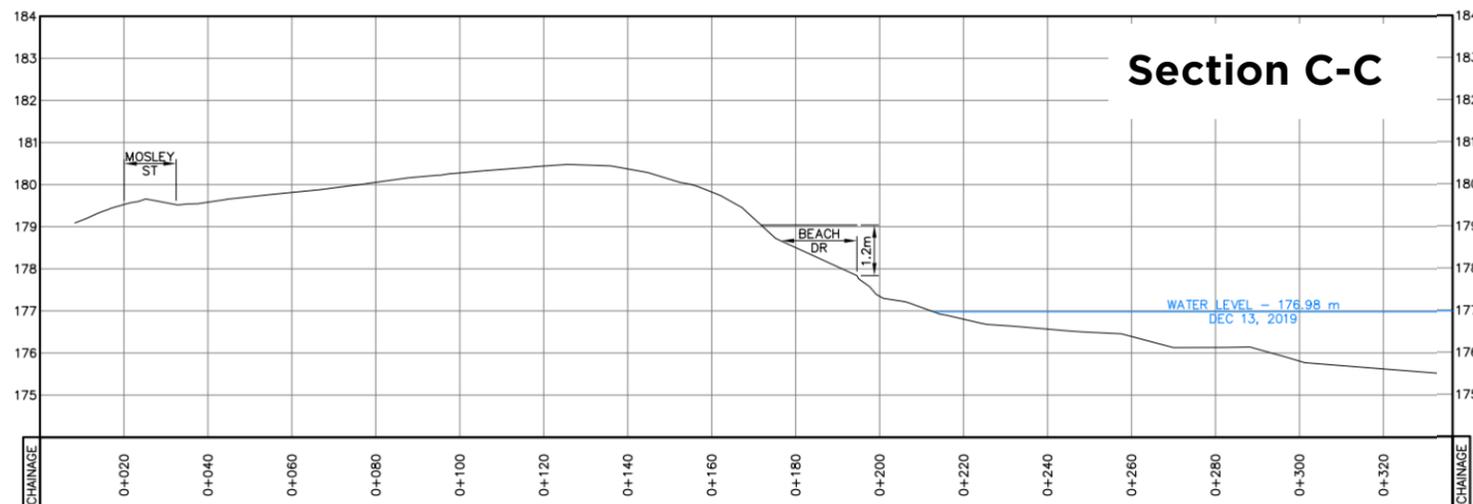
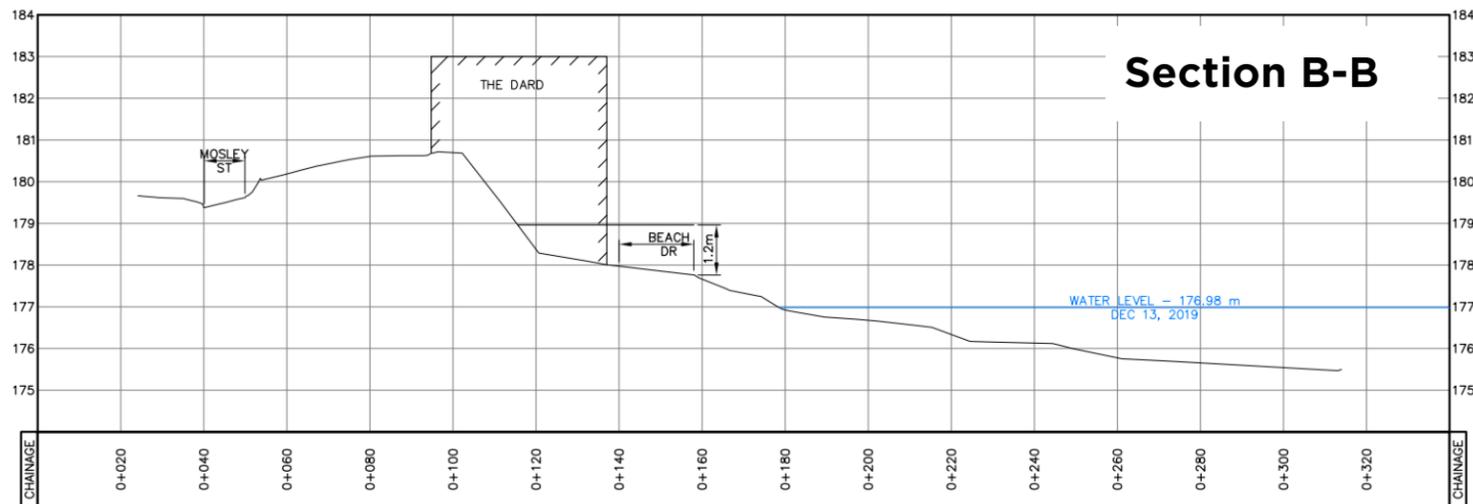
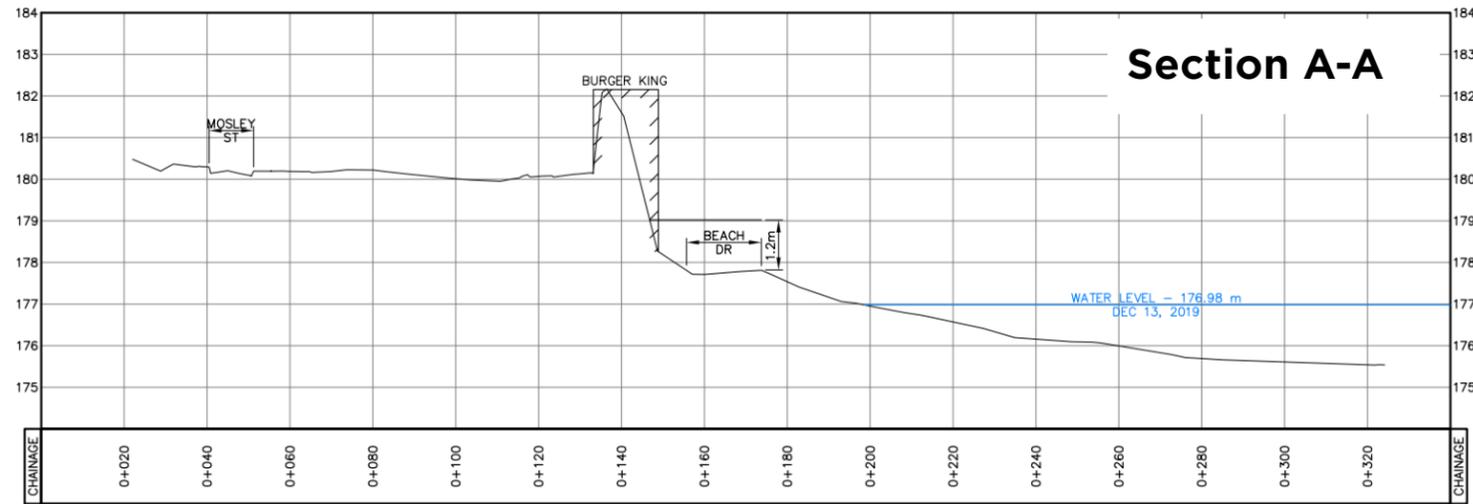
Developing in the Flood Hazard Area

- development within the flood hazard area is permitted if specific conditions are met, including compliance with flood-proofing and access standards
- new development could be allowed within the flood hazard area if these standards are met with designs completed by a qualified professional engineer

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 31: Beach Drive Hazard Mapping



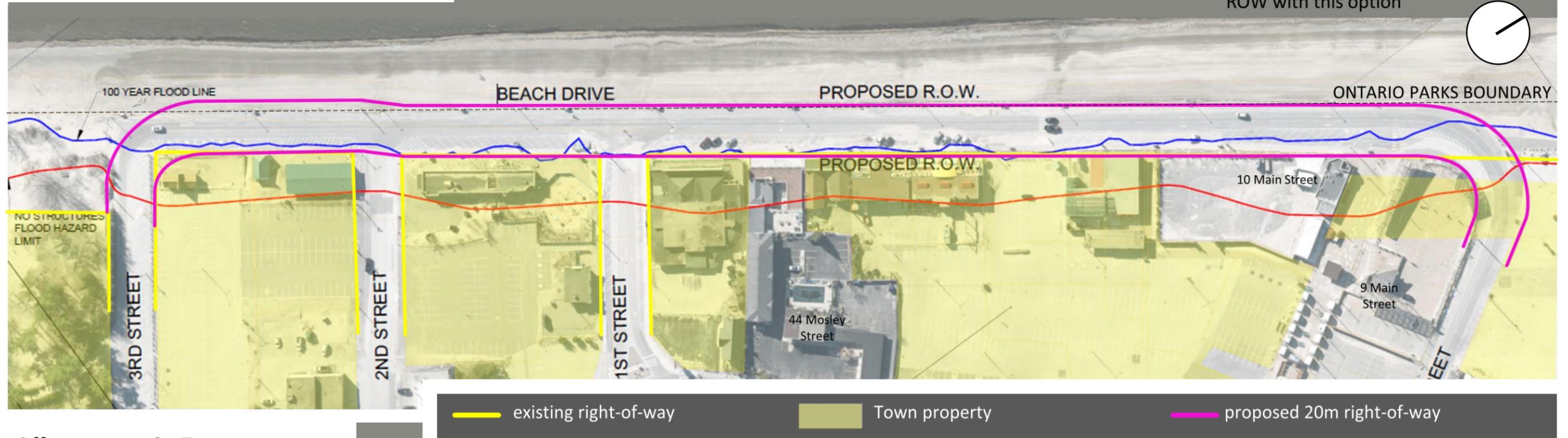


MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
Figure 32: Beach Area Sections

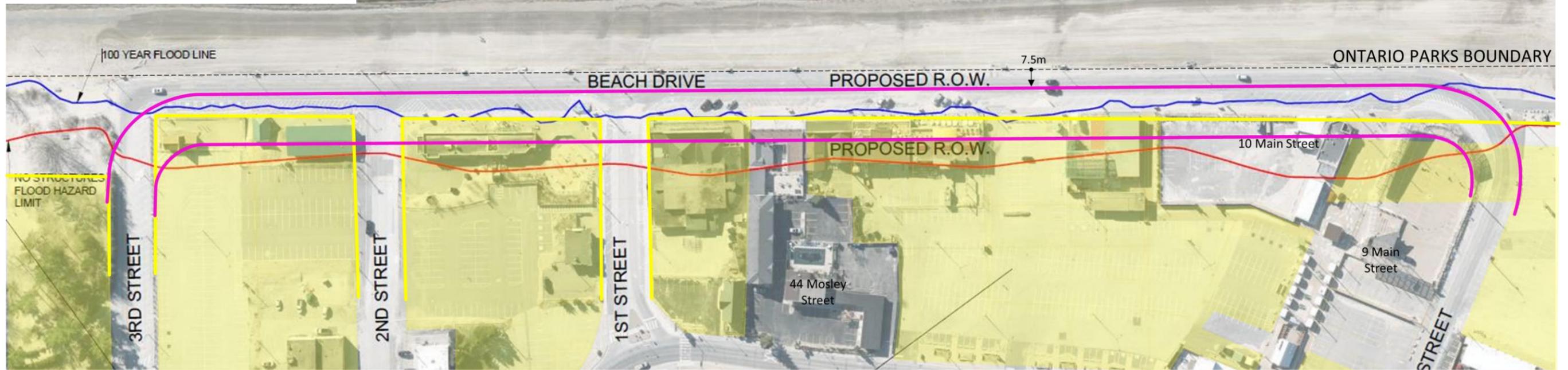


Alignment 1: Existing Alignment

Note: could also maintain the existing 18m ROW with this option



Alignment 2: Recover Minimum Beach Area



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

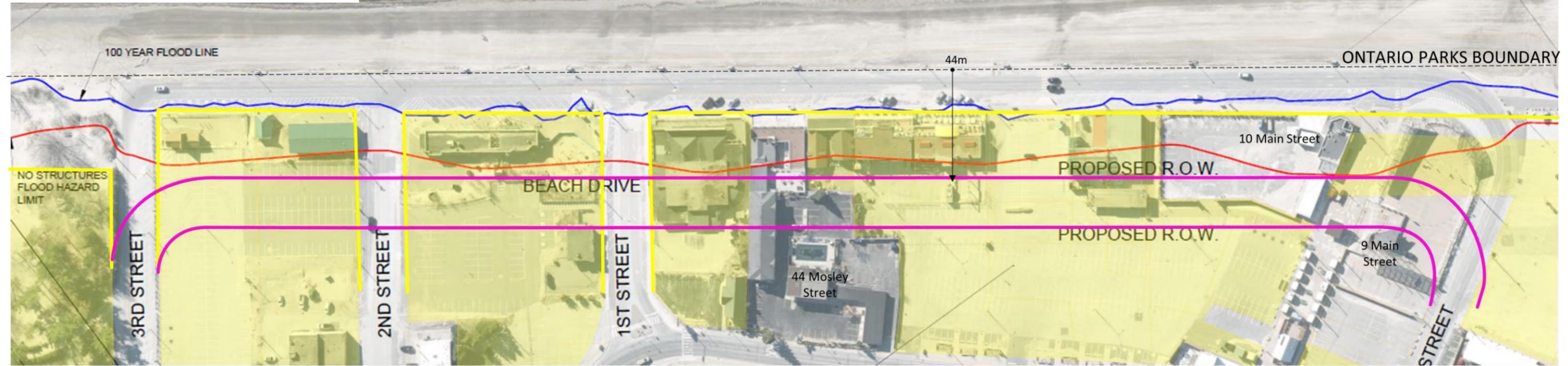
Figure 33A: Beach Drive Alignment & Widening



Alignment 3: 100 Year Flood Line



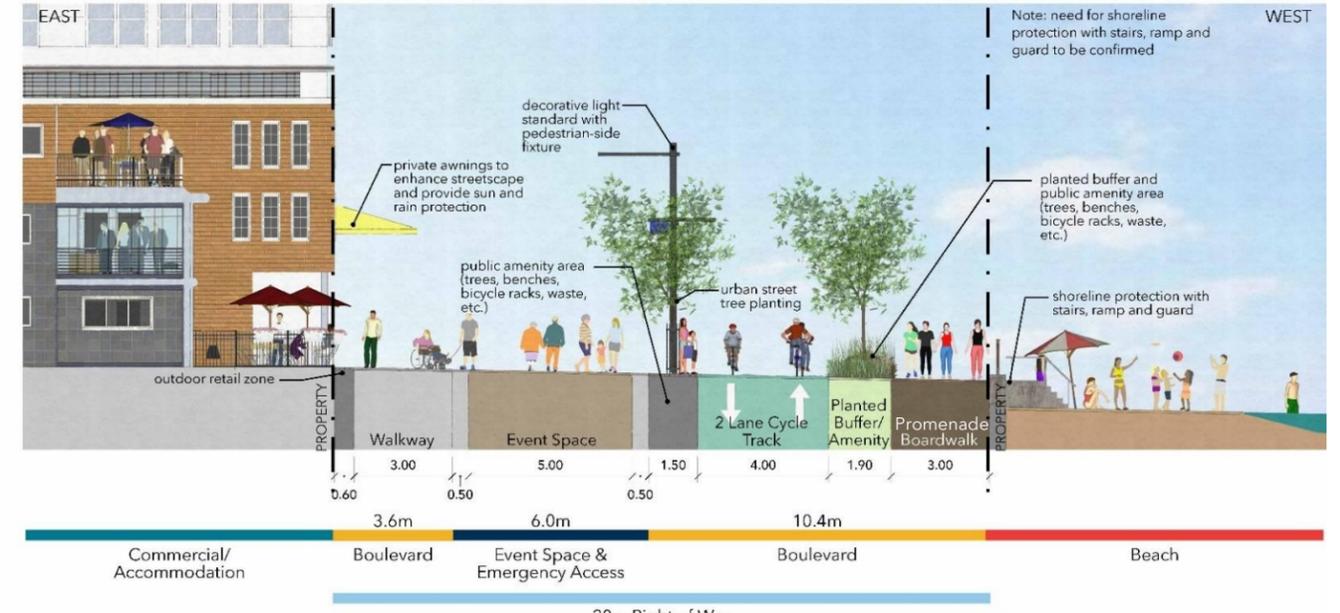
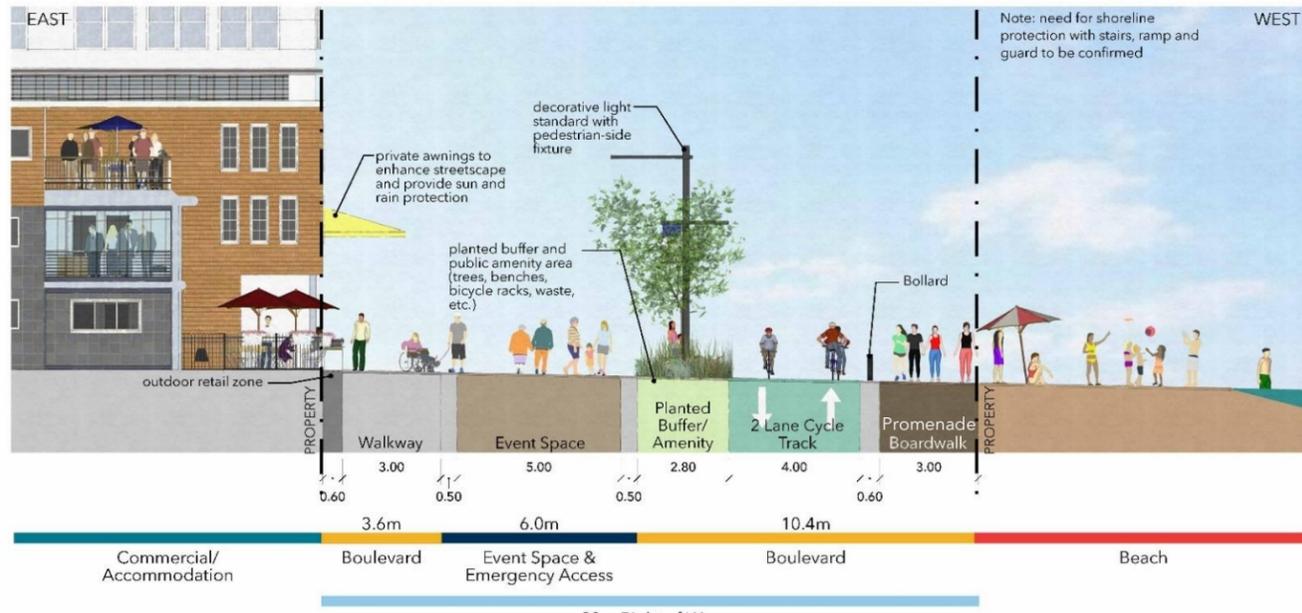
Alignment 4: No Structure Flood Hazard Limit



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 33B: Beach Drive Alignment & Widening





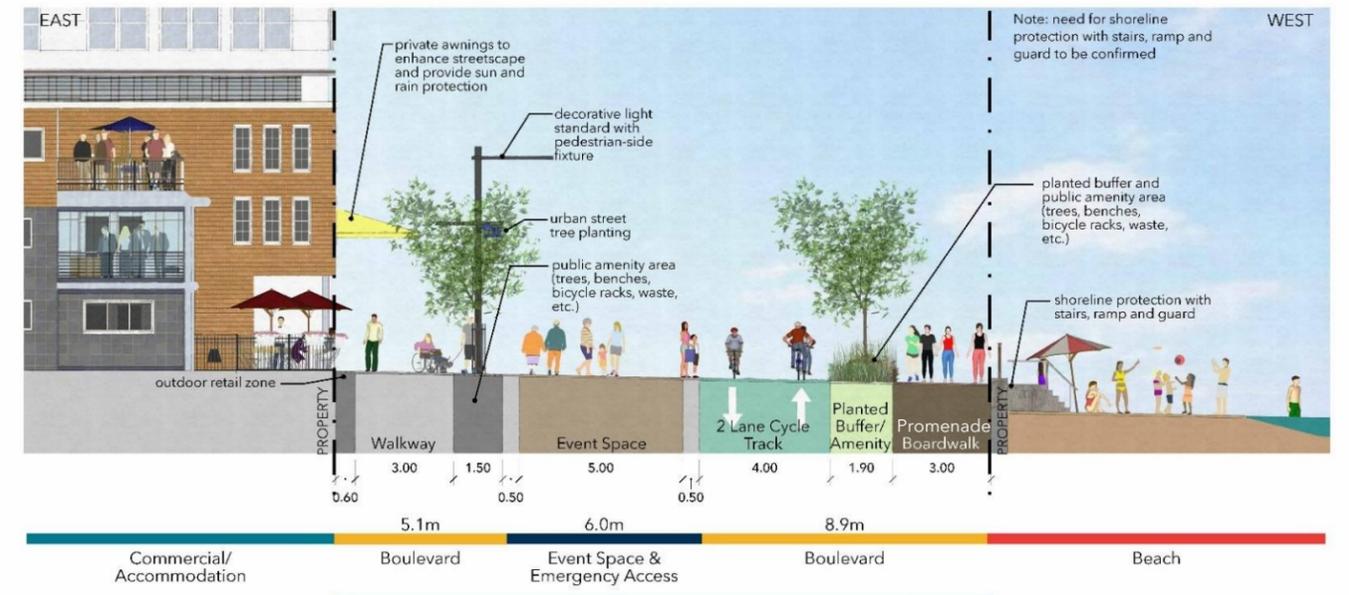
Design Concept 1



Design Concept 2

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
 Figure 34A: Beach Drive Alternative Design Concepts

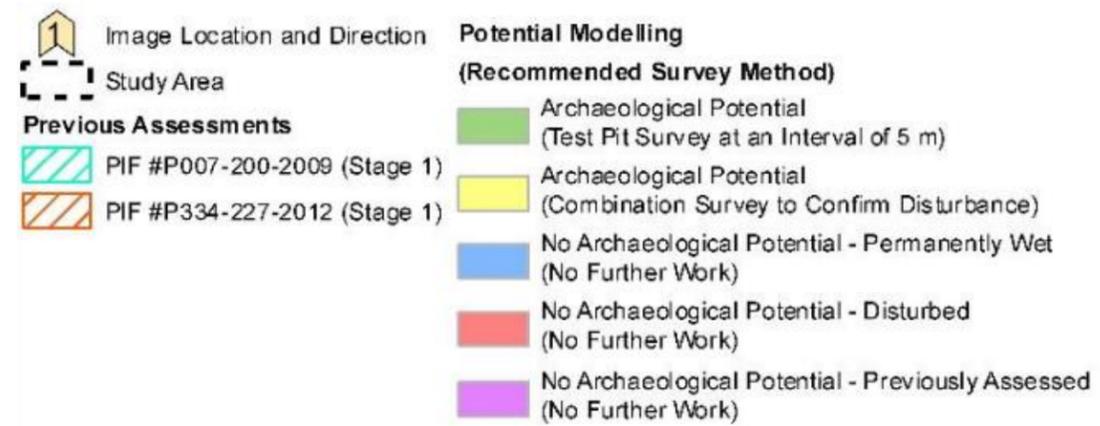
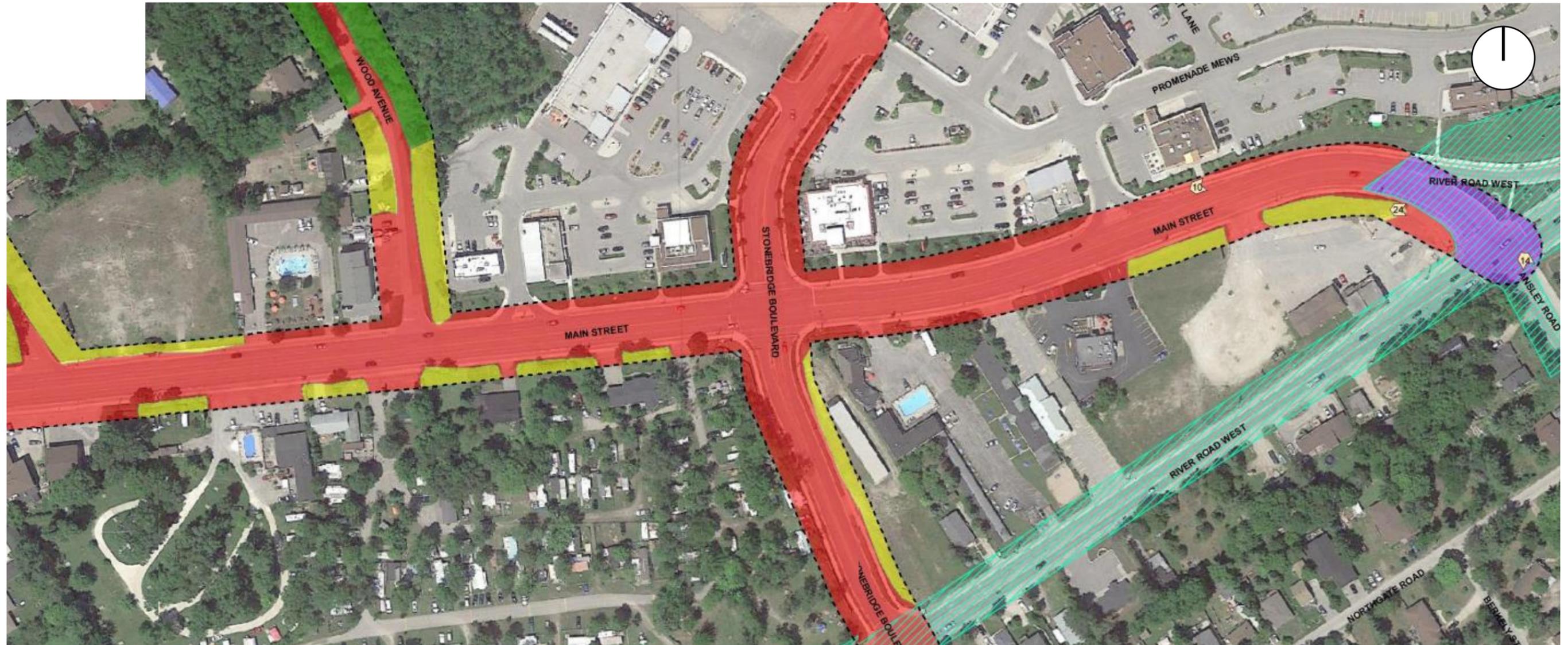




**Design
Concept
3**

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
Figure 34B: Beach Drive Alternative Design Concepts



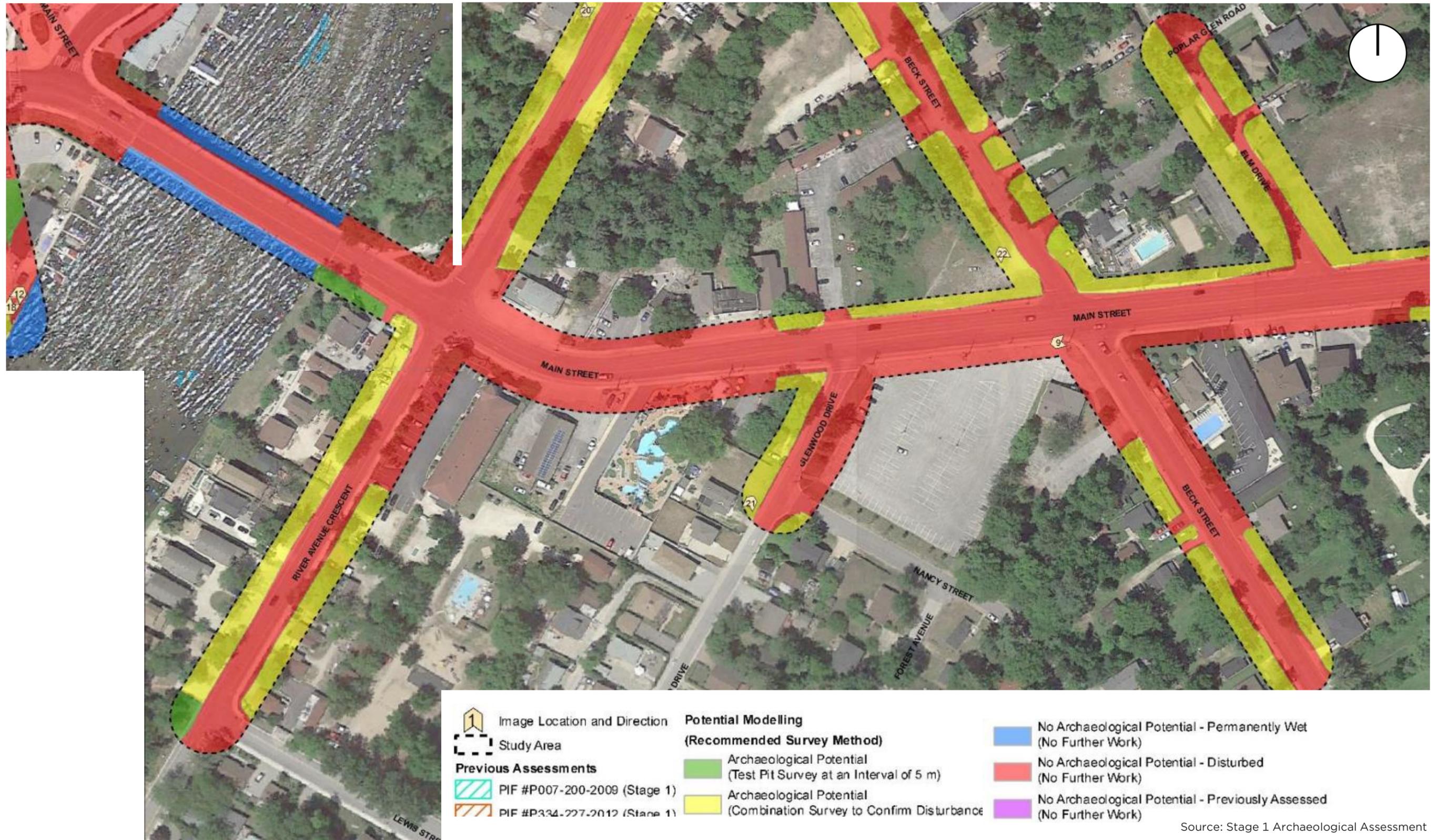


Source: Stage 1 Archaeological Assessment

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 35A: Main Street Areas of Archaeological Potential





MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 35B: Main Street Areas of Archaeological Potential



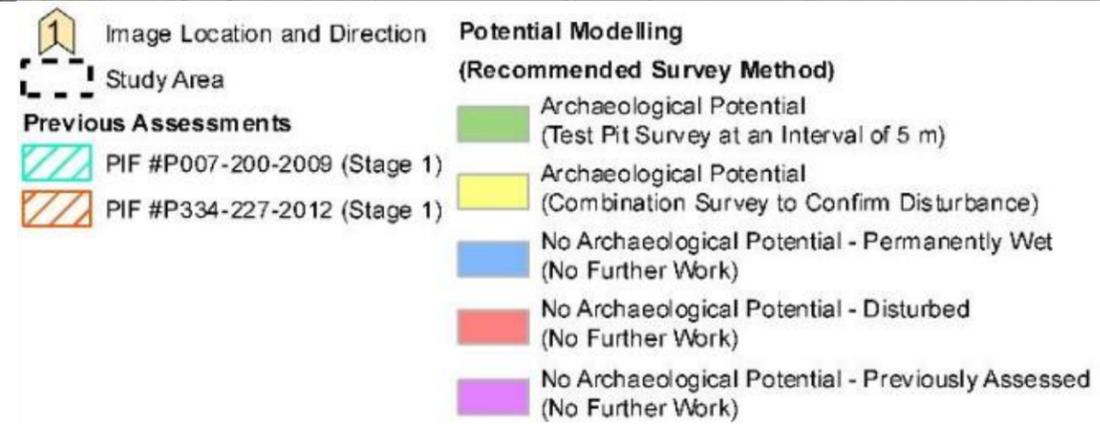


Source: Stage 1 Archaeological Assessment

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 36A: Mosley Street & Beach Drive Areas of Archaeological Potential



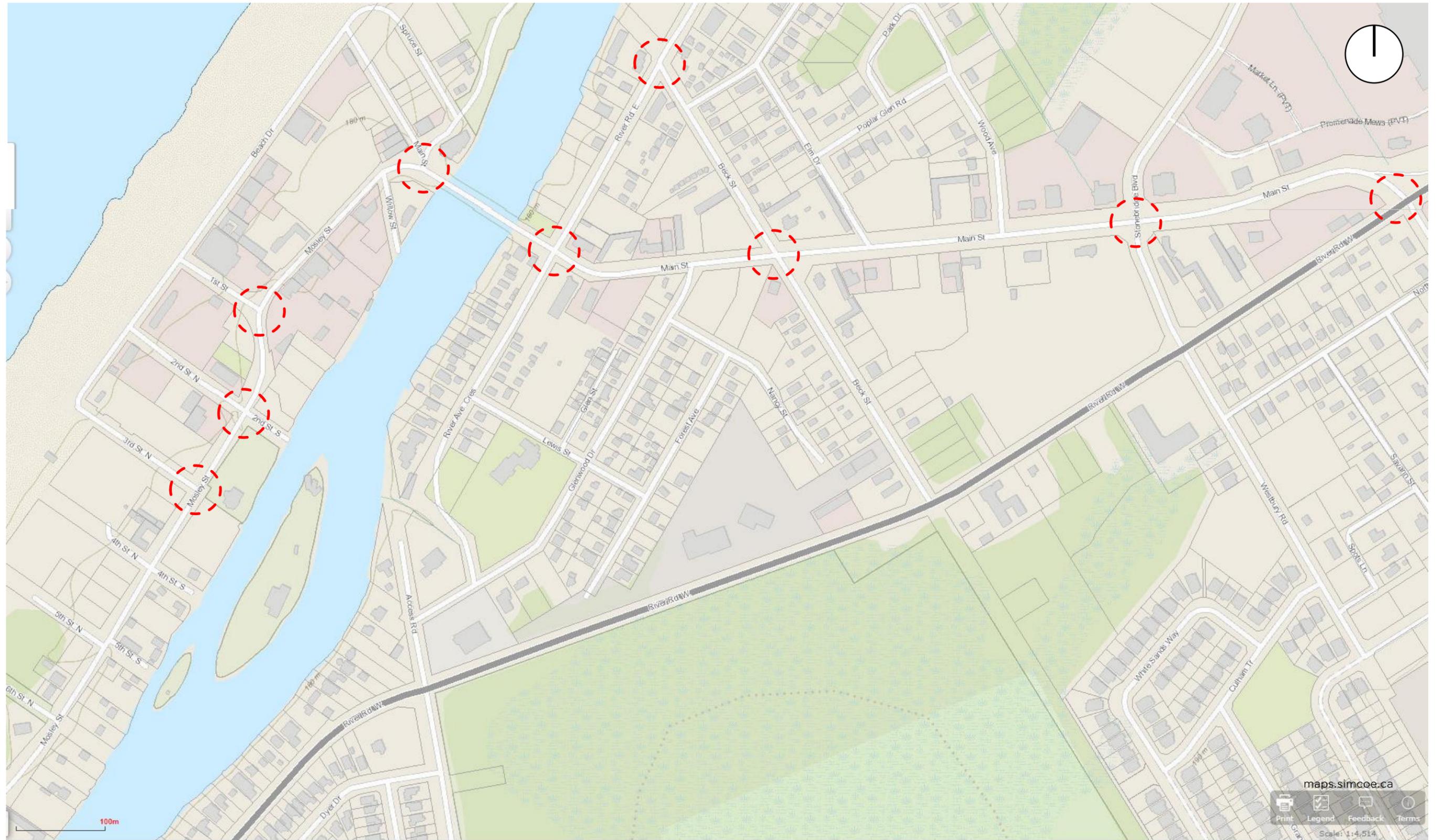


Source: Stage 1 Archaeological Assessment

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 36B: Mosley Street & Beach Drive Areas of Archaeological Potential



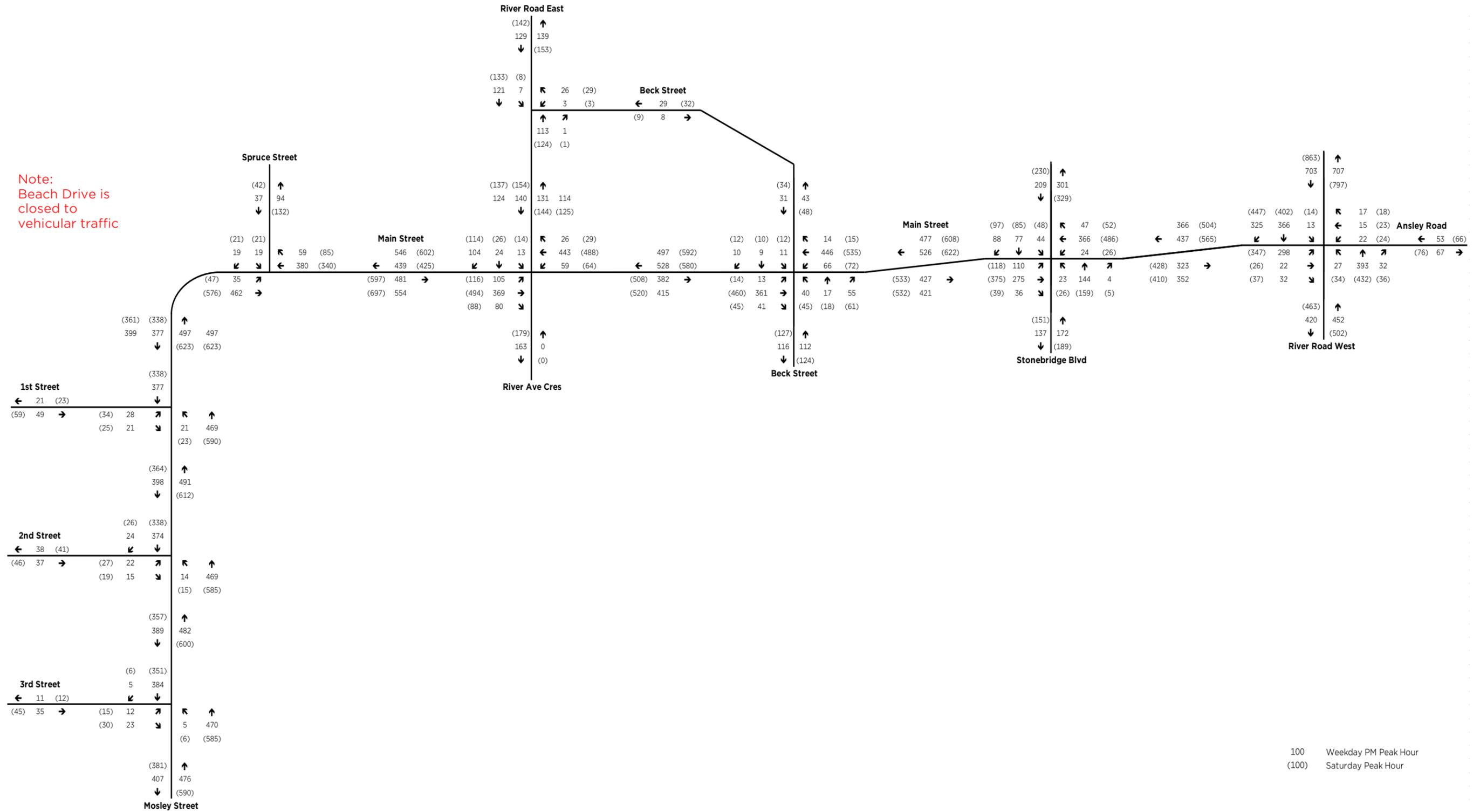


MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 37: Key Intersections



Note:
Beach Drive is
closed to
vehicular traffic

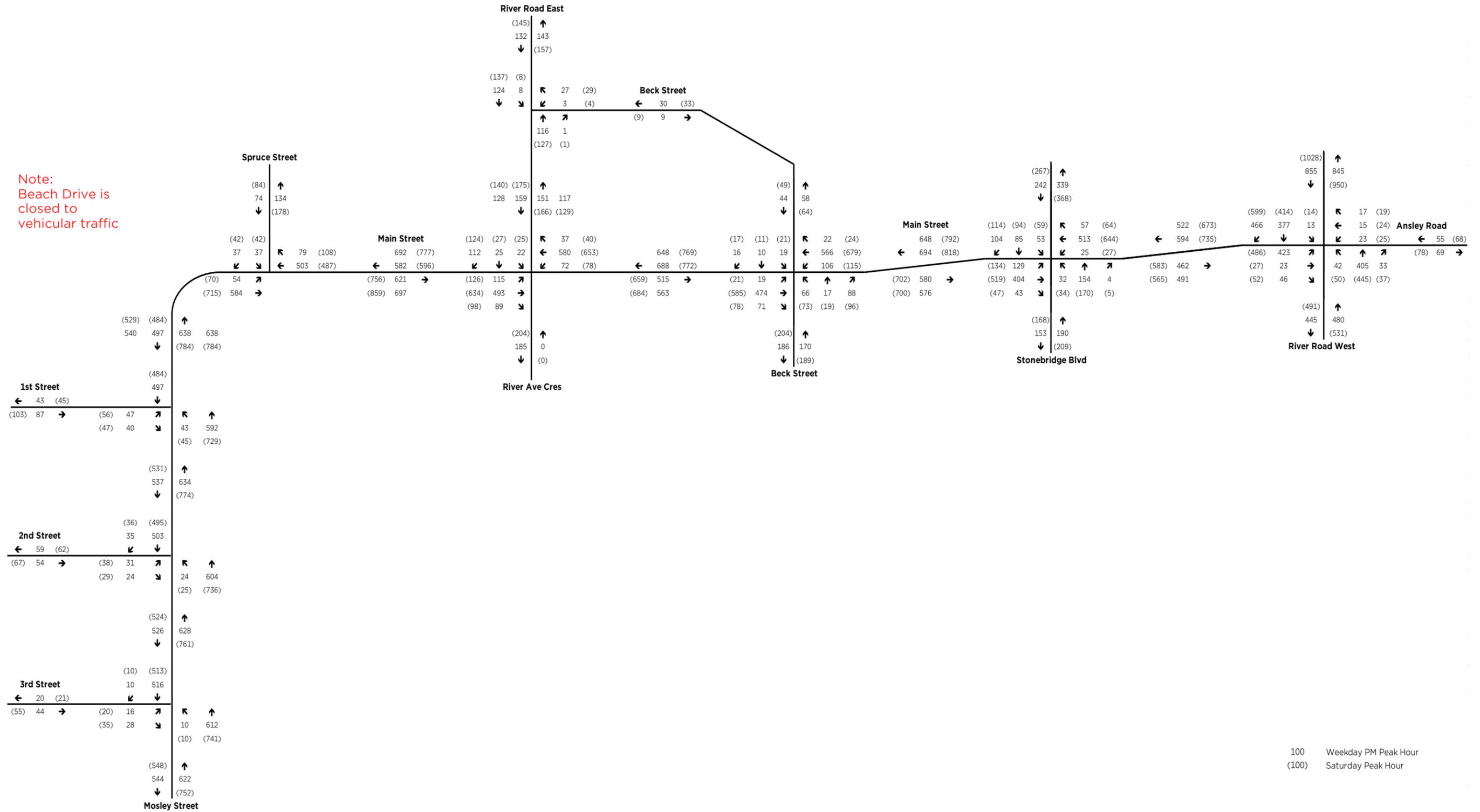


MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 38: 2026 Traffic Volumes with Recommended Solutions



Note:
Beach Drive is
closed to
vehicular traffic

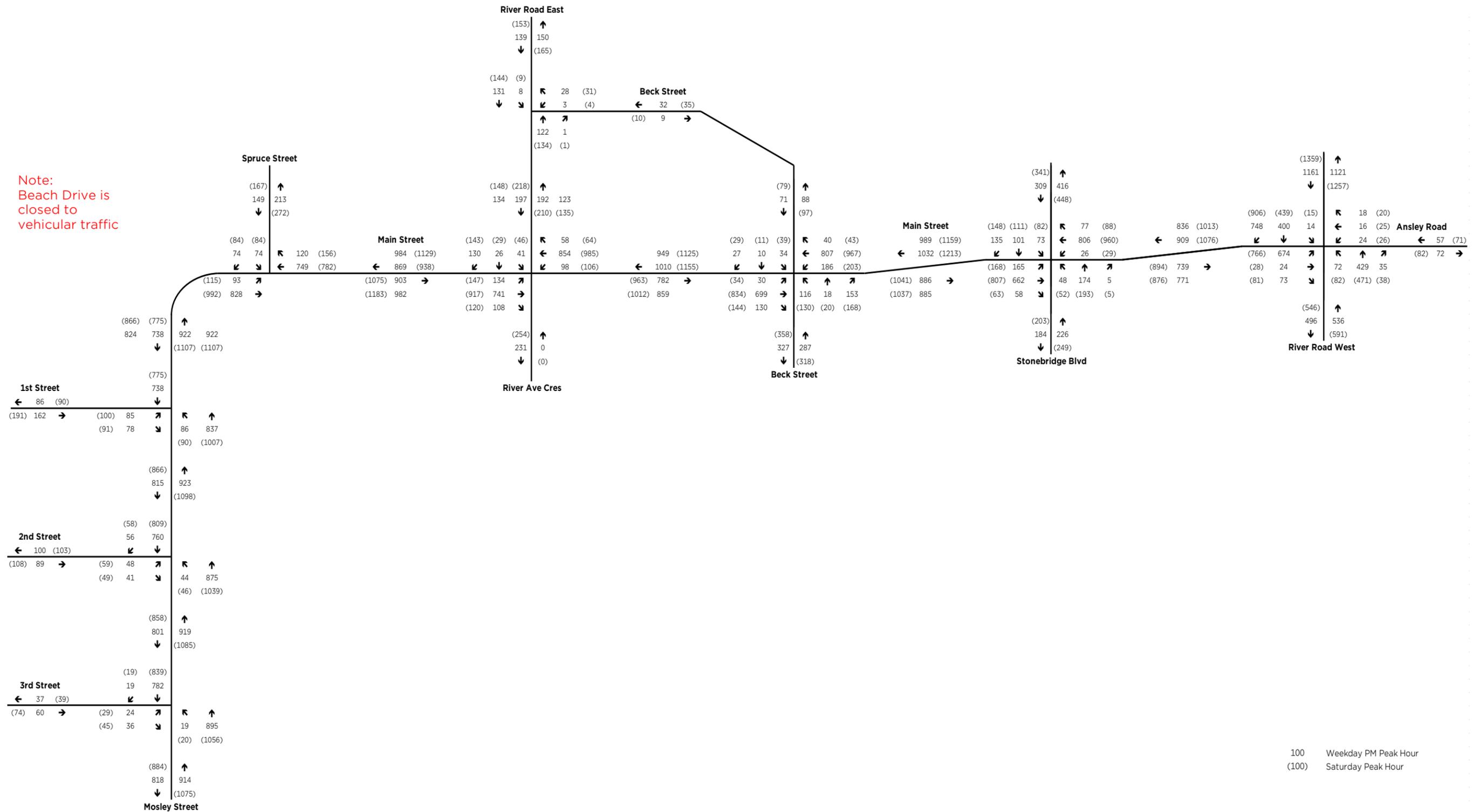


MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 39: 2031 Traffic Volumes with Recommended Solutions



Note:
Beach Drive is
closed to
vehicular traffic

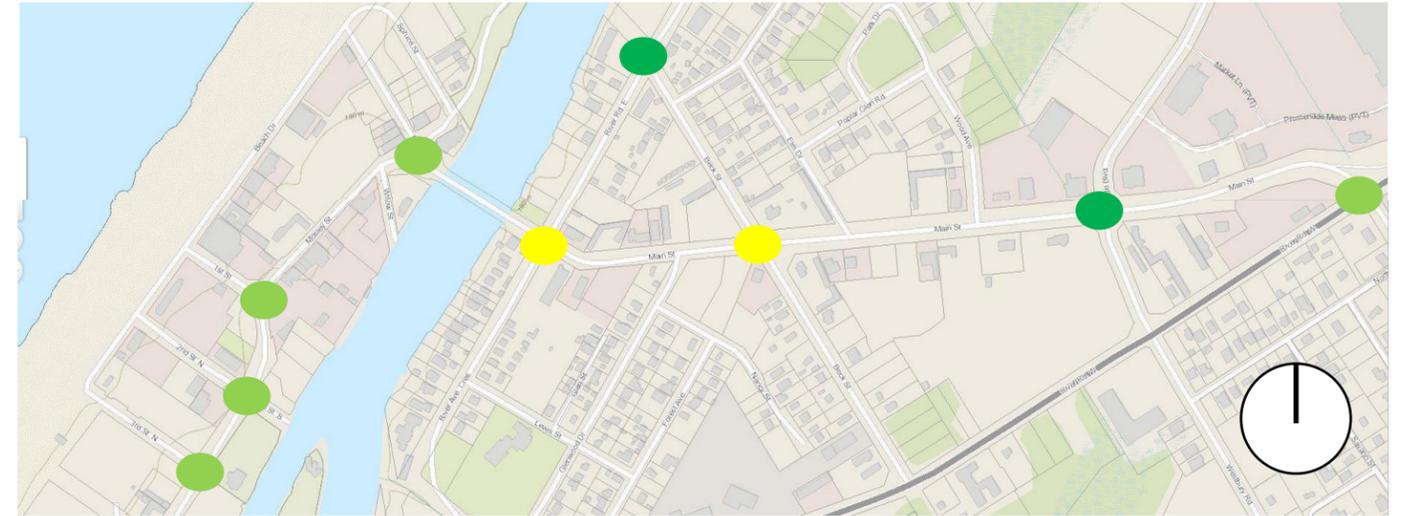


MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

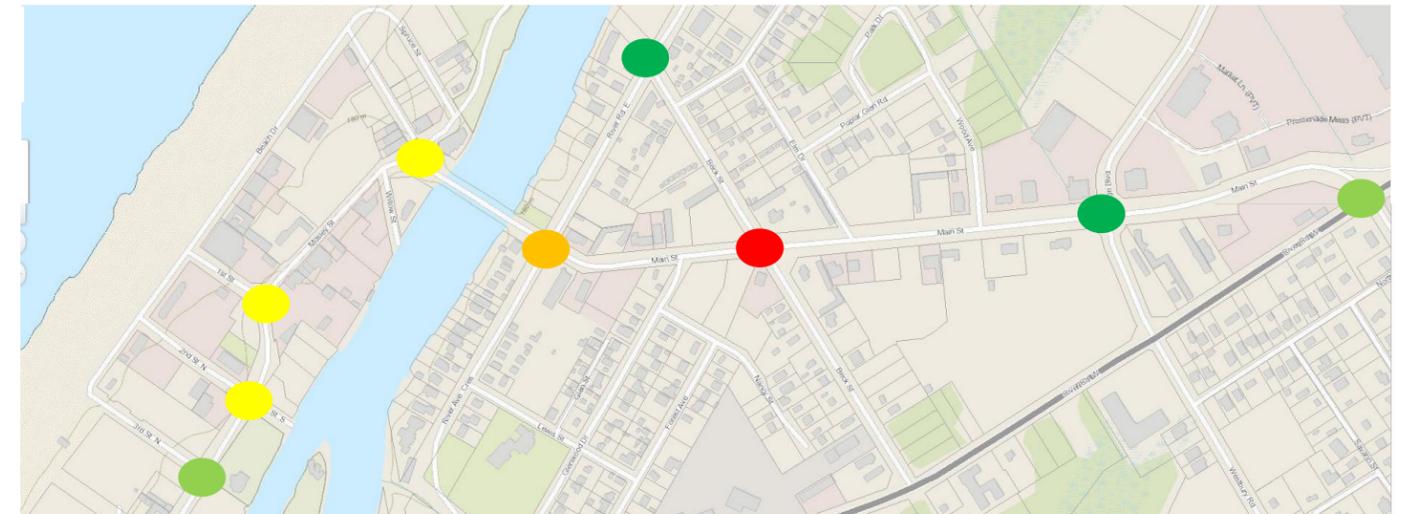
Figure 40: 2041 Traffic Volumes with Recommended Solutions



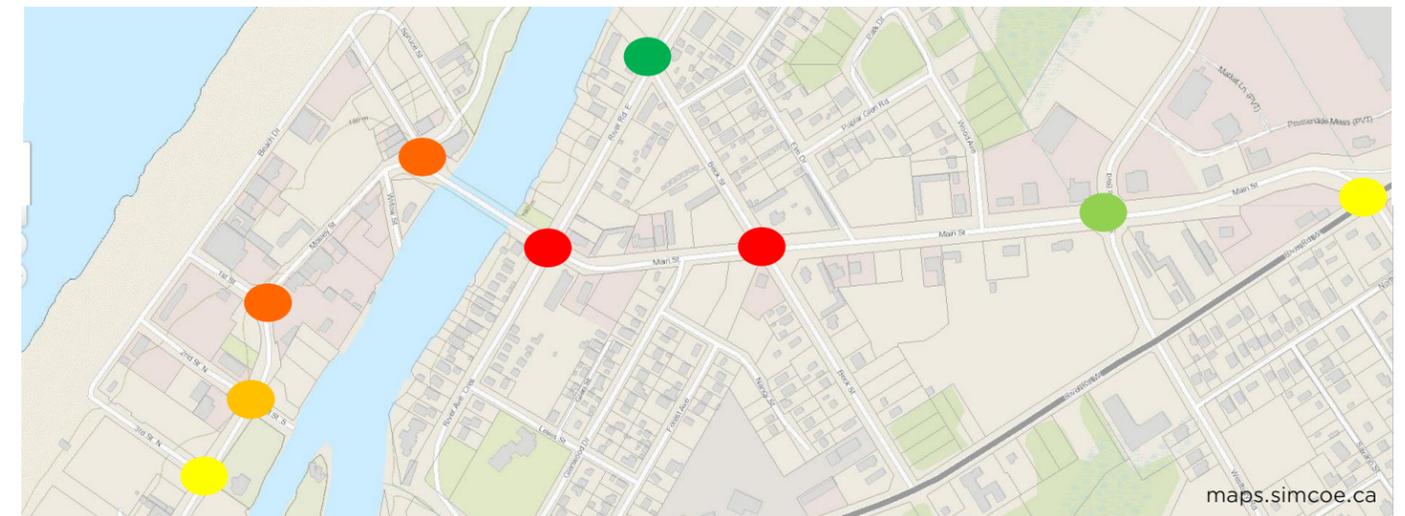
2026 PM



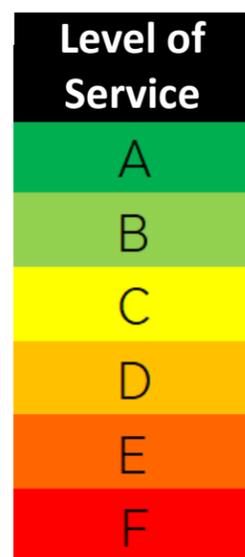
2031 PM



2041 PM



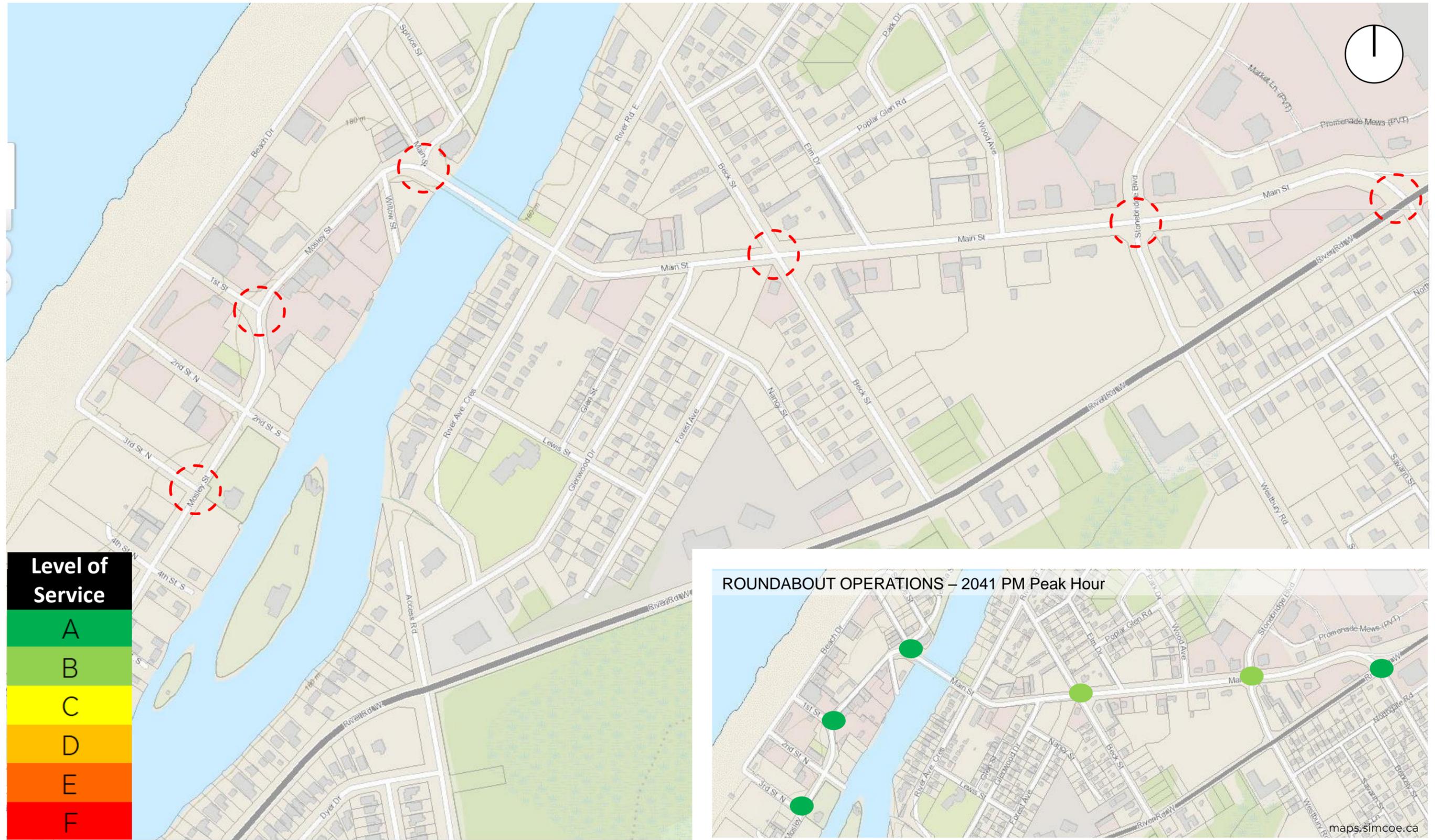
maps.simcoe.ca



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 41: Key Intersection Operations with Recommended Solutions

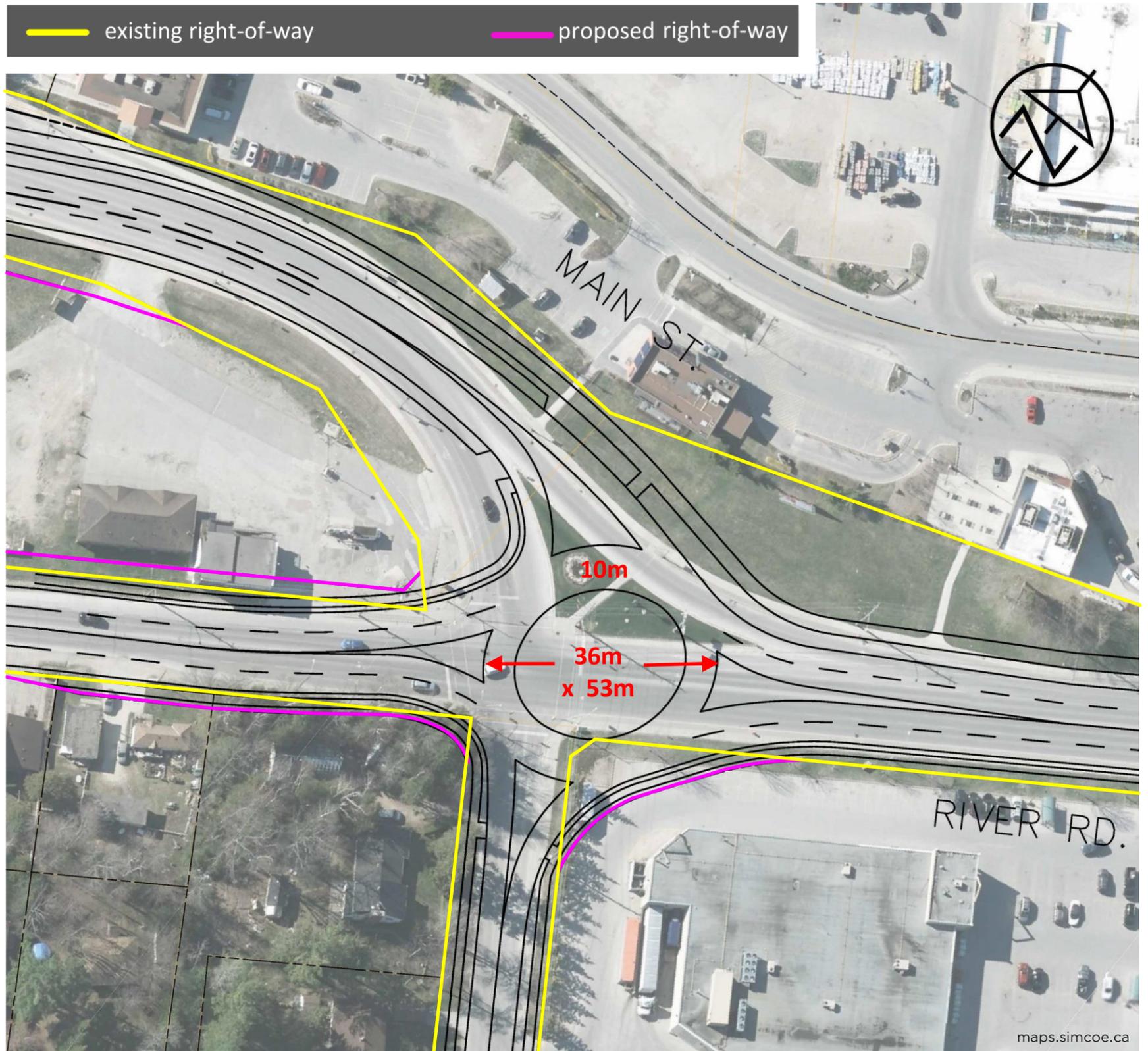




MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 42: Roundabout Locations & Operations with Recommended Solutions

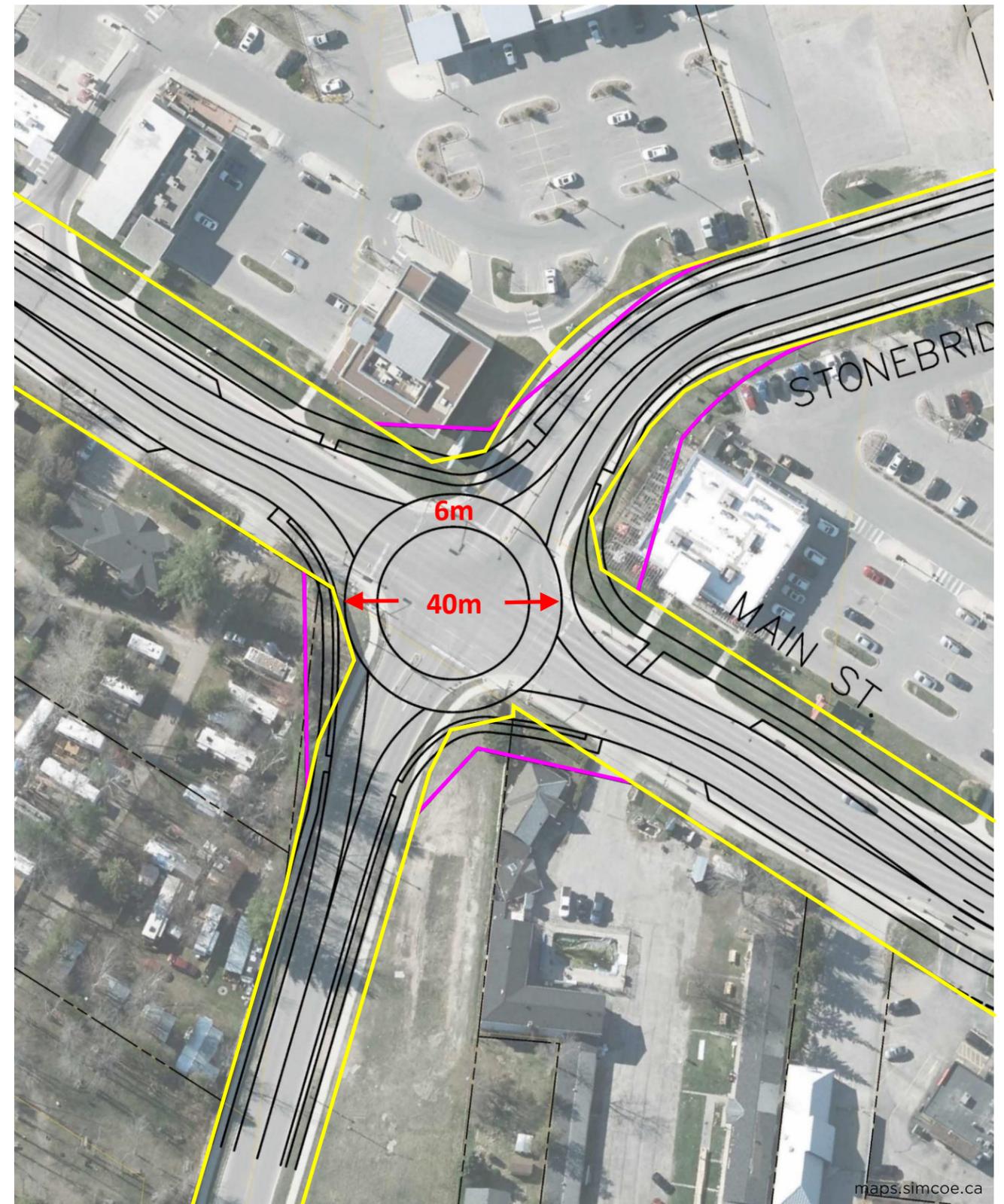
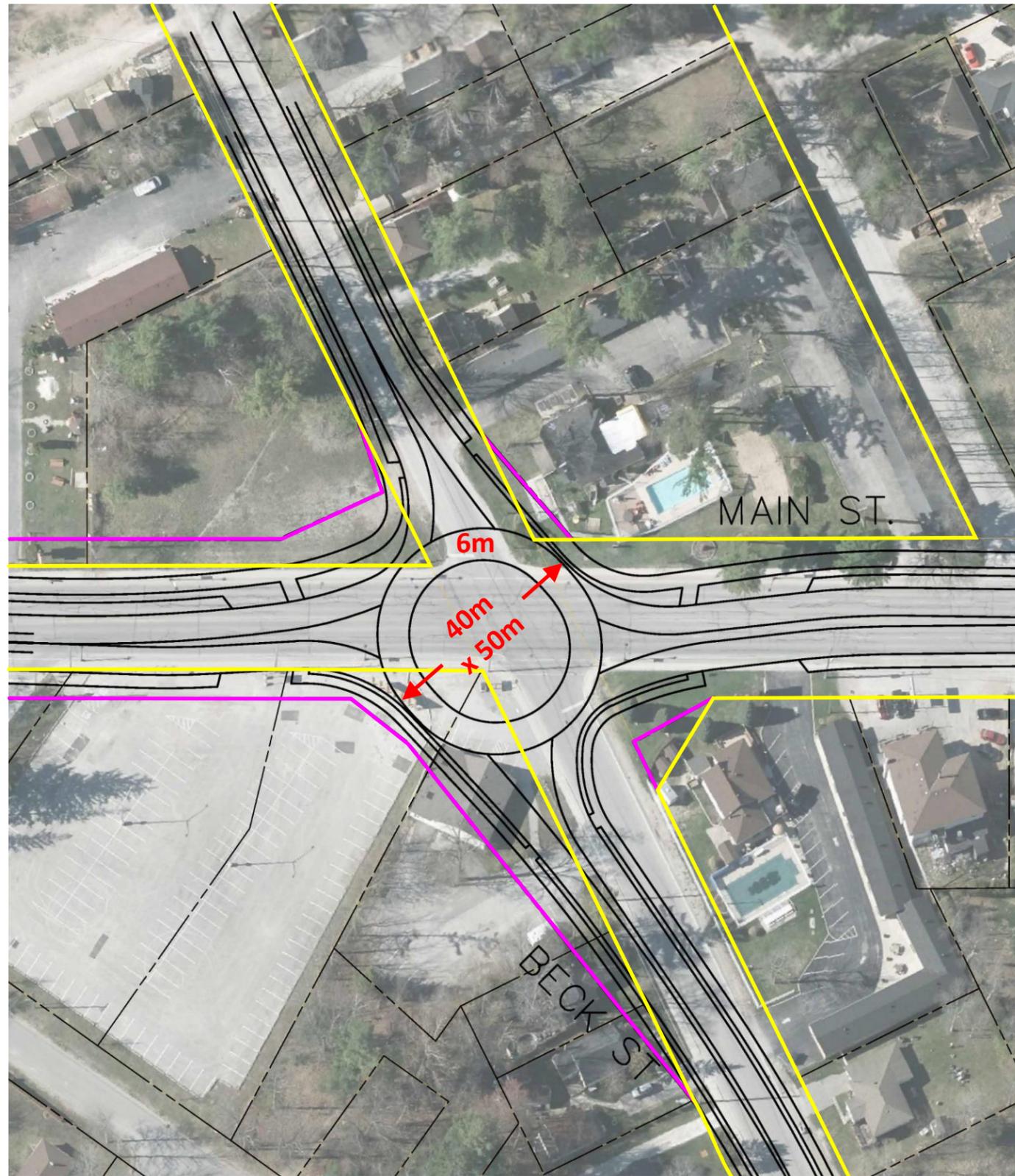




MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
 Figure 43A: Main Street Roundabouts



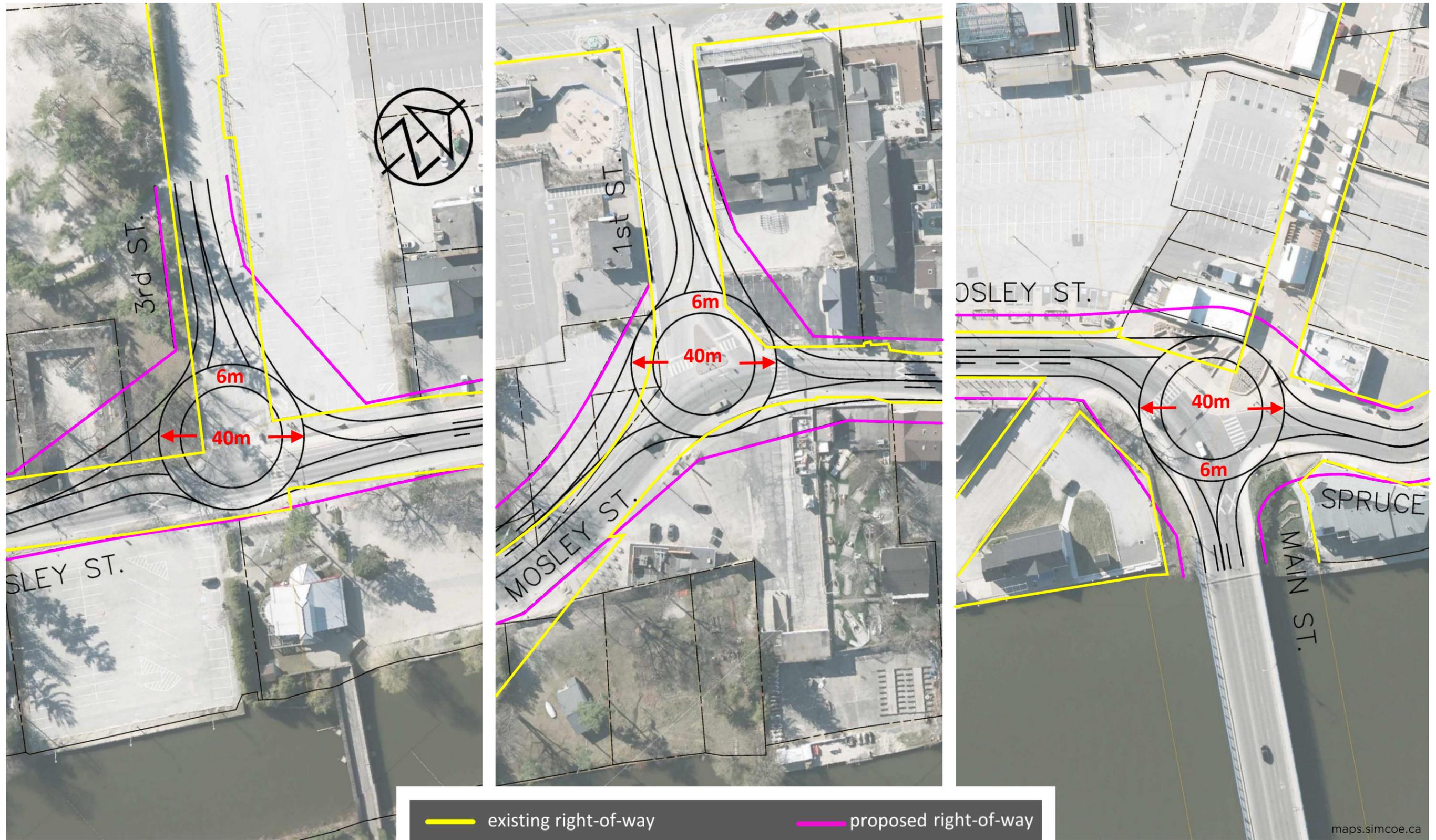
— existing right-of-way — proposed right-of-way



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 43B: Main Street Roundabouts





MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 44: Mosley Street Roundabouts



Existing Conditions



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 45: River Avenue Crescent & Glenwood Drive – Existing Conditions



Configuration 1



Configuration 2



- Turn restriction
- Centre median

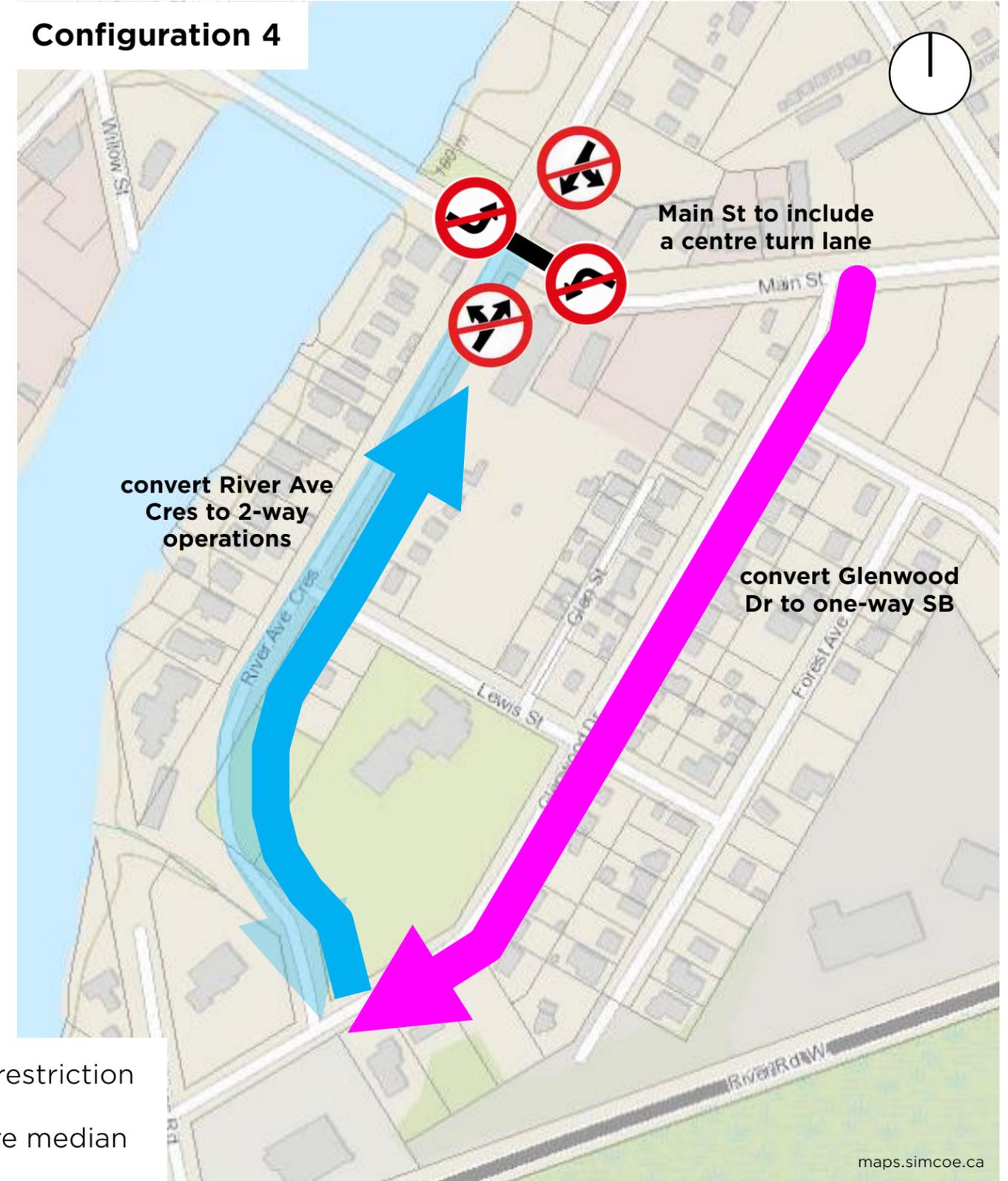
MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
Figure 46A: River Avenue Crescent & Glenwood Drive Alternative Configurations



Configuration 3



Configuration 4



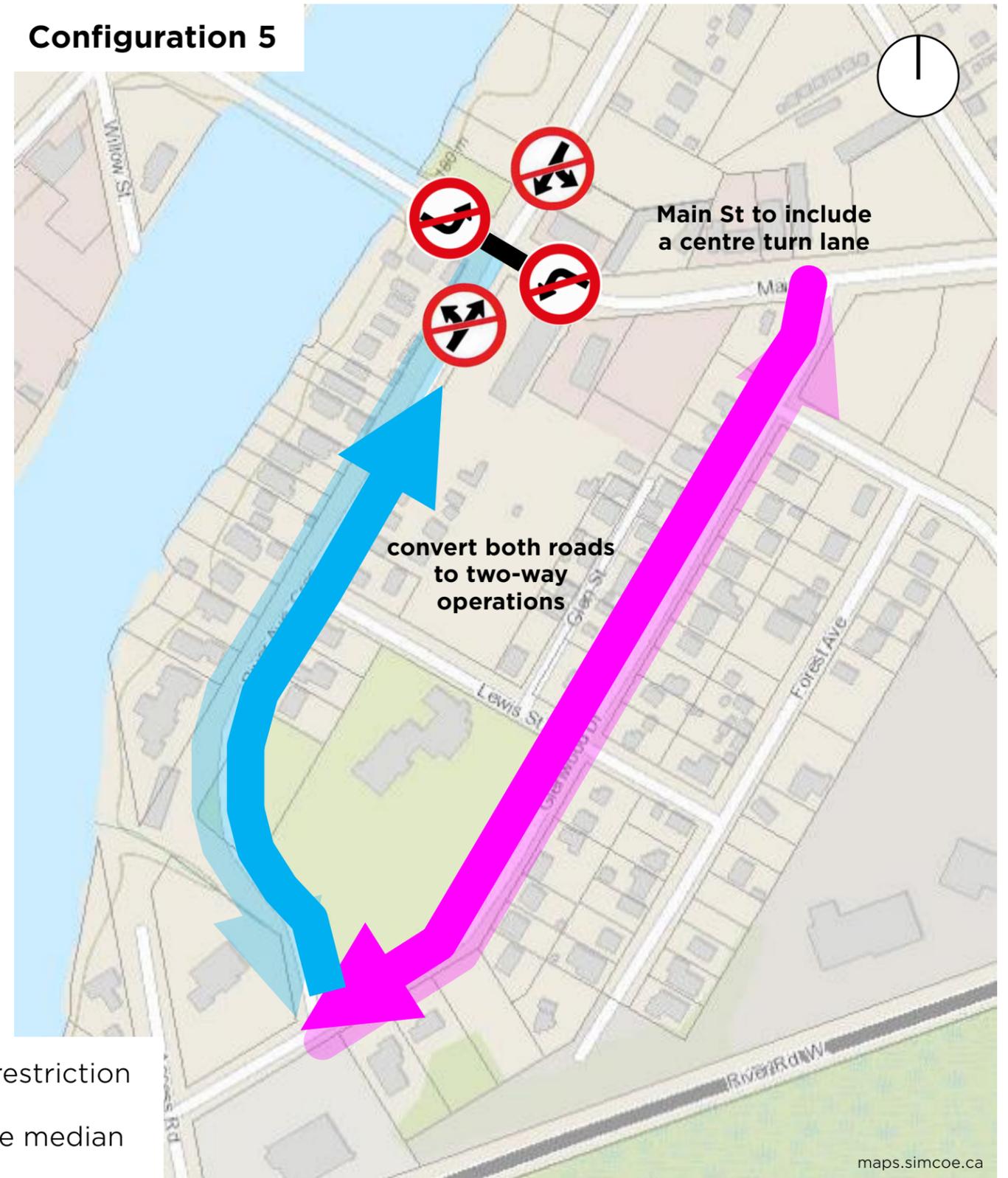
maps.simcoe.ca

MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 46B: River Avenue Crescent & Glenwood Drive Alternative Configurations



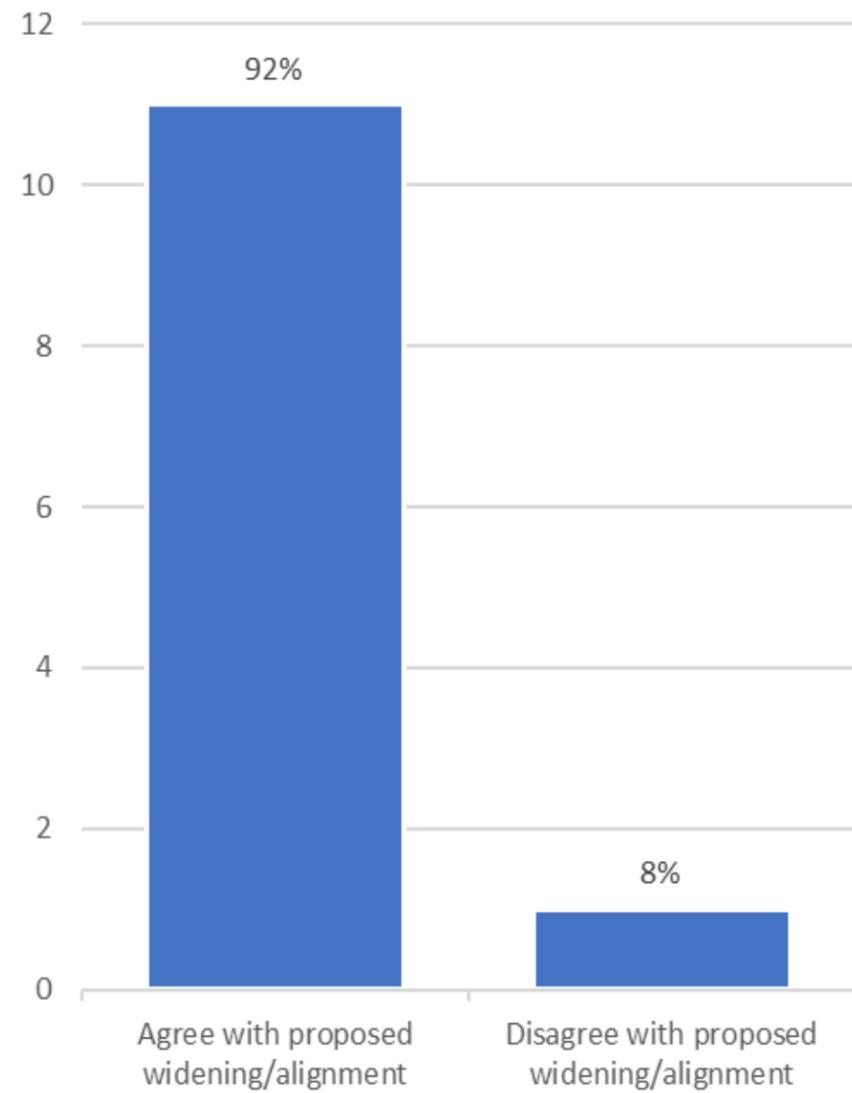
Configuration 5



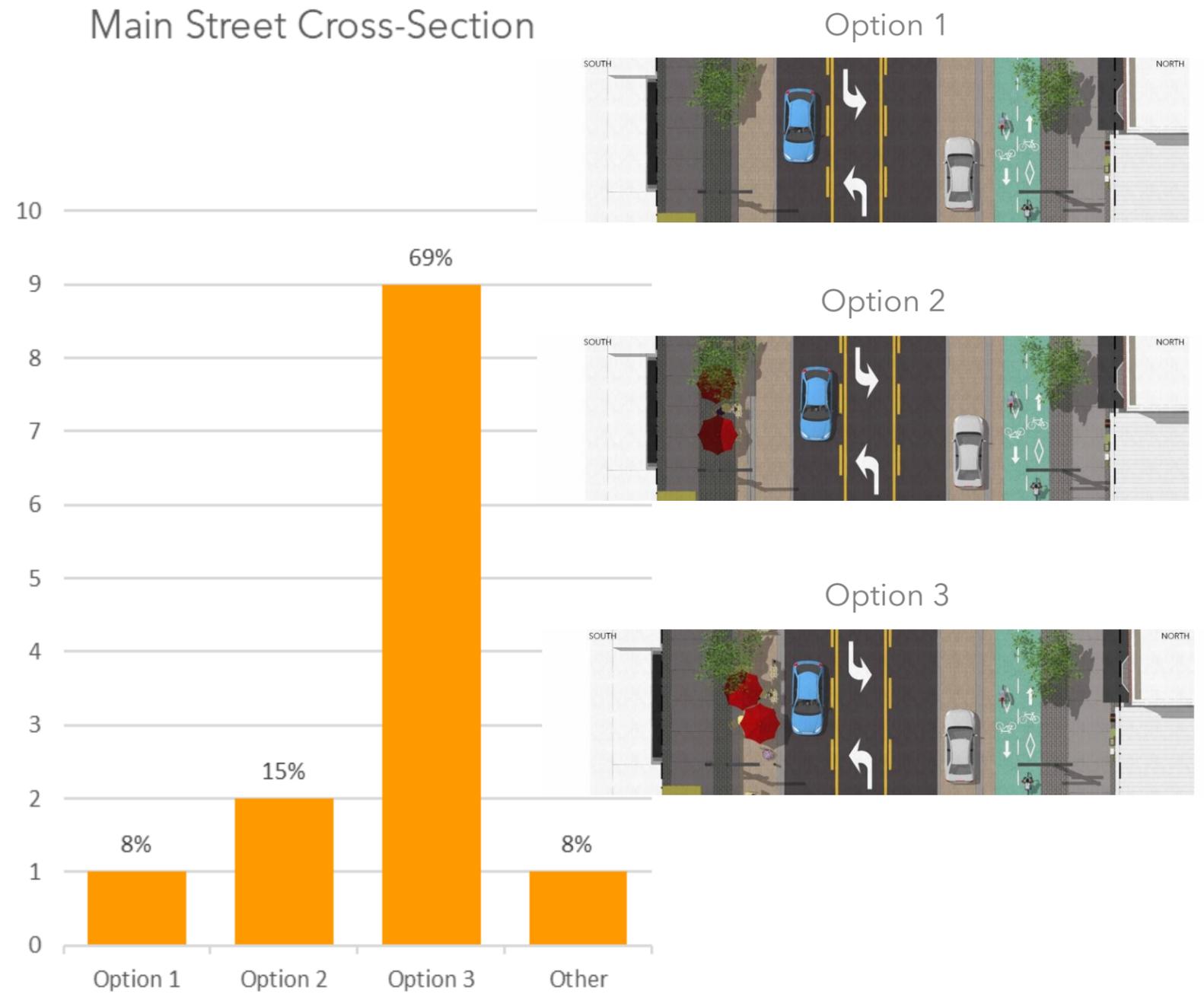
MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS
Figure 46C: River Avenue Crescent & Glenwood Drive Alternative Configurations



Main Street Alignment



Main Street Cross-Section

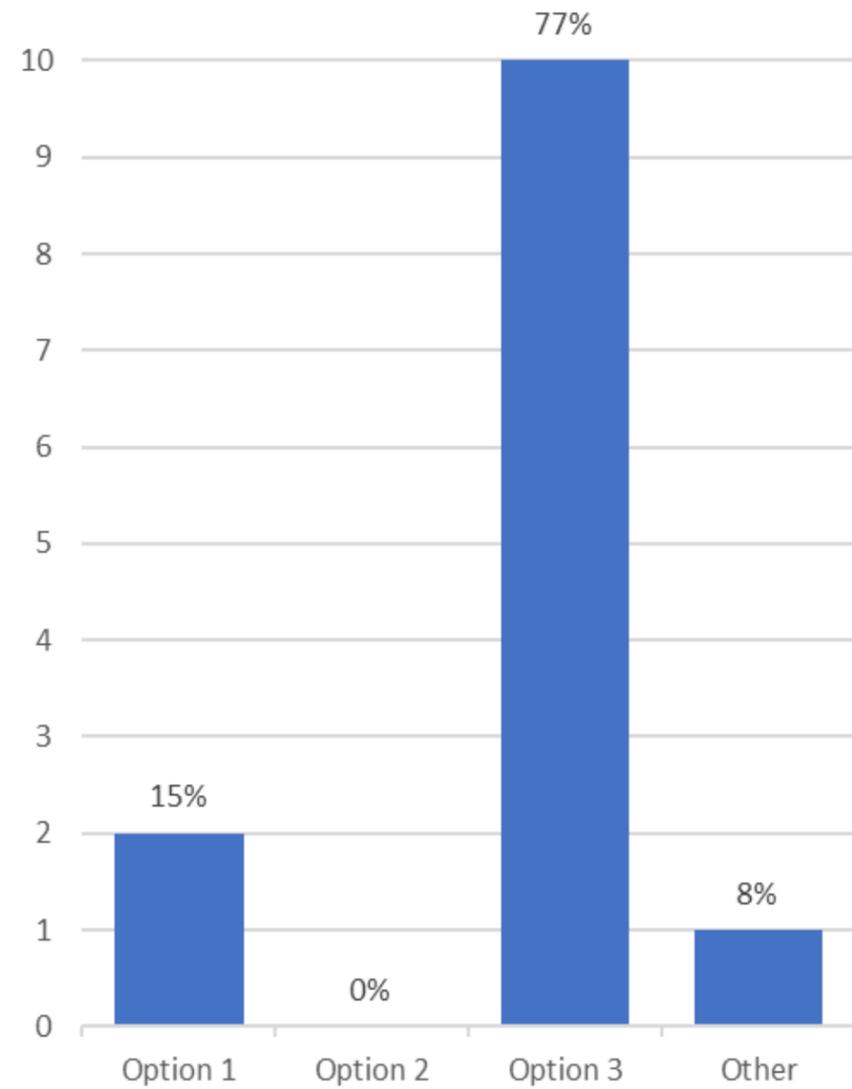


MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

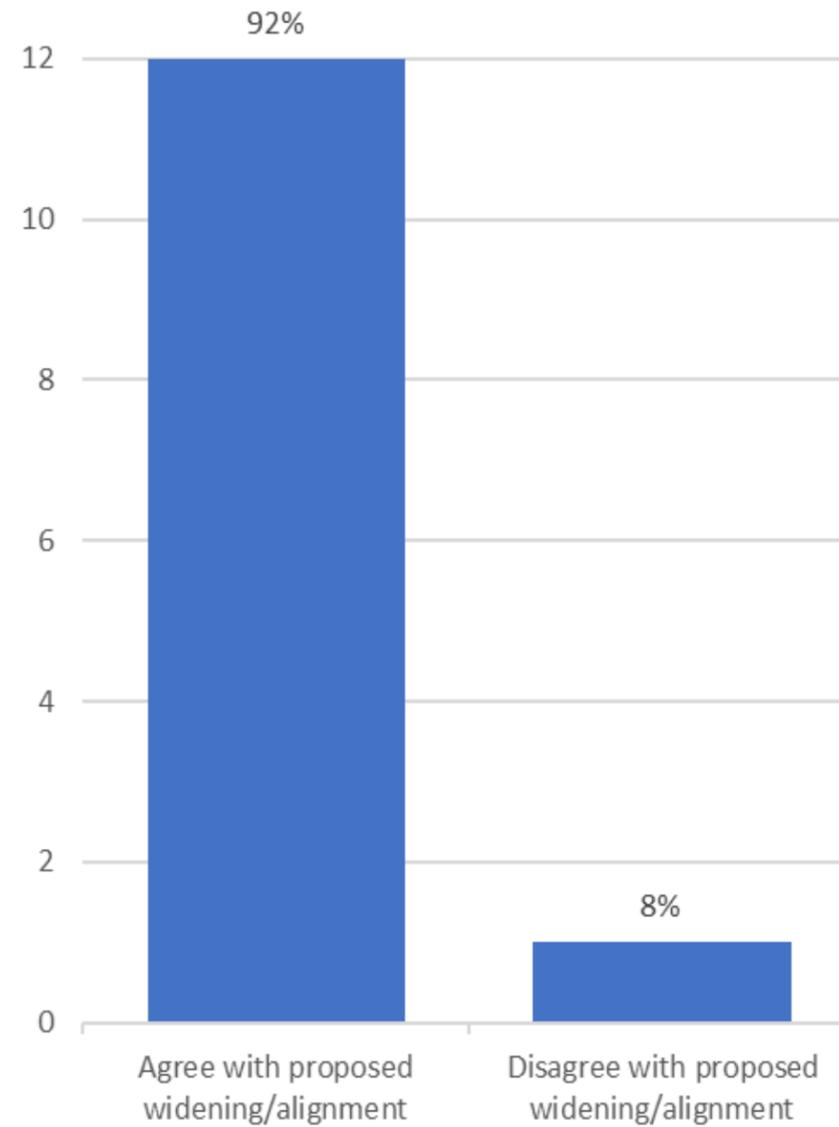
Figure 47: PIC 2 Summary – Main Street



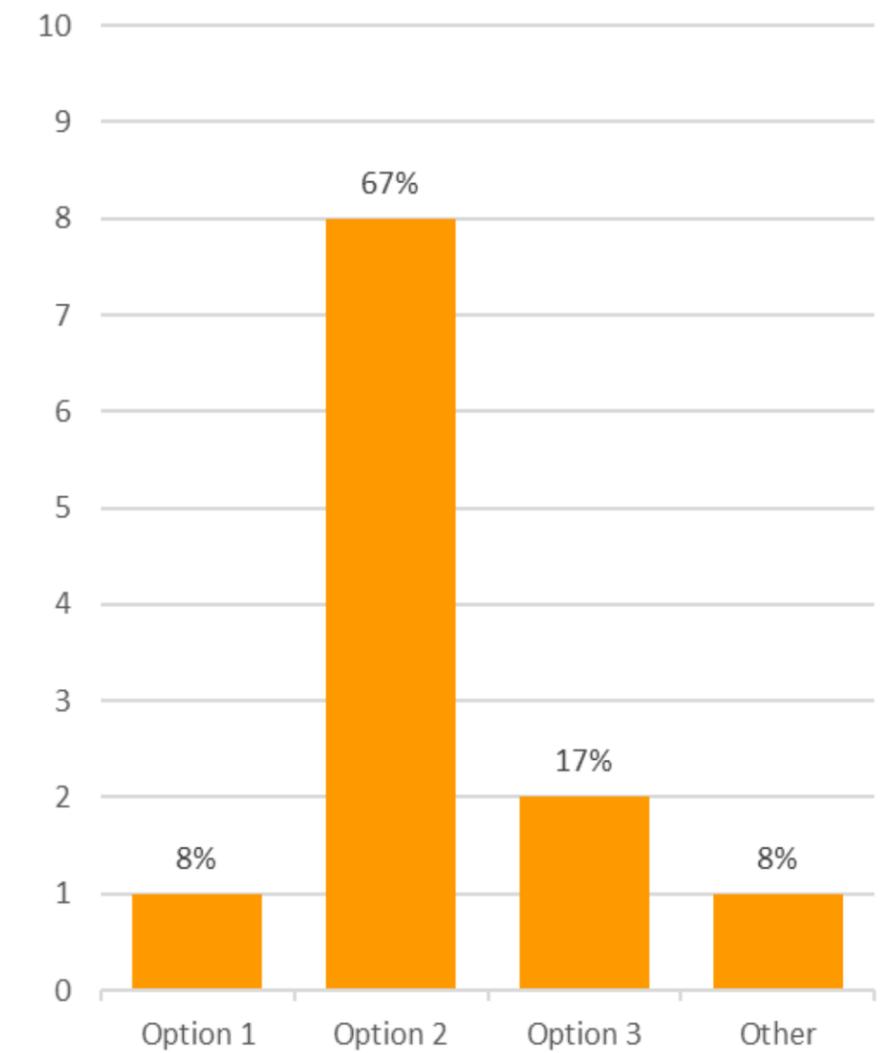
Mosley Street Alignment River to 2nd Street



Mosley Street Alignment 2nd Street to 6th Street



Mosley Street Cross-Section

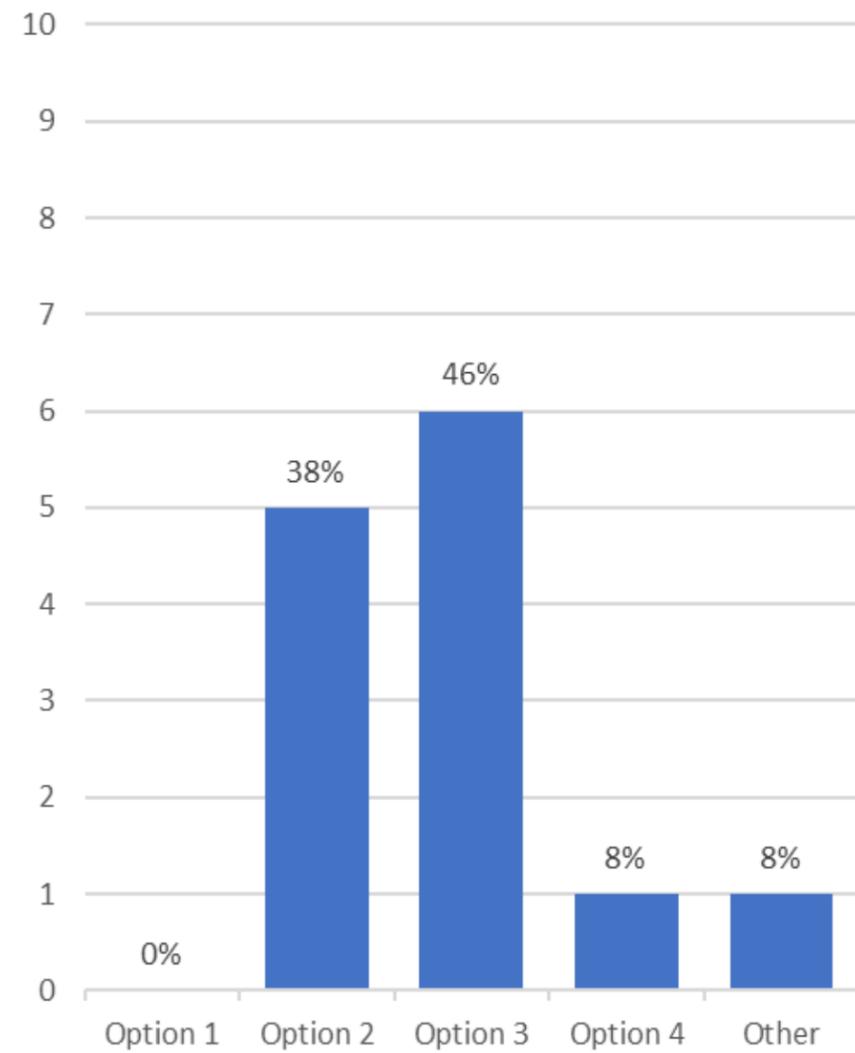


MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

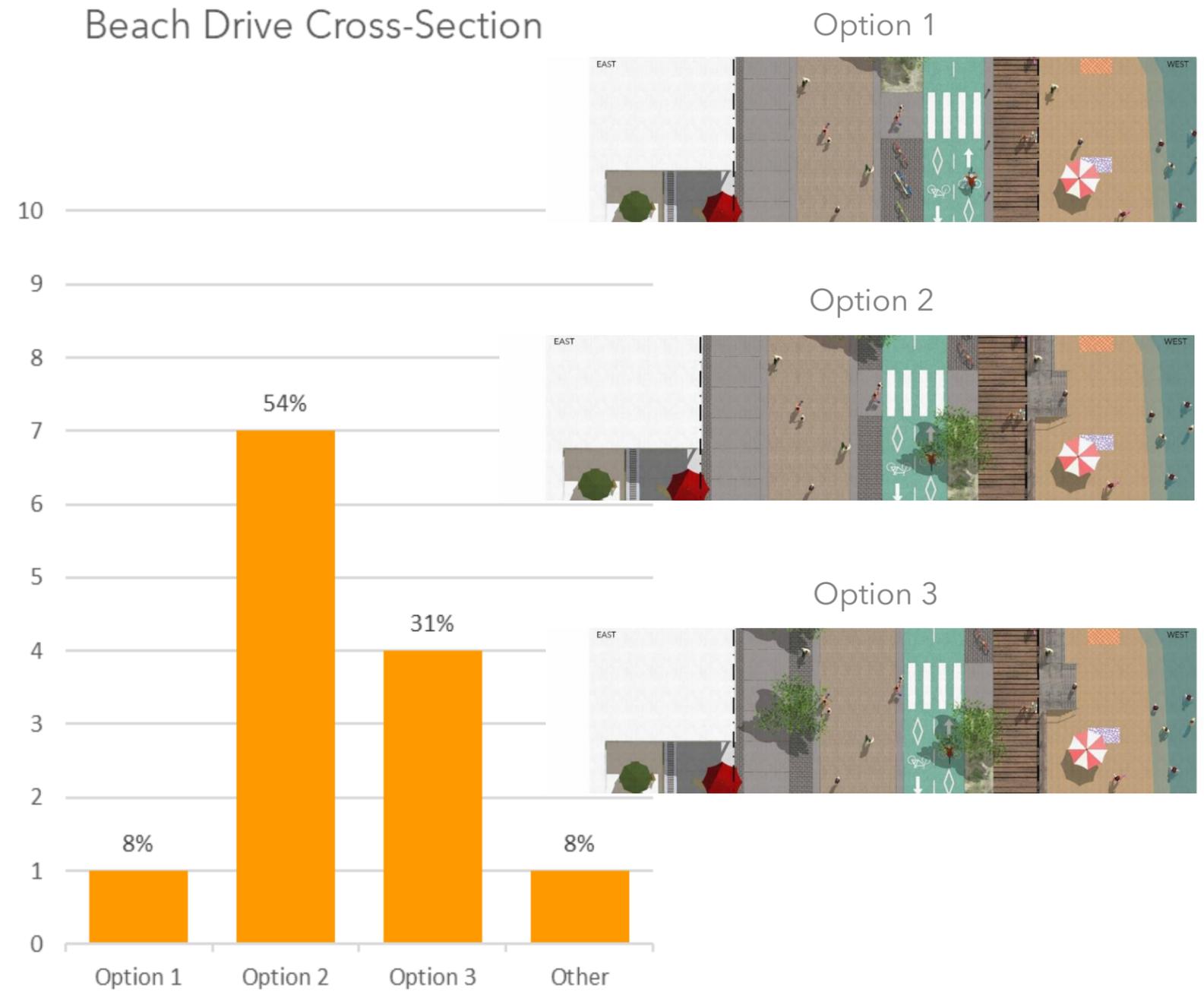
Figure 48: PIC 2 Summary – Mosley Street



Beach Drive Alignment



Beach Drive Cross-Section

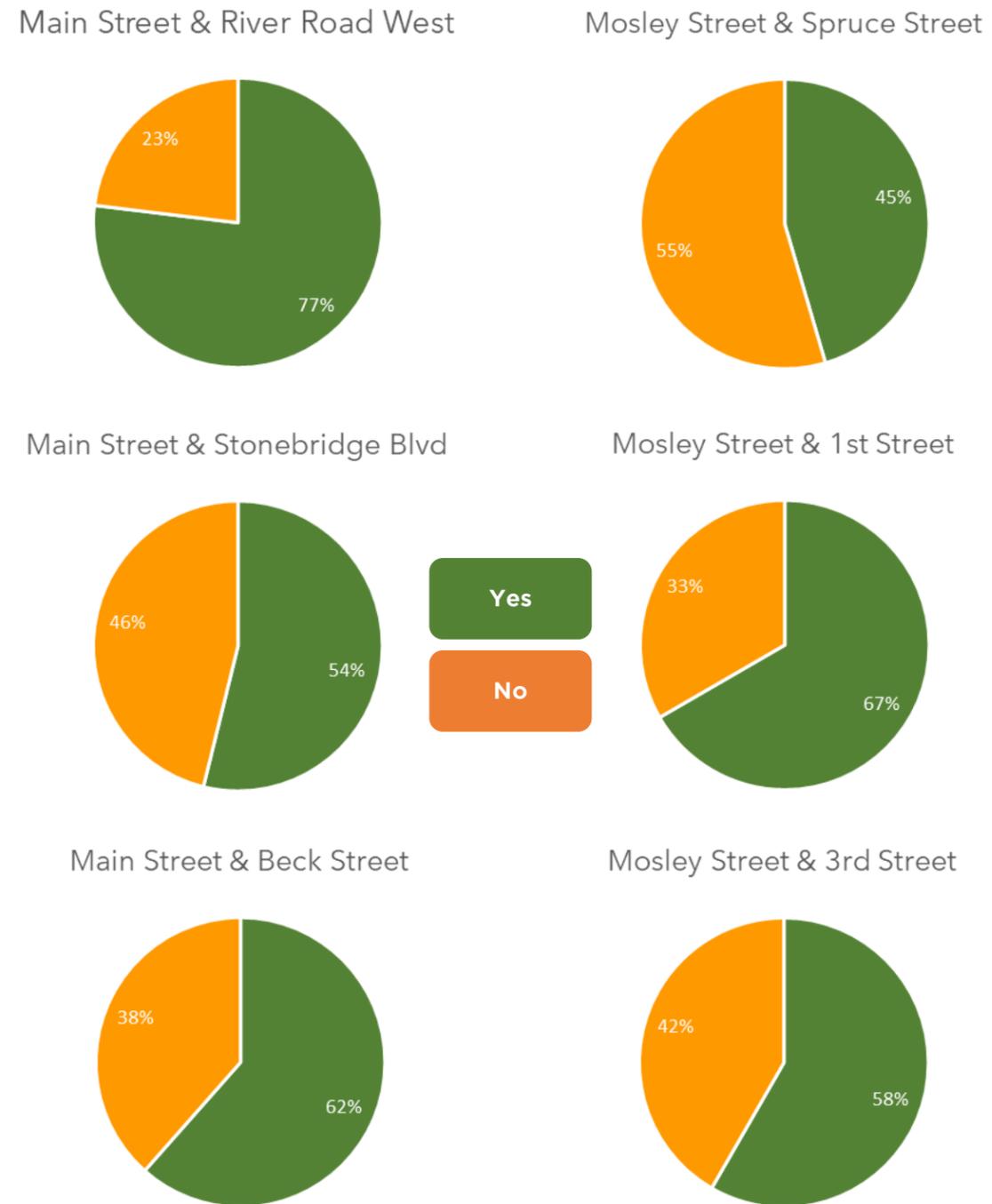


MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

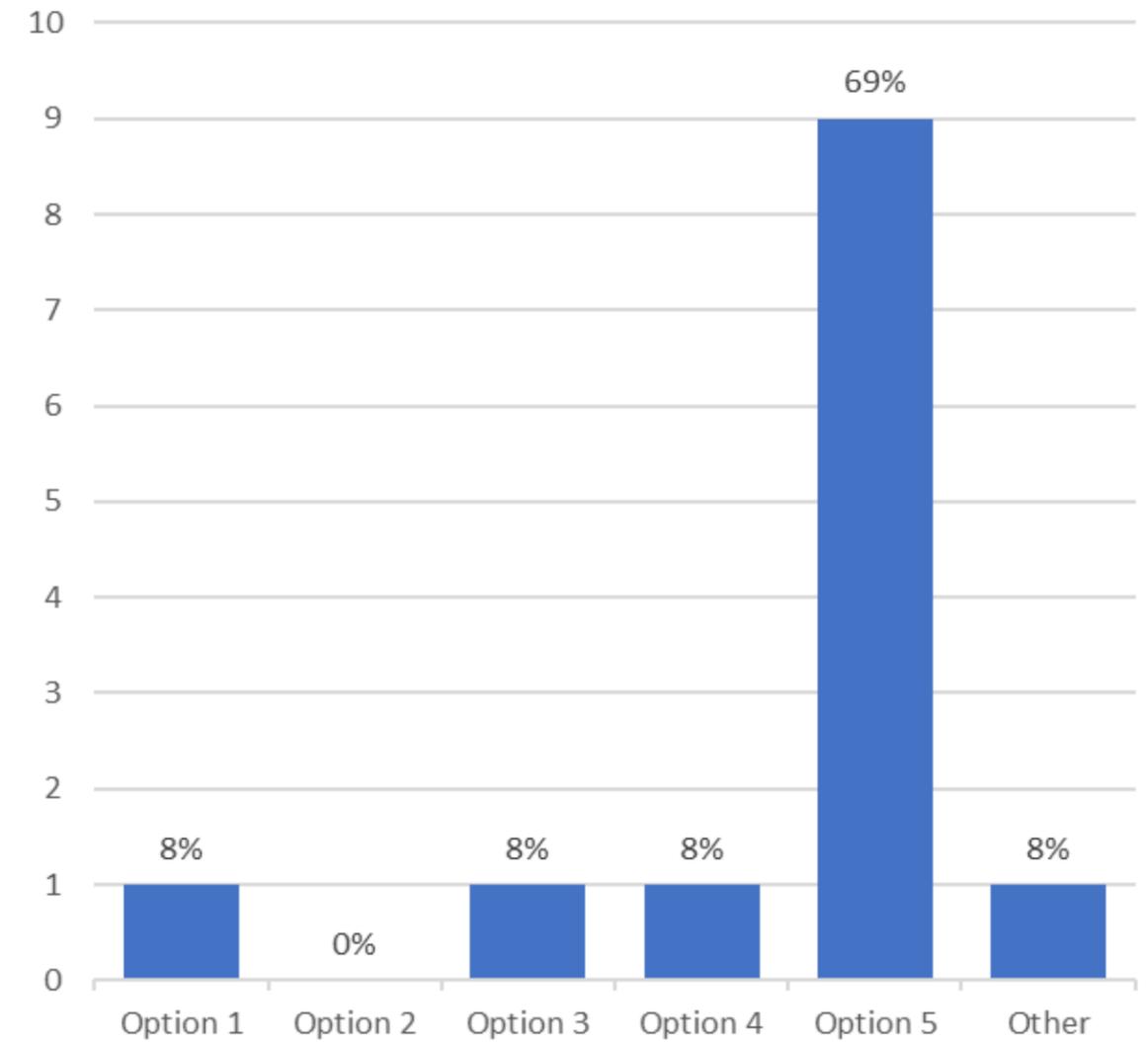
Figure 49: PIC 2 Summary - Beach Drive



Do you support the implementation of roundabouts at.....



Which configuration do you support for River Avenue Crescent and Glenwood Drive?

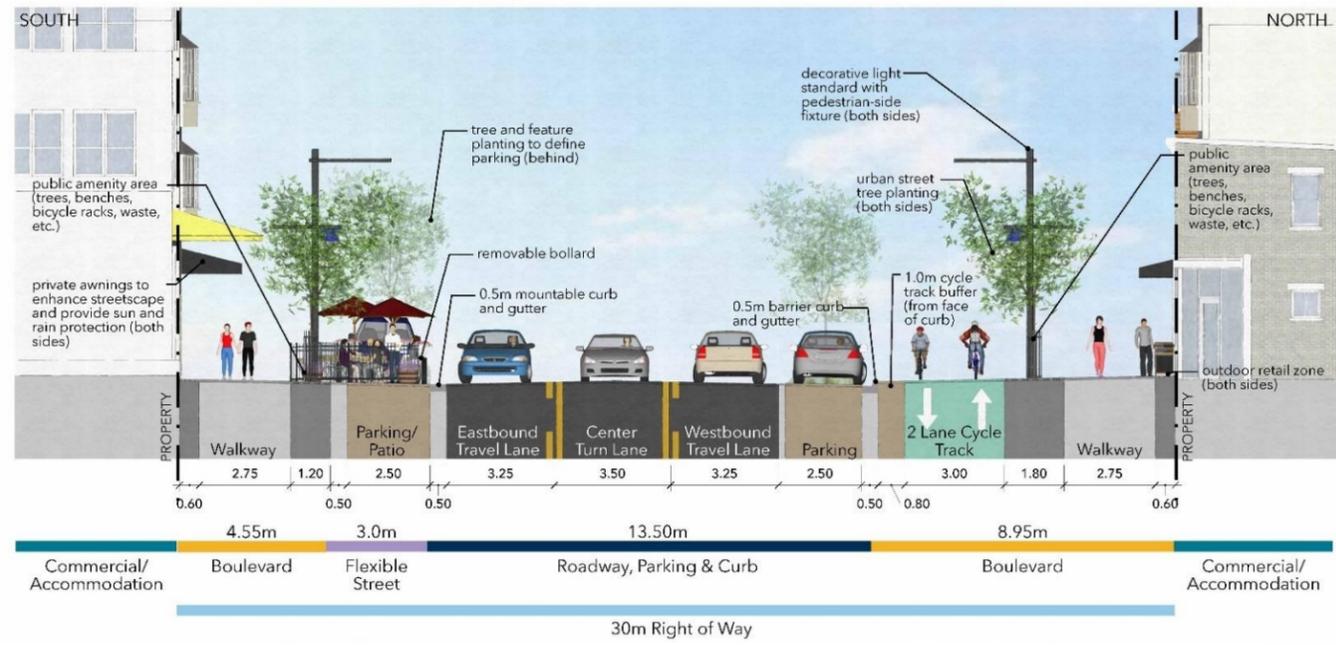


MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

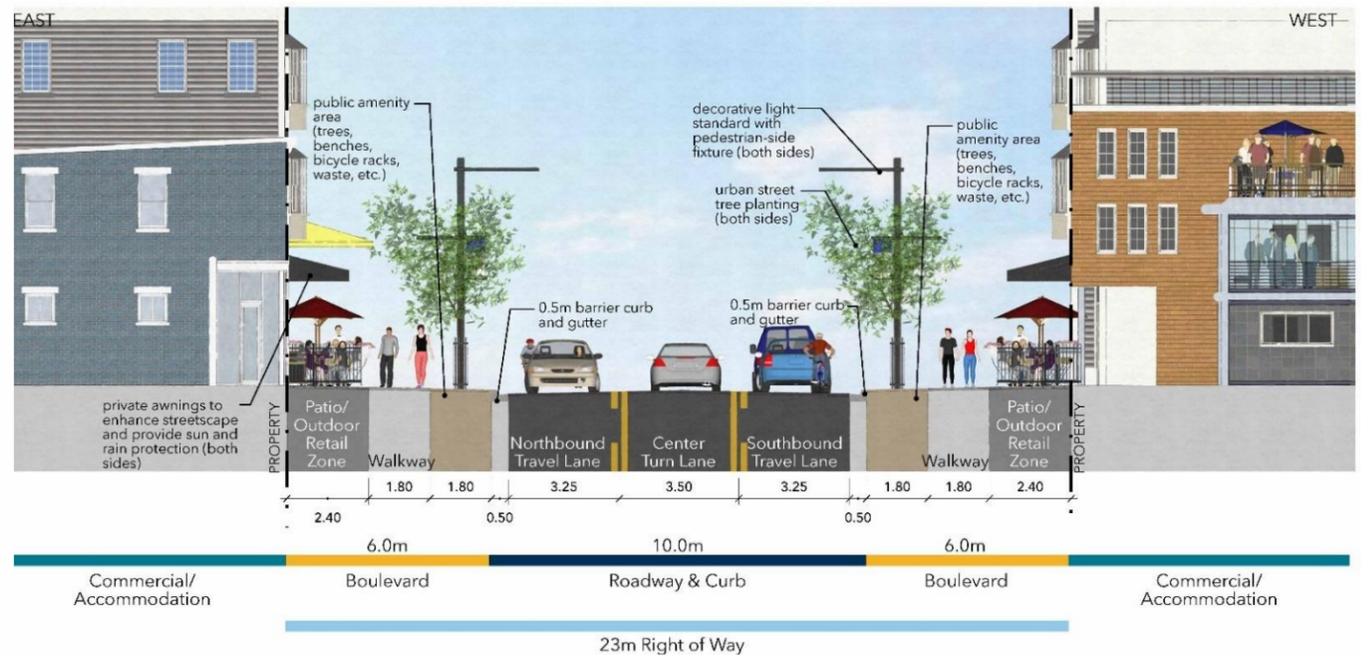
Figure 50: PIC 2 Summary - Other Considerations



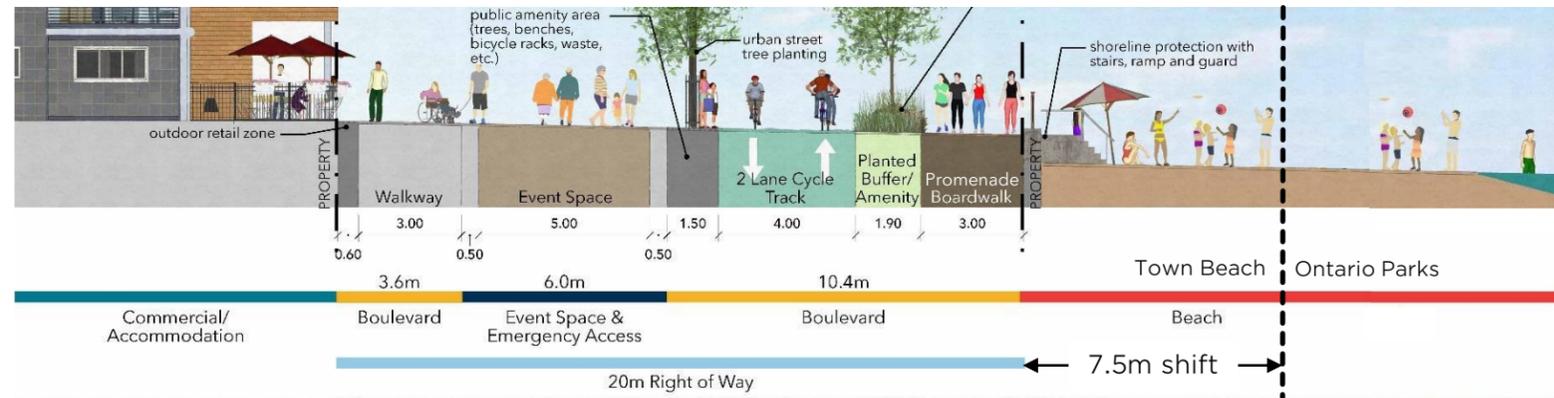
Main Street - Design Concept 3



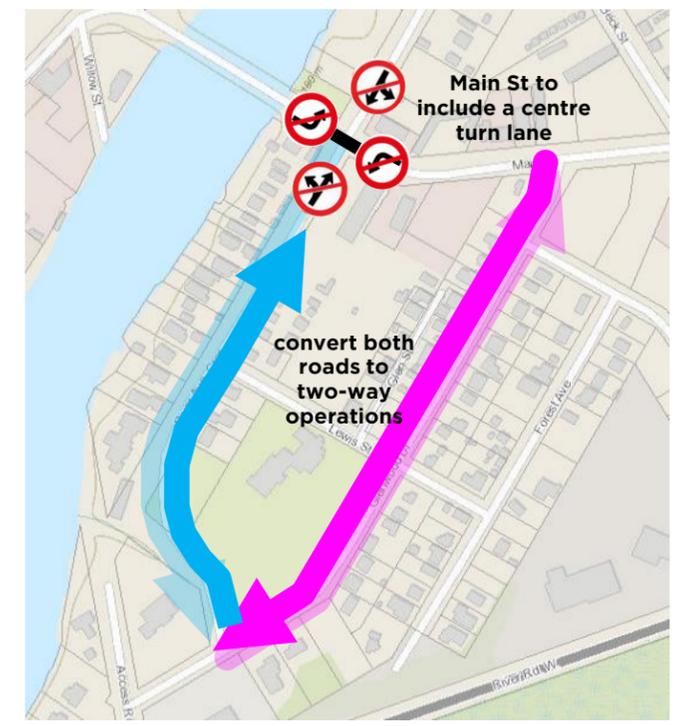
Mosley Street - Design Concept 2



Beach Drive - Design Concept 2



River Ave Cres & Glenwood Dr - Configuration 5



MAIN STREET AND BEACH AREAS 1 & 2 IMPROVEMENTS

Figure 51: Preferred Design Concepts

