Environmental Study Report

Water Street Improvements between Brock Street South and South Blair Street Municipal Class Environmental Assessment, Schedule ‘C’

Town of Whitby

60591304

October 2025

NOTE: Track changes reflect revisions made to address comments received during 30-day comment period following issue of Notice of Completion

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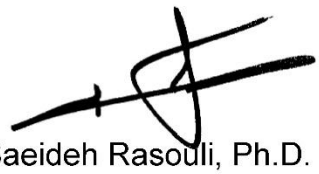
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Executive Summary

In the Fall of 2018, the Town of Whitby (the Town) and the Regional Municipality of Durham (Durham Region) initiated the Brock Street South and Water Street Schedule 'C' Municipal Class Environmental Assessment (Class EA) study aimed at investigating road modifications to Brock Street South (between Victoria Street and Front Street, and from south of the Pringle Creek Bridge to Water Street), as well as Water Street (between Brock Street South and South Blair Street). Additionally, Brookfield Residential, in partnership with the Region, commenced the Pringle Creek Bridge Schedule 'C' Class EA with the objective of improving the Pringle Creek Bridge on Brock Street South. Due to the close proximity of these two studies and the effects of the Pringle Creek Bridge Class EA on the ongoing Brock Street South / Water Street project, the Town placed the Brock Street South/Water Street Class EA on hold.

Following the completion of the Pringle Creek Bridge Class EA study in 2023, the Town resumed the Class EA process for the current project; however, the project Study Area was reduced to include only Water Street between Brock Street South and South Blair Street, and the Town was now the sole proponent of the study. The Brock Street South component was removed so that the study could focus on Water Street.

The purpose of the current Class EA study is to explore possible road modifications and improvements along Water Street from Brock Street South to South Blair Street to identify opportunities to enhance the corridor experience along the Whitby waterfront; accommodate active transportation and travel needs within the area; and address road alignment and drainage deficiencies. These improvements are part of the Town's ongoing efforts and partnerships to transform the Whitby waterfront into a destination of choice for all to enjoy. This study has been conducted in accordance with the planning and design process for a Schedule 'C' project, as outlined in the Municipal Class Environmental Assessment parent document (October 2000, amended in 2007, 2011, 2015 and 2023).

Extensive consultation was completed throughout this process that included Indigenous Communities, external agencies, municipal staff, emergency service providers, key stakeholders, and the public. In addition to developing a project webpage on the municipality's website, the municipality hosted three Community Open Houses to present information regarding the project and to obtain feedback.

Community Open House #1 occurred on November 19, 2018 utilizing an in-person format with the purpose of introducing the Project and the Class EA process, and to obtain initial input from the public and stakeholders regarding problems, opportunities and potential solutions for the project. It was well attended with 58 persons signing-in.

The municipality hosted a second in-person Community Open House #2 on May 24, 2023 with the purpose of providing an update given that the project was placed on hold following Community Open House #1 in November 2018. The Alternative Solutions under consideration to address the identified problems/opportunities were presented along with the evaluation leading to selection of the preliminary Preferred Solution (MCEA Phase 2) as well as the Road Alignment and Cross-Section concepts developed to implement the Preferred Solution (MCEA Phase 3). Twenty four people signed-in for the meeting.

The third and final Community Open House for the project was hosted by the municipality on January 10, 2024 with the purpose of presenting and gathering feedback on the identified Preliminary Preferred Road Alignment and Cross-section. The evaluation completed was also presented along with the mitigation and environmental protection strategy identified to minimize potential impacts. The Regional Municipality of Durham was also in attendance at Community Open House #3 to answer questions regarding the Class EA that was concurrently underway for the Whitby Water Supply Plant Expansion located on Water Street. A total of 17 individuals signed in at Community Open House #3.

Key public comments/concerns identified during the public meetings related to requests for the Whitby Waterfront to consist of low density residential areas with large areas of green space and natural habitat for wildlife; improved access and connectivity along Brock Street South and Water Street (e.g., separate cyclist and walking lanes on the multi-use paths, updated boardwalks, more benches for pedestrians, more parking for vehicles etc.); requests for the realignment of Brock Street South and Water Street; and concerns regarding general impacts during construction. Overall, members of public were generally satisfied with the proposed road improvements and appreciated the inclusion of active transportation and landscaping opportunities along Water Street.

As part of the Class EA process an inventory of the existing environment (i.e. technical, natural, socio-economic, and cultural) was completed to establish existing conditions and to identify any areas of environmental concern or constraint with the Study Area. This information was used in assessing potential impacts resulting from the alternatives under consideration and in developing an appropriate mitigation strategy.

Alternative Road Alignments and Cross-section concepts were generated and evaluated leading to the selection of the Preliminary Preferred Road Alignment and Cross-section which was subsequently presented at Community Open House #3. Following Community Open House #3 and the receipt of input, the Recommended Plan consisting of the Preferred Road Alignment and Cross-section was selected. However, following consultation with property owners, the Preferred Road Alignment and Cross-

section concepts were further refined leading to development of a **Preliminary Design** as follows:

- **Preliminary Design Road Alignment (i.e. Roundabout and Curve Correction):** Generally utilizes the existing road alignment and implements curve corrections of 130 metres, includes a roundabout on Water Street just east of Brock Street South, and a second roundabout at the intersection of Water Street and South Blair Street. The section of Water Street between 270 Water Street and South Blair Street is shifted 3.0 metres south as a result of property discussions with Canada Christian College (300 Water Street).
- **Preliminary Design Cross-Section:** Provides for two 3.0 Multi-Use Paths and a two-way cycle track on the south side. The cross-section was refined to provide optimal median width and boulevard space for streetscaping, hydro poles and streetlights.

Mitigation measures and commitments to future work have been identified to assist in minimizing impacts associated with the Preliminary Design. Following completion of this Class EA process the project will move forward to the detailed design phase where the design will be finalized, impacts confirmed, and mitigation refined accordingly.

Table of Contents

1. Introduction 1
1.1 Background and Purpose of the Project 1
1.2 Project Team Organization 3
1.3 Municipal Class Environmental Assessment 4
1.3.1 Legislative Changes 4
1.3.2 Municipal Class Environmental Assessment Process 5
1.3.3 Environmental Study Report and Section 16 Order 8

2. Planning Context 10
2.1 Provincial Planning Context 10
2.1.1 Provincial Policy Statement, 2024 10
2.1.2 The 2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area 11
2.1.3 Source Protection Plan 12
2.2 Regional Planning Context 12
2.2.1 Durham Region Official Plan 12
2.2.2 Durham Region Transportation Master Plan 14
2.2.3 Durham Region Cycling Plan 15
2.2.4 Central Lake Ontario Conservation Authority Policies 15
2.3 Local Planning Context 16
2.3.1 Town of Whitby Official Plan 16
2.3.2 Port Whitby Community Secondary Plan 19
2.3.3 Town of Whitby Active Transportation Plan 19
2.4 Climate Change 21
2.4.1 Ministry of the Environment and Climate Change 21
2.4.2 Durham Region Community Climate Adaptation Plan 21
2.4.3 Town of Whitby 21
2.5 Environmental Assessment Studies within the Study Area 22
2.5.1 Durham Region Pringle Creek Bridge MCEA 22
2.5.2 Durham Region Whitby Water Supply Plant Expansion 22

3. Consultation 23
3.1 Study Notifications 23
3.1.1 Project Webpage 23
3.1.2 Notice of Commencement / Community Open House #1 23
3.1.3 Notice of Community Open House #2 24
3.1.4 Notice of Community Open House #3 24
3.1.5 Preliminary Circulation of Environmental Study Report 25
3.1.6 Notice of Completion 26
3.2 Indigenous Community Consultation 26
3.2.1 External Agencies 29
3.2.2 Meeting with CLOCA, MECP, and Durham Region May 16, 2019 31

3.2.3 Key Agency Comments 32
3.2.3.1 Ministry of the Environment Conservation and Parks 32
3.2.3.2 Ministry of Transportation (MTO) 33
3.2.3.3 Ministry of Citizenship and Multiculturalism (MCM) 33
3.2.3.4 Transport Canada 33
3.2.3.5 Central Lake Ontario Conservation Authority 33
3.2.3.6 Ministry of Natural Resources and Forestry (MNRF) 35
3.2.3.7 Department of Fisheries and Oceans (DFO) 36
3.2.3.8 Impact Assessment Agency of Canada / Government of Canada 36
3.2.4 Municipal Comments 36
3.2.4.1 Durham Region 36
3.2.4.2 Town of Whitby Active Transportation and Safe Roads Advisory Committee (ATSRAC) 37
3.2.5 Stakeholder Comments 38
3.2.5.1 Brookfield Residential 38
3.2.5.2 Durham Region Cycling Coalition (DRCC) 39
3.2.5.3 Imperial Oil Limited 40
3.3 Public Consultation 40
3.3.1 Community Open House #1 40
3.3.1.1 Key Public Comments/Concerns 41
3.3.2 Community Open House #2 43
3.3.2.1 Key Comments / Concerns 44
3.3.3 Community Open House #3 47
3.3.3.1 Key Comments / Concerns 48

4. Existing Conditions 50

4.1 Technical Environment 50
4.1.1 Traffic Operations and Active Transportation 50
4.1.2 Geometrics 52
4.1.3 Elexicon Energy 52
4.1.4 Durham Region - Water Supply Plant Expansion and 270 Water Street Redevelopment 52
4.1.5 Other Utilities 53
4.2 Natural Environment 53
4.2.1 Planning Policy Areas 54
4.2.2 Natural Heritage Features & Designated Areas 54
4.2.3 Vegetation and Vegetation Communities 54
4.2.4 Breeding Birds 60
4.2.5 Wildlife and Wildlife Habitat 60
4.2.6 Significant Wildlife Habitat 61
4.2.6.1 Confirmed Habitat 61
4.2.6.2 Candidate Habitat 63
4.2.7 Species at Risk 64
4.2.8 Fish and Fish Habitat 65
4.2.9 Existing Drainage 65
4.2.10 Groundwater and Source Protection 66
4.2.11 Contamination and Waste Management 67
4.2.12 Geotechnical Information 67
4.3 Socio-Economic Environment 69

4.3.1 Land Use 69
4.3.2 Transit and Active Transportation 71
4.3.2.1 Whitby GO Station 71
4.3.2.2 Durham Region Transit 71
4.3.2.3 Active Transportation 71
4.3.3 Noise 71
4.4 Cultural Environment 71
4.4.1 Archaeological Resources 71
4.4.2 Built Heritage and Cultural Heritage Landscapes 72

5. Problem and Opportunity Statement 78

6. MCEA Phase 2 Alternative Solutions 79

6.1 Generation of Alternative Solutions 79
6.1.1 Evaluation Framework and Criteria 79
6.1.2 Evaluation of Alternative Solutions 80
6.1.3 Selection of Preferred Alternative Solution 82

7. MCEA Phase 3 Alternative Design Concepts 83

7.1 Generation of Alternative Design Concepts 83
7.1.1 Road Alignment Design Concepts 83
7.1.1.1 Road Alignment #1 (Refined): Roundabout and Curve Correction (Increase Curve Radius) 83
7.1.1.2 Road Alignment #2 (Refined): Roundabout and Curve Correction with Minor Road Realignment to the Southwest 85
7.1.1.3 Road Alignment #3: Hybrid of Alternatives 1 and 2 85
7.1.2 Cross-Section Concepts 88
7.1.2.1 Cross-section 1: Cycle Track and Multi-Use Paths 88
7.1.2.2 Cross-section 2: Multi-Use Paths 88
7.1.2.3 Cross-section 3: Enhanced Streetscaping 89
7.2 Evaluation Framework and Criteria 90
7.2.1 Evaluation of Road Alignment Concepts 90
7.2.2 Evaluation of Proposed Cross-Sections 93

8. Recommended Plan 95

8.1 Preferred Road Alignment 95
8.2 Preferred Cross-Section 95

9. Preliminary Design 98

9.1 Design Criteria 98
9.2 Preliminary Design Alignment 98
9.3 Preliminary Design Cross-Section 101
9.4 Property 101
9.5 Pavement Structure 101
9.6 Streetlighting 101
9.7 Drainage and Stormwater Management 103

9.7.1 Whitby WSP Expansion Stormwater Management Plan 103
9.7.2 Water Street Proposed Stormwater System 103
9.7.2.1 North of Water Street Drainage 103
9.7.2.2 South of Water Street Drainage 104
9.7.2.3 Road Drainage and Flooding Conditions 104
9.7.2.4 Road Runoff Treatment 105
9.8 Cost Estimate 105

10. Potential Environmental Effects, Mitigation Measures and Monitoring 107
10.1 Technical Environment 107
10.1.1 Utilities 107
10.1.2 Traffic Detours and Road Closures 107
10.1.3 Property 108
10.2 Natural Environment 109
10.2.1 Erosion and Sediment Control 109
10.2.2 Vegetation and Designated Natural Areas 109
10.2.3 Wildlife and Wildlife Habitat 116
10.2.4 Fish and Fish Habitat 122
10.2.5 Stormwater Management 123
10.2.6 Groundwater and Source Protection 124
10.2.7 Waste and Contamination 125
10.2.8 Geotechnical 126
10.3 Social Environment 127
10.3.1 Land Use & Property Impacts 127
10.3.2 Active Transportation 128
10.3.3 Noise 128
10.3.4 Air Quality 129
10.4 Cultural Environment 130
10.4.1 Archaeological Resources 130
10.4.2 Built Heritage Resources (BHR) 131

11. Climate Change 134
11.1 Potential for Project to Impact Climate Change 134
11.2 Potential for Climate Change to Impact this Project 135

12. Permits and Approvals 136

13. Summary of Environmental Effects, Mitigation and Commitments 138

14. Monitoring 149

Figures

Figure 1: Project Study Area 2
Figure 2: MCEA Planning and Design Process 6
Figure 3: Excerpt of Town of Whitby Official Plan Schedule A Land Use 17
Figure 4: Port Whitby Community Secondary Plan 20
Figure 5: Existing Water Street and Waterfront Trail 51
Figure 6: Ecological Land Classification (ELC) and Designated Areas 57
Figure 7: Existing Natural Heritage Features 62
Figure 8: CTC Source Protection Region Moderate and Low Threat Locations 68
Figure 9: Existing Land Use within Study Area 70
Figure 10: Stage 1 Archaeological Assessment Results 73
Figure 11a: Existing Built Heritage and Cultural Heritage Landscapes within Study Area 75
Figure 11b: Cultural Heritage Evaluation Report Port Whitby & Port Perry Railway Area of Study 77
Figure 12: Road Alignment #1 (Refined) – Roundabout and Curve Correction (Increased Curve Radius) 84
Figure 13: Road Alignment #2 (Refined) – Roundabout and Curve Correction with Minor Road Realignment to Southwest 86
Figure 14: Road Alignment #3 – Hybrid of Alternatives 1 and 2 87
Figure 15: Cross-section 1: Cycle Track and Multi-Use Paths 88
Figure 16: Cross-section 2: Multi-Use Paths 89
Figure 17: Cross-section 3: Enhanced Streetscaping 89
Figure 18: Preferred Road Alignment #1 (Refined) – Roundabout and Curve Correction (Increase Curve Radius) 96
Figure 19: Preferred Cross-section 1 – Cycle Track and Multi-Use Paths 97
Figure 20: Preliminary Design Alignment – Roundabout and Curve Correction (Increase Curve Radius) 100
Figure 21: Preliminary Design Cross-section for West Segment (Brock Street South to Water Street Roundabout) 102
Figure 22: Preliminary Design Cross-section for East Segment (Water Street Roundabout to South Blair Street Roundabout) 102
Figure 23: Recommended Plan Potential Natural Heritage Impacts 117

Tables

Table 1: Summary of Comments Received and Responses Provided at COH #1 for the Brock – Water Street MCEA ____ 42
Table 2: Summary of Community Open House #2 Comments Received and Responses Provided ____ 45
Table 3: Community Open House #2 Comment-Response Table Town of Whitby (Internal Departments) ____ 46
Table 4: Summary of Community Open House #3 Comments Received and Responses Provided ____ 49
Table 5: Vegetation Communities within Study Area ____ 56
Table 6: Summary of Tree Condition ____ 59
Table 7: Class EA Phase 2 Evaluation Criteria ____ 80
Table 8: Class EA Phase 2 Evaluation Matrix ____ 81
Table 9: Class EA Phase 3 Alternative Design Concepts ____ 83
Table 10: Phase 3 Road Alignment Evaluation Summary ____ 92
Table 11: Phase 3 Cross-Section Evaluation Summary ____ 94
Table 12: Summary of Cost Estimate ____ 105
Table 13: Summary of Environmental Effects, Mitigation and Commitments to Future Work ____ 139

Appendices

Appendix A. Consultation
Appendix B. Natural Environment Report
Appendix C. Arborist Report and Tree Preservation Plan
Appendix D. Drainage and Stormwater Management Report
Appendix E. Stage 1 Archaeological Assessment
Appendix F. Cultural Heritage Screening Report
Appendix G. Preliminary Design
Appendix H. Road Design Criteria
Appendix I. Traffic Operations Assessment Memo
Appendix J. Subsurface Utility Engineering Survey
Appendix K. **NEW** - Cultural Heritage Evaluation Report & Heritage Impact Assessment: Port Whitby & Port Perry Railway Corridor
Appendix L. **NEW** - Notice of Completion 30-Day Comments and Responses

1. Introduction

1.1 Background and Purpose of the Project

In the Fall of 2018, the Town of Whitby (the Town) and the Regional Municipality of Durham (Durham Region) initiated the Brock Street South and Water Street Schedule 'C' Municipal Class Environmental Assessment (Class EA) study aimed at investigating road modifications to Brock Street South (between Victoria Street and Front Street, and from south of the Pringle Creek Bridge to Water Street), as well as Water Street (between Brock Street South and South Blair Street). Additionally, Brookfield Residential, in partnership with the Region, commenced the Pringle Creek Bridge Schedule 'C' Class EA with the objective of improving the Pringle Creek Bridge on Brock Street South. Due to the close proximity of these two studies and the effects of the Pringle Creek Bridge Class EA on the ongoing Brock Street South / Water Street project, the Town placed the Brock Street South/Water Street Class EA on hold.

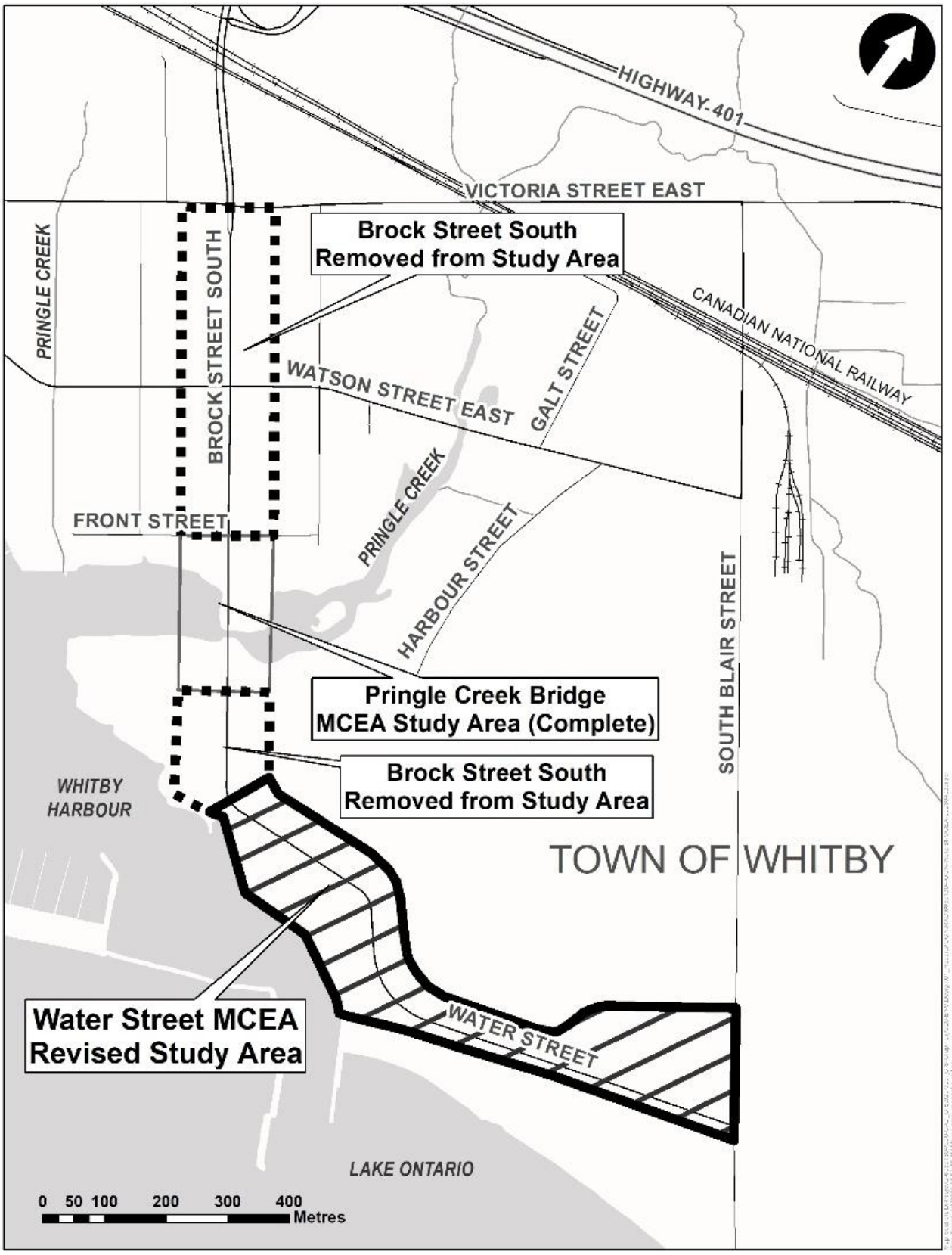
Following the completion of the Pringle Creek Bridge Class EA study in 2023, the Town resumed the Class EA process for the current project; however, the project Study Area was reduced to include only Water Street between Brock Street South and South Blair Street, and the Town was now the sole proponent of the study. The Brock Street South component was removed so that the study could focus on Water Street.

The purpose of this Class EA is to explore possible road modifications and improvements along Water Street from Brock Street South to South Blair Street to identify opportunities to enhance the corridor experience along the Whitby waterfront; accommodate active transportation and travel needs within the area; and address road alignment and drainage deficiencies. These improvements are part of the Town's ongoing efforts and partnerships to transform the Whitby waterfront into a destination of choice for all to enjoy.

Figure 1 illustrates the revisions made to the project Study Area during the course of this project and the final Study Area subject to this Class EA and as documented in this Environmental Study Report.

The study has been conducted in accordance with the planning and design process for a Schedule 'C' project, as outlined in the Municipal Class Environmental Assessment parent document (October 2000, amended in 2007, 2011, 2015 and 2023) as prepared by the Municipal Engineers Association, approved under the Ontario Environmental Assessment Act (R.S.O. 1990, c. E.18).

Figure 1: Project Study Area



1.2 Project Team Organization

This study has been undertaken as a collaborative effort between the Town and AECOM Canada ULC (AECOM). Key Project Team members for the Town and AECOM included the following individuals:

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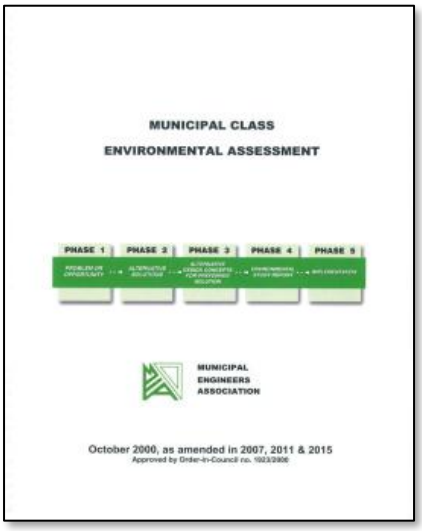
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1.3 Municipal Class Environmental Assessment

1.3.1 Legislative Changes

The Class Environmental Assessment is a planning process that has been approved under the Ontario Environmental Assessment Act for a class or group of undertakings. A Class EA follows an approved process designed to protect the environment and ensure compliance with the Environmental Assessment Act. A municipality is required to complete a Municipal Class Environmental Assessment before an infrastructure project such as the one proposed can be constructed. Projects that are identified in the Class EA can proceed to implementation without further approval under the Act provided that the approved Class EA planning process is followed.



The Municipal Class EA (MCEA) document (October 2000, as amended in 2007, 2011, 2015 and 2023) prepared by the Municipal Engineers Association provides municipalities with a phased planning procedure, approved by the Minister of the Environment, Conservation and Parks, to plan and undertake specified transportation and servicing projects that occur frequently, are usually limited in scale and have a predictable range of environmental impacts that can be addressed through application of standard mitigation.

Since initiating this Class EA there have been changes in legislation that have affected the Municipal Class Environmental Assessment process in Ontario. In June 2019, the Ministry of Municipal Affairs and Housing (MMAH) introduced Bill 108 the "More Homes, More Choice Act" in the Ontario Legislature. Bill 108 provided amendments to existing legislation that included the Environmental Assessment (EA) Act with the intent of modernizing and streamlining the EA process in Ontario. Key changes included a focus on higher risk projects, exemption of very low risk projects from the Class EA process, streamlining of approval times, and the elimination of duplication. The amendments resulted in an exemption of Schedule 'A' and 'A+' projects, a limited scope and timeline for Part II Order requests and changes in the Project Schedule classification for various undertakings.

In addition, the COVID-19 Economic Recovery Act (Bill 197) was passed in July 2020 that also amended the Environmental Assessment Act. Bill 197 resulted in two key changes that included an amendment to the Part II Order Request process and the granting of authority to the MECP to create new regulations that will ultimately replace Class EAs with an expedited Environmental Assessment (EA) process. In accordance

with Bill 197, the Part II Order process is now available only for concerns related to Aboriginal or Treaty Rights. An additional 30-day window is now also provided for the MECP to decide what action should be taken in response to a concern raised (i.e., disregard, elevate project, or approve with conditions).

The Municipal Engineers Association subsequently revised the Municipal Class Environmental Assessment parent document in March of 2023 to reflect the above noted changes in legislation.

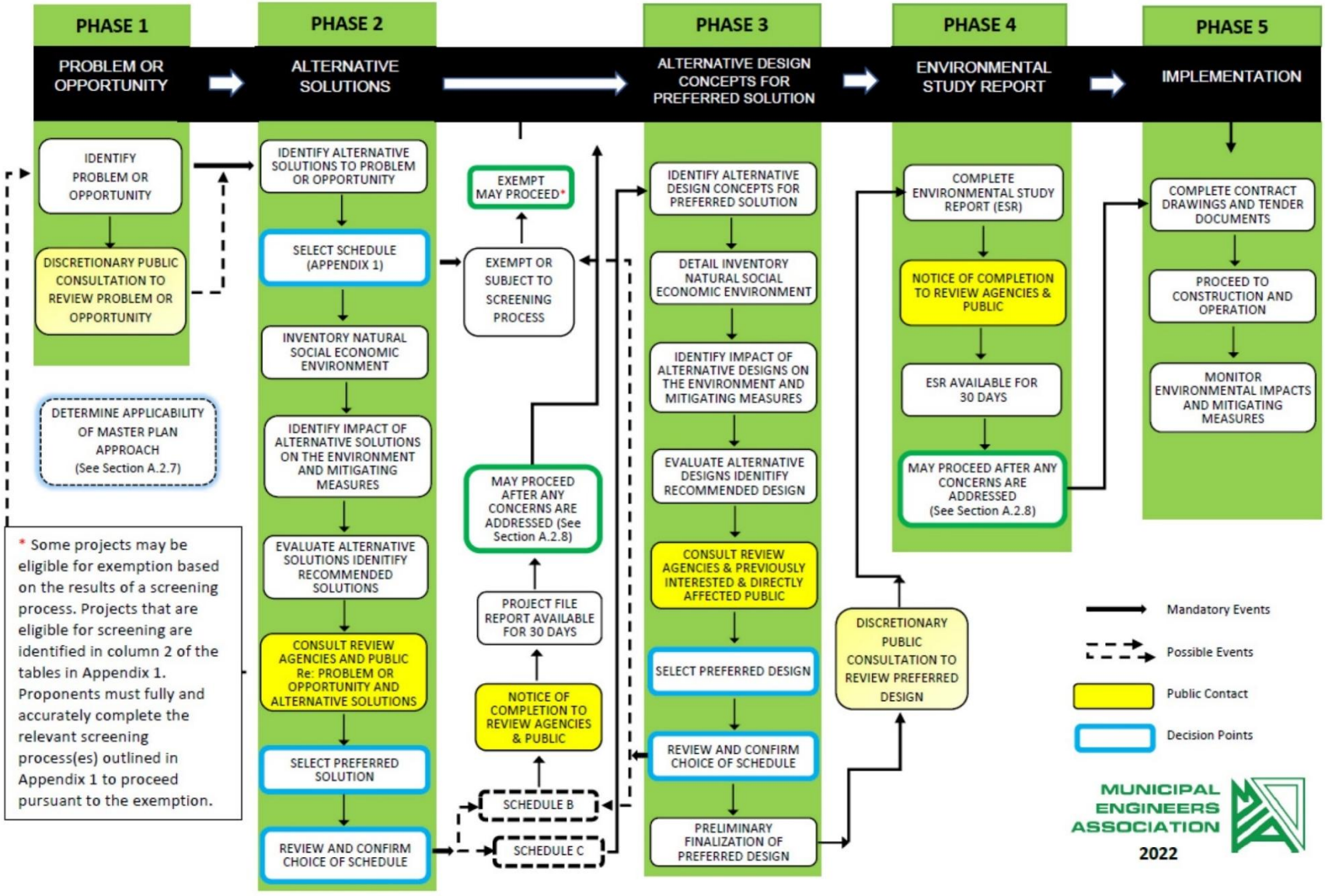
1.3.2 Municipal Class Environmental Assessment Process

As illustrated in **Figure 2** the Municipal Class EA process consists of five phases and the application of these phases depends on the Class EA Schedule that applies to a project.

Since undertakings carried out by municipalities can vary in their environmental impact, projects are classified as one of the following which establishes the level of the Municipal Class EA process to be completed:

- **Exempt Projects**
  Formerly classified as Schedule 'A' and 'A+', these projects include various municipal maintenance, operational activities, rehabilitation works, minor reconstruction or replacement of existing facilities, and new facilities that are limited in scale and have minimal adverse effects on the environment. These projects are exempt from the requirements of the Environmental Assessment Act.
- **Eligible for Screening to Exempt**
  Some projects may be eligible for exemption based on the results of a screening process. Proponents may choose to complete the applicable screening process to determine whether their project is eligible for exemption from the EAA or proceed with the applicable Schedule 'B' or 'C' process. Proponents must fully and accurately complete the relevant screening process(es) outlined in MCEA document to proceed pursuant to the exemption.
- **Schedule 'B'**
  These projects have the potential for some adverse environmental effects. The proponent is required to undertake the first two phases of the MCEA process. At the end of Phase 2, a Project File Report is prepared to document the planning process completed and made available for review by any interested person or party. If there are no outstanding concerns, then the proponent may proceed to implementation once the regulatory process has been completed. Schedule 'B' projects generally include improvements and minor expansions to existing facilities or smaller new projects.

Figure 2: MCEA Planning and Design Process



- **Schedule 'C'**
  Such projects have the potential for significant adverse environmental effects and must proceed under the full planning and documentation (Phases 1 to 4) procedures specified in the Municipal Class EA document. Schedule 'C' projects require that an Environmental Study Report be prepared and filed for a 30-day public review period. If there are no outstanding concerns, the proponent may proceed to implementation once the regulatory process has been completed. Schedule 'C' projects generally include the construction of new facilities and major expansions to existing facilities.

Based on the works proposed, the subject project constitutes a Schedule 'C' project that requires completion of Phases 1 to 4, with implementation during Phase 5. The phases and applicable tasks are summarized as follows:

- **Phase 1 – Problem or Opportunity:** Identify the Problems or Opportunities to be addressed and the need and justification.
- **Phase 2 – Alternative Solutions:** Identify Alternative Solutions to address the problems/opportunities; inventory the existing environment (physical, natural, socio-economic, & cultural); evaluate the alternative solutions; obtain input from the public, agencies, and Indigenous Communities; and select the Preferred Solution.
- **Phase 3 – Alternative Design Concepts for the Preferred Solution:** Develop Alternative Design Concepts to implement the Preferred Solution; evaluate the alternatives and their potential for impact; consult with the public, agencies, key stakeholders, and Indigenous Communities; select the Preferred Design; and identify a mitigation strategy to minimize potential environmental impacts.
- **Phase 4 – Environmental Study Report:** Document the Class EA process completed in an Environmental Study Report, including a summary of the rationale, and the planning, design and consultation process as established through Phases 1 to 3 above and make such documentation available for a 30-day review period; and,
- **Phase 5 – Implementation:** Complete contract drawings and documents, proceed to construction and operation, and monitor construction for adherence to environmental provisions and commitments.

The Class EA process serves as a mechanism for understanding the economic, social and environmental concerns when implementing municipal infrastructure projects. It incorporates the following key principles of EA planning:

- Consultation with affected parties early in the process and throughout its duration, such that the planning process is a co-operative venture.

- Consideration of a reasonable range of alternatives, both functionally different 'alternatives to' and 'alternative methods' of implementing the solution.
- Identification and consideration of the effects of each alternative on all aspects of the environment.
- Systematic evaluation of alternatives in terms of their advantages and disadvantages, to determine their net environmental effects; and,
- Provision of clear and complete documentation of the planning process, to allow 'traceability' of decision-making with respect to the project.

1.3.3 Environmental Study Report and Section 16 Order

In accordance with the Municipal Class Environmental Assessment Schedule 'C' process, this Environmental Study Report has been prepared to document the planning process undertaken including details of the study recommendations as well as potential impacts and mitigation measures. A Notice of Completion was issued indicating the availability of the Environmental Study Report for a 30-day public review period from **November 3, 2025 to December 19, 2025**.

This Environmental Study Report is being made available for review on the Town's website at connectwhitby.ca/WaterStreet with a hard copy also available at the **Town Hall at 575 Rossland Road East** and the **Whitby Central Public Library at 405 Dundas Street West** during regular business hours.

Interested persons may provide written comments to the following members of the Project Team by **December 19, 2025**:

- **Kevin Phillips, P.Eng.**
  Project Manager
  AECOM Canada ULC
  105 Commerce Valley Drive West, 8th Floor
  Markham, Ontario L3T 7W3
  Telephone: 905.886.7022
  Email: Kevin.Phillips@aecom.com
- **Horace Look, P.Eng.**
  Program Manager
  Town of Whitby
  575 Rossland Road East
  Whitby, Ontario L1N 2M8
  Telephone: 905.430.4935
  Email: lookh@whitby.ca

In addition, a request may be made to the Ministry of the Environment, Conservation and Parks for an order imposing additional conditions or requiring an individual environmental assessment may be made on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests should include your full name and contact information.

Requests should specify what kind of order is being requested (additional conditions or an individual environmental assessment), explain how an order may prevent, mitigate or remedy potential adverse impacts, and any supporting information. The request should be sent in writing by mail or by email to the following with a copy to Mr. Horace Look at the Town:

- **Minister of Environment, Conservation and Parks**
  Ministry of Environment, Conservation and Parks
  777 Bay Street, 5th Floor
  Toronto, Ontario M7A 2J3
  E-mail: minister.mecp@ontario.ca
- **Director, Environmental Assessment Branch**
  Ministry of Environment, Conservation and Parks
  135 St. Clair Avenue West, 1st Floor
  Toronto, Ontario M4V 1P5
  E-mail: EABDirector@ontario.ca

Please visit the ministry's website for more information on requests for orders under section 16 of the Environmental Assessment Act at: https://www.ontario.ca/page/class-environmental-assessments-part-ii-order. Please note that information related to this project will be collected in accordance with the Municipal Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments received will become part of the public record and may be included in study documentation prepared for public review.

2. Planning Context

This section provides a summary of the provincial, regional, and local plans and policies that were reviewed to ensure the consistency of this undertaking with the policy framework that guides land use planning and infrastructure development in Ontario.

2.1 Provincial Planning Context

There are a number of provincial plans and policies that govern the development of both the Regional and Municipal Official Plans. At the initiation of the project these included the Provincial Policy Statement, 2020 (PPS), the Growth Plan for the Greater Golden Horseshoe 2020, and the 2041 Regional Transportation Plan. However, since initiating this study, an updated Provincial Policy Statement came into effect on October 20, 2024 that provides a streamlined province-wide land use planning policy framework that replaces both the earlier Provincial Policy Statement (2020) and A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2019). It is now one single land use policy document that also builds upon housing-supportive policies from both the earlier documents.

The relevant plans and policies have been reviewed and are summarized below as they relate to this Project.

2.1.1 Provincial Policy Statement, 2024

The Provincial Policy Statement is issued under the authority of S. 3 of the Planning Act, R.S.O. 1990, c. P.13. It provides direction on matters of provincial interest related to land use planning and development and promotes the provincial planning system. The amended document came into effect on October 20, 2024, and applies to planning decisions made on or after that date. As indicated, the Provincial Planning Statement, 2024 replaces both the preceding 2020 Provincial Policy Statement and the 2019 Growth Plan for the Greater Golden Horseshoe.

While there have been amendments, the document continues to include policies regarding key issues that affect communities, such as:

- building more housing where it's needed
- making land available for development
- creating opportunities for economic development and job creation
- planning for the appropriate transportation, water, sewer and other infrastructure necessary to accommodate current and future needs

- protecting the environment and important resources including farmland, water, archaeology, cultural heritage, mineral aggregates and petroleum
- engaging with Indigenous communities to facilitate knowledge-sharing, inform decision-making in land use planning and protect Aboriginal and treaty rights
- protecting people, property and community resources by directing development away from natural or human-made hazards, such as flood prone areas.

The Provincial Policy Statement includes several initiatives and policies governing transportation systems and infrastructure corridors directing that transportation systems facilitate the movement of people and goods in a safe and energy efficient manner to address projected needs. It promotes multi-model transportation (transit, pedestrian, cycling) and indicates that transportation and land use considerations be integrated in all stages of the planning process.

The Provincial Policy Statement, 2024 identifies 29 municipalities that are considered to be "large and fast growing". Large and fast-growing municipalities are encouraged to plan for a target of 50 residents and jobs per gross hectare within designated growth areas. Neither the Town of Whitby nor Durham Region are included on the list of large and fast growing municipalities.

The amendments as reflected in the Provincial Policy Statement, 2024 demonstrate a focus on building homes and associated infrastructure as well as strategic growth that is consistent with the Province's goal to provide 1.5 million homes by 2031.

2.1.2 The 2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area

Metrolinx, the Government of Ontario regional transportation agency, is tasked with delivering long-term sustainable transportation for the Greater Toronto Hamilton Area. The Metrolinx 2041 Regional Transportation Plan was published in 2018 and builds upon its predecessor the "The Big Move", and identifies a plan for establishing an integrated, multi-modal regional transportation system that will serve all people of the Greater Toronto Hamilton Area. While the Regional Transportation Plan has many goals and objectives for the future of transportation, the most noticeable goals include improving transportation choices, providing comfort and convenience, promoting an active and healthy lifestyle, providing safe and secure mobility, and reducing dependence on non-renewable resources by way of increasing the number of trips taken by transit, walking and cycling.

Whitby GO Station is a commuter rail station located at 1350 Brock Street South, just west of the intersection of Brock Street and Victoria Street, north of the Study Area. The

station primarily serves GO transit's Lakeshore East Line, which connects Whitby to Downtown Toronto's Union Station. It also serves as a hub for several local and regional bus routes operated by GO Transit and Durham Region Transit (Bayly Priority Bus, and Brock Street/ Baldwin Priority Bus).

2.1.3 Source Protection Plan

The purpose of the Ontario Clean Water Act (2006) is to protect drinking water at the source and to safeguard human health and the environment. The Act aims to protect existing and future drinking water sources and ensure that municipal drinking water supplies are protected by the development of a watershed-based Source Protection Plan.

A Source Protection Plan includes policies to address significant drinking water threats and specifies how the risk level of identified threats is to be reduced, and how future threats will be avoided. Source Protection Plans identify vulnerable areas within each municipality that include Wellhead Protection Areas, Intake Protection Zones, Highly Vulnerable Aquifers, Significant Groundwater Recharge Areas, Event-based modelling areas, and Issue Contributing Areas.

The project Study Area is located within the Central Lake Ontario Source Protection Area that is part of the broader Credit Valley-Toronto and Region-Central Lake Ontario (CTC) Source Protection Region. The CTC Source Protection Plan applies to all three Source Protection Authorities in the Region: Credit Valley, Toronto and Region and Central Lake Ontario.

The Durham Region Whitby Water Supply Plant (301 Water Street) is protected by an intake protection zone. As part of the Class EA process, consideration is given to the potential for the works proposed to adversely impact the quality or quantity of a drinking water source as well as the policies and guidelines of the applicable Source Protection Plan.

2.2 Regional Planning Context

2.2.1 Durham Region Official Plan

The Region initiated Envision Durham, the Municipal Comprehensive Review of the Region's Official Plan in 2019 which was subsequently adopted by Regional Council in May 2023. Envision Durham, Adopted Official Plan, as Amended (May 2023) contains policies that guide land use development in the Region to 2051. The document provides policies to ensure an improved quality of life and secure the health, safety, convenience and well-being of present and future residents of the Region.

As of January 1, 2025, as a result of Bill 23: *More Homes Built Faster Act,* the Region of Durham has now been identified by the province as an "upper-tier municipality without planning responsibilities". Bill 23 amended the Planning Act to distinguish between an "upper tier municipality with planning responsibilities" and an "upper tier municipality without planning responsibilities." The definition of the latter was later revised prior to coming into effect by Bill 185*, Cutting Red Tape Build More Homes Act* (June 6, 2024). Bill 185 in addition to the earlier Bill 162: *Get It Done Act*, 2024 were implemented with the focus of streamlining approvals and increasing housing and infrastructure development across the province.

The designation of Durham Region as an "upper-tier municipality without planning responsibilities" means that the Region no longer has the authority or statutory requirement to adopt official plans or amendments, approve lower-tier plans or amendments, approve plans of subdivision, or appeal planning decisions, as these are now the responsibility of the eight lower-tier municipalities within the Region. While this does not mean the elimination of Durham Region's upper-tier planning function, the Town of Whitby as well as the other affected municipalities will now assume approval authority for all Planning Act decisions, except as determined by the Ministry of Municipal Affairs and Housing.

The new Regional Official Plan, Envision Durham, has now become part of the Area Municipal Official Plans of Durham's eight municipalities which means that each area municipality, including the Town of Whitby, has the responsibility for the Regional Official Plan as it pertains to each municipality which includes repealing or amending the document. The Town of Whitby is now undertaking its five-year Official Plan Review that will establish policies to manage how Whitby should grow between now and 2051. Through this Official Plan update the Town will be incorporating the relevant policies of Envision Durham.

The current Envision Durham *Map 1 Regional Structure – Urban and Rural Systems*, designates land use adjacent the west half of the project Study Area as Community Areas, transitioning into Waterfront Areas, with a smaller portion designated as Employment Areas to the east. Community Areas are intended primarily for housing purposes although in some locations limited retailing, office and employment uses may also be permitted. Waterfront Areas are a component of the Region's Greenland System which consists of open spaces to ensure ecological health and renewal, protect significant habitats, and provide opportunities for recreational activities. The Official Plan directs that waterfront development shall not negatively impact key natural heritage or hydrologic features. Employment Areas facilitate the development of industries and businesses that require separation from sensitive land uses, with the aim of guiding their development to obtain the greatest benefit for the Region. The Region advocates

for sustainable design and the development of transit-supportive, compact urban form, while also seeking to minimize parking in Employment Areas, where appropriate.

Map 3b Road Network identifies Water Street as a Type 'C' Arterial. A Type 'C' Arterial designation typically refers to a roadway that connects arterials and collectors with limited local road access. These arterials slightly prioritize traffic movement over land access, and primarily serve intra-municipal trips. Type 'C' arterials typically handle between 4,000 and 20,000 Average Annual Daily Traffic (AADT) and offer uninterrupted flow except at traffic control signals and pedestrian crossings. Under the Official Plan, the speed limit for Type 'C' arterials is typically 50 to 60 kilometres per hour in Urban Areas. Generally, there are no restrictions to goods movement along Type 'C' arterials.

Official Plan Policy 8.4.16 acknowledges the necessity to enhance east-west transportation linkages south of Highway 401. Additionally, it emphasizes the significance of Waterfront Areas as 'people places" and providing public access to the waterfront and open spaces. As such, the potential for an east-west connection between South Blair Street and Thickson Road, south of Victoria Street in the Town of Whitby, is going to be considered in conjunction with any proposals for redeveloping the existing uses in the Employment Area, east of Blair Street South. The Durham Region Transit Priority and Goods Movement Network does not intersect with Water Street.

2.2.2 Durham Region Transportation Master Plan

The Durham 2017 Transportation Master Plan (TMP) is a strategic planning document that defines the policies, programs, and infrastructure modifications necessary to accommodate anticipated transportation demands up to the year 2031 and beyond, aligning with the development pattern outlined in the Regional Official Plan. The document encompasses all modes of transportation, including walking, cycling, public transit, auto and goods movement. It specifies seven strategic directions which include goals and actions focused on land use and transportation, public transit, walking and cycling, roads, among others.

The Durham Transportation Master Plan aims to establish a comprehensive region-wide cycling network that connects people to destinations with safe and comfortable facilities. The Waterfront within the Study Area is designated as part of the Regional Trail network, which supports a variety of users, including cyclists, and provides connections to Cycling Networks. A proposed linkage as part of the Durham Regional Trail Network is also identified.

2.2.3 Durham Region Cycling Plan

The Regional Cycling Plan 2021 provides a region-wide cycling network serving both urban and rural areas that identifies actions and initiatives that will help the Region and area municipalities work together to provide a high-quality, well connected, and safe cycling network that accommodates people of all ages and abilities.

The vision and goals for the Regional cycling network include: establishing support for strategic direction at the regional level; integration of new cycling trends and lessons learned; support for co-ordination between the Region and its member municipalities and key partners; alignment with accepted guidelines and standards; and establishing support through a comprehensive and meaningful engagement strategy.

The Region is committed to supporting healthy and sustainable lifestyles by investing in cycling and pedestrian infrastructure to encourage active transportation. Cycling is viewed as a vital mode of transportation that not only promotes mobility but also contributes to community health, road and trail safety, and environmental sustainability.

The Waterfront Trail has been identified as an Existing Primary Cycling Network within the Study Area while a planned Primary Cycling Network is designated along Brock Street South.

2.2.4 Central Lake Ontario Conservation Authority Policies

The Town of Whitby is located within the Central Lake Ontario Conservation Authority (CLOCA) and is subject to CLOCA's plans and policies. CLOCA is a public organization established under the Conservation Authority Act and is governed by a Board of Directors. The purpose of the Conservation Act (CA) Act is *"to provide for the organization and delivery of programs and services that further the conservation, restoration, development and management of natural resources in watersheds in Ontario."* (CA Act Part I, 0.1). Under the provisions of the EA Act, CLOCA reviews and comments on Class and Individual Environmental Assessments that occur within their watershed providing local natural hazard and watershed input.

CLOCA is guided by a Strategic Plan, which provides the basis for their policies and guidelines as identified in the CLOCA Planning and Procedural Document (PPD). The PPD contains general and specific policies intended to provide guidance for land development and infrastructure projects taking place within the CLOCA watershed.

In accordance with Section 3.6 of the PPD infrastructure and transportation projects are to demonstrate that the undertaking will not result in impediment to wildlife movement, stream flow, fish movement or aquatic habitat. Green Infrastructure that provides ecological and hydrological benefits such as natural heritage features/systems,

parklands, stormwater management, urban forests, permeable surfaces, green roofs, etc. is also encouraged. Stormwater management is to be completed in accordance with CLOCA's technical guidelines.

CLOCA was consulted as part of this Class EA process and their input as regards to stormwater management, ecology, working in proximity to wetlands, and etc. is further detailed in later sections of this report.

2.3 Local Planning Context

2.3.1 Town of Whitby Official Plan

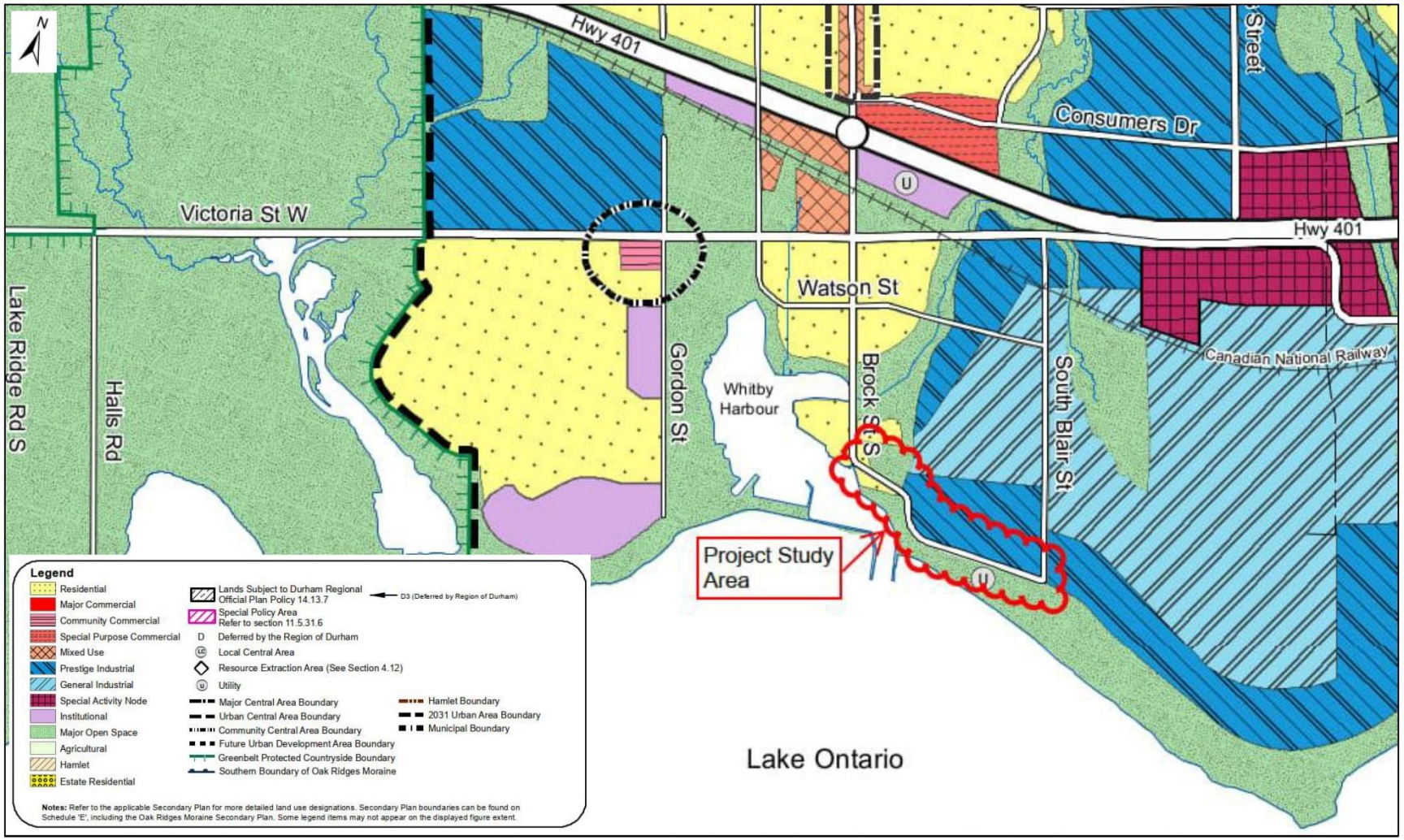
The Town of Whitby Official Plan provides general policy direction and a planning framework to guide development and growth within the Municipality. The Town of Whitby has initiated its five-year Official Plan Review to establish policies that will manage growth in the municipality until 2051.

As illustrated in **Figure 3**, an excerpt of the Town of Whitby Official Plan Schedule A Land Use map, land use within the Study Area on the north side of Water Street is designated as **Prestige Industrial** from South Blair Street to approximately midway through the Study Area where it transitions to Major Open Space. The south side of Water Street is primarily designated **Major Open Space** adjacent Lake Ontario and Whitby Harbour, with lands designated as **Residential** in proximity to Brock Street at the western limit of the Study Area, south of the Pringle Creek Bridge. Lands at the western end of the Study Area are also identified as being part of the **Port Whitby Intensification Area** and within the **Port Whitby Community Improvement Area.**

The above noted land use designations are further detailed as follows to provide an understanding of land use planned within the Study Area:

- **Prestige Industrial** - S. 4.7.3.2 of the Official Plan indicates that the Prestige Industrial designation includes lands that are in a strategic location with prime exposure to Highways 401, 407, and 412. Development and redevelopment in these areas are to exhibit a high standard of building design, an attractive appearance, and extensive landscaping. This designation also encourages a range of parcel sizes to accommodate a broad range of uses that generally include light industrial within enclosed buildings, professional, corporate, and industrial oriented office buildings, major office uses within Business Parks, data processing centres, commercial or technical schools, post-secondary educational facilities, research and development facilities, and incidental sales outlets within industrial buildings.

Figure 3: Excerpt of Town of Whitby Official Plan Schedule A Land Use



- **Residential** - As per S. 4.4.1 of the Official Plan, the goal of the Residential designation is to establish and sustain healthy, safe, attractive, and complete communities through the development and redevelopment of residential neighbourhoods with a range of housing options and supporting uses.
- **Major Open Space** - As outlined in S. 4.9 of the Official Plan, the goal of the Major Open Space designation is to *"establish, maintain, preserve, and enhance an integrated and linked system of public open spaces, natural heritage and hydrologic features, agricultural lands, rural uses, parkland, and recreational facilities that meets the needs of present and future residents and maintains a healthy and resilient Natural Heritage System."* Lands along the Lake Ontario Waterfront are designated as Major Open Space to support the objective of a Waterfront that is publicly accessible and interconnected, offers a wide range of recreational activities, and provides for the protection and conservation of natural heritage features and cultural heritage resources.
- **Port Whitby Intensification Area** - Intensification Areas are locations where the majority of expected intensification is anticipated to occur. As per Official Plan S. 4.2.8.1, the Port Whitby Intensification Area is intended to implement the requirements of the Durham Regional Official Plan for a Waterfront Place by providing for a range of residential, entertainment, leisure and civic uses in proximity to the Waterfront in the Port Whitby area. One of the objectives of an Intensification Area is to promote the efficient use of existing and planned infrastructure by encouraging intensification, where appropriate.
- **Community Improvement Areas** – this refers to locations within the municipality that may have incompatible land uses and / or a lack of parks, open space, streetscaping, landscaping, and community facilities (i.e., libraries, recreation centres, sports fields, etc.). They may also be deficient in infrastructure (i.e., water, sanitary sewers, storm sewers, roads, sidewalks, curbs, street lighting, traffic control, and utilities, etc.) and parking areas and possibly have buildings and properties that are in need of maintenance, rehabilitation, or redevelopment. There may be opportunities for improvement, intensification, or redevelopment of vacant or under-utilized properties and buildings and the area may show signs of economic decline in commercial, mixed-use, or industrial areas or exhibit other reasons for community improvement (i.e., environmental, social, or economic development). There may also be the presence of lands known or suspected to be contaminated based on historical land use. As per S. 6.3 of the Official Plan the primary goal of a Community Improvement area is to provide for the *".ongoing maintenance, improvement, rehabilitation, and upgrading of the Municipality's residential, commercial, industrial, and mixed-use areas in a manner which is integrated into the overall planning and development of the Municipality."*

Schedule D of the Official Plan identifies Water Street within the Study Area as a Type C Arterial Road. As noted in S. 8.1.3.3.2 of the Official Plan, Type C arterial roads are designed to move lower volumes of traffic at slower speeds over relatively short distances with right-of-way to be 26-30 metres in width. As illustrated, transportation infrastructure within the Study Area will need to accommodate a variety of land uses ranging from prestige industrial to residential and parkland.

2.3.2 Port Whitby Community Secondary Plan

Secondary Plans are prepared to implement the policies of the Official Plan that provide more detailed policies and schedules for land use, development densities, supporting facilities, and the road network. The subject Study Area is subject to the Port Whitby Community Secondary Plan.

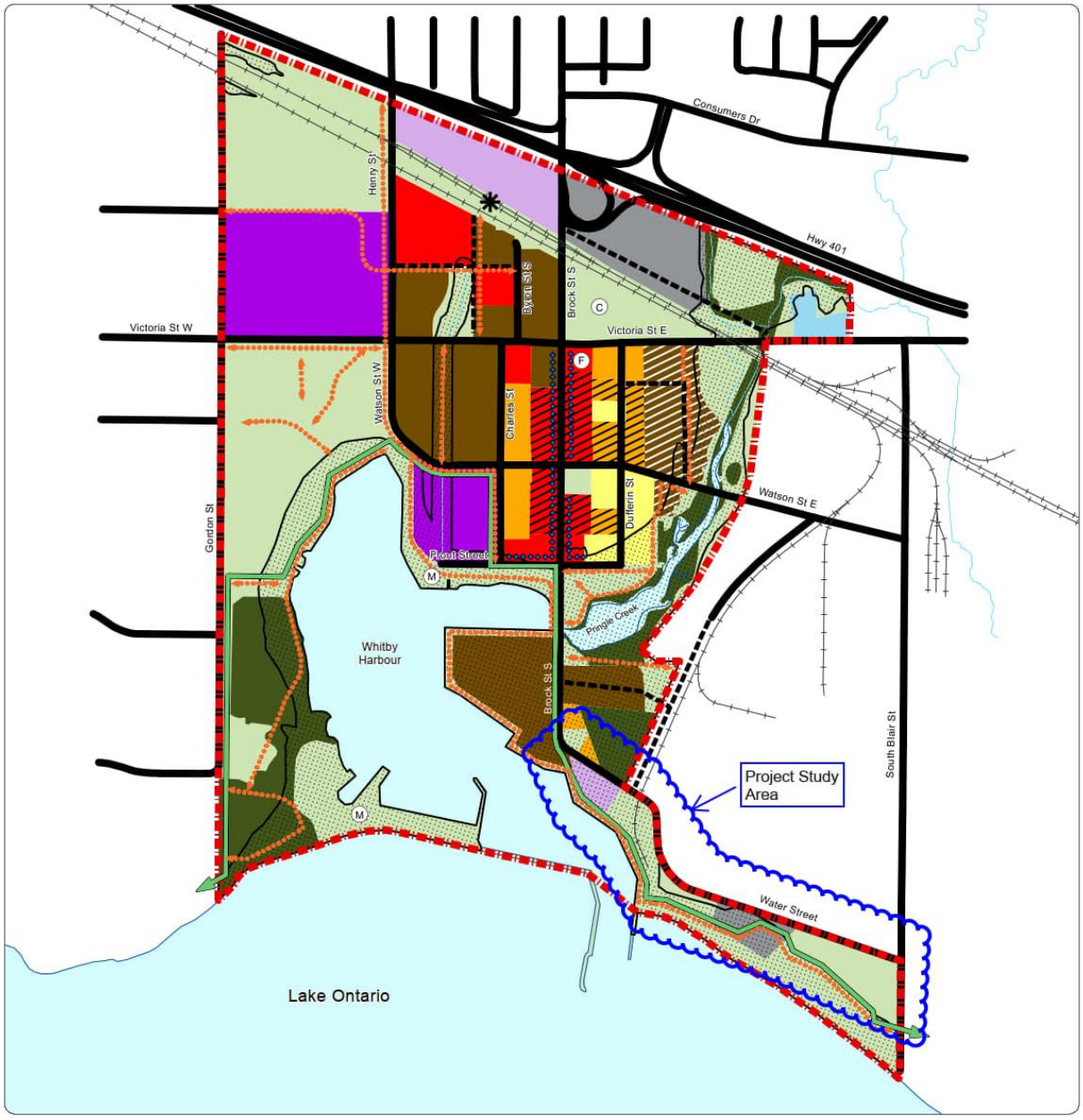
As indicated in **Figure 4** (excerpt of Official Plan Schedule F), Water Street from South Blair Street to the west side of the railway crossing is the northern boundary of the Port Whitby Community. The lands abutting Water Street to the south are primarily designated **Major Open Space** with a small pocket identified as a **Utility** area midway between South Blair Street and the railway crossing. At the western limits of the Study Area lands are designated as Commercial on the south side of Water Street, transitioning to High Density Residential Mixed Use approaching Brock Street. Lands on the north side of Water Street from Brock Street to the railway crossing are a mix of **Medium Density Residential Two, Environmental Protection Area,** and **Major Open Space.** The lands south of Water Street adjacent Lake Ontario and Whitby Harbour are also identified as a **Natural Hazard Area.**

An **Active Transportation Network / Connection** as well as a **Waterfront Trail** are identified running south of Water Street for the full the length of the Study Area parallel to the shoreline of Lake Ontario and Whitby Harbour.

2.3.3 Town of Whitby Active Transportation Plan

The Town of Whitby's Active Transportation Plan (ATP) (2021) is a long-range plan that provides guidance to encourage the use of transit as well as walking and cycling to create a more connected community that is safe and accessible for everyone. As indicated, this study is being undertaken to identify opportunities to enhance the corridor experience along the Whitby Waterfront including active transportation, and travel demands within the area in accordance with the Town's Active Transportation Plan.

Figure 4: Port Whitby Community Secondary Plan



2.4 Climate Change

Climate Change was considered throughout this Class EA process including in the evaluation of alternatives and in developing the design and mitigation strategy. Key guidance documents at the Provincial, Regional, and local level considered during this Class EA process are summarized below.

2.4.1 Ministry of the Environment and Climate Change

The MECP released a document entitled "Considering Climate Change in the Environmental Assessment Process" in 2017 that provides guidance relating to the ministry's expectations for considering climate change during the environmental assessment process. It is part of the Environmental Assessment program's Guides and Codes of Practice and describes two types of climate change effects to be considered:

- The effect that a project can have on climate change - consider the degree to which the project can provide some climate change mitigation.
- The effect climate change has on a project – consider the degree to which the project can demonstrate adaptation to climate change impacts.

2.4.2 Durham Region Community Climate Adaptation Plan

In December 2016, Durham Region released a Climate Adaptation Plan to provide a strategy for climate adaptation and to assist the Region and its member municipalities in adequately addressing climate resilience needs. It outlined 18 proposed programs to address local adaptation measures for the region with the goal of assessing current programs and infrastructure design to determine if these are sufficient and able to function if subjected to extreme weather events.

Among the strategies recommended applicable to transportation infrastructure was to utilize measures to reduce flooding, designing adaptive culverts and bridges as well as employing measures to address extreme heat impact to asphalt pavement such as using asphalt resilient to extreme heat, using light colored asphalt pavement to reduce heat absorption, and increasing urban tree cover to reduce heat impact.

2.4.3 Town of Whitby

The Town of Whitby declared climate change an emergency in June 2019, becoming the first municipality in Durham Region to do so. Following this declaration, Whitby Council has endorsed climate change plans developed by both the Town and Durham Region. In 2022, the Town of Whitby released the Climate Emergency Response Plan as it was recognized that a detailed, community-level plan was necessary to identify

ways to make the community more adaptive to climate change and to reduce greenhouse gas emissions. The Climate Emergency Response Plan was developed in two phases as follows:

- **Phase 1:** Resilience was on climate adaptation and identified risks to the municipality from climate change as well as actions the Town and community can take to reduce the impacts and associated risks of climate change. It included a high-level overview of costs and economic impacts of these actions as compared to the costs of inaction. The Resilience Plan was approved by the Town's Council in 2022 and is currently in the implementation phase.
- **Phase 2:** Mitigation focused on climate mitigation and potential sources of greenhouse gas emissions in Whitby, as well as provided guidance and recommendations to meet the Town's community-wide greenhouse gas emissions reduction target of net-zero by 2045.

2.5 Environmental Assessment Studies within the Study Area

2.5.1 Durham Region Pringle Creek Bridge MCEA

In 2017 Brookfield Residential, in partnership with the Region initiated the Pringle Creek Bridge Schedule 'C' Municipal Class EA with the objective of improving the Pringle Creek Bridge on Brock Street South. The existing bridge was fully re-constructed in 1962 and required rehabilitation. In addition, the limited width of the creek under the bridge was causing flooding upstream. The Study also included consideration of existing and future traffic needs for the area, and improvements for better pedestrian, cycling and Waterfront Trail connections. The Class EA process was completed in 2023.

2.5.2 Durham Region Whitby Water Supply Plant Expansion

In 2005, the Durham Region completed a Municipal Class Environmental Assessment study that recommended an expansion of the Whitby Water Supply Plant on the north side of Water Street. In 2018, as a result of lower water demands and construction issues on the north side of Water Street, the Region completed an Addendum to the Whitby Water Supply Plant Municipal Class EA and proposed an expansion of the facility within the existing property limits.

In April 2023 the Region completed a second addendum to address updates to the project description including relocation of the proposed Energy Centre to 270 Water Street and a revised alignment of the waterfront trail fronting the Whitby Water Supply Plant.

3. Consultation

3.1 Study Notifications

In accordance with the Municipal Class EA, a minimum of three points of contact are required for a Schedule 'C' project. For this project four notices were issued throughout the project as follows:

- Notice of Commencement / Community Open House #1
- Notice of Community Open House #2
- Notice of Community Open House #3
- Notice of Completion

A project Contact List was developed at the project start consisting of local residents, property owners, and businesses within the Study Area as well as key stakeholders, agencies, elected officials, Durham Region, Indigenous Communities, emergency service providers, and area utilities. The Contact List was updated, as required, throughout the duration of the project.

3.1.1 Project Webpage

A webpage was developed for this undertaking on the municipality's website at https://connectwhitby.ca/WaterStreet that was maintained and updated at key milestones during the project. The webpage provided an easily accessible venue for interested parties to obtain updates regarding the project and to access all notices, public meeting information, and project documentation issued as part of the Class EA process. Viewers were also able to subscribe to the project as well as submit a comment via an online comment form.

3.1.2 Notice of Commencement / Community Open House #1

A combined Notice of Commencement / Community Open House #1 was issued early in the project to announce the commencement of the Class EA process and the scheduling of Community Open House #1 on November 19, 2018.

The project webpage was updated by the municipality with a copy of the notice placed on the webpage on October 31, 2018. A copy of the notice was also published in two editions of the local newspaper *Oshawa-Whitby This Week* on October 31 and November 14, 2018.

A letter and copy of the notice were issued May 12, 2023, by direct mail to all those on the contact list on October 31, 2018. Approximately 2,060 copies of the notice were also circulated as a brochure/flyer delivery via Canada Post Unaddressed Admail to all landowners, residents and businesses within a 1.5 kilometres radius of the Study Area on October 31, 2018.

Copies of the contact list and notification material are included in **Appendix A**.

3.1.3 Notice of Community Open House #2

A Notice was issued to announce the scheduling of Community Open House #2 which the municipality hosted on May 24, 2023.

The project website at https://connectwhitby.ca/WaterStreet was updated by the municipality on May 12, 2023, with a copy of the notice posted on the website. The Municipality also arranged for the notice to be published in two editions of the local newspaper *Oshawa-Whitby This Week* that included Thursday, May 11 & 18, 2023.

A letter and copy of the notice were issued May 12, 2023, by direct mail to all those on the contact list supplemented by an email on May 15, 2023. Approximately 1,050 copies of the notice were also circulated as a brochure/flyer delivery via Canada Post Unaddressed Admail on May 19, 2023.

Copies of the contact list and notification material are included in **Appendix A**.

3.1.4 Notice of Community Open House #3

A Notice was issued to announce the scheduling of Community Open House #3 which the municipality hosted on January 10, 2024.

During this stage of the project, a printed local newspaper was no longer available for the Town of Whitby. As such, the Town opted to utilize their website to advertise the notice of Community Open House #3 and the Project website was subsequently updated by the municipality on December 15, 2023.

On December 15, 2023, a letter and a copy of the Notice were sent by direct mail to all those on the contact list, supplemented by an email on the same date. Additionally, 1,046 copies of the Notice were distributed as a brochure/flyer via Canada Post Unaddressed Admail on December 15, 2023.

Copies of the contact list and notification material are included in **Appendix A**.

3.1.5 Preliminary Circulation of Environmental Study Report

In advance of issuing the Notice of Completion and filing the final Environmental Study Report for the standard 30-day comment period, the Town of Whitby completed a preliminary circulation of the draft document on May 5, 2025 to Indigenous Communities that included Curve Lake, Alderville, Hiawatha, and Mississaugas of Scugog Island First Nations as well as key stakeholders that included the Central Lake Ontario Conservation Authority and Durham Region. The Environmental Study Report was also forwarded to the Ministry of Environment, Conservation, and Parks given that the agency had previously requested in 2018 that they be provided a minimum of 30 days to review the Environmental Study Report in advance of filing the final report.

An email was issued May 5, 2025 advising that the Project Team had selected the preliminary Recommended Plan to address the problem / opportunities and to complete the improvements to Water Street and that a draft Environmental Study Report was available for their review. The subject Indigenous Communities and key stakeholders were advised that their input would be appreciated and that the Project Team was available to meet with them to discuss the project further, if required.

No significant comments were submitted in response to the preliminary circulation of the Environmental Study Report. Below is a brief summary of the comments received:

- **Hiawatha First Nation** – advised May 6, 2025 that they would review the Draft Environmental Study Report and that they would contact the Project Team if they had any questions or concerns. No comments were submitted.
- **Alderville First Nation** – advised May 24, 2025 that they were hoping to provide a formal response in June 2025. A formal response was not submitted.
- **Mississaugas of Scugog Island First Nation** – advised May 16, 2025 of their expectation to be consulted on all natural environment and archaeological fieldwork, including Stage 1 Archaeological Assessments, and they requested an invite to participate in the Stage 2 Archaeological Assessment. The Town advised that an invitation to participate in the Stage 2 field work would be extended to them during the detailed design phase to follow in the future.
- **Central Lake Ontario Conservation Authority / Durham Region** – no comments submitted.
- **Ministry of Environment, Conservation, and Parks** – no further comments received.

3.1.6 Notice of Completion

A Notice of Completion was issued at the close of the project to identify the Preliminary Recommended Plan and to advise of the completion of an Environmental Study Report to document the Class EA process and its availability on the public record for a 30-day comment period.

A letter and a copy of the Notice were issued by direct mail to all those on the contact list, supplemented by an email. In addition, copies of the notice were issued as a brochure/flyer via Canada Post Unaddressed Admail. The project webpage was also updated to include a copy of the notice and the Environmental Study Report. Respondents were advised to provide any comments within the 30-day period.

Copies of the contact list and notification material are included in **Appendix A**.

Following issue of the Notice of Completion and the availability of the ESR for a 30-day public comment period a number of comments were received. A local property owner expressed concern regarding potential property impacts. **Durham Regional Police Service** provided updated contact information. **Canada Christian College** inquired as to when the public process would end and where they should look for details. **Durham Region Cycling Coalition** questioned if any thought was given to how two Multi Use Paths and a cycle track will merge to a single MUP (the Waterfront Trail) at Brock St. It was also questioned how the Multi Use Paths and cycle track will terminate at South Blair St. noting that, at present, a grassy, gravel trail connects to the Waterfront Trail but that it is gated at Water St.

As detailed in the section that follows, four Indigenous Communities provided comments that included the Chippewas of Rama First Nation, Huron Wendat First Nation, Alderville First Nation and Mississaugas of Scugog Island First Nation.

3.2 Indigenous Community Consultation

The Indigenous Communities consulted throughout this Class EA process included the following:

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

- Huron-Wendat Nation
- Anishinabek Nation
- Metis Nation of Ontario
- Beausoleil First Nation

Notification in the form of a letter and copy of the notice was forwarded to Indigenous Communities at key milestones. These were encouraged to attend the Community Open Houses and to participate in the Class EA process as well as to advise of any concerns within the area of study. The Project Team also offered to meet with them, should it be requested.

In addition to the above, the Town of Whitby Project Manager opened the 30-minute presentations at Community Open House #2 and #3 by reading the Municipality's First Nation Land Policy.

Curve Lake First Nation

The Town reached out to Curve Lake First Nation (CLFN) through 4 Directions Conservation (4DC), which had been initially involved in projects directed by CLFN. 4DC indicated that the Town and CLFN needed to enter into a Capacity Funding Agreement to continue the consultation process. Under this agreement, the Town is required to provide CLFN with funding to support the review of MCEA materials and other tasks associated with the consultation program. The Town completed reviewing the agreement and reached out to Curve Lake First Nation on three occasions (i.e. May 9, 2024, June 19, 2024, and December 2, 2024) and will continue to engage with CLFN.

Hiawatha First Nation

The Town engaged Hiawatha First Nation (HFN) through 4 Directions Conservation (4DC), a consultant initially involved in projects under HFN's direction. A meeting was held on February 22, 2024, with representatives from HFN and 4DC, during which the Town introduced the Water Street Municipal Class EA project. At the meeting, HFN and 4DC provided information regarding the review process, requirements, and approximate timelines. Following the meeting, 4DC provided the Town with a draft Capacity Funding Agreement, requesting the Town's review and signature to proceed with the consultation process. Under the agreement, the Town is required to provide HFN with funding to support the review of MCEA materials and other consultation-related tasks. The Town completed its review of the agreement and reached out to HFN on June 21, 2024 and the agreement has since been executed. A site meeting was also held on July 25, 2024, where HFN and Town staff walked the site, shared project information, and outlined the requirements needed to advance the consultation program. Regular project

updates and technical reports, as they become available, have been shared with HFN through the Town's Project Manager.

Additionally, Hiawatha First Nation has expressed interest in participating in the detailed design phase to explore the potential incorporation of First Nation cultural elements within the road design. Further consultation will be completed with Hiawatha First Nation during the future detailed design process to follow at a future date.

Additional Comments Received

The following key comments were received from other Indigenous communities during the Class EA process:

- **Mississaugas of the Credit First Nation (MCFN)** – advised that the subject project is not within MCFN Treaty Lands and Territory and that MCFN can be removed from the project contact list.
- **Mississaugas of Scugog Island First Nation (MSIFN)** – advised that they will not be able to attend the Community Open House event on May 24th but would like to stay engaged on the project and requested that the Town please provide reports subject to review as they become available. Following issue of the Notice of Completion the MSIFN advised that while they have nothing further to share currently, they requested that they continue to receive future updates regarding this project. They also directed that the MSIFN contact information be updated to include consultation@scugogfirstnation.com.

- **Alderville First Nation (AFN)** – requested a File Fee for this project in the amount of $300.00 to address administration, an initial meeting, project updates as well as review of standard material and project overviews. The Town was directed to submit a Notice of Request to Consult as per Alderville FN Consultation Protocol. Alderville FN also requested that they be engaged at Stage 1 of an archaeological assessment, and they expressed an interest in participating in any archaeological field work. Following issue of the Notice of Completion AFN reiterated that they be notified when the archaeological assessments are planned for the project and that they be engaged when the Stage 1 assessment is scheduled. As part of the August 21, 2026 update (summarized below), the Town clarified that a Stage 1 archaeological assessment was completed as part of the MCEA process and that the draft report was forwarded to their community for review and comment on May 5, 2025 as part of the preliminary circulation of the draft ESR.

- **Chippewas of Rama First Nation** - expressed a desire to participate in the detailed design phase to explore the potential to incorporate First Nation cultural elements within the road design and they have the opportunity to participate on site during Stage 2 archaeological field work and to also review the draft reports.
- **Huron Wendat First Nation** - expressed a desire to participate in any archaeological field work planned in the future as part of this project. It was also highlighted that if any bones or artifacts are discovered during the development work, the Wendat Nation is to be informed immediately.

Prior to issue of the Environmental Study Report, all project environmental reports were provided to the Indigenous communities for their review and comment.

Indigenous Community Update

In addition, the Town provided an update August 21, 2026 to the above noted Indigenous communities advising that the ESR was updated and finalized following issue of the Notice of Completion and the close of the 30-day public review period, incorporating all comments received and the related municipal response. A link to the final ESR was provided. The update also advised that the Town had initiated the detailed design phase of the Water Street reconstruction project based on the EA recommendations and that the Town would continue to engage with the noted Indigenous communities. For those communities (i.e. Curve Lake, Hiawatha, Alderville, Wendake, and Chippewas of Rama First Nations) that expressed an interest in participating in the Stage 2 Archaeological Assessment the Town advised that they would continue to keep them informed regarding participation in the Stage 2 fieldwork and report review and further noted that they would be informed immediately should any bones or artifacts be discovered during the development work. For further details regarding Indigenous Consultation completed during the Class EA process please refer to the Indigenous Community Consultation Record and Tracking Log included in **Appendix A6**.

Agency, Municipality, and Stakeholder Consultation

3.2.1 External Agencies

The following Federal and Provincial agencies, technical stakeholders, utilities, emergency services and interest groups were consulted throughout this process:

Federal and Provincial Agencies

- Fisheries and Oceans Canada
- Transport Canada

- Canadian Environmental Assessment Agency
- Environment and Climate Change Canada
- Canadian Pacific Railway
- Canadian National Railway
- VIA Rail Canada
- Ministry of Environment, Conservation and Parks
- GO Transit / Metrolinx
- Ministry of Indigenous Affairs
- Ministry of Citizenship and Multiculturalism
- Ministry of Municipal Affairs and Housing Community Planning and Development (East)
- Ministry of Natural Resources and Forestry
- Ministry of Transportation

Technical Stakeholders

- Regional Municipality of Durham
- Central Lake Ontario Conservation Authority
- Waterfront Regeneration Trust
- Town of Whitby Active Transportation Safe Roads Advisory Committee

Elected Officials

- Member of Parliament, Whitby
- Member of Provincial Parliament, Whitby-Oshawa
- Member of Parliament, Durham
- Member of Provincial Parliament Durham

Emergency Services

- Region of Durham Paramedic Service
- Whitby Fire and Emergency Services
- Durham Regional Police Service
- Ontario Provincial Police

Utilities

- Hydro One Distribution Facilities
- Enbridge Gas Distribution Inc.
- Enbridge Pipelines, Inc.
- Elexicon Energy
- Bell Canada
- Rogers Communications Inc.
- Telus

- telMAX
- Zayo (Formerly MTS-Allstream)
- Trans-Northern Pipelines Inc.

School Board

- Durham Catholic District School Board
- Durham District School Board

Interest Groups

- Brookfield Residential
- Whitby Library
- Durham Agricultural Advisory Committee
- Durham Emergency Management Office
- Durham Region Environmental Advisory Committee
- Durham Region Health Department
- Durham Student Transportation Services
- Whitby Chamber of Commerce
- Rotary Club of Whitby
- Sunrise Thickson Woods Land Trust
- Durham Region Field Naturalists
- Whitby Heritage Community Association
- Whitby Youth Council
- Whitby Seniors Committee of Council
- Whitby Lions Club Whitby Rotary Club
- Active Transportation and Safe Roads
- Kiwanis Club of Sydenham – Oshawa

3.2.2 Meeting with CLOCA, MECP, and Durham Region May 16, 2019

On May 16, 2019, nearing the end of Phase 2 of the MCEA process, the Project Team met with CLOCA, MECP, and the Region of Durham regarding the project.

AECOM provided an overview of the project that identified the limits of the Study Area along with a brief summary of the problem/opportunities, existing conditions within the Study Area (road configuration, traffic conditions, natural environment, socio-economic environment, etc.), the alternatives under consideration, and the Project schedule.

CLOCA also noted that while the roundabouts have the potential to impact the PSW; the impacts appear smaller when compared to the increased radius options. CLOCA advised that protection of the wetland is their main concern and that they would like to

see how the study can enhance the environment and provide environmental education opportunities along the Whitby Waterfront. CLOCA suggested limiting right-of-way widenings to provide additional landscaping features along Water Street since there are already existing environmental features in much of the area. The inclusion of stormwater management features and Low Impact Development measures were also discussed with AECOM noting that these would be added once the designs are more refined.

MECP asked if members of the public have shown interest in the project. AECOM confirmed that Community Open House #1 was well attended by local residents, and that the majority of the questions/concerns related to area development, traffic and cycling facilities along the waterfront.

A copy of the Meeting Minutes are included in **Appendix A**.

3.2.3 Key Agency Comments

A number of agencies provided input during the EA process. The agencies that responded and their key comments are summarized below.

3.2.3.1 Ministry of the Environment Conservation and Parks

Early in the project MECP provided a standard response letter acknowledging receipt of project notification and outlining their areas of interest for the project.

The letter identified Indigenous communities who should be consulted regarding the project that included Alderville First Nation, Curve Lake First Nation, Hiawatha First, Nation, Mississaugas of Scugog Island First Nation, and the Williams Treaty Claims Co-ordinator. MECP also advised that Huron Wendat First Nation be notified if a Stage 2 Archaeological Assessment is required for the project. The procedural aspects of consultation with Aboriginal communities were also discussed.

The identified MECP areas of interest relating to the current Class EA process included: Source Water Protection, Climate Change, Planning and Policy, Air Quality, Dust and Noise, Ecosystem Protection and Restoration, Surface Water, Groundwater, Contaminated Soils, Excess Materials Management, Servicing and Facilities, Mitigation and Monitoring, as well as consultation expectations. MECP also advised of potential contamination concerns within the Study Area.

As noted, near the end of Phase 2 of the MCEA process, the Project Team met with the MECP as well as CLOCA, and the Region of Durham to further discuss their concerns.

3.2.3.2 Ministry of Transportation (MTO)

The Ministry of Transportation forwarded the Pringle Creek Bridge Municipal Class EA Study notification as well as the Ministry's Access Management Guideline and Traffic Impact Study Guideline.

3.2.3.3 Ministry of Citizenship and Multiculturalism (MCM)

The Ministry of Citizenship and Multiculturalism provided a standard letter acknowledging receipt of the project notification and outlining their areas of interest for the project. MCM requested the Project Information Form number for the Stage 1 Archaeological Assessment to be completed for the project and also asked that the Cultural Heritage Screening Report be provided to them for review prior to issuance of the Notice of Completion.

3.2.3.4 Transport Canada

Transport Canada acknowledged receipt of notification but advised that the agency does not require receipt of all Individual or Class EA related notifications and requested that proponents self-assess the project as regards impacts to a federal property and/or waterway and determine whether an approval and/or authorization is required under the Acts administered by Transport Canada (i.e., Navigation Protection Act, Railway Safety Act, Transportation of Dangerous Goods Act, Aeronautics Act). It was also noted that any projects that will occur on federal property prior to exercising a power, performing a function or duty in relation to that project, will be subject to a determination of the likelihood of significant adverse environmental effects as per Section 67 of the Canadian Environmental Assessment Act, 2012.

Following a review of the project in the context of the above it was determined that the work proposed would not require a Federal approval and the project was not subject to the Canadian Environmental Assessment Act.

3.2.3.5 Central Lake Ontario Conservation Authority

In a letter dated January 17, 2019, CLOCA advised that the subject project is within their jurisdiction and they provided input relating to proposed road modifications and stormwater management and the need to ensure that roads are at sufficient elevation to provide safe access while avoiding any negative flooding impacts to adjacent areas of land.

CLOCA also identified the presence of the Whitby Harbour Provincially Significant Wetland Complex, with areas in proximity to Brock Street South and Water Street noting that encroachment into wetland areas should be avoided where possible, and any areas of wetland loss should be addressed through compensation projects in the immediate

vicinity. CLOCA advised that a permit is required from CLOCA prior to any works taking place within these regulated areas.

CLOCA also advised that they have both a regulatory and policy interest in this Class EA study with respect to the following issues:

- Application and implementation of Ontario Regulation 42/06 Development, Interference and Alteration Regulations, for Conservation Authorities,
- Natural hazard management and mitigation;
- Natural heritage systems and features;
- Watershed planning and implementation;
- Wildlife and wildlife movement and migration;
- Source water protection and groundwater resources;
- Surface water quantity and quality;
- Stormwater management;
- Conservation lands acquisition, management and restoration.

Direction relating to obtaining data from CLOCA was also provided along with review fees. CLOCA asked that any relevant reports/studies also be provided to them to assist with their review moving forward.

Following the May 16, 2019 meeting that included the Town of Whitby, MECP, and Durham Region, CLOCA provided feedback on the Alternative Design Concepts and made the following suggestions:

- Limit any road widening through wetland areas. CLOCA noted that while it is understood that in order to provide safe access in flood events, the road profile will need to be raised. However, the additional footprint required for sidewalks/multi use paths may unnecessarily impact the wetland, given the existing pedestrian/cycling infrastructure provided by the waterfront trail.
- Installation of a grass/landscaped boulevard to enhance natural beauty may be unnecessary through wetland areas. Rather, it was suggested that the Town consider highlighting and exhibiting the existing natural features (e.g., signage on bird species in the area, rare plants, etc.) similar to what was done for Promenade Park in Whitby.
- Enhance areas of the wetland where necessary – CLOCA noted that past industrial uses may present opportunities for rehabilitation of the wetland area and that this should be examined as part of the natural heritage evaluations and mitigation measures.
- Limiting any proposed roundabouts to areas outside of the existing wetland.

In a letter dated March 7, 2024, CLOCA provided additional input following their review of the Community Open House #3 presentation material. CLOCA reiterated the proximity of the project to Lake Ontario and the potential for flooding concerns as well as the presence of a Provincially Significant Wetland within the Study Area and expressed their interest in any proposed improvements to vehicular and pedestrian movement through this area in the context of these hazards and regulated features. CLOCA also highlighted that they were aware that Road Alignment #1 and Cross-section #1: Cycle Track and Multi-use Paths were the Preferred alternatives. Given the above, CLOCA provided the following additional comments:

1. Road widening and transitional grading within wetlands be minimized.
2. Any impacts to existing flooding hazards, whether they be riverine or Lake Ontario related, must demonstrate no negative impact on adjacent lands. Safe access and egress through the regulatory floodplain should be a guiding principle in the establishment of the new road profile through this area to address public safety and property damage caused by overtopping events.
3. Landscaping Plans supporting this project should consist of native, non-invasive species.
4. The Stormwater Management design for this project should include appropriate control measures acceptable to the Central Lake Ontario Conservation Authority.

CLOCA requested an opportunity to review technical reports prepared in support of the analysis presented at Community Open House #3, specifically referencing the Natural Environment Report and any reports related to Stormwater Management and/or floodplain (natural hazard) considerations.

In 2024, an arrangement was made between the Town and CLOCA regarding the acquisition and restoration of the 2802 Thickson Road property in Whitby. Under this arrangement, the Town will acquire the property, remove all illegal structures—including decks and retaining walls—and design and implement shoreline protection measures while re-naturalizing the site. Due to the environmental benefits of this project, CLOCA has waived all environmental compensation requirements associated with the Water Street EA, the Harbour Street extension, and other local projects. However, at CLOCA's request, the Town must still assess and document all environmental impacts and implement mitigation and protective measures to minimize environmental impacts.

3.2.3.6 Ministry of Natural Resources and Forestry (MNRF)

The Ministry of Natural Resources and Forestry provided their standard letter to acknowledge receipt of the project notification (i.e., Notice of Community Open House)

and provided information regarding their areas of interest for the specific project. This included instructions for obtaining available data resources for natural heritage information, guidelines relating to natural hazards as well as direction and guidance regarding the Petroleum Wells & Oil, Gas and Salt Resources Act, the Fish and Wildlife Conservation Act, the Public Lands Act, and the Lakes and Rivers Improvement Act.

3.2.3.7 Department of Fisheries and Oceans (DFO)

The Department of Fisheries and Oceans expressed concern that the work proposed may encroach upon DFO owned property – Small Craft Harbours and requested further information on project plans. However, DFO advised that the Fish and Fish Habitat Protection Program is not able to provide comment regarding general planning and directed that once impacts are confirmed during detailed design, then a Request for Review form can be submitted if it is determined that there is the potential to impact fish and fish habitat.

3.2.3.8 Impact Assessment Agency of Canada / Government of Canada

The Impact Assessment Agency of Canada provided correspondence indicating that the Impact Assessment Act sets out the federal process for assessing the impacts of certain major projects. It was noted that the Physical Activities Regulations (the Regulations) under the Impact Assessment Act identify the physical activities that constitute a "designated project" that is subject to the Impact Assessment Act. Based on the information provided, the agency advised that the proposed project does not appear to include physical activities that are described in the Regulations and therefore a federal Impact Assessment would not be required; however, it was noted that other federal regulatory permits, authorizations and/or licences may still be required.

3.2.4 Municipal Comments

3.2.4.1 Durham Region

Durham Region submitted an email May 22, 2019 as a follow-up to the May 16th, 2019 meeting with the Town, the MECP, and CLOCA. The Region forwarded Regional Official Plan (ROP) Amendment #171 adopted by Council in June 2018 and in-effect since July 2018 pertaining to Schedule 'C', Map 'C2' of the ROP where Water Street was removed as a future Type C Arterial easterly from the existing Water Street/South Blair Street intersection to Thickson Road. It was noted that as part of the amendment there is a reference included on the Schedule to Policy 11.3.15 which speaks to the potential for an east-west connection between South Blair Street and Thickson Road, south of Victoria Street, but that it doesn't commit to a specific alignment.

The Region also provided input for the Water Street/South Blair Street intersection design alternatives/curves suggesting that as long as the opportunity for an easterly extension is not precluded in the future, that would provide more options to locate the road in the future somewhere south of Victoria Street.

As part of the ongoing detailed design of the Water Street Reconstruction Project, the Town and the Region's design teams are working collaboratively to confirm design elements. Coordination meetings have been and will continue to be held to resolve potential conflicts and ensure both projects are delivered without compromising safety, access, or future infrastructure needs. The proposed roundabouts will include sufficient turning radii and mountable curbs to accommodate oversized vehicles accessing the SSPS and the future Energy Centre for operations and maintenance. Detailed design drawings will be provided to the Region's design team for review and comment. As part of the ongoing detailed design of the Water Street Reconstruction Project, the Town will provide 30%, 60% and 90% road design plan and profile drawings to the Region's design team to coordinate the two designs and confirm there are no conflicts, including road and building elevations and grading. The Region's design team is aware of the Town's project schedule through previous coordination meetings. The Town will continue to provide schedule updates as required and keep the Region informed throughout the ongoing coordination process.

3.2.4.2 Town of Whitby Active Transportation and Safe Roads Advisory Committee (ATSRAC)

An email was submitted June 30, 2023, by the Town's Active Transportation and Safe Roads Advisory Committee (ATSRAC) with their input regarding the Community Open House #2 MCEA Phase 2 Alternative Solutions.

The Committee's preference was identified as Road Alignment Alternative Solution #3 Minor Engineering Design Upgrade and Cross-section #1 but included a proposed minor revision involving a widening of the boulevard so that the boulevard street trees can be shifted towards the curb so that they are between the Multi Use Path and the roadway. It was suggested that a visibly separate cycle track is needed due to potential high volumes of people in the area. It was also noted that at least two (2) pedestrian crossings are needed with one being near the Heydenshore Pavilion and one near the new westerly roundabout. The Committee advised that they would like to review the proposed amenities (bike racks, benches, etc.) when added to the plan.

3.2.5 Stakeholder Comments

3.2.5.1 Brookfield Residential

The Project Team along with representatives from Durham Region met with area Developer, Brookfield Residential, on May 16, 2019. AECOM provided an overview of the project, identifying the limits of the Study Area and provided a brief summary of existing conditions within the Study Area (road configuration, traffic conditions, natural environment, socio-economic environment, etc.). The Project schedule was also discussed noting that Community Open House #2 was anticipated for Summer 2019.

After summarizing the Problem / Opportunity Statement for the project AECOM provided a summary of the alternative solutions (MCEA Phase 2) that were under consideration which included: Alternative 1 Do Nothing, Alternative 2 Widen Brock Street South and/or Water Street, Alternative 3 Improve Streetscape and Active Transportation, Alternative 4 Apply Engineering Design Solutions and Alternative 5 Build a New Road. AECOM recommended carrying both Alternative 3 Improve Streetscape and Active Transportation and Alternative 4 Apply Engineering Design Solutions forward for further review, as these options would address the problems and opportunities identified.

AECOM then discussed the Phase 3: Preliminary Alternative Design Concepts and presented two Alternative Design Concepts that included Design Concept #1-Increasing road horizontal curve radii to 100 metres or 150 metres; and Design Concept #2-Adding roundabouts to the two intersections at Brock Street South and Proposed Street 'A', Water Street and the Proposed Harbour Street Extension, and at Water Street and South Blair Street.

Brookfield representatives asked if constructing the Harbour Street extension to Water Street had been considered and noted that this would create a new road to the waterfront which would alleviate traffic from Brock Street South and Water Street. However, AECOM clarified that the focus of the current project is solely Brock Street South and Water Street.

Brookfield also questioned if the parcels of land at the Brock Street South and Water Street curve would be impacted if the radius is increased (with Design Concept drawing #1). AECOM confirmed that lands on the east side of the road would be impacted. Brookfield noted that the lands on the east side were owned by Imperial Oil and AECOM advised that Imperial Oil will be engaged prior to Community Open House #2.

Brookfield noted their preference would be for stop control at Proposed Street 'A', rather than a roundabout at Proposed Street 'A' and Brock Street South. The Developer further advised that they do not support the roundabout at Proposed Street 'A' and

Brock Street South, as their designs do not accommodate it and the current plans have been developed with considerable feedback from the municipality already.

Brookfield highlighted that the Port Whitby Sustainable Community Plan designates the area along Brock Street South as future mixed-use (residential and commercial) and an extension of downtown Whitby; however, the removal of on-street parking on Brock Street South will limit this plan. Brookfield suggested designing a mountable curb that could be blocked off for the time being, providing a space for on-street parking in the future. Durham Region noted that the alternative designs can be flexible, as Brock Street South is a Type 'C' Arterial Road that is planned to be downloaded from a Regional road to a municipal road.

Brookfield noted that they have submitted a Traffic Impact Study for a 26 metre ROW along Brock Street South, south of Pringle Creek Bridge. They recommended not showing a 20 metre right-of-way on the Alternative Design Concepts. Brookfield also suggested adding Low Impact Development features and bioswales to Alternative C1 - Water Street (Brock Street South to South Blair Street) which AECOM confirmed would be considered.

Lastly, Brookfield outlined their timelines noting that they were progressing quickly with the Dockside development, with a Draft Plan of Subdivision expected to be submitted in June 2019, and a Site Plan for the west lands later in 2019.

A copy of the Meeting Minutes are included in **Appendix A**.

3.2.5.2 Durham Region Cycling Coalition (DRCC)

Following a review of the Community Open House #2 presentation and conversing extensively with AECOM Project Manager, K. Phillips, at the public meeting, DRCC advised that they were very pleased with the overall conceptual presentation and that they were aware that a hybrid model of Road Alignment Alternatives #2 and #3 would likely be carried forward noting that they fully endorsed this selection. DRCC further advised that their preferred cross-section would be Option #1 as it provides a clearly defined space by user group which would assist in avoiding conflict. DRCC recommended that the 4.0 metre vehicle traffic lane be narrowed with painted out shoulder lines in support of traffic calming. DRCC also advised that it is understood that there will be several pedestrian crossings added to the corridor, and they requested that fully signalized bicycle cross rides be considered where an Multi Use Path is involved. They also commended the Town on the "excellent proposal" indicating that they looked forward to learning more as the project unfolds.

3.2.5.3 Imperial Oil Limited

Imperial Oil Limited (Imperial Oil) was consulted following Community Open House #2. The Project Team met with representatives from Imperial Oil on August 24, 2023, October 17, 2023 and July 11, 2024, to provide project updates and discuss potential impacts on Imperial Oil's property at 101 Water Street. The property was formerly a marine petroleum terminal with above-ground storage tanks, which were removed when the site was taken out of service. The property is now an unused lot.

Imperial Oil shared some relevant background information pertaining to the lands. A review of the property has been completed, and the recommended next steps include conducting Phase 1 and Phase 2 Environmental Site Assessment. Additional requirements will depend on the intended future use of the land, whether as a road allowance or potentially as parkland, or other.

3.3 Public Consultation

Extensive public consultation was completed as part of this Class EA process with the municipality hosting three Community Open Houses regarding the project as follows.

3.3.1 Community Open House #1

The municipality hosted an in-person Community Open House on November 19, 2018, at the Port Whitby Marina Avalon Lounge, 301 Watson Street West in the Town of Whitby, Ontario from 5:00 p.m. to 8:00 p.m. This meeting was a joint public consultation event with the Durham Region Pringle Creek Bridge MCEA project. A total of 58 individuals signed-in at the Community Open House, with 38 attendees requesting to be added to the Project contact list.

The purpose of the Community Open House was to introduce the Project, describe the MCEA process, and to obtain initial input from the public and stakeholders. Information on next steps and opportunities for public participation during the process were also presented.

Members of the public were given the opportunity to provide feedback on comment sheets which could be submitted during the event or forwarded to the Project Team via mail or e-mail following the meeting.

Attendees were also provided sticky notes at several of the display boards and maps, to provide input on certain aspects of the study (e.g., vision for the Study Area, perceived constraints and opportunities, etc.).

A copy of the Community Open House #1 presentation material and Summary Report is included in **Appendix A**.

3.3.1.1 Key Public Comments/Concerns

Using the sticky notes provided, attendees posted a total of 11 comments on the Problem/Opportunity display board and a total of 30 comments on the maps. The key themes of the comments included:

- Requests for Port Whitby to consist of low density residential areas with large areas of green space and natural habitat for wildlife;
- Requests for improved active transportation access and connectivity along Brock Street South and Water Street (e.g., separating cyclists and pedestrians on the Multi Use Paths, updated boardwalks, more benches for pedestrians, more parking for vehicles, etc.);
- Requests for the realignment of Brock Street South and Water Street;
- Concern for the increased number of construction vehicles that will be traveling along Brock Street South, South Blair Street and Water Street during construction; and,
- Concern for emergency vehicles being able to access the waterfront during construction.

A total of twenty comment sheets were received at the Community Open House. Four of the comment sheets submitted were specifically related to the current project, while thirteen were directed towards both the current project and the Durham Region Pringle Creek Bridge Class EA. The remaining three comment sheets focused on the Durham Region Pringle Creek Bridge Class EA.

A summary of the comment received relating to the Project and the Project Team response is provided in **Table 1.** Copies of the comment sheets received, with personal information removed, are included in **Appendix A**.

Table 1: Summary of Comments Received and Responses Provided at COH #1 for the Brock – Water Street MCEA

Topic	Summary of Community Comments/Questions	Response from the Project Team
Active Transportation	■ Will there be additional safe alternatives for pedestrian paths? ■ Enhance the pedestrian aspects of the Waterfront Trail. ■ Additional benches should be included to allow individuals walking to rest. ■ Will the Waterfront Trail be able to accommodate multiple mode shares and a variety of users? ■ A wider trail should be incorporated to allow for cycling and walking.	■ Subsequent phases of the EA will include the development and evaluation of a number of road design solutions and concepts, including various road configurations to accommodate pedestrians and cyclists. The safety of pedestrians and cyclists is a priority and will be a key consideration as part of the planning / design process.
Long Term Planning	■ How tall will the future condominiums be? Will the condominium towers impact views and create shadows? ■ What is the status of the Water Treatment Facility and will it be able to accommodate the new condominium developments? ■ Will upgrades to infrastructure, e.g., sewers and water treatment, be paid by developers?	■ Planning and design of the future condominium development is beyond the scope of this EA. ■ The Whitby Water Supply Plant (WSP) Expansion EA was completed in January 2018. The planning of the Brock Street and Water Street improvements will incorporate the preferred design of the WSP study. ■ The Town of Whitby and Region of Durham will review the need for upgrades to infrastructure as they relate to the Brock Street and Water Street improvements.
Traffic Patterns	■ Is Brock Street able to accommodate the future traffic generated from residential land uses?	■ A traffic study will be prepared to review and document the traffic needs for the Brock Street South and Water Street corridor.
Traffic Patterns	■ Existing tractor-trailers adversely impact traffic conditions and parking availability.	■ The traffic impacts of large vehicle movements will be considered in a forthcoming traffic review for the Project. This comment will also be forwarded to the Town of Whitby for their consideration by their Parking Management Team. Town has extended Harbour Street to allow for the construction of an access road connecting to 220 Water Street. This access road will significantly reduce truck traffic on Water Street by eliminating trucks traveling to and from this property. However, since the property acquisition is still ongoing, the construction of the access road has been put on hold.
Construction Considerations	■ Alternative active transportation routes should be maintained during construction.	■ A Traffic Management Plan will be developed during detailed design which will consider alternative active transportation routes during construction.
Construction Considerations	■ Commercial vehicles should not be allowed on Brock Street South of Victoria Street during construction. A detoured route should be implemented.	■ A Traffic Management Plan will be developed during detailed design which will consider truck traffic during construction.
Wildlife	■ Concerns about the impact on wildlife in the area and the threat faced by vehicle and cyclist traffic. How will wildlife be protected?	■ The Environmental Study Report (ESR) for the Project will document existing conditions of the natural environment. As the study progresses, potential impacts on the natural environment will be identified and mitigation measures will be developed to avoid or minimize these impacts to the extent possible.
Wildlife	■ How will the new condominium development impact wildlife?	■ Planning and design of future condominium development are beyond the scope of this EA.

3.3.2 Community Open House #2

The Town of Whitby hosted an in-person Community Open House #2 on May 24, 2023, at the Heydenshore Pavilion at 589 Water Street, Whitby from 5:00 pm to 8:00 pm with 24 people signing in at the meeting.

The meeting utilized an in-person, drop-in style format with the purpose of providing an update regarding the project given that it was placed on hold following Community Open House #1 on November 19, 2018. The purpose of Community Open House #2 was to also present the Alternative Solutions under consideration and the evaluation that led to selection of the Preferred Solution as part of MCEA Phase 2 as well as the alternative Design Concepts developed to implement the Preferred Solution as part of MCEA Phase 3.

Project Team members from both the municipality and AECOM were in attendance and available to answer questions. Representatives from Durham Region were also in attendance to answer questions regarding the Class EA that was concurrently underway for the Whitby Water Supply Plant Expansion located on Water Street as well as the separate Pringle Creek Bridge Class EA.

The meeting included a 15-minute presentation to introduce the project and provide a brief overview by K. Phillips of AECOM as well as H. Look and P. Angelo of the Town of Whitby. Town staff initiated the presentation by first reading the First Nation Land Policy.

Following the presentation, a 45-minute question & answer (Q&A) period was provided. Approximately 15 residents and one Member of Council were in attendance for the presentation. Key comments and concerns mentioned during the Q&A session related to increased traffic volumes including truck traffic, increased vehicle speeds, driver safety, cyclist safety, planned development, and active transportation.

For the remaining two hours of the meeting, residents were able to view the 26 display boards while the Project Team circulated the room answering questions. Roll plans of the Road Alignment Concepts were also made available for residents to provide specific comments via sticky notes. In addition, Durham Region included two presentation boards regarding the Whitby Water Supply Plant Expansion Class EA.

A copy of the Community Open House #2 presentation material and Summary Report is included in **Appendix A**.

3.3.2.1 Key Comments / Concerns

Residents were generally happy to see that improvements to active transportation were being included in the proposed concepts. During the meeting, preference appeared to be for Cross-section Concept #1 since it provided for cyclist facilities separated from pedestrian facilities.

Members of the public were given the opportunity to provide feedback on comment sheets which could be submitted during the event or be sent to the Project Team via mail or e-mail following the meeting.

A total of four comment sheets were submitted during the meeting. **Table 2** provides a summary of the comments received at the meeting during the Q&A session and from comment sheets submitted following the meeting along with the project team response. No comments were posted on the roll plan drawings.

The Community Open House #2 material was also reviewed by Town of Whitby internal departments. Key comments relate to tree removals, alternative treatments to tree planting in the median, median width, and access to Rotary Sunrise Lake Park parking lot. Refer to **Table 3** for a summary of the comments received from internal departments and the associated Project Team response.

Copies of the comment sheets received, with personal information removed, are included in **Appendix A**.

Table 2: Summary of Community Open House #2 Comments Received and Responses Provided

Topic	Summary of Community Comments/Questions	Response from the Project Team
Traffic Volumes / Safety	■ Concerns with traffic volumes, speeds; and the need for traffic calming in the area. ■ Existing sharp curves help to slow traffic so reducing the curves may result in increased traffic speeds. ■ Truck traffic in residential areas needs to be considered. Concerned about trucks on Watson Street and surrounding area. ■ Traffic safety is important to area residents. A 200-person petition was taken to Council in November 2022 regarding traffic safety. ■ Development planned for the subject Study Area is high density which will result in an increase in traffic. Questioned whether this was being considered as part of current MCEA.	■ A traffic assessment is being completed for the subject corridor that will consider planned development. Preliminary traffic modelling indicates that Water Street requires only two vehicle lanes. ■ A traffic calming policy is being contemplated for the municipality that will include a review of Brock Street South, south of Victoria Street near the residential area. ■ The removal of the sharp curves will improve traffic safety since they are substandard.
Active Transportation	■ Is a 'complete streets' approach to design being taken? ■ Cycling safety, including along the new Harbour Street link. ■ Could a portion of Water Street be closed temporarily to vehicle traffic for special events so that residents can walk the area. ■ Concerns with crossing Water Street to reach the waterfront area. ■ Separate bike lanes from pedestrians.	■ A 'complete streets' approach to design is being taken for Water Street. ■ The safety of pedestrians and cyclists is a priority and will be a key consideration as part of the planning / design process. ■ The Town is considering the potential to close portions of Water Street temporarily for special events. ■ The road design will consider pedestrian crossing designs to assist pedestrians crossing Water Street.
Planned Development	■ Status of the proposed hotel convention centre at northwest corner of Water Street/S. Blair Street (i.e., 580 Water Street).	■ The development potential of the subject lot is being reviewed by the municipality.
Other	■ It was noted that there are several groups with interest in the subject Study Area that include the Durham Region (waterfront trail project), the Town's current Water Street MCEA, and the Waterfront Generation Trust. It was questioned whether all three groups are talking with one another?	■ It was noted that the Town is working with the Region and that any key stakeholders are being consulted as part of the process. ■ Waterfront Regeneration Trust is included in the project distribution list, and is being consulted as part of the Water Street MCEA Study.

Table 3: Community Open House #2 Comment-Response Table Town of Whitby (Internal Departments)

Item	Date	Department / Division	Comments on COH2 Materials (via emails)	Project Team's Response
1	19-Apr-23	Planning	■ The existing 1.0 hectare woodland will require significant tree removals to accommodate a re-aligned roadway. Typically, removals would require a Tree Removal Permit to be obtained in advance. Given the existing size, the Regional Woodland Protection By-Law may be the more appropriate legislation governing any proposed impacts to this woodland. The potential for municipal projects to be excluded will need to be explored further. Despite any exclusions that may be available, consideration for compensation should be included to ensure the Town is being consistent with municipal policies valuing urban tree canopy. A Tree Inventory and Arborist Report/Assessment should be completed.	■ Comment noted. Tree Inventory and Arborist Report/Assessment and compensation will be discussed as part of this study.
2	19-Apr-23	Planning	■ Suggest including an alternative treatment to tree planting in the median in at least one of the options (i.e. planter on the median). ■ Consideration could include waterfront-themed banner poles, waterfront-themed light standards, tough perennial type plantings that die-down in the winter and avoid issues of conflicts with winter snow clearing storage, salt impacts (use rosa rugosa for example which likes the salt) or that avoid mowing maintenance through summer months; a sculptural element could be included -could be decorative themed fencing for example like these images start to suggest. ■ Laser-cut panels could incorporate the Whitby logo and illustrate historical vignettes of the history of Whitby, referencing the marina, trade, Intrepid park historical elements, indigenous peoples, trade, local flora and fauna of the waterfront area, etc.	■ Comment noted and will be taken into consideration during detailed design.
3	19-Apr-23	Operations	■ From an operational standpoint, the preferred concept would be Option C with a slight variation at the bend where separation of the combined MUP to separate bike lanes (at the bend) could be considered and then re-connected with the MUP. Separation of users is suggested to enhance curb appeal.	■ Comment noted.
4	14-Apr-23	Parks Operations	■ 44 metre wide centre median is acceptable for trees provided silva cells are being used for salt mitigation from the road and MUP to improve survival and tree health. Note – this area has now been reduced to 3 metres in some instances.	■ Comment noted and further discussions/consultation with Parks Operations will occur during detailed design.
5	14-Apr-23	Parks Operations	■ Trees planted under utilities will require appropriate species.	■ Comment noted and further discussions/consultation with Parks Operations will occur during detailed design.
6	14-Apr-23	Parks Operations	■ Recommend the centre median not contain trees. ■ A 4 metre wide centre median with trees and grass both will substantially increase maintenance costs. ■ High amount of salt on median not conducive to tree and grass health.	■ Comment noted and further discussions/consultation with Parks Operations will occur during detailed design.
7	14-Apr-23	Parks Operations	■ For the shoulder trees, same as above – silva cells and utility consideration.	■ Comment noted and further discussions/consultation with Parks Operations will occur during detailed design.
8	14-Apr-23	Parks Operations	■ One metre strip of grass between road and MUP not ideal. Grass will not survive due to road salt and will turn to weeds. Recommend use of an alternate surfacing or increase the size.	■ Comment noted and further discussions/consultation with Parks Operations will occur during detailed design.
9	19-Apr-23	Right of Ways Services	■ No additional comments.	■ Noted.
10	14-Apr-23	Parks	■ Is it possible to add a second access to the Rotary Sunrise Lake Park parking lot to improve safety and access. i.e., remove hammerhead turning movements and potentially expanding the parking lot.	■ Due to contaminated soil and potential discharge to the lake, the second access may not be feasible due to its close proximity to harbour which may trigger a different permit process with DFO and MECP which is very stringent and lengthy, and the associated liability for the Town could be substantial and cost-prohibited.
11	16-May-23	Planning	■ Please provide a copy of the cultural heritage reports when available. ■ No further comments regarding the Display Boards or from an Official Plan policy perspective.	■ Comment noted.

3.3.3 Community Open House #3

The Town of Whitby hosted its third and final Community Open House for the project on January 10, 2024, at the Heydenshore Pavilion at 589 Water Street, Whitby from 5:00 pm to 8:00 pm. An in-person, drop-in style format was used for the meeting.

The purpose of Community Open House #3 was to present and gather feedback on the identified Preliminary Preferred Road Alignment and Cross-section. The evaluation completed was also presented along with the mitigation and environmental protection strategy identified to minimize potential impacts associated with the Preliminary Preferred Alternative & Cross-section. Project Team members from both the municipality and AECOM were in attendance and available to answer questions.

In addition, a representative from the Regional Municipality of Durham was in attendance to answer questions regarding the Class EA currently underway for the Whitby Water Supply Plant Expansion located on Water Street.

The meeting included a 30-minute presentation opened by H. Look of the Town of Whitby, who read the Town's First Nation Land Acknowledgement. The presentation was then completed by K. Phillips and C. Hawkins from AECOM, who provided an update on the Project; including a recap of Community Open House #2 (held on May 24, 2023) as well as a review of the three proposed Road Alignment Concepts and Cross-sections, identification of the Preliminary Preferred Plan and the rationale for making this selection.

A total of 17 individuals signed in at Community Open House #3, with a member of the Town's Council, N. Lundquist, also present. Approximately 13 residents were in attendance for the presentation. Key comments and concerns mentioned during the Q&A session after the presentation related to existing parking issues, cyclist and pedestrian safety, the intersection of Water Street and Brock Street South, and operation of the roundabouts.

For the remainder of the meeting, attendees had the opportunity to view the 18 display boards while the Project Team circulated the room, answering questions. The Roll Plan of the Preliminary Preferred Road Alignment was made available for the public to closely review and provide specific comments via sticky notes.

A copy of the Community Open House #3 presentation material and the Summary Report is included in **Appendix A.**

3.3.3.1 Key Comments / Concerns

Members of public were generally satisfied with the proposed road improvements and appreciated the inclusion of active transportation and landscaping opportunities along Water Street. The attendees were given the opportunity to provide feedback on comment sheets, which could be completed during the event or sent to the Project Team via mail or e-mail until February 10, 2024. A total of 5 comment sheets were received at the event.

Table 4 provides a summary of the comments received at the meeting during the Q&A session and from comment sheets submitted along with the associated Project Team response. No comments were posted on the roll plan drawing.

Copies of the comment sheets received, with personal information removed, are included in **Appendix A**.

After Community Open House #3, several property owners approached the Town to discuss the potential impacts on their properties.

The owner of 250 Water Street expressed concerns regarding the location of the roundabout and its impact on access to their property, and unauthorized parking in their private parking lot by visitors to the waterfront park.

The owner of 300 Water Street raised concerns about the shortened driveway after Water Street is reconstructed, which may affect ingress and egress operations, as well as potential impacts on their existing retaining wall, signage, and roundabout.

The Town has also initiated discussions with Durham Region regarding the potential 3 metre property acquisition on the south side of Water Street to accommodate road improvement works.

The Town is actively engaged in ongoing discussions with these property owners to resolve all the above issues.

Table 4: Summary of Community Open House #3 Comments Received and Responses Provided

Topic	Summary of Community Comments/Questions	Response from the Project Team
Parking	■ Concerns about loss of existing parking spaces in the area. ■ Desire for additional parking, preferably free, on the south side of Water Street.	■ While opportunities to add more parking spaces are limited directly along the road corridor, the Project Team acknowledged the desire for additional parking and noted that public off-street parking is currently proposed at 270 Water Street as part of the contemplated development of these lands. ■ Consideration will be given during the detailed design to improving and providing access to the area parking lots, as well as optimizing the current parking.
Pedestrian Safety	■ Preference for multiple pedestrians crossing opportunities across Water Street, especially near the parking lots.	■ Controlled pedestrian crossings will be incorporated into the road design to enhance and facilitate pedestrian crossings along Water Street.
Operation of the Roundabout	■ Questions about treatment of cyclists at roundabouts, and how the cycle track and Multi-use Path (MUP) will navigate through/around the roundabouts. ■ Appreciated the incorporation of two roundabouts.	■ During the detailed design, the cycle track and MUP will be designed to navigate smoothly through the intersection and around the roundabouts along the boulevard space, with attention to the safety of cyclist and efficient traffic flow. ■ Comments noted.
Cross-section	■ Support for Cross-section #1. ■ Preference for trees along south side of MUPs to provide shade during the day, and advocate for full tree canopy over the MUPs to provide shade during the early/late hours when the sun is lower. ■ In Cross-section #1, suggested switching the north boulevard MUP and tree corridor so that the trees were along the south side of the MUP to provide shade. However, acknowledged this may not actually be a better or safer option since it aligns the MUP closer to the motor vehicle portion of the road. ■ Appreciated the separated cycle track identified in Cross-section #1, as it avoids conflicts with pedestrians.	■ Comments noted and will be further considered during detailed design.
Natural Environment	■ Concern about the potential impact on the natural environment.	■ As the preferred road alignment is confirmed, the impacts on the natural environment will be identified, and mitigation measures will be developed to avoid or minimize these impacts to the extent possible.
Evaluation Process	■ Recognized that the evaluation process was comprehensive.	■ Noted.
Other	■ Acknowledged the Project Team's detailed attention into the overall planning and design process, addressing the concerns raised during Community Open House #2. ■ Comment about Brookfield's ongoing design and forthcoming reconstruction of Brock Street South and the interface with Water Street. ■ Expressed dissatisfaction with the existing intersection configuration at Water Street and South Blair Street; mentioning that the current stop sign is often ignored by motorists.	■ Comments noted. ■ Comments noted. ■ The proposed roundabout in the preferred design will address this issue.

4. Existing Conditions

An inventory of the existing environment (i.e. technical, natural, socio-economic, and cultural) was completed to establish existing conditions within the Study Area. This information was used to identify any areas of environmental concern or constraint to assist in assessing potential impacts resulting from the alternatives under consideration and in developing an appropriate mitigation strategy.

This inventory was established through the collection of information from primary and secondary sources, field visits, a review of design drawings, consultation with agencies and completion of the following investigations and supporting documentation:

- Natural Environment Report
- Arborist Report and Tree Preservation Plan
- Stage 1 Archaeological Assessment
- Cultural Heritage Screening Report
- Drainage and Stormwater Management Report
- Traffic Operations Assessment

4.1 Technical Environment

4.1.1 Traffic Operations and Active Transportation

The Study Area includes Water Street between Brock Street South (Regional Road 46) and South Blair Street. Water Street is considered a rural undivided road. It is primarily oriented east-west, has a two-lane cross-section with a posted speed limit of 40 kilometres per hour, and is owned by the Town of Whitby. Water Street predominantly serves passenger vehicles, with occasional truck traffic. The street provides vehicular access to the waterfront and nearby businesses, and is also served by Durham Region Transit, which operates an On Demand local bus route along Water Street.

A traffic study included in **Appendix I** titled Brock and Water Street EA Study – Traffic Operations Assessment memo was completed in 2019 to assess whether the current road configuration of Water Street could accommodate the forecasted traffic demand in the ultimate horizon year of 2031. The study did not identify a need for additional traffic lanes within the Study Area to accommodate existing or future traffic demand. Water Street intersects with South Blair Street; however, traffic movement and volumes do not warrant the installation of any traffic signals.

The existing Water Street right-of-way (ROW) ranges from 13 metres at the narrowest section to 28 metres at the widest. There are currently no dedicated active transportation facilities within the ROW. The area is currently accessed by pedestrians and cyclists via the Waterfront Trail as shown in **Figure 5** or through the use of the gravel shoulder. A key objective of the Town of Whitby Official Plan (2021) is to prioritize the inclusion of bicycle and pedestrian routes in road reconstruction projects to improve both continuity and safety. Specifically, the Plan emphasizes enhancing pedestrian and cyclist connectivity to the Waterfront, ensuring that future road projects support active transportation.

Figure 5: Existing Water Street and Waterfront Trail



4.1.2 Geometrics

Water Street extends from Brock Street South to its intersection with South Blair Street. Along the corridor, multiple driveways provide access to business and parking lots. Water Street currently features two substandard horizontal curve radii, which pose a safety risk to drivers. Under existing conditions, the curve at Brock Street South has a radius of 50 metres and the curve at the 220 Water Street entrance has a radius of 54 metres.

Additionally, the low road profile contributes to frequent overtopping and flooding during heavy rainfall. In certain areas, the road's crown elevation falls below the Lake Ontario high water level, further increasing the risk of flooding.

4.1.3 Elexicon Energy

There are existing hydro poles along the south side of Water Street. Roadway illumination for Water Street is provided by luminaires attached to the hydro poles and supplemented by streetlights along the north side. From an aesthetic standpoint, Elexicon Energy will be required to relocate existing hydro poles to the north side of Water Street as part of the road improvement works. The relocation design will be completed as part of detailed design and will be co-ordinated with illumination design.

4.1.4 Durham Region - Water Supply Plant Expansion and 270 Water Street Redevelopment

The Whitby Water Supply Plant (WSP), which is owned and operated by the Region of Durham, is located on the south side of Water Street. The WSP is part of the Whitby Drinking Water System which provides potable water to consumers in the Town of Whitby and surrounding areas. The Region is planning to expand the plant within the exiting site and implementing an Energy Centre to the north at 270 Water Street. This project is currently ongoing.

As part of the 270 Water Street development, the Region of Durham is proposing a twin box culvert in front of the site along the north side of the road. The culvert is proposed to cross Water Street near the curve and outlet into Lake Ontario. Additionally, the plans also include a proposed 1,200 millimetre feedermain from the WSP that will be located under Water Street. The locations of the box culvert and watermain are indicated on the preliminary design layout drawings in **Appendix G**.

The Water Street design team will work closely with the Region's design team to maintain safe, continuous access to the WWSP and the Energy Centre during both construction and future operation / maintenance. The Town recognizes the need to accommodate oversized vehicles and hazardous material deliveries to the WWSP and

Energy Centre for long-term continued operations, including the design of appropriate turning radii and implementing safety measures to ensure secure and efficient access for these critical deliveries. It is also acknowledgement that construction sequencing will need to align with the Region's Water Supply Plant Expansion project timeline to ensure integration and avoid conflicts during implementation.

4.1.5 Other Utilities

A Subsurface Utility Engineering (SUE) Survey for existing utilities was completed by 4Sight Utility Engineers as part of the Whitby WSP project, as shown in **Appendix J**.

Relocation of all utilities including but not limited to gas, telephone, and cable along Water Street will be determined during detailed design.

4.2 Natural Environment

A review of the existing natural environment was completed by AECOM and documented in a Natural Environment Report included in **Appendix B**. The natural heritage review described the existing terrestrial environmental conditions within the Study Area and identified significant natural heritage features based on information collected from relevant background information and ecological field investigations. As no online watercourses (i.e., those connected to a waterbody that contain fish at any given time of the year) were identified within the Study Area no aquatic field investigations were completed. AECOM also conducted an Ecological Land Classification (ELC) assessment and a floral inventory of sites within the Study Area to supplement available background information and to confirm and refine vegetation communities that were previously delineated.

A background information review was completed prior to field investigations to obtain information on known natural heritage features and species records, including rare species (i.e., Species at Risk and Species of Conservation Concern) within the Study Area. This included a review of existing agency mapping and database information; Wildlife Atlases and other online databases; the Natural Heritage Reference Manual (MNRF, 2010); and other planning documents and guidelines pertaining to Species at Risk, as well as the Region of Durham Official Plan (2020); and the Town of Whitby Official Plan (2021). A review was also made of applicable municipal, provincial and federal legislation. Data requests were forwarded to relevant agencies to obtain and confirm natural heritage data that was not publicly available from online sources. Information requests were submitted to the Ministry of Natural Resources and Forestry (MNRF), the Ministry of Conservation, Environment and Parks (MECP), and the Central Lake Ontario Conservation Authority (CLOCA).

4.2.1 Planning Policy Areas

Planning Policy Areas include land use planning designations from provincial plans, upper and lower-tier municipal official plans, and conservation authorities. Planning Policy Areas relate to the protection of the natural environment that are applicable to the Project and include the following:

- Region of Durham's Natural Heritage System;
- Town of Whitby Natural Heritage System; and,
- CLOCA Regulated Area (2023).

4.2.2 Natural Heritage Features & Designated Areas

Natural features and areas identified for protection in the Provincial Policy Statement and other legislation are collectively referred to as Natural Heritage Features and include Valleylands, Environmentally Significant Areas, Provincially Significant Wetlands, Areas of Natural and Scientific Interest, fish habitat, Significant Woodlands and Significant Wildlife Habitat. In accordance with S.1.6.8.6 of the Provincial Policy Statement consideration is to be given to natural heritage features when planning for corridors and rights-of-way for significant transportation and infrastructure facilities.

The Study Area is located within the Pringle Creek Watershed and is within an area regulated by the Central Lake Ontario Conservation Authority (CLOCA).

As illustrated in **Figure 6**, the Whitby Harbour Provincially Significant Wetland Complex is located at the west end of the Study Area on the north side of Water Street where the corridor transitions to Brock Street South. Lands designated as Natural Hazard (i.e., poor drainage, organic soils, flood susceptibility, etc.) are also present within the Study Area. However, there were no Significant Valley lands, Areas of Natural and Scientific Interest or Significant Woodlands identified within the Study Area.

This Whitby Harbour Provincially Significant Wetland Complex was evaluated in 2007 by the Ministry of Natural Resources and Forestry and is comprised of 17 individual wetlands including marsh and swamp communities, totalling an area of 22.18 hectares. The wetland is located at the bottom of the watershed and its emergent vegetation plays an important role in controlling shoreline erosion.

4.2.3 Vegetation and Vegetation Communities

AECOM conducted an Ecological Land Classification (ELC) assessment and a floral inventory of sites within the Study Area on August 1, 2023 to supplement available background information and to confirm and refine vegetation communities that were

previously delineated in the Study Area in support of the Whitby Water Supply Plant Expansion Class EA (Beacon Environmental, 2021); for the north side of Water Street, west of Blair Street (Beacon Environmental in 2014 and 2021); and the ELC designations delineated by CLOCA within the Study Area in 2023.

AECOM confirmed that the ELC classifications and descriptions were generally consistent with the earlier assessment carried out by Beacon Environmental (2021). Vegetation communities delineated by AECOM ecologists are summarized in **Table 5** and illustrated in **Figure 6**.

Table 5: Vegetation Communities within Study Area

Ecological Land Classification Code	Ecological Land Classification Name	ELC Description
THDM2-11	Hawthorn Deciduous Shrub Thicket	■ The hawthorn thicket was densely comprised of Hawthorn species, Dogwood, and Manitoba Maple. ■ The ground layer consisted of Canada Goldenrod, Wood Avens, and Garlic Mustard.
CUM1-1	Dry-Moist Old Field Meadow	■ This community was primarily dominated by Red-osier Dogwood, Canada Goldenrod, Panicle Aster, and Wild Parsnip.
SWD3-4	Manitoba Maple Mineral Deciduous Swamp	■ The canopy consisted of Manitoba Maple, Willow species and Eastern Cottonwood. The shrub layer consisted of Red-osier Dogwood and Dogwood. The herbaceous layer consisted of Riverbank Grape, Canada Goldenrod and Smooth Bedstraw.
SWD4-1	Willow Mineral Deciduous Swamp	■ This community primarily consisted of Crack Willow, Manitoba Maple and Trembling Aspen. Herbaceous species included Canada Goldenrod and Panicle Aster.
SWD4-5	Poplar Mineral Deciduous Swamp	■ The canopy consisted of Trembling Aspen and Crack Willow. The shrub layer consisted of Manitoba Maple, Red-osier Dogwood, Cottony Willow, Riverbank Grape and Willow species. The herbaceous layer consisted of Canada Goldenrod, Sensitive Fern and Narrow-leaved Cattail.
MAS2-1	Cattail Mineral Shallow Marsh	■ The canopy contained Crack Willow, and Cottony Willow. The herbaceous layer consisted of hybrid Cattail, Lake Sedge and Canada Goldenrod.

Figure 6: Ecological Land Classification (ELC) and Designated Areas



Source: Water Street Improvements between Brock Street South and South Blair Street Natural Environment Report (AECOM, July 2024)

AECOM's field investigations indicated the presence of six ELC vegetation communities in the Study Area with generally low vegetation quality (i.e., Floristic Quality Index of less than 19) and an overall abundance of non-native species that were established including, but not limited to: Dog Strangling Vine, Common Reed, Common Buckthorn, Mustard, and Purple Loosestrife. Given the urban location of the Study Area, some vegetation communities were fragmented due to the presence of existing roads, buildings, parking lots, manicured lawns and trails. Although the Study Area has been subject to anthropogenic disturbances (i.e., fragmentation, foot traffic), larger tracts of vegetation communities are still generally intact when compared to the larger surrounding area. Additionally, the Study Area includes vegetation communities associated with the Whitby Harbour Provincially Significant Wetland Complex.

A total of 80 plant species were recorded, of which 41 (51%) were native and 39 (49%) were non-native. Of the non-native species, 22 (28%) were considered invasive. The majority of the plant species recorded have a low to moderate sensitivity to disturbance. There were no Species at Risk, Species of Conservation Concern or locally rare plants observed.

AECOM completed a search for Species at Risk Trees that included Butternut and Black Ash on May 29, 2024. The search was conducted within areas that will be impacted by construction as well as within 30 metres of the construction footprint. No Butternut or Black Ash were recorded by AECOM Arborists.

The Provincially Significant Wetland contains features that are considered rare across the landscape, such as coastal wetlands which have experienced significant historical losses in Ontario. The lakeshore or coastal marshes in Durham Region represent the largest concentration of these wetlands in the western portion of Lake Ontario providing important nursery and spawning areas for fish. The Whitby Harbour Provincially Significant Complex has 13 significant species including eight provincially significant bird species that visit and feed in the wetlands, two regionally rare plant species and three locally rare species. The wetland also provides important habitat for wildlife including stopover sites for migrating waterfowl. In the fall, mudflats provide important feeding areas for migrating shorebirds including the Lesser Yellowleg which is designated as Threatened under the Endangered Species Act.

While a confirmed *SWH for Wildlife Concentration Area - Mixed Wader Nesting Colony* (potentially associated with swamp communities within portions of the PSW) was identified within the broader terrestrial area of review (i.e., Study Area plus 120 metre buffer) it is not located within the Study Area. The portion of the PSW within the Study Area contains only marsh communities as per the OWES report (MNRF, 2007).

Additional swamp and marsh communities were identified within the Project Limits during ELC surveys in close proximity to portions of the Provincially Significant Wetland that may also provide potential Significant Wildlife Habitat.

In addition to the review of natural heritage features, an Arborist Report and Tree Preservation Plan (AECOM, April 2025) was also prepared with the purpose of completing a tree inventory to assess the health and structure of the on-site trees, and to quantify any impacts to trees associated with the Project. Trees were inventoried within the anticipated impact area, as per the latest drawings, as well as trees within 6 metres of the impact area. The Town requires that an Arborist Report and Tree Protection Plan be prepared for all construction related applications where trees are in proximity of proposed work. The Arborist Report was prepared in accordance with the Towns' Tree Protection By-laws and was based on the Town's Arborist Report Requirements and Tree Protection Requirements for New Development (2020) guidelines. For additional details, please refer to **Appendix C** for a copy of the Arborist Report and Tree Preservation Plan.

Arborists conducted a visual tree assessment (VTA) on trees within the Tree Inventory Area on May 24, 2024 and May 29, 2024. All trees regardless of size were inventoried within the Tree Inventory Area. All tree species at risk (SAR) regardless of Diameter at Breast Height measurement, were inventoried if encountered within 30 metres of the Impact Area.

The Diameter at Breast Height, defined as the diameter of the tree trunk at 1.4 metres above grade was measured. The dripline and height of inventoried trees were estimated in metres. A visual tree assessment (VTA) was used to determine the health and structural condition of each tree including recording any abiotic and biotic disorders and conditions, as well as structural defects.

A total of 720 trees were inventoried as part of this arborist review. All individual trees surveyed were found within an urban environment with their DBH measurements up to 94 centimetres; the average DBH was 21 centimetres. Several tree species were identified during the tree inventory, with the most abundant being Trembling Aspen at 31.6% and Willow Sp. at 20.1%. **Table 6** provides a summary of the health and structure condition of trees observed. Of the 720 trees inventoried, approximately 474 were located on Municipal land and therefore owned by the Town of Whitby and 246 trees were located on private lands.

Table 6: Summary of Tree Condition

Condition Rating	Ecological Land Classification Name
Excellent	0
Good	90
Fair	472
Poor	42
Very Poor	25
Dead	91
Total	**720**

4.2.4 Breeding Birds

AECOM ecologists conducted two rounds of breeding bird surveys on June 6 and June 24, 2022, following the protocols from the Ontario Breeding Bird Atlas Guide for Participants (OBBA, 2001). As illustrated in **Figure 6**, a total of 11 breeding bird survey stations were established along the Study Area with the surveys conducted twice during the breeding season separated by at least 10 days. Incidental avian observations were also recorded (with breeding evidence codes during the breeding season).

Isolated trees, shrubs, vegetation communities and buildings/bridges provide potential nesting habitat for migratory birds. A total of 55 bird species were observed over two rounds of point count surveys and incidentally during other field investigations within the Study Area. The majority of the species recorded during field investigations are considered common and widespread in Ontario and adaptable to early successional, forest edge or human-altered habitats. The majority of the species observed receive protection under the Migratory Bird and Convention Act (MBCA). No nests of Schedule 1 MBCA-protected bird species (i.e., Pileated Woodpecker) were observed during field investigations; however, targeted surveys were not completed.

Additionally, three Species of Conservation Concern birds were recorded that included the Eastern Wood-pewee, Barn Swallow, and Caspian Tern. Eastern Wood-pewee was observed during both rounds of breeding bird surveys near BBS-05 (refer to **Figure 6**) within the Poplar Mineral Deciduous Swamp (SWD4-5) located south of Water Street near the Whitby Lions Promenade location abutting Whitby Harbour. Barn Swallows were observed foraging within the Study Area; however, no nests were found within the area expected to be impacted by the project. Caspian Tern was observed in suitable nesting habitat along the harbour in Lake Ontario, outside the limits of the project.

4.2.5 Wildlife and Wildlife Habitat

Although the Study Area has been anthropogenically disturbed and fragmented, larger tracts of vegetation communities are still generally intact. Since Water Street is not subject to heavy traffic, it is not considered a significant barrier for terrestrial wildlife that may move between area vegetation communities. The majority of species observed were considered common and tolerant of urban disturbances. Incidental wildlife observations included the Eastern Chipmunk, Eastern Cottontail, Eastern Gray Squirrel, Red Squirrel, Eastern Gartersnake, the Monarch Butterfly, and a number of bird species.

The Study Area contained core and regional areas of CLOCA's Wildlife Habitat Network (WHN), which includes a connected system of important wildlife habitats and corridors within CLOCA's jurisdiction. Core habitats were associated with significant features

such as the Whitby Harbour PSW Complex. Core habitat was also present along open water and vegetation communities within the harbour. Core habitat within the Study Area is likely to support a variety of wildlife including potential Significant Wildlife Habitat and Species at Risk.

Regional habitat areas were associated with vegetation communities north of Water Street and west of South Blair Street. Regional habitats provide important corridors for wildlife allowing a variety of wildlife to move between habitats that are key for specific life stages. Regional habitats may include communities along the Lake Ontario shoreline that support migratory birds and insects and facilitate movement of terrestrial animals.

4.2.6 Significant Wildlife Habitat

Significant Wildlife Habitat (SWH) is defined as areas that have important ecological features and functions and that support sustainable populations of plants, wildlife and other organisms and are generally categorized by the MNRF into one of five categories that include Seasonal Concentration Areas, Rare Vegetation Communities, Specialized Habitats for Wildlife, Habitats of Species of Conservation Concern, and Animal Movement Corridors.

While Species of Conservation Concern do not receive legal protection under the Endangered Species Act, they may be afforded protection under the Provincial Policy Statement (2020), Migratory Birds Convention Act (1994), Fish and Wildlife Conservation Act (1997), and other planning documents.

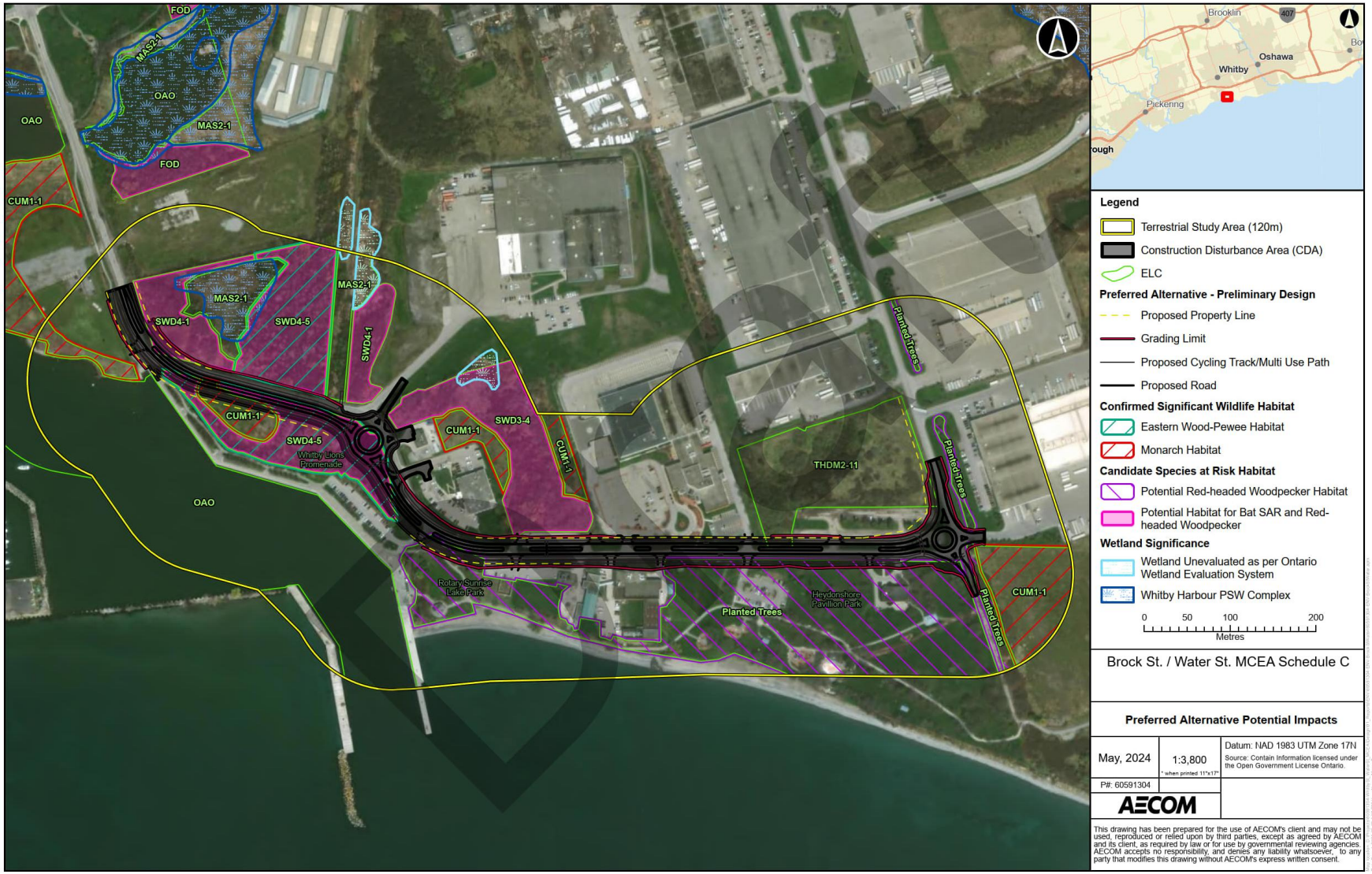
The presence of Significant Wildlife Habitat was determined by comparing general habitat conditions and characteristics observed to the habitat criteria identified in the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, 2015).

The following confirmed and candidate Significant Wildlife Habitat were identified within the Study Area.

4.2.6.1 Confirmed Habitat

As illustrated on **Figure 7**, confirmed habitat for two Species of Conservation Concern was identified within the study area. This included habitat for the Eastern Wood-pewee within the Poplar Mineral Deciduous Swamp (SWD4-5) primarily at the western half of the Study Area on both the north and south side of Water Street as well as habitat for the Monarch Butterfly located within pockets of cultural meadow communities scattered throughout the Study Area.

Figure 7: Existing Natural Heritage Features



4.2.6.2 Candidate Habitat

The following candidate SWH are located within the Study Area as identified on **Figure 7.**

a) Seasonal Concentration Areas

- **Bat Maternity Colonies** – candidate habitat was observed within the swamp area on the north side of Water Street within the Manitoba Maple Mineral Deciduous Swamp (SWD3-4), Poplar Mineral Deciduous Swamp (SWD4-5) and Willow Mineral Deciduous Swamp (SWD4-1) on both the north and south side Water Street in the western half of the study area.
- **Turtle Wintering Areas** were observed within the Cattail Mineral Shallow Marsh (MAS2-1) in the area on the north side of Water Street in the western half of the Study Area and Lake Ontario.
- **Colonially Nesting Bird Breeding Habitat** (Tree/Shrubs) was confirmed by the MNRF outside the Study Area; however, swamp communities identified during ELC Surveys may provide potential SWH. While no nests of colonially tree/shrub nesting birds were identified, entirety of swamp communities were not searched for nests.

b) Specialized Habitats of Wildlife

The following specialized wildlife habitats were identified within the Study Area as follows:

- Waterfowl Nesting Area where upland communities were adjacent to wetland communities;
- Amphibian Breeding Habitat (Woodland) within Deciduous Swamp (SWD) and MAS2-1 communities;
- Marsh Breeding Bird Habitat within MAS2-1 community;
- Habitats for Species of Conservation Concern:
  - Habitat for Barn Swallow on buildings and park structures with suitable ledges and overhangs;
  - Habitat for Common Nighthawk on flat-topped buildings;
  - Habitat for Northern Map Turtle in Lake Ontario; and,
  - Habitat for Snapping Turtle in Lake Ontario and the Cattail Mineral Shallow Marsh (MAS2-1).

c) Animal Movement Corridors

- These may be present within the swamp, marsh and upland communities that occur along either side of Water Street to provide opportunities for amphibian movement between breeding and summer habitat within the Study Area and the surrounding area.

4.2.7 Species at Risk

Species at Risk include those listed as Extirpated, Endangered or Threatened on the Species at Risk in Ontario (SARO) list and that receive both individual and habitat protection under the Endangered Species Act. Desktop Species of Conservation Concern and Species at Risk habitat screenings were conducted with any recent occurrence records or ranges overlapping the Study Area identified and then screened by comparing their habitat requirements to the habitat conditions present. The potential for the species to occur within the Study Area was determined through a probability of occurrence as follows:

- **Low Probability:** no suitable habitat for the species and no occurrence of the species incidentally observed through field reconnaissance within the Study Area but there is a known species record in the general area.
- **Medium Probability:** potentially suitable Species at Risk habitat identified within the Study Area, but no occurrence of the species incidentally observed through field reconnaissance although there is a known species record in the general area.
- **High Probability:** good quality Species at Risk habitat identified within the Study Area and known species record in the Study Area (either through current field assessment or background information).

Several candidate habitats for Species at Risk were identified within the Study Area. Of the 26 Species at Risk records identified through the background review, the following Species at Risk designated as Endangered under the Endangered Species Act were determined to have a medium potential to occur in the Study Area:

- **Red-headed Woodpecker** - The edge of swamp communities or isolated trees within the park areas along the lakeshore may contain suitable cavity trees for nesting (refer to **Figure 7**).
- **Species at Risk Bats –** These include the Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, and Tri-coloured Bat. All of the Deciduous Swamp (SWD) communities, located primarily at the western half of the Study Area on both sides of Water Street, may contain suitable cavity trees for bat roosting (refer to **Figure 7**).

The remaining Species at Risk were determined to have a low potential to occur within the Study Area due to a lack of suitable habitat.

While Bank Swallows were observed foraging near Breeding Bird Station-02 (BBS-02) on the vacant lands in the southeast quadrant of Water Street and South Blair Street no

nests or suitable nesting habitat were identified within the Study Area. It is expected that the Bank Swallows are likely nesting outside the Study Area in the bluffs along Lake Ontario and near Thickson Woods Point where there are known nesting colonies. The Bank Swallow was the only Species at Risk observed within the Study Area.

4.2.8 Fish and Fish Habitat

As noted, since no online watercourses (i.e., those connected to a waterbody that contain fish at any given time of the year) were identified within the Study Area no aquatic field investigations were completed. However, background information was reviewed to obtain an understanding of the aquatic features present within the Study Area.

The Study Area is situated within the boundaries of the Pringle Creek watershed. There were no watercourses observed within the Study Area; however, the main tributary of Pringle Creek is located north of the Study Area with Lake Ontario and Whitby Harbour situated to the south and southwest, respectively.

A number of fish species were noted to be present within Lake Ontario and Whitby Harbour that included the Bluegill, Bowfin, Brown Bullhead, Brown Trout, Channel Catfish, Chinook Salmon, Coho Salmon, Common Carp, Freshwater Drum, Goldeye, Lake Trout, Largemouth Bass, Mooneye, Muskellunge, Northern Pike, Pumpkinseed, Rainbow Trout, Rock Bass, Round Goby, Shortnose Cisco, Smallmouth Bass, Threespine Stickleback, Walleye, White Bass, White Perch, White Sucker, and Yellow Perch.

The Shortnose Cisco was the only aquatic Species at Risk identified during the background review. While potential habitat for Shortnose Cisco may be present within the broader terrestrial area of review (i.e., Study Area plus 120 metre buffer) it is not located within the project Study Area.

4.2.9 Existing Drainage

AECOM completed a stormwater management review of the project Study Area to review existing drainage, identify deficiencies and to prepare a preliminary Stormwater Management design to service Water Street in support of the planned improvements. The review was documented in a Drainage and Stormwater Management Report and included a description of the existing drainage area (i.e. land use, flow direction, etc.) as well as stormwater management opportunities and constraints in relation to the Recommended Plan. Refer to **Appendix D** for a copy of the report.

Under existing conditions, runoff drains through a series of ditches, sewers and culverts toward Lake Ontario. The stormwater system collects runoff from both the road and external areas.

Overland flow from properties along the north side of Water Street is directed towards the roadway and conveyed across Water Street through two crossings located in front of 250 Water Street. From the east, stormwater is collected and conveyed for approximately 200 metres from the South Blair Street intersection via ditches and three small culverts until it reaches a culvert located at the southeast corner of the Canada Christian College property at 300 Water Street. This culvert, extending approximately 175 metres with a diameter ranging from 0.375 to 0.75 metres, carries flow to the east manhole at 250 Water Street ("EastCrossingMH"), where the water passes beneath Water Street toward the outfall, eventually discharging into Lake Ontario. Road runoff along this 175-metre segment is collected through a series of catch basins and overland flow paths, discharging through a 500 millimetre culvert into the east manhole at 250 Water Street ("EastCrossingMH"). From the west, road runoff is routed through a series of ditches and three small culverts along the road before entering an underground sewer (0.375 metre diameter) at the west catch basin at 250 Water Street ("WestCrossingMH"). This sewer runs beneath Water Street and discharges at the south outfall, directing the flow toward Lake Ontario.

Along the south side of Water Street, road runoff on the east side of Water Street, from the South Blair Street intersection to the Whitby Water Supply Plant, is currently conveyed through a network of ditches and small culverts, which direct the water across the Region's Water Supply Plant property toward Lake Ontario. Beyond this section, runoff from the south side of the road either drains overland towards the south outfall or flows directly into the lake.

The ditches and culverts along the north side of the road collect stormwater from various external sources, including wetlands, development lots, parking areas, woodlands, and vacant land. On the south side, stormwater primarily flows away from the road, moving southward.

Under existing conditions, Water Street is overtopped by 100-year storm events at multiple locations. Overtopping occurs (less than 5 centimetres) on the east side of the road taking place at the southeast and southwest corner of 300 Water Street. Overtopping is prevalent on the west side of the road, with flow moving from north to south, as indicated in modeling results. This overtopping is primarily due to the road's relatively flat and low surface elevation in that area, which makes it more susceptible to overflow during storm events.

4.2.10 Groundwater and Source Protection

The Study Area is located within the Central Lake Ontario Source Protection Area that is part of the broader Credit Valley-Toronto and Region-Central Lake Ontario (CTC) Source Protection Region. The CTC Source Protection Plan (Approved Feb. 23, 2022)

applies to all three Source Protection Authorities in the Region: Credit Valley, Toronto and Region, and Central Lake Ontario.

The Whitby Water Supply Plant is located within the Study Area between Water Street and Lake Ontario approximately 0.38 kilometres west of South Blair Street. As illustrated in **Figure 8**, the CTC Source Protection Plan identifies the area adjacent Lake Ontario as an Intake Protection Zone-2 with a score of 4. To the south of the Study Area a Surface Water Intake is identified in Lake Ontario with a surrounding buffer designated as Intake Protection Zone-1 with a score of 5. The Study Area is also within an area identified as a Highly Vulnerable Aquifer.

As per S. 6.1.2 of the CTC Source Protection Plan, Intake Protection Zones refer to the area on the water and land surrounding a municipal surface water intake. IPZ-1 includes a one-kilometre circle around the intake if it is located in one of the Great Lakes and IPZ-2 is the area where water can reach the intake in a specified time (i.e., two hours was used by CTC).

A Highly Vulnerable Aquifer refers to an aquifer that is susceptible to contamination due to its location near the ground's surface or because the ground that surrounds it is highly permeable. An area identified as a Highly Vulnerable Aquifer is subject to certain land use policies such as those regarding the application and/or handling and storage of road salt.

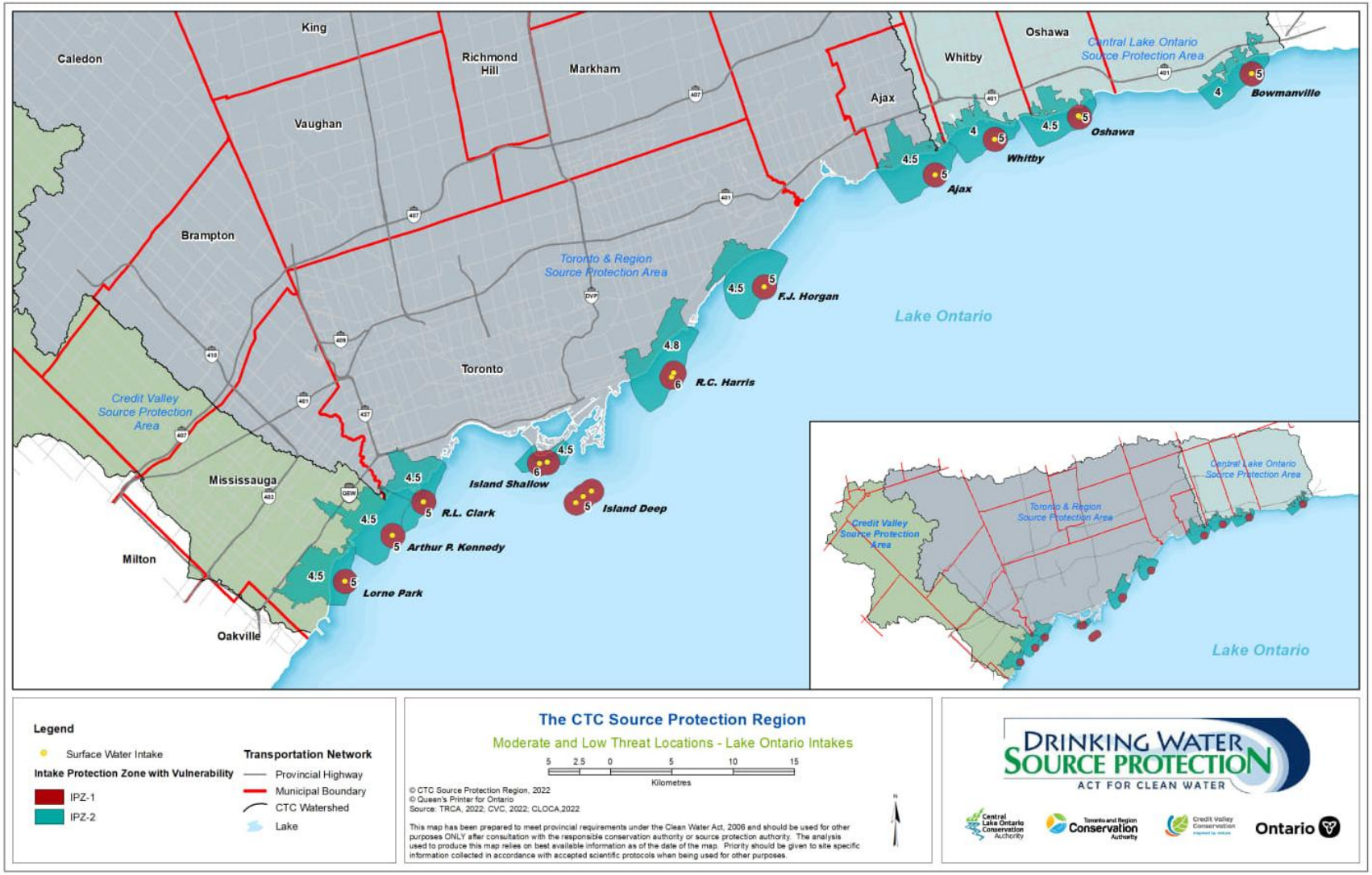
4.2.11 Contamination and Waste Management

Given the history of industrial operations within the Study Area, there is the potential for contamination to be present on several properties within the Study Area. Additional geotechnical investigation, chemical testing, and other study will be required during detailed design to confirm the potential for contamination and to develop an appropriate mitigation strategy.

4.2.12 Geotechnical Information

An earlier Geotechnical / Environmental Assessment Report completed by Golder Associates Ltd. in June 2001 for the existing Water Street alignment was provided for reference for the current Class EA. The preceding study was completed for a segment of Water Street stretching from Harbour Street south to approximately Rotary Sunrise Lake Park. In addition to the geotechnical investigation, the review also included an assessment of the subsurface conditions for the presence of environmental impact from the property immediately south of Water Street given the historical use of the site as a bulk oil storage facility by Texaco.

Figure 8: CTC Source Protection Region Moderate and Low Threat Locations



Soil samples were obtained from seven boreholes drilled on the edge / shoulder of the Water Street east bound lane and one placed in a landscaped area between Water Street and the Rotary Sunrise Lake Park parking lot. Four monitoring wells were also installed in four of the borehole locations.

The boreholes revealed that pavement structure / fill was present between 0.61 metres and 2.21 metres with subsurface conditions below that depth generally consisting of deposits of sand, sandy silt, silty sand, sand and gravel and gravely sand underlain by deposits of silty clay and clayey silt till.

High groundwater levels were encountered at depths ranging from 1.2 to 2.4 metres below ground surface and it was noted that while water levels may fluctuate with time, excavations within the upper 2 to 3 metres of the site will likely encounter a significant flow of water into the excavation that may require localized dewatering. The investigation also noted that there is likely a hydraulic connection with Lake Ontario given the granular nature of the upper soils.

An extensive deposit of peat was encountered at Boreholes 1 to 6 with locations of very soft to soft silty clay identified at Boreholes 7 and 8. The report also noted that the majority of fill materials encountered appear to be suitable for reuse as engineered fill on site, provided that they are at suitable water content and are free of significant amounts of organics or chemical contaminants. The fills encountered at Boreholes 7 and 8 were found to contain significant amounts of topsoil, construction rubble and a single MECP exceedance for zinc in the Borehole 8 fill samples. The fills in the general area of Borehole 7 and 8 are likely to be reusable as general fill in landscaped areas only. In terms of foundations, bearing soils encountered in the upper 3 to 4 metres of the site are not considered suitable for the support of conventional strip and spread footings, due to the presence of soft clays, peat and fill materials.

4.3 Socio-Economic Environment

4.3.1 Land Use

As illustrated in **Figure 9**, existing land use within the Study Area consists of a variety of uses including institutional, commercial, industrial, and parkland. Existing land use to the south of Water Street at the east end of the Study Area consists of two parks that include the Rotary Sunrise Lake Park, a large park and beach area with associated parking lots and the Kiwanis Heydenshore Park, a large park with trails, playgrounds and parking lots as well as the Haydenshore Pavilion community centre. The Regional Water Supply Plant is also situated between the two parks on the south side of Water Street. A Waterfront Trail passes through the Study Area abutting the shores of Whitby Harbour and Lake Ontario.

Figure 9: Existing Land Use within Study Area



The north side of Water Street is characterized primarily by commercial and light industrial land uses, including warehouses and low-rise office complexes situated on large lots set well back from the road. The Canadian Christian College is located on the north side of Water Street just west of South Blair Street. The northwest corner of the Water Street / South Blair Street intersection is a large, undeveloped lot that provides overflow parking for the Kiwanis-Haydenshore Park. The western end of the Study Area includes a large undeveloped wooded lot and the remnants of a former railway corridor.

4.3.2 Transit and Active Transportation

4.3.2.1 Whitby GO Station

The Whitby GO Station is located south of Highway 401 between Brock Street South and Henry Street. There is limited infrastructure on Water Street to support the long-term objective of enabling GO users to access the waterfront.

4.3.2.2 Durham Region Transit

On Demand service along Water Street provides local transit service and connections to scheduled bus routes and GO Transit services. There is currently no accessible interconnection to the bus platforms on Water Street.

4.3.2.3 Active Transportation

The Great Lakes Waterfront Trail is a 3,600 kilometre interconnecting trail along the Canadian shores of the Great Lakes and St. Lawrence River that extends from Prince Township, west of Sault Ste. Marie, to the Quebec border. A section of the Great Lakes Waterfront Trail that passes through the Town of Whitby is located south of Water Street abutting the shores of Whitby Harbour and Lake Ontario that provides a scenic path for pedestrian and cyclists along the waterfront. Currently, there are no on-road provisions for active transportation on Water Street.

4.3.3 Noise

At present there are no residences within the Study Area or in proximity. There is a private commercial educational facility with no associated outdoor space, and no observable operable windows. As per MECP noise guideline NPC-300 and MTO Environmental Guide for Noise (MTO Noise Guide) this location is not considered noise sensitive. Also, as per NPC-300, and the MTO Noise Guide, where a park is not adjacent to a noise sensitive land use (housing subdivision, etc.) it is not considered noise sensitive. Therefore, there are no defined noise sensitive land uses in close proximity to the project.

4.4 Cultural Environment

4.4.1 Archaeological Resources

AECOM completed a Stage 1 Archaeological Assessment for the subject Study Area with the objective of documenting the archaeological and land use history and present conditions within the Study Area. The study was conducted to meet the requirements of the *Ministry of Citizenship and Multiculturalism Standards and Guidelines for Consultant*

Archaeologists (Government of Ontario 2011). AECOM conducted a Stage 1 field review on August 8, 2023. A copy of the Stage 1 Report is included in **Appendix E**.

Based on a review of the historical, environmental, and archaeological context of the Study Area, AECOM's Stage 1 background study and subsequent field review determined that the potential for the recovery of pre- and post-contact Indigenous and 19th century Euro-Canadian archaeological resources within the Study Area is high, within areas not subject to previous disturbance, based on the presence of the following features:

- Distance to various types of water sources (Lake Ontario, Pringle Creek);
- Areas of early Euro-Canadian settlement (Port Whitby); and,
- Early transportation routes (Brock Street South, Water Street, South Blair Street, and the Whitby, Port Perry & Lindsay Railway).

Figure 10 identifies the areas within the Study Area where there is archaeological potential and those where archaeological potential has been removed. This includes areas cleared of archaeological concern through previous assessment, low lying and wet areas, as well as locations where extensive and deep land alterations have significantly compromised the recovery of archaeological materials. This would include constructed roadways, parking lots, building footprints, former building footprints documented through historical aerial photography, buried and above ground utilities and infrastructure, and sidewalks.

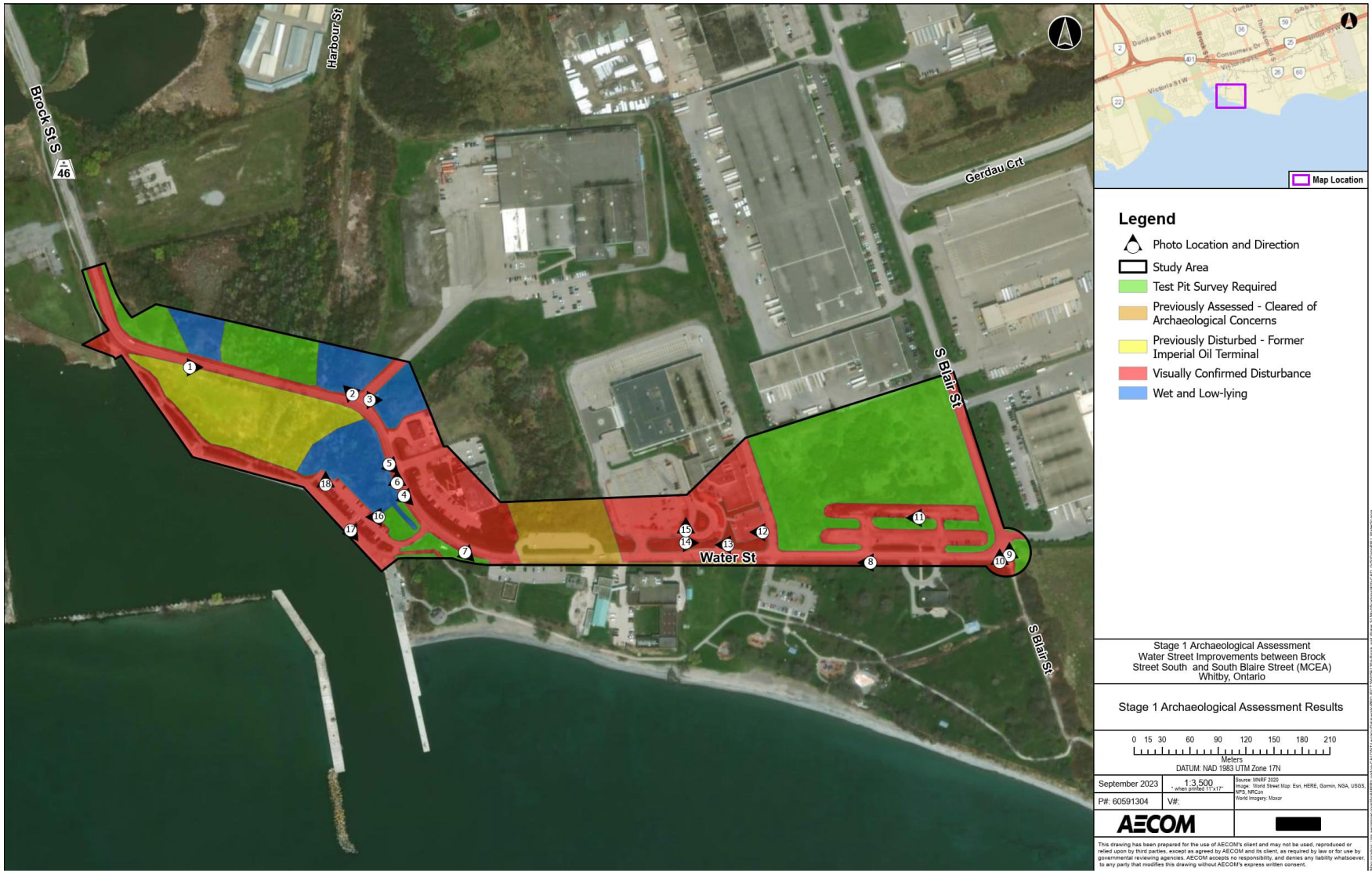
A Stage 2 archaeological assessment is recommended for all areas of potentially undisturbed land within the Study Area limits, as illustrated in green shading in **Figure 10.**

4.4.2 Built Heritage and Cultural Heritage Landscapes

As part of this undertaking AECOM completed a **Cultural Heritage Screening Report** (refer to **Appendix F**) to assess the Study Area to identify and document known and potential built heritage resources and cultural heritage landscapes of cultural heritage value or interest within and/or adjacent to the Study Area.

This heritage review consisted of a desktop study and application of the *Ministry of Citizenship and Multiculturalism Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* (i.e., MCM Criteria Checklist, 2016) to assist in determining the potential for the planned improvements to impact cultural heritage resources within the Study Area.

Figure 10: Stage 1 Archaeological Assessment Results



A review was made of municipal, provincial, and federal heritage registers and inventories including the Town of Whitby Municipal Heritage Register. Online historic mapping was also reviewed as well as several online resources that included those available by the Ontario Heritage Trust; Ontario Historical Society's Ontario Heritage Directory and Map; Ontario Genealogical Society's Ontario Cemetery Index; Parks Canada's National Historic Sites; Canadian Heritage River System website; and, the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites. Secondary sources including the Port Whitby Self-guided Walking Tour (2016) were also reviewed. Email consultation was completed with the Town of Whitby, Ontario Heritage Trust, and Ministry of Citizenship and Multiculturalism MCM.

For the purposes of this Study, the Built Heritage Resources and Cultural Heritage Landscapes were categorized as either Known or Potential. Known resources consist of municipally, provincially, or federally designated or listed properties that have an existing level of heritage protection, designation, or recognition. Potential resources consist of properties identified during the desktop screening exercise that include a building or structure appearing to be older than 40 years of age, that, informed by the Ministry of Citizenship and Multiculturalism Criteria Checklist, have been determined in this Study to have potential cultural heritage value or interest.

The heritage review concluded that there is one known Built Heritage Resource and one potential Cultural Heritage Landscape within the Study Area as follows:

- **Built Heritage Resource (Location 1)** – this refers to the former Waterworks Pump House at 269 Water Street, currently listed on the Town of Whitby's Municipal Heritage Register. This resource includes the remains of c.1904 Waterworks Pumphouse. Four original exterior walls of the former pumphouse structure, constructed of buff brick, are present. The structure has decorative brick details including three voussoir-arched window and door openings, corbelled brickwork and recessed bays separated by pilasters. The pump house operated until 1978, when the equipment and roof were removed, and the original chimney was demolished.
- **Cultural Heritage Landscape (Location 2)** – this refers to the former Port Perry and Port Whitby / CN Railway corridor that crosses Water Street towards the western end of the Study Area and is identified as a potential cultural heritage landscape. It was constructed in 1871 and originally used to transport produce and lumber to Port Whitby for shipment with tracks still existing as late as 1968. The former corridor is still visible extending northeast from Water Street and is now used as a hydro corridor.

Please refer to **Figure 11a** for the locations of the above noted resources.

Figure 11a: Existing Built Heritage and Cultural Heritage Landscapes within Study Area



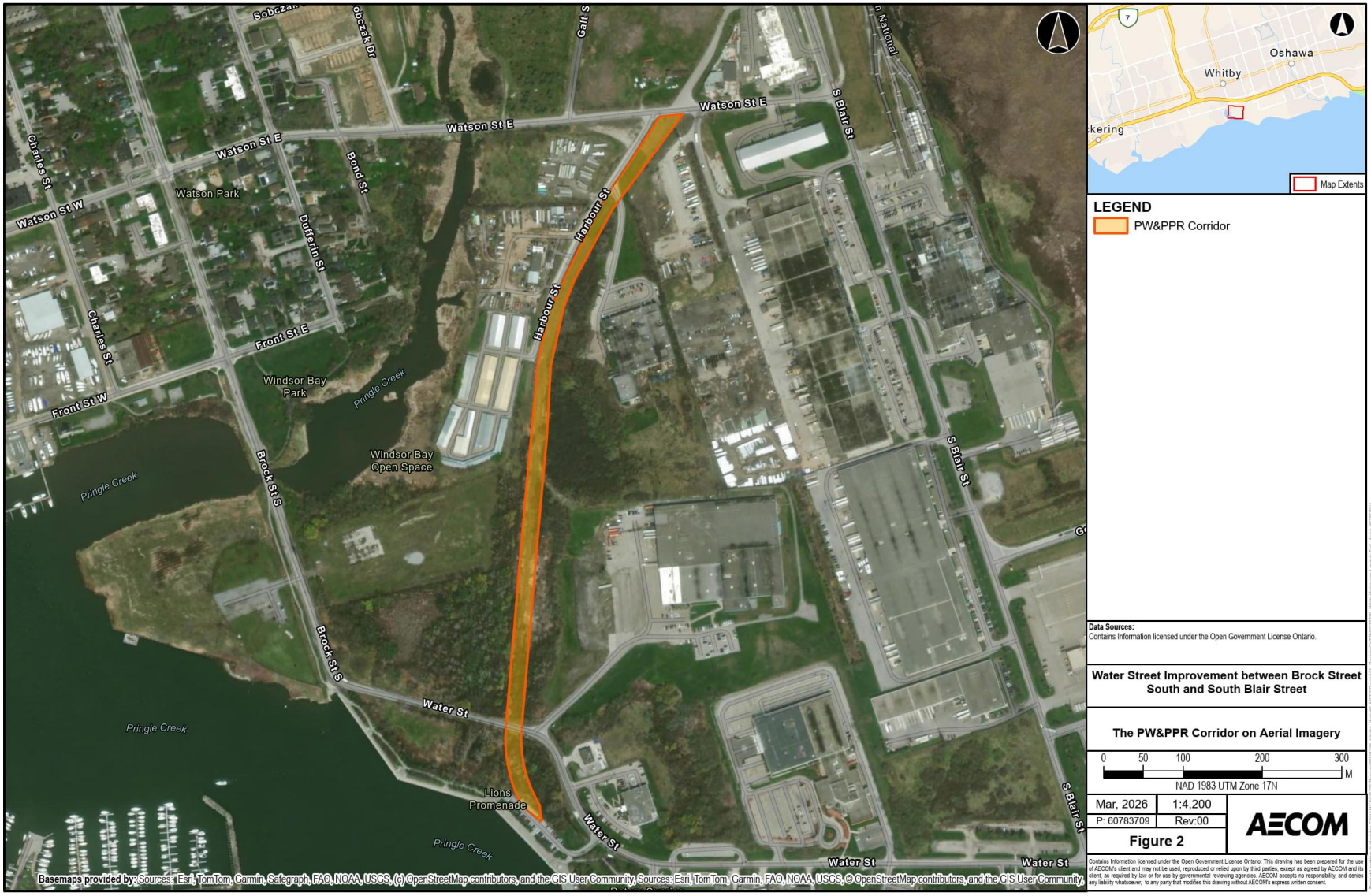
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Following completion of the CHSR and its recommendation to complete further study of the one potential Cultural Heritage Landscape to be impacted within the Study Area, the Town completed a **Cultural Heritage Evaluation Report (CHER)** and Heritage Impact Assessment (HIA) for the Port Whitby & Port Perry Railway (PW&PPR) Corridor to determine whether the Corridor has Cultural Heritage Value or Interest (CHVI) according to Ontario Regulation 9/06 (O. Reg. 9/06). **Figure 11b** illustrates the area of study included in the CHER.

The CHER determined that the PW&PPR Corridor holds historical value due to its association with the PW&PPR, a local railway company established by residents of the Town of Whitby. This railway played a significant role in the historical development of the Town, particularly in connecting Port Whitby to Port Perry, Lindsay, and the broader railway network, including the Grand Trunk Railway and later the Canadian National Railway. Based on a comprehensive review that included background historical research, field assessments, professional expertise, and the application of O. Reg. 9/06, it was determined that the PW&PPR Corridor possesses CHVI at the local level and therefore qualifies for designation under the Ontario Heritage Act. The vestiges of the corridor, and any remaining archaeological potential within the corridor, are considered to yield, or have the potential to yield information that contributes to an understanding of a community or culture, particularly as these relate to human land use in what is now the Town of Whitby. Despite its historical significance, the PW&PPR Corridor was found to lack physical and contextual value. The removal of railway tracks and ties, along with significant alterations to the waterfront of Port Whitby, has effectively eliminated the transportation and industrial functions and the historical context of the corridor.

The CHER/HIA concluded that given the CHVI of the PW&PPR Corridor and the anticipated impacts of the Project, cultural heritage mitigation is required. Selection and implementation of mitigation measures was completed in consultation with a Town of Whitby Heritage Planner. To review the CHER/HIA in its entirety, please refer to **Appendix K**.

Figure 11b: Cultural Heritage Evaluation Report Port Whitby & Port Perry Railway Area of Study



5. Problem and Opportunity Statement

As part of the Class EA process a formal Problem/Opportunity Statement was developed to identify the problems and / or opportunities within the Study Area to be addressed by the planned undertaking. The Problem/Opportunity Statement was updated based on feedback received following Community Open House #1 and presented at Community Open House #2 as follows:

To enhance the Whitby Waterfront, and provide opportunities for better pedestrian, cycling and Waterfront Trail connections, improvements will be undertaken on Water Street between Brock Street South and South Blair Street. These improvements will address road alignment and drainage deficiencies, support parking, and will also accommodate future travel demands including active transportation to and from the Whitby Waterfront.

6. MCEA Phase 2 Alternative Solutions

6.1 Generation of Alternative Solutions

During Phase 2 of the MCEA process five alternative solutions were developed to address the identified problem and opportunities and were presented to the public during Community Open House #2 for review and comment. These included the following:

- **Alternative 1 – 'Do Nothing':** This alternative is included as part of the Class EA process to establish a benchmark to gauge the potential for environmental impacts. It proposes to maintain the "status quo" with no measures implemented to improve Water Street other than regular maintenance.
- **Alternative 2 – Improve Streetscape and Active Transportation**: This alternative proposes to improve the corridor to enhance cyclist and pedestrian facilities. This would include the addition of Multi-Use Paths and/or bicycles lanes, improved traffic control, installation of street furniture, landscaping, pedestrian crossings, etc.
- **Alternative 3 – Minor Engineering Design Upgrade**: This alternative involves minor engineering improvements to address specific road geometry, drainage and flooding issues.
- **Alternative 4 – Widen Water Street:** This alternative provides additional travel lanes to increase capacity for existing and future traffic needs.
- **Alternative 5 – Build a New Road:** This alternative proposes to construct a new road in a different location connecting Brock Street South and South Blair Street that would accommodate all modes of transportation and provide effective stormwater drainage.

6.1.1 Evaluation Framework and Criteria

The aforementioned Alternative Solutions were evaluated using relevant criteria to assist in comparing the potential for impact related to each alternative and to illustrate the advantages / disadvantages of each option and ultimately, to assist in selection of the Preferred Alternative Solution. Technical as well as natural, socio-economic, and cultural criterion were utilized to complete the Phase 2 evaluation as illustrated in **Table 7**.

Table 7: Class EA Phase 2 Evaluation Criteria

Evaluation Categories	Description
Traffic / Transportation	Potential effects on traffic and modes of transportation including future travel demand, road network connectivity, and accommodation of active transportation.
Technical / Engineering Construction	Constraints and complexities including utility impacts, safety concerns, drainage/flooding issues, and required approvals.
Land Use	Conformity with local, regional and provincial plans, policies and regulations, and ability to accommodate existing and planned development.
Natural Environment	Potential to impact natural heritage features including terrestrial/aquatic species and habitats, wetlands, vegetation, and stormwater management.
Climate Change	Potential effects on climate change (e.g., carbon footprint), and adaptation to future extreme weather conditions and events.
Social Environment	Potential effects on residents, neighbourhoods, businesses, community character, social cohesion and community features including streetscape improvements, property impacts, noise and air quality impacts, emergency response time, and traffic disruptions during construction.
Archaeology and Culture	Potential effects on archaeological and built heritage resources and cultural heritage landscapes.
Cost	Capital costs, construction costs, and operation and maintenance costs.

6.1.2 Evaluation of Alternative Solutions

Each alternative was reviewed for its potential to impact the various criterion. An Evaluation Matrix was developed to illustrate the evaluation completed. The matrix utilizes a simple, visual approach to compare the alternatives and to highlight the positive and negative impacts associated with each alternative. The impact of an alternative on the various criterion was scored as either Not Preferred, Less Preferred, or Preferred. **Table 8** illustrates the evaluation completed.

As illustrated, while Alternative 1 may have less potential for impact given that no improvements are proposed it was considered less preferred as it does not address key issues and Town objectives in addition to the Phase 1 Problem/Opportunity Statement. While Alternative 2 provides some improvements and has reduced potential for impact in some areas, it does not fully address the key issues and / or Town objectives and therefore scored more moderately. While Alternatives 4 and 5 do provide improvements and address Town objectives, they are the least preferred given they have the highest construction complexity and costs and the highest potential for area impacts associated with construction.

Table 8: Class EA Phase 2 Evaluation Matrix

EVALUATION OF ALTERNATIVE SOLUTIONS

Whitby

MCEA PHASE 2

Legend: ○ Not Preferred | ◐ Less Preferred | ● Preferred

Evaluation Objectives	Alternative Solutions					Rationale
	1. Do Nothing	2. Improve Streetscape & Active Transportation	3. Minor Engineering Design Upgrades	4. Widen Water Street	5. Build a New Road	
Traffic / Transportation Traffic capacity, active transportation and road connectivity	○	●	○	◐	●	**Alternatives 2 & 5** improve road connectivity for all travel modes, and accommodate active transportation to the fullest extent. **Alternative 4** accommodates active transportation, but provides excessive auto-capacity in a widened unnecessary four-lane road. **Alternatives 1 & 3** are least preferred as they do not improve road network connectivity nor improve active transportation.
Technical / Engineering Construction complexity, utility impacts, safety concerns, drainage/flooding issues, approvals	○	◐	●	○	○	**Alternative 3** is most preferred as it addresses safety and flooding issues, and is least complex in terms of construction. **Alternative 2** will have a moderate impact on utilities, but does not address flooding issues and safety concerns associated with road geometry. **Alternatives 4 & 5** do not address flooding issues and geometry on existing Water Street, and they have the greatest utility impacts, approval requirements and a high overall construction complexity. **Alternative 1** does not address safety concerns and flooding issues.
Land Use Existing and planned land use, consistency with planning policy	○	◐	●	◐	◐	**Alternative 3** is most preferred alternative as it has low impact on existing land uses and is consistent with land use planning goals. **Alternatives 4 & 5** accommodate existing and future development, but will have a higher potential to impact existing land use. **Alternative 2** is consistent with land use planning policy, but will moderately impact current land use. **Alternative 1** has no land use impacts, but is not consistent with land use policy.
Natural Environment Aquatic and terrestrial species/habitat, vegetation, sensitive natural features	◐	○	●	○	○	**Alternative 3** is most preferred as it has the least potential to impact the natural environment and provides improved stormwater management. While **Alternative 1** has the least potential to impact the natural environment since no construction is proposed, it does not address stormwater management issues. **Alternative 2** has moderate potential to impact the natural environment and provides improved greenspace through additional landscaping, but does not address flooding issues. **Alternatives 4 & 5** improve stormwater management, but have the highest potential to impact the natural environment.
Climate Change Carbon footprint (CO_2 emissions) and ability to adapt to future extreme weather conditions	○	●	●	○	◐	**Alternative 3** is most preferred as it proposes the least carbon footprint and provides opportunity for adaption to future extreme weather conditions. **Alternative 2** proposes a moderate carbon footprint, less CO_2 emissions, and includes green space (carbon sink). **Alternative 5** can be designed to adapt to extreme weather events, but will result in a greater carbon footprint. **Alternative 4** is least preferred as it will result in the largest footprint and greatest potential for carbon emissions. While **Alternative 1** proposes no change to the carbon footprint, it is also least preferred since it is not resistant to extreme weather conditions.
Social Environment Emergency response times, streetscape, property & access, noise & air quality, and traffic disruption	◐	●	◐	○	○	**Alternative 2** is most preferred as it addresses Town objectives by providing an enhanced Whitby waterfront area. **Alternative 1** has no property or access impacts, but proposes no improvements to the waterfront area. **Alternative 3** has low property impacts, but does not enhance the Whitby Waterfront area or streetscape. **Alternatives 4 and 5** propose the highest property impacts and traffic disruption during construction.
Archaeology and Culture Archaeological and Built Heritage resources	●	◐	◐	○	○	**Alternative 1** has no potential to impact archaeological and cultural heritage resources since no construction is proposed. **Alternatives 2 & 3** would have moderate impacts. **Alternatives 4 & 5** have the greatest potential for impacts since these alternatives propose the most construction.
Cost Capital, operation, and maintenance costs	●	◐	◐	○	○	**Alternative 1** proposes no improvements and therefore no associated costs. **Alternatives 2 and 3** are expected to have more moderate costs in comparison. **Alternatives 4 & 5** have highest costs associated with the most construction and maintenance.
Overall Ranking	◐	◐	●	○	○	Overall, **Alternative 3** is most preferred as it addresses key issues affecting the corridor, meets Town objectives, and has more reasonable costs in comparison to other alternatives, and mitigation can assist in minimizing potential impacts. **Alternative 1** is screened out as it does not address key issues and Town objectives. While **Alternative 2** provides some improvements and has reduced potential for impact in some areas, it does not fully address the key issues/Town objectives and therefore scored more moderately. While **Alternatives 4 & 5** do provide improvements and address Town objectives, they are the least preferred given they have the highest construction complexity and costs and the highest potential for area impacts associated with construction.

Overall, Alternative 3 was identified as the Preferred Solution as it addresses key issues affecting the corridor, meets Town objectives and has more reasonable costs in comparison to other alternatives, and mitigation can assist in minimizing potential impacts. It can also accommodate existing and planned development, has a minimal carbon footprint, and provides opportunities for adaption for future extreme weather conditions.

6.1.3 Selection of Preferred Alternative Solution

Following Community Open House #2 and the receipt of input it was recommended that both **Alternative Solution #3 Minor Engineering Design Upgrade** and **Alternative #2 Improving Streetscape and Active Transportation** (to enhance cyclist and pedestrian facilities) be carried forward for further review, as these strategies together can contribute to improving Water Street to address the identified problems and opportunities affecting the corridor.

7. MCEA Phase 3 Alternative Design Concepts

At Community Open House #2, the preliminary Preferred Alternative Solution was presented along with technically feasible Design Concepts developed to implement the Preferred Solution.

7.1 Generation of Alternative Design Concepts

As illustrated in **Table 9**, three Alternative Road Alignment Concepts and three Cross-Section Concepts were developed to implement the Preferred Solution selected at the conclusion of Phase 2 and presented during Community Open House #2.

Table 9: Class EA Phase 3 Alternative Design Concepts

Road Alignment Concepts	Cross-Section Concepts
1. **Road Refined Alignment #1** Roundabout and Curve Correction (Increase Curve Radius) 2. **Road Refined Alignment #2** Roundabout and Curve Correction with Minor Road Realignment to the Southwest 3. **Road Alignment #3** Hybrid of Alternatives 1 and 2	1. **Cross-Section Concept #1** Cycle Track and Multi-Use Paths 2. **Cross-Section Concept #2** Cycle Track and Multi-Use Paths 3. **Cross-Section Concept #3** Enhanced Streetscaping

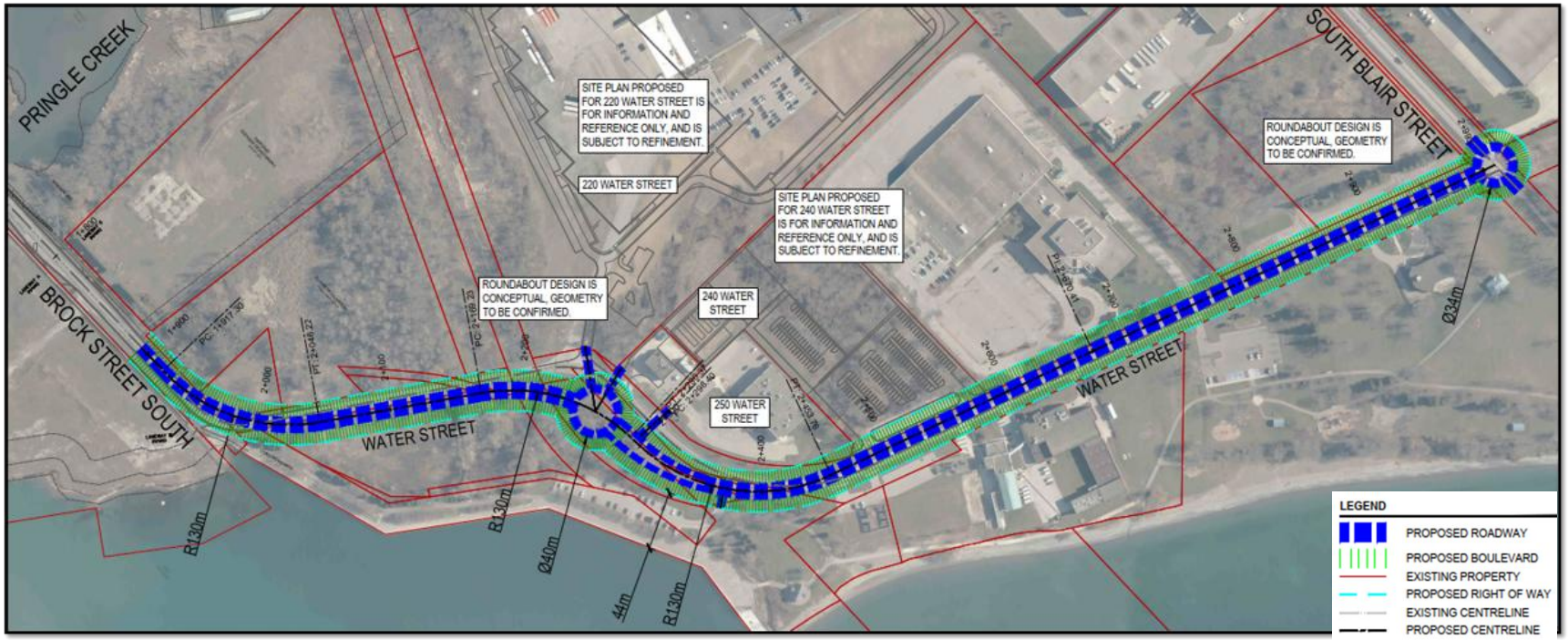
7.1.1 Road Alignment Design Concepts

Following Community Open House #2 the alternatives were further refined based on feedback received. The following refined versions were presented at Community Open House #3.

7.1.1.1 Road Alignment #1 (Refined): Roundabout and Curve Correction (Increase Curve Radius)

While this alternative was presented at Community Open House #2 as an "Existing Alignment with Curve Corrections" it was later refined to reflect feedback received. As illustrated in **Figure 12**, this alternative will utilize the existing road alignment but it was refined to include a curve correction of 130 metres as well as a second roundabout on Water Street, east of Brock Street South. The second roundabout will improve traffic flow, and overall safety for pedestrians, cyclists and motorists by reducing through traffic speed; and providing an opportunity for a streetscaped gateway.

Figure 12: Road Alignment #1 (Refined) – Roundabout and Curve Correction (Increased Curve Radius)



7.1.1.2 Road Alignment #2 (Refined): Roundabout and Curve Correction with Minor Road Realignment to the Southwest

As illustrated in **Figure 13**, this alternative design proposes a curve correction to a larger radius of 150 metres with a minor road realignment to the southwest near the 220-250 Water Street entrances. The second roundabout will improve traffic flow, and overall safety for pedestrians, cyclists and motorists by reducing through traffic speed; and will also provide an opportunity for a streetscaping gateway.

7.1.1.3 Road Alignment #3: Hybrid of Alternatives 1 and 2

As illustrated in **Figure 14**, this design offers a hybrid of Alternatives #1 and 2 that proposes a divided alignment with the westbound lane following Alignment #1, and the eastbound lane following Alignment# 2.

Figure 13: Road Alignment #2 (Refined) – Roundabout and Curve Correction with Minor Road Realignment to Southwest

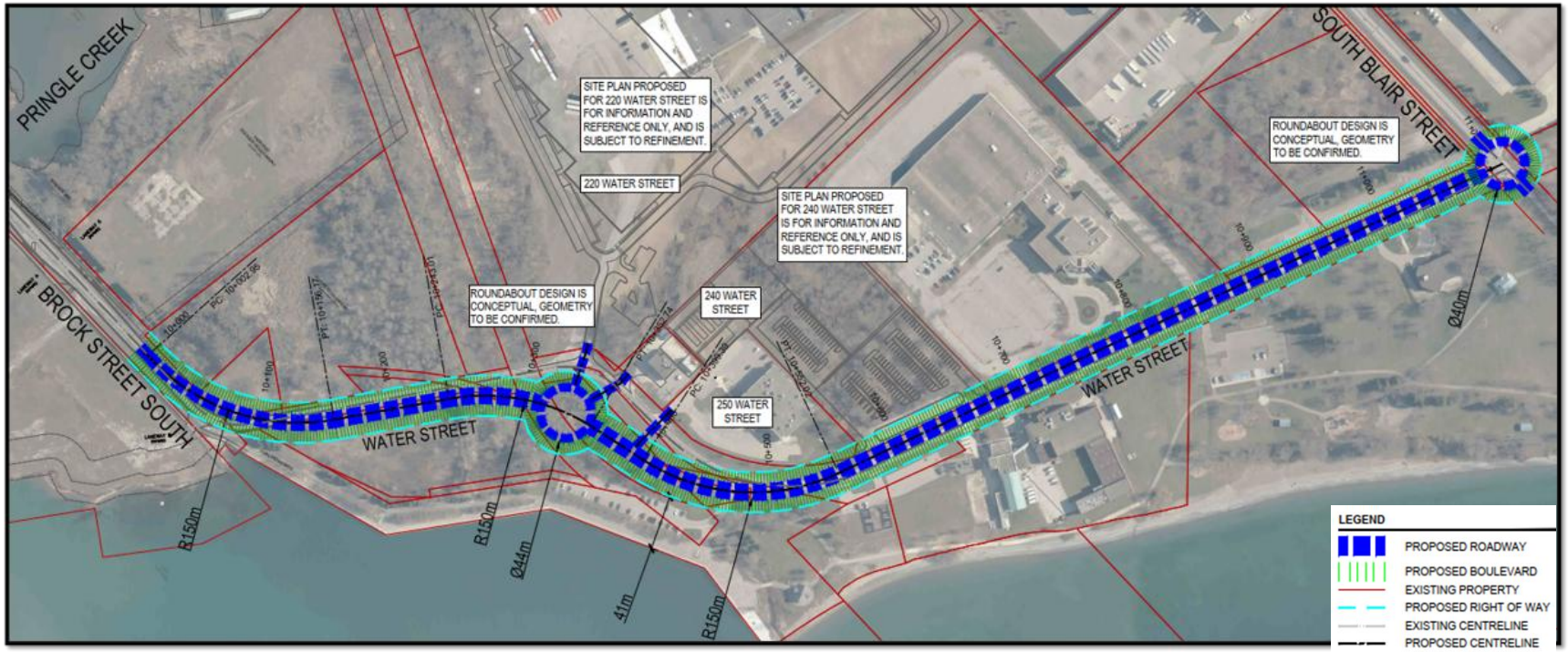
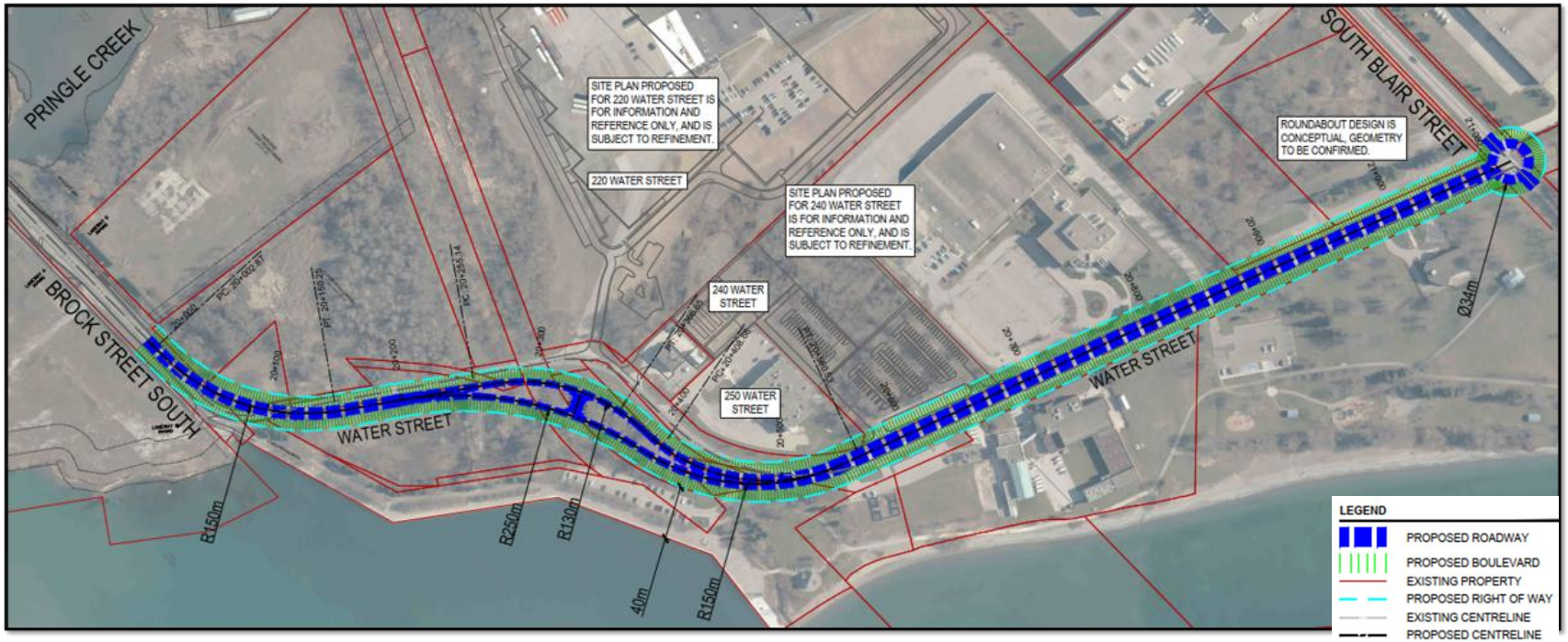


Figure 14: Road Alignment #3 – Hybrid of Alternatives 1 and 2



7.1.2 Cross-Section Concepts

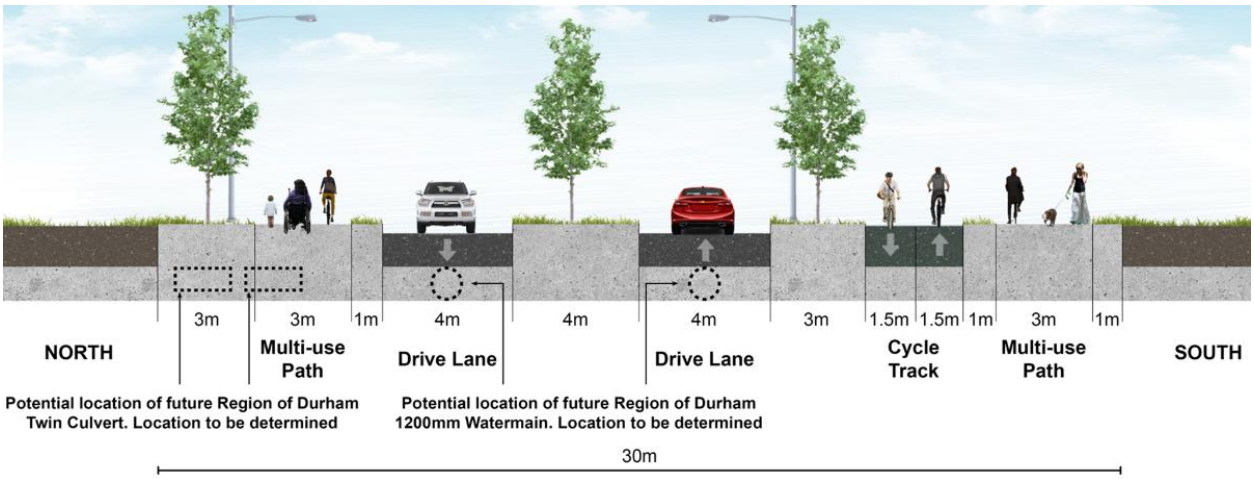
As noted, three proposed cross-sections were also developed for consideration as follows:

7.1.2.1 Cross-section 1: Cycle Track and Multi-Use Paths

As illustrated in **Figure 15**, this cross-section proposes the inclusion of two 3.0 Multi-Use Paths (MUPs) and a two-way cycle track on the south side.

This option provides safer cycling via a separate cycle track thereby reducing conflict between cyclists and pedestrians. It also provides boulevard and median streetscaping opportunities with the provision of two 3.0 metre rows of street trees and one 4.0 metre row of trees in the median. The south tree line provides separation of cyclists / pedestrians from vehicular traffic. The disadvantage of this option is that the 3 metre boulevards provide less opportunities for streetscaping and tree planting.

Figure 15: Cross-section 1: Cycle Track and Multi-Use Paths

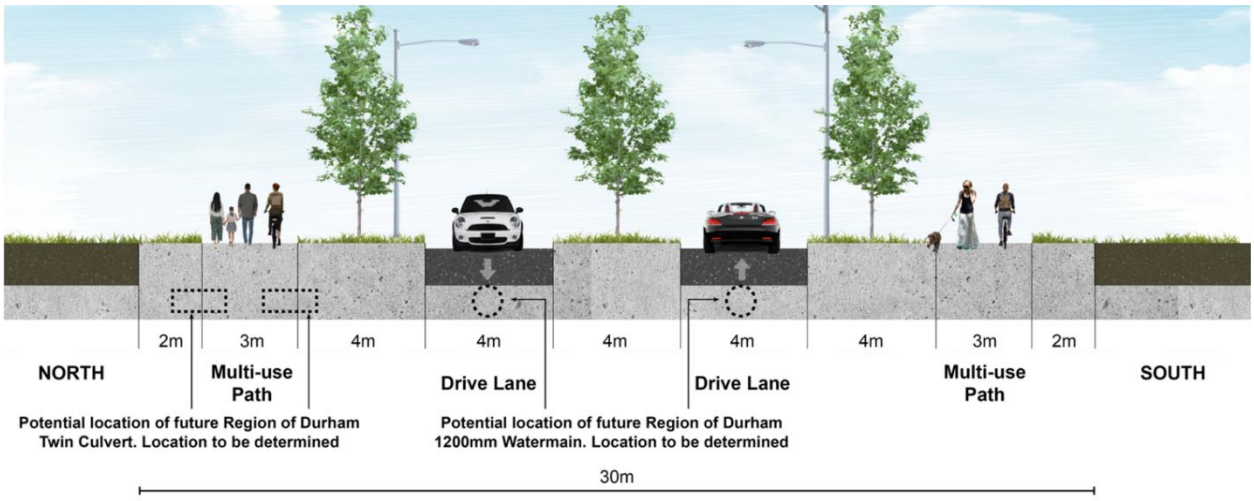


7.1.2.2 Cross-section 2: Multi-Use Paths

As illustrated in **Figure 16**, this cross-section proposes a slightly enhanced boulevard and median streetscaping opportunities with three 4.0 metre rows of street trees on boulevards and the median.

This alternative offers slightly enhanced boulevard and median streetscaping opportunities with three 4.0 metre rows of street trees on boulevards and median as well as enhanced separation of cyclists / pedestrians from vehicular traffic via the tree lines proposed on both the north and south sides. However, this option does not propose separate cycle tracks and therefore the potential exists for conflict between cyclists and pedestrians.

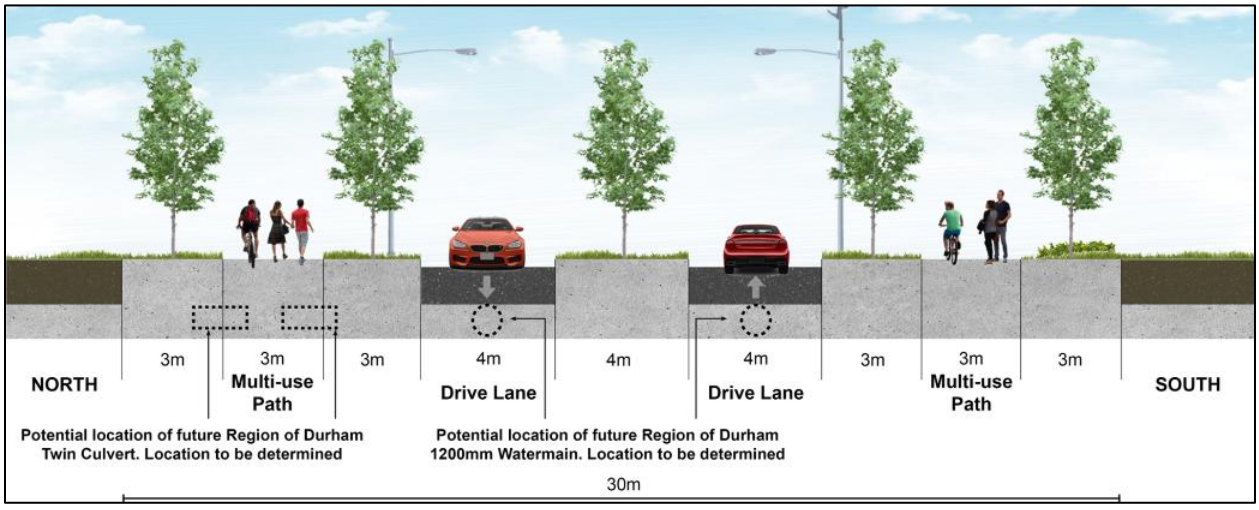
Figure 16: Cross-section 2: Multi-Use Paths



7.1.2.3 Cross-section 3: Enhanced Streetscaping

As illustrated in **Figure 17**, this cross-section proposes enhanced boulevards & median streetscaping opportunities with two 3.0 metre rows of street trees on the north boulevard, one 4.0 metre row of trees within the median, and two 3.0 metre rows of trees on the south boulevard. The advantage of this alternative is that it provides enhanced separation of cyclists / pedestrians from vehicular traffic with tree lines both on the north and south sides. It also provides enhanced streetscape and shaded path with tree lines on either side of MUPs. This disadvantage of this option is that it does not provide separate cycle tracks and therefore there is the potential for conflict between cyclists and pedestrians.

Figure 17: Cross-section 3: Enhanced Streetscaping



7.2 Evaluation Framework and Criteria

At Community Open House #2 the preliminary Preferred Alternative Solution was identified along with the Alternative Design Concepts under consideration to implement the Preferred Solution. The advantages and disadvantages associated with each option were presented along with the more detailed evaluation criterion to be used to further evaluate each design concept.

The following Short List evaluation criteria was presented at Community Open House #2 and updated following input received. This criterion was used to evaluate and select the Preferred Road Alignment with applicable criteria also used to evaluate the Cross-section concepts.

Technical Environment

- Traffic Conditions / Network Connectivity
- Design Criteria / Roadway Geometry
- Property Access / Egress
- Constructability
- Utilities and Servicing Infrastructure
- Safety
- Transit
- Accessibility

Socio-Economic Environment

- Existing and Planned Land Use
- Land Use Planning Policy
- Tourism
- Active Transportation
- Streetscaping
- Property Impacts
- Noise and Air Quality
- Climate Change
- Parks and Open Spaces
- Businesses and Institutions

Natural Environment

- Aquatic species and their habitat including Species at Risk (SAR)
- Terrestrial species and their habitat including SAR
- Designated Natural Areas, Wetlands, and Vegetation
- Groundwater / Source Protection
- Stormwater Management and Drainage
- Waste and Contamination

Cultural Environment

- Archaeological Resources
- Built Heritage and Cultural Heritage Landscapes

Cost

- Capital Costs
- Property Acquisition Costs
- Operation and Maintenance Costs

7.2.1 Evaluation of Road Alignment Concepts

Alternative Road Alignments were evaluated using a Reasoned Argument (trade-off) method of evaluation to identify the advantages and select the Preliminary Preferred Road Alignment. This evaluation was presented at Community Open House #3.

Table 10 provides a summary of the evaluation completed of Road Alignment concepts #1, #2, and #3.

As illustrated, Road Alignment #1 was selected as the Preferred Road Alignment because it is preferred or equally preferred in three major categories (i.e., cost, socio-economic and cultural environment); and is the second preferred (with a slight difference) in the technical and natural environment categories. This choice strikes a balance by addressing the identified challenges / opportunities and minimizing impacts to the technical, natural, socio-economic, and cultural environments.

In summary, Road Alignment #1 was selected for the following reasons:

- **Enhanced Traffic Flow and Safety:** Two roundabouts lead to improved traffic flow and overall safety for pedestrians, cyclists and motorist by slowing through traffic.
- **Minimum Property Requirements:** Requires the least amount of property acquisition.
- **Emission Reduction:** Promotes lower speeds and reduced fuel consumption, resulting in reduced emissions, including greenhouse gases.
- **Natural Environment:** Lower impact on natural environment.
- **A Gateway to Whitby Waterfront:** The second roundabout will serve as a gateway to the Whitby Waterfront featuring aesthetic landscaping and streetscaping.
- **Cultural Resources:** Least impact on cultural resources.
- **Noise:** More desirable from noise perspective.

Table 10: Phase 3 Road Alignment Evaluation Summary

Legend: ● Preferred ◐ Moderately Preferred ○ Less Preferred

Category	Road Alignment #1	Road Alignment #2	Road Alignment #3	Rationale
Technical Environment	◐	●	○	**Alternative 2 is preferred because:** ▪ The second roundabout will enhance traffic flow and improve overall safety for all road users by slowing through vehicles. ▪ Preserves opportunities for full-moves access for all driveways along Water Street. ▪ Provides more opportunity to accommodate the raised elevation of Water Street.
Socio-Economic Environment	●	◐	○	**Alternative 1 is preferred because:** ▪ Requires the least amount of property acquisition. ▪ The second roundabout will serve as a gateway to Whitby Waterfront, featuring aesthetic landscaping and streetscaping, and potentially enhance the tourist perception and overall experience of the area, as well as provide a crossing location for the future multi-use trail along the old rail corridor. ▪ Slower vehicular speeds associated with the roundabout can reduce vehicle noise from braking and acceleration, improve fuel consumption/emissions and ultimately provide increased opportunity to improve air quality and a reduction of greenhouse gas emissions.
Natural Environment	◐	○	●	**Alternative 3 is preferred because:** ▪ Has the least potential to impact forested areas / potential wildlife habitat (including Species at Risk) and designated natural areas; followed by Alternative 1. However, Alternative 1 also has the least potential to encounter contaminated soil.
Cultural Environment	●	◐	◐	**Alternative 1 is preferred, because:** ▪ Has the least potential to impact former Port Perry and the Port Whitby Railway / Canadian National Rail Corridor.
Cost	●	◐	●	**Alternatives 1 and 3 are equally preferred because:** ▪ Alternative 1 requires the least amount of property cost followed by Alternative 3. ▪ Alternative 3 requires the lowest potential capital cost to implement the roadwork and a single roundabout at South Blair Street.
OVERALL SUMMARY	●	◐	○	**Alternative 1** is identified as the **Preliminary Preferred Road Alignment** because it is preferred or equally preferred in three major categories (cost, socio-economic and cultural environments); and is the second preferred (with a slight difference) in the technical and natural environment categories. This choice strikes a balance by addressing the identified challenges / opportunities and minimizing impacts to the technical, natural, socio-economic, and cultural environments.

✓ **Preliminary Preferred Road Alignment**

7.2.2 Evaluation of Proposed Cross-Sections

Three cross-section concepts were generated and evaluated to determine the road cross-section that best balances the functional requirements of an improved Water Street. As illustrated in **Table 11**, the cross-section concepts were evaluated based on their ability to improve active transportation; safety conditions; landscaping and tree planting; minimize carbon footprint and resilience to extreme weather events; and capital cost.

All three cross-sections have the same right-of-way and area of impact; enhance pedestrian and cyclist safety; improve active transportation by providing Multi-Use Paths on both the north and south sides of Water Street. However, Cross-section 1 is preferred as it:

- Optimizes active transportation the most.
- Provides a higher level of safety.
- Has the greatest potential to reduce greenhouse gas emissions impacting the climate.
- Was the most favoured cross-section based on feedback from Community Open House #2.

Table 11: Phase 3 Cross-Section Evaluation Summary

Factor	Cross-section #1	Cross-section #2	Cross-section #3	Rationale
Active Transportation	●	◐	◐	**Cross-section 1 is preferred because it:** ✓ Provides a dedicated cycle track.
Safety	●	◐	◐	**Cross-section 1 is preferred because it:** ✓ Improves safety for pedestrians through a dedicated cycle track separating cyclists from pedestrians on the adjacent Multi-Use Path.
Streetscaping and Landscaping	◐	◐	●	**Cross-section 3 is preferred because it:** ✓ Has more opportunity for landscaping and tree planting.
Climate Change	●	◐	◐	**Cross-section 1 is preferred because it:** ✓ Provides the greatest opportunity to encourage non-auto based traffic, and to reduce greenhouse gas emissions affecting climate.
Capital Cost	○	●	◐	**Cross-section 2 is preferred because it:** ✓ Has the lowest amount of infrastructure and landscaping, and thus lowest potential capital cost to implement.
Summary	●	◐	◐	**Overall, Cross-section 1 is the Preferred Cross-section.**

✓ **Preferred Cross-Section**

Legend: ● Preferred ◐ Moderately Preferred ○ Less Preferred

8. Recommended Plan

In summary, following an evaluation of both Road Alignment and Cross-Section concepts and the receipt of input, the **Recommended Plan** consisting of the Preferred Road Alignment and the Preferred Cross-Section was selected as further detailed below.

8.1 Preferred Road Alignment

Road Alignment #1 (Refined): Roundabout and Curve Correction (Increase Curve Radius)

As illustrated in **Figure 18,** this alternative will utilize the existing road alignment but implement a curve correction of 130 metres and include a roundabout on Water Street just east of Brock Street South and a second roundabout at the intersection of Water Street and South Blair Street.

8.2 Preferred Cross-Section

Cross-section 1: Cycle Track and Multi-Use Paths

As illustrated in **Figure 19**, this cross-section provides for two 3.0 Multi-Use Paths and a two-way cycle track on the south side. This option will provide safer cycling via a separate cycle track thereby reducing conflict between cyclists and pedestrians. It also provides boulevard and median streetscaping opportunities with the provision of two 3.0 metre rows of street trees and one 4.0 metre row of trees in the median. The south tree line provides separation of cyclists and pedestrians from vehicular traffic.

Figure 18: Preferred Road Alignment #1 (Refined) – Roundabout and Curve Correction (Increase Curve Radius)

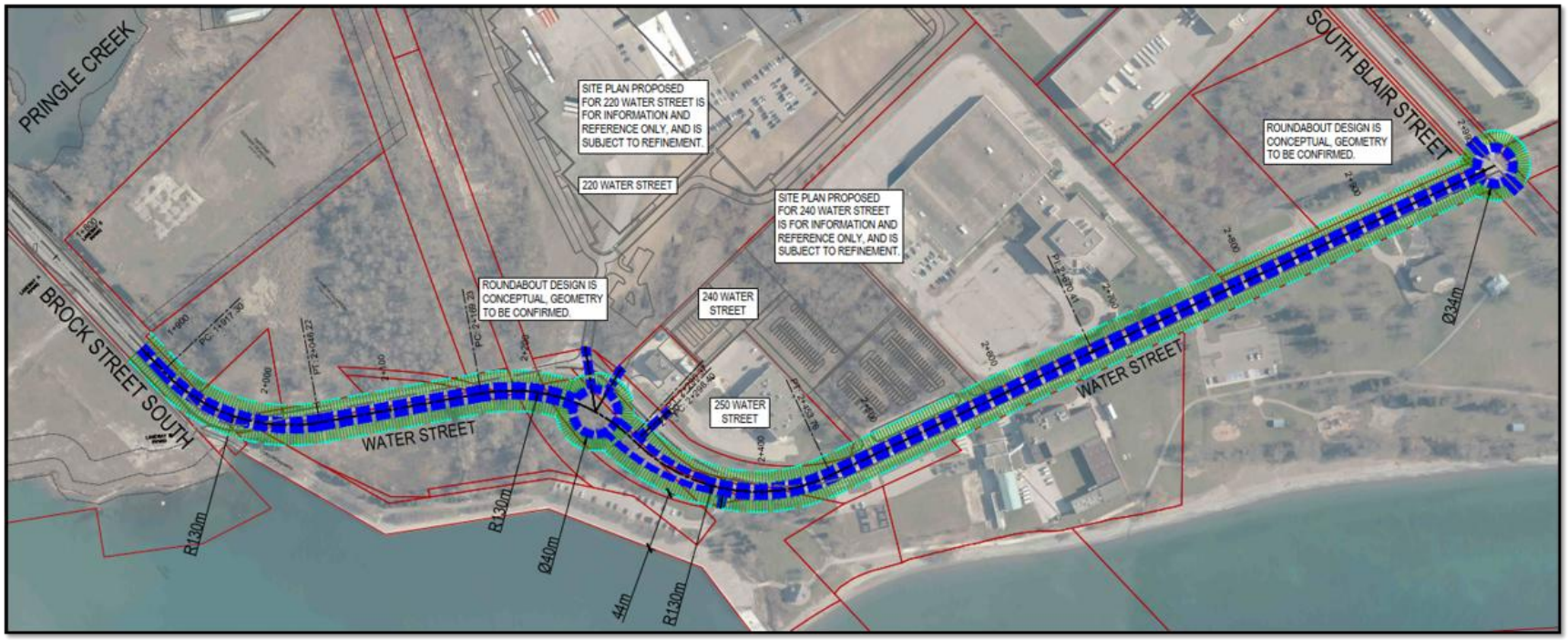
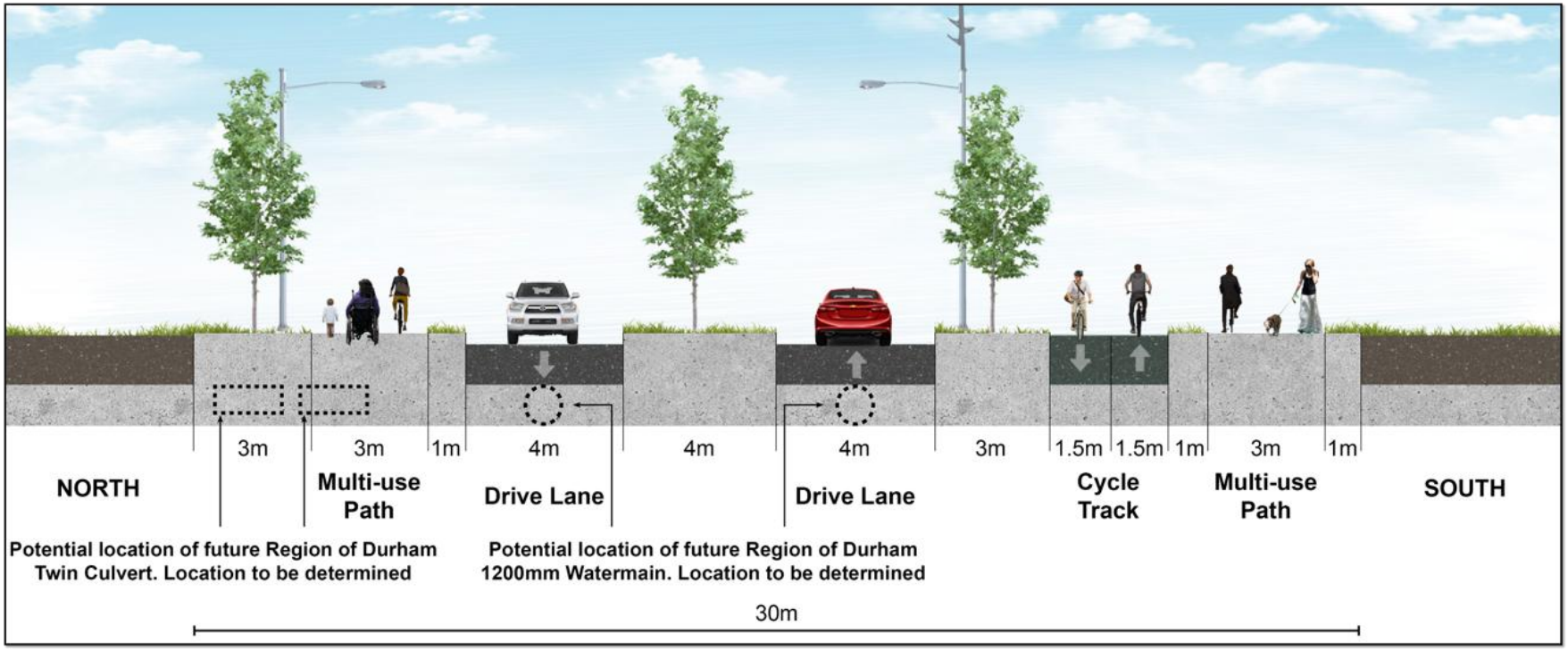


Figure 19: Preferred Cross-section 1 – Cycle Track and Multi-Use Paths



9. Preliminary Design

Following consultation with property owners, the Preferred Road Alignment and Cross-Section concepts of the Recommended Plan were refined further. The final Preliminary Design is detailed as follows, and included in **Appendix G**.

9.1 Design Criteria

Design Criteria have been developed for the project, based on Town of Whitby Standards and the Transportation Association of Canada (TAC) guidelines, and are included in **Appendix H**. The alternative solutions have been developed based on the Design Criteria.

Water Street is designed as an Urban Local Divided road with a design speed of 50 kilometres per hour, while preserving the current posted speed limit of 40 kilometres per hour. The road will feature an urban cross-section, incorporating curbs and gutters, and will maintain a two-lane configuration throughout. Additionally, the design includes pedestrian and cycling facilities within the boulevard, along with landscaped areas in both the boulevard and the centre median. The total cross-sectional width, exceeding the minimum Design Criteria, ranges from 30 to 36 metres.

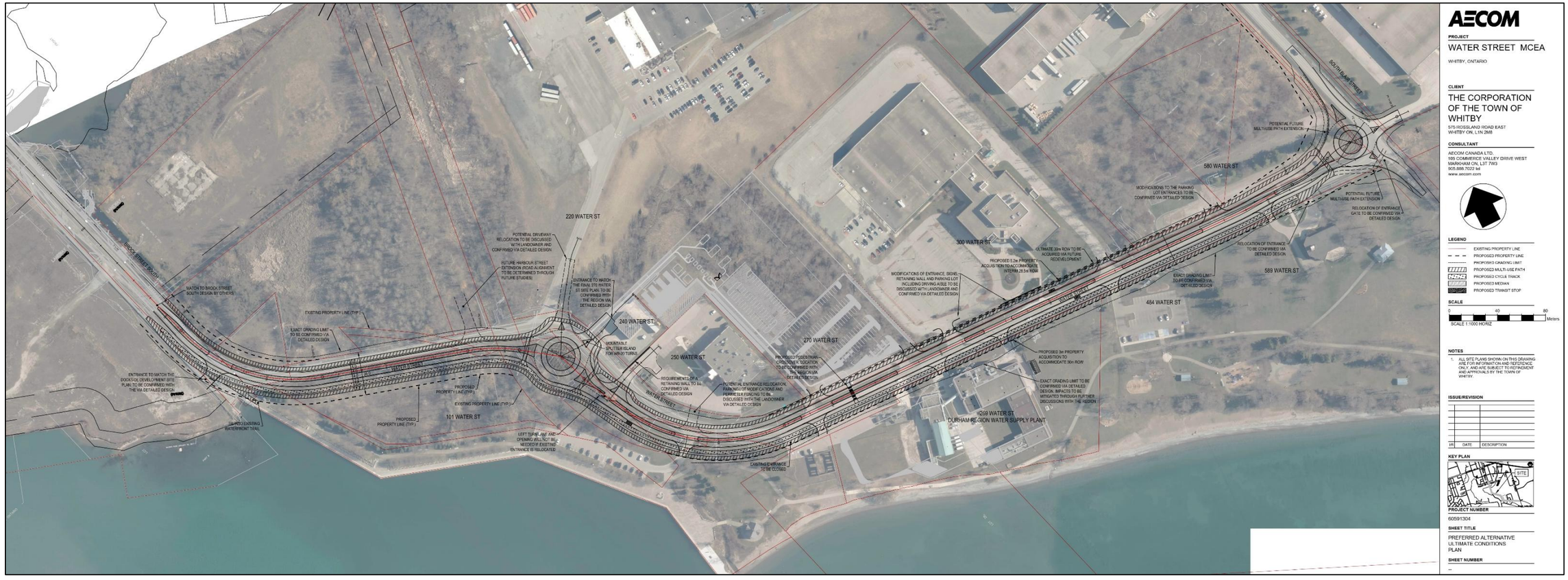
9.2 Preliminary Design Alignment

As illustrated in **Figure 20** (see **Appendix G** for road plans depicting the corridor at a higher scale), the horizontal alignment closely resembles the preferred road alignment presented at Community Open House #2. The plan still utilizes the existing road alignment and implements curve corrections of 130 metres and includes a roundabout on Water Street just east of Brock Street South and a second roundabout at the intersection of Water Street and South Blair Street. However, the section between 270 Water Street and South Blair Street was shifted 3.0 metres south as a result of property discussions with Durham Region. The vertical alignment will be raised for segments of Water Street as part of flooding mitigation. At the west end of Water Street, the profile will tie into Brookfield's Dockside development profile, and at South Blair Street the profile will tie into existing.

The 30 m road allowance is required to achieve the overall EA objectives; as such, the 3 m widening on the south side is required. As part of the detailed design process, the Town will provide 30%, 60%, and 90% road design plan and profile submissions to the Region's design team to coordinate the two designs and address any potential grading or access issues.

The Region noted that any changes to alignment or property boundaries could affect critical infrastructure, including feedermains as well as future high voltage duct banks which will provide power to the WSP. These impacts must be assessed and addressed during detailed design to avoid conflicts. It was also noted that adequate cover will be needed for existing and future utilities that the Region will be installing as part of their project. Coordination with the Region during detailed design will be critical to ensure these changes do not negatively impact WSP operations or expansion plans. It was noted that adding fill on top of watermains, sanitary sewers, feedermains and sanitary forcemains may also be impactful to the structural integrity of these pipes and their associated appurtenances (i.e. valve chambers).

Figure 20: Preliminary Design Alignment – Roundabout and Curve Correction (Increase Curve Radius)



9.3 Preliminary Design Cross-Section

As illustrated in **Figures 21 and 22**, the cross-sections provide for two 3.0 Multi-Use Paths and a two-way cycle track on the south side. The cross-section was refined to provide optimal median width and boulevard space for streetscaping, hydro poles and streetlights.

9.4 Property

Local property acquisition will be required to accommodate the horizontal geometry adjustments and the widening of Water Street. Additionally, temporary land interests or easements will be necessary for grading and staging purposes. Fronting 300 Water Street, an interim 28.5 metre ROW may be utilized to minimize the impact on the property. All property requirements will be confirmed during detailed design via consultations and agreements with the impacted property owners

9.5 Pavement Structure

Standard pavement structure for this road will be based on Town of Whitby Standards. However, the actual pavement structure used for the road reconstruction will be determined based on further geotechnical investigation work during the detailed design phase to follow at a future date.

9.6 Streetlighting

To match the theme of a waterfront parkway environment, decorative street lighting will be used, with the potential for attaching banners, baskets, and other elements. Actual design details will be confirmed during the detailed design phase and through consultations with the public, stakeholders, and Town staff.

Figure 21: Preliminary Design Cross-section for West Segment (Brock Street South to Water Street Roundabout)

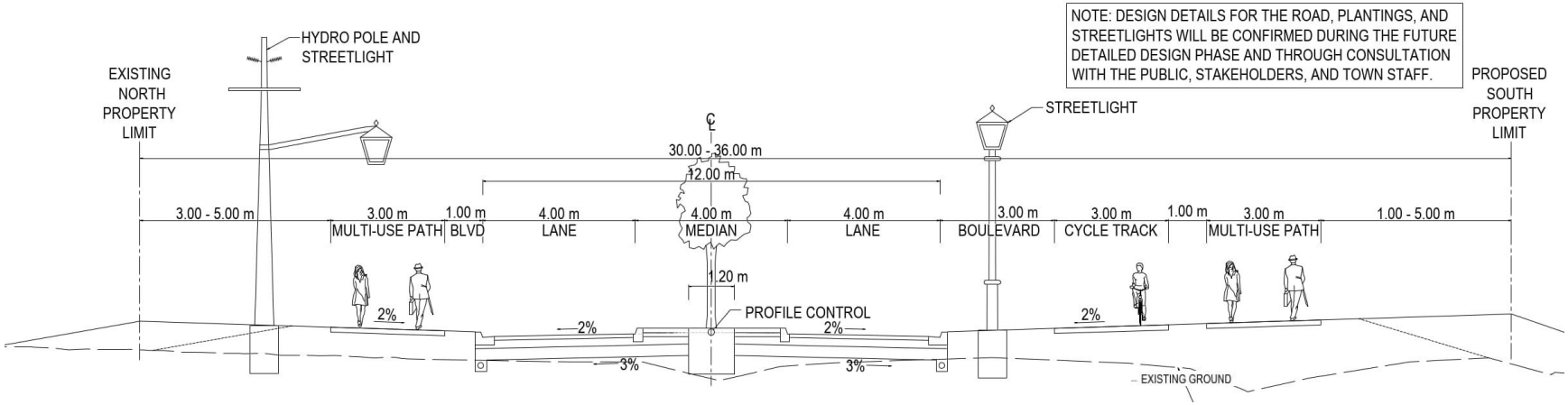
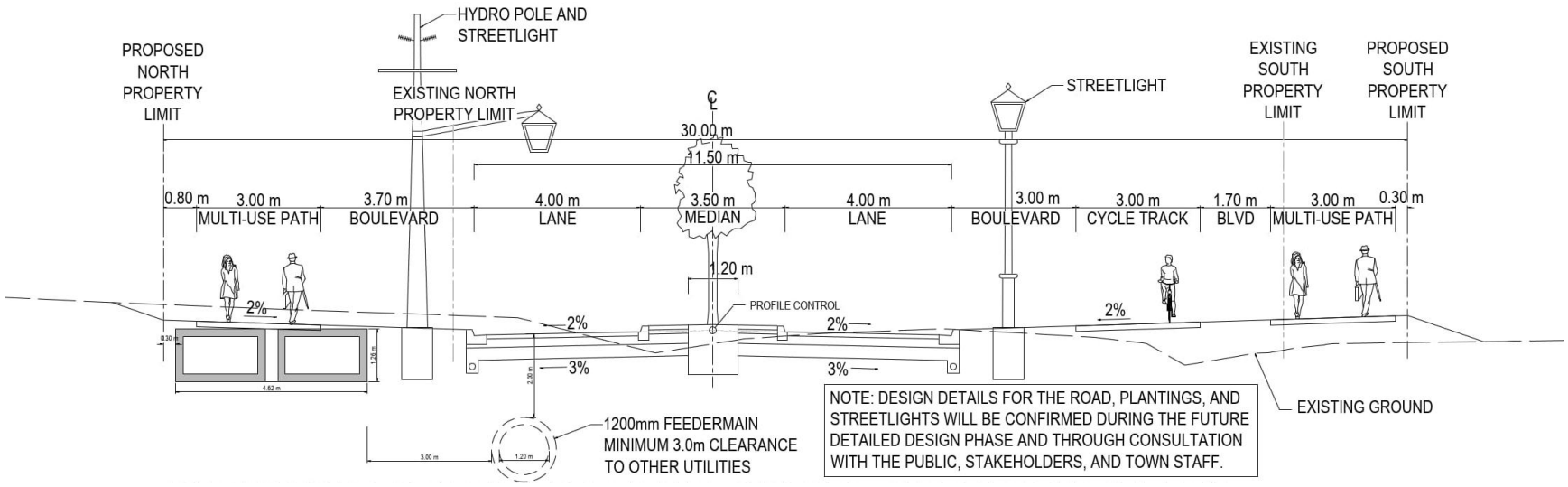


Figure 22: Preliminary Design Cross-section for East Segment (Water Street Roundabout to South Blair Street Roundabout)



9.7 Drainage and Stormwater Management

A preliminary drainage design was developed for the Preliminary Design as part of the stormwater management review that accounted for the full buildout of the Region's Water Supply Plant (WSP) expansion, the construction of the Energy Centre, and future developments at 220 Water Street.

9.7.1 Whitby WSP Expansion Stormwater Management Plan

Based on the Whitby WSP Expansion Stormwater Management Plan, the stormwater infrastructure north of Water Street is currently proposed to be developed in two phases (Phases 1 and 2).

It is understood that Phase 1 is part of the Whitby WSP Expansion Contract 3A, scheduled for construction from July 2027 to February 2030. Earlier in Phase 1, in 2028, the existing 175 metre culvert north of Water Street, extending from the southwest corner of the Canada Christian College property at 300 Water Street to the outfall, will be upgraded to a twin box culvert (1.8 metre span × 0.9 metre rise) to convey stormwater to Lake Ontario. Phase 2, representing the ultimate build-out involves upsizing the remaining of the existing 175 metre culvert north of Water Street to a 0.75 metre sewer extending from the southeast to the southwest corner of the Canada Christian College property. ~~As part of the WSP Expansion Phase 2 plan, a 0.45 metre sewer is also proposed to be installed further east, extending from the southeast corner of the Canada Christian College property to the South Blair Street intersection. The approach of construction of the stormwater infrastructure as part of the WSP Expansion project is under development and further coordination will be required through detailed design.~~

9.7.2 Water Street Proposed Stormwater System

Under proposed conditions, road runoff will be collected in gutters and directed to road storm sewers through catch basins for the 5-year storm event. Some roadside ditches will be maintained or reconstructed to address external flows. As part of the Town's Water Street improvements ~~WSP Expansion Phase 2 plan~~, a 0.45 metre sewer is also proposed to be installed further east, extending from the southeast corner of the Canada Christian College property to the South Blair Street intersection. ~~The approach of construction of the stormwater infrastructure as part of the WSP Expansion project is under development and further coordination will be required through detailed design.~~

9.7.2.1 North of Water Street Drainage

Under the proposed road plan, the ditches on the north side of Water Street, from the South Blair Street intersection to the southeast corner of the Canada Christian College property at 300 Water Street, will be removed to accommodate road widening. In its

place, 0.45 metre sewer will be installed along the road, near the new property boundary, to capture external runoff. This design aligns with the proposed WSP Expansion Plan. A ditch inlet will be placed at the southeast corner of the Canada Christian College property to collect stormwater from external area. The 0.45 metre sewer will discharge into a 0.75 metre sewer, which will then connect to a twin culvert (1.8 metre span x 0.9 metre rise) crossing under the road, conveying stormwater to the outfall on the south side. This design aligns with the WSP Expansion Plan.

The road modifications on the west side will not affect the existing ditches, which will be retained in their current state to manage external flows from the north of the site.

9.7.2.2 South of Water Street Drainage

The Preliminary Design involves road widening primarily to the south, resulting in the burial of existing ditches and small culverts along the affected section of Water Street. External flow into the road area is expected to be minimal, as it will originate from approximately 0.61 hectares of mostly pervious land. The road's drainage system will be designed to collect and convey this runoff. As per existing conditions, most of the runoff from the south side will be discharged into the lake, maintaining the current drainage patterns.

9.7.2.3 Road Drainage and Flooding Conditions

The proposed road drainage system is designed to collect and convey road runoff via a minor system capable of handling a 5-year storm event, while the major system is engineered to manage runoff from both the road and surrounding external areas during a 100-year storm event.

As part of the Preliminary Design, the proposed road design will include a road slope ranging from 0.48% to 4% with catch basins installed every 60 to 70 meters along both sides of the road that will serve as outlets for the road's sub-catchments. On the north side, 20 new sub-catchments covering a total of 1.72 hectares will be introduced, while the south side proposes 19 sub-catchments spanning 1.94 hectares.

As indicated, two property developments are proposed within or adjacent to the Study Area. Brookfield development (SCS Consulting, 2017) is not expected to impact stormwater flows on Water Street. Stormwater from this development will be retained on-site or diverted away, and the existing runoff from these lands was accounted for in the analysis.

The second development, located at 220 Water Street (HUSSON, 2022), spans 9.87 hectares. According to the stormwater management report, the maximum stormwater release rate from this site is 1.27 m^3/s.

The road's major and minor drainage systems were modeled along both sides of the road. Based on the proposed road profile road, runoff will be contained within gutters on

each side, directing flow to the road drainage sewers via catch basins spaced along the road. For a 5-year storm event, the runoff will be conveyed through the sewers, while in a 100-year storm event, the gutters will handle the excess flow beyond the capacity of the 5-year event. The catch basins were modeled as orifices, following OPSD 400.020 standards. Sewers were sized to eliminate flooding within the minor system during a 5-year storm. The road gutter and curb design follow OPSD 600.010. The major system was designed to prevent flow spread beyond the gutter, with a maximum allowable flow depth of 15 centimetres.

As part of the stormwater management review, the potential for road overtopping from the northwest of Water Street under the proposed conditions was evaluated using modeling. A capacity analysis was also conducted for the twin culvert (north of Water Street) and the two crossings under post-development conditions.

9.7.2.4 Road Runoff Treatment

For the treatment of road runoff, Oil and Grit Separators (OGSs) are planned to be installed at the outlets of each road sewer. However, the final number of OGS units will depend on flow rates and the type of OGS selected, with their placement likely on the east and west sides of the road. This configuration will be finalized during the detailed design phase.

To achieve an Enhanced Level of Protection (80% TSS removal) for water quality, the use of OGSs alone will need to be supplemented with other measures. Given the limited available land, the precise location and design of these additional measures will be confirmed during the detailed design stage.

9.8 Cost Estimate

The estimated cost for the construction of the preferred preliminary design for the road modifications and improvements along Water Street from Brock Street South to South Blair Street is $10,350,000 (excluding design engineering and construction administration). For more information on the estimated total cost, refer to **Table 12.**

These preliminary cost estimates are to be reviewed and confirmed during the detailed design phase of the Project.

Table 12: Summary of Cost Estimate

Summary	Total Cost
Civil (roadway, storm sewer)	$3,400,000
Electrical (lighting)	$500,000
Boulevard (streetscaping, MUP, cycle track)	$1,700,000

Summary	Total Cost
Utility Relocations	$1,100,000
Traffic Management	$200,000
Sub-Total	**$6,900,000**
Contingency (50%)	$3,450,000
Total	**$10,350,000**

10. Potential Environmental Effects, Mitigation Measures and Monitoring

The following sections outline the potential direct and indirect environmental effects associated with the Preliminary Design as well as the mitigation strategy proposed to minimize adverse effects.

During the detailed design stage, the Preliminary Design will be further refined and impacts confirmed with mitigation updated to reflect any changes.

10.1 Technical Environment

10.1.1 Utilities

Service disruption to existing gas, telephone, and cable utilities is anticipated during construction. Co-ordination with private utility companies will be required during detailed design to mitigate service disruptions to area business, customers, students, etc.

Overhead hydro poles along the south side of Water Street will be relocated to the north side of Water Street. Co-ordination with Elexicon during detailed design is required to determine and mitigate potential impacts. Co-ordination will also be required with Durham Region given that there is the potential to impact the Energy Center's current design and operations. These impacts will be reviewed jointly to ensure adequate clearances and to maintain safe access.

Mitigation

During detailed design, the Region, utility and service providers will be consulted to confirm locations of existing and future infrastructure and to determine requirements for relocation, design specification and timing. Mitigation measures for utility disruptions include providing sufficient notice to the utility companies.

10.1.2 Traffic Detours and Road Closures

The construction of Water Street will temporarily impact vehicular travel, including disruptions to the Durham Region Transit route and routing to businesses and the waterfront.

Mitigation

Comprehensive detour plans and construction staging will be developed during detailed design which will aim to maintain access to businesses along Water Street and the

waterfront. Throughout the construction process, social media will be used and signage will be installed on approach routes to inform drivers of any road operation changes, road closures, or detours routes. Options such as one-way circulation may be considered.

A Traffic and Transportation Management Plan will be developed in consultation with emergency service providers and the Town of Whitby to outline construction staging methodology. The plan will inform the public on construction activities and schedule. This plan will be monitored and updated as necessary throughout the construction period. As requested by the Region, the Traffic & Transportation Management Plan is to also include the construction sequence and access windows aligned to the Region's operations and delivery schedules (including hazardous materials).

Consultation with Durham Region Transit will be undertaken to discuss potential transit impacts to the On Demand local bus service. Notices and signage will be provided informing transit users of the disturbance caused by the road construction.

During road construction, existing active transportation will be maintained along the Waterfront Trail. Safety measures will be used where necessary to separate the work area from pedestrians and cyclists. Signage indicating the presence of construction crews and/or activities will also be utilized. Active transportation impacts will be included in the Transportation Management Plan and determined during detailed design.

10.1.3 Property

Property acquisition will be required to accommodate the widening and realignment of Water Street. Temporary land interests or easements (for staging or grading purposes) during construction may also be necessary. Property owners along Water Street include Town of Whitby, Region of Durham, Imperial Oil and other private owners. Property requirements will be confirmed during detailed design.

Mitigation

The amount of property acquired from private owners will be confirmed during detailed design and should be limited to the minimum required. Temporary land interests will also be assessed as part of the detailed design process. Efforts should be made to minimize grading impacts by optimizing road design and profile, with the potential use of retaining walls to further reduce grading effects. To ensure project success, impacted property owners should be actively engaged early in the process to cultivate their support and secure their buy-in.

10.2 Natural Environment

As noted, the Preliminary Design will utilize the existing road alignment for most of the project length but will implement a curve correction for a segment of the corridor (opposite the Durham Pumping Station property) as well as introduce a roundabout on Water Street just east of Brock Street South and a second roundabout at the intersection of Water Street and South Blair Street. A widening will be required to accommodate the infrastructure improvements. As such, key impacts will be associated with the expanded footprint and property acquisition required to accommodate the new alignment and improvements proposed.

The following sections describe the potential natural environmental impacts associated with the Preliminary Design. The Preliminary Design as illustrated includes the outermost limit anticipated to be affected by construction activities. Many of the potential impacts are commonly encountered during construction and can be addressed through the implementation of standard mitigation measures to reduce or avoid potential impacts.

10.2.1 Erosion and Sediment Control

Vegetation clearing, grubbing and grading during construction exposes soils and has the potential to result in sediment runoff discharging into nearby natural heritage features including Whitby Harbour and / or Lake Ontario.

Mitigation

The following measures will assist in addressing erosion and sediment control:

- An **Erosion and Sediment Control Plan** should be developed prior to construction that includes the installation of sediment and erosion control measures such as silt fencing and straw-bale check dams prior to construction activities.
- Exposed soils and disturbed areas should be re-stabilized following construction, with non-biodegradable erosion and sediment control measures removed from site once these areas have been stabilized.

10.2.2 Vegetation and Designated Natural Areas

The arborist review determined that approximately 720 trees are located within the tree inventory area or project limits. Of these, an estimated 78% are in Good to Fair condition, while the remaining 22% are classified as Poor to Dead. Based on the current design and the Tree Protection Zones (TPZs), approximately 529 trees within the

project limits are expected to be impacted by more than 30%. As a result, these trees may require removal. However, given that 22% of the existing trees are already in Poor to Dead condition, the number of trees likely to be adversely affected by the proposed roadwork and potentially requiring removal is estimated to be around 400.

It is important to note that the removals as noted represents the worst-case scenario, as it assumes that all trees within the project limits will be removed. This estimate does not consider the potential to retain trees in areas with minimal grade changes or the feasibility of transplanting trees. Additionally, the proposed removals will be offset by the planting of approximately 330 new trees along the 1.1 kilometre Water Street boulevards and median, with trees spaced approximately 10 metres apart. This estimate also does not include any additional plantings that could occur in adjacent public or park areas.

During the construction phase, certified arborists will evaluate each affected tree to determine the actual extent of impact before confirming removal. Tree preservation will remain a key priority, and removals will only proceed when absolutely necessary. Where feasible, transplanting will also be explored. Furthermore, opportunities for design modifications and alternative construction methods will be actively pursued to minimize both the number of impacted trees and the extent of any potential damage.

All trees larger than 5 centimetres are regulated by Town of Whitby by-laws. All work undertaken by the Town is exempt from the Town and the Region's By-laws and, therefore, no permits are required.

Overall, approximately 0.935 ha of vegetation communities will be cleared to accommodate the work proposed. However, vegetation removal will be limited to edge habitat that is already disturbed by anthropogenic influences and it is anticipated that the connectivity between vegetation communities will not be impacted.

There is the potential for construction to accidentally intrude into adjacent natural heritage features which provide candidate and confirmed Significant Wildlife Habitat and Species at Risk habitat. Additionally, machinery use adjacent to natural heritage features can result in soil compaction and trampling of herbaceous vegetation. These impacts can limit a plant's ability to grow and absorb nutrients and water.

Vegetation clearing, grubbing and grading can also expose soil resulting in sediment runoff and deposition within terrestrial natural features which can lead to suffocation of vegetation. Exposed soils can also result in dust deposition within adjacent natural heritage features which may interrupt the ability of vegetation to photosynthesize.

In addition, vegetation clearing, grubbing and grading and the movement of construction equipment has the potential to introduce or perpetuate the establishment of invasive

species in new areas and / or contribute to further spread in already established areas if control measures are not implemented. However, for the subject project impacts are expected to be minimal given that many invasive species (i.e., Dog strangling Vine, Common Reed, Manitoba Maple, Common Buckthorn, Garlic Mustard, and Purple Loosestrife) are already present.

No direct impacts are anticipated to the Whitby Harbour Provincially Significant Wetland Complex as it is located outside the anticipated area of impact. However, increased impervious surfaces as result of installation of the road curve widenings, roundabout and sidewalk/multi use pathways can indirectly affect the hydrology, drainage and water quantity of nearby natural features such as the adjacent wetlands, including parts of the Whitby Harbour Provincially Significant Wetland Complex, that are particularly sensitive to changes in the hydrological regime.

Mitigation

The following mitigation measures will assist in minimizing impacts to vegetation communities and Designated Natural Areas in proximity to the work proposed:

- Minimize vegetation removal to the extent possible and limit it to within the construction disturbance area.
- Clearly delineate vegetation clearing zones (i.e., using silt or tree protection fencing) on both construction drawings and in the field prior to clearing and grading to prevent accidental damage to vegetation or intrusion into adjacent vegetation areas.
- Monitor all fencing (silt, tree, and wildlife exclusion) during construction on a weekly basis and within 24 hours after significant rain or wind events to ensure that all fencing is intact and functioning properly.
- Areas temporarily disturbed should be revegetated once construction is complete by planting native trees, shrubs and native grasses and sedges.
- Implement appropriate setbacks and erosion and sediment control fencing to define the construction footprint and prevent accidental removal.
- A **Tree Protection Plan** should be developed during detailed design to identify required tree protection and mitigation measures following best management practices and municipal by-laws as appropriate.
- Vegetation clearing and associated edge effects to natural heritage features can be mitigated by planting native vegetation in any areas temporarily disturbed by construction activities. Where vegetation removals are required and machinery use has resulted in degradation of edge habitat, compensation

plantings should be considered and should include native trees, shrubs and herbaceous species.

- The use of alternative de-icing products / application methods should be considered to reduce the input of road salts into the adjacent swamps and marshes. A **Road Salt and Snow Management Plan** should be developed prior to construction activities.
- An **Invasive Species Control Plan** including the Clean Equipment Protocol for Industry (Halloran et al., 2013) is recommended to be developed prior to construction activities to provide control of invasive species.
- All machinery, construction equipment and vehicles arriving on site should be inspected for soil potentially containing seeds of plant material from invasive species.
- Use water as a dust control measure to reduce or eliminate generation of dust from heavy equipment construction and earth moving activities, areas of exposed soils and areas of concrete drilling/cutting to mitigate dust deposition into adjacent natural areas.

Arborist Mitigation

Below is a summary of mitigation recommended as part of the Arborist review. For additional details, please refer to the **Arborist Report and Tree Preservation Plan** prepared for this project included as **Appendix C**:

- **Tree Preservation**
  - It is recommended that an ISA certified arborist be retained to monitor the Project's construction activities to ensure all trees recommended for protection and retention are being maintained adequately, in relation to standard arboricultural practices and the tree protection protocols. Similarly, encroachment into the Tree Protection Zone (TPZ) of trees permitted for injury should be conducted under the supervision of an ISA certified arborist.
  - Where a permit to injure or remove was not previously issued, no grading, excavation, construction access, or material storage shall occur within the TPZ of those trees.

- **Tree Protection Hoarding**
  - Tree protection hoarding shall be installed as per the local by-laws and regulations to protect all trees proposed for retention throughout the construction process.

- Tree protection hoarding is to be installed around trees recommended for retention within the offset area as shown on the Tree Preservation Plan and in accordance with the Towns' Tree Protection Requirements for New Development (2020).
- Tree protection hoarding may include vertical fencing or horizontal hoarding and tree protection signage.
- It is recommended an ISA certified arborist conduct a post-construction assessment to evaluate the health and structure of trees that were retained during construction and identify opportunities for mitigation should any trees display signs of stress (e.g., falling limbs, declining health, etc.). Additional mitigation measures may be prescribed following construction such as monitoring, mulching, vertical mulching, irrigation, fertilization, and pruning.

- **Vertical Fencing:**
  - To prevent access into the TPZ of protected trees shall be installed as per the Town's Tree Protection Requirements for New Development (2020) guide and as illustrated in Detail 700 and 701. It should encompass as much of the TPZ of protected trees as possible as shown in the Tree Protection Plan.
  - Trunk protection, involving batten strapped together around the trunk of the tree with padding beneath, may also be introduced, as an addition to vertical fencing, for trees adjacent work proposed work where space is limited due to the densely urbanized environment.

- **Horizontal Hoarding:**
  - Horizontal hoarding is to be installed to supplement vertical fencing to prevent compaction and root damage where encroachment into the minimum TPZ is required and authorized.
  - It is recommended that horizontal hoarding is installed wherever the full TPZ cannot be protected with vertical fencing and where temporary disturbance is anticipated, such as site access and material storage.
  - To be placed in accordance with the guidelines accepted by Urban Forestry and as detailed in the Arborist Report (AECOM, Sept. 2024) included in **Appendix C**.
  - If required, sediment control fence should be installed as per Figure 6 of the Tree Protection Policy and Specifications for Construction Near Trees (2016) and to the satisfaction of Urban Forestry.

- **Tree Protection Signage**
  - Shall be installed on the fence by the contractor to clearly delineate TPZs as per Detail 703 of the Town of Whitby guidelines for Tree Removal Requirements in New Developments.

- **Construction and Excavation Near Trees**
  - Opportunities to avoid root damage within or near a TPZ shall be taken, including restricting heavy equipment usage, material storage, and excavation within the vicinity of a TPZ.
  - If machinery use or equipment storage is necessary within a TPZ, horizontal hoarding shall be utilized.
  - If excavation is necessary within a TPZ, additional care must be taken to preserve existing trees through a root exploration utilizing tree minded construction methodology and root pruning where necessary.

- **Root Exploration**
  - Root exploration should be conducted under the supervision of an ISA certified arborist, following Urban Forestry's authorization.
  - If excavation is required within a TPZ an exploratory excavation is recommended first to determine the damage to the tree's root system by the proposed work.
  - The exploratory excavation should be performed using hand digging or a low-pressure hydro-vac or pneumonic device, such as an air spade. No roots should be severed during the root exploration, and special care should be taken to avoid root damage during the excavation process.
  - The excavated area should be backfilled with clean native fill as soon as reasonably possible, and the area should then be watered to prevent desiccation and promote root growth.
  - The root exploration should be conducted under the supervision of an ISA certified arborist and following Urban Forestry's authorization.

- **Excavation**
  - Methods of excavation within the TPZ of trees proposed for preservation shall be limited to less harmful methods, such as hand digging or pneumatic or hydraulic excavation.
  - Fill within the TPZ shall not be permitted unless mitigated in a way that maintains air and water availability for roots. Additionally, all grade

changes within and adjacent to TPZs shall be undertaken in accordance with tree protection guidelines.

- **Root Pruning**
  - Roots encountered during excavation in or outside TPZ should be preserved wherever feasible.
  - If root pruning must occur to facilitate a grade change or other earthworks, it shall be conducted in accordance with acceptable arboricultural standards. For additional details, refer to the Arborist Report included in **Appendix C**.
- **Branch Pruning**
  - Where branches are likely to be damaged during construction, and pruning is approved, branches shall be pruned ahead of the work to avoid branches being broken off, so that bark is not torn, and wounds are not more extensive than necessary.
  - Any branches that overhang the work area and require pruning are to be pruned using clean tools as per the latest arboricultural practices (TCIA, 2008).
  - The Contractor(s) must report immediately to the Contract Administrator any damage to trees such as broken limbs, damage to roots, or wounds to the main trunk or stem systems so that the damage can be assessed immediately.
- **Tree Removal and Vegetation Clearing**
  - If tree removals are required they should be removed following permit issuance where applicable and prior to construction activities commencing on site, as trees proposed for removal may become hazardous once construction and excavation begins on site.
  - It is recommended that an ISA certified arborist be retained during tree removal operations to ensure that standardized arboricultural techniques are employed.
- **Post Construction Monitoring and Remedial Care**
  - Post-construction it is recommended that all on-site trees be inspected by an Arborist to assess the health of each tree. Remedial care such as mulching, vertical mulching, fertilization or irrigation may be recommended based on each tree's current condition.

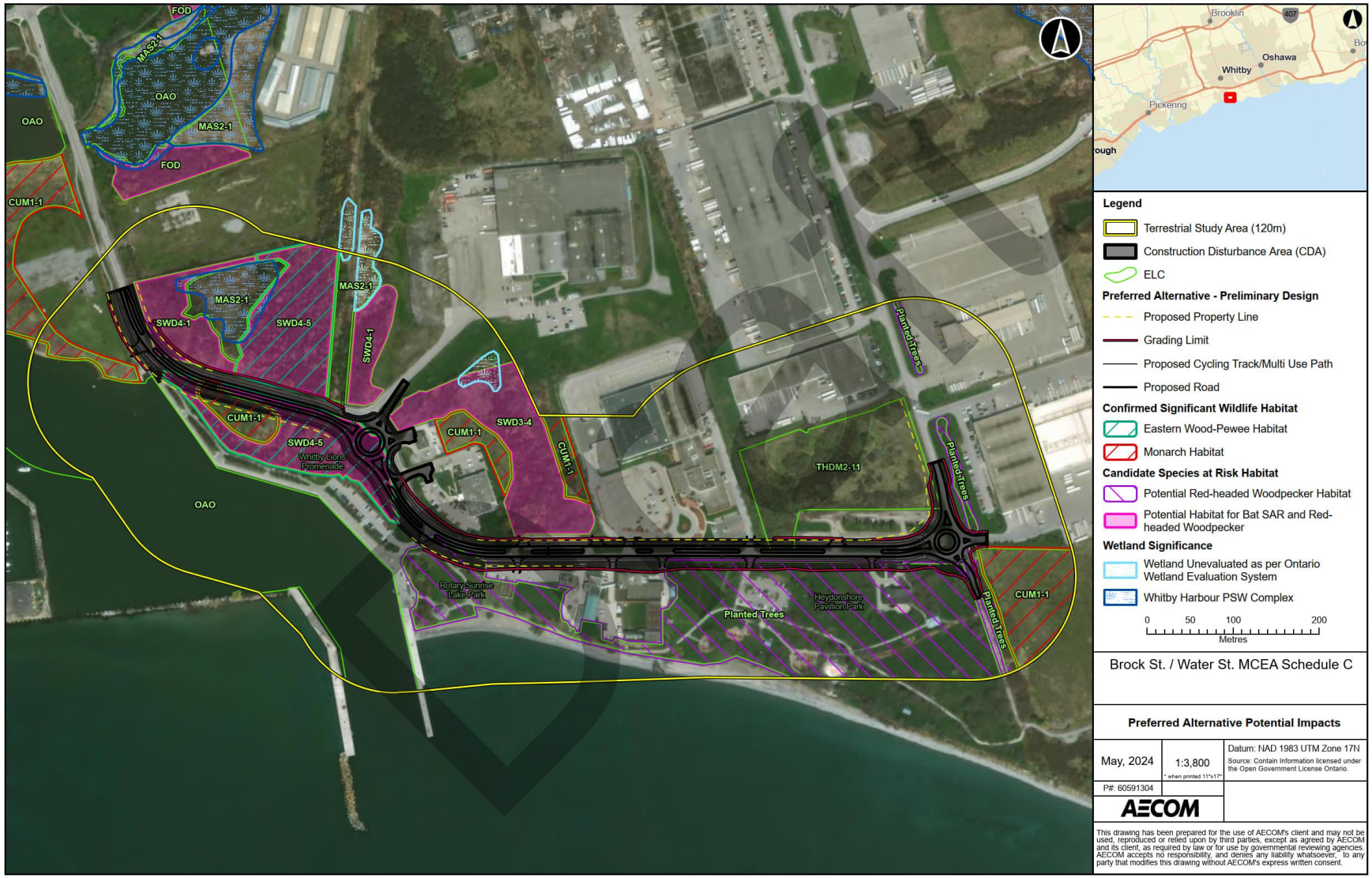
- **Invasive Species, Pests and Diseases**
  - To prevent the spread of invasive species during tree removal operations, trees should be removed from the site in a manner that will prevent the emergence and spread of invasive species and wood should only be moved in accordance with the latest Canadian Food Inspection Agency (CFIA) regulations.
  - Following best pruning practices shall also be considered for species more susceptible to pests and diseases.
  - Removals and pruning of infected trees should be done by a qualified arborist using industry standard best management practices and as per the recommendations outlined in this section.
  - Mitigation and prevention measures should be followed as per the recommendations of the Canadian Food Inspection Agency. The Canadian Food Inspection Agency website provides up-to-date information on all active pest and diseases and should be referred to regularly.

10.2.3 Wildlife and Wildlife Habitat

Adjacent vegetation communities provide breeding habitat and movement corridors for a variety of wildlife, including Species at Risk (SAR), Species of Conservation Concern and/or migratory birds protected under the Migratory Bird Convention Act. In addition, migratory and/or SAR birds have the potential to use manmade structures (e.g., bridges and buildings) for nesting. Confirmed Significant Wildlife Habitat (SWH) was identified within the Study Area for two Species of Conservation Concern which included the Eastern Wood-pewee within the Poplar Mineral Deciduous Swamp (SWD4-5) areas and the Monarch Butterfly within the cultural meadow communities. Additionally, several candidate SWH were identified and represented by woodlands, wetlands and Lake Ontario within the Study Area providing potentially suitable habitat for SAR species including the Red-headed Woodpecker and several species of SAR Bats. Additional details are provided below with locations illustrated on **Figure 23**:

- **Confirmed SWH including habitat for Monarch** – Confirmed habitat for the Monarch Butterfly was identified within the Dry-Moist Old Field Mineral Cultural Meadow (CUM1-1) where Common Milkweed was present. Impacts to confirmed Monarch habitat is anticipated to be minimal as only 0.104 ha of the Dry-Moist Old Field Mineral Cultural Meadow (CUM1-1) communities will be removed which will be limited to disturbed edge habitat.

Figure 23: Recommended Plan Potential Natural Heritage Impacts



- **Loss of Confirmed SWH including habitat for Bird SOCC** – Confirmed habitat for Eastern Wood-pewee was identified in the Poplar Mineral Deciduous Swamp (SWD4-5). Approximately 0.641 ha of confirmed SWH will be removed; however, these impacts are considered minimal as there will be 2.279 ha of remaining habitat available and the impacts will be limited to edge habitat abutting the existing roadway, an area already subject to anthropogenic disturbances. Given confirmed habitat for Eastern Wood-pewee is not limited in the greater landscape, vegetation removal is not anticipated to impair or eliminate the form and function of the remaining Eastern Wood-pewee habitat.
- **Loss of Candidate SWH including habitat for Bird SOCC** - Candidate habitat for Common Nighthawk and Barn Swallow was identified within the Study Area. Common Nighthawk may nest on flat gravel roof tops and the Barn Swallow may nest on buildings or park structures in the Study Area. No impacts are anticipated as no building demolitions or structure modifications are proposed.
- **Loss of Candidate SWH for Waterfowl Nesting Areas** – Impacts to CUM1-1 communities and associated Candidate SWH for Waterfowl Nesting Areas are anticipated to be minimal as only 0.104 ha of the CUM1-1 communities will be removed and will be limited to already disturbed edge habitat with upland communities are also present in the greater landscape.
- **Disturbance and/or Loss of Candidate Turtle Wintering Areas (including habitat for turtle SOCC)** – Potential turtle wintering areas were identified in Lake Ontario and the Cattail Mineral Shallow Marsh (MAS2-1). Impacts to overwintering turtles are not anticipated as no in-water works are proposed and the project is not expected to impact the MAS2-1 area.

  Candidate habitat for Snapping Turtle was identified in the swamp communities and MAS2-1. While 0.753 ha of candidate Snapping Turtle habitat will be impacted approximately 6.474 ha of swamp and marsh communities will remain intact to provide habitat for this species.

  Candidate habitat for Northern Map Turtle was identified in Lake Ontario; however, no direct impacts to the lake are anticipated.

  Since turtles travel long distances (e.g., in search of mates, nesting sites, etc.) during the active season (April 1 to October 30) there is the potential for turtles to incidentally wander into the construction work area where they may be susceptible to injury/mortality as result of construction activities.

- **Loss of Candidate SWH for Amphibian Breeding Habitat (Woodland) and Amphibian Movement Corridors** – Candidate SWH for amphibian breeding habitat (Woodland) was identified within the swamp communities. Approximately 0.753 ha of vegetation removal is anticipated within deciduous swamp communities. The swamp and marsh communities as well as the adjacent upland habitat may provide opportunities for amphibian movement between breeding and summer habitat within the Study Area and the surrounding area. No direct impacts are anticipated to marsh communities as they are located outside the anticipated area of impact.

  Impacts to swamp communities are considered minimal given the greater landscape outside the Study Area consists of forested communities along the lakeshore. Impacts to swamp communities adjacent the corridor will be limited to edge habitat which is already subject to anthropogenic disturbances. Approximately 6.474 ha of swamp and marsh communities will remain intact to provide amphibian breeding habitat and amphibian movement corridors. Vegetation removal is therefore not anticipated to impair or eliminate the form and function of the remaining amphibian breeding habitat and amphibian movement corridors.

- **Loss of Candidate SWH for Colonially Nesting Bird Breeding Habitat (Tree/Shrubs)** – Candidate SWH for colonial nesting bird breeding habitat was identified within the deciduous swamp communities where approximately 0.753 ha of vegetation is anticipated to be removed. These impacts are considered minimal given the greater landscape consists of continuous forested communities along the lakeshore.

  Impacts to swamp communities located adjacent the existing road will be limited to edge habitat which is already subject to anthropogenic disturbances. Approximately 6.474 ha of swamp communities will remain intact to provide colonial nesting bird breeding habitat. Given that candidate Colonial Nesting Bird Breeding habitat is not limited in the greater landscape it is not anticipated that vegetation removals will impair or eliminate the form and function of the remaining habitat.

- **Loss of Candidate Red-headed Woodpecker habitat** - Candidate habitat for Red-headed Woodpecker was identified along edges of swamp communities and isolated trees within park areas. While approximately 0.753 ha of swamp communities will be removed it will be limited to edge habitat already subject to anthropogenic disturbances. This is considered a minimal impact given that the greater landscape consists of forested communities along the lakeshore and since approximately 6.474 ha of swamp communities

will remain intact to provide Red-headed Woodpecker habitat. As such, it is not anticipated the work proposed will impair or eliminate the form and function of the remaining candidate Red-headed Woodpecker habitat.

- **Loss of potential bat SAR habitat and candidate Bat Maternity Colonies SWH –** Candidate bat cavity trees and SWH for bat maternity colonies were observed within the swamp communities which may contain suitable roost habitat. Impacts to candidate bat SAR habitat and SWH are anticipated as a result of vegetation removal within the forested communities. Approximately 0.753 ha of vegetation removal is anticipated within deciduous swamp communities. Impacts to swamp communities adjacent the roadway will be limited to edge habitat which is already subject to anthropogenic disturbances and approximately 6.474 ha of swamp communities will remain intact to provide bat SAR habitat. Given that candidate bat SAR habitat and SWH is not limited in the greater landscape, vegetation removal is not anticipated to impair or eliminate the form and function of the remaining bat SAR habitat and SWH.

- **Migratory Bird Nest and Egg Destruction** – Vegetation communities provide breeding habitat and movement corridors for a variety of wildlife, including SAR, SOCC and/or migratory birds protected under the MBCA. Furthermore, migratory and/or SAR birds may use manmade structures (e.g., bridges and buildings) for nesting. Vegetation (i.e., trees, shrubs and ground cover) removal or structure demolition/rehabilitation has the potential to destroy migratory bird nests and eggs, which are protected under the MBCA, if conducted during the overall bird nesting period of April 1 to August 31. No Schedule 1 MBCA-protected species were observed within the Study Area; however, targeted surveys were not completed and there is potentially suitable habitat for Pileated Woodpecker present. Vegetation removal has the potential to destroy nests belonging to Schedule 1 MBCA protected species, which receive year-round protection under the MBCA.

- **Disturbance to Wildlife** – Construction activities have the potential to disturb wildlife within adjacent natural features. Urban wildlife, including SOCC may enter the construction work area and may become susceptible to accidental injury or mortality associated with construction equipment or machinery if not properly mitigated. Wildlife encounters during construction within the active season may result in collisions with construction equipment or disruption of life cycle processes (e.g., nesting, hibernating, etc.) resulting in injury or mortality. Noise and vibrations from construction activities are anticipated to be temporary, short in duration and are not anticipated to substantially increase from daily existing road use. A certain degree of disturbance can be avoided by restricting construction activities to certain times of the day and outside of breeding periods for any bird species identified within the Study Area.

Overall, the potential for impact will be temporary and limited to the period of construction. It is expected that the mitigation measures as recommended will sufficiently address potential disturbances to wildlife.

Mitigation

The mitigation as recommended below will assist in the protection of area wildlife and SAR during the period of construction:

- Avoid vegetation removal (ground cover, shrubs, trees) during the active bird nesting season (April 1 to August 31) to avoid impacting nesting birds and contravention of the MBCA.
- Should vegetation removal be required during the active bird nesting season, a nest survey should be conducted by a qualified ecologist or equivalent no more than 48 hours prior to vegetation removal.
- Reduce the slope of stockpiled substrates (gravel, sand, soil) and maintain it at 70 degrees or less during the breeding bird season (April 1 to August 31) to prevent burrowing MBCA protected and SAR birds from nesting in the stockpiled material.
- Avoid tree removals during the bat active season (April 1 to September 30) to minimize impacts to SAR bats and contravention of Section 9 of the ESA in the areas identified as potential SAR bat habitat (i.e., Manitoba Maple Mineral Deciduous Swamp (SWD3-4), Poplar Mineral Deciduous Swamp (SWD4-5) and the Willow Mineral Deciduous Swamp (SWD4-1)).
- If work is to be done at night during the bat active season of April 1 to September 30, construction lighting should be directed downwards and shielded.
- Install temporary wildlife exclusion fencing in accordance with the Best Management Practices for Mitigating the Effects of Roads on Amphibian and Reptile Species at Risk in Ontario (MNRF, 2016) along the limits of construction adjacent to wetlands in order to prevent herpetofauna from entering the construction work area.
- Wildlife exclusion fencing should be placed along the limits of construction if work is to be done during the turtle and snake active season of April 1 to October 30 and should be installed before April 1 of any year. Fencing depth and height of exclusion measures should consider the variety of wildlife using the area and be installed such that any species potentially impacted are screened for and relocated.

- A SAR and Wildlife Observation and Handling Protocol is recommended to be developed prior to construction.
- It is recommended that construction staff receive SAR Awareness Training and be made aware of the possible wildlife, including SAR and SOCC, that may occur within the construction area. The Plan should include SAR identification and the proper protocols to implement if SAR/SOCC are encountered in the construction area to reduce harm/injury to the animal. The handling protocol should follow the MNRF's Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders (MNRF, no date).

10.2.4 Fish and Fish Habitat

There is no in-water work proposed as part of this project; however, given the proximity to Lake Ontario there is the potential for indirect impacts resulting from road reconstruction during the construction period.

Vegetation clearing, grubbing and grading exposes soils and has the potential to result in sediment runoff discharging into nearby Lake Ontario. Elevated levels of sediment and related turbidity can reduce the productivity of an aquatic system by clogging the gills of fish, covering fry and eggs within the substrate and reducing prey availability.

There is also the potential for road salt loading in adjacent wetlands and Lake Ontario as a result of increased impervious surfaces, which may indirectly affect fish and aquatic SAR habitat, including turtle habitat.

A **confirmatory site review is recommended during detailed design** to identify potential overland flow north of Water Street along the abandoned railway corridor, and potential (unlikely) seasonal connectivity to any nearby waterbody.

Mitigation

Overall, impacts are not expected to be significant provided that the mitigation as recommended is implemented during construction:

- Develop a Spills Response Plan prior to construction to avoid/minimize contaminant release to the adjacent natural areas.
- All machinery, construction equipment and vehicles arriving on site should be in clean condition (e.g., free of fluid leaks, or attached soil potentially containing seeds of plant material from invasive species) and be inspected and washed in accordance with the Clean Equipment Protocol for Industry (Halloran, Anderson, & Tassie, 2013) prior to arriving and leaving the construction area.

- Operate, store and maintain equipment and associated materials in a manner and at a distance that prevents the entry of any deleterious substance from entering a waterbody (as per OPSS 182). Any part of equipment entering the waterbody or operating from the bank shall be cleaned, free of fluid leaks and in good working condition.
- Refuelling, maintenance, or repair of equipment should not occur within 30 metres of a wetland or Lake Ontario. Emergency spill-kits and drop trays should be kept on site and deployed as necessary for equipment working near or over water.
- Utilize chemical de-icers and salt only as needed.
- Develop and implement a **Road Salt and Snow Management Plan.**
- An **Erosion and Sediment Control Plan** should be developed prior to construction that includes the installation of sediment and erosion control measures such as silt fencing and straw-bale check dams prior to construction activities.
- Exposed soils and disturbed areas should be re-stabilized following construction, with non-biodegradable erosion and sediment control measures removed from site once these areas have been stabilized.
- Complete a confirmatory site review during detailed design to identify potential overland flow north of Water Street along the abandoned railway corridor, and potential (unlikely) seasonal connectivity to any nearby waterbody.

10.2.5 Stormwater Management

The post-development plan for the site will include additional impervious area that results in more site runoff compared to pre-development. This impacts the quality and quantity of stormwater runoff from the site into the downstream system.

The project is located within an area regulated by the Central Lake Ontario Conservation Authority (CLOCA) and therefore ongoing consultation will be required with CLOCA during detailed design. During construction there is the potential to impact surface water through the accidental spillage of harmful substances from refuelling and/or equipment maintenance. Erosion can also occur and result in sediment entering nearby lakes/watercourses. Since the project is located in proximity to Lake Ontario and Whitby Harbour there is increased potential for surface water impacts during construction. Therefore, the following stormwater management strategy is proposed to mitigate potential impacts.

Mitigation

The following measures will assist in minimizing impacts:

- **Water Quantity:** Quantity control is not required due to the proximity of Lake Ontario. Runoff will drain uncontrolled to the proposed infrastructure north of Water Street. With the implementation of the proposed storm sewer, no flooding is expected on Water Street.
- **Water Quality:** The water quality target for the project is the long-term average removal of 80% Total Suspended Solids (TSS) on an annual loading basis from runoff leaving the site. This will be achieved through a "treatment train" approach such as enhanced grassed swales and vegetated buffer strips, where feasible, or by using standalone measures such as OGS unit. However, due to identified soil and groundwater contamination on-site, promotion of infiltration is not recommended as part of a treatment train approach for the site. The detailed assessment of the proposed facilities is to be completed as part of the detailed design for site plan development.
- **Water Balance:** Water balance is generally achieved by constructing Low Impact Development facilities for infiltration, where practical. As indicated, infiltration is not recommended due to the pre-development condition of existing soil and groundwater contamination. It is understood that contaminated groundwater is from an unconfirmed upgradient property, and as such cannot be remediated on this property alone. Therefore, Low Impact Development features that reintroduce precipitation into the groundwater system or promote water balance are not recommended for the site as they could worsen existing conditions.

10.2.6 Groundwater and Source Protection

As noted, the Region's Whitby Water Supply Plant is located within the Study Area between Water Street and Lake Ontario approximately 0.38 kilometres west of South Blair Street. The CTC Source Protection Plan identifies the area adjacent to Lake Ontario as an Intake Protection Zone-2 with a score of 4. The project is also within an area identified as a Highly Vulnerable Aquifer. A Surface Water Intake is identified in Lake Ontario to the south, outside the Study Area with a surrounding buffer designated as Intake Protection Zone-1 with a score of 5.

This project involves improvements to an existing corridor that will involve some expansion of the existing footprint to accommodate a realignment and roundabout construction. There is the potential for additional paved surfaces to impact groundwater

recharge/discharge and there is the potential for contaminants / spills to be released during construction.

During detailed design further assessment will be necessary to determine if groundwater dewatering activities will be required to facilitate construction and whether the amounts required will be subject to an Environmental Activity and Sector Registry (EASR). As per O. Reg. 66/25 a Permit-To-Take-Water (PTTW) no longer applies to construction activities.

Mitigation

The following measures will assist in minimizing impacts:

- The contractor will be required to complete water taking (groundwater) in accordance with the requirements of the Ontario Water Resources Act and the Environmental Protection Act.
- During detailed design a hydrogeological assessment will be completed in conjunction with related geotechnical engineering and geo-environmental investigations. The scope of the hydrogeological assessment program may encompass additional borehole drilling / monitoring well installations, groundwater level monitoring (short and longer-term), hydraulic conductivity testing, and/or groundwater quality sampling, to inform the Project design (both permanent and temporary components) and support development of tender documents / specifications.
- The hydrogeological data obtained may be utilized to assess and quantify potential groundwater management / control requirements, volumes, and regulatory (i.e. EASR) requirements in relation to construction-related water-takings, evaluate potential impacts (with regard to existing groundwater users and the natural environment), and provide options for the handling and discharge of dewatering effluent.
- As per By-law 6998-15, a discharge permit may be required through consultation with the Town of Whitby prior to discharging dewatering effluent prior to discharging to the Town's municipal sewer system(s).

10.2.7 Waste and Contamination

Given the history of industrial operations within the Study Area, there is the potential for contamination to be present.

During construction excess soil may also be generated. The excavation, transportation, temporary storage, and final placement or disposal activities should comply with the

requirements set out by the Ministry of the Environment, Conservation and Parks. During the detailed design phase, Ministry of the Environment, Conservation and Parks will be consulted during the development of the Soil Management Plan(s).

Mitigation

The following measures will assist in minimizing impacts:

- Additional geotechnical investigation, chemical testing and related study will be required during detailed design to confirm the potential for contamination and to develop appropriate mitigation measures.
- Excess soil that is excavated and managed on-site or off-site during construction will need to be addressed in in accordance with Ontario Reg 406/19- On-Site and Excess Soil Management, under Ontario's Environmental Protection Act, R.S.O. 1990, c. E. 19 and the technical document entitled "Rules for Soil Management and Excess Soil Quality Standards" (Ministry of the Environment, Conservation and Parks, 2019). During detailed design, the following studies may need to be completed in accordance with Ontario Reg 406/19:
    1. Assessment of Past Uses
    2. Sampling and Analysis Plan
    3. Soil Characterization Report
    4. Excess Soil Destination Assessment Report
- SP ENVR0014 – Amendment to OPSS 180, November 2016 - Compliance With Ontario Regulation (O. Reg.) 406/19 for On Site and Excess Soil Management
- OPSS 180 Management of Excess Materials
- SP101F21 Occupational Health and Safety Act Compliance

10.2.8 Geotechnical

As indicated, an earlier Geotechnical / Environmental Assessment Report completed by Golder Associates Ltd. in June 2001 for the existing Water Street alignment was provided for reference for the current Class EA. The report determined that poor bearing soils including fibrous peat and fill as well as high groundwater conditions are all concerns that will need to be addressed and as such, further project specific geotechnical investigation(s) will be required. The environmental component of the investigation determined that no significant environmental impact was identified attributable to the former bulk fuel facility. Fill materials that contained waste such as wood, metal, coal, slag, cinder and ash were encountered (i.e. BH 1, 2, 7 and 8) and fill from BH 8 was found to contain zinc at levels above the MECP Table B criterion (2001).

Mitigation

The following measures will assist in minimizing impacts:

- Further project specific geotechnical investigation(s) are recommended. Waste materials identified in the fill such as wood, metal, coal, slag, cinder and ash must be removed from the fill prior to any re-use of the fill. The separate waste materials should also be disposed of offsite at an approved receiving facility.
- If the waste cannot be separated from the fill, then the fill and waste should not be re-used on site and should be disposed off site at an approved receiving facility. Chemically unsuitable fill (i.e. BH 8), likewise should not be reused on site.
- Additional chemical testing may be required to determine the extent of chemically unsuitable fill. For any fill requiring off site disposal, an additional waste characterization chemical analysis under O. Reg. 558 would be required.
- Groundwater dewatering may be required.

10.3 Social Environment

10.3.1 Land Use & Property Impacts

As discussed, property acquisition is required to accommodate the new alignment and planned improvements. There may also be access issues resulting from the improvements. During construction there may be temporary access impacts to the waterfront and to private property within the construction area.

Efforts have been made to minimize the amount of property to be acquired and those impacted have been consulted during the current Class EA process. It will be important that continued consultation with directly and indirectly impacted property owners be ongoing during the detailed design phase and in advance of construction. Construction staging and detours, along with signage and advance notification, will assist in minimizing impacts during the construction period.

Mitigation

The following measures will assist in minimizing impacts:

- Confirm property requirements and complete continued consultation with directly and indirectly impacted property owners during the detailed design phase to secure buy-ins.

- Utilize traffic management measures (i.e., construction staging, detours etc.) to minimize impacts to local traffic and to maintain access during construction.
- Implement signage and provide advance notification regarding affected entrances and access.
- Provide advance notification regarding temporary modifications to waterfront access.

10.3.2 Active Transportation

Ultimately, the Recommended Plan will provide positive improvements for active transportation within the subject Study Area by enhancing the Whitby Waterfront through the provision of improved opportunities for pedestrians and cyclists including Waterfront Trail connections. The improvements will also accommodate future active transportation travel demands. However, during construction there will be potential impacts to active transportation within the area of construction. These impacts will be temporary and can be minimized through continued consultation with affected stakeholders and through advance notification of construction to assist in keeping everyone informed of impacts during construction.

Mitigation

The following measures will assist in minimizing impacts during construction:

- Continued consultation with active transportation stakeholders including internal Town departments and the Active Transportation and Safe Roads Advisory Committee.
- Provide advance notification of active transportation restrictions during construction.
- Provide signage in the area of construction and advise of alternate routes, where possible, during the construction period.

10.3.3 Noise

The subject improvements are planned for an existing corridor and therefore not expected to result in a significant increase in noise post construction. There are no residential areas within the Study Area or in proximity; however, there is an educational facility and two parks that have the potential to be adversely impacted during construction. While there is the potential for noise impacts during construction these will be temporary.

Mitigation

The following measures will assist in minimizing noise impacts during construction:

- During construction, continue to monitor the site conditions and maintain constant dialogue with adjacent property owners to gather feedback and address any issues brought up by them in a timely manner.
- Implement Best Management Practices during construction to minimize noise impacts.
- Restrict contractor from working during weekends or on holidays.
- Maintain equipment in an operating condition that prevents unnecessary noise, including but not limited to non-defective muffler systems, properly secured components, and the lubrication of moving parts.
- Restrict the idling of equipment to the minimum necessary to perform work specified.
- Adhere to Town of Whitby Noise By-law 6917-14.

10.3.4 Air Quality

During construction there is the potential for dust and fumes to be generated which can negatively impact air quality. However, impacts will be temporary and limited to the period of construction.

Mitigation

The following measures will assist in minimizing impacts to air quality:

- During construction, continue to monitor the site conditions and maintain constant dialogue with adjacent property owners to gather feedback and address any issues brought up by them in a timely manner.
- Best Management Practices should be implemented during construction to maintain air quality and include no unnecessary idling of vehicles.
- Dust suppressants should be applied to control dust generated by construction activities, as required.
- Stockpiles of soil, sand and aggregate should be covered.
- Construction site should be regularly cleaned to remove debris and dust caused by construction.
- OPSS 100 'General Conditions of Contract' - Requirement to control dust so that it does not affect traffic, enter surface waters, or escape beyond the right-of-way to cause a nuisance to residents, business or utilities.

10.4 Cultural Environment

10.4.1 Archaeological Resources

The Stage 1 archaeological assessment determined that the potential for the recovery of pre- and post-contact Indigenous and 19th century Euro-Canadian archaeological resources within the Study Area is high within areas not subject to previous disturbance. As such, further study will be required during detailed design.

Areas of previous disturbance (e.g., roadways, parking lots, and building footprints) are considered to possess low to no archaeological potential. These areas have been photo documented and are not recommended for further assessment. Similarly, no further assessment is recommended for areas photo documented as low lying and wet area or for areas subject to previous archaeological assessments that have been cleared of archaeological concern.

Mitigation

The following measures will assist in minimizing impacts to archaeological resources:

- During detailed design, a **Stage 2 Archaeological Assessment is to be completed** for all areas of potentially undisturbed land within the Study Area limits, not previously cleared of archaeological concerns. Any subsequent stages of archaeological assessment recommended by the Stage 2 report are also to be completed during detailed design in advance of ground-disturbing activities.
- The assessment must be conducted by a licensed archaeologist and must follow the requirements set out in the Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011).
- Based on current conditions within the Study Area, the Stage 2 assessment should consist of a standard test pit survey at 5 metre intervals is to be conducted in all areas that will be impacted by the project where ploughing is not feasible (e.g., woodlots, overgrown areas, manicured lawns).
- In the event that previously unknown or unassessed deeply buried archaeological resources are uncovered during construction, the contractor shall immediately notify the Contract Administrator. Work shall remain suspended within the subject area until otherwise directed by the Contract Administrator in writing. The CA will contact the Town of Whitby representative who will confirm the need to engage a licensed consultant archaeologist to carry out any archaeological fieldwork, in compliance with Section 48 (1) of the Ontario Heritage Act.

- In the event that human remains are encountered during construction, the contractor shall immediately notify the Contract Administrator. Work shall remain suspended within the subject area until otherwise directed by the Contract Administrator in writing. The CA will contact the Municipal representative who will notify the police, coroner and the Registrar of the Bereavement Authority of Ontario.

10.4.2 Built Heritage Resources (BHR)

As noted, the CHSR indicated that one Built Heritage Resource, identified as **BHR #1**, the former Waterworks Pump House at 269 Water Street, was confirmed within the Study Area and is listed on the Town of Whitby's Municipal Heritage Register. BHR #1 will not be directly impacted by the work proposed; however, it is located within 50 metres of the proposed road modification work and therefore has the potential to be indirectly impacted by vibration resulting from construction activities. Since it will not be directly impacted by the project no further heritage reporting is required; however, vibration monitoring is recommended.

~~As noted,~~In addition, the CHSR identified the Cultural Heritage Evaluation Report completed for the ~~there is~~ one potential Cultural Heritage Landscape within the Study Area identified as **CHL #1**, consisting of the former Port Whitby and Port Perry Railway corridor. As CHL #1 crosses Water Street towards the western end of the Study Area, the Recommended Plan will transect the former railway corridor south of the present alignment of Water Street and acquisition of this section of the former corridor will be required. Given its potential to be impacted by the project, the CHSR recommended further study and the Town subsequently completed a CHER/HIA for the Port Whitby & Port Perry Railway (PW&PPR) Corridor to determine whether the Corridor has Cultural Heritage Value or Interest (CHVI) according to Ontario Regulation 9/06 (O. Reg. 9/06). The CHER/HIA ~~,~~ concluded that given the CHVI of the PW&PPR Corridor and the anticipated impacts of the Project, cultural heritage mitigation is required. The selection and implementation of mitigation measures was completed in consultation with a Town of Whitby Heritage Planner.

Mitigation

The following measures will assist in minimizing impacts to cultural heritage resources within the Study Area:

- **Built Heritage Resource 1**: Vibration monitoring should be undertaken pre, during and post construction to confirm no vibration impacts are incurred during construction. Should the Recommended Plan be modified during detailed design

it is recommended that the potential Built Heritage Resource 1 be further reviewed to confirm impacts and mitigation, including the potential need for further study.

- **Cultural Heritage Landscape 1 (Port Whitby and Port Perry Railway Corridor):** ~~The completion of a Cultural Heritage Evaluation Report (CHER) is recommended during detailed design to evaluate CHVI of the corridor.~~ In consideration of the impacts, it was determined that there will be direct, permanent, and irreversible impacts to the PW&PPR Corridor, which will in turn directly impact the CHVI of the corridor. As a result, conservation and mitigation options were evaluated, and the following recommendations developed:

  General Recommendations

  - **Designation under the Ontario Heritage Act:** Given the identified cultural heritage value or interest of the PW&PPR Corridor, the Town of Whitby should consider designation of the corridor under Part IV of the Ontario Heritage Act to formally recognize and protect its heritage attributes.
  - **Indigenous Engagement:** Engagement with relevant Indigenous communities should be undertaken during the detailed design phase to identify and incorporate Indigenous values, interests, and perspectives into the Project, including opportunities for interpretation and commemoration.
  - **Archaeological Assessment and Mitigation:** All required archaeological assessments shall be completed prior to construction in accordance with applicable provincial standards and guidelines. Any identified archaeological resources will be addressed through appropriate mitigation measures, including licensed archaeological investigation, documentation, and reporting.
  - **Commemoration Strategy (Applicable to All Options):** Regardless of the conservation option selected, the incorporation of commemorative measures is strongly encouraged, as it represents a positive intervention that enhances public understanding, appreciation, and engagement with the history of the corridor. (Refer to Section 9.2.3 of CHER/HIA (Appendix K) for more information)).

  Conservation Strategy Recommendations

  - **Preferred Conservation Strategy – Modified Design (Option 2):** A modified design approach (Option 2) is recommended as the preferred conservation strategy. This approach represents a balanced response that minimizes impacts to key heritage attributes while allowing the Project to proceed. In particular, the following measures are recommended:

- Retention of the pedestrian crossing alignment (Design Modification B) to maintain the physical and visual continuity of the PW&PPR Corridor across Water Street and support its legibility as a historic transportation route; or if not feasible,
- Maintenance of corridor connectivity and landscape continuity (Design Modification C), including: Formalized pedestrian and cyclist connections between the corridor and adjacent multi-use pathways; Implementation of wayfinding and interpretive signage; and Strategic retention and planting of vegetation aligned with the historic corridor edges to reinforce its linear form.

- **Alternative Approach – Preliminary Design with Commemoration (Option 3):** Should the Town determine that the modified design approach (Option 2) is not feasible, proceeding with the Preliminary Design (Option 3) may be undertaken, provided that a commemorative strategy is implemented to interpret and communicate the cultural heritage value of the PW&PPR Corridor. (Refer to Section 9.2.3 of CHER/HIA (Appendix K) for more information)).

11. Climate Change

Increased temperatures worldwide are creating changes in climate that are resulting in extreme weather events. Climate change concerns relate to the increased concentration of greenhouse gases in the atmosphere which can result in a rise in the global mean surface temperature. The rise of greenhouse gas emissions is influencing climate patterns, hydrology, ecosystems and ocean chemistry.

The MECP has prepared a guide entitled “"Considering Climate Change in the Environmental Assessment Process." The Guide forms part of the Environmental Assessment program's Guides and Codes of Practice and outlines the ministry's expectation for considering climate change as part of the environmental assessment process.

There are two approaches to address climate change. These include climate change mitigation (i.e., reducing a project's impact on climate change) and climate change adaptation (i.e., increasing the local ecosystem's resilience to climate change). A qualitative review of climate change was completed for this project that included a review of the potential for the project to impact climate change and the potential impact that climate change may have on a project.

11.1 Potential for Project to Impact Climate Change

This undertaking is a small-scale project involving the reconstruction of an existing corridor and it is not expected that the emission of greenhouse gases will significantly increase over existing conditions. The improvements planned will provide for better movement of traffic and an improved level of service as well as improved infrastructure for walking and cycling. Together these measures may encourage more active transportation and potentially result in a decrease in vehicular use and ultimately a reduction in vehicular greenhouse gas emissions.

Vegetation can also assist in removing carbon dioxide from the atmosphere. While there will be some tree removals required to accommodate the improvements a mitigation strategy has been developed to assist in reducing impacts to area vegetation. Mitigation in the form of tree protection and replanting will assist in minimizing impacts to existing vegetation and restoring vegetation that is removed.

11.2 Potential for Climate Change to Impact this Project

Extreme weather events resulting from climate change can overwhelm existing stormwater management infrastructure and lead to flooding. As part of this project the drainage infrastructure within the corridor will be improved and reconstructed to address flooding concerns in the area. Ultimately, this undertaking is expected to make the area less vulnerable to climate change.

12. Permits and Approvals

During the detailed design phase, the design will be finalized and potential impacts resulting from the project will be confirmed. The need for additional surveys and associated approvals will be discussed with appropriate agencies (i.e., MECP, MNRF, CLOCA, DFO, etc.) during the early phases of detailed design. Contravention of the ESA or the MBCA is not anticipated provided the mitigation as noted is implemented; however, this will need to be confirmed.

The permits / approvals as well as further studies that may be required during detailed design are summarized below:

- An approval or permit may be required from the Central Lake Ontario Conservation Authority for the works proposed.
- Tree Removals: All work undertaken by the Town is exempt from the Town and the Region's By-laws and, therefore, no permits are required.
- Migratory Bird Convention Act (MBCA) - although unlikely, nests of species listed under Schedule 1 of the MBCA (i.e., Pileated Woodpecker) may appear from year to year and could require removal. Unoccupied nests of these migratory birds, whose nests are commonly re-used from one year to the next, cannot be removed without a permit unless reported though the Abandoned Nest Registry and nest remains unoccupied for the corresponding period of time (i.e., 36 months for Pileated Woodpecker). Nest searches and call playback surveys for Red-headed Woodpecker and Pileated Woodpecker may be required to confirm presence/absence.
- Endangered Species Act (ESA) - An updated SAR habitat screening is recommended during detailed design to address the protection status of species under the ESA that may change over time.
- The following surveys may be required; however, this may be subject to change based on the updated SAR habitat screening, agency consultation (MECP/MNRF/CLOCA) and design-related impacts:
  - Leaf-off cavity tree searches and acoustic surveys for bat SAR relating to anticipated bat SAR habitat loss.
  - Nest searches and call playback surveys for Red-headed Woodpecker and Pileated Woodpecker may be required to confirm presence/absence.
  - Anuran nocturnal calling surveys following the Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (BSC et al., 2009).

- Fish and Fish Habitat - A confirmatory fish and fish habitat survey should be completed to identify potential overland flow north of Water Street along the abandoned railway corridor, and potential (unlikely) seasonal connectivity to any nearby waterbody. A DFO Request for Review is not expected to be required since work is no in-water work is proposed. A Species at Risk Act, 2002 (SARA) review and approval by Fisheries and Oceans Canada (DFO) is not anticipated as there are no watercourses or federally listed SAR present within the Study Area.
- A wetland evaluation may be required to confirm boundaries of the Whitby Harbour PSW Complex in accordance with the Ontario Wetland Evaluation System Southern Manual (MNRF, 2022).
- A Hydrogeological Investigation Report is recommended to evaluate the local physical and environmental setting to confirm general groundwater usage within the area, including aquifers, well types and locations as well as to evaluate groundwater contamination and potential source water protection issues. This information will assist in determining water taking requirements including the need for an Environmental Activity and Sector Registry registration based on the detailed design.
- An Arborist Report is recommended to summarize the results of a tree inventory and to document required removals based on the detailed design and for use in consideration of replacement plantings as well as to document permitting requirements for killed or injured trees.

13. Summary of Environmental Effects, Mitigation and Commitments

Please refer to **Table 13**, for a summary of the key environmental concerns associated with the Recommended Plan and the corresponding mitigation proposed to assist in minimizing adverse effects.

Table 13: Summary of Environmental Effects, Mitigation and Commitments to Future Work

Environmental Concern and Potential Impacts	Mitigation/Commitments
Erosion & Sediment Control ■ Vegetation clearing, grubbing and grading during construction can expose soil and has the potential to result in sediment runoff discharging into nearby natural heritage features including Whitby Harbour and / or Lake Ontario.	■ An **Erosion and Sediment Control Plan** should be developed prior to construction that includes the installation of sediment and erosion control measures such as silt fencing and straw-bale check dams prior to construction activities. ■ Exposed soils and disturbed areas should be re-stabilized following construction, with non-biodegradable erosion and sediment control measures removed from site once these areas have been stabilized.
Vegetation and Designated Areas ■ There were no regulated species at risk trees, heritage trees, memorial trees, or any other trees with special status identified during the tree inventory. ■ Overall, approximately 0.935 ha of vegetation communities will be cleared to accommodate work proposed; however, vegetation removal will be limited to edge habitat that is already disturbed by anthropogenic influences and it is anticipated that the connectivity between vegetation communities will not be impacted. ■ There is the potential for construction to accidentally intrude into adjacent natural heritage features which provide candidate and confirmed Significant Wildlife Habitat and Species at Risk habitat. Machinery use adjacent to natural heritage features can result in soil compaction and trampling of herbaceous vegetation. ■ Vegetation clearing, grubbing and grading can also expose soil resulting in sediment runoff and deposition within terrestrial natural features which can lead to suffocation of vegetation. ■ Vegetation clearing, grubbing and grading and the movement of construction equipment has the potential to introduce or perpetuate the establishment of invasive species ■ Approximately 720 trees are located within the tree inventory area or project limits. An estimated 78% are in Good to Fair condition, while the remaining 22% are classified as Poor to Dead. ■ Based on the current design and Tree Protection Zones, approximately 529 trees within the project limits are expected to be impacted by more than 30%. As a result, these trees may require removal. However, given that 22% of the existing trees are already in Poor to Dead condition, the number of trees likely to be adversely affected by the proposed roadwork and potentially requiring removal is estimated to be around 400. ■ This estimate is a worst case scenario as it does not consider the potential to retain trees in areas with minimal grade changes or the feasibility of transplanting trees. Additionally, the proposed removals will be offset by the planting of approximately 330 new trees along the 1.1 kilometre Water Street boulevards and median, with trees spaced approximately 10 meters apart. This estimate also does not include any additional plantings that could occur in adjacent public or park areas for compensation.	■ All trees larger than 5 centimetres are regulated by Town of Whitby by-laws. ■ All work undertaken by the Town is exempt from the Town and the Region's By-laws (Section 1) and, therefore, no permits are required. ■ Consultation will be required with CLOCA during detailed design to confirm remediation measures required. ■ Vegetation removal should be minimized to the extent possible and be limited to within the construction disturbance area. ■ Vegetation clearing zones shall be clearly delineated (i.e., using silt or tree protection fencing) on both construction drawings and in the field prior to clearing and grading to prevent accidental damage to vegetation or intrusion into adjacent vegetation areas. ■ All fencing (silt, tree, and wildlife exclusion) shall be monitored during construction on a weekly basis and 24 hours after significant rain or wind events to ensure that fencing is intact and functioning properly. ■ Areas temporarily disturbed should be revegetated once construction is complete by planting native trees, shrubs and native grasses and sedges. ■ Appropriate setbacks and erosion and sediment control fencing shall be implemented to define the construction footprint and prevent accidental removal. ■ A **Tree Protection Plan** should be developed during detailed design to identify required tree protection and mitigation measures following best management practices and municipal by-laws as appropriate. ■ Vegetation clearing and associated edge effects to natural heritage features can be mitigated by planting native vegetation in any areas temporarily disturbed by construction activities. ■ The use of alternative de-icing products / application methods should be considered to reduce the input of road salts into the adjacent swamps and marshes. A **Road Salt and Snow Management Plan** should be developed prior to construction activities. ■ An **Invasive Species Control Plan** including the Clean Equipment Protocol for Industry (Halloran et al., 2013) is recommended to be developed prior to construction activities to provide control of invasive species. ■ All machinery, construction equipment and vehicles arriving on site should be inspected for soil potentially containing seeds of plant material from invasive species. ■ Use water as a dust control measure to reduce or eliminate generation of dust from heavy equipment construction and earth moving activities, areas of exposed soils and areas of concrete drilling/cutting to mitigate dust deposition into adjacent natural areas. **Arborist Recommended Mitigation** **Tree Preservation:** ■ It is recommended that an ISA certified arborist be retained to monitor the Project's construction activities to ensure all trees recommended for protection and retention are being maintained adequately, in relation to standard arboricultural practices and the tree protection protocols. Similarly, encroachment into the Tree Protection Zone (TPZ) of trees permitted for injury should be conducted under the supervision of an ISA certified arborist. ■ Where a permit to injure or remove was not previously issued, no grading, excavation, construction access, or material storage shall occur within the TPZ of those trees.

	Tree Protection Hoarding: ■ Shall be installed as per the local by-laws and regulations to protect all trees proposed for retention throughout the construction process. ■ Shall be installed around trees recommended for retention within the Offset Area as shown on the Tree Preservation Plan and in accordance with the Towns' Tree Protection Requirements for New Development (2020). ■ Tree protection hoarding may include vertical fencing or horizontal hoarding and tree protection signage. ■ It is recommended an ISA certified arborist conduct a post-construction assessment to evaluate the health and structure of trees that were retained during construction and identify opportunities for mitigation should any trees display signs of stress (e.g., falling limbs, declining health, etc.). Additional mitigation measures may be prescribed following construction such as monitoring, mulching, vertical mulching, irrigation, fertilization, and pruning. **Vertical Fencing:** ■ To prevent access into the TPZ of protected trees vertical fencing shall be installed as per the Town's Tree Protection Requirements for New Development (2020) guide and as illustrated in Detail 700 and 701. ■ Trunk protection, involving batten strapped together around the trunk of the tree with padding beneath, may also be introduced, as an addition to vertical fencing, for trees adjacent work proposed work where space is limited due to the densely urbanized environment. **Horizontal Hoarding:** ■ Horizontal hoarding is to be installed to supplement vertical fencing to prevent compaction and root damage where encroachment into the minimum TPZ is required and authorized. ■ Horizontal hoarding is to be installed wherever the full TPZ cannot be protected with vertical fencing and where temporary disturbance is anticipated, such as site access and material storage. ■ To be placed in accordance with the guidelines accepted by Urban Forestry and as detailed in the Arborist Report (AECOM, Sept. 2024). ■ If required, sediment control fence should be installed as per Figure 6 of the Tree Protection Policy and Specifications for Construction Near Trees (2016) and to the satisfaction of Urban Forestry. **Tree Protection Signage:** ■ Shall be installed on the fence by the contractor to clearly delineate TPZs as per Detail 703 of the Town of Whitby guidelines for Tree Removal Requirements in New Developments. **Construction and Excavation Near Trees:** ■ Opportunities to avoid root damage within or near a TPZ shall be taken, including restricting heavy equipment usage, material storage, and excavation within the vicinity of a TPZ. ■ If machinery use or equipment storage is necessary within a TPZ, horizontal hoarding shall be utilized. ■ If excavation is necessary within a TPZ, additional care must be taken to preserve existing trees through a root exploration utilizing tree minded construction methodology and root pruning where necessary. **Root Exploration:** ■ Root exploration should be conducted under the supervision of an ISA certified arborist, following Urban Forestry's authorization. ■ If excavation is required within a TPZ an exploratory excavation is recommended first to determine the damage to the tree's root system by the proposed work. ■ The exploratory excavation should be performed using hand digging or a low-pressure hydro-vac or pneumonic device, such as an air spade. No roots should be severed during the root exploration, and special care should be taken to avoid root damage during the excavation process. ■ The excavated area should be backfilled with clean native fill as soon as reasonably possible, and the area should then be watered to prevent desiccation and promote root growth. ■ The root exploration should be conducted under the supervision of an ISA certified arborist and following Urban Forestry's authorization.

Environmental Concern and Potential Impacts	Mitigation/Commitments
	Excavation: ■ Methods of excavation within the TPZ of trees proposed for preservation shall be limited to less harmful methods, such as hand digging or pneumatic or hydraulic excavation. ■ Fill within the TPZ shall not be permitted unless mitigated in a way that maintains air and water availability for roots. Additionally, all grade changes within and adjacent to TPZs shall be undertaken in accordance with tree protection guidelines. **Root Pruning:** ■ Roots encountered during excavation in or outside TPZ should be preserved wherever feasible. ■ If root pruning must occur to facilitate a grade change or other earthworks, it shall be conducted in accordance with acceptable arboricultural standards **Branch Pruning:** ■ Where branches are likely to be damaged during construction, and pruning is approved, branches shall be pruned ahead of the work to avoid branches being broken off, so that bark is not torn, and wounds are not more extensive than necessary. ■ Any branches that overhang the work area and require pruning are to be pruned using clean tools as per the latest arboricultural practices (TCIA, 2008). ■ The Contractor(s) must report immediately to the Contract Administrator any damage to trees such as broken limbs, damage to roots, or wounds to the main trunk or stem systems so that the damage can be assessed immediately. **Tree Removal and Vegetation Clearing:** ■ If tree removals are required they should be removed following permit issuance where applicable and prior to construction activities commencing on site, as trees proposed for removal may become hazardous once construction and excavation begins on site. ■ It is recommended that an ISA certified arborist be retained during tree removal operations to ensure that standardized arboricultural techniques are employed. **Post Construction Monitoring and Remedial Care:** ■ Post-construction it is recommended that all on-site trees be inspected by an Arborist to assess the health of each tree. Remedial care such as mulching, vertical mulching, fertilization or irrigation may be recommended based on each tree's current condition. **Invasive Species, Pests and Diseases:** ■ To prevent the spread of invasive species during tree removal operations, trees should be removed from the site in a manner that will prevent the emergence and spread of invasive species and wood should only be moved in accordance with the latest CFIA regulations. ■ Following best pruning practices shall also be considered for species more susceptible to pests and diseases. ■ Removals and pruning of infected trees should be done by a qualified arborist using industry standard best management practices and as per the recommendations outlined in this section. Mitigation and prevention measures should be followed as per the recommendations of the CFIA. The CFIA website provides up-to-date information on all active pest and diseases and should be referred to regularly.

Environmental Concern and Potential Impacts	Mitigation/Commitments
Designated Areas ■ No direct impacts are anticipated to the Whitby Harbour Provincially Significant Wetland Complex as it is located north of the Study Area and outside the anticipated area of impact. ■ Increased impervious surfaces as a result of installation of the road curve widenings, roundabout and sidewalk/multi use pathways can indirectly affect the hydrology, drainage and water quantity of nearby natural features such as the adjacent wetlands, including parts of the Whitby Harbour Provincially Significant Wetland Complex, that are particularly sensitive to changes in the hydrological regime.	■ Continued consultation with Central Lake Ontario Conservation Authority (CLOCA) will be required during Detailed design. ■ A wetland evaluation may be required to confirm boundaries of the Whitby Harbour PSW Complex in accordance with the Ontario Wetland Evaluation System Southern Manual (MNRF, 2022). ■ The use of alternative de-icing products / application methods should be considered to reduce the input of road salts into the adjacent swamps and marshes. ■ Minimize the need for the use of winter salt and quality treatment for oil, grease & gas where applicable. ■ A **Road Salt and Snow Management Plan** should be developed prior to construction activities. ■ As recommended in the Water Street Natural Environment Report, the existing drainage patterns between wetland units should be maintained through proper design and implementation of Low Impact Design (LID) measures. A hydrological assessment may be required to determine changes to drainage conditions based on the proposed works.
Wildlife and Species at Risk ■ Adjacent vegetation communities provide breeding habitat and movement corridors for a variety of wildlife, including Species at Risk, Species of Conservation Concern and/or migratory birds protected under the Migratory Bird Convention Act. ■ Migratory and/or SAR birds have the potential to use manmade structures (e.g., bridges and buildings) for nesting. ■ Several candidate SWH were identified and represented by woodlands, wetlands and Lake Ontario within the Study Area providing potentially suitable habitat for SAR species including the Red-headed Woodpecker and several species of SAR Bats. **Species of Conservation Concern** ■ Confirmed Significant Wildlife Habitat was identified within the Study Area for the Eastern Wood-pewee within the Poplar Mineral Deciduous Swamp (SWD4-5) areas and the Monarch Butterfly within the cultural meadow communities. ■ Impacts will be limited to edge habitat abutting the existing roadway, an area already subject to anthropogenic disturbances. Vegetation removal is not anticipated to impair or eliminate the form and function of the remaining Eastern Wood-pewee habitat. ■ Candidate habitat for Common Nighthawk and Barn Swallow was identified within the Study Area. No impacts are anticipated as no building demolitions or structure modifications are proposed. **Loss of Candidate SWH for Waterfowl Nesting Areas** ■ Impacts to CUM1-1 communities and associated Candidate SWH for Waterfowl Nesting Areas are anticipated to be minimal and will be limited to already disturbed edge habitat. **Disturbance and/or Loss of Candidate Turtle Wintering Areas (including habitat for turtle SOCC)** ■ Potential turtle wintering areas were identified in Lake Ontario and the Cattail Mineral Shallow Marsh (MAS2-1). Candidate habitat for Snapping Turtle was identified in the swamp communities and MAS2-1. Candidate habitat for Northern Map Turtle was identified in Lake Ontario. ■ Impacts to overwintering turtles are not anticipated as no in-water works are proposed. No direct impacts to Lake Ontario or Northern Map Turtle are anticipated. ■ Since turtles travel long distances (e.g., in search of mates, nesting sites, etc.) during the active season (April 1 to October 30) there is the potential for turtles to incidentally wander into the construction work area where they may be susceptible to injury/mortality as result of construction activities **Loss of Candidate SWH for Amphibian Breeding Habitat (Woodland) and Amphibian Movement Corridors** ■ Candidate SWH for amphibian breeding habitat (Woodland) was identified within the swamp communities.	■ Avoid vegetation removal (ground cover, shrubs, trees) during the active bird nesting season (April 1 to August 31) to avoid impacting nesting birds and contravention of the MBCA. ■ Should vegetation removal be required during the active bird nesting season, a nest survey should be conducted by a qualified ecologist or equivalent no more than 48 hours prior to vegetation removal. ■ Reduce the slope of stockpiled substrates (gravel, sand, soil) and maintain it at 70 degrees or less during the breeding bird season (April 1 to August 31) to prevent burrowing MBCA protected and SAR birds from nesting in the stockpiled material. ■ Avoid tree removals during the bat active season (April 1 to September 30) to minimize impacts to SAR bats and contravention of Section 9 of the ESA in the areas identified as potential SAR bat habitat (i.e., Manitoba Maple Mineral Deciduous Swamp (SWD3-4), Poplar Mineral Deciduous Swamp (SWD4-5) and the Willow Mineral Deciduous Swamp (SWD4-1)). ■ If work is to be done at night during the bat active season of April 1 to September 30, construction lighting should be directed downwards and shielded. ■ Install temporary wildlife exclusion fencing in accordance with the Best Management Practices for Mitigating the Effects of Roads on Amphibian and Reptile Species at Risk in Ontario (MNRF, 2016) along the limits of construction adjacent to wetlands in order to prevent herpetofauna from entering the construction work area. ■ Wildlife exclusion fencing should be placed along the limits of construction if work is to be done during the turtle and snake active season of April 1 to October 30 and should be installed before April 1 of any year. Fencing depth and height of exclusion measures should consider the variety of wildlife using the area and be installed such that any species potentially impacted are screened for and relocated. ■ A SAR and Wildlife Observation and Handling Protocol is recommended to be developed prior to construction. ■ It is recommended that construction staff receive SAR Awareness Training and be made aware of the possible wildlife, including SAR and SOCC, that may occur within the construction area. The Plan should include SAR identification and the proper protocols to implement if SAR/SOCC are encountered in the construction area to reduce harm/injury to the animal. The handling protocol should follow the MNRF's Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders (MNRF, no date). ■ **Migratory Bird Convention Act (MBCA)** - although unlikely, nests of species listed under Schedule 1 of the MBCA (i.e., Pileated Woodpecker) may appear from year to year and could require removal. Unoccupied nests of these migratory birds, whose nests are commonly re-used from one year to the next, cannot be removed without a permit unless reported though the Abandoned Nest Registry and nest remains unoccupied for the corresponding period of time (i.e., 36 months for Pileated Woodpecker). Nest searches and call playback surveys for Red-headed Woodpecker and Pileated Woodpecker may be required to confirm presence/absence. ■ **Endangered Species Act (ESA)** - An updated SAR habitat screening is recommended during Detailed design to address the protection status of species under the ESA that may change over time. ■ The following surveys may be required; however, this may be subject to change based on the updated SAR habitat screening, agency consultation (MECP/MNRF/CLOCA) and design-related impacts:

Environmental Concern and Potential Impacts	Mitigation/Commitments
The swamp and marsh communities as well as the adjacent upland habitat may provide opportunities for amphibian movement between breeding and summer habitat within the Study Area and the surrounding area. ■ . No direct impacts are anticipated to marsh communities as they are located outside the anticipated area of impact. ■ Impacts to swamp communities are considered minimal given the greater landscape outside the Study Area consists of forested communities along the lakeshore. ■ Impacts to swamp communities adjacent the corridor will be limited to edge habitat which is already subject to anthropogenic disturbances. ■ Vegetation removal is not anticipated to impair or eliminate the form and function of the remaining amphibian breeding habitat and amphibian movement corridors. **Loss of Candidate SWH for Colonially Nesting Bird Breeding Habitat (Tree/Shrubs)** ■ Candidate SWH for colonial nesting bird breeding habitat was identified within the deciduous swamp communities where vegetation is to be removed. These impacts are considered minimal given the greater landscape consists of continuous forested communities along the lakeshore. ■ Impacts to swamp communities located adjacent the existing road will be limited to edge habitat which is already subject to anthropogenic disturbances. Given that candidate Colonial Nesting Bird Breeding habitat is not limited in the greater landscape it is not anticipated that vegetation removals will impair or eliminate the form and function of the remaining habitat. **Loss of Candidate Red-headed Woodpecker habitat** ■ Candidate habitat for Red-headed Woodpecker was identified along edges of swamp communities and isolated trees within park areas. Impacts will be limited to edge habitat already subject to anthropogenic disturbances. Work proposed is not expected to impair or eliminate the form and function of the remaining candidate Red-headed Woodpecker habitat. **Loss of potential bat SAR habitat and candidate Bat Maternity Colonies SWH** ■ Candidate bat cavity trees and SWH for bat maternity colonies were observed within the swamp communities which may contain suitable roost habitat. ■ Impacts to candidate bat SAR habitat and SWH are anticipated as a result of vegetation removal within the forested communities. Impacts to swamp communities adjacent the roadway will be limited to edge habitat which is already subject to anthropogenic disturbances. Vegetation removal is not anticipated to impair or eliminate the form and function of the remaining bat SAR habitat and SWH. **Migratory Bird Nest and Egg Destruction** ■ Vegetation communities provide breeding habitat and movement corridors for a variety of wildlife, including SAR, SOCC and/or migratory birds protected under the MBCA. ■ Migratory and/or SAR birds may use manmade structures (e.g., bridges and buildings) for nesting. ■ Vegetation (i.e., trees, shrubs and ground cover) removal or structure demolition/rehabilitation has the potential to destroy migratory bird nests and eggs, which are protected under the MBCA, if conducted during the overall bird nesting period of April 1 to August 31. ■ No Schedule 1 MBCA-protected species were observed within the Study Area; however, targeted surveys were not completed and there is potentially suitable habitat for Pileated Woodpecker present. ■ Vegetation removal has the potential to destroy nests belonging to Schedule 1 MBCA protected species, which receive year-round protection under the MBCA. **Disturbance to Wildlife** ■ Construction activities have the potential to disturb wildlife within adjacent natural features. ■ Urban wildlife, including SOCC may enter the construction work area and may become susceptible to accidental injury or mortality associated with construction equipment or machinery if not properly mitigated.	○ Leaf-off cavity tree searches and acoustic surveys for bat SAR relating to anticipated bat SAR habitat loss. ○ Nest searches and call playback surveys for Red-headed Woodpecker and Pileated Woodpecker may be required to confirm presence/absence. ■ Anuran nocturnal calling surveys following the Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (BSC et al., 2009).

Environmental Concern and Potential Impacts	Mitigation/Commitments
■ Wildlife encounters during construction within the active season may result in collisions with construction equipment or disruption of life cycle processes (e.g., nesting, hibernating, etc.) resulting in injury or mortality. ■ Noise and vibrations from construction activities are anticipated to be temporary, short in duration and are not anticipated to substantially increase from daily existing road use.	
Fish & Fish Habitat ■ There is no in-water work proposed as part of this project; however, given the proximity to Lake Ontario there is the potential for indirect impacts resulting from road reconstruction during the construction period. ■ Vegetation clearing, grubbing and grading exposes soils and has the potential to result in sediment runoff discharging into nearby Lake Ontario. Elevated levels of sediment and related turbidity can reduce the productivity of an aquatic system by clogging the gills of fish, covering fry and eggs within the substrate and reducing prey availability. ■ There is also the potential for road salt loading in adjacent wetlands and Lake Ontario as a result of increased impervious surfaces, which may indirectly affect fish and aquatic SAR habitat, including turtle habitat. ■ Overall, impacts are not expected to be significant provided that the mitigation as recommended is implemented during construction.	■ A **confirmatory site review is recommended during Detailed design** to identify potential overland flow north of Water Street along the abandoned railway corridor, and potential (unlikely) seasonal connectivity to any nearby waterbody. ■ Develop a Spills Response Plan prior to construction to avoid/minimize contaminant release to the adjacent natural areas. ■ All machinery, construction equipment and vehicles arriving on site should be in clean condition (e.g., free of fluid leaks, or attached soil potentially containing seeds of plant material from invasive species) and be inspected and washed in accordance with the Clean Equipment Protocol for Industry (Halloran, Anderson, & Tassie, 2013) prior to arriving and leaving the construction area. ■ Operate, store and maintain equipment and associated materials in a manner and at a distance that prevents the entry of any deleterious substance from entering a waterbody (as per OPSS 182). Any part of equipment entering the waterbody or operating from the bank shall be cleaned, free of fluid leaks and in good working condition. ■ Refuelling, maintenance, or repair of equipment should not occur within 30 metres of a wetland or Lake Ontario. Emergency spill-kits and drop trays should be kept on site and deployed as necessary for equipment working near or over water. ■ Utilize chemical de-icers and salt only as needed. ■ A **Road Salt and Snow Management Plan** should be developed and implemented during construction. ■ An **Erosion and Sediment Control Plan** should be developed prior to construction that includes the installation of sediment and erosion control measures such as silt fencing and straw-bale check dams prior to construction activities. ■ Exposed soils and disturbed areas should be re-stabilized following construction, with non-biodegradable erosion and sediment control measures removed from site once these areas have been stabilized.
Stormwater Management ■ The post-development plan will include additional impervious area that results in more runoff compared to pre-development. This impacts the quality and quantity of stormwater runoff from the site into the downstream system. ■ The project is located within an area regulated by the Central Lake Ontario Conservation Authority (CLOCA) and therefore ongoing consultation will be required with CLOCA during detailed design. ■ During construction there is the potential to impact surface water through the accidental spillage of harmful substances from refuelling and/or equipment maintenance. ■ Erosion can also occur and result in sediment entering nearby lakes/watercourses. ■ Since the project is located in proximity to Lake Ontario and Whitby Harbour there is increased potential for surface water impacts during construction.	■ **Water Quantity**: Quantity control is not required due to the proximity of Lake Ontario. Runoff will drain uncontrolled to the proposed infrastructure north of Water Street. With the implementation of the proposed storm sewer, no flooding is expected on Water Street. ■ **Water Quality:** The water quality target for the project is the long-term average removal of 80% Total Suspended Solids (TSS) on an annual loading basis from runoff leaving the site. This will be achieved through a "treatment train" approach such as enhanced grassed swales and vegetated buffer strips, where feasible, or by using standalone measures such as OGS unit. However, due to identified soil and groundwater contamination on-site, promotion of infiltration is not recommended as part of a treatment train approach for the site. The detailed assessment of the proposed facilities is to be completed as part of the detailed design for site plan development. ■ **Water Balance:** Water balance is generally achieved by constructing LID facilities for infiltration, where practical. As indicated, infiltration is not recommended for the site due to the pre-development condition of existing soil and groundwater contamination. It is understood that contaminated groundwater is from an unconfirmed upgradient property, and as such cannot be remediated on this property alone. Therefore, LID features that reintroduce precipitation into the groundwater system or promote water balance are not recommended for the site as they could worsen existing conditions.

Environmental Concern and Potential Impacts	Mitigation/Commitments
Groundwater and Source Protection ■ The Whitby Water Supply Plant is located within the Study Area between Water Street and Lake Ontario approximately 0.38 kilometres west of South Blair Street. ■ The CTC Source Protection Plan identifies the area adjacent to Lake Ontario as an Intake Protection Zone-2 with a score of 4. ■ A Surface Water Intake is identified in Lake Ontario to the south, outside the Study Area with a surrounding buffer designated as Intake Protection Zone-1 with a score of 5. ■ The project is also within an area identified as a Highly Vulnerable Aquifer. ■ There is the potential for additional paved surfaces to impact groundwater recharge / discharge and there is the potential for contaminants / spills to be released during construction.	■ The contractor will be required to complete water taking (groundwater) in accordance with the requirements of the Ontario Water Resources Act and the Environmental Protection Act. ■ During detailed design a hydrogeological assessment is to be completed in conjunction with related geotechnical engineering and geo-environmental investigations. The scope of the hydrogeological assessment program may encompass additional borehole drilling / monitoring well installations, groundwater level monitoring (short and longer-term), hydraulic conductivity testing, and/or groundwater quality sampling, to inform the Project design (both permanent and temporary components) and support development of tender documents / specifications. ■ The hydrogeological data obtained may be utilized to assess and quantify potential groundwater management / control requirements, volumes, and regulatory (i.e. EASR) requirements in relation to construction-related water-takings, evaluate potential impacts (with regard to existing groundwater users and the natural environment), and provide options for the handling and discharge of dewatering effluent. ■ As per By-law 6998-15, a discharge permit may be required through consultation with the Town of Whitby prior to discharging dewatering effluent prior to discharging to the Town's municipal sewer system(s).
Waste and Contamination ■ Given the history of industrial operations within the Study Area there is the potential for contamination to be present. ■ During construction excess soil may also be generated. The excavation, transportation, temporary storage, and final placement or disposal activities should comply with the requirements set out by the Ministry of the Environment, Conservation and Parks (MECP). During the detailed design phase, MECP will be consulted during the development of the Soil Management Plan(s).	■ Additional geotechnical investigation, chemical testing and related study will be required during detailed design to confirm the potential for contamination and to develop appropriate mitigation measures. ■ Excess soil that is excavated and managed on-site or off-site during construction will need to be addressed in in accordance with Ontario Reg 406/19- On-Site and Excess Soil Management, under Ontario's Environmental Protection Act, R.S.O. 1990, c. E. 19 and the technical document entitled "Rules for Soil Management and Excess Soil Quality Standards" (Ministry of the Environment, Conservation and Parks, 2019). During detailed design, the following studies may need to be completed in accordance with Ontario Reg 406/19: 1. Assessment of Past Uses 2. Sampling and Analysis Plan 3. Soil Characterization Report 4. Excess Soil Destination Assessment Report ■ SP ENVR0014 – Amendment to OPSS 180, NOVEMBER 2016 - Compliance With Ontario Regulation (O. Reg.) 406/19 for On Site and Excess Soil Management ■ OPSS 180 Management of Excess Materials ■ SP101F21 Occupational Health and Safety Act Compliance
Geotechnical Information ■ An earlier Geotechnical / Environmental Assessment Report completed by Golder Associates Ltd. in June 2001 for the existing Water Street alignment was provided for reference for the current Class EA. ■ The report determined that poor bearing soils including fibrous peat and fill as well as high groundwater conditions are all concerns that will need to be addressed and as such, further project specific geotechnical investigation(s) will be required. ■ The environmental component of the investigation determined that no significant environmental impact was identified attributable to the former bulk fuel facility.	■ Further project specific geotechnical investigation(s) are recommended. Waste materials identified in the fill such as wood, metal, coal, slag, cinder and ash must be removed from the fill prior to any re-use of the fill. The separate waste materials should also be disposed of offsite at an approved receiving facility. ■ If the waste cannot be separated from the fill, then the fill and waste should not be re-used on site and should be disposed off site at an approved receiving facility. Chemically unsuitable fill (i.e. BH 8), likewise should not be reused on site. ■ Additional chemical testing may be required to determine the extent of chemically unsuitable fill. For any fill requiring off site disposal, an additional waste characterization chemical analysis under O. Reg. 558 would be required. ■ Groundwater dewatering may be required.
Land Use & Property Impacts ■ Property acquisition is required to accommodate the new alignment and planned improvements. ■ There may be access issues resulting from the improvements. ■ During construction there may also be temporary access impacts to the waterfront and private property within the construction area. ■ Construction Staging and detours along with signage and advance notification will assist in minimizing impacts during the construction period.	■ Confirm property requirements and complete continued consultation with directly and indirectly impacted property owners during the detailed design phase to secure buy-ins. ■ Utilize traffic management measures (i.e., construction staging, detours etc.) to minimize impacts to local traffic and to maintain access during construction. ■ Implement signage and provide advance notification regarding affected entrances and access. ■ Provide advance notification regarding temporary modifications to waterfront access. ■ To ensure project success, actively engage impacted property owners early in the process to cultivate their support and secure their buy-in.

Environmental Concern and Potential Impacts	Mitigation/Commitments
Active Transportation ■ During construction there will be potential impacts to active transportation within the area of construction. These impacts will be temporary and can be minimized through continued consultation with affected stakeholders and through advance notification of construction to assist in keeping everyone informed of limitations during construction.	■ Continued consultation with Active Transportation stakeholders including internal Town departments and the Active Transportation and Safe Roads Advisory Committee. ■ Provide advance notification of active transportation restrictions during construction. ■ Provide signage in the area of construction and advise of alternate routes, where possible, during the construction period.
Noise ■ The subject improvements are planned for an existing corridor, with no expected increase in traffic volumes and are therefore not expected to result in a significant increase in noise post construction. ■ There are no noise sensitive areas within the Study Area or in proximity; however, there are commercial land uses, and public parks which can be adversely impacted (disturbed) during construction. ■ While there is the potential for noise impacts at non noise sensitive land uses during construction, these effects will be temporary.	■ During construction, continue to monitor the site conditions and maintain constant dialogue with adjacent property owners to gather feedback and address any issues brought up by them in a timely manner. ■ Maintain equipment in an operating condition that prevents unnecessary noise, including but not limited to non-defective muffler systems, properly secured components, and the lubrication of moving parts. ■ Require construction equipment to meet MECP guidelines NPC 115 and 118 ■ Adhere to Town of Whitby Noise By-law 6917-14. ■ Implement best practices for limiting construction noise impacts where possible. Best practices can include, but are not limited to: ○ Limit/restrict construction during weekends or on holidays. ○ Restrict the idling of equipment to the minimum necessary to perform work specified ○ Operating construction equipment as far away from potential complainants/noise sensitive areas ○ Using the smallest equipment required to accomplishing the required task ○ Attempt to minimize the simultaneous usage of equipment ■ Prepare a noise complaint process, and provision for the implementation of additional best practices for managing construction noise.
Air Quality ■ During construction there is the potential for dust and fumes to be generated which can negatively impact air quality. However, impacts will be temporary and limited to the period of construction.	■ During construction, continue to monitor the site conditions and maintain constant dialogue with adjacent property owners to gather feedback and address any issues brought up by them in a timely manner. ■ Best Management Practices should be implemented during construction to maintain air quality and include no unnecessary idling of vehicles. ■ Dust suppressants should be applied to control dust generated by construction activities, as required. ■ Stockpiles of soil, sand and aggregate should be covered. ■ Construction sites and should be regularly cleaned to remove debris and dust caused by construction. ■ OPSS 100 'General Conditions of Contract' - Requirement to control dust so that it does not affect traffic, enter surface waters, or escape beyond the right-of-way to cause a nuisance to residents, business or utilities.
Archaeological ■ The Stage 1 archaeological assessment determined that the potential for the recovery of pre- and post-contact Indigenous and 19th century Euro-Canadian archaeological resources within the Study Area is high within areas not subject to previous disturbance. Further study will be required during detailed design. ■ Areas of previous disturbance (e.g., roadways, parking lots, and building footprints) are considered to possess low to no archaeological potential. These areas have been photo documented and are not recommended for further assessment. ■ No further assessment is recommended for areas photo documented as low lying and wet area or for areas subject to previous archaeological assessments that have been cleared of archaeological concern.	■ During detailed design, a Stage 2 Archaeological Assessment is to be completed for all areas of potentially undisturbed land within the Study Area limits, not previously cleared of archaeological concerns. Any subsequent stages of archaeological assessment recommended by the Stage 2 report are also to be completed during detailed design in advance of ground-disturbing activities. ■ The assessment must be conducted by a licensed archaeologist and must follow the requirements set out in the Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011). ■ Based on current conditions within the Study Area, the Stage 2 assessment should consist of a standard test pit survey at 5 metre intervals is to be conducted in all areas that will be impacted by the project where ploughing is not feasible (e.g., woodlots, overgrown areas, manicured lawns). ■ In the event that previously unknown or unassessed deeply buried archaeological resources are uncovered during construction, the contractor shall immediately notify the Contract Administrator. Work shall remain suspended within the subject area until otherwise directed by the Contract Administrator in writing. The CA will contact the Town of Whitby representative who will confirm the need to engage a licensed consultant archaeologist to carry out any archaeological fieldwork, in compliance with Section 48 (1) of the Ontario Heritage Act. ■ In the event that human remains are encountered during construction, the contractor shall immediately notify the Contract Administrator. Work shall remain suspended within the subject area until otherwise directed by the Contract Administrator in writing. The CA will contact the Municipal representative who will notify the police, coroner and the Registrar of the Bereavement Authority of Ontario.

Environmental Concern and Potential Impacts	Mitigation/Commitments
Built Heritage and Cultural Heritage Landscapes ■ **Cultural Heritage Landscape 1:** The Cultural Heritage Evaluation Report (CHER) completed for the one potential Cultural Heritage Landscape within the Study Area identified as CHL #1, consisting of the former Port Whitby and Port Perry Railway corridor, concluded that while it satisfies one criterion under O. Reg. 9/06, it does not meet the required threshold of two criteria to qualify for designation under the Ontario Heritage Act. As such, the CHER determined that the Subject Property does not fulfill the regulatory standards for designation, and that no further cultural heritage reporting is required. ~~There is one potential Cultural Heritage Landscape within the Study Area identified as CHL #1 consisting of the former Port Whitby and Port Perry Railway corridor.~~ As CHL #1 crosses Water Street towards the western end of the Study Area, the Recommended Plan will transect the former railway corridor south of the present alignment of Water Street and acquisition of this section of the former corridor will be required.	**Cultural Heritage Landscape 1:** ~~The completion of a Cultural Heritage Evaluation Report (CHER) is recommended during detailed design to evaluate CHVI of the corridor.~~ In consideration of the impacts, it was determined that there will be direct, permanent, and irreversible impacts to the PW&PPR Corridor, which will in turn directly impact the CHVI of the corridor. As a result, conservation and mitigation options were evaluated, and the following recommendations developed: **General Recommendations** ■ **Designation under the Ontario Heritage Act:** Given the identified cultural heritage value or interest of the PW&PPR Corridor, the Town of Whitby should consider designation of the corridor under Part IV of the Ontario Heritage Act to formally recognize and protect its heritage attributes. ■ **Indigenous Engagement:** Engagement with relevant Indigenous communities should be undertaken during the detailed design phase to identify and incorporate Indigenous values, interests, and perspectives into the Project, including opportunities for interpretation and commemoration. ■ **Archaeological Assessment and Mitigation:** All required archaeological assessments shall be completed prior to construction in accordance with applicable provincial standards and guidelines. Any identified archaeological resources will be addressed through appropriate mitigation measures, including licensed archaeological investigation, documentation, and reporting. ■ **Commemoration Strategy (Applicable to All Options):** Regardless of the conservation option selected, the incorporation of commemorative measures is strongly encouraged, as it represents a positive intervention that enhances public understanding, appreciation, and engagement with the history of the corridor. (Refer to Section 9.2.3 of CHER/HIA (Appendix K) for more information)). **Conservation Strategy Recommendations** ■ **Preferred Conservation Strategy – Modified Design (Option 2):** A modified design approach (Option 2) is recommended as the preferred conservation strategy. This approach represents a balanced response that minimizes impacts to key heritage attributes while allowing the Project to proceed. In particular, the following measures are recommended: – Retention of the pedestrian crossing alignment (Design Modification B) to maintain the physical and visual continuity of the PW&PPR Corridor across Water Street and support its legibility as a historic transportation route; or if not feasible, – Maintenance of corridor connectivity and landscape continuity (Design Modification C), including: Formalized pedestrian and cyclist connections between the corridor and adjacent multi-use pathways; Implementation of wayfinding and interpretive signage; and Strategic retention and planting of vegetation aligned with the historic corridor edges to reinforce its linear form. ■ **Alternative Approach – Preliminary Design with Commemoration (Option 3):** Should the Town determine that the modified design approach (Option 2) is not feasible, proceeding with the Preliminary Design (Option 3) may be undertaken, provided that a commemorative strategy is implemented to interpret and communicate the cultural heritage value of the PW&PPR Corridor. (Refer to Section 9.2.3 of CHER/HIA (Appendix K) for more information)).
■ **Built Heritage Resource 1:** One Built Heritage Resource, identified as BHR #1, the former Waterworks Pump House at 269 Water Street, was confirmed within the Study Area and is listed on the Town of Whitby's Municipal Heritage Register. BHR #1 will not be directly impacted by the work proposed; however, it is located within 50 metres of the proposed road modification work, and therefore has the potential to be indirectly impacted by vibration resulting from construction activities. Since it will not be directly impacted by the project no further heritage reporting is required; however, vibration monitoring is recommended.	**Built Heritage Resource 1:** ■ Vibration monitoring should be undertaken pre, during and post construction to confirm no vibration impacts are incurred during construction. ■ Should the Recommended Plan be modified during detailed design it is recommended that the potential Built Heritage Resource 1 be further reviewed to confirm impacts and mitigation, including the potential need for further study.

Environmental Concern and Potential Impacts	Mitigation/Commitments
Climate Change ■ This undertaking is a small-scale project involving the reconstruction of an existing corridor and it is not expected that the emission of greenhouse gases will significantly increase over existing conditions. ■ The improvements planned will provide for better movement of traffic and an improved level of service as well as improved infrastructure for walking and cycling. Together these measures may encourage more active transportation and potentially result in a decrease in vehicular use and ultimately a reduction in vehicular greenhouse gas emissions. ■ Vegetation can also assist in removing carbon dioxide from the atmosphere. While there will be some tree removals required to accommodate the improvements a mitigation strategy has been developed to assist in reducing impacts to area vegetation. ■ As part of this project the drainage infrastructure within the corridor will be improved and reconstructed to address flooding concerns in the area and ultimately make the area less vulnerable to climate change.	■ Mitigation in the form of tree protection and replanting will assist in minimizing impacts to existing vegetation and restoring vegetation that is removed. ■ Provide improved drainage infrastructure within the corridor to address flooding concerns.

14. Monitoring

During detailed design the Recommended Plan will be refined and impacts confirmed. Mitigation will be updated to reflect any changes in design. Mitigation and any necessary monitoring will be incorporated into the Construction Documents to be implemented during construction. Monitoring will be conducted by on-site construction staff to make certain that environmental protection measures are being implemented and are effective. The Contract Administrator will be responsible for making certain that environmental protection measures and monitoring as identified are implemented during construction and that any repairs to protection measures will be made in a timely and effective manner. Post construction monitoring will be completed, as required.