

**Regional Road 25  
Transportation Corridor  
Improvements from Steeles  
Avenue to 5 Side Road,  
Town of Milton/Town of  
Halton Hills**

Environmental Study Report



Prepared for:  
Regional Municipality of  
Halton

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# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

## Table of Contents

|                                                                                                        |           |
|--------------------------------------------------------------------------------------------------------|-----------|
| <b>Executive Summary .....</b>                                                                         | <b>i</b>  |
| <b>1.0 Introduction.....</b>                                                                           | <b>1</b>  |
| 1.1 Introduction and Background.....                                                                   | 1         |
| 1.2 Study Area.....                                                                                    | 2         |
| 1.3 Ontario Environmental Assessment Act .....                                                         | 4         |
| 1.3.1 Municipal Class Environmental Assessment Process .....                                           | 4         |
| 1.3.2 Comments and Request for Order for Higher Level of Study .....                                   | 9         |
| 1.4 Study Organization .....                                                                           | 10        |
| 1.5 Consultation Plan .....                                                                            | 11        |
| 1.5.1 Town of Milton .....                                                                             | 12        |
| 1.5.2 Town of Halton Hills.....                                                                        | 12        |
| 1.5.3 Conversation Halton and Ministry of Natural Resources and Forestry .....                         | 13        |
| 1.5.4 Technical Agencies Committee .....                                                               | 13        |
| 1.6 Public Consultation.....                                                                           | 15        |
| 1.6.1 Public Information Centres .....                                                                 | 16        |
| 1.6.2 Study Notifications and Website .....                                                            | 16        |
| 1.6.3 Indigenous Communities Consultation .....                                                        | 17        |
| 1.6.4 Issues Management Tracking System – Issues Log .....                                             | 17        |
| 1.7 ESR Review .....                                                                                   | 17        |
| <b>2.0 PROBLEMS AND OPPORTUNITIES .....</b>                                                            | <b>19</b> |
| 2.1 Planning Policy .....                                                                              | 19        |
| 2.1.1 Provincial Policy Statement .....                                                                | 19        |
| 2.1.2 Greenbelt Plan .....                                                                             | 20        |
| 2.1.3 Growth Plan for the Greater Golden Horseshoe.....                                                | 21        |
| 2.1.4 Halton Region Official Plan.....                                                                 | 21        |
| 2.1.5 Halton Region Transportation Master Plan – The Road to Change, 2011.....                         | 22        |
| 2.1.6 Halton Region Active Transportation Master Plan, 2015.....                                       | 23        |
| 2.1.7 Town of Milton Official Plan .....                                                               | 23        |
| 2.1.8 Town of Milton Transportation Master Plan .....                                                  | 24        |
| 2.1.9 Town of Halton Hills Official Plan .....                                                         | 24        |
| 2.1.10 Town of Halton Hills Transportation Master Plan .....                                           | 25        |
| 2.1.11 Mobility Management Strategy for Halton.....                                                    | 25        |
| 2.1.12 Defining Major Transit Requirements in Halton .....                                             | 26        |
| 2.2 Other Related Initiatives and Studies .....                                                        | 26        |
| 2.2.1 Regional Road 25/Highway 401 Bridge Improvements .....                                           | 26        |
| 2.2.2 Steeles Avenue Widening and Reconstruction.....                                                  | 27        |
| 2.2.3 Regional Road 25 Improvements Municipal Class EA Study – Highway 401 to Campbellville Road ..... | 28        |

## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

|            |                                                                |           |
|------------|----------------------------------------------------------------|-----------|
| 2.3        | Traffic Analysis .....                                         | 28        |
| 2.3.1      | Existing Conditions .....                                      | 28        |
| 2.3.2      | Future Conditions .....                                        | 32        |
| 2.3.3      | Projected Operations (2031) .....                              | 35        |
| 2.3.4      | Road Safety Review .....                                       | 36        |
| 2.3.5      | Roundabout Feasibility Study .....                             | 37        |
| 2.3.6      | Traffic Analysis Summary and Recommendation .....              | 37        |
| 2.4        | Problem Being Addressed .....                                  | 38        |
| <b>3.0</b> | <b>EXISTING AND FUTURE CONDITIONS .....</b>                    | <b>39</b> |
| 3.1        | Transportation .....                                           | 39        |
| 3.1.1      | Transportation Network .....                                   | 39        |
| 3.1.2      | Transit .....                                                  | 42        |
| 3.1.3      | Active Transportation.....                                     | 43        |
| 3.2        | Socio-Economic Environment.....                                | 44        |
| 3.2.1      | Existing Land Use.....                                         | 44        |
| 3.2.2      | Future Land Use.....                                           | 45        |
| 3.2.3      | Noise .....                                                    | 45        |
| 3.2.4      | Pedestrian and Cycling Facilities.....                         | 45        |
| 3.3        | Natural Environment.....                                       | 46        |
| 3.3.1      | Background Data Collection and Analysis.....                   | 46        |
| 3.3.2      | Aquatic and Fish Habitat Survey Approach .....                 | 47        |
| 3.3.3      | Vegetation Survey Approach.....                                | 47        |
| 3.3.4      | Wildlife Survey Approach .....                                 | 48        |
| 3.3.5      | Environmentally Designated Areas.....                          | 49        |
| 3.3.6      | Vegetation Communities .....                                   | 49        |
| 3.3.7      | Wildlife Habitat .....                                         | 57        |
| 3.3.8      | Significant Natural Heritage Features.....                     | 57        |
| 3.3.9      | Significant Wildlife Habitat .....                             | 58        |
| 3.3.10     | Tree Inventory .....                                           | 60        |
| 3.3.11     | Fish and Fish Habitat.....                                     | 61        |
| 3.4        | Physiography and Soils .....                                   | 63        |
| 3.5        | Surface Drainage and Watershed Characteristics.....            | 64        |
| 3.5.1      | Watercourse Crossings and Bridges .....                        | 67        |
| 3.5.2      | Source Water Protection .....                                  | 69        |
| 3.6        | Cultural Environment .....                                     | 70        |
| 3.6.1      | Built Heritage Resources and Cultural Heritage Landscapes..... | 70        |
| 3.6.2      | Archaeological Assessment .....                                | 72        |
| 3.7        | Major Utilities .....                                          | 72        |
| 3.8        | Other Infrastructure .....                                     | 73        |
| <b>4.0</b> | <b>Alternative Solutions.....</b>                              | <b>75</b> |
| 4.1        | Description of Alternative Solutions .....                     | 75        |
| 4.1.1      | Do Nothing .....                                               | 75        |

## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

|            |                                                                      |            |
|------------|----------------------------------------------------------------------|------------|
| 4.1.2      | Limit Development.....                                               | 75         |
| 4.1.3      | Transportation Demand Management.....                                | 76         |
| 4.1.4      | Improved Transit Infrastructure / Other Modes of Transportation..... | 76         |
| 4.1.5      | Intersection and / or Operational Improvements.....                  | 76         |
| 4.1.6      | Improvements to Other Roadways Beyond Planned Program .....          | 76         |
| 4.1.7      | Improvements to Regional Road 25 .....                               | 76         |
| 4.2        | Analysis and Evaluation of Alternative Solutions.....                | 76         |
| 4.2.1      | Do Nothing .....                                                     | 81         |
| 4.2.2      | Limit Development.....                                               | 81         |
| 4.2.3      | Travel Demand Management Measures .....                              | 81         |
| 4.2.4      | Improved Transit Infrastructure / Other Modes of Transportation..... | 82         |
| 4.2.5      | Intersection and / or Operational Improvements.....                  | 82         |
| 4.2.6      | Improvements to Other Roadways Beyond Planned Program .....          | 82         |
| 4.2.7      | Improvements to Regional Road 25 – Recommended.....                  | 82         |
| <b>5.0</b> | <b>Design Alternatives .....</b>                                     | <b>83</b>  |
| 5.1        | Approach to Developing Alternative Design Concepts .....             | 83         |
| 5.2        | Design Criteria.....                                                 | 85         |
| 5.3        | Preliminary Screening of Design Alternatives by Segment.....         | 86         |
| 5.3.1      | Steeles Avenue to Market Drive .....                                 | 86         |
| 5.3.2      | Market Drive to Chisholm Drive .....                                 | 90         |
| 5.3.3      | Chisholm Drive to High Point Drive .....                             | 91         |
| 5.3.4      | High Point Drive to James Snow Parkway .....                         | 92         |
| 5.3.5      | James Snow Parkway to Peddie Road/ Escarpment Way .....              | 93         |
| 5.3.6      | Peddie Road/ Escarpment Way to 5 Side Road.....                      | 94         |
| <b>6.0</b> | <b>Project Consultation Process.....</b>                             | <b>95</b>  |
| 6.1        | Public Consultation.....                                             | 95         |
| 6.1.1      | Notice of Study Commencement.....                                    | 95         |
| 6.1.2      | Public Information Centres .....                                     | 96         |
| 6.1.3      | Meetings with Property Owners along Regional Road 25 .....           | 97         |
| 6.2        | Technical Agencies .....                                             | 98         |
| 6.2.1      | Technical Agency Committee Meetings .....                            | 98         |
| 6.2.2      | Municipal Meetings.....                                              | 100        |
| 6.2.3      | Conservation Halton .....                                            | 100        |
| 6.2.4      | Infrastructure Ontario.....                                          | 101        |
| 6.2.5      | Ministry of Transportation .....                                     | 101        |
| 6.3        | Canadian National (CN) Rail .....                                    | 102        |
| 6.4        | Indigenous Communities .....                                         | 102        |
| <b>7.0</b> | <b>Project Description.....</b>                                      | <b>103</b> |
| 7.1        | Major Features .....                                                 | 104        |
| 7.1.1      | Design Criteria.....                                                 | 104        |
| 7.1.2      | Horizontal Alignment .....                                           | 105        |
| 7.1.3      | Profile .....                                                        | 105        |

## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

|        |                                                                                           |     |
|--------|-------------------------------------------------------------------------------------------|-----|
| 7.1.4  | Typical Cross Sections .....                                                              | 106 |
| 7.1.5  | Intersections and Access.....                                                             | 109 |
| 7.1.6  | Provisions for Active Transportation .....                                                | 109 |
| 7.1.7  | Drainage and Stormwater Management.....                                                   | 110 |
| 7.1.8  | Fluvial Geomorphology.....                                                                | 125 |
| 7.1.9  | Hydrogeology .....                                                                        | 125 |
| 7.1.10 | Landscaping .....                                                                         | 127 |
| 7.1.11 | Utilities.....                                                                            | 127 |
| 7.1.12 | Illumination .....                                                                        | 128 |
| 7.1.13 | Tree Inventory .....                                                                      | 128 |
| 7.1.14 | Property Requirements.....                                                                | 128 |
| 7.1.15 | Preliminary Cost Estimate .....                                                           | 152 |
| 7.2    | Potential Environmental Impacts, Mitigation Measures, and Commitments to Future Work..... | 156 |
| 7.2.1  | Natural Environment.....                                                                  | 156 |
| 7.2.2  | Socio-Economic Environment .....                                                          | 161 |
| 7.2.3  | Noise Analysis.....                                                                       | 163 |
| 7.2.4  | Air Quality .....                                                                         | 164 |
| 7.2.5  | Potential Contaminated Sites .....                                                        | 165 |
| 7.2.6  | Cultural Environment .....                                                                | 166 |
| 7.2.7  | Transportation .....                                                                      | 167 |
| 7.2.8  | Source Water Protection and Hydrogeology .....                                            | 167 |
| 7.3    | Design and Construction Considerations .....                                              | 168 |
| 7.3.1  | Potential Impacts during Construction .....                                               | 168 |
| 7.3.2  | Disposal of Excess Material .....                                                         | 169 |
| 7.3.3  | Measures for Proper Tree Removal and Preservation of Residual Plant Communities .....     | 169 |
| 7.3.4  | Mud and Dust Control.....                                                                 | 169 |
| 7.4    | Monitoring and Maintenance .....                                                          | 170 |
| 7.5    | Detailed Design Commitments .....                                                         | 170 |
| 7.6    | Permit Requirements.....                                                                  | 171 |
| 7.7    | Monitoring.....                                                                           | 173 |

### List of Tables

|                                                                |     |
|----------------------------------------------------------------|-----|
| Table 1: Existing Road Network .....                           | 39  |
| Table 2: Ecological Land Classification Vegetation Types ..... | 49  |
| Table 3: HEC-RAS Models and Crossings.....                     | 68  |
| Table 4: Existing Conditions Peak Flow Comparison .....        | 68  |
| Table 5: Assessment of Alternative Solutions .....             | 77  |
| Table 6: Preliminary Screening of Design Alternatives.....     | 84  |
| Table 7: Preliminary Design Criteria - Regional Road 25.....   | 85  |
| Table 8: CN Rail Overpass Replacement Options .....            | 88  |
| Table 9: Design Criteria.....                                  | 104 |

## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

|                                                                          |     |
|--------------------------------------------------------------------------|-----|
| Table 10: Culverts Hydraulic Parameters (Existing and Proposed).....     | 121 |
| Table 11: Impervious area to Pond S36 (5 Side Road to Highway 401) ..... | 123 |
| Table 12: Preliminary Property Requirements.....                         | 151 |
| Table 13: Preliminary Cost Estimate .....                                | 152 |
| Table 14: Permit Requirements.....                                       | 171 |

### **List of Figures**

|                                                                                         |     |
|-----------------------------------------------------------------------------------------|-----|
| Figure 1: Study Area from Steeles Avenue to 5 Side Road.....                            | 3   |
| Figure 2: Municipal Class EA Planning Process .....                                     | 7   |
| Figure 3: Study Overview .....                                                          | 11  |
| Figure 4: Cross Section of Regional Road 25/Highway 401 Structure .....                 | 27  |
| Figure 5: Typical Cross Section – Steeles Avenue Class EA.....                          | 27  |
| Figure 6: Existing A.M. Peak Hour Traffic Volumes (2016) .....                          | 30  |
| Figure 7: Existing P.M. Peak Hour Traffic Volumes (2016) .....                          | 31  |
| Figure 8: Forecast A.M. Peak Hour Traffic Volumes (2031).....                           | 33  |
| Figure 9: Forecast P.M. Peak Hour Traffic Volumes (2031).....                           | 34  |
| Figure 10: Milton Transit Routes .....                                                  | 42  |
| Figure 11: Existing Active Transportation Facilities.....                               | 43  |
| Figure 12: Milton 401 Industrial/Business Park Secondary Plan - Land Use Plan .....     | 44  |
| Figure 13: Existing ELC Vegetation Communities.....                                     | 53  |
| Figure 14: Existing ELC Vegetation Communities Cont'd .....                             | 54  |
| Figure 15: Existing ELC Vegetation Communities Cont'd .....                             | 55  |
| Figure 16: Aquatic Habitat.....                                                         | 61  |
| Figure 17: Existing Drainage Conditions (Steeles Avenue to South of Market Drive) ..... | 65  |
| Figure 18: Existing Drainage Conditions (South of Market Drive to Highway 401).....     | 66  |
| Figure 19: Regional Road 25 Proposed Typical Cross-Section .....                        | 107 |
| Figure 20: Existing Drainage Conditions and Culvert Locations.....                      | 113 |
| Figure 21: Existing Regional and 100-Year Flood Plains .....                            | 117 |
| Figure 22: Proposed Regional and 100-Year Flood Plains .....                            | 118 |

### **List of Appendices**

Appendix A - Consultation

Appendix B - Transportation Planning

Appendix C - Natural Heritage

Appendix D - Cultural Heritage

Appendix E - Archaeological Assessment

Appendix F - Drainage/Stormwater Management

## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

Appendix G - Noise Assessment

Appendix H - Air Quality

Appendix I – Tree Inventory

Appendix J – Preliminary Geotechnical Assessment

Appendix K – Hydrogeological Report

# **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

## **Executive Summary**

Based on growth estimates prepared as part of Regional Official Plan (ROP) Amendment 39, Halton Region will experience significant growth in population and employment to 2031. In accordance with the policy objectives set out in the ROP as well as the Regional Transportation Master Plan – The Road to Change (2011), Halton Region has retained Stantec Consulting to identify transportation corridor improvements along Regional Road 25 from Steeles Avenue (Regional Road 8) to 5 Side Road in the Town of Milton.

In accordance with the Municipal Class Environmental Assessment (MCEA) document (Municipal Engineers Association, 2000, as amended in 2007, 2011, and 2015), this study is being planned as a Schedule C undertaking, which will include the completion of Phases 1 through 4 of the MCEA study process.

The proposed road improvements will include widening Regional Road 25 from four to six lanes, improvements at intersections, and the addition of active transportation facilities (multi-use paths and on-road bike lanes) in both directions.

## **Consultation Plan**

A contact list was developed at the outset of the study, which includes relevant government and regulatory agencies, utilities, community organizations, interested members of the public, and Indigenous communities. Project notices, including the Notice of Study Commencement, Notices of Public Information Centres (PICs), and the Notice of Completion were published in the Milton Champion and Georgetown Independent in two (2) consecutive editions, and posted on the Regional Road 25 study webpage at [www.halton.ca/EAprojects](http://www.halton.ca/EAprojects).

A Technical Advisory Committee (TAC) was established to facilitate discussions among relevant agencies and approval bodies. Two (2) TAC meetings were held during the study in advance of the PICs (February 22, 2018 and April 25, 2019).

Two (2) PICs were held throughout the study to ensure stakeholders had a strong understanding of the project, and to provide opportunities for stakeholders to provide input into the alternatives, evaluation criteria, and design details. PIC No. 1 was held on March 8, 2018 and PIC No. 2 was held on June 11, 2019.

All input from the public, review agencies/ministries, and other stakeholders has been documented. All consultation with Indigenous Communities has also been documented in an Indigenous Consultation Log.

# **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

## **Problems and Opportunities**

Phase 1 of the MCEA process includes the identification and description of the problems and opportunities. This is completed through the review of planning and policy documents, related studies and reports, and initial traffic review to understand the existing and planned conditions and objectives within the study area and surrounding neighborhoods, and to provide the framework for identifying improvements. Relevant policy documents include the Provincial Policy Statement, Greenbelt Plan, Growth Plan for the Greater Golden Horseshoe, Halton Region Official Plan, Halton Region Transportation Master Plan – The Road to Change, Halton Region Active Transportation Master Plan, Town of Milton Official Plan, Town of Milton Transportation Master Plan, Town of Halton Hills Official Plan, Town of Halton Hills Transportation Master Plan, Mobility Management Strategy for Halton, and Defining Major Transit Requirements in Halton.

A detailed traffic analysis was completed for the study area for the existing (2016) and future conditions (2031). Based on the review of existing and future traffic operations along the corridor, and the findings and recommendations of related studies and reports, the following Problem/Opportunity Statement was identified for the study:

- Improvements to the Regional Road 25 corridor are needed to accommodate increased traffic volumes and active transportation facilities. The improved transportation corridor will serve the needs of the transportation system and area growth to 2031.

## **Existing Conditions**

Phase 2 of the MCEA process includes a general inventory of the socio-economic, cultural, and natural environments. Background information was collected from various sources to characterize the existing features within the study area.

The existing transportation network, including roads, transit, and active transportation facilities were reviewed to understand the current conditions. Existing and future land use patterns were identified, and a noise analysis was carried out to evaluate the current socio-economic conditions prior to determining alternative solutions.

A natural environment assessment was conducted to evaluate the existing study area conditions, identify constraints and sensitivities, and determine the general connectivity of natural features within study limits and surrounding area. Field investigations included the characterization of vegetation communities, botanical surveys, a wildlife habitat assessment, and an aquatic habitat assessment. Drainage and watershed characteristics were identified, and analysis conducted to determine flow levels and connectivity.

## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

A Stage 1 Archaeological Assessment and Cultural Heritage Assessment were performed to determine archaeological potential, identify built heritage resources and cultural heritage landscapes present within the study area. The findings of the existing conditions will be considered throughout the development and evaluation of alternative solutions and designs for the corridor.

### **Alternative Solutions**

Alternative solutions to address problem/opportunity were identified and evaluated based on their ability to reduce impacts to the socio-economic, natural, cultural, and technical environments. Seven solutions were analyzed: do nothing, limit development, travel demand management (TDM) measures, improved transit services/other modes of transportation, intersection and/or operational improvements, improvements to other roadways beyond planned program, and improvements to Regional Road 25. Of the seven alternatives suggested, improvements to Regional Road 25 was identified as the preferred solution, with TDM measures, improved transit service/other modes of transportation, and intersection and/or operational improvements carried forward as part of the overall strategy.

### **Alternative Designs**

Improvement alternatives included widening Regional Road 25 from Steeles Avenue to 5 Side Road from four to six lanes for, including: widen to the west of existing centerline; widen to the east of existing centerline; and, widen symmetrically on both sides of existing centerline. Based on the preliminary screening of design alternatives, a “best fit” approach (i.e., a combination of widening to the east, west and centerline) was developed to accommodate the improvements in order to minimize impacts to existing conditions.

### **Preferred Design**

The preferred design for Regional Road 25 between Steeles Avenue and 5 Side Road will include widening of Regional Road 25 from 4 to 6 lanes between Steeles Avenue and 5 Side Road with on-road bike lanes and multi-use path on both sides of the road.

This information should be reviewed in combination with **Chapter 5.0** of the ESR, which describes alternative design concepts. Although modifications may occur during detail design, any changes should not alter the intent of the recommended undertaking or its components. During detail design, additional consultation with technical agencies such as CH, MNRF, MTO, MECP, Town of Milton, Town of Halton Hills, utilities, and affected property owners, will be required.

## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

The recommended undertaking for Regional Road 25 between Steeles Avenue and 5 Side Road will include the following:

- Widening of Regional Road 25 from 4 to 6 lanes between Steeles Avenue and 5 Side Road using a 47 m ultimate right-of-way;
- Implementing active transportation facilities along both sides of the corridor including:
  - 1.8 m exclusive on-road bike lanes on both sides of the road.
  - 3.0 m asphalt multi-use path on both sides of the road.
- Complete reconstruction of the CN Rail overpass to accommodate a widened Regional Road 25 cross-section;
- Raised concrete center median;
- 1.0 m concrete strip between the curb and the multi-use path, with a minimum width of 0.5 m to be used in constricted areas;
- Improvements to culverts in order to address current overtopping of Regional Road 25 during a Regional storm event;
- Providing landscaping within the right-of-way, including planting milkweed for Monarch habitat at culvert C1, and naturalizing the watercourse downstream of culvert C2; and
- Roundabout at Regional Road 25 and 5 Side Road.

### **Property Impacts**

Property totaling approximately 1.123 ha will be required for the widening of Regional Road 25.

### **Potential Impacts and Mitigating Measures**

The preferred design has been developed to fulfill the objectives of the project while minimizing the negative impacts on the surrounding natural, cultural and socio-economic environment, adjacent property and utilities. As these impacts are unavoidable, the study team conducted a detailed impact assessment and shared results of investigations and analyses with review agencies. Based on the assessment and input received from review agencies, specific mitigation measures were developed for the project. The ESR provides a detailed description of the identified impacts and proposed mitigation measures for detailed design and implementation of the project. The details of the potential environmental effects, mitigation measures, detailed design commitments and permitting requirements are provided in **Section 7.0** of the ESR.

## **1.0 Introduction**

### **1.1 Introduction and Background**

Regional Road 25 is a north-south major arterial Regional road which runs through Halton Region between Lake Ontario and 32 Side Road. It is an important transportation facility in the existing and future Halton Region transportation network as it is one of the few Regional arterial roads that extend continuously between the south and north municipal boundaries. Regional Road 25 serves the movement of goods and people and distributes traffic to and from the Provincial freeway system, as well as providing access to residential, commercial, and industrial land uses in the Town of Oakville, Town of Milton and Town of Halton Hills. Beyond Halton Region, Regional Road 25 continues northerly in the Town of Eramosa within Wellington County.

On a Regional planning level, the need for improvements on Regional Road 25 between Steeles Avenue and 5 Side Road (widening from 4 to 6 lanes) was identified in the Halton Region Transportation Master Plan to 2031 – The Road to Change (2011), and the Region's Active Transportation Master Plan (2015), which identified the need to support road users of all modes.

Halton Region retained Stantec Consulting to identify transportation corridor improvements along Regional Road 25 from Steeles Avenue (Regional Road 8) to 5 Side Road, within the Town of Milton/Town of Halton Hills.

The improvements identified through this Municipal Class Environmental Assessment (MCEA) Study tie into two construction projects recently completed, including:

- The widening of Steeles Avenue from Industrial Drive to Regional Road 25 from two to four lanes with on-road bike lanes (both directions), and an in-boulevard multi-use trail (both directions), completed in 2018; and
- The Ministry of Transportation Ontario (MTO) Regional Road 25/Highway 401 interchange improvements to accommodate an ultimate Highway 401 cross section of eight core commuter lanes and four collector lanes. This project was completed in 2019 and includes a new structure over Highway 401 with a six-lane cross section, bike lanes and sidewalks on either side of the structure.



# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

## 1.2 Study Area

The overall study area of approximately 3 km is shown in **Figure 1** and includes Regional Road 25 from Steeles Avenue to 5 Side Road within the Town of Milton/Town of Halton Hills. The southerly study limit of improvements ties into the completed improvements at the Steeles Avenue/Regional Road 25 intersection. The legal road name of Regional Road 25 from Steeles Avenue to Highway 401 Westbound Off-Ramp is Martin Street, which continues south of Steeles Avenue. However, for the purposes of this report, the roadway through the extent of the study area will be referred to as Regional Road 25.

Intersections within the study area include (from south to north):

- Chris Hadfield Way;
- Market Drive;
- Chisholm Drive/Maplehurst Correctional Facility;
- Highway 401 Eastbound Off-Ramp/MTO Carpool Lot;
- Highway 401 Westbound Off-Ramp;
- High Point Drive;
- James Snow Parkway;
- Escarpment Way/Peddie Road; and
- 5 Side Road.



**Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**



**Figure 1: Study Area from Steeles Avenue to 5 Side Road**



## **1.3 Ontario Environmental Assessment Act**

Municipal road projects are subject to the Ontario Environmental Assessment (EA) Act. The Class Environmental Assessment process is an approved process under the EA Act for a specific group or “class” of projects. Projects such as these are therefore approved subject to compliance with an approved Class EA process.

The proponent for this study is the Regional Municipality of Halton. Accordingly, the study is being carried out in accordance with the requirements of the *Municipal Class Environmental Assessment* (MCEA, 2000, as amended 2007, 2011 and 2015) prepared by the Municipal Engineers Association.

### **1.3.1 Municipal Class Environmental Assessment Process**

The Municipal Class Environmental Assessment (MCEA) outlines a streamlined, proponent driven, comprehensive planning process under which municipal road, sewage, and water infrastructure undertakings are approved. The undertakings are considered approved provided the mandatory environmental planning process as set out in the Municipal Class EA document are completed.

The MCEA document provides municipalities with a five-phase planning process approved under the EA Act to plan and undertake all municipal infrastructure projects in a manner that protects the environment. Key components of the MCEA planning process include:

- Consultation with potentially affected parties early and throughout the process;
- Consideration of a reasonable range of alternative solutions;
- Systematic evaluation of alternatives;
- Clear and transparent documentation; and
- Traceable decision-making.

The Municipal Class EA document provides a framework by which projects are classified as Schedule A, A+, B, or C based on a variety of factors including the general complexity of the project, level of investigation required, and the potential impacts on the natural, social, cultural, and economic environments that may occur.

**Schedule A** projects are limited in scale, have minimal anticipated environmental impacts and generally include normal or emergency operational activities. These types of projects may be implemented without following the planning process as outlined in the Municipal Class EA. **Schedule A+** projects are similarly pre-approved but require that proponents notify potentially affected parties prior to implementation. These types of projects may include road rehabilitation works.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

**Schedule B** projects generally include improvements and minor expansions to existing facilities. These types of projects have the potential for some adverse environmental and social impacts, and proponents are thus required to undertake a screening process involving mandatory contact with potentially affected members of the public, Indigenous communities, and relevant review agencies to ensure that they are aware of the project and that their concerns are addressed. Schedule B projects require the completion of Phases 1 and 2 of the Municipal Class EA planning process, which is documented in a Project File and which is then filed for review by the public, review agencies, and Indigenous communities for a minimum 30-day review period.

**Schedule C** projects have the potential for significant environmental impacts and must follow the full planning process specified in the Municipal Class EA document including Phases 1 through 4. The project is documented in an Environmental Study Report (ESR), which is then filed for review by the public, review agencies, and Indigenous communities for a minimum 30-day review period.

### **Five-Phase Planning Process**

**Figure 2** illustrates the MCEA planning process, and identifies steps considered essential for compliance with the requirements of the EA Act. An overview of the five-phase planning process is provided below.

- Phase 1** Identify the problem (deficiency) or opportunity, including documentation of the factors that lead to the conclusion that an improvement or change is needed. This may include public consultation to confirm/review the problem or opportunity.
- Phase 2** Identify a reasonable range of alternative solutions to address the problem or opportunity. This Phase also includes an inventory of the existing environment in order to identify potential mitigation measures, and to assist in the evaluation of alternatives in terms of the identified evaluation criteria. A preferred solution is chosen based on the results of the evaluation, and taking into account input from the public, review agencies, and Indigenous communities. It is at this point that the appropriate Schedule (B or C) is chosen for the undertaking. If Schedule B is chosen, the process and decisions are then documented in a Project File and made available for a 30-day review period by the public, review agencies, and Indigenous communities. Schedule C projects proceed through the following phases.
- Phase 3** Examine the alternative methods for implementing the preferred solution, which typically involve design alternatives. A detailed inventory of the natural, socio-economic, and technical environment is undertaken in order to assess the impacts of the alternative designs, in an attempt to avoid or minimize negative effects and maximize positive effects.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

- Phase 4** Document the MCEA process followed in an ESR, which includes a summary of the rationale and the planning, design, and consultation process followed for the project, and make the documentation available for consideration by the public, review agencies, and Indigenous communities through a mandatory 30-day review period.
- Phase 5** Complete contract drawings and documents and proceed to construction and operation with monitoring to ensure adherence to environmental provisions and commitments.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

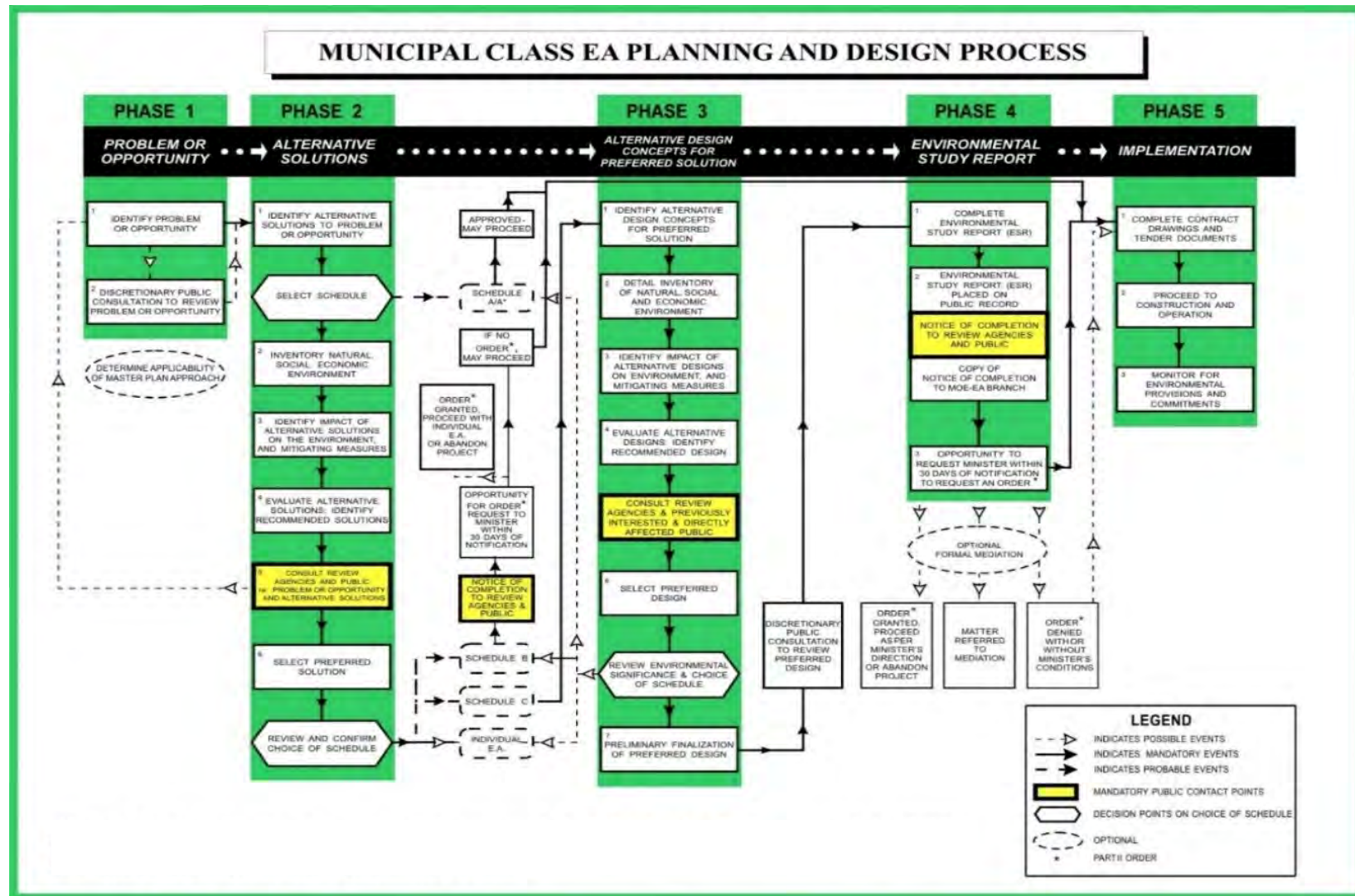


Figure 2: Municipal Class EA Planning Process



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

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## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **1.3.2 Comments and Request for Order for Higher Level of Study**

Interested persons may provide written comments to Halton Region for a response using the following contact information:

Ann Larkin, P.Eng.  
Supervisor – Transportation Planning  
1151 Bronte Road  
Oakville, ON L6M 3L1  
ann.larkin@halton.ca

In addition, a request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study (i.e. requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g. require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the ministry.

Requests should specify what kind of order is being requested (request for additional conditions or a request for an individual/comprehensive environmental assessment), how an order may prevent, mitigate or remedy those potential adverse impacts, and any information in support of the statements in the request. This will ensure that the ministry is able to efficiently begin reviewing the request.

The request should be sent in writing by mail or by email to:

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

and

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



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

Requests should also be sent to Halton Region by mail or by email:

Ann Larkin, P.Eng.  
Supervisor – Transportation Planning  
1151 Bronte Road  
Oakville, ON L6M 3L1  
ann.larkin@halton.ca

### **1.4 Study Organization**

This MCEA study has been carried out by the Project Team which includes staff from Halton Region and specialists from Stantec Consulting Ltd. as follows:

#### **Halton Region**

- Jeffrey Reid, C.E.T., LET, Project Manager
- Ann Larkin, P. Eng., Supervisor, Transportation Planning
- Melissa Green-Battiston, P. Eng., Manager, Infrastructure Planning

#### **Stantec Consulting**

- Gordon Murray, P. Eng., PTOE, Consultant Project Manager
- Paula Hohner, MSc.PI, RPP, MCIP, Assistant Project Manager and MCEA Planning Lead
- Francois Tomeo, P. Eng., Transportation Planning and Traffic Engineering Lead

An overview of the study, including key public consultation milestones is provided in **Figure 3**



# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

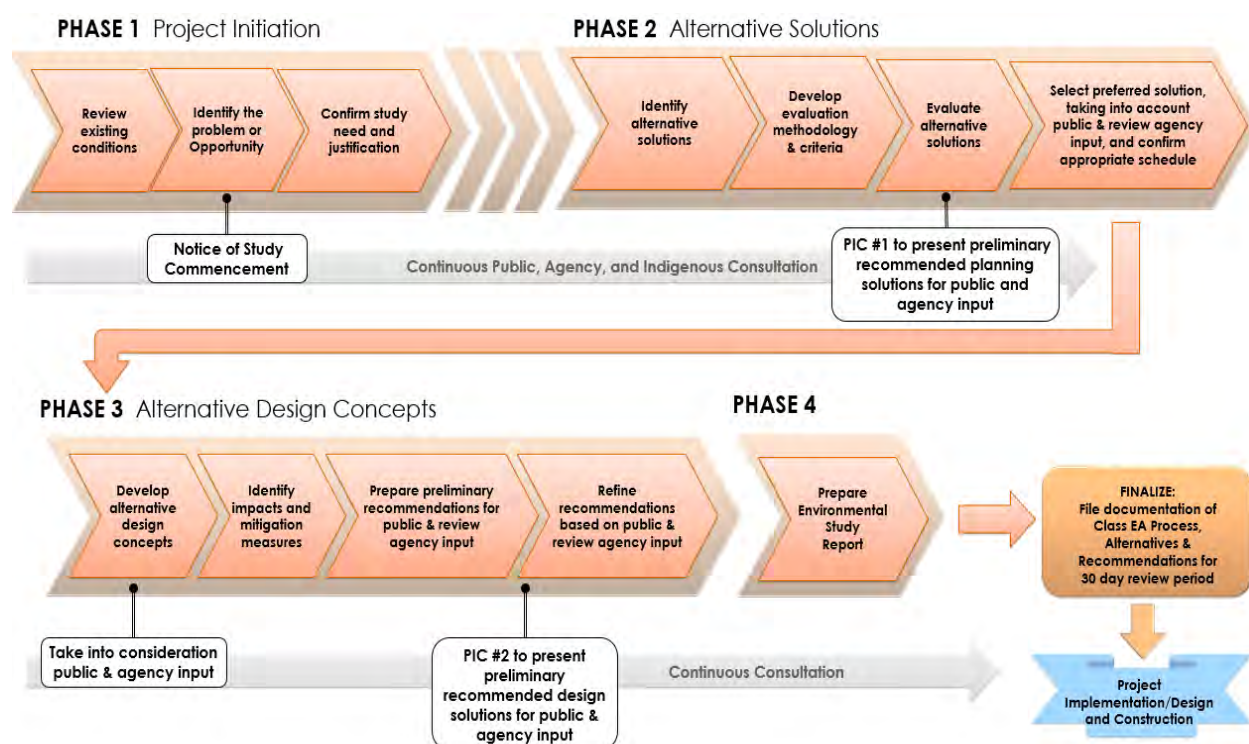


Figure 3: Study Overview

## 1.5 Consultation Plan

The consultation plan followed throughout the project is based on the Consultation and Communication Plan developed for all MCEAs undertaken within the Region. The main objective of the consultation plan is to encourage two-way communication with stakeholders and Regional staff, to aid the development of an acceptable preferred solution.

The Project Team developed a Project Contact List at the outset of the study. This list includes representatives from relevant government and regulatory agencies, utilities, community organizations, interested members of the public (residential and business), landowners, developers, and Indigenous Communities. The list is provided in **Appendix A**.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

The Project Contact List has been maintained and updated by the Project Team throughout the study. Interested individuals responding to the Notice of Study Commencement, Public Information Centres and associated notifications, and the Notice of Study Completion were also added. Given Protection of Privacy Legislation, names, addresses and telephone numbers of stakeholders were not released beyond the Project Team.

### **1.5.1 Town of Milton**

The majority of the study area is located within the Town of Milton. As such, the Town of Milton has been a key agency throughout the MCEA study to ensure coordination with other initiatives in the Town. Representatives from the Town of Milton were invited to the Technical Agencies Committee meetings held during the study. The following table provides an overview of the meetings held throughout the MCEA Study.

| <b>Date</b>       | <b>Purpose</b>                                                                                                       |
|-------------------|----------------------------------------------------------------------------------------------------------------------|
| February 28, 2018 | To discuss project background, overall study schedule, consultation plan, key considerations, and next steps.        |
| April 2, 2019     | To discuss the development and evaluation of Preliminary Alternative Designs and the Recommended Design Alternative. |

### **1.5.2 Town of Halton Hills**

A portion of the study area is located within the Town of Halton Hills. As such, the Town of Halton Hills has also been a key agency throughout the study. Representatives from the Town of Halton Hills were invited to the Technical Agencies Committee meetings held during the study. The following table provides an overview of the meetings held throughout the MCEA Study.

| <b>Date</b>       | <b>Purpose</b>                                                                                                       |
|-------------------|----------------------------------------------------------------------------------------------------------------------|
| February 28, 2018 | To discuss project background, overall study schedule, consultation plan, key considerations, and next steps.        |
| April 2, 2019     | To discuss the development and evaluation of Preliminary Alternative Designs and the Recommended Design Alternative. |



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **1.5.3 Conversation Halton and Ministry of Natural Resources and Forestry**

Recognizing the importance of retaining natural features throughout the study area and ensuring project planning was carried out to minimize impacts, Conservation Halton (CH) and the Ministry of Natural Resources and Forestry (MNRF) were considered to be key agencies and were provided several opportunities to provide input during the study. Representatives of CH and MNRF also participated in the Technical Agencies Committee meetings held throughout the MCEA study. The following table provides an overview of the meetings that have occurred to date.

| <b>Date</b>      | <b>Purpose</b>                                                                                                                                                                                                                                                        |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| July 12, 2017    | Meeting with CH to discuss project background, overall study schedule, existing conditions overview, natural environment key features, stormwater management and next steps. A site walk with CH was also completed.                                                  |
| January 23, 2018 | Meeting with CH and MNRF to provide an overview of the problems and opportunities identified within the study area and the proposed Regional Road 25 corridor improvements. The CH checklist and responses were discussed as well as project schedule and next steps. |
| June 25, 2018    | Meeting with CH and MNRF to review draft Stormwater Management (SWM) Report, CH comments/Region draft responses and Regional Road 25 design alternatives. In addition, both quality control and potential Low Impact Development (LID) measures were discussed.       |
| April 25, 2019   | Meeting with CH to discuss SWM report comments and modelling approach.                                                                                                                                                                                                |

### **1.5.4 Technical Agencies Committee**

Technical agencies, including federal, provincial and municipal agencies and utilities, with a potential interest in the study or whose mandate may be affected, were contacted in June 2017 through the mailing/emailing of the Notice of Study Commencement, to ascertain whether or not they wanted to participate in the study, the appropriate contact, potential issues and concerns, and requested to provide technical input and to comment on the study's findings. The following provides an overview of the TAC meetings held throughout the Regional Road 25 MCEA Study, and minutes of meetings are provided in **Appendix A**.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

| Date              | Purpose                                                                                                                                                                                              |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| February 22, 2018 | TAC #1: To review the study background, study approach, existing conditions, and alternative solutions.                                                                                              |
| April 25, 2019    | TAC #2: To review proposed improvements on the Regional Road 25 corridor, the analysis of alternatives, identification of the preliminary preferred alternative, mitigation measures and next steps. |

Agencies and utilities invited to participate in the study are listed below.

### **Federal**

- Transport Canada

### **Provincial**

- Ministry of the Environment, Conservation and Parks
- Ministry of Community and Social Services
- Ministry of Community Safety and Correctional Services, Maplehurst
- Correctional Complex, and the Vanier Centre for Women
- Ministry of Natural Resources and Forestry
- Ministry of Municipal Affairs and Housing
- Ministry of Heritage, Sport, Tourism and Culture Industries
- Ministry of Transportation Ontario
- Infrastructure Ontario
- Ontario Provincial Police
- Conservation Halton

### **Local**

- Halton Catholic District School Board
- Halton District School Board
- Halton Student Transportation Services
- Milton Transit
- Halton Region Paramedic Services
- Halton Regional Police Service
- Halton Region Accessibility Advisory Committee
- Milton Fire Department
- Milton Accessibility Advisory Committee
- Town of Milton Engineering Services
- Town of Milton Planning and Development
- Town of Halton Hills Transportation and Public Works



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **Utilities**

- Bell Canada
- Cogeco Cable Systems Inc.
- Microcell
- Telus
- TransCanada Pipelines
- Hydro One Networks Inc.
- Trans-Northern Pipelines Inc.
- Union Gas
- Milton Hydro Distribution
- Rogers Cable Systems
- Halton Hills Hydro

### **Other Infrastructure**

- Canadian National Railway

### **Indigenous Communities**

- Haudenosaunee Confederacy Chiefs Council
- Mississaugas of the New Credit First Nation
- Six Nations of the Grand River

## **1.6 Public Consultation**

A key component of the MCEA process is public consultation during the process. For this study, the main points of public consultation are:

- To notify the public that the study was commencing;
- To review and receive public input regarding the problem being addressed and discuss issues related to the project including alternative solutions, environmental considerations, conceptual corridors, and evaluation criteria;
- To review and receive public input regarding the design alternatives, evaluation of design alternatives, and identification of the preliminary preferred alternative;
- To review and receive public input regarding the evaluation of alternatives and the preliminary plan and profile of the preferred alternative including proposed mitigation measures; and
- To review the Environmental Study Report (ESR) upon filing on record.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### 1.6.1 Public Information Centres

Public Information Centres (PICs) are part of the public consultation process and are designed to involve stakeholders early and throughout the study process, to aid in identifying public concerns to assist in the development of a preferred alternative. Two PICs were held for this project as follows:

| Date                    | Content                                                                                                                                                                                                                                                                                |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thursday, March 8, 2018 | PIC #1: To provide members of the public with an opportunity to meet the Project Team and discuss issues related to the project, review the study scope, existing conditions along the Regional Road 25 corridor, proposed typical cross section, evaluation criteria, and next steps. |
| Tuesday, June 11, 2019  | PIC #2: To provide members of the public an opportunity to review and obtain public input on the design alternatives being considered, the analysis of alternatives, identification of the preliminary preferred alternative, mitigation measures and next steps.                      |

The comments received from the public are discussed in **Section 6.1.2** of this report. In addition, individual meetings with property owners are summarized in **Section 6.1.3**.

Materials presented at the PICs can be found in **Appendix A** and on the project website at: [www.halton.ca](http://www.halton.ca).

### 1.6.2 Study Notifications and Website

The Notice of Study Commencement, Notice of Public Information Centres, and Notice of Study Completion were published in the Milton Champion and Georgetown Independent newspapers, on the Region's website, and mailed to those people on the Master Project Contact List, as well as others who expressed an interest in this project throughout the duration of the study. All notices were placed in the newspapers for two consecutive weeks, in advance of the PICs.

At the outset of the study, a website dedicated to the Regional Road 25 MCEA Study was established at [www.halton.ca](http://www.halton.ca). The project website was updated throughout the study and included up-to-date information on the study, project notices, and project documentation.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **1.6.3 Indigenous Communities Consultation**

In response to the Region's query, a written response received from the MECP on July 6, 2017 identified potential interested Indigenous Communities to be consulted as part of this study. These include:

- Haudenosaunee Confederacy Chiefs Council
- Mississaugas of the New Credit First Nation
- Six Nations of the Grand River

The first point of contact for this project was the Notice of Study Commencement and cover letter dated January 11, 2018, which was sent via courier to the above communities on January 12, 2018.

All public material has been forwarded to the above communities, and follow-up phone calls/emails were completed to ensure that communities had sufficient information to determine consultation interests. All interested parties were notified and invited to all PICs (notices sent via courier on February 21, 2018 and May 28, 2019) and given the opportunity to express concerns and provide feedback through an invitation to meet and via telephone calls soliciting discussion.

The Indigenous Community Communication Log, letters provided to Indigenous Communities and correspondence from Indigenous Communities is provided in **Appendix A**.

### **1.6.4 Issues Management Tracking System – Issues Log**

A significant component to the MCEA process is the documentation of how public input has influenced project planning, and how issues have been managed. The Project Team acknowledged all submitted comments and provided responses on how these stakeholder comments, questions and/or issues have been considered in the MCEA Study. All questions and comments from PICs, electronic comments and those received directly via phone, mail or e-mail have been documented.

## **1.7 ESR Review**

The ESR for the Regional Road 25 MCEA from Steeles Avenue to 5 Side Road (i.e., this report) documents the decision-making process during the study. The Notice of Study Completion for this MCEA notifies members of the public and agencies that the ESR is available for public review for a minimum 30-day period. Due to COVID-19 the ESR was made available electronically for public review at [www.halton.ca](http://www.halton.ca).



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

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## **2.0 PROBLEMS AND OPPORTUNITIES**

Phase 1 of the Municipal Class EA process involves the identification of the problems and opportunities being addressed through the study, including documentation of the factors leading to the need for improvements. This includes a review of a number of planning and policy documents, related studies and reports, and initial traffic review. An overview is provided below.

### **2.1 Planning Policy**

A number of planning and policy documents have been reviewed to understand the existing and planned conditions and objectives within the study area and surrounding neighbourhoods, and to provide the framework for identifying improvements, including:

- Provincial Policy Statement;
- Greenbelt Plan;
- Growth Plan for the Greater Golden Horseshoe;
- Halton Region Official Plan;
- Halton Region Transportation Master Plan – the Road to Change;
- Halton Region Active Transportation Master Plan;
- Town of Milton Official Plan;
- Town of Milton Transportation Master Plan;
- Town of Halton Hills Official Plan;
- Town of Halton Hills Transportation Master Plan;
- Mobility Management Strategy for Halton; and
- Defining Major Transit Requirements in Halton.

#### **2.1.1 Provincial Policy Statement**

The Provincial Policy Statement (PPS 2014) is issued under the *Planning Act, R.S.O. 1990, c.P.13* and supports the planning of land uses across the Province. The PPS provides policy direction for the use and management of land, as well as infrastructure while protecting the environment and resources and to ensure opportunities for employment and residential development. Sections of the PPS that are applicable to the planning of transportation infrastructure include:



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

*Part V Policies* – Specifically, Section 1.6.7 outlines the policies for infrastructure and public service facilities under transportation systems. The policies state that, “Transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs.” A multimodal transportation system is to provide connectivity within and amongst the transportation systems. Improving connections across jurisdictional boundaries should be considered where possible. Land use patterns should be planned to minimize the length and number of vehicle trips, as well as to support existing and future active transportation and transit services.

### **2.1.2 Greenbelt Plan**

The Greenbelt Plan (2017) provides a land use planning framework that ensures a sustainable approach to managing future development and growth within the economy, environment, and society to ensure the prosperity of current and future generations. It provides additional ecological protection measures to meet long-term environmental goals that protect our resources and allow for active transportation and transit-supportive communities to offset greenhouse gas emissions.

The Greenbelt Plan provides policy direction on the planning of transportation infrastructure to support the goals described in the Plan, including the following:

- Provide communities with conveniently located services to reduce the need for automobiles and rather promote active transportation and, where necessary, transit;
- Allow for integrated approaches to growth management to enhance the movement of goods and transportation while supporting the agri-food network and local opportunities;
- Work in collaboration with other agencies and organizations to ensure interconnectedness with all aspects of the natural and built environment while maintaining ecological integrity; and
- Provide a range of transportation modes for all ages and abilities, including active transportation and transit to reduce the reliance on automobiles.

The Greenbelt Plan encourages complete communities, whereby everyone has equal transportation opportunities and encourages municipalities to implement these policies.

This MCEA has regard for the policy directions within the Greenbelt Plan, by ensuring that improvements facilitate the movement of goods and people between major highways and urban centres in a sustainable manner, including supporting multi-modal transportation. The goals and objectives set out in the Greenbelt Plan were considered during the identification and evaluation of alternative solutions.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **2.1.3 Growth Plan for the Greater Golden Horseshoe**

The Growth Plan for the Greater Golden Horseshoe (2017) was prepared under the *Places to Grow Act* (2006) and addresses Provincial interest in building stronger, prosperous communities by managing growth of the Greater Golden Horseshoe to the planning horizon of 2031. The 2017 Growth Plan replaced the *Places to Grow Act* (2006).

To ensure sustainable growth, Section 3.2.2, Point 1 of Places to Grow addresses the infrastructure required to support growth, and states the following:

- a) *Provide connectivity among transportation modes for moving people and for moving goods;*
- b) *Offer a balance of transportation choices that reduces reliance upon any single mode and promotes transit, cycling and walking;*
- c) *Be sustainable, by encouraging the most financially and environmentally appropriate mode for trip-making;*
- d) *Offer multi-modal access to jobs, housing, schools, cultural and recreational opportunities, and goods and services; and*
- e) *Provide for the safety of system users.*

The planning of Regional Road 25 improvements between Steeles Avenue and 5 Side Road is consistent with planning directions in the Growth Plan, which is to provide connections between communities in the Town of Milton/Halton Hills and across Halton Region, support efficient transit services, support multi-modal uses through provisions to pedestrians and cyclists, increase efficiency and flexibility of the transportation network, reduce delays for residents and businesses, and support transportation needs on arterial roads.

### **2.1.4 Halton Region Official Plan**

The Halton Region Official Plan (2006) was adopted by Regional Council in March 1994 and approved by the Minister of Municipal Affairs and Housing in November 1995. Between 2001 and 2004, a major review of The Regional Plan (1995) was undertaken in accordance with the *Planning Act*. This culminated in the adoption of Regional Official Plan Amendment 25 (ROPA 25) by Regional Council on June 23, 2004. The amendment was appealed and subsequently adjudicated by the Ontario Municipal Board in April-August 2006 with the issuance of a number of decisions.

This Office Consolidation of the Official Plan, referred to as Halton Regional Official Plan (2006), incorporates all modifications, subsequent approvals, and approved amendments to the Plan up to and including August 17, 2006.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

Halton Region's Amendment No. 38 (December 2009) to the Region's Official Plan (ROPA 38) represents the completion of the second stage of the "two-stage" approach adopted by Regional Council to implement the results of the five-year statutory comprehensive review of the Regional Official Plan as required under Section 26 of the Planning Act. ROPA 38 is based largely on the 13 Official Plan Directions contained in the "Towards Sustainability" report endorsed by Council in June 2009 and brings the Region's Official Plan into conformity with a number of Provincial initiatives including, the Provincial Policy Statement, the Growth Plan for the Greater Golden Horseshoe, and the Greenbelt Plan.

ROPA identifies Regional Road 25 between Steeles Avenue and 5 Side Road as a Major Arterial, with a 35 m right-of-way (ROW)<sup>1</sup>.

The purposes of a Major Arterial Road, as defined in the Official Plan, are:

- Serve mainly inter-regional demands;
- May serve as Intensification Corridor;
- Accommodate all truck traffic;
- Accommodate higher order transit service and high occupancy vehicle lanes;
- Connect Urban Areas in different municipalities;
- Carry high volumes of traffic;
- Distribute traffic to and from Provincial Freeways and Highways; and
- Accommodate active transportation.

### **2.1.5 Halton Region Transportation Master Plan – The Road to Change, 2011**

Halton Region Council approved the Halton Region Transportation Master Plan (to 2031) – The Road to Change (TMP) was conducted to meet Phases 1 and 2 of the MCEA process. The purpose of the study was to develop a strategy that reflects Halton Region's transportation vision over the next 20 years to 2031, which would be a dynamic integrated transportation strategy that considers all modes of travel.

The study provides the Region with the strategies, tools and policies needed to manage traffic safely, effectively and cost efficiently, to offer a range of transportation choices to meet the needs of Halton Region residents, to identify and protect future transportation corridors, and to identify the estimated costs and timing of transportation improvements. (See Halton Region website for more information: [www.halton.ca](http://www.halton.ca)),

Elements of the Halton Region Transportation Master Plan have identified a 47 m ROW on Regional Road 25 between Steeles Avenue and 5 Side Road.

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<sup>1</sup> The TMP identifies Regional Road 25 between Steeles Avenue and 5 Side Road as a Major Arterial, with a 47 m ROW. The TMP was completed after ROPA 38.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

This MCEA is being undertaken to confirm and refine the recommendations of the TMP and complete the planning process required prior to implementation, following the requirements of a Schedule C MCEA project.

### **2.1.6 Halton Region Active Transportation Master Plan, 2015**

Halton Region Council approved the Active Transportation Master Plan (ATMP) which recommends Regional Walking and Cycling Networks to support and encourage people to walk and bike around Halton. Active transportation is any form of human-powered transportation, including walking, cycling, rollerblading, skateboarding, and moving with mobility devices. An active transportation network can include sidewalks, multi-use paths, crosswalks, on-road bike lanes and off-road trails. The objective of the Active Transportation Master Plan is to create a network that will make it easier for people to walk, bike and roll around Halton. As part of planning for the Regional Road 25 transportation corridor improvements, features of active transportation were considered. (See Halton Region website for more information: [www.halton.ca](http://www.halton.ca)).

The Region's ATMP identified exclusive bike lanes (both sides) of Regional Road 25 between Steeles Avenue and 5 Side Road.

### **2.1.7 Town of Milton Official Plan**

The Town of Milton Official Plan 1997 (Office Consolidation 2008) (OP) provides the policy framework for the management and use of land within the Town of Milton. The study area is located within the Milton 401 Industrial/Business Park Secondary Planning Area. Details of the land use within the study area is discussed in **Section 2.3.1, Existing Conditions**.

In addition to the land use concept, the Milton 401 Secondary Plan also provides a number of other policy directions related to design elements applicable to the study area:

- **Linked Open Space System:** Open space linkages along stream and utility corridors shall be supplemented by pedestrian and bicycle links along key roads.
- **Enhanced Streetscape Design:** Regional Road 25, Steeles Avenue, and James Snow Parkway are recognized as major access routes which play significant roles within the community. The road design, landscaping, street tree plantings, sidewalks, lighting, bike paths, and boulevards should be coordinated and designed to a high standard, having regard for the Town's Urban Design Guidelines.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

- Gateways: A Primary Gateway is identified at the interchange of Highway 401 and Regional Road 25, and Secondary Gateways are identified at the intersections of Regional Road 25 and 5 Side Road, James Snow Parkway, and the intersection of Steeles Avenue and Martin Street. Gateways are identified as key points of entry to the Town's Urban Area, which require special design treatment.
- Transit: Potential Transit Routes are identified along Regional Road 25 through the entire study area.

This MCEA Study has regard for the objectives of the Town of Milton OP and Secondary Plan through the development of alternatives and design concepts.

### **2.1.8 Town of Milton Transportation Master Plan**

The Town of Milton Transportation Master Plan (TMP) (April 2018) was developed to plan for growth within the community and develop a vision for a well-connected community. The TMP provides for an integrated and multi-modal network that has been planned which includes transportation options such as transit, active transportation, and Transportation Demand Management (TDM) measures to provide viable travel options to the personal automobile. Key travel modes are supported by a series of strategies to address goods movement, traffic safety and traffic calming, road design guidelines and road classification.

See Town of Milton website for more information:

[https://www.milton.ca/en/live/resources/Milton-TMP---Final-Report\\_WEB.pdf](https://www.milton.ca/en/live/resources/Milton-TMP---Final-Report_WEB.pdf)

### **2.1.9 Town of Halton Hills Official Plan**

The Town of Halton Hills Official Plan (Office Consolidation, 2008) establishes the policies for the land use and growth in the Town of Halton Hills. Within the Town of Halton Hills 5 Side Road is the boundary between the Town of Milton. Lands adjacent to Regional Road 25, north of 5 Side Road include General Employment Area, and Agricultural Areas, with Special Policy Areas 2 and 3. Special Policy Area 2 permits a day use activity centre and commercial driving range, in addition to limited agricultural uses and a permanent second non-farm residence on the eastern and western portions of the property. Special Policy Area 3 permits a place of worship not exceeding 1,250 m<sup>2</sup> of gross floor area with accessory uses.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **2.1.10 Town of Halton Hills Transportation Master Plan**

The Town of Halton Hills completed a Transportation Master Plan (TMP), in November 2011 to provide the strategies, policies, and tools required to meet the Town's transportation needs safely, effectively, and cost efficiently. With respect to the Regional Road 25 study area, the TMP refers to the recommendations within the Halton Region TMP, which includes the widening of Regional Road 25 from 5 Side Road to 10 Side Road.

The Halton Hills TMP can be found at: <https://www.haltonhills.ca/initiatives/tmp.php>

### **2.1.11 Mobility Management Strategy for Halton**

The Mobility Management Strategy (MMS) for Halton was completed in 2016 to identify the vision, goals, and strategies to guide the Region's short term and long-term transportation needs considering the significant population and employment growth facing the Region to 2041.

The Strategy was developed based on the principle of "Mobility-as-a-Service" that focuses on an interconnected and multi-modal transportation system.

The MMS provides Halton Region with a network and key inputs that can be further positioned to influence and shape the development of other ongoing multi-modal initiatives, such as the Ministry of Transportation Greater Golden Horseshoe Multi-Modal Transportation Plan, the update to the Metrolinx "Big Move" Regional Transportation Plan, the implementation of the Metrolinx's GO Station Access Plan and Regional Express Rail.

The MMS identifies Regional Road 25 within the study area as a Mobility Link corridor, intended to serve as a local service/inter-municipal connection to provide increased customer accessibility to important inter-municipal destinations (including a connection between the Milton and Acton GO Stations) through a variety of transit options.

This MCEA Study has regard for the goals and objectives of the Mobility Management Strategy for Halton by considering a range of improvements to facilitate the movement of people and goods, along with improvements to support the multi-modal transportation network.

The MMS can be found at:

[https://edmweb.halton.ca/OnBaseAgendaOnline/Documents/ViewDocument/PW-03-17-LPS13-17\\_-\\_Mobility\\_Management\\_Strategy\\_f\\_-\\_PW-03-17\\_LPS13-17\\_revised.doc?meetingId=3748&documentType=Minutes&itemId=97559&publishId=47638&isSection=false](https://edmweb.halton.ca/OnBaseAgendaOnline/Documents/ViewDocument/PW-03-17-LPS13-17_-_Mobility_Management_Strategy_f_-_PW-03-17_LPS13-17_revised.doc?meetingId=3748&documentType=Minutes&itemId=97559&publishId=47638&isSection=false)



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **2.1.12 Defining Major Transit Requirements in Halton**

The Defining Major Transit Requirements (DMTR) in Halton was completed in 2019 and built upon the MMS, which identified a Region-wide grid network of Transit Priority Corridors and Mobility Links. The objectives of this study:

- To evaluate the existing and proposed Major Transit Station Areas to identify infrastructure gaps, barriers to development and opportunities in order to unlock the economic potential of these areas; and
- To define the “Type”, “Form” and “Function” of the Transit Priority Corridors, identify the transit infrastructure investments to address demand, and to enhance mobility and connectivity between existing and proposed Major Transit Station Areas.

Halton Region completed the DMTR in collaboration with the local municipalities to identify order-of-magnitude investment requirements for the Transit Priority Corridors that support inter/intra-regional connections and the potential growth of the Major Transit Station Areas.

The Preliminary 2031 and 2041 Recommended Transit Priority Corridor Networks will inform Halton Region’s 2041 Regional Official Plan Review and future Multi-Modal Transportation Master Plan.

The MMS can be found at:

[https://edmweb.halton.ca/OnBaseAgendaOnline/Documents/ViewDocument/LPS45-19-PW-18-19\\_-\\_Defining\\_Major\\_Transit\\_Require\\_-\\_LPS45-19-PW-18-19\\_-\\_Defining\\_Major\\_Transit\\_Requi?meetingId=3952&documentType=Minutes&itemId=110839&publishId=58125&isSection=false](https://edmweb.halton.ca/OnBaseAgendaOnline/Documents/ViewDocument/LPS45-19-PW-18-19_-_Defining_Major_Transit_Require_-_LPS45-19-PW-18-19_-_Defining_Major_Transit_Requi?meetingId=3952&documentType=Minutes&itemId=110839&publishId=58125&isSection=false)

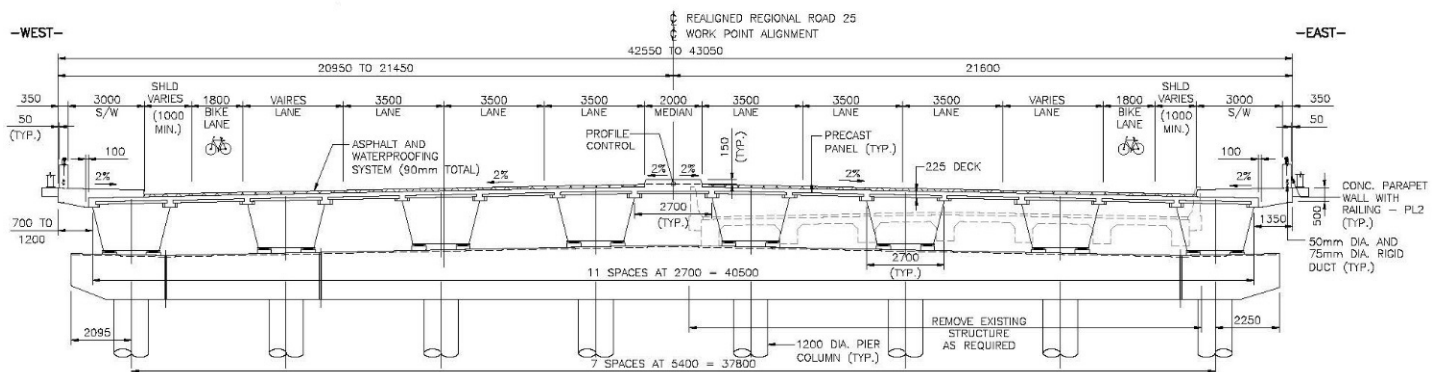
## **2.2 Other Related Initiatives and Studies**

### **2.2.1 Regional Road 25/Highway 401 Bridge Improvements**

The MTO has recently completed the works to widen the structure at the Regional Road 25/Highway 401 interchange to accommodate an ultimate Highway 401 cross section of eight core commuter lanes and four collector lanes. Improvements to Regional Road 25, as identified in the TMP and ATMP, were incorporated into the new structure including a six-lane cross section with bike lanes and sidewalks on either side of the structure (see **Figure 4**).



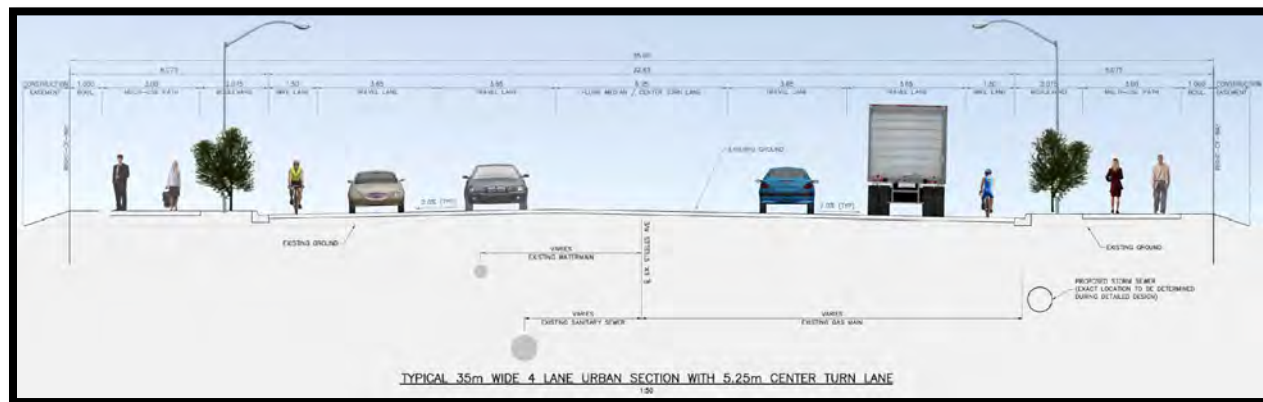
## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills



**Figure 4: Cross Section of Regional Road 25/Highway 401 Structure**

### 2.2.2 Steeles Avenue Widening and Reconstruction

Halton Region recently completed the widening of Steeles Avenue from 400 m west of Industrial Drive to east of Regional Road 25/Martin Street. The cross section includes two 3.65 m travel lanes in each direction, dedicated on-street bicycle lanes, turning lanes at intersections (including dual left turn lanes southbound on Regional Road 25 at Steeles Avenue), and 3.0 m multi-use pathways on both sides of Steeles Avenue (see **Figure 5**).



**Figure 5: Typical Cross Section – Steeles Avenue Class EA**



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **2.2.3 Regional Road 25 Improvements Municipal Class EA Study – Highway 401 to Campbellville Road**

A previous Regional Road 25 Improvements MCEA Study between Highway 401 and Campbellville Road (5 Side Road) was completed in 2006. The preferred design included the following:

- Widening from 2 to 4 lanes between High Point Road and 5 Side Road;
- Continuous northbound right turn lane from Highway 401 to High Point Drive;
- Signalization of the High Point Drive intersection with Regional Road 25;
- Replacement of the rural cross section (with roadside ditches) to an urban cross section with curb and gutter, from north of the Highway 401 interchange to Campbellville Road;
- Road drainage to be conveyed by storm sewers along Regional Road 25 to an existing Town of Milton stormwater management pond located north and east of the Regional Road 25/Highway 401 interchange;
- Naturalization of the watercourse crossing Regional Road 25 immediately north of Highway 401 (Tributary N2-B) from the east end of the culvert to the Town of Milton stormwater management pond;
- Access management in the form of a 2.0 m raised median at selected locations to restrict left turn lanes where possible;
- A 5.25 m flush median between James Snow Parkway and Peddie Road to provide full-movements access to properties on both sides of Regional Road 25 where necessary; and
- Northbound right-turn lanes at Peddie Road and 5 Side Road.

Construction by Halton Region of the preferred design was completed over a two-year period from 2012 to 2014.

## **2.3 Traffic Analysis**

A detailed traffic analysis was completed for the study area for the existing (2016) and future conditions (2031). The Transportation Planning Report is provided in **Appendix B** and provides an overview of the methodology used and the existing and future modelling results. A summary of the key findings is provided in the following sections.

### **2.3.1 Existing Conditions**

Regional Road 25 (Martin Street) is an existing four-lane major arterial roadway which runs north-south. The posted speed limit along Regional Road 25 between 5 Side Road and James Snow Parkway is 70 km/h, and between James Snow Parkway and Steeles Avenue is posted at 50 km/h. The roadway briefly becomes five lanes between High Point Drive and the Highway 401 westbound off-ramp due to the added lane from the off-ramp.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

All roadway intersections along the corridor from Steeles Avenue to 5 Side Road are signalized. At the intersection with Steeles Avenue, channelized right turns are provided on the southbound and westbound approaches. Signage is posted prohibiting trucks from entering Martin Street south of Steeles Avenue, at which point Martin Street's jurisdiction changes from Halton Region to the Town of Milton.

Existing weekday a.m. and p.m. peak hour turning movement volumes are shown in **Figure 6** and **Figure 7**.

Under existing conditions (2016), all north-south movements along the Regional Road 25 corridor operate under acceptable levels of service (LOS) and volume to capacity ratios. All mid-block segments are well below their theoretical capacities. Some deficiencies are observed on the eastbound and westbound approaches to the Steeles Avenue/Regional Road 25 intersection, with the overall intersection operating at capacity in the p.m. peak period. The operations at the intersection of Regional Road 25/Steeles Avenue are anticipated to improve with the intersection improvements recently completed.

Full results of the traffic analysis including intersection and midblock LOS and volume to capacity ratios are included in the Transportation Planning Report (**Appendix B**).



# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

Segment from Highway 401 EB Off-Ramp to Steeles Avenue

Segment from 5 Side Road to Highway 401 WB Off-Ramp

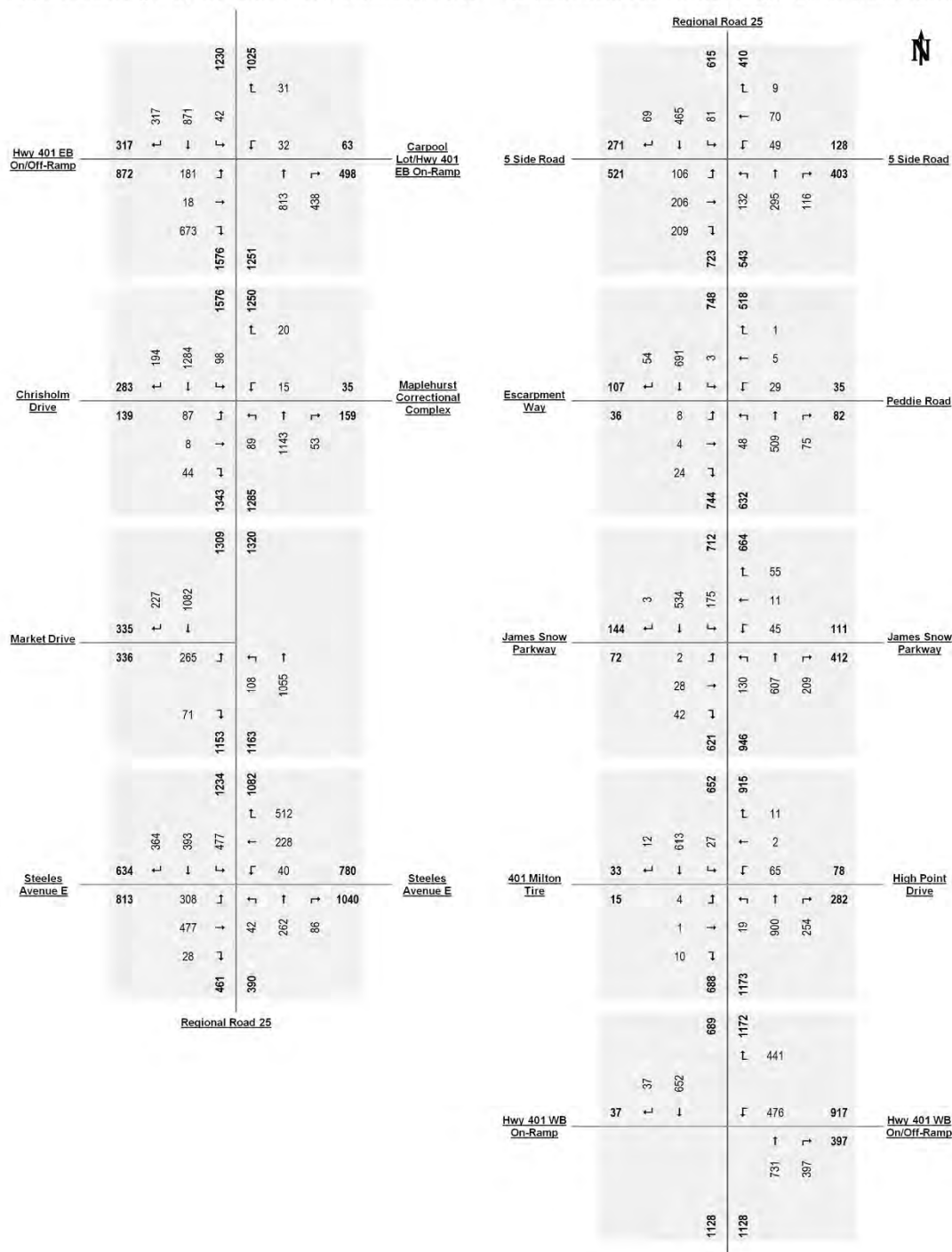


Figure 6: Existing A.M. Peak Hour Traffic Volumes (2016)



# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

Segment from Highway 401 EB Off-Ramp to Steeles Avenue    Segment from 5 Side Road to Highway 401 WB Off-Ramp

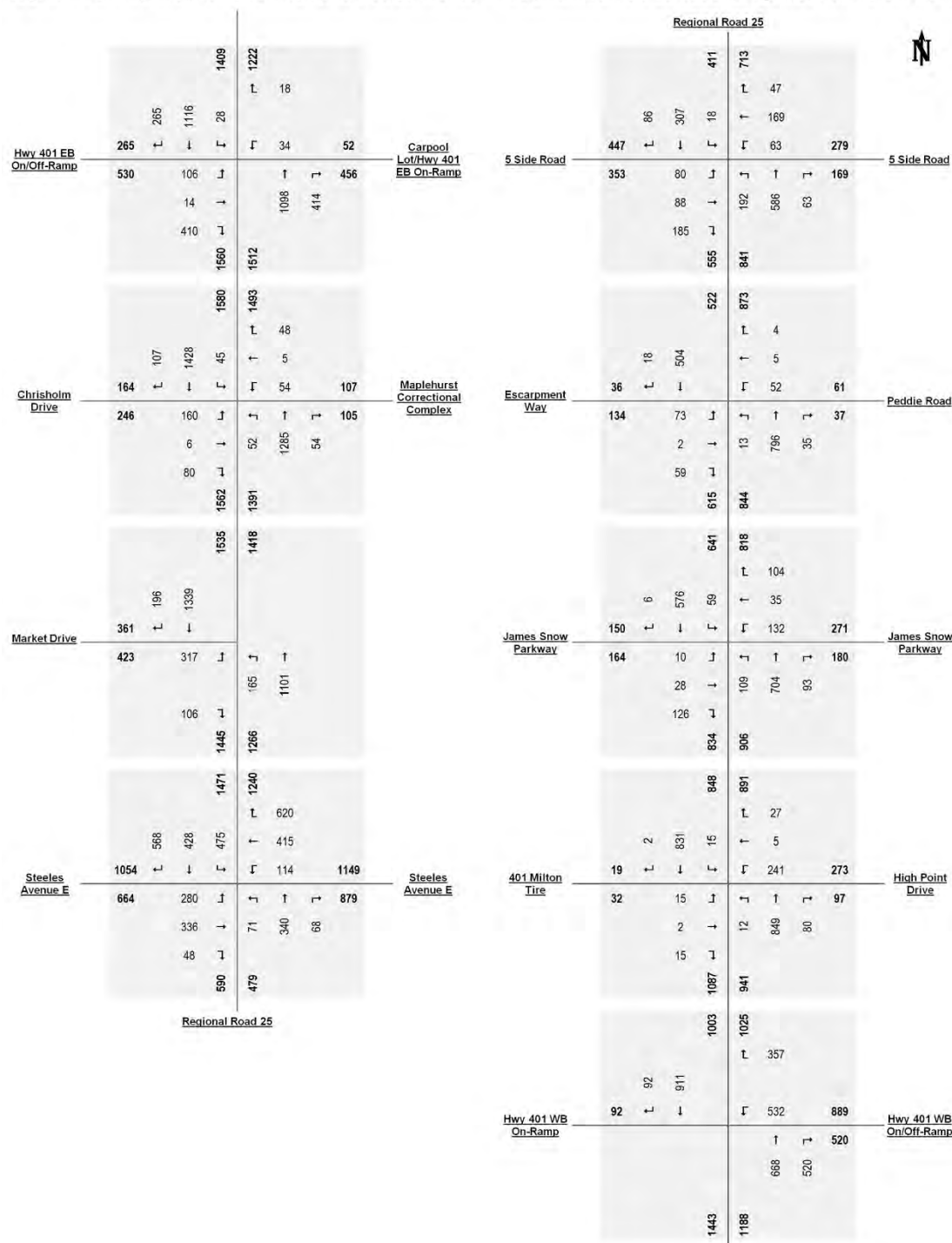


Figure 7: Existing P.M. Peak Hour Traffic Volumes (2016)



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### 2.3.2 Future Conditions

Halton Region's EMME Transportation Model was used to forecast travel demand in the 2021, 2026 and 2031 horizon years. The Region's model incorporates the *Best Planning Estimates of Population and Employment 2011-2031*, which estimates the growth in the region for each Traffic Zone at each horizon year, and also incorporates the projected Roads Capital Projects (to 2031) consistent with the Region's 2011 Transportation Master Plan. The model is calibrated to the 2006 Transportation Tomorrow Survey for the 2011 base year. For more information on the forecast methodology, see the Transportation Planning Report (**Appendix B**). Forecast traffic volumes for the 2031 horizon year are illustrated in **Figure 8** and **Figure 9**.

#### 2.3.2.1 Development in the Corridor

Halton Region has identified five developments which are anticipated to potentially impact the Regional Road 25 study area from Steeles Avenue to 5 Side Road. These developments include: 2 Mansewood Court, 2800 High Point Drive, 8300 and 8400 Parkhill Drive, Giuseppe Zanchin and Zag Properties, and the expansion of the GO Transit carpool lot at Regional Road 25/Highway 401. All new trips generated by these developments have been incorporated into the forecast volumes along Regional Road 25. See the Transportation Planning Report (**Appendix B**) for more information on trip generation.

#### 2.3.2.2 Planned Road Improvements

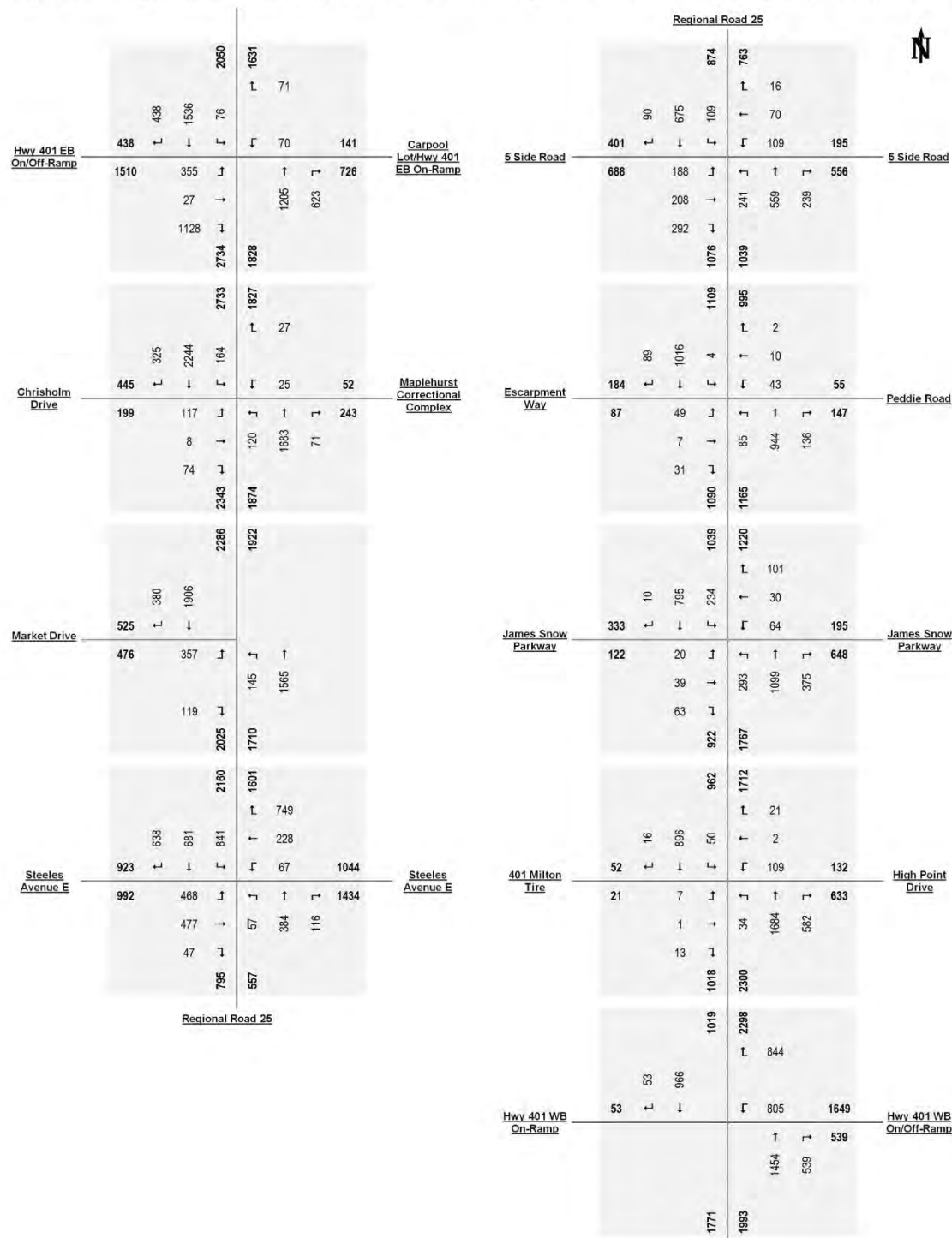
A number of road improvements are planned as part of the Steeles Avenue widening (2 to 4 lanes) from Industrial Drive to Regional Road 25/Martin Street intersection:

- Dual southbound left-turn lanes;
- Elimination of the channelized southbound right-turn; and
- Dual eastbound left-turn lanes.



# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

Segment from Highway 401 EB Off-Ramp to Steeles Avenue      Segment from 5 Side Road to Highway 401 WB Off-Ramp



# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

Segment from Highway 401 EB Off-Ramp to Steeles Avenue      Segment from 5 Side Road to Highway 401 WB Off-Ramp

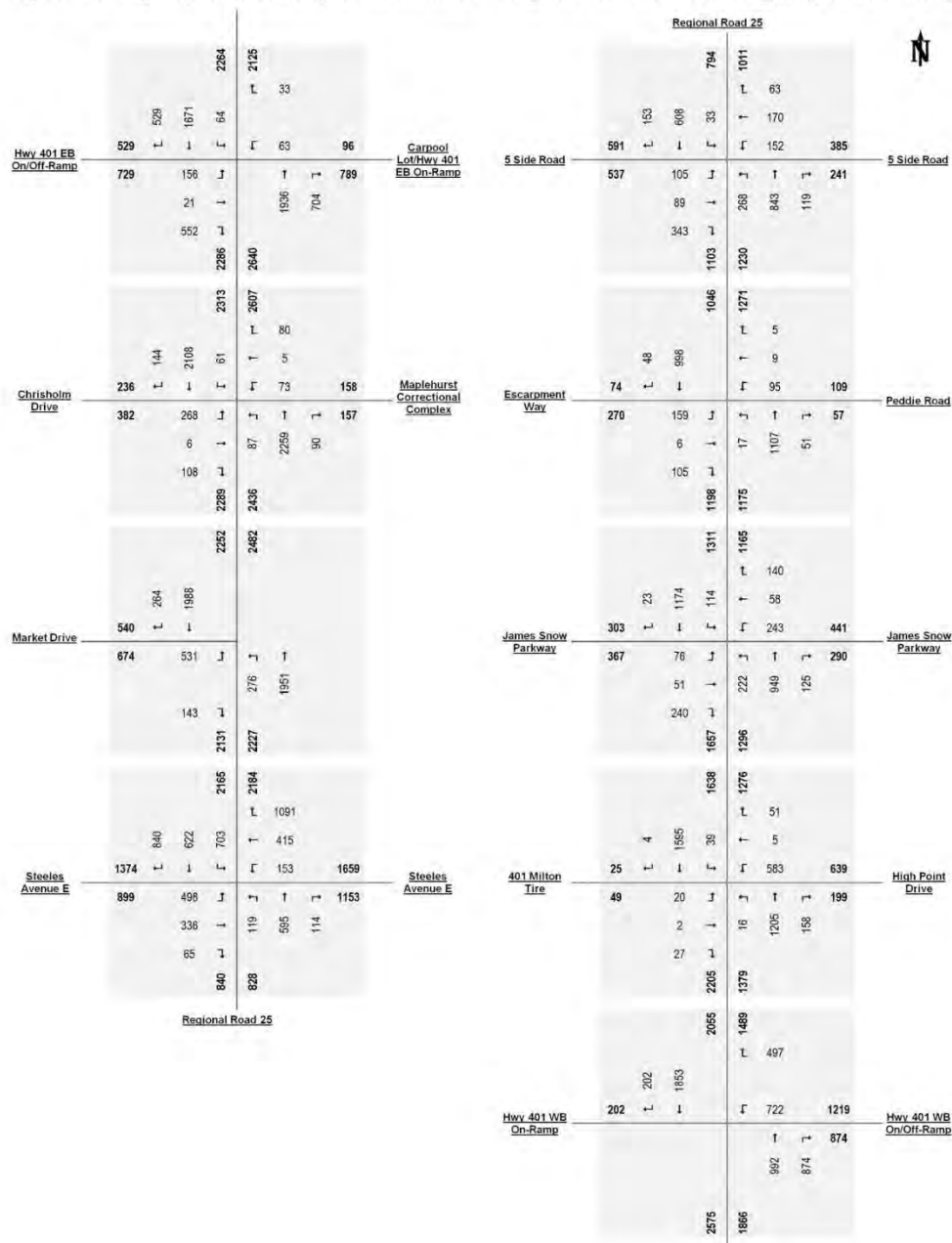


Figure 9: Forecast P.M. Peak Hour Traffic Volumes (2031)



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **2.3.3 Projected Operations (2031)**

#### **2.3.3.1 Future (2031) Operating Performance: Do Nothing (Without Physical Improvements)**

The existing conditions analysis summarized in **Section 2.3.1** confirms the requirement for additional capacity on Regional Road 25 from Steeles Avenue to 5 Side Road on the basis of current capacity constraints during the afternoon peak hour. However, the level of service analysis for future conditions first considers potential traffic impacts on the basis of a Do Nothing scenario to assess the extent of future impacts without any physical improvements. The operating performance reflects the existing lane geometry throughout the project limits except for the recently completed widening of the Steeles Avenue/Regional Road 25 intersection. The analysis also incorporates suitable revisions to signal timings at all signalized intersections. Detailed signalized intersection capacity analysis output is included in the appendix of the Transportation Planning Report (**Appendix B**).

The analysis of a Do Nothing alternative has demonstrated that there is a need for the widening of Regional Road 25 to six lanes. A summary of the basis for this need is provided below:

- Intersection capacity deficiencies are anticipated south of the Regional Road 25/Peddie Road intersection;
- Deficiencies in both the northbound and southbound directions with the southbound direction operating worse in the a.m. and p.m. peak hour;
- Operations at the Regional Road 25/Steeles Avenue are expected to deteriorate;
- Regional Road 25/Market Drive left turning movement is expected to operate at capacity in the p.m. peak hour after widening occurs unless an additional eastbound left turning lane is provided;
- High westbound left turning volumes are forecast at the Regional Road 25/High Point Drive unless an advanced westbound left turn phase is implemented; and
- Eastbound through/right movement at Regional Road 25/5 Side Road intersection is anticipated to reach capacity with the current right turn-on-red prohibition unless an auxiliary right turn lane is provided and right turns on red permitted.

It is worth noting that the CN Rail overpass structure between Steeles Avenue and Market Drive can currently only accommodate 5 through travel lanes crossing underneath it and therefore will need to be widened to accommodate 6 lanes with additional on-road and off-road active transportation infrastructure. Not implementing an additional northbound through lane at the Market Drive intersection will result in poor



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

operations and extensive queuing on the northbound approach. Without an additional eastbound left turn lane, northbound movements are anticipated to reach capacity at the p.m. peak hour, resulting in delay. As such, it was determined that 6 travel (through) lanes are required at the CN Rail overpass. The analysis presented in **Section 2.3.2** identifies the predicted operating performance.

### **2.3.3.2 Future (2031) Operating Performance: Widening from Steeles Avenue to 5 Side Road (With Physical Improvements)**

The traffic analysis summarized in **Section 2.3.2** supports the need for additional through capacity on Regional Road 25 throughout the project limits. Based on these findings, the traffic analysis includes an assessment of future impacts with the widening of Regional Road 25 between Steeles Avenue and 5 Side Road to confirm that a six-lane cross-section will adequately address 2031 travel demand with additional through capacity.

In addition to widening Regional Road 25 to a basic six-lane cross-section between Steeles Avenue and 5 Side Road, the following lane configuration improvements include:

- Exclusive right-turn lanes at Regional Road 25 and James Snow Parkway (both north/south directions), as well as at Regional Road 25 and Peddie Road (northbound direction only);
- The E-N right turn lane at the intersection with the Highway 401 WB off-ramp is realigned to provide an additional right turn lane and accommodate a.m. peak hour traffic volumes;
- Removal of the channelized right turn lane reduces weaving of traffic and improves the safety of cyclist and pedestrian crossings at the E-N ramp; and
- The reconfigured lanes of the westbound off-ramp (left, shared left/right, right) will accommodate forecast (2031) volume and reduce queuing.

The analysis of impacts to 2031 based on the recommended widening to a basic six-lane cross-section confirms that forecast turning movement volumes can be accommodated throughout the project limits between Steeles Avenue and 5 Side Road.

### **2.3.4 Road Safety Review**

Collision data provided by Halton Region for the Regional Road 25 corridor intersections from 2012 to 2016 were assessed to identify trends in collisions and to identify possible opportunities for improvement. The full Road Safety Review is provided in the Transportation Planning Report in **Appendix B**.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

All intersections and mid-blocks along the corridor, with the exception of the Regional Road 25/Steeles Avenue intersection have low average collision rates. No collision-prone conditions were identified through the assessment. It is assumed that the reconstruction of the intersection, which is part of the Steeles Avenue Improvements currently underway, will improve safety conditions at the intersection.

The Preliminary Design Report for the Highway 401 Improvements from Trafalgar Road to Regional Road 25 (March 2015, URS) had identified an alternate design for the Highway 401 westbound off-ramp interchange to reduce the collision rate for the channelized westbound right turn. It is recommended to terminate the off-ramp at the ramp terminal intersection (eliminating the channelized westbound right turn), thus controlling the pedestrian and cyclist crossing and improving safety conditions.

### **2.3.5 Roundabout Feasibility Study**

A Roundabout Feasibility Study was completed to determine whether the signalized intersections along the corridor are candidates for conversion to roundabout intersection control types. The study concluded that the intersection of Regional Road 25 with 5 Side Road should be further considered for the implementation of a two-lane roundabout. The other signalized intersections within the Study Area would experience substantial negative impacts with the implementation of a roundabout, with little to no operational benefits over a signalized intersection. The Roundabout Feasibility Study is included in the Transportation Planning Report (**Appendix B**).

### **2.3.6 Traffic Analysis Summary and Recommendation**

With development planned for Milton Heights, Sherwood Survey and 401 Business Park, and to best support the introduction of active transportation facilities along the corridor, widening of Regional Road 25 between Steeles Avenue and 5 Side Road is recommended. This will result in a uniform driving condition for motorists and provide additional road safety benefits. The improvement will increase travel efficiency, lane continuity, reliability and also continue to accommodate agricultural vehicles, goods movement, pedestrians/cyclists and transit.

Based on the foregoing, it is recommended that Regional Road 25 be widened from 4 to 6 lanes between Steeles Avenue to 5 Side Road.



## **2.4 Problem Being Addressed**

Based on the review of existing conditions on Regional Road 25, the analysis of existing traffic volumes, projected future (2031) travel demands and the findings and recommendations of related studies, the problem being addressed by the study was defined as follows:

- Existing Regional Road 25 is experiencing significant delays during peak periods and will increase at intersections in the future;
- Future traffic is expected to grow by 2031;
- To support future growth and travel demands, improvements to the Regional Road 25 corridor are required; and
- The improved corridor will support all modes of transportation (i.e. active transportation, GO Transit, interregional travel, agricultural vehicles, and goods movement).

Therefore, Halton Region carried out this study to address the foregoing in accordance with the MCEA process.



## **3.0 EXISTING AND FUTURE CONDITIONS**

As part of Phase 2 of the MCEA process, a general inventory of the transportation, socio-economic, cultural, and natural environments was undertaken to characterize the study area. These environmental conditions were considered during the evaluation of alternative solutions and identification of impacts and mitigation.

Background information was collected from various sources including:

- Background studies and reports;
- Data provided by Halton Region;
- Investigations undertaken as part of this MCEA Study;
- Meetings with the Project Team;
- Correspondence and meetings with participating Technical Agencies, including the Town of Milton and Conservation Halton (CH); and
- Consultation with members of the public, including key stakeholders (e.g., property owners).

The study area focuses on Regional Road 25 from Steeles Avenue to 5 Side Road and is located in the Town of Milton/Town of Halton Hills, in Halton Region. **Figure 1** provides a key plan of the study area.

### **3.1 Transportation**

#### **3.1.1 Transportation Network**

The main components of the existing road are described in **Table 1**.

**Table 1: Existing Road Network**

| <b>Road</b>                                                       | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Martin Street/Regional Road 25<br>(Steeles Avenue to Highway 401) | <ul style="list-style-type: none"><li>• Under the jurisdiction of Halton Region</li><li>• Major arterial road (north of Steeles Avenue)</li><li>• Runs north-south</li><li>• Four-lane roadway with short five lane cross-section at the Highway 401 E-N off-ramp</li><li>• Posted speed limit ranges from 50 km/h to 70 km/h</li><li>• Several signalized intersections from Steeles Avenue to 5 Side Road</li></ul> |



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

| Road                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | <ul style="list-style-type: none"> <li>Channelized right turn (E-N movement) at Steeles Avenue intersection</li> <li>Signage posted prohibiting trucks from entering Martin Street south of Steeles Avenue</li> </ul>                                                                                                                                                                                                                                             |
| Steeles Avenue<br>(Regional Road 8)        | <ul style="list-style-type: none"> <li>Under the jurisdiction of Halton Region</li> <li>Major arterial road</li> <li>Four-lane roadway</li> <li>Posted speed limit of 60 km/h</li> <li>Runs east-west</li> <li>Two-way left turn lanes between Regional Road 25 and Ontario Street</li> <li>Widening from two to four lanes (Industrial Road to Regional Road 25) recently completed</li> </ul>                                                                   |
| Market Drive                               | <ul style="list-style-type: none"> <li>Under the jurisdiction of Town of Milton</li> <li>Two-lane local roadway</li> <li>Runs east-west</li> <li>Assumed speed limit of 50 km/h (no posted speed limit)</li> <li>West leg of Regional Road 25 intersection widens to two entry lanes and separate left and right turn lanes on to Regional Road 25</li> </ul>                                                                                                     |
| Chisholm Drive                             | <ul style="list-style-type: none"> <li>Under the jurisdiction of Town of Milton</li> <li>Two-lane local roadway</li> <li>Runs east-west</li> <li>Posted speed limit of 50 km/h</li> <li>East leg of intersection with Regional Road 25 provides access to Maplehurst Correctional Complex and Vanier Centre for Women</li> <li>West leg of intersection with Regional Road 25 provides two entry lanes and separated left/through and right turn lanes</li> </ul> |
| Highway 401<br>(Macdonald-Cartier Freeway) | <ul style="list-style-type: none"> <li>Under the jurisdiction of the Ministry of Transportation of Ontario (MTO)</li> <li>Six-lane provincial freeway, with future plans to widen to 10 lanes</li> <li>Runs east-west</li> <li>Posted speed limit of 100 km/h</li> <li>Parclo A-4 configuration at the Highway 401/Regional Road 25 interchange</li> </ul>                                                                                                        |



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

| Road                                 | Description                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High Point Drive                     | <ul style="list-style-type: none"> <li>• Under the jurisdiction of Town of Milton</li> <li>• Two-lane local roadway</li> <li>• Runs east-west</li> <li>• Assumed speed limit of 50 km/h (no posted speed limit)</li> <li>• West leg of intersection with Regional Road 25 provides access to a single industrial property</li> </ul>                                                  |
| James Snow Parkway (Regional Road 4) | <ul style="list-style-type: none"> <li>• Under the jurisdiction of Halton Region</li> <li>• Four-lane major arterial roadway</li> <li>• Runs east-west, terminating west of Escarpment Way</li> <li>• Posted speed limit of 60 km/h</li> </ul>                                                                                                                                        |
| Peddie Road/ Escarpment Way          | <ul style="list-style-type: none"> <li>• Under the jurisdiction of Town of Milton</li> <li>• Two-lane local roadway</li> <li>• Runs east-west at Regional Road 25 intersection and north-south west of the intersection</li> <li>• Posted speed limit of 50 km/h</li> <li>• Auxiliary left turn lanes at all approaches of the Regional Road 25 intersection</li> </ul>               |
| 5 Side Road                          | <ul style="list-style-type: none"> <li>• Under the jurisdiction of Town of Milton</li> <li>• Two-lane minor arterial roadway</li> <li>• Runs east-west</li> <li>• Posted speed limit of 60 km/h</li> <li>• 5 Side Road becomes Campbellville Road west of Dublin Line</li> <li>• Signage posted eastbound at Regional Road 25 for No Right Turn On Red (NRTOR) restriction</li> </ul> |



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### 3.1.2 Transit

The Regional Road 25 corridor from Steeles Avenue to 5 Side Road is currently serviced regularly by Milton Transit and GO Transit buses. Milton Transit provides both conventional and special needs buses. The corridor is serviced by Route 1A – Industrial (West to East), Route 1B – Industrial (East to West), and Route 1C – Industrial. Routes 1A and 1B provide regular service throughout the weekdays, and Route 1C operates only on Saturdays. GO Transit routes which service the Regional Road 25/Highway 401 carpool lot include: Route 24 – Cambridge/ Milton; Route 25 – Waterloo/ Mississauga; and Route 29 – Guelph/ Mississauga. Milton Transit Routes are identified on **Figure 10**.

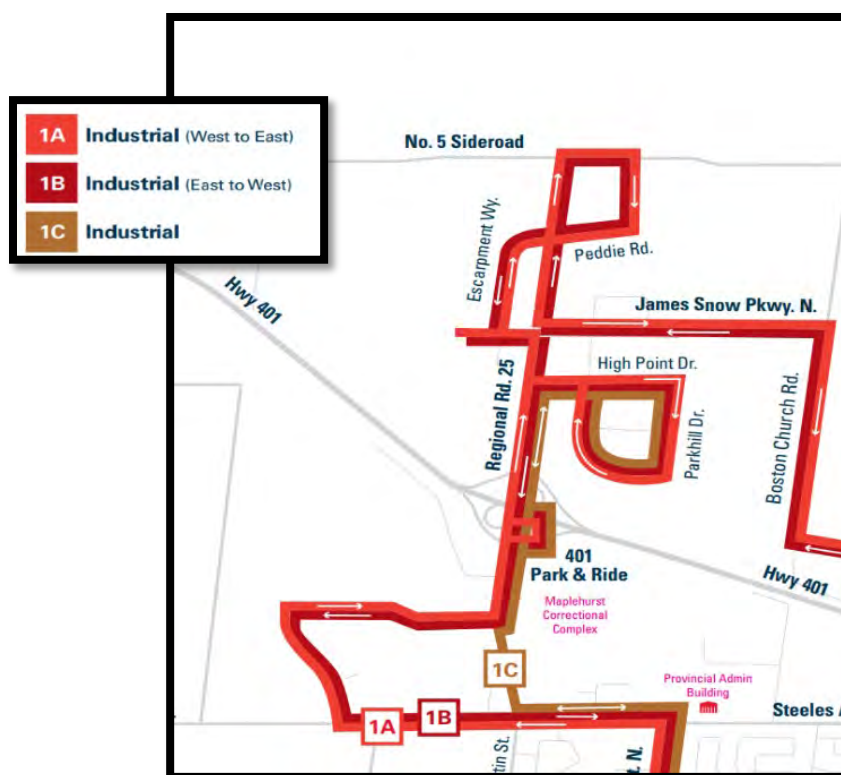


Figure 10: Milton Transit Routes



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### 3.1.3 Active Transportation

There is an existing multi-use path between Steeles Avenue and Market Drive, and sidewalk from Market Drive to Chisholm Drive within the Regional Road 25 corridor. Otherwise, there are limited active transportation facilities. Sidewalks and multi-use paths are provided on some intersecting roads including Peddie Road, James Snow Parkway, High Point Drive, Chisholm Drive, Market Drive and Steeles Avenue. These facilities do not connect to a continuous north/south active transportation network. The existing active transportation facilities are illustrated on **Figure 11**.



**Figure 11: Existing Active Transportation Facilities**



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

As noted in **Section 2.1.6**, Halton Region completed an Active Transportation Master Plan Study to create a 20-year vision for active transportation in the region. As part of the Regional Road 25 corridor improvements, active transportation was considered, such as on-road bike lanes, multi-use paths, and sidewalks to accommodate pedestrians and cyclists.

## 3.2 Socio-Economic Environment

### 3.2.1 Existing Land Use

The study area is located in the Town of Milton, a lower tier municipality within Halton Region, and within the boundaries of the Milton 401 Industrial/Business Park Secondary Plan. With reference to the Secondary Plan below in **Figure 12** the goal is to provide the framework for a planned, high quality industrial/business park, as well as a gateway to the Town of Milton's Urban Area while connecting various land use areas.

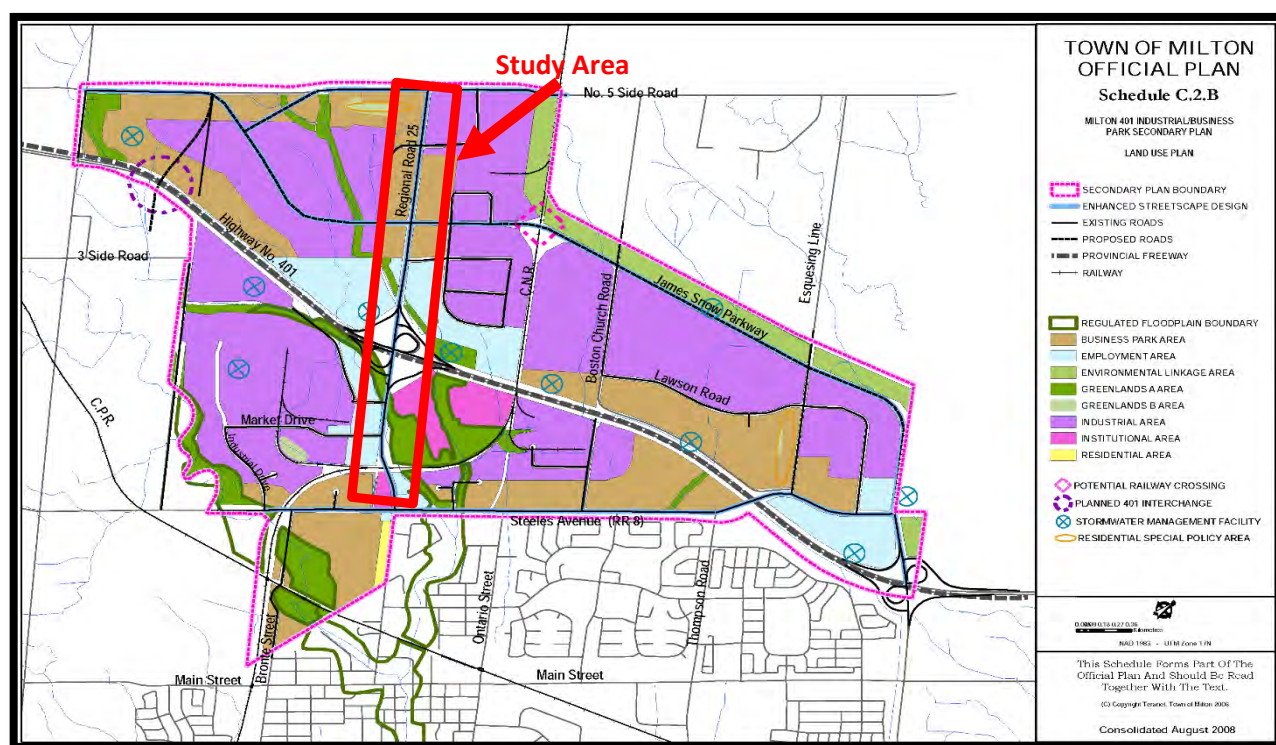


Figure 12: Milton 401 Industrial/Business Park Secondary Plan - Land Use Plan



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

Existing lands serve local and interregional travel as well as agricultural equipment and goods movement. Lands adjacent to Regional Road 25 from Steeles Avenue north to Highway 401 include employment and institutional areas, including the Maplehurst Correctional Complex and Chris Hadfield Park. Employment and industrial uses are located north of Steeles Avenue to 5 Side Road. Lands outside the corridor consist primarily of industrial and business park uses with some Greenland and Environmental Linkage Areas.

### **3.2.2 Future Land Use**

Information on active planning applications was provided by Halton Region, including:

- 2 Mansewood Court - part of a larger industrial subdivision and includes a 756 m<sup>2</sup> building with a parking lot. The development is located at the north quadrant of the intersection of Regional Road 25/5 Side Road and may be used as a truck parking lot;
- 2800 High Point Drive - a 4554 m<sup>2</sup> expansion to an existing office building located on the east quadrant of the intersection of Regional Road 25/High Point Drive;
- 8300 & 8400 Parkhill Drive - two warehouse buildings (21,998 m<sup>2</sup>) with office space (1,430 m<sup>2</sup>) located north of the Highway 401 interchange and can be accessed via High Point Drive; and
- Giuseppe Zanchin and ZAG - six proposed automobile retail buildings (combined gross floor area of 10,250 m<sup>2</sup>), a gas/service station and car wash, a restaurant with drive-thru (650 m<sup>2</sup>), a bank (380 m<sup>2</sup>), along with a convenience restaurant with drive-thru (280 m<sup>2</sup>). The developments are located on the south and west quadrants of the intersection of Regional Road 25/James Snow Parkway. A portion of the development has been built out with a Tim Hortons, On the Run, and an Esso fueling station on the west quadrant of Regional Road 25/James Snow Parkway.

The Regional Road 25 corridor is designated for future employment and Industrial/Business land uses. It is expected that there will be some new commercial development at the south end of the study area, north of Steeles Avenue.

### **3.2.3 Noise**

There are 3 Noise Sensitive Areas (NSAs) located within the study limits. A noise analysis has been carried out as part of this MCEA Study (see **Section 7.0**).

### **3.2.4 Pedestrian and Cycling Facilities**

As noted in **Sections 2.1.6 and 3.1.3** the Region's Active Transportation Master Plan has been considered in this study.



### **3.3 Natural Environment**

A natural environment assessment was carried out as part of the Regional Road 25 MCEA Study. Field investigations and the existing conditions assessment was completed for the entire corridor between Steeles Avenue and 5 Side Road. The findings of this assessment are summarized in this section and documented in the Natural Environment Report (**Appendix C**).

#### **3.3.1 Background Data Collection and Analysis**

Background information was reviewed to assess the general character of the Study Area, identify potential constraints and sensitivities, and assess the general connectivity of natural features within the study limits to features within the surrounding landscape. Agencies were consulted to request records on the status, classification, mapping, and community information of both terrestrial and aquatic species. Field investigations included the characterization and mapping of vegetation communities using the Ecological Land Classification (ELC) system, a wildlife habitat assessment, incidental wildlife observations, and an aquatic habitat assessment. Background natural environment information collected included the following key sources:

- Halton Region Official Plan (Halton Region 2009);
- Regional Official Plan (ROP) consolidation 2013 (Halton Region 2013);
- Natural Heritage Information Centre (NHIC) database (MNRF 2017);
- Land Information Ontario (LIO) natural heritage mapping (MNRF 2017);
- Regional Road 25 Improvements Class Environmental Assessment Study Highway 401 to Campbellville Road (URS Canada Inc. 2006);
- Department of Fisheries and Oceans aquatic species at risk (SAR) mapping (DFO 2017);
- Ontario Breeding Bird Atlas (Cadman et al. 2007);
- Ontario Mammal Atlas (Dobbyn 1994);
- Ontario Reptile and Amphibian Atlas (Ontario Nature 2017);
- Natural Heritage Reference Manual for Natural Heritage policies of the Provincial Policy Statement, 2005. Second Edition (MNR 2010);
- Significant Wildlife Habitat Technical Guideline (MNR 2000);
- Long Term Environmental Monitoring Program - Grindstone Creek, Sixteen Mile Creek and Supplemental Monitoring (Conservation Halton 2013);
- Conservation Halton;
- Digital air photos; and
- Ministry of Natural Resources and Forestry (MNRF).



### **3.3.2 Aquatic and Fish Habitat Survey Approach**

Field investigations of aquatic features within the study area were conducted on September 8, 2017 by Stantec Consulting Ltd. (Stantec) ecologists, including three different watercourses. Compiled background information, including comments and input from agencies, was considered specifically in developing and understanding the field program. SAR information discussed below was obtained from a variety of background information sources. All watercourses and drainage features were assessed and mapped approximately 50 m upstream and 50 m downstream of Regional Road 25. Watercourse assessments included the following habitat parameters (where applicable):

- Flow condition, clarity, general gradient, and velocities;
- Channel dimensions and general character;
- Morphology (e.g., riffles, pools);
- Cover opportunities (i.e., woody debris, undercut banks, boulders, aquatic vegetation);
- Substrate type;
- Bank height, character, and stability/evidence of erosion;
- Riparian vegetation;
- Any observations of fish presence and/or barriers to fish movement;
- Potential specialized and important habitat areas including potential spawning habitat, good nursery cover, holding habitat (deeper refuge pools);
- Evidence of groundwater discharge or indicators; and
- Disturbances, habitat limitations and potential habitat enhancement opportunities.

Fish community surveys were not undertaken, as existing fish community data were available from previous reports. The available background information was deemed sufficient to categorize these watercourses without requiring additional fish community surveys.

### **3.3.3 Vegetation Survey Approach**

A single season vegetation assessment and botanical inventory was undertaken by Stantec on July 10, 2017. The scope of vegetation fieldwork and analyses included the following:

- Classifying and mapping vegetation communities according to the ELC system for Southern Ontario (Lee et al., 1998), with 2008 ELC code updates. ELC mapping received from CH was used to supplement assessments performed by Stantec;
- Evaluating vegetation community significance using NHIC rankings (NHIC, 2017);



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

- Identifying and evaluating locally rare and uncommon plants through the Vascular Plants of Halton Region (Crins et al., 2006). A vascular plant species list was prepared based on the botanical inventory work. Flora nomenclature was based primarily on the Database of Vascular Plants of Canada (VASCAN) (Brouillet et al. 2010+) with updates to genera, specific epithets, and family names as necessary to reflect recent taxonomic revisions.

As much of the study area is developed with commercial/industrial or institutional uses, the origin of much of the vegetation in the study area is derived from human activity. Active development is occurring in a number of locations in the study area.

Natural/semi-natural vegetation communities are limited within study area and found in areas in the vicinity of the tributaries of Sixteen Mile Creek. Vegetation communities include Deciduous Thicket (THD), Cultural Communities (CU), Mixed Meadow (MEM), Graminoid Meadow (MEG), Deciduous Swamp (SWD), Swamp Thicket (SWT), Shallow Marsh (MAS), and Meadow Marsh (MAM). The vegetation communities identified within the study area are considered common and widespread throughout southern Ontario.

There were no designated natural features identified in the study area according to Land Information Ontario mapping (LIO 2017).

### **3.3.4 Wildlife Survey Approach**

Wildlife habitat assessments and incidental wildlife observations were conducted on July 10 and July 12, 2017 by Stantec. Surveys included ELC; Woodland assessments; Wildlife assessments; and GIS analysis. The following were used to identify SAR and provincially rare species with known ranges in the study area:

- The Ontario Reptile and Amphibian Atlas (Ontario Nature 2017);
- Ontario Breeding Bird Atlas (OBBA) (Cadman et al, 2007);
- The Atlas of the Mammals of Ontario (Dobbyn 1994)
- NHIC database; and
- MNRF consultation.

MNRF's Significant Wildlife Habitat Technical Guide (OMNR 2000) and Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E (MNRF 2015) were used to identify candidate and confirmed Significant Wildlife Habitat in conjunction with ELC, habitat and wildlife observations.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### 3.3.5 Environmentally Designated Areas

Based on the background review conducted on July 6, 2017, there are no Environmentally Significant Areas (ESAs), Areas of Natural and Scientific Interest (ANSIs), Significant Wildlife Habitat (SWH), Provincially Significant Wetlands (PSWs), provincial or national parks, or conservation areas located within the study area. The Regional Road 25 study area is located within the Sixteen Mile Creek watershed, which is an identified floodplain.

### 3.3.6 Vegetation Communities

The vegetation communities identified in the study area are illustrated on **Figures 13 to 15**. All communities observed are considered common in Southern Ontario. A brief description of each community is provided below in **Table 2**.

**Table 2: Ecological Land Classification Vegetation Types**

| ELC Type                                                | Community Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Thicket (TH)</b>                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Deciduous Thicket (THD)</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| THDM2-11<br>Hawthorn<br>Deciduous Shrub<br>Thicket Type | One upland thicket community was located along a riparian corridor, southwest of the interchange with Highway 401. Dominant species included Hawthorn (not identifiable to species at the time of the inventory), Manitoba maple, grey dogwood, Canada goldenrod and cool-season grasses. This unit included large open grown bur oak, and a locally uncommon plant species (big bluestem).                                                                                                                                          |
| <b>Cultural (CU)</b>                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| CUW1 – Cultural<br>Woodland                             | Two woodland communities were present, one on either side of RR25, north of the interchange with Highway 401. Both units were connected to a drainage feature. The unit on the west side was dominated mid-aged bur oak, Manitoba maple, and Norway spruce; while the unit on the east side was dominated by young white poplar.<br><br>A third unit was located on the west side of RR25 at the south end of the study area, north of Steeles Avenue East. This unit was dominated by hybrid white willow and little-leaved linden. |



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

**Table 2: Ecological Land Classification Vegetation Types**

| ELC Type                                                                      | Community Description                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CUT1-1<br>Sumac Deciduous Shrub Thicket Type                                  | Five sumac thickets were present in the study area, including three units along the Rail line north of Steeles Avenue East, and two units located along a drainage feature located northwest of the interchange with Highway 401.<br><br>All units were dominated by staghorn sumac, with common mixed meadow species also present (see below).        |
| CUT1-4<br>Gray Dogwood Deciduous Shrub Thicket Type                           | One gray dogwood thicket was located approximately 100m west of RR25, south of the interchange with Highway 401. The unit was assessed from the edge; however, some wetland species appeared to be common, including reed canary grass, blue cattail ( <i>Typha x glauca</i> ), purple loosestrife and white panicked aster.                           |
| Meadow (ME)                                                                   |                                                                                                                                                                                                                                                                                                                                                        |
| Mixed Meadow (MEM)                                                            |                                                                                                                                                                                                                                                                                                                                                        |
| MEMM3 - Dry - Fresh Mixed Meadow Ecosite                                      | Eight mixed meadow communities were present throughout the study area. These communities occurred in vacant lots and roadsides and were created by anthropogenic disturbance. Dominant species included smooth brome, quackgrass, tall ryegrass, Canada goldenrod, Canada thistle, white sweet-clover, red clover, cow vetch, and bird's-foot trefoil. |
| MEMM4 - Fresh - Moist Mixed Meadow Ecosite                                    |                                                                                                                                                                                                                                                                                                                                                        |
| Graminoid Meadow (MEG)                                                        |                                                                                                                                                                                                                                                                                                                                                        |
| MEGM3 - Dry - Fresh Graminoid Meadow Ecosite                                  | Two graminoid meadow communities were present in the study area, one along the edge of a riparian corridor, northwest of the interchange with Highway 401, and one surrounding the Highway 401 carpool lot on the east side. Dominant species included smooth brome, quackgrass and timothy.                                                           |
| Swamp (SW)                                                                    |                                                                                                                                                                                                                                                                                                                                                        |
| Deciduous Swamp (SWD)                                                         |                                                                                                                                                                                                                                                                                                                                                        |
| SWDM4-1/MASM1-12<br>Willow Mineral Deciduous Swamp Type / Common Reed Mineral | One swamp / march complex occurred in a riparian corridor on the west side to RR25, north of Steeles Avenue East. Dominant species included hybrid white willow and common reed.                                                                                                                                                                       |



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

**Table 2: Ecological Land Classification Vegetation Types**

| <b>ELC Type</b>                                                                   | <b>Community Description</b>                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Shallow Marsh Type                                                                |                                                                                                                                                                                                                                                      |
| <b>Swamp Thicket (SWT)</b>                                                        |                                                                                                                                                                                                                                                      |
| SWT2-5 - Red-osier Dogwood Mineral Deciduous Thicket Swamp Type                   | One red-osier dogwood swamp thicket was present along a riparian corridor, southwest of the interchange with Highway 401. Dominant species included red-osier dogwood, reed canary-grass, blue cattail, purple loosestrife and white panicled aster. |
| <b>Marsh (MA)</b>                                                                 |                                                                                                                                                                                                                                                      |
| <b>Shallow Marsh (MAS)</b>                                                        |                                                                                                                                                                                                                                                      |
| MAS2-1 Cattail Mineral Shallow Marsh Type                                         | One very narrow cattail marsh community occurred along a drainage feature northeast of the Rail line crossing of RR25. The marsh was dominated by blue cattail.                                                                                      |
| MASM1-12 Common Reed Mineral Shallow Marsh Type                                   | One common reed marsh community was present along a drainage feature in the RR25 ROW, north east of the Rail line crossing of RR25. The unit was a dense colony of common reed.                                                                      |
| <b>Meadow Marsh (MAM)</b>                                                         |                                                                                                                                                                                                                                                      |
| MAM2-3 Red-top Graminoid Mineral Meadow Marsh Type                                | One graminoid meadow marsh community was present along a riparian corridor, northeast of the interchange with Highway 401. Dominant species included redtop, reed canary grass, purple loosestrife and white panicled aster.                         |
| MAMM1/SWM Graminoid Mineral Meadow Marsh Ecosite / Stormwater Management Facility | One naturalized dry stormwater management basin was located on the east side of RR25, south of 5 Side Road. This was documented from the edge of the feature; however, it appeared to be dominated by redtop and other cool-season grasses.          |



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

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# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

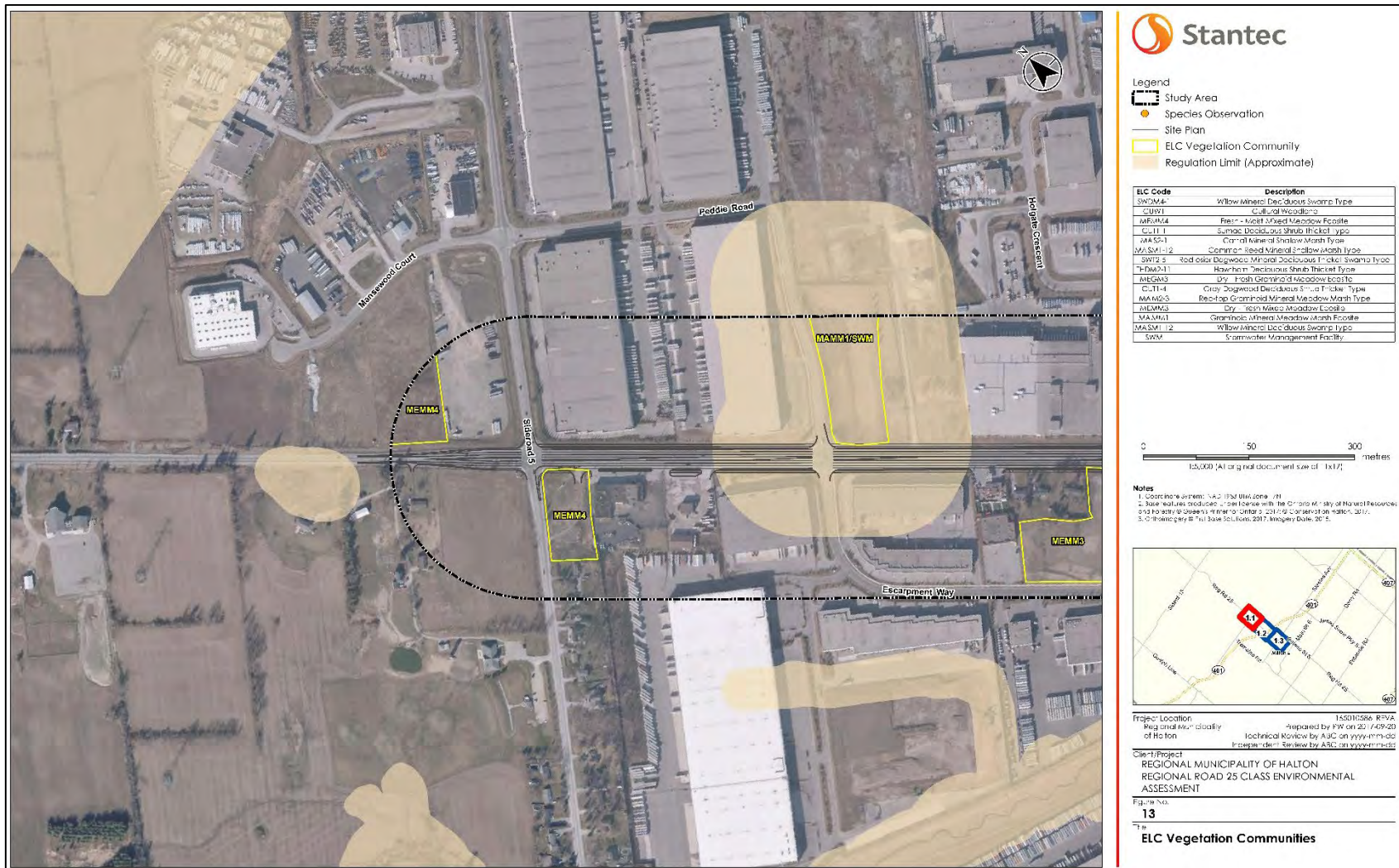


Figure 13: Existing ELC Vegetation Communities



# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

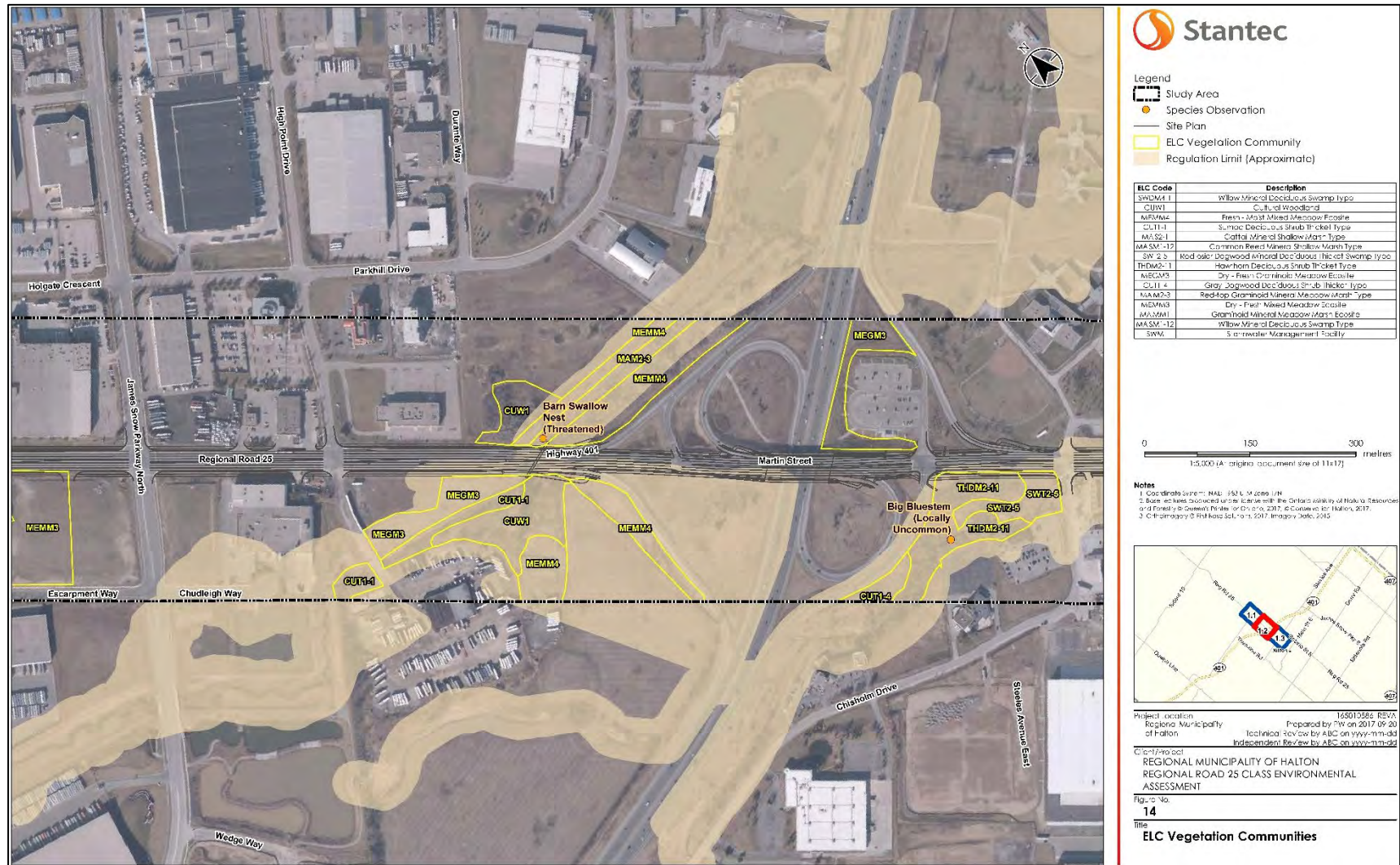


Figure 14: Existing ELC Vegetation Communities Cont'd



# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

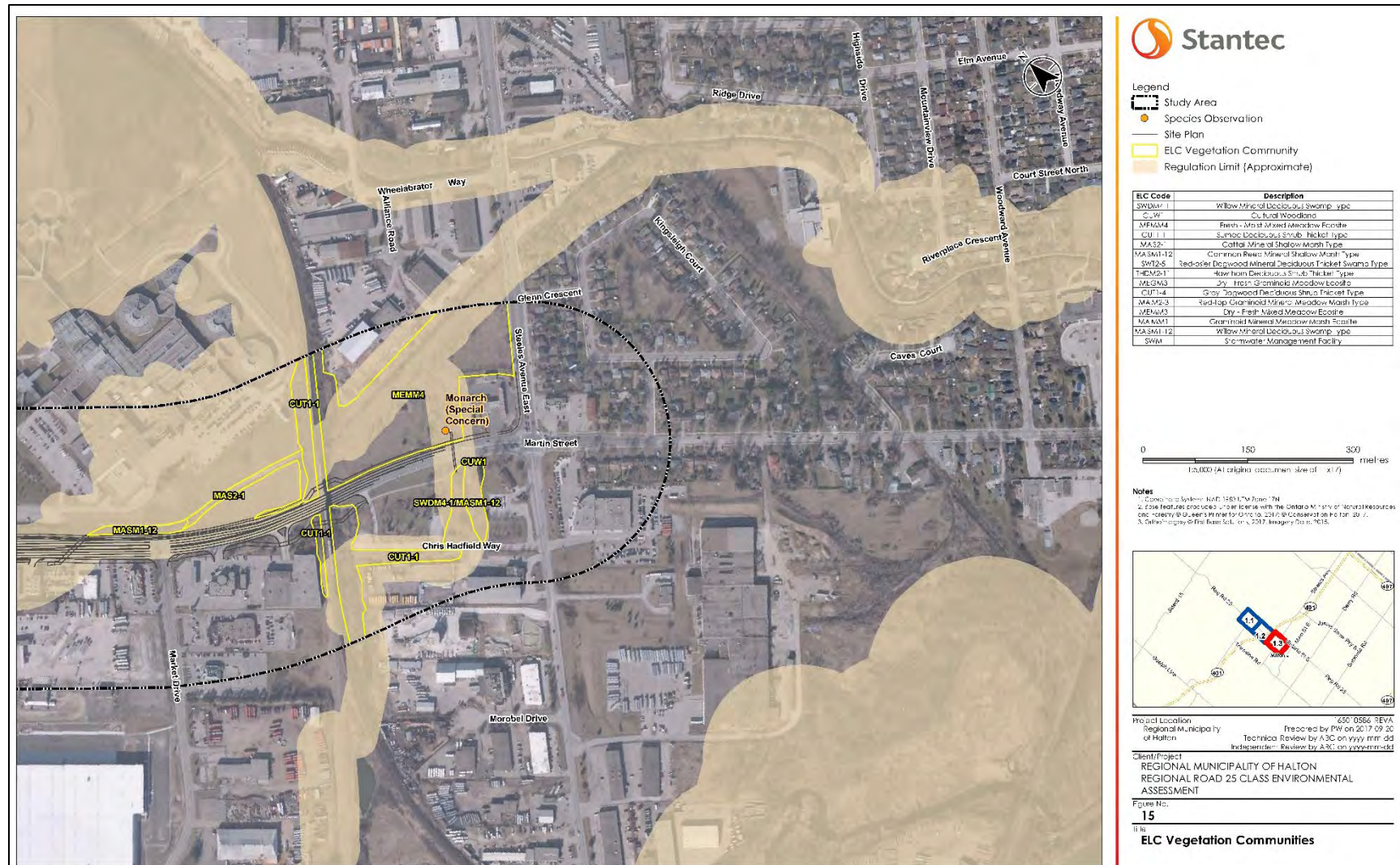


Figure 15: Existing ELC Vegetation Communities Cont'd



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

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## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

Of the above noted community types, one is considered locally uncommon: the Hawthorne Deciduous Shrub Thicket Type (THDM2-11) contained in a population of Big Bluestem, that was found south of Highway 401 on the west side of Regional Road 25. No significant valleylands or woodlands were present within the study area.

A vascular plant species checklist is provided in Appendix H of the Natural Environment Report. A total of 76 species were recorded within the study area during field surveys, 6 of which could not be identified to Genus due to an absence of identifying characters. Of the identified species, 37 (53%) are non-native.

Of the native species for which information is available, Co-efficient of Conservatism (C)<sup>2</sup> values range from 0 to 8, with the majority being 0 to 6. The majority of species identified have S-ranks<sup>3</sup> of S5 (Secure), while 3 species have a rank of S4 (Apparently Secure). One species, Honey Locust (*Gleditsia triacanthos*) with an S-rank of S2 (Imperiled; often fewer than 20 occurrences) was observed within the study area. One vascular plant species, Big Bluestem (*Andropogon gerardii*), considered locally uncommon in Halton Region, was observed during field surveys within the Hawthorn Deciduous Shrub Thicket Type (THDM2-11).

### 3.3.7 Wildlife Habitat

The study area is in a heavily urbanized landscape with many industrial developments. There was little natural habitat present. The isolated pockets of cultural woodland, thickets, meadows, and marsh habitat may provide habitat for wildlife.

### 3.3.8 Significant Natural Heritage Features

#### 3.3.8.1 Wetlands

There were no Provincially Significant or unevaluated wetlands identified in the study area according to LIO mapping (MNR 2017b).

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<sup>2</sup> Value of 0 to 10 based on plants degree of fidelity to a range of synecological parameters: (0-3) Taxa found in a variety of plant communities; (4-6) Taxa typically associated with a specific plant community but tolerate moderate disturbance; (7-8) Taxa associated with a plant community in an advanced successional stage that has undergone minor disturbance; (9-10) Taxa with a high fidelity to a narrow range of synecological parameters (Oldham et al., 1995)

<sup>3</sup> Refer to plant list legend in Appendix E of the EIS for an explanation of S-Ranks.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **3.3.8.2 Endangered and Threatened Species**

A habitat assessment was completed for species that were identified in the background review as potentially present in the study area. Barn Swallow was the only bird SAR confirmed nesting in the study area at culvert C4. The three other culverts may also be suitable for nesting Barn Swallow, but none were observed. Bat SAR may also be present in the study area but there was no maternity roost habitat present. Habitat for species of special concern and other rare species is discussed below.

### **3.3.8.3 Wildlife Observations**

There was a low abundance and diversity of wildlife observations in this urbanized setting. Some common insect (e.g., Summer Azure, Cabbage White), bird (e.g., Red-winged Blackbird), mammal (e.g., Muskrat) and amphibian (e.g., Green Frog) species were incidentally observed during vegetation surveys. All species that were observed had ranks of secure (S5) or apparently secure (S4) within Ontario.

### **3.3.8.4 Migratory Bird Nests**

One Barn Swallow nest was present in culvert C4. While no other bird nests were observed, the natural vegetation in the study area likely supports nesting migratory birds.

## **3.3.9 Significant Wildlife Habitat**

The presence of Significant Wildlife Habitat (SWH) in the study area was assessed based on Stantec's background review and results of field surveys. SWH was classified as either 'candidate' or 'confirmed'. Features that were identified as candidate, may require additional targeted surveys. Consideration for carrying out additional surveys to confirm presence of SWH may be undertaken at the detailed design phase when project footprints are known. Features that were identified as confirmed SWH were those in which there was sufficient information available to confirm that that SWH category criteria were met.

There are four general types of significant wildlife habitat: seasonal concentration areas, rare or specialized habitat, habitat for species of conservation concern, and wildlife movement corridors. These are discussed in more detail below. MNRF's Significant Wildlife Habitat Technical Guide (OMNR 2000) and SWH Criteria Schedules for Ecoregion 7E (MNRF 2015) was applied to identify candidate and confirmed Significant Wildlife Habitat using ELC, habitat and wildlife observations.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **3.3.9.1 Seasonal Concentration Areas**

Seasonal concentration areas are those sites where large numbers of a species gather together at one time of the year, or where several species congregate. Examples include bird migratory stopover areas, raptor wintering areas, bat hibernacula or maternity colonies, reptile overwintering areas, colonially-nesting bird breeding habitat, and deer yarding areas. Only the best examples of these concentration areas are usually designated as significant wildlife habitat. Areas that support a species at risk, or if a large proportion of the population may be lost if the habitat is destroyed, are examples of seasonal concentration areas which should be designated as significant.

No candidate significant wildlife habitat was identified in the study area.

### **3.3.9.2 Rare or Specialized Habitat**

Rare or specialized habitats are two separate components. Rare habitats are those with vegetation communities that are considered rare in the province. It is assumed that these habitats are at risk and that they are also likely to support additional wildlife species that are considered significant. Specialized habitats are microhabitats that are critical to some wildlife species.

No significant rare habitats were identified in the study area. One type of candidate specialized wildlife habitat was identified (amphibian breeding habitat – wetland). Candidate amphibian breeding habitat (wetlands) was identified in the red-osier dogwood swamp thicket (SWT2-5), which was present along a riparian corridor, southwest of the interchange with Highway 401.

### **3.3.9.3 Species at Risk and Species of Conservation Concern**

Species at Risk (SAR) are defined as species listed as Threatened or Endangered provincially by the Committee on the Status of Species at Risk in Ontario (COSSARO) and subsequently are afforded protection under the Endangered Species Act (ESA). A species designated as Special Concern provincially, assigned a conservation status (S-Rank) of S1 to S3 or SH<sup>4</sup>, or designated as Special Concern, Threatened, or Endangered by the Committee for the Status of Endangered Wildlife in Canada (COSEWIC) or under the federal Species at Risk Act, are considered Species of Conservation Concern (SCC).

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<sup>4</sup> S1 = critically imperiled; S2 = imperiled; S3 – vulnerable; S4 – common and apparently secure; SH = no verified observations made in recent years but suitable habitat for these species is believed to occur (refer to <https://www.ontario.ca/page/forest-associated-species-conservation-concern> for more detail)



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

A habitat assessment was completed for species that were identified in the background review as potentially present in the study area. Barn Swallow was the only bird species at risk confirmed nesting in the study area at culvert C4. Though no other bird nests were observed, it is likely that the study area provides suitable habitat for nesting migratory birds.

Suitable habitat for Monarch was found in the southern section of the study area near culvert C1. A population of Big Bluestem, a locally uncommon plant species was found within the study area.

In addition, both the MNRF and CH indicated the watercourses within the study area are regulated as occupied habitat for Redside Dace, a species listed as Endangered under the SARA and ESA.

### **3.3.9.4 Wildlife Movement Corridors**

No natural wildlife movement corridors were observed in the study area. Migration corridors are areas that are traditionally used by wildlife to move from one habitat to another. This is usually in response to different seasonal habitat requirements. There are two types of animal movement corridors in Ecoregion 7E, amphibian and deer movement corridors. As per the Ecoregion Criterion Schedule, movement corridors must connect candidate or confirmed significant wildlife habitat features, including amphibian wetland breeding habitat, deer yarding, or deer winter congregation areas.

Although it does not qualify as SWH, a dry ledge is present in culvert C1 and it was noted that raccoons and possibly other small mammals are using the culvert as a travel corridor.

### **3.3.9.5 Significant Woodlands**

There were no significant woodlands present in the study area (as defined by the Natural Heritage Reference Manual for Natural Heritage Policies of the PPS; MNR 2010).

### **3.3.9.6 Significant Valleylands**

There were no significant valleylands present in the study area.

### **3.3.10 Tree Inventory**

A tree inventory and arborist assessment were completed along Regional Road 25. Trees along the limits of the ROW were assessed for species, diameter at breast height (DBH) and general condition. A total of 322 trees were included within the inventory. Trees species identified at the time of the assessment include:



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

- Red Maple
- Colorado Spruce
- Norway Maple
- Juniper/Red Cedar
- White Spruce
- Eastern White Cedar
- Golden Weeping Willow
- Honey Locust
- Little Leaf Linden
- Scots Pine
- Crab Apple
- Austrian Pine
- Serviceberry
- Red Oak

### 3.3.11 Fish and Fish Habitat

Field investigations of fish and fish habitat features within the study area were conducted on September 8, 2017 by Stantec ecologists. The aquatic habitat assessment was carried out on three watercourses within the study area, including an unnamed tributary to Sixteen Mile Creek, Tributary N1-A and Tributary N2-B, as shown on **Figure 16**. A summary of findings from the assessment carried out within the study area is provided in **Appendix C**.



Figure 16: Aquatic Habitat



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

Habitat within the study area is suitable to support many of the species that are known to inhabit the Sixteen Mile Creek West Branch (Holm et al 2009; Scott and Crossman 1998). Sensitive or limiting habitats were not observed within the study area. The watercourses provide fish habitat for a fish community comprised of tolerant warmwater species. The unnamed Sixteen Mile Creek tributary (culvert C1), Tributary N1-A (culverts C2 and C3) and Tributary N2-B (C4 culvert) provide suitable habitat to support Redside Dace, including slow flowing pools and overhanging vegetation. Redside Dace is listed as Endangered provincially and Special Concern-Schedule 1 federally. As such, this species is provided protection under the ESA.

### **3.3.11.1 Unnamed Tributary to Sixteen Mile Creek (Culvert C1)**

The unnamed tributary to Sixteen Mile Creek associated with culvert C1 originates west of Regional Road 25 in a combination of roadside ditches and online ponds. It flows through a marsh dominated by Common Reed (*Phragmites australis subsp. australis*) prior to entering the concrete box culvert at Regional Road 25. Downstream of Regional Road 25 the tributary flows east in a straightened, trapezoidal channel and through a 20 m corrugated steel pipe culvert prior to the confluence with the Tributary N1-A approximately 110 m east of Regional Road 25.

Upstream of Regional Road 25 within the marsh area, the tributary lacks a well-defined channel and the bottom substrate is 80% silt and 20% detritus. Downstream of Regional Road 25 within the trapezoidal channel, habitat consists of riffles and pools with substrates of cobble (30%), gravel (10%), clay (20%), and detritus (40%). At the time of the field investigations, the wetted width of the defined channel downstream of Regional Road 25 ranged from 0.8 m to 1.5 m and average depth was 0.1 m to 0.2 m. The channel contained dense cattails and Common Reed on both sides of Regional Road 25. At the time of the field investigation, there was an accumulation of vegetation at the culvert inlet that likely functions as a barrier to fish movement during low flow conditions.

### **3.3.11.2 Tributary N1-A (Culverts C2 and C3)**

The Tributary N1-A originates northwest of the study area and generally flows in a southeasterly direction. Culverts C2 (Regional Road 25) and C3 (Chisholm Drive crossing) are located on this tributary.

Culvert C3 is the Chisholm Drive crossing of Tributary N1-A which is located approximately 80 m upstream of culvert C2. The tributary originates northwest of the study area and exhibits a natural meandering pattern with a riparian zone consisting of grasses and scattered trees as it approaches Regional Road 25. It then enters culvert C3 and parallels Regional Road 25 for approximately 80 m, crossing under two driveways before entering culvert C2. The exposed channel between culverts C2 and C3 was trapezoidal in shape with gabion basket lined banks. Habitat consisted of pools and riffles with a wetted width of 1.0 m to 2.0 m with a depth of 0.20 m to 0.30 m.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

Downstream of culvert C2, the tributary consisted of a concrete-lined square channel (approximately 4 m wide and 20 m long) providing run habitat. Downstream of the concrete-lined channel, the banks were vegetated with a combination of grasses and small shrubs that overhang the channel. The wetted width of the channel within this reach ranged from 0.5 m to 3 m with average depths from 0.10 m to 0.40 m. Habitat consisted of a combination of runs and riffles with scattered slow flowing pools. Substrate in the reach downstream of Regional Road 25 was dominated by silt (80%) with scattered cobble (10%) and gravel (10%) underlain by areas hardened with riprap and gabion. There were areas of cattails and *Phragmites* that formed small islands within the main flow area. The channel was surrounded by manicured grass that provided no shade to the watercourse.

### **3.3.11.3 Tributary N2-B (Culvert C4)**

Tributary N2-B originates northwest of the study area and flows in an easterly direction through a combination of rural and urbanized areas. Aquatic habitat near culvert C4 consists of mostly runs with dense cattails upstream of the culvert. Downstream of the culvert, habitat consists of a large pool followed by diffuse flow through a cattail marsh. Approximately 20 m downstream of culvert C4, the channel was recently realigned into a natural meandering pattern and consists of a combination of riffles and slow flowing pools. The wetted width of the channel ranged from 1.0 m to 1.5 m with average depths from 0.10 m to 0.40 m. Substrates consisted of silt (40%), cobble (30%), sand (10%) and gravel (10%). Riparian vegetation consisted of a combination of grasses and other herbaceous species overhanging the channel along with scattered trees and shrubs within the floodplain. A combination of cobble and riprap observed at the culvert C4 inlet may be functioning as a barrier to fish passage during low flow conditions.

## **3.4 Physiography and Soils**

The study area is located within the boundary area of South Slope and Peel Plain physiographical region in an area comprised of Drumlinized Till Plains and Bevelled Till Plains according to the "Physiography Map of South Central Portion of Southern Ontario" (Map 2226, Scale 1:253,440) prepared by the Ontario Department of Mines and Northern Affairs, and based on database maintained by Ontario Geological Survey ("OGS").

Three (3) tributaries of the Sixteen Mile Creek crossing the east portion of the study area flows southeasterly towards the Sixteen Mile Creek. The tributaries join the Sixteen Mile Creek approximately 1.2 km southeast of the study area.



### **3.5 Surface Drainage and Watershed Characteristics**

The study area lies within the Sixteen Mile Creek watershed and contains tributaries and channels of Sixteen Mile Creek, all of which drain into Lake Ontario, and fall under the authority of CH. CH regulates the erosion hazards, flooding hazards and associated allowance within 15 m of the watercourse features. More specifically, the study area includes the Tributaries N1-A and N2-B, both of which form a portion of the west branch of the Sixteen Mile Creek. Tributary N1-A has a total drainage area of 59.4 hectares (ha), located to the west of Regional Road 25 and north of Steeles Avenue. Tributary N2-B has a total drainage area of 501.6 ha, located to the west of Regional Road 25 and north of Highway 401.

Lands on either side of Regional Road 25 primarily include commercial and industrial developments. There are two stormwater management (SWM) ponds which are located within the Tributary N2-B subwatershed and provide quantity and quality control near the study area. SWM pond S34 is located near the southwest intersection of Regional Road 25 and James Snow Parkway. High Point Pond (S36) is located near the northeast intersection of Highway 401 and Regional Road 25. Flows travel southerly to Tributary N1-A and easterly to Tributary N2-B. The storm sewer system north of Regional Road 25 drains into Tributary N2-B, which crosses Regional Road 25 from west to east and discharges into High Point Pond (S36). Runoff from the urban section of Regional Road 25, south of Highway 401 directly discharges into Tributary N1-A. The existing drainage conditions mosaics are provided in **Figure 17** and **Figure 18**.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

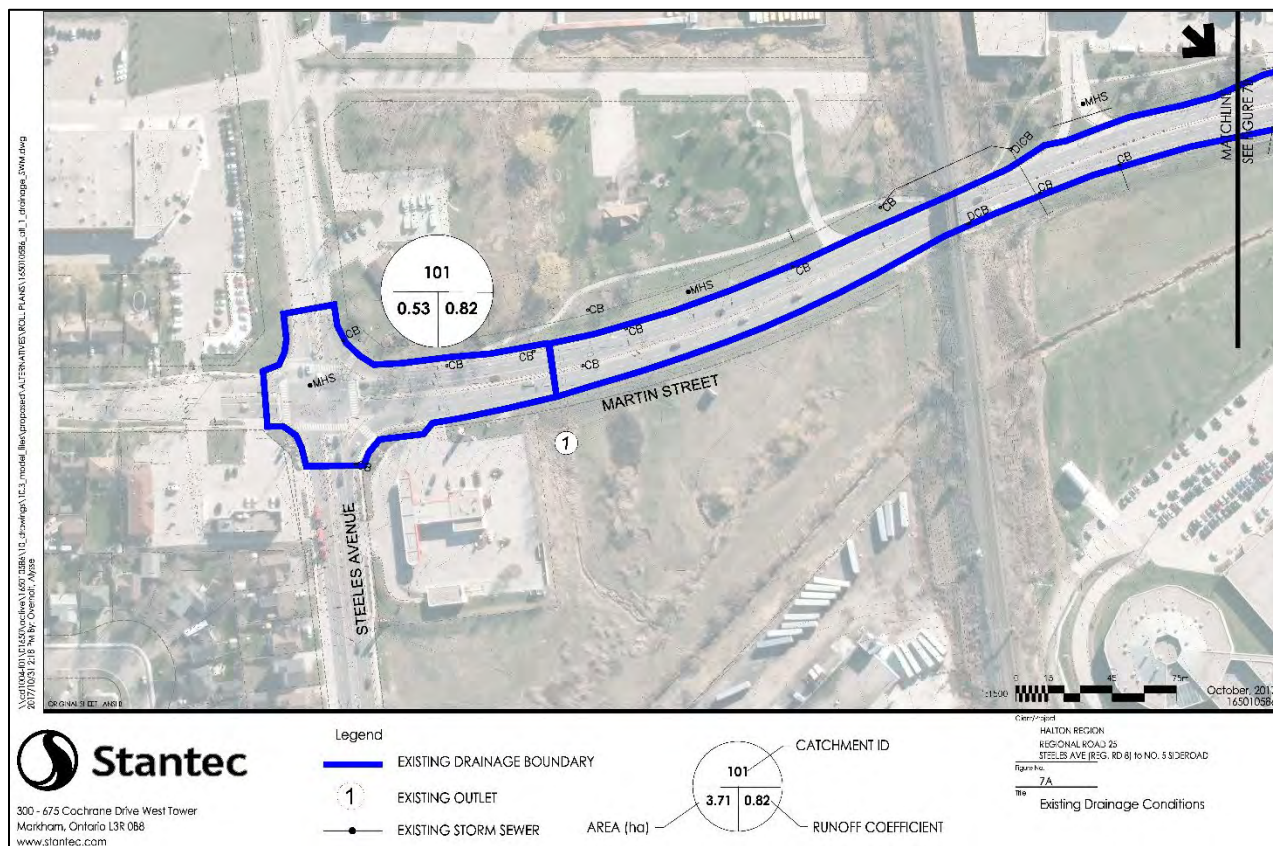
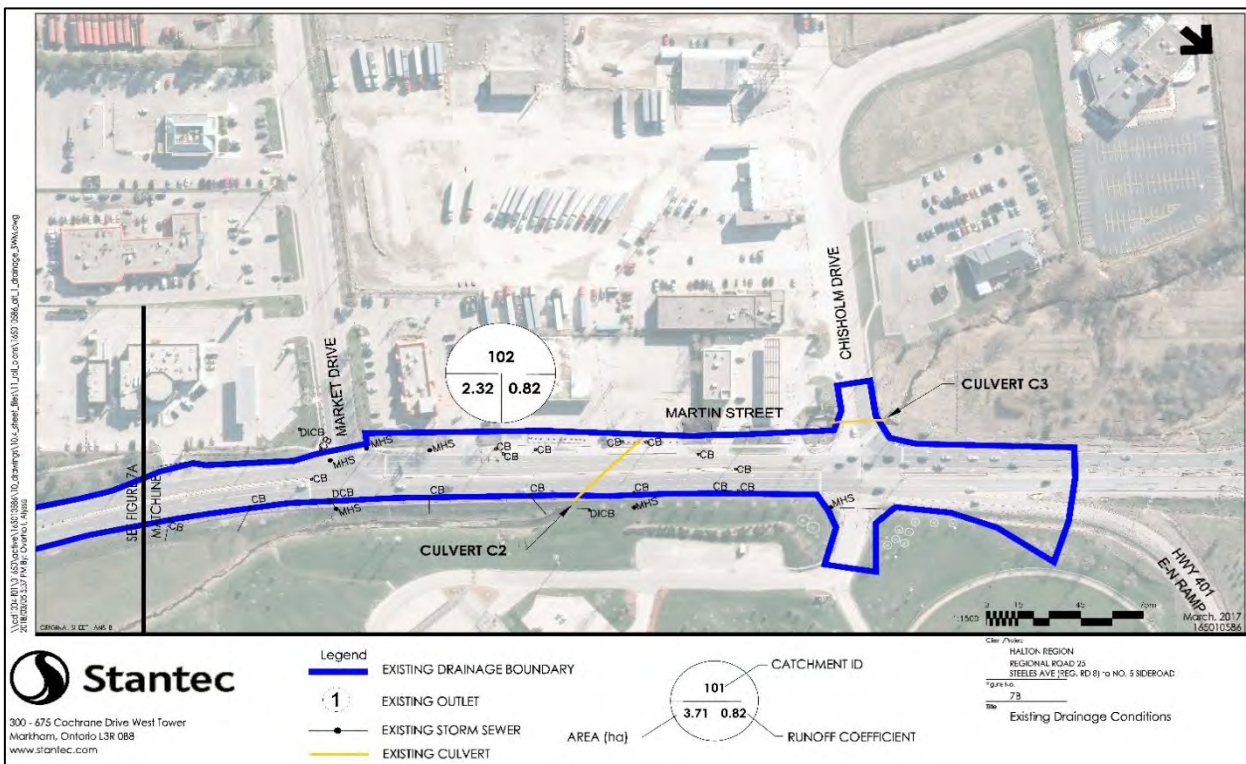


Figure 17: Existing Drainage Conditions (Steeles Avenue to South of Market Drive)



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills



**Figure 18: Existing Drainage Conditions (South of Market Drive to Highway 401)**



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### 3.5.1 Watercourse Crossings and Bridges

The existing roadway within the study area includes five (5) crossings over tributaries to Sixteen Mile Creek. Locations and details of these crossings are listed below and illustrated on **Figure 17** and **Figure 18**.

- **Culvert C1:** Located approximately 80m north of Steeles Avenue, it consists of a 2130 x 1220mm concrete box culvert. This culvert conveys the flow of an unidentified branch of Tributary N2-B across Regional Road 25 in a west-east direction in addition to receiving the runoff from a 59ha drainage area occupied by industrial and commercial developments. A Visual OTTHYMO (VO2) model was used to calculate the Regional storm and 100-year peak flow into the culvert. The conducted analysis confirmed the culvert along with SWM facilities have sufficient capacity to control peak flows. No HEC-RAS model was received for this tributary; accordingly, Culvert Master was used to evaluate the culvert.
- **Culvert C2:** Located under Regional Road 25 and the parking lot for a car dealership, approximately 150m south of Chisholm Drive and identified as Culvert C21 and Culvert C22. C21 is a rectangular reinforced concrete culvert (4300mm x 2540mm) and C22 is a Structural Plate Corrugated Steel Pipe Arch (SPCSPA) culvert (3800mm x 2500mm) which adjoins to C21 at the upstream side. The culvert was built in 1980. This culvert conveys the flow of Tributary N2-B across Regional Road 25 in a west-east direction. The concrete portion of the culvert is in good condition and requires minor patch repairs. The SPCSPA invert is buckled and corroded. The creek infiltrates under the SPCSPA and reappears to enter the downstream concrete portion of the culvert. The SPCSPA cut-off wall is exposed and the inlet creek bed is below the invert. The Region to complete minor rehabilitation work to the deteriorated concrete by lining the invert. Included in the Regional Road 25 improvements, the Region will replace the inlet of the SPCSPA with a precast concrete structure; inlet retaining walls; safety improvements; and, creek rehabilitation. A HEC-RAS2.1 model was received for this tributary from CH.
- **Culvert C3:** Located near the intersection of Regional Road 25 and Chisholm Drive, the culvert conveys the flow of Tributary N1-A across Chisholm Drive.
- **Culvert C4:** Located north of Highway 401, approximately 70m north of the westbound off-ramp, C4 consists of a reinforced concrete box culvert (2997mm x 2182mm x 59.91m) which conveys the flow of Tributary N1-A across Regional Road 25 in a west-east direction.
- **CN Rail Bridge BR01:** The CN Rail crosses over Regional Road 25 via a 15m span bridge, which is located about 300m north of Steeles Avenue.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

- CN Rail Culvert BR02: This is a 2500mm diameter culvert, located about 60m east of Regional Road 25 and north of Steeles Avenue and conveys the flow of Tributary N1-A across the CN Rail track.

Stantec completed an updated hydraulic assessment for the existing culverts using the HEC-2/HEC-RAS models from CH, to simulate the anticipated impacts that the proposed roadway improvements will have on the tributaries to Sixteen Mile Creek and the associated upstream/downstream flood conveyance infrastructure. Particular attention was given to potential grading implications along the east and west sides of Regional Road 25 (from Chisholm Drive to Market Drive), which lies immediately adjacent to the tributary.

**Table 3** below provides summary of the relevant HEC-RAS models and the related Crossings/Culverts.

**Table 3: HEC-RAS Models and Crossings**

| HEC-RAS Model | Version | Culverts                    | Tributary |
|---------------|---------|-----------------------------|-----------|
| FOAK11        | 5.3     | Culverts C2, C3 and CN BR02 | N1-A      |
| RR25 Channel  | 5.3     | Culvert C4                  | N2-B      |
| Culvert C1    | 5.3     | Culvert C1                  | N1-A      |

Model FOAK11 results illustrate that the CN Rail culvert BR02, located east of Regional Road 25 and north of Steeles Avenue, has sufficient capacity to convey the 100-year storm event. The results also show that, during the Regional storm event, a large area upstream of the CN Rail culvert will be flooded, including Regional Road 25 and Chisholm Drive.

A comparison of flows obtained for each storm event condition at each culvert within the study area is provide in **Table 4**.

**Table 4: Existing Conditions Peak Flow Comparison**

| Culvert ID | Span Size (mm) | Length (m) | Type (material) | Drainage Area (ha) | Events   | Flow (m <sup>3</sup> /s) | Road Low Point Elevation |
|------------|----------------|------------|-----------------|--------------------|----------|--------------------------|--------------------------|
| C1         | 2100 x 1200    | 50         | concrete box    | 58.9               | 5-Year   | 1.65                     | 206.00                   |
|            |                |            |                 |                    | 50-Year  | 3.61                     |                          |
|            |                |            |                 |                    | 100-Year | 4.25                     |                          |
|            |                |            |                 |                    | Regional | 6.86                     |                          |



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

| Culvert ID | Span Size (mm) | Length (m) | Type (material) | Drainage Area (ha) | Events   | Flow (m³/s) | Road Low Point Elevation |
|------------|----------------|------------|-----------------|--------------------|----------|-------------|--------------------------|
| C2         | 4300 x 2500    | 63         | concrete box    | 362.9              | 10-Year  | 2.91        | 206.75                   |
|            |                |            |                 |                    | 50-Year  | 4.24        |                          |
|            |                |            |                 |                    | 100-Year | 4.74        |                          |
|            |                |            |                 |                    | Regional | 30.32       |                          |
| C3         | 3700 x 800     | 24         | concrete box    | 362.9              | 10-Year  | 2.91        | 206.80                   |
|            |                |            |                 |                    | 50-Year  | 4.24        |                          |
|            |                |            |                 |                    | 100-Year | 4.74        |                          |
|            |                |            |                 |                    | Regional | 30.32       |                          |
| C4         | 3000 x 2400    | 60         | concrete box    | 658.0              | 10-Year  | 5.2         | 212.05                   |
|            |                |            |                 |                    | 50-Year  | 7.27        |                          |
|            |                |            |                 |                    | 100-Year | 8.19        |                          |
|            |                |            |                 |                    | Regional | 36.29       |                          |

The summary of hydrological parameters, analyses and modeling are provided in **Appendix F** (Stormwater Management Report).

### 3.5.2 Source Water Protection

Protecting municipal sources of drinking water from becoming contaminated or overuse will ensure a sufficient supply of clean, safe drinking water. The *Clean Water Act* 2006 (CWA) is intended to protect existing and future sources of municipal drinking water as part of the Province's overall commitment to protecting human health and the environment. The CWA sets out a framework for source protection planning including the designation of Source Protection Areas and the establishment of Source Protection Committees, who are responsible for the development Source Protection Plans (SPPs) in their respective areas. SPPs contain policies to protect municipal drinking water sources from provincially prescribed activities that may negatively impact the quality and quantity of drinking water sources within the following Vulnerable Areas: Wellhead Protection Areas, Intake Protection Zones, Significant Groundwater Recharge Areas, and Highly Vulnerable Aquifers. Applicable SPPs illustrate the location of Vulnerable Areas.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

The Regional Road 25 MCEA study area is located within the Halton-Hamilton Source Protection Region and therefore the applicable SPP in the study area is the Halton-Hamilton Source Protection Plan ([www.protectingwater.ca](http://www.protectingwater.ca)). Review of the vulnerable areas mapping and related policies in the Halton-Hamilton SPP indicates that the Regional Road 25 MCEA study area is partly located within a Highly Vulnerable Aquifer, however, there are no SPP policies that apply to the proposed project-related activities. This was also confirmed through consultation with Halton Region Source Protection staff.

### **3.6 Cultural Environment**

Stantec was retained by the Region to conduct a cultural heritage assessment to identify built heritage and cultural heritage landscapes present within and adjacent to the study area. A cultural heritage resource is used to describe cultural heritage landscapes and built heritage resources. A cultural landscape is perceived as a collection of individual built heritage features and other related features that together form farm complexes, roadscares and nucleated settlements. Built heritage features are typically individual buildings or structures that may be associated with a variety of human activities, such as historical settlement and patterns of architectural development.

#### **3.6.1 Built Heritage Resources and Cultural Heritage Landscapes**

The requirement to consider cultural heritage in a MCEA is discussed in the EA document and the Provincial Policy Statement (PPS). Identifying cultural heritage features is particularly important when describing existing and future conditions, developing alternative solutions/designs, and determining the preferred design.

The desktop and site review of the study area was completed by Stantec between April 2017 and August 2017. A land use history was completed to provide a cultural context for the study area and to provide a background upon which to base evaluations. Potential heritage resources were identified through consultation and a windshield survey, inventoried, and evaluated according to Ontario Regulation (O. Reg.) 9/06, the Criteria for Determining Cultural Heritage Value or Interest (CHVI). Where CHVI was identified, the resource was mapped, and recommendations were made for further study.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

Listings of provincially and locally designated properties, heritage districts and easements are maintained by the Ontario Heritage Trust (OHT), Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) and the Town of Milton within the Town of Milton Heritage List (2016). Consultation with these interested agencies and municipalities resulted in the identification of one protected heritage property within or adjacent to the study area. The property (1 Chris Hadfield Way) is listed as a heritage resource on the Town of Milton's Heritage Inventory but is not designated under the *Ontario Heritage Act* (OHA).

During the windshield survey, a total of 13 properties were identified as potential heritage properties. In each case, an evaluation of the CHVI of the property was undertaken according to O. Reg. 9/06. Each potential heritage resource was considered both as an individual structure and as a potential component of a cultural heritage landscape. Following evaluation, two cultural heritage resources were identified within and adjacent to the study area. The first, the original CN Rail train station located at 1 Chris Hadfield Way (CHR 1) was identified as a heritage resource due to its high degree of craftsmanship, association with historical development being built sometime between the late 19<sup>th</sup> and early 20<sup>th</sup> century, and its contribution in understanding the importance of Rail transportation pre-urbanization. Maplehurst Correctional Complex and Vanier Centre for Women located at 661 Martin Street (CHR 2) were identified as the second heritage resource. As one of the first of its kind in addition to its being one of the first non-agricultural infrastructure developments, Maplehurst Correctional Complex was built around the concept of rehabilitation with a focus on vocational and academic training in hopes of integrating inmates back into society as productive members.

Based on the findings of the Cultural Heritage Assessment Report, the following recommendations were identified:

1. Two cultural heritage resources were identified in this Cultural Heritage Assessment Report, including the train station at 1 Chris Hadfield Way (CHR 1) and the Maplehurst Correctional Complex and Vanier Centre for Women located at 661 Martin Street (CHR 2). These cultural heritage resources should be avoided during the proposed construction of road improvements within the study area.
2. An assessment for the preferred alternative should be carried out to identify impact to heritage resources within and adjacent to the study area.
3. To assist in the retention of historic information, copies of the Cultural Heritage Assessment Report should be deposited with a local repository of historical material.

The findings of the Cultural Heritage Assessment Report were considered through the development and evaluation of alternative solutions, and measures will be identified to prevent and/or mitigate identified impacts to cultural heritage resources.

A copy of the Cultural Heritage Assessment is included in **Appendix D**.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### 3.6.2 Archaeological Assessment

A Stage 1 Archaeological Assessment was completed in accordance with the MTCS 2011 *Standards and Guidelines for Consultant Archaeologists*. The intent of the Stage 1 assessment is to identify areas of archaeological potential within the study area based on historical research and visual site inspections.

The property inspection conducted on August 9, 2017 for the Stage 1 Archaeological Assessment found that while a majority of the study area has been subject to extensive and deep land alterations which have removed any archaeological potential, other portions of the study area still exhibit moderate to high potential for the identification and recovery of archaeological resources. Three areas were found to still retain archaeological potential within the study area, including:

- West corner of the intersection of Chisholm Drive and Martin Street, immediately southeast of the Highway 401 off ramp;
- Northeast side of Martin Street straddling the CN bridge overpass; and
- Southwest side of Martin Street at Chris Hadfield Park.

The Stage 1 Archaeological Assessment was submitted to the MTCS for review and entry into the Ontario Public Register of Archaeological Reports. MTCS provided confirmation on April 3, 2018 that the report is consistent with the Ministry's 2011 Standards and Guidelines for Consultant Archaeologists and the terms and conditions for archaeological licences.

A copy of the Stage 1 Archaeological Assessment is included in **Appendix E**.

### 3.7 Major Utilities

There are a number of existing utilities along the Regional Road 25 corridor including:

- Municipal water and sanitary sewers;
- Milton Hydro – overhead power lines from Steeles Avenue to 5 Side Road;
- Bell Canada – buried cables within the Regional Road 25 right of way;
- Union Gas – buried gas distribution lines within the Regional Road 25 right of way and;
- Rogers Cable – overhead wires mounted on hydro poles.



### **3.8 Other Infrastructure**

CN Rail's existing grade separation is located at Mile 34.31 within the Halton Subdivision, approximately 0.30km north of Steeles Avenue. The Halton Subdivision is part of CN Rail's main north/south corridor linking eastern Canada to the United States. The Halton Subdivision is the westerly artery to the largest rail yard on CN Rail's network, as well as one of the railway's busiest lines.

The existing CN Rail structure consists of a steel ballast deck on a single span resting on concrete abutments. The structure was built in 1963 with a major rehabilitation in 1982. Since that time, there has been minor repair work, including in 2016 which included patch repair of abutment and retaining walls, replacement of missing rivets, and touch-up of steel coating.

There is an existing culvert, located approximately 60m east of Regional Road 25 under the CN tracks, which consists of a box concrete culvert (2.0m x 2.7m). Currently, under a Regional storm event this culvert has insufficient capacity, which results in the over-topping of Regional Road 25.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

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## **4.0 Alternative Solutions**

As part of Phase 2 of the Municipal Class EA process, reasonable and feasible solutions to the problems and opportunities are identified and evaluated based on their ability to resolve the issues, and their impacts to the socio-economic, natural, cultural, and technical environments.

### **4.1 Description of Alternative Solutions**

The following alternative solutions were identified at the planning level to address the problems and opportunities identified in **Chapter 2.0**:

- “Do Nothing”
- Limit Development
- Transportation Demand Management (TDM)
- Improve Transit Infrastructure/ Other Modes of Transportation
- Intersection and / or Operational Improvements
- Improvements to Other Roadways Beyond Planned Program
- Improvements to Regional Road 25

A brief description of each of the alternatives is provided below for improvements to Regional Road 25 from Steeles Avenue to 5 Side Road.

#### **4.1.1 Do Nothing**

With the Do Nothing alternative, the existing road network will be maintained as status quo. Only planned infrastructure improvements will be in place, for example, extension of James Snow Parkway to 5 Side Road, Tremaine Road realignment and new interchange at Highway 401.

#### **4.1.2 Limit Development**

Under this scenario, there would be more limits placed on land use development. Projections of future travel demands are dependent on the approval of future urban areas (Halton Region Official Plan, in accordance with *Places to Grow*). Limiting development would reduce future travel demands and require fewer infrastructure improvements.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **4.1.3 Transportation Demand Management**

Transportation Demand Management (TDM) includes the implementation of strategies and policies to reduce the number of vehicles particularly during peak times by encouraging alternative modes of transportation or distributing demands outside of peak travel times. Examples of TDM include carpooling and staggered work hours. As part of Halton Region's overall transportation strategy, TDM measures may help to manage the rate of growth in travel demand when considered in tandem with other alternatives.

### **4.1.4 Improved Transit Infrastructure / Other Modes of Transportation**

This alternative would involve upgrades to transit services and encourage active transportation through the provision of dedicated cycling and pedestrian facilities throughout the corridor. While these measures are part of the Region's overall transportation strategy, on their own, they do not address the need for additional capacity on Regional Road 25.

### **4.1.5 Intersection and / or Operational Improvements**

This alternative would involve the addition of traffic signals, auxiliary lanes (e.g., right turn and left turn lanes), additional lanes through the intersections, and consideration of roundabouts. Operational improvements include modifications to signal timing plans, traffic signal interconnect systems, and road user information systems.

### **4.1.6 Improvements to Other Roadways Beyond Planned Program**

Improvements are currently planned for a number of roadways in the vicinity of the Regional Road 25 study area, including the James Snow Parkway, Steeles Avenue, and Tremaine Road. Under this scenario, capacity improvements would take place on neighbouring roadways.

### **4.1.7 Improvements to Regional Road 25**

Improvements to the Regional Road 25 corridor to address future corridor requirements would involve widening from 4 to 6 traffic lanes, and provision for active transportation facilities.

## **4.2 Analysis and Evaluation of Alternative Solutions**

The alternative solutions were assessed in terms of how well they would address the problems and opportunities. The Assessment of Alternative Solutions (**Table 5**) summarizes the analysis and evaluations of alternative solutions under factor groups such as socio-economic, cultural, and natural environments, as well as transportation and costs.



Table 5: Assessment of Alternative Solutions

| ALTERNATIVE SOLUTIONS                                                                                      |                                                                                                                                                     |                                                                                                                                                                                        |                                                                                                                                                                                     |                                                                                                                                                                                                    |                                                                                                                                                          |                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Factors                                                                                                    | Do Nothing                                                                                                                                          | Limit Development                                                                                                                                                                      | Travel Demand Management Measures                                                                                                                                                   | Improved Transit Infrastructure / Other Modes of Transportation                                                                                                                                    | Intersection and / or Operational Improvements                                                                                                           | Improvements to Other Roadways Beyond Planned Program                                                                                                                                                                                                                | Improvements to Regional Road 25                                                                                                                                                                                                                                                       |
| Socio-Economic Environment                                                                                 |                                                                                                                                                     |                                                                                                                                                                                        |                                                                                                                                                                                     |                                                                                                                                                                                                    |                                                                                                                                                          |                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                        |
| Property Effects, Existing Land Use, Community Effects                                                     | No impact to adjacent properties and existing land use.                                                                                             | No impact to adjacent properties and existing land use.                                                                                                                                | No impact to adjacent properties and existing land use.                                                                                                                             | Potential impact due to the implementation of active transportation and transit related improvements (e.g., bus bays, transit stops, intersection reconstruction, bike lanes, multi-use pathways). | Would likely have some property impact particularly for properties in close proximity to the intersections. Minimal impact to overall existing land use. | Improvements on other roadways have already been identified as part of the Region and local Transportation Master Plans. Impact to existing properties would be determined based on respective MCEA Studies. Potential impact to access along the improved roadways. | Property impacts generally along the frontage of properties adjacent to the Regional Road 25 corridor. Some existing accesses on Regional Road 25 would become right-in/right-out only; however, U-turn movements are permitted at signalized intersections (unless otherwise posted). |
| Consistency with Planning Policies (Official Plan, Transportation Master Plan, Active Transportation Plan) | Not consistent with the Halton Region Transportation Master Plan. Not consistent with Region and Town's objective to promote Active Transportation. | Not consistent with the planned population and employment growth identified by Halton Region, Town of Milton, and Town of Halton Hills in conformance with the Provincial Growth Plan. | Consistent with Region's and Town's objectives to manage travel demand. However, this would not address the need to provide additional capacity with the Regional Road 25 corridor. | Consistent with the Region and Town's vision to increase modal share of transit and other transportation methods such as walking and cycling but would not address the need.                       | Would not fully address future transportation needs.                                                                                                     | Improvements on other roadways have already been identified as part of the Region and Town Transportation Master Plans; widening beyond planned program would be inconsistent with existing Regional planning.                                                       | Consistent with planning documents to provide additional capacity within the Regional Road 25 corridor.                                                                                                                                                                                |
| Impacts to Future Development                                                                              | No direct physical impacts but does not provide the improvements required to support future development.                                            | Not consistent with planned population and employment growth rates identified by the Region, Town of Halton Hills, and Town of Milton.                                                 | No direct physical impacts but does not provide the improvements required to support future development.                                                                            | No direct physical impacts but does not provide the improvements required to support future development.                                                                                           | No direct physical impacts but does not provide the improvements required to support future development.                                                 | Future developments will have to coordinate with Region and Town to integrate with proposed additional roadway improvements                                                                                                                                          | Future developments will coordinate with the Region and Town to integrate with proposed Regional Road 25 improvements.                                                                                                                                                                 |



Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

| ALTERNATIVE SOLUTIONS                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                         |                                                                                                                                                         |                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                    |                                                                                                                                                                                                                           |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Factors                                       | Do Nothing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Limit Development                                                                                                                                       | Travel Demand Management Measures                                                                                                                       | Improved Transit Infrastructure / Other Modes of Transportation                                                                                                                                                                                                     | Intersection and / or Operational Improvements                                                                                                                                                                                                           | Improvements to Other Roadways Beyond Planned Program                                                                                                                                                                              | Improvements to Regional Road 25                                                                                                                                                                                          |
|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                         |                                                                                                                                                         |                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                    | Widening Regional Road 25 will support future travel demands generated from future development.                                                                                                                           |
| Noise                                         | Some potential increase in noise level due to increased traffic near noise sensitive areas adjacent to Regional Road 25 when compared to existing conditions.                                                                                                                                                                                                                                                                                                                                                                            | Likely no significant impact to existing noise sensitive areas adjacent to Regional Road 25 (three residential properties at north end of study area).  | Likely no significant impact to existing noise sensitive areas adjacent to Regional Road 25.                                                            | Minimal change in noise level from improved modes of transportation or increased transit services.                                                                                                                                                                  | Minimal change in noise level.                                                                                                                                                                                                                           | Potential increase in noise level to noise sensitive areas adjacent to the roadways.                                                                                                                                               | Potential increase in noise level to noise sensitive areas adjacent to Regional Road 25.                                                                                                                                  |
| Cultural Environment                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                         |                                                                                                                                                         |                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                    |                                                                                                                                                                                                                           |
| Archaeological Resources                      | A Stage 1 Archaeological Assessment was completed. The majority of the study area is previously disturbed and does not require further assessment. Areas that have not been previously disturbed within the study area exhibit moderate to high potential for the identification and recovery of archaeological resources and require a Stage 2 Archaeological Assessment if the land is to be impacted. Details can be found in the Stage 1 Archaeological Assessment in <b>Appendix E</b> .                                            |                                                                                                                                                         |                                                                                                                                                         |                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                    |                                                                                                                                                                                                                           |
| Built Heritage Resources / Cultural Landscape | A built heritage and cultural heritage landscape review was carried out. Two cultural heritage resources were identified within or adjacent to the study area. A Train Station, located at 1 Chris Hadfield Way, and Civic Building (Maplehurst Correctional Complex and Vanier Centre for Women, located at 661 Martin Street). Additional information regarding the heritage features can be found in <b>Appendix D</b> Cultural Heritage Assessment Report. No anticipated impacts to the two identified cultural heritage resources. |                                                                                                                                                         |                                                                                                                                                         |                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                    |                                                                                                                                                                                                                           |
| Natural Environment                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                         |                                                                                                                                                         |                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                    |                                                                                                                                                                                                                           |
| Fisheries and Aquatic Habitat                 | No net loss of fish habitat however potential minor impacts related to habitat quality due to increased traffic and therefore road runoff contaminants.                                                                                                                                                                                                                                                                                                                                                                                  | No net loss of fish habitat however potential minor impacts related to habitat quality due to increased traffic and therefore road runoff contaminants. | No net loss of fish habitat however potential minor impacts related to habitat quality due to increased traffic and therefore road runoff contaminants. | Possible impacts to fish habitat as a result of transportation initiatives to accommodate active transportation and transit services. Impacts will depend on the nature of improvements relative to watercourse features. No net loss. of fish habitat anticipated. | Additional effects on fish habitat are possible in order to accommodate intersection and/or operational improvements. These impacts will depend on the nature of improvements relative to watercourse features. No net loss of fish habitat anticipated. | Potential fish habitat effects associated with culvert and road widening dependent on nature of undertaking and agency liaison. Increased contaminant levels may be generated with widened pavement surface and will be mitigated. | Potential fish habitat effects related to culvert work associated with the road widening dependent on the nature of undertaking and agency liaison. Effects can be reduced by applying environmental protection measures. |



Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

| ALTERNATIVE SOLUTIONS              |                                                                                                                                                    |                                                                                                                                                    |                                                                                                                                                    |                                                                                                                                                                                                           |                                                                                                                                                         |                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                    |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Factors                            | Do Nothing                                                                                                                                         | Limit Development                                                                                                                                  | Travel Demand Management Measures                                                                                                                  | Improved Transit Infrastructure / Other Modes of Transportation                                                                                                                                           | Intersection and / or Operational Improvements                                                                                                          | Improvements to Other Roadways Beyond Planned Program                                                                                                                                                                                                                              | Improvements to Regional Road 25                                                                                                                                                                                                                                                   |
| Surface Water Quality and Quantity | Potential minor impact on surface water quality through increased traffic demand and resulting incremental contaminant runoff from existing roads. | Potential minor impact on surface water quality through increased traffic demand and resulting incremental contaminant runoff from existing roads. | Potential minor impact on surface water quality through increased traffic demand and resulting incremental contaminant runoff from existing roads. | Effects on surface water resources may be experienced to accommodate transit initiatives and active transportation. These effects will depend on nature of improvements relative to watercourse features. | Potential impact on surface water as a result of increased traffic demand and resulting incremental increase in contaminant runoff from existing roads. | Potential water quality effects through widening at existing water courses both due to construction and increased runoff.                                                                                                                                                          | Potential water quality effects through widening at existing water courses both due to construction and increased runoff.                                                                                                                                                          |
| Vegetation (Wetland and Upland)    | No physical impacts to vegetation. Possible incremental contaminant drift with increased traffic demand and localized vegetation stress.           | No physical impacts to vegetation. Possible incremental contaminant drift with increased traffic demand and localized vegetation stress.           | No physical impacts to vegetation. Possible incremental contaminant drift with increased traffic demand and localized vegetation stress.           | Potential effects to vegetation may occur to accommodate transit services and other modes of transportation. These effects will depend on nature and location of improvements.                            | Potential for relatively minor vegetation disturbance and/or removal in areas where improvements occur.                                                 | Potential for vegetation disturbance and/or removal in areas where existing vegetation and wetland features extend into the right-of-way.                                                                                                                                          | Potential for vegetation disturbance and/or removal in areas where existing vegetation and wetland features extend into the right-of-way, resulting in edge effects or fragmentation.                                                                                              |
| Wildlife                           | No physical impacts to wildlife and wildlife habitats.                                                                                             | No physical impacts to wildlife and wildlife habitats.                                                                                             | No physical impacts to wildlife and wildlife habitats.                                                                                             | Potential for habitat removal and intrusion to accommodate transit initiatives and active transportation facilities. These effects will depend on nature and location of improvements.                    | Potential for minor habitat impact in areas where improvements are made.                                                                                | Potential for habitat removal in areas where existing vegetation and wetland features extend into the right-of-way. Existing culverts used by wildlife may require lengthening. Potential for reduced quality in habitat adjacent to the widened roadway (increased light, noise). | Potential for habitat removal in areas where existing vegetation and wetland features extend into the right-of-way. Existing culverts used by wildlife may require lengthening. Potential for reduced quality in habitat adjacent to the widened roadway (increased light, noise). |



Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

| ALTERNATIVE SOLUTIONS                        |                                                                                                          |                                                                                                                                                                                                      |                                                                                                                                                           |                                                                                                                                                                                                                                                                                                            |                                                                                                                                                        |                                                                                                                                                               |                                                                                                                                                                                           |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Factors                                      | Do Nothing                                                                                               | Limit Development                                                                                                                                                                                    | Travel Demand Management Measures                                                                                                                         | Improved Transit Infrastructure / Other Modes of Transportation                                                                                                                                                                                                                                            | Intersection and / or Operational Improvements                                                                                                         | Improvements to Other Roadways Beyond Planned Program                                                                                                         | Improvements to Regional Road 25                                                                                                                                                          |
| Transportation                               |                                                                                                          |                                                                                                                                                                                                      |                                                                                                                                                           |                                                                                                                                                                                                                                                                                                            |                                                                                                                                                        |                                                                                                                                                               |                                                                                                                                                                                           |
| Ability to Accommodate Traffic Demand        | Does not address capacity requirements for future transportation demand on Regional Road 25.             | Regional Road 25 is operating near and/or at capacity based on existing and planned future development.                                                                                              | Would help to reduce and optimize transportation demand. Would require significant changes to travel behaviour to achieve improved levels of service.     | Provides choice for mobility needs of population (reduces auto dependency); potential for reduction of traffic congestion.                                                                                                                                                                                 | Localized improvements would not sufficiently address the identified problem or accommodate transportation demand.                                     | Regional and municipal plans have outlined improvement needs for additional roads to support future transportation demand.                                    | Supports transportation demand for population and employment growth adjacent to the corridor and surrounding area.                                                                        |
| Costs                                        |                                                                                                          |                                                                                                                                                                                                      |                                                                                                                                                           |                                                                                                                                                                                                                                                                                                            |                                                                                                                                                        |                                                                                                                                                               |                                                                                                                                                                                           |
| Order of Magnitude Cost (Construction Costs) | N/A                                                                                                      | N/A                                                                                                                                                                                                  | \$                                                                                                                                                        | \$\$                                                                                                                                                                                                                                                                                                       | \$\$                                                                                                                                                   | \$\$\$\$\$                                                                                                                                                    | \$\$\$\$\$                                                                                                                                                                                |
| Summary                                      | Do Nothing would restrict future approved development and would not address future transportation needs. | Projections of future travel demands are based on the approved future urban area as shown in the Halton Region Official Plan. Limiting development was not considered to be reasonable in isolation. | Although part of Halton Region's overall transportation strategy, on their own TDM does not address the need for additional capacity on Regional Road 25. | Transit services and other modes of transportation as outlined in the Region's transportation strategy will improve transportation demands. Improvements to Regional Road 25 will aid in achieving the Region's Transportation Master Plan by providing additional lanes to support a multimodal corridor. | Intersection and operational improvements would not fully address the identified problem but are required as part of the overall improvement strategy. | Required as part of the overall transportation strategy in addition to improvements to the Regional Road 25 corridor and will be subject to separate studies. | Improvements to Regional Road 25 are required to address future corridor requirements and support future developments through the implementation of multimodal transportation strategies. |
| Recommended to be Carried Forward            | NO – for comparison purposes only.                                                                       | NO – not consistent with policy documents.                                                                                                                                                           | YES – within the overall strategy.                                                                                                                        | YES – within the overall strategy.                                                                                                                                                                                                                                                                         | YES – within the overall strategy.                                                                                                                     | NO – subject to separate studies.                                                                                                                             | YES – carried forward as the preferred alternative solution.                                                                                                                              |



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **4.2.1 Do Nothing**

This alternative involves maintaining status quo. The existing roadway would be retained in its present configuration and operational problems would continue to grow. Only planned improvements will be in place including the widening of Steeles Avenue and Tremaine Road. The Do Nothing alternative does not address future transportation needs of the Regional Road 25 transportation corridor and would therefore result in the escalation of congestion issues. Failure to implement additional lanes under the Do Nothing approach will result in operational problems, extensive queuing, and traffic movements reaching capacity. Although this alternative is not considered feasible, it is carried forward throughout the EA process and used as a baseline for comparison purposes.

### **4.2.2 Limit Development**

Projections of future travel demands are based on approved future development (best planning estimates), as shown in various policy documents that support growth and connectivity, in particular the Halton Region, Town of Milton, and Town of Halton Hills Official Plans. The Town of Milton Official Plan and Milton 401 Industrial/Business Park Secondary Plan designates the lands surrounding Regional Road 25 for industrial and business development. The uses will require infrastructure improvements. Limiting development was not considered to be a viable option and therefore was not carried forward for further consideration within this study.

### **4.2.3 Travel Demand Management Measures**

TDM provides alternative means to travelling during high traffic demand hours, including carpooling and staggered work hours, to reduce the number of vehicles traveling during peak hours. Although these measures are part of Halton Region's overall transportation strategy, they will not address the need for additional capacity on their own. As development increases, the need for additional capacity remains high, and while combined efforts with TDM measures may help to alleviate traffic congestion associated with growth rates, additional measures are required to address the primary problem. Therefore, this alternative will be carried forward for further consideration as part of the overall transportation strategy.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **4.2.4 Improved Transit Infrastructure / Other Modes of Transportation**

Regional Road 25 is currently served by Milton Transit and GO Transit buses, which operate Monday through Saturday on 3 different routes. Active transportation facilities are limited along the corridor, with a multi-use path between Steeles Avenue and Market Drive, a sidewalk from Market Drive to Chisholm Drive, and multi-use paths and sidewalks on the majority of intersecting roads. The Region's Active Transportation Master Plan, dated May 2015, has identified sidewalks and bike lanes on both sides of Regional Road 25. Although alternate modes of transportation will not address the problem alone, widening Regional Road 25 will better facilitate the movement of transit while providing the space needed to improve active transportation facilities along the corridor.

### **4.2.5 Intersection and / or Operational Improvements**

Intersection improvements include the addition of auxiliary lanes, additional lanes through the intersection and traffic signals. The addition of these measures would not fully address the problem, although they are required as part of the overall improvement strategy. Operational improvements include modifications to signal timing plans, traffic signal interconnect systems, and road user information systems. They would not fully address the identified problem but will still be considered as part of the overall improvement strategy and can be easily incorporated into an overall program of improvements.

### **4.2.6 Improvements to Other Roadways Beyond Planned Program**

Widening of other Regional roadways in the immediate study area beyond planned improvements would not be consistent with the Halton Region Transportation Master Plan, as well as other local improvements by the Town of Halton Hills and Town of Milton. This would lead to impacts beyond the planned rights-of-way.

### **4.2.7 Improvements to Regional Road 25 – Recommended**

To support future growth and travel demands, improvements to the Regional Road 25 corridor are required. In the Halton Region Transportation Master Plan, Regional Road 25 was identified as requiring additional capacity and widening from four to six general purpose lanes. Multi-use pathways on either side of the road are included to support a multimodal transportation network. Therefore, this alternative is carried forward for further consideration as part of the overall improvement strategy.



## **5.0 Design Alternatives**

Phase 3 of the Municipal Class EA process involves the development and review of alternative design concepts. Having established the need for improvements on Regional Road 25 (**Section 2.0**) and the selected recommended alternative solution (**Section 4.0**), the next phase involves the development of design alternatives.

### **5.1 Approach to Developing Alternative Design Concepts**

Consideration was given to the following widening alternatives to widen Regional Road 25 (Steeles Avenue to 5 Side Road), from four to six lanes:

- Alternative 1 – Widen to the west of existing centerline.
- Alternative 2 – Widen to the east of existing centerline.
- Alternative 3 – Widen symmetrically on both sides of existing centerline.

Within the Regional Road 25 corridor there are a number of key constraints that include the CN Rail bridge overpass, as well as established commercial and industrial businesses.

The following criteria were taken into consideration for the widening of Regional Road 25 from four to six lanes between Steeles Avenue and 5 Side Road:

#### **Transportation**

- Ability to accommodate future 2031 travel demand

#### **Cultural Environment**

- Archaeological Resources
- Built Heritage Resources / Cultural Landscape

#### **Socio-Economic Environment**

- Integration with ongoing, planned and completed improvements
- Impacts to adjacent properties
- Access to existing properties
- Impacts to future land uses



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### Natural Environment

- Fisheries and Aquatic Habitat
- Surface Water Quality and Quantity
- Vegetation (Wetland and Upland)
- Wildlife

### Engineering Considerations

- Constructability
- Construction Staging

### Preliminary Cost Estimate

- Order of Magnitude Cost

Given these constraints, it was not considered reasonable to develop alternatives for widen to the east only, widen to the west only or strictly on the existing centreline for the entire corridor.

Based on the preliminary screening of design alternatives (**Table 6**), a “best fit” approach (i.e., a combination of widening to the east, west and centerline) is recommended to accommodate the improvements.

**Table 6: Preliminary Screening of Design Alternatives**

|                            | <b>Alternative 1<br/>Widen to the West</b>                      | <b>Alternative 2<br/>Widen to the East</b>                      | <b>Alternative 3<br/>Widen Symmetrically</b>                    | <b>Alternative 4<br/>Best Fit</b>                               |
|----------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
| Transportation             | No preference – all alternatives meet transportation objectives | No preference – all alternatives meet transportation objectives | No preference – all alternatives meet transportation objectives | No preference – all alternatives meet transportation objectives |
| Cultural Environment       | Moderately Preferred                                            | Moderately Preferred                                            | Most Preferred                                                  | Most Preferred                                                  |
| Socio-economic Environment | Least Preferred                                                 | Least Preferred                                                 | Moderately Preferred                                            | Most Preferred                                                  |
| Natural Environment        | Least Preferred                                                 | Least Preferred                                                 | Moderately Preferred                                            | Most Preferred                                                  |



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

|                            | <b>Alternative 1<br/>Widen to the West</b> | <b>Alternative 2<br/>Widen to the East</b> | <b>Alternative 3<br/>Widen Symmetrically</b> | <b>Alternative 4<br/>Best Fit</b> |
|----------------------------|--------------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------------|
| Engineering Considerations | Moderately Preferred                       | Least Preferred                            | Least Preferred                              | Most Preferred                    |
| Preliminary Cost Estimate  | Least Preferred                            | Least Preferred                            | Most Preferred                               | Moderately Preferred              |
| <b>Summary</b>             | Not Recommended                            | Not Recommended                            | Not Recommended                              | Recommended                       |

The Design Alternatives were refined based on the “best fit” approach and evaluated on a segment-by-segment basis, as follows:

1. Steeles Avenue to Market Drive
2. Market Drive to Chisholm Drive
3. Chisholm Drive to High Point Drive
4. Highpoint Drive to James Snow Parkway
5. James Snow Parkway to Escarpment Way/Peddie Road
6. Escarpment Way/Peddie Road to 5 Side Road

## 5.2 Design Criteria

Regional Road 25 is proposed to be widened from four to six lanes between Steeles Avenue and 5 Side Road. The design criteria, summarized in **Table 7**, were used to develop the road design alternatives.

**Table 7: Preliminary Design Criteria - Regional Road 25**

| <b>Criteria</b>           | <b>Design Standard</b>                                                                              |
|---------------------------|-----------------------------------------------------------------------------------------------------|
| Design Speed              | 80 km/h from Steeles Avenue to James Snow Parkway<br>90km/h from James Snow Parkway to 5 Side Road  |
| Posted Speed              | 50 km/h from Steeles Avenue to James Snow Parkway<br>70 km/h from James Snow Parkway to 5 Side Road |
| Number of Lanes and Width | 6 lanes at 3.5m each                                                                                |



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

| Criteria                            | Design Standard                                      |
|-------------------------------------|------------------------------------------------------|
| Provision for Active Transportation | Multi Use Path (3.0 m)<br>On-road Bike Lanes (1.8 m) |
| Minimum Grade                       | 0.3 %                                                |
| Maximum Grade                       | 5 %                                                  |
| Minimum Curve Radius                | 340 m                                                |
| Minimum Stopping Sight Distance     | 130 m                                                |
| Minimum Crest Curve                 | $K_{\text{crest}} = 35$                              |
| Minimum Sag Curve                   | $K_{\text{sag}} = 35$                                |
| Basic Right of Way Width            | 47 m                                                 |

### 5.3 Preliminary Screening of Design Alternatives by Segment

The following section provides an overview of the road segment, design alternatives, evaluation and preliminary recommendation in terms of cross section and lane configuration.

#### 5.3.1 Steeles Avenue to Market Drive

This segment of Regional Road 25 is developed with commercial and institutional uses. There are a number of considerations through this section of Regional Road 25, including:

##### Socio-Economic Environment

- Ontario Provincial Police Department – 203 Steeles Avenue East
- Milton Visitor Community Center – 1 Chris Hadfield Way
- Chris Hadfield Park
- Self Storage – 530 Martin Street
- Gas Station/Restaurant/Coffee Shop – 20 Market Drive
- Gas Station/Restaurant – 235 Steeles Avenue East
- Vacant Land – 275 Steeles Avenue East

##### Cultural Environment

- Maplehurst Correctional Complex, Vanier Centre for Women – 655, 661 Martin Street



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **Natural Environment**

- Unnamed Sixteen Mile Creek Tributary – Culvert C1 with protected Redside Dace Habitat, protected under both the Endangered Species Act and the Species at Risk Act.
- Monarch Butterfly Habitat identified in the corridor.

### **Geometric**

- CN Rail bridge overpass crossing Regional Road 25 between Chris Hadfield Park and Smartstop Self Storage.

The above-noted constraints have resulted in a “best fit” approach to limit property impacts and encroachment on various environments. From north of Steeles Avenue to the rail bridge overpass crossing, the preferred option is to widen symmetrically, keeping a “best fit” approach while accommodating the preferred cross section. This approach will reduce significant impacts to adjacent properties, culverts and tributaries crossing the corridor while eliminating the need for channel realignment or an upstream extension of culvert C1.

The largest constraint in this area is the rail bridge overpass. The following section provides an overview of the four options that were considered in the evaluation of the replacement of the rail bridge overpass.

#### **5.3.1.1 Rail Bridge Overpass**

There were four rail overpass replacement options considered:

- Option 1: Maintain the Existing Bridge Structure (Do Nothing).
- Option 2: Construct New Abutments and Lengthen Bridge, In-Place.
- Option 3: Construct Temporary Single-Track Rail Diversion to the South and Construct New Bridge.
- Option 4: Construct Single-Track Permanent Realignment to the South on a New Bridge.

A summary of the overpass options under various considerations is provided in **Table 8**.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

**Table 8: CN Rail Overpass Replacement Options**

| <b>Considerations</b>                             | <b>Option 1:<br/>Maintain<br/>the<br/>Existing<br/>Bridge<br/>Structure<br/>(Do<br/>Nothing)</b>                   | <b>Option 2:<br/>Construct<br/>New<br/>Abutments<br/>and<br/>Lengthen<br/>Bridge<br/>(In-Place)</b>                                                                                                                                                                                      | <b>Option 3:<br/>Temporary<br/>Single-<br/>Track Rail<br/>Diversion<br/>to the<br/>South</b>                                                   | <b>Option 4:<br/>Single-<br/>Track<br/>Permanent<br/>Realignment on a<br/>New<br/>Bridge</b>                                                   |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Accommodates<br>Regional Road 25<br>Cross-section | No, existing<br>21 m wide<br>opening does<br>not<br>accommodate<br>RR 25 6-lane<br>cross-section.                  | Yes                                                                                                                                                                                                                                                                                      | Yes                                                                                                                                            | Yes                                                                                                                                            |
| Closures<br>(Track/Road)                          | Long duration<br>track closures<br>(48-72hr) to<br>open-cut<br>structure for<br>pedestrian/cyc<br>list facilities. | Long duration<br>track closures<br>(48-72hr) to<br>remove and<br>replace track<br>deck.<br>Greatest<br>impact on<br>Railway<br>operations.<br>Requires<br>numerous<br>nightly work<br>blocks over an<br>extended<br>period (for<br>temporary<br>track supports<br>and new<br>abutments). | Requires a<br>number of<br>night-time<br>work blocks<br>and two 12hr<br>track<br>closures.<br>Minimizes<br>impact to<br>Railway<br>operations. | Requires a<br>number of<br>night-time<br>work blocks<br>and two 12hr<br>track<br>closures.<br>Minimizes<br>impact to<br>Railway<br>operations. |



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

| <b>Considerations</b> | <b>Option 1:<br/>Maintain<br/>the<br/>Existing<br/>Bridge<br/>Structure<br/>(Do<br/>Nothing)</b>                            | <b>Option 2:<br/>Construct<br/>New<br/>Abutments<br/>and<br/>Lengthen<br/>Bridge<br/>(In-Place)</b>                                                                                      | <b>Option 3:<br/>Temporary<br/>Single-<br/>Track Rail<br/>Diversion<br/>to the<br/>South</b>                                                                                                      | <b>Option 4:<br/>Single-<br/>Track<br/>Permanent<br/>Realignment on a<br/>New<br/>Bridge</b>                                                                                                                         |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Constructability      | Construction staging is complex. Requires workers within a 'live' track and inside the required setbacks from Rail traffic. | Construction staging is very complex. Requires workers within a 'live' track and inside the required setbacks from Rail traffic. Replace deck and associated tracks in a single weekend. | Requires construction of temporary bridge, rebuilding of tracks and two switches. Allows for new relief culverts under the Railway embankment. No impact to existing (permanent) track alignment. | Requires construction of a long section of tracks and two switches. Allows for new relief culverts under the Railway embankment. Introduces minor impacts to private properties south of the existing Rail corridor. |
| Cost                  | Less costly than the other options.                                                                                         | Moderate capital costs including "throw-away."                                                                                                                                           | Highest capital costs than the other options.                                                                                                                                                     | Lower capital costs than Option 3.                                                                                                                                                                                   |

### Preferred CN Rail Overpass Option

Based on the analysis and evaluation of the four options, both Option 3 and Option 4 are viable alternatives from both a constructability and safety perspective.

The preferred option will be confirmed during detail design and through further consultation with CN Rail.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **5.3.2 Market Drive to Chisholm Drive**

This section of Regional Road 25 is developed with adjacent commercial uses and nearby cultural heritage resources. There are a number of constraints through this section of the corridor, with Maplehurst Correctional Complex and Vanier Centre for Women on the east side of Regional Road 25, and four commercial properties along the west side (restaurant, auto sales, gas station/restaurant). Within this section is a watercourse (Culvert C2) crossing Regional Road 25, which has been identified as a Redside Dace Habitat.

#### **Socio-Economic Environment**

- Restaurant – 590 Martin Street
- Auto Sales – 610, 626 Martin Street
- Gas Station/Restaurant – 640 Martin Street

#### **Cultural Environment**

- Maplehurst Correctional Complex, Vanier Centre for Women – 655, 661 Martin Street

#### **Natural Environment**

- Tributary N1-A of Sixteen Mile Creek - Culvert C2 (crossing Regional Road 25 and Culvert C3 (crossing Chisholm Drive) with protected Redside Dace Habitat, protected under both the *Endangered Species Act* and the *Species at Risk Act*.

#### **Transportation**

Due to the above constraints, widening all to the east or all to the west of the existing right-of-way centerline poses significant property impacts and environmental effects and therefore was not recommended through this section of the corridor. As a result, both of these alternatives were “screened out” to limit property impacts to businesses along the west side of the corridor and to institutional facilities along the east side of the corridor, and a “best fit” approach was used for this section of the corridor.

The area in the vicinity of Market Drive (Gas Station/Restaurant property) will be widened predominantly to the east with slight widening to the west. This approach will eliminate the need to impact the entrance to the Restaurant at 590 Martin Street and maintain the existing right-in/ right-out entrance but will not impact operations to the east. North of the Auto Sales property to Chisholm Drive will be widened symmetrically about the existing centerline of the road. This approach will minimize the impacts on both sides of Regional Road 25. New retaining walls will need to be constructed to protect the existing open channels located in front of the Auto Sales and Gas Station/Restaurant properties.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

The presence of regulated Redside Dace Habitat in Tributary N1-A acts as a constraint throughout this section. Culvert C2 will need to be extended by 10 m on the east side of the road and, as a result, approximately 130 m of the channel located on the Maplehurst Correctional Complex property will need to be realigned to create a new natural channel. The realignment and naturalization of this channel will require a retaining wall be placed on the west side of the access road to the Maplehurst Correctional Complex.

### **5.3.3 Chisholm Drive to High Point Drive**

This section of Regional Road 25 is developed with industrial and institutional uses and consists primarily of the Highway 401 corridor. Few property constraints exist and rather the larger constraints deal with the natural environment through this section of the corridor. Based on the preliminary screening of design alternatives, a “best fit” approach was used. The following outlines the constraints within this section of the corridor:

#### **Socio-Economic Environment**

- Milton GO Transit Carpool Lot
- 8300 Parkhill Drive
- 8400 Parkhill Drive
- Tire Centre – 8420, 8448 Regional Road 25
- Service Ontario – 2800 High Point Drive

#### **Cultural Environment**

- Maplehurst Correctional Complex, Vanier Centre for Women – 655, 661 Martin Street

#### **Natural Environment**

- Tributary N1-A – Culvert C3 with protected Redside Dace Habitat, protected under both the Endangered Species Act and the Species at Risk Act.
- Tributary N2-B – Culvert C4 with protected Redside Dace Habitat, protected under both the Endangered Species Act and the Species at Risk Act.

#### **Transportation**

- Highway 401 overpass and interchange.

With the exception of the need to tie into the existing Highway 401 overpass (recently completed), the largest constraint within this portion of the study area relates to the natural environment. Culvert C3 to the west of Regional Road 25 at Tributary N1-A, and Culvert C4 to the west of Regional Road 25 at Tributary N2-B are both regulated as Redside Dace Habitat. It is not recommended that Culvert C4 be extended to accommodate the road widening, however a headwall and wing walls will be required at the upstream end to accommodate grading. It is recommended that Culvert C3 be extended (both northerly and southerly) to accommodate the road widening. Therefore,



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

permits and an Overall Benefit Plan will likely be required from MECP. As in-water works are required for the completion of the extension, timing windows must be adhered to, and enhanced sediment and erosion control measures will be required, to protect Redside Dace Habitat.

As mentioned above, the major geometric constraint in this area is the recent construction improvements of the Regional Road 25/ Highway 401 overpass and interchange. The proposed design will “tie-in” to the current construction of the overpass bridge. North of Highway 401, existing ditching on the east side of Regional Road 25 will need to be pushed back to accommodate a proposed multi-use pathway, and a permanent drainage easement will be required along the west side of the existing properties.

### **5.3.4 High Point Drive to James Snow Parkway**

This section of Regional Road 25 is developed with industrial and commercial uses. There are two main property constraints through this section of the corridor, including 8501 Chudleigh Way (Industrial Building on west side) and at 8473 Regional Road 25 (Gas Station on east side). The Gas Station (8473 Regional Road 25) operates in close proximity to the existing right-of-way and it is important to its operation that the roadway not encroach further into the property. Based on the preliminary screening of design alternatives, a “best fit” approach was used.

Due to the proximity of the existing gas pumps and underground storage tanks at the Gas Station (8473 Regional Road 25) located in the north east corner of the Regional Road 25 and High Point Drive intersection, Regional Road 25 is proposed to be widened primarily to the west to avoid substantial impacts to the operations of this business. The southern access to the property from Regional Road 25 will be permanently closed in order to adhere to the Region’s Access Management Guidelines and spacing requirements. Fuel delivery trucks that need to access the Gas Station (8473 Regional Road 25) would enter via the High Point Drive access and exit the site via the northerly driveway (right-in/right-out) onto Regional Road 25.

Using the “best fit” approach, a 6.1 m clearance can be maintained from the face of the existing building located at 8501 Chudleigh Way to the existing/proposed property line; however, permanent easements will be required on this property for hydro pole guying and possibly street-lighting. A daylighting triangle is recommended on the northwest corner of the High Point Drive/Regional Road 25. Also, a permanent property acquisition is required at 8473 Regional Road 25 (Gas Station) to accommodate infrastructure for utilities behind the proposed multi-use pathway.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **5.3.5 James Snow Parkway to Peddie Road/ Escarpment Way**

This section of Regional Road 25 is developed with residential, commercial, and industrial properties. The main constraints in this section of the corridor are at 2999 James Snow Parkway North (Distribution Centre) on the east side of Regional Road 25 and 8612 Regional Road 25 (Gas Station) property on the west side. Additional property will be required from the residential properties. Below outlines both the socio-economic and business constraints within this section of the corridor:

#### **Socio-economic Environment**

- Gas Station/Restaurant – 3025 James Snow Parkway North
- Residential Property – 8584 Regional Road 25
- Residential Property – 8598 Regional Road 25
- Residential Property – 8604 Regional Road 25
- Gas Station – 8612 Regional Road 25
- Commercial Businesses – 8695, 8699 Regional Road 25
- 2998 Peddie Road
- Distribution Centre – 2999 James Snow Parkway North

Based on the preliminary screening of design alternatives, a “best fit” approach was used for this section of the corridor, as widening all to the east or all to the west of the right-of-way centerline was not recommended due to the significant property impacts on both sides of Regional Road 25. Although various alignment options would provide similar improvements from a transportation perspective, widening to the east would have significant property impacts for the Distribution Centre whereas widening to the west would have substantial property impacts for the Gas Station and the residential properties.

It is recommended that the road be widened symmetrically, maintaining the existing centerline except in the area of the Gas Station. A slight shift of the existing centerline to the east is recommended to reduce any impacts to the operations of the Gas Station. By using this approach, the operations of the Gas Station will not be affected, however, a temporary construction easement will be required on this property to reconstruct a portion of their access due to the addition of the 3.0 m multi-use path.

Permanent property acquisition is required on both sides of Regional Road 25 at 3025 James Snow Parkway, 8594, 8695, and 8699 Regional Road 25 on the west and 2999 James Snow Parkway and 2998 Peddie Road on the east side of Regional Road 25 to accommodate ditching, and ditch inlet catch basins.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **5.3.6 Peddie Road/ Escarpment Way to 5 Side Road**

This section of Regional Road 25 is developed with commercial and industrial properties. The below outlines socio-economic and business constraints within this section of the corridor:

#### **Socio-economic Environment**

- Commercial Businesses – 8620, 8640, 8690, 8698 Regional Road 25
- Restaurant – 8724 Regional Road 25
- Commercial Businesses – 8750 Regional Road 25
- 8772 Regional Road 25
- Commercial Businesses – 2751 Peddie Road
- Distribution Centre – 2995 Peddie Road

In this section of the corridor, the main impacts are related to the need for intersection improvements for the Regional Road 25/5 Side Road intersection. Under existing conditions, the intersection experiences high delay and volume-to-capacity ratios on the eastbound through/right movement. This is in part due to the no right turn-on-red restriction in the eastbound direction. A roundabout feasibility study was completed and recommended that a two-lane roundabout be implemented at this intersection.

To accommodate the right-of-way required to implement a roundabout at the Regional Road 25/5 Side Road intersection, permanent property acquisitions will be required at 8772, 9000, and 9056 Regional Road 25 and at 2751 Peddie Road. These property requirements will also accommodate a multi-use path adjacent to the roundabout, as well as to providing daylighting triangles to obtain appropriate sight lines.

For the northbound direction between Peddie Road/ Escarpment Way and 5 Side Road, two northbound through lanes are required, as well as an exclusive right-turn lane (that will end at 5 Side Road). This will minimize the need to encroach on existing properties on the east side of Regional Road 25. However, in the southbound direction between 5 Side Road and Peddie Road/Escarpment Way, it is recommended that an additional acceleration right turn lane be developed which will widen the road from two through lanes to three through lanes. Due to this widening, permanent property acquisition, as well as a temporary construction easement, is required at 8750 Regional Road 25 to accommodate the multi-use path and utility infrastructure.

A “best fit” approach (i.e., a combination of widening to the east, west and centerline) was recommended along the Regional Road 25 corridor to accommodate the improvements, in order to minimize impacts to existing conditions.



## **6.0 Project Consultation Process**

Halton Region recognizes that public consultation is critical to the development and delivery of a project and, therefore, has created opportunities for the public to provide their input at key points of the study process.

The intent of the consultation program is to ensure that all stakeholders are given the opportunity to provide input on transportation needs and the existing environment along the Regional Road 25 corridor in addition to the proposed improvements required to support future growth and development in Halton Region.

The main objective of this section is to document the key consultation events (technical agencies, stakeholders and the public) and encourage two-way communication with stakeholders and Regional staff/Project Team to aid in the development of an acceptable preferred design that addresses public input while achieving the proposed improvements.

The following section will document the key consultation events with technical agencies, stakeholders, and the public that are associated with the Regional Road 25 Municipal Class EA Study.

### **6.1 Public Consultation**

#### **6.1.1 Notice of Study Commencement**

The Notice of Study Commencement for the Regional Road 25 MCEA from Steeles Avenue to 5 Side Road was placed on the Region's website and published in the following newspapers:

- Milton Champion - Friday, June 1, 2017
- Georgetown Independent - Friday, June 8, 2017

The notice was mailed to directly impacted property owners along the study area corridor in addition to stakeholders identified on the project contact list on Tuesday, May 30, 2017. The project contact list is comprised of Local and Regional Councillor's whose wards were within the limits of the study corridor, potentially interested Indigenous Communities, technical agencies (federal, provincial and municipal agencies), utility companies, and property owners within the study limits. Additional information regarding the project contact list, property owner distribution map, and the Notice of Study Commencement can be found in **Appendix A**.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### 6.1.2 Public Information Centres

Public Information Centres (PIC) are part of the overall consultation process for this project, providing an opportunity for the public to identify their concerns throughout the study process, while assisting in the development of a preferred alternative. A total of two PICs were held during the MCEA Study:

- PIC #1 – Thursday, March 8, 2018
- PIC #2 – Tuesday, June 11, 2019

A summary of each PIC is provided below, with the full reports included in **Appendix A**. Comments received at the PICs were taken into consideration as the study proceeded.

#### 6.1.2.1 Public Information Centre #1 (March 8, 2018)

The purpose of the PIC #1 was to provide stakeholders with the opportunity to meet the Project Team, discuss any concerns regarding the project, review the study scope, existing conditions, proposed improvements, evaluation criteria, and next steps in the study process.

The Notice for PIC #1 was published in the Milton Champion and Georgetown Independent on Thursday, February 22, 2018 and Thursday, March 1, 2018. A copy of the PIC notice is provided in **Appendix A**.

Stantec notified (by email) local and Regional Councillor's in addition to utility companies; federal, provincial, and municipal agencies; and members of the public who provided comments or requested to be on the study mailing list. The notice was also mailed out to property owners within the study area and additional agencies the week of February 19, 2018. Halton Region sent out (couriered) notices to relevant Indigenous Communities on January 12, 2018.

The PIC was held as follows:

|           |                                                                                                     |
|-----------|-----------------------------------------------------------------------------------------------------|
| Date:     | Thursday, March 8, 2018                                                                             |
| Time:     | Drop-in between 6:30 – 8:30 p.m.                                                                    |
| Location: | Bob Rumball Canadian Centre of Excellence for the Deaf<br>7801 5 Side Road, Milton Ontario, L9T 2X7 |

A total of 7 members of the public signed in at the PIC. One Regional Councillor was in attendance.

Key comments/concerns raised at the meeting include:

- Synchronize the traffic lights along Regional Road 25.
- Maintain full moves access to properties.
- Construct a sidewalk on the west side of Regional Road 25.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

A summary report for the PIC, including a copy of the presentation slides and the comments received, is provided in **Appendix A**.

### **6.1.2.2 Public Information Centre #2 (June 11, 2019)**

The purpose of PIC #2 was to provide stakeholders with the opportunity to meet the project team, discuss any concerns regarding the project, review the study scope, factors/criteria for evaluation of alternative designs, alternative designs considered; environmental impacts and proposed mitigation; and next steps.

The Notice for PIC #2 was published in the Milton Champion, Georgetown Independent and Acton Tanner on Thursday, May 30, 2019 and Thursday, June 6, 2019. A copy of the PIC notice is provided in **Appendix A**.

Stantec notified (by email) local and Regional Councillor's in addition to utility companies; federal, provincial, and municipal agencies; and members of the public who provided comments or requested to be on the study mailing list. The notice was also mailed out to property owners within the study area and additional agencies the week of May 27, 2019. Halton Region sent out (couriered) notices to relevant Indigenous Communities on May 28, 2019.

The PIC was held as follows:

|           |                                                                                                |
|-----------|------------------------------------------------------------------------------------------------|
| Date:     | Tuesday, June 11, 2019                                                                         |
| Time:     | Drop-in between 6:30 – 8:30 p.m.                                                               |
| Location: | Milton Sports Centre Meeting Room #2 A/B<br>605 Santa Maria Boulevard, Milton Ontario, L9T 6J5 |

A total of 8 members of the public signed in at the PIC. One Regional Councillor was in attendance. No major comments or concerns were raised at the meeting.

A copy of the presentation slides and the comments received is provided in **Appendix A**.

### **6.1.3 Meetings with Property Owners along Regional Road 25**

The recommended preferred design for the Regional Road 25 corridor considered the degree of property impacts to local residents and businesses. The MCEA Study recommended a preferred design to minimize property impacts to the greatest degree possible, and to find a balance between needs of the community and the property impacts will have on private property owners affected by the recommended preferred design.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

Accordingly, members of the Project Team met with individual property owners to raise awareness of the potential property impacts associated with the recommended preferred design as presented at PIC #2. These meetings provided a consultative forum to discuss and survey each potentially impacted property owner's interest. The meetings served to provide owners with clarity on the potential property/access requirements, Regional practices regarding the determination of compensation, and general timing of proposed road works associated with the corridor improvements following completion of the MCEA Study. The Region initiated these discussions to fully inform impacted property owners and to receive input.

A schedule of these meetings is as follows:

| Date                         | Property                                                    |
|------------------------------|-------------------------------------------------------------|
| July 11, 2018<br>May 2, 2019 | 8470 Regional Road 25 and 8501 Chudleigh Way                |
| May 2, 2019                  | 8584 and 8598 Regional Road 25                              |
| May 2, 2019                  | 610 and 626 Regional Road 25                                |
| May 2, 2019                  | 8604 and 8612 Regional Road 25                              |
| May 15, 2019                 | 8473 and 8521 Regional Road 25, and 2754 James Snow Parkway |

Minutes from these meetings are provided in **Appendix A**.

## 6.2 Technical Agencies

Technical agencies were notified of the commencement of the MCEA Study through the mailing/emailing of the Notice of Study Commencement in June 2017. Comments received from technical agencies are provided in **Appendix A** of this ESR. A number of meetings with agencies were held, along with two Technical Agency Committee meetings, and are documented in this section. Technical agencies were also invited to attend the two Public Information Centres that were held.

### 6.2.1 Technical Agency Committee Meetings

Two Technical Agency Committee (TAC) meetings were held as a means to update agencies on the study's status and allow agencies to provide input to the Project Team as the study progressed:

- TAC Meeting #1 – February 22, 2018
- TAC Meeting #2 – April 25, 2019



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

A brief summary of each of these meetings is provided below, while minutes are included in **Appendix A**. Comments received at the TAC meetings were taken into consideration throughout the study.

### **6.2.1.1 Technical Agencies Committee Meeting #1 (February 22, 2018)**

The purpose of TAC Meeting #1 was to review the study background, study approach, existing conditions, alternative solutions, and to review high level conceptual corridor alternatives for the improvements for the Regional Road 25 corridor. Technical agencies were invited to this meeting via email on Thursday, February 22, 2018. Representatives from the following technical agencies attended:

- Halton Region – Planning and Legislative Services
- Halton Region – Business Planning and Corporate Initiatives
- Halton Region – Engineering and Construction
- Stantec – Planning
- Stantec – Design
- Town of Halton Hills – Transportation
- Town of Milton – Traffic
- Town of Milton – Transit
- Milton Fire Department
- Ministry of Transportation (MTO)
- Maplehurst Correctional Complex/Vanier Centre for Women
- Bell Canada
- Cogeco Inc.
- Union Gas

Meeting minutes from the first TAC meeting can be found in **Appendix A**.

### **6.2.1.2 Technical Agency Meeting #2 (April 25, 2019)**

The purpose of TAC Meeting #2 was to review the study background, factors/criteria for evaluation of alternative designs, alternative design concepts for the preferred solution, recommended preferred design, proposed mitigation, and next steps. Technical agencies were invited to this meeting via email on Thursday, March 28, 2019. Representatives from the following technical agencies attended:

- Halton Region – Planning and Legislative Services
- Halton Region – Engineering and Construction
- Stantec – Planning
- Stantec – Design
- Conservation Halton
- Halton Hills Hydro
- Bell Canada
- Union Gas



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

Meeting minutes from the second TAC meeting can be found in **Appendix A**.

### **6.2.2 Municipal Meetings**

Given that the study area is located within the Town of Milton and Town of Halton Hills, the Towns have been key agencies participating throughout the study to ensure consistency with municipal planning objectives.

A total of two meetings were held with the Town of Milton to the completion of the MCEA documentation. Meetings for the subject section were held on February 28, 2018 and a joint meeting with the Town of Halton Hills on April 2, 2019. The purpose of the first meetings was to inform the Towns about the ongoing status of the MCEA Study, and to understand the needs and concerns of the Towns. The design alternatives and recommended preferred design were presented to the Towns on April 2, 2019, prior to the second PIC on June 11, 2019. Both the Town of Milton and Town of Halton Hills are in general agreement with the recommended preferred improvements to the Regional Road 25 corridor.

Meeting minutes with the Town of Milton/Halton Hills are included in **Appendix A**.

There will be ongoing consultation with the municipalities during detailed design.

### **6.2.3 Conservation Halton**

Recognizing the importance of retaining natural features throughout the study area and ensuring planning was carried out to minimize impacts, Conservation Halton (CH) was considered to be a key agency and was provided several opportunities to provide input during the study.

Meetings were held on July 12, 2017, January 23, 2018, June 25, 2018, and May 3, 2019. All meeting minutes are included in **Appendix A**.

The purpose of the first meeting (July 12, 2017) was to discuss background information, study approach, existing conditions from an environmental perspective, alternative solutions, and factors/criteria for analysis. This meeting included a site walk to visit a number of key natural features along the Regional Road 25 corridor and for the Project Team to gain insight on environmental impacts.

At the January 23, 2018 meeting, which included a representative from the Ministry of Natural Resources and Forestry, the focus was to provide an overview of the existing environmental conditions for Stormwater Management (SWM) and drainage, in addition to the planning alternatives and next steps for the Regional Road 25 improvements.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

At the June 26, 2019 meeting, the Project Team met with representatives of CH and MNRF to discuss responses to CH comments on the draft Stormwater Management Report. CH confirmed that they were satisfied with the majority of responses received and an updated Stormwater Management Report was provided to CH following the meeting. To further clarify CH's comments regarding the draft Stormwater Management Report and hydraulic modelling, on May 3, 2019 Stantec met with CH to confirm assumptions and methodology.

CH was provided with an opportunity to review the draft ESR and their comments have been incorporated.

Meeting minutes with Conservation Halton are included in **Appendix A**.

### **6.2.4 Infrastructure Ontario**

The Project Team met with Infrastructure Ontario (IO) on April 8, 2019 as they own lands adjacent to Regional Road 25 corridor, at the Maplehurst Correctional Complex/Vanier Centre for Women. The meeting included a review of the problem/opportunities, factors for analysis and evaluation, recommended design alternative and proposed mitigation measures. Of particular note was the analysis and evaluation of the stormwater management/drainage for both existing and proposed conditions.

IO staff highlighted their operational activities and the importance of maintaining access to both the Maplehurst Correctional Complex and Centre for Women during construction, as well as ensuring that services (i.e. hydro and water) are maintained during construction.

The Region committed to working with both Maplehurst Correctional Complex and Centre for Women to maintain access and services during construction.

Meeting minutes with IO are included in **Appendix A**.

### **6.2.5 Ministry of Transportation**

The preferred preliminary design recommended by this Municipal Class EA Study will match into the recently completed MTO Regional Road 25/Highway 401 interchange improvements to accommodate an ultimate Highway 401 cross section of eight core commuter lanes and four collector lanes. The MTO project includes a new structure over the Highway 401 with a six-lane cross section, including on-road bike lanes and sidewalks on either side of the structure. The project team met with the MTO on March 6, 2018 to provide information on the MCEA Study and to coordinate design and construction details for the Highway 401/Regional Road 25 interchange.

Meeting minutes with MTO are included in **Appendix A**.



## **6.3 Canadian National (CN) Rail**

With the need for Regional Road 25 improvements, the CN Rail overpass at the south end of the study area created a need for consultation with CN Rail. The project team met with CN Rail on February 21, 2018 (teleconference) to provide an overview of the project, discuss any issues within the corridor, and to review bridge replacement options.

A second meeting was held with CN Rail on July 26, 2018 to review a summary of alternatives for the CN Rail overhead bridge crossing. Based on the analysis and evaluation of the four options, both Option 3 (Construct Temporary Single-Track Rail Diversion to the south and Construct New Bridge) and Option 4 (Construct Single-Track Permanent Realignment to the south on a New Bridge) were considered viable alternatives from both a constructability and safety perspective.

The preferred option will be confirmed during detail design and through further consultation with CN Rail. The details of the approach to replacement (i.e., temporary, or permanent track diversion) will be determined during detail design.

Meeting minutes with CN Rail are included in **Appendix A**.

## **6.4 Indigenous Communities**

Indigenous Communities were notified of this study upon study commencement, in addition to being notified and invited to attend all PICs. Letters provided to Indigenous Communities, correspondence from Indigenous Communities and the communications log can be found in **Appendix A**.



## **7.0 Project Description**

The Regional Municipality of Halton has undertaken a Schedule 'C' Municipal Class Environmental Assessment (MCEA) to identify the preferred alternative to address future (2031) travel demand on Regional Road 25 between Steeles Avenue to 5 Side Road, within the Town of Milton / Town of Halton Hills. The proposed road improvements will include widening Regional Road 25 from four to six lanes, improvements at intersections, and the addition of active transportation facilities (multi-use paths and on-road bike lanes) in both directions.

The major features for the proposed roadway and active transportation improvements are described below in **Section 7.1**. Potential environmental impacts, mitigation measures, and commitments to future work are outlined in **Section 7.2**. The preliminary plan and profiles are provided in Plates 1 to 20.

This information should be reviewed in combination with **Chapter 5.0** of the ESR, which describes alternative design concepts. Although modifications may occur during detail design, any changes should not alter the intent of the recommended undertaking or its components. During detail design, additional consultation with technical agencies such as CH, MNRF, MTO, MECP, Town of Milton, Town of Halton Hills, utilities, and affected property owners, will be required.

The recommended undertaking for Regional Road 25 between Steeles Avenue and 5 Side Road will include the following:

- Widening of Regional Road 25 from 4 to 6 lanes between Steeles Avenue and 5 Side Road using a 47 m ultimate right-of-way;
- Implementing active transportation facilities along both sides of the corridor including:
  - 1.8 m exclusive on-road bike lanes on both sides of the road
  - 3.0 m asphalt multi-use path on both sides of the road
- Complete reconstruction of the CN Rail overpass to accommodate a widened Regional Road 25 cross-section;
- Raised concrete center median;
- 1.0 m concrete strip between the curb and the multi-use path, with a minimum width of 0.5 m to be used in constricted areas;
- Improvements to culverts in order to address current overtopping of Regional Road 25 during a Regional storm event;
- Providing landscaping within the right-of-way, including planting milkweed for Monarch habitat at culvert C1, and naturalizing the watercourse downstream of culvert C2; and
- Roundabout at Regional Road 25 and 5 Side Road.



# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

## 7.1 Major Features

### 7.1.1 Design Criteria

Currently, Regional Road 25 is a four-lane major arterial road with a posted speed limit of 50km/h between Steeles Avenue and James Snow Parkway, and 70km/h between James Snow Parkway and 5 Side Road. After the improvements have been implemented, the posted speed limits on Regional Road 25 will remain consistent with existing posted speeds. This is consistent with Regional Road 25's major arterial road classification. The geometric design details for the proposed widening have been provided in **Table 9**, below.

**Table 9: Design Criteria**

|                        | <b>Existing Conditions</b>                                                                                      | <b>Design Standard</b>                                                                                      | <b>Proposed Standard</b>                                                                              |
|------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Design Speed           | 90 km/h                                                                                                         | 90 km/h                                                                                                     | 80 km/h from Steeles Avenue to James Snow Parkway<br>90 km/h from James Snow Parkway to 5 Side Road   |
| Posted Speed           | 50 km/h between Steeles Avenue and north of Highway 401<br>70 km/h between north of Highway 401 and 5 Side Road | 50 km/h between Steeles Avenue and James Snow Parkway<br>70 km/h between James Snow Parkway and 5 Side Road | 50 km/h from Steeles Avenue and James Snow Parkway<br>70 km/h from James Snow Parkway and 5 Side Road |
| No. of Lanes and Width | 4 lanes at 3.5 m                                                                                                | 6 lanes at 3.5 m                                                                                            | 6 lanes at 3.5 m                                                                                      |
| Boulevard Treatment    |                                                                                                                 | Boulevard width varies<br>0.5 m curb and gutter                                                             | 0.5 m "kill strip", varies<br>0.5 m curb and gutter                                                   |



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

|                                         | <b>Existing Conditions</b>                                                     | <b>Design Standard</b>                                                      | <b>Proposed Standard</b>                                                    |
|-----------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Provisions for Pedestrians and Cyclists | Sidewalk and multi-use path on west side from Steeles Avenue to Chisholm Drive | Multi-use Path (3.0 m), both sides<br>On-road Bike Lane (1.8 m), both sides | Multi-use Path (3.0 m), both sides<br>On-road Bike Lane (1.8 m), both sides |
| Minimum Grade                           | 0.11%                                                                          | 0%                                                                          | 0.11%                                                                       |
| Maximum Grade                           | 3.53%                                                                          | 6-8%                                                                        | 4.00%                                                                       |
| Minimum Curve Radius                    | 575 m                                                                          | 340 m                                                                       | 600 m                                                                       |
| Minimum Stopping Sight Distance         | 130 m                                                                          | 130 - 170 m                                                                 | 150 m                                                                       |
| Minimum Crest Curve                     | $K_{\text{crest}} = 40$                                                        | $K_{\text{crest}} = 32 - 53$                                                | $K_{\text{crest}} = 35$                                                     |
| Minimum Sag Curve                       | $K_{\text{sag}} = 30$                                                          | $K_{\text{sag}} = 15-20^*$                                                  | $K_{\text{sag}} = 15$                                                       |
| Basic ROW                               | Varies                                                                         | 47 m                                                                        | Varies                                                                      |

\*TAC table 2.1.3.4 Rate of Sag Vertical Curvature ( $k$ )

### 7.1.2 Horizontal Alignment

The widening of Regional Road 25 will be completed using the “best-fit” approach, considering the constraints and surrounding environments. The “best-fit” alignment was developed on a segment-by-segment basis to ensure specific constraints on both the east and west side of the corridor were considered. The proposed widening was evaluated based on its ability to minimize potential impacts to surrounding natural, socio-economic, cultural, and technical environments. In areas where constraints exist, the cross-section elements (median/boulevard widths, etc.) were modified to minimize potential impacts to adjacent properties and features.

### 7.1.3 Profile

The proposed vertical profile is proposed to generally follow that of the existing Regional Road 25 profile in order to minimize property impacts. A preliminary geotechnical investigation was carried out by GeoPro Consulting which also provided preliminary pavement design recommendations. A copy of the report is included in **Appendix J**.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### 7.1.4 Typical Cross Sections

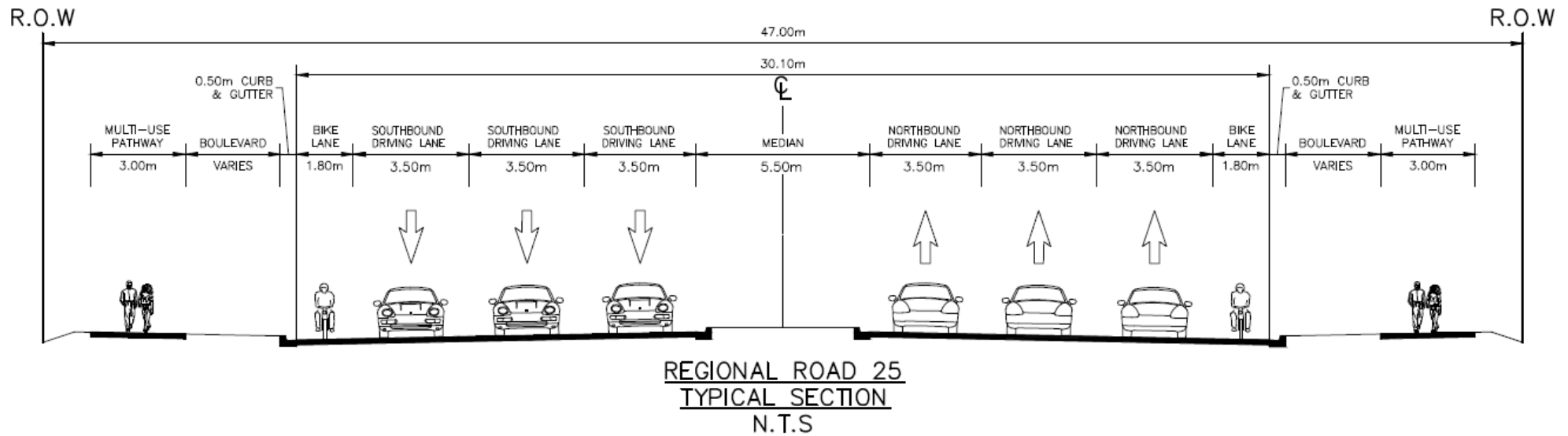
The proposed typical cross-section for the Regional Road 25 corridor improvements between Steeles Avenue and 5 Side Road is illustrated in **Figure 19**. The proposed cross-section within the study area will generally include the following features:

- 47 m right-of-way (varies locally near intersections and at constrained locations such as commercial properties).
- 6 lane cross-section (3 lanes in each direction).
- 5.5 m landscaped raised median, reduced to 1.0 m in constrained right-of-way areas.
- Reduction in the southbound left turn lane width from 3.5 m to 3.25 m at Regional Road 25 and High Point Drive, to minimize property impacts.
- Active transportation facilities, as follows:
  - 3.0 m multi-use path on both sides of the road throughout the project study limits, reduced to 2.4 m in constrained areas.
  - 1.8 m exclusive on-bike lanes on both sides of the road throughout the corridor.
- Boulevard, varying in width throughout the study area.
- 0.5 m curb and gutter and 0.5 m “kill strip” along both sides of the roadway.

In areas with existing constraints due to adjacent businesses and properties, the cross-section has been modified to minimize or avoid impacts to these features. These constraints include 8470 Regional Road 25, 8501 Chudleigh Way, 8473 Regional Road 25, the CN Rail overpass, and other buildings and properties in close proximity to the road right-of-way. Modification to the cross-section in restricted areas will be subject to further refinement during detailed design.



# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills



**Figure 19: Regional Road 25 Proposed Typical Cross-Section**



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

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## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **7.1.5 Intersections and Access**

As a Regional road, Regional Road 25 will include left and right turn lanes at most signalized intersections. All intersections within the study area that are signalized under existing conditions will remain (except at 5 Side Road with a new roundabout).

Under existing conditions, commercial and residential properties along Regional Road 25 generally have full moves access (i.e., can turn left and right) to and from Regional Road 25. The proposed widening of Regional Road 25 includes the implementation of a raised concrete centre median separating northbound and southbound lanes (except at signalized intersections). As a result, all commercial and residential properties will be restricted to right-in/right-out access only. Impacted properties will require alternate ways to access/egress, including “U” turns at signalized intersections or “360 degree turns” at the proposed 5 Side Road roundabout. Limiting access along Regional Road 25 will substantially increase the efficiency of traffic operations and improve safety for all road users.

### **7.1.6 Provisions for Active Transportation**

Both the Halton Region Official Plan and the Halton Region Active Transportation Master Plan (ATMP) Study (to 2031) recognized the need for active transportation (pedestrian and cyclist accommodations) throughout the corridor. The ATMP proposes on-road bike lanes and multi-use paths (both sides of Regional Road 25) between Steeles Avenue to 5 Side Road. Consistent with the ATMP, active transportation facilities for the study area are proposed as follows:

- Steeles Avenue to 5 Side Road:
  - 3.0 m multi-use paths on both sides of the road; and
  - 1.8 m wide on-road bike lanes on both sides of the road.

It should be noted that between the completion of the MCEA Study and construction, there may be new designs and policies related to active transportation. As such, the facilities being proposed may be updated or refined at the time of detailed design for the Regional Road 25 corridor. The 47 m ROW is capable of accommodating both active transportation facilities and road improvements in order to facilitate the sustainable movement of people and goods throughout the study area.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **7.1.7 Drainage and Stormwater Management**

#### **7.1.7.1 Proposed Drainage Conditions**

The overall drainage and stormwater management strategy is to improve upon existing drainage conditions (i.e., no overtopping on Regional Road 25 under Regional storm events and all crossings meet freeboard requirements). Both quality and quantity control are to be provided.

The study area of Regional Road 25 between Steeles Avenue and 5 Side Road contains tributaries and channels of Sixteen Mile Creek. There are two Stormwater Management (SWM) ponds within the Tributary N2-B subwatershed, including SWM Pond S34 and SWM Pond S36 (High Point Pond). The north portion of Regional Road 25 between Highway 401 and 5 Side Road has an urban section, where runoff from the road is collected via curbs, gutters, catch basins, and storm sewers, and drains into Tributary N-2B, which drains to Pond S36. The south portion of the road, between Steeles Avenue and Highway 401, has an urban section where runoff from the road is collected via curbs, gutters, and catch basins, and discharges untreated directly into Tributary N1-A.

The criteria for evaluating the existing stormwater management features within the study area include water quality control, water quantity control, and opportunities to implement infiltration measures/LID features, which may have the capability to address quantity and quality control.

The overall drainage and stormwater management (SWM) plan aims to evaluate the condition and performance of the existing SWM and drainage system and provide recommendations to accommodate the proposed road improvements. Both quality and quantity control are to be provided.

The widening of Regional Road 25 will result in an increase of impervious areas as compared to pre-development impervious areas. This will result in an increase of runoff north of Highway 401 to stormwater management Pond S36. The existing capacity of this pond is capable of accommodating the increased runoff from the increased impervious ROW. The increased runoff generated south of Highway 401 and north of Steeles Avenue will be maintained at pre-development levels by installing upsized pipes ("super-pipes") or underground chambers, which will provide the necessary storage volume for water quantity control.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

Due to the increase in impermeable surfaces from the road widening, there is potential for an increase in pollutants entering the watercourses. This results in reduced stream water quality, degraded aquatic habitat, flooding, and in-stream erosion. Mitigation measures are required to minimize adverse impacts, such as treatment trains for the removal of total suspended solids, and the incorporation of stabilization methods using natural vegetative materials, as well as traditional quality control measures, such as oil-grit separators.

The study area includes six culvert crossings of tributaries to Sixteen Mile Creek, including one crossing of Tributary N1-A east of Regional Road 25, under the CN Rail. The existing culvert crossings, SWM ponds, and tributary areas are provided on **Figure 20**.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

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## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

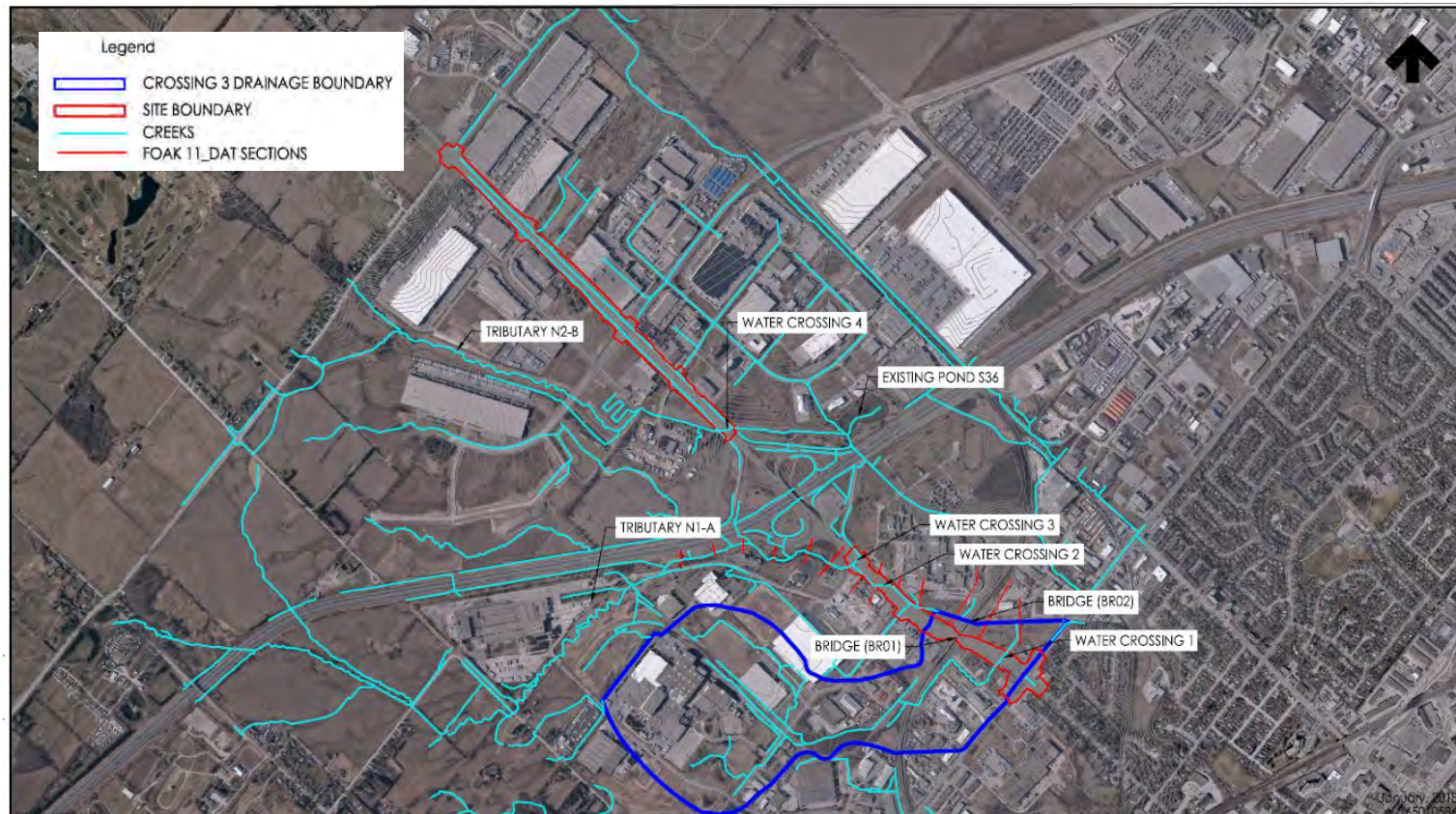


Figure 20: Existing Drainage Conditions and Culvert Locations



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

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## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

The existing culverts were evaluated to determine if existing capacity is sufficient to support increased flows following the proposed improvements. It has been determined that culverts C1 and C4 will not require any hydraulic capacity upgrades or improvements based on the projected flows. Both culvert C2 and C3 have sufficient hydraulic capacity but will require extensions to accommodate the road widening. Culvert C2 will be extended approximately 16.0 m on the east side of the road, and the ditch located downstream from the culvert will be realigned for a total length of 180 m. In addition, the culvert should undergo whatever rehabilitation or repairs deemed necessary at the time of detailed design. Culvert C3 will be extended approximately 10.0 m on both the north and south sides of Chisholm Drive to accommodate the improvements required at this location.

CN Rail Bridge BR01 was analyzed to confirm if the existing capacity is sufficient to convey Regional Road 25 overland flow during the 100-year and Regional Storm events. The conveyance capacity of the existing structure was confirmed to have sufficient capacity to convey the major storm peak flow, and therefore, does not require any improvements.

CN Rail Culvert BR02 was analyzed to confirm if the existing capacity is sufficient to convey the Regional flow of Tributary N-1A. The results confirm that Culvert BR02 does not have sufficient capacity, which results in the Regional Storm flooding a large area upstream of the CN Rail culvert, along Regional Road 25. In order to mitigate this flooding, it is proposed to increase the capacity of CN Rail Culvert BR02 by adding two circular (1800 mm diameter) relief culverts to either side of the existing culvert. Under these proposed conditions, Regional Road 25 will not overtop during a Regional Storm event (see Drainage/SWM Report for further details).

LID measures and oil-grit separators can be implemented, where possible, as a proactive SWM strategy that mitigates the impacts of increased runoff and stormwater pollution by managing runoff from the source. Suggested measures for water quality and quantity control include oil-grit separators, and underground polypropylene chambers. These can represent a relatively cost-effective method of providing SWM controls within a constrained right-of-way. The use of LID measures will be confirmed during detail design.

### **7.1.7.2 Proposed Conditions Hydrologic Modelling**

The proposed drainage conditions vary when compared to the existing conditions drainage mosaics, as shown on **Figure 21** and **Figure 22**.

A visual OTTHYMO (VO2) hydrologic model was developed to estimate localized runoff from the roadway and external areas under existing conditions, using the locally appropriate storm duration, distribution, and return period(s).

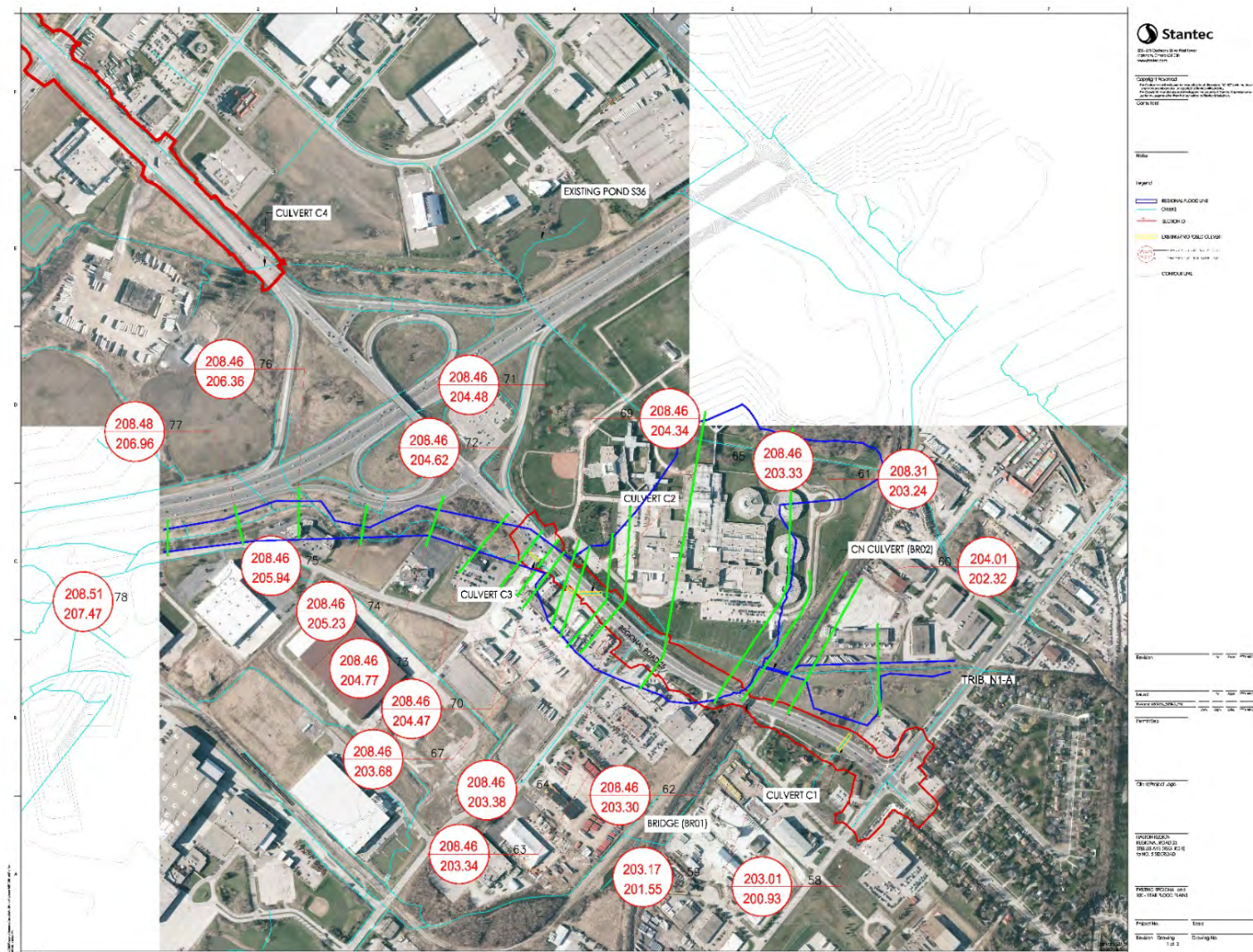


## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

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## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills



### Figure 21: Existing Regional and 100-Year Flood Plains



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **7.1.7.3 Hydraulic Assessment**

Hydraulic assessments have been completed for each culvert using HEC-2/HEC-RAS models to simulate the anticipated impacts that the proposed road improvements will have on the tributaries to Sixteen Mile Creek and the associated upstream/downstream flood conveyance infrastructure. Particular attention must be given to grading and ditching changes along the east and west sides of Regional Road 25 (from Chisholm Drive to Market Drive), adjacent to the watercourse. The details of each model used in the assessment is provided in the Drainage and SWM Report (**Appendix F**). These models will need to be updated at detailed design to verify culvert sizing, flood levels and quality control requirements, based on new hydraulic models to be provided by CH.

### **7.1.7.4 Road Classification and Design Flow**

Regional Road 25 is a major arterial road, traversing through both commercial and industrial developments adjacent to the corridor. According to the MTO Highway Drainage Design Standards (HDDS) for an urban arterial road, for structures with spans less than or equal to 6.0 m the design flow is the 50-year storm flow; and for spans greater than 6.0 m, the design flow is the 100-year storm flow.

Deemed as a major arterial road with a span of greater than 6.0 m, the Regional Road 25 design flow must follow the 100-year storm flow, as outlined in the MTO HDDS for an urban arterial road.

### **7.1.7.5 Hydraulic Modelling and Impact Assessments**

The hydraulic performance of the existing culverts was analyzed, and the results are summarized as follows:

- Crossing C1: Peak flows from the sub catchment are controlled to pre-development levels via three existing SWM facilities. The VO2 model was used to calculate the 100-year peak flow into the culvert. The analysis confirmed the culvert has sufficient capacity to convey the 100-year peak flow.
- Culvert C2: This culvert will be extended by 10.0 m on the east side of the road to accommodate the road widening at this location. Tributary NW-2-G3, downstream of the culvert, will be affected by the widening and will therefore be realigned to the east for a total length of 130 m. Natural channel design for the realigned section will be confirmed during detailed design. Structural rehabilitation works will also be required for Culvert C2. The detailed design will review the need for repair of deteriorated concrete; replacement of the inlet Structure P Corrugated Steel Pipe Arch (SPCSPA) with a precast 6000 x 2000 concrete structure (similar to the main culvert); inlet retaining walls; safety improvements; and, creek rehabilitation.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

- Culvert C3: This culvert will be extended by 3.0 m, and 6.0 m on both the north and south sides of the road respectively, the extension is proposed to accommodate the road widening at this location.
- Culvert C4: Has sufficient capacity to convey peak flows from all storm events up to and including the Regional Storm.
- Models confirmed the CN Rail Bridge BR01 has sufficient capacity to convey the Regional Storm.
- Modelling suggests the capacity of CN Rail Culvert BR02 should be increased to handle major storm flows and alleviate upstream flooding.
- Storm sewers will be sized to handle peak flows for the 5-year storm event generated by the new proposed road.
- Quantity control is required to control peak flows to pre-development levels for all storm events, including the 100-year storm.

The hydraulic performance of the existing structures was analyzed using HEC-RAS/HEC-2 models provided by Conservation Halton. Where HEC-RAS/HEC-2 models were not available, new models were developed and used to evaluate the culverts/crossings. This information will be used as input into detail design.

A summary of existing and proposed culvert hydraulic parameters has been included in **Table 10**.



# Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

**Table 10: Culverts Hydraulic Parameters (Existing and Proposed)**

| Culvert ID | Events   | Existing   |            |           |             | Proposed   |            |           |             |
|------------|----------|------------|------------|-----------|-------------|------------|------------|-----------|-------------|
|            |          | TWL<br>(m) | HWL<br>(m) | FB<br>(m) | OT<br>(Y/N) | TWL<br>(m) | HWL<br>(m) | FB<br>(m) | OT<br>(Y/N) |
| C1         | 5-Year   | 203.4      | 203.89     | 2.11      | No          | 203.40     | 203.89     | 2.11      | No          |
|            | 50-Year  | 203.5      | 204.36     | 1.64      | No          | 203.50     | 204.44     | 1.56      | No          |
|            | 100-Year | 203.5      | 204.48     | 1.52      | No          | 203.50     | 204.58     | 1.42      | No          |
|            | Regional | 203.6      | 204.95     | 1.05      | No          | 203.60     | 205.79     | 0.21      | No          |
| C2         | 10-Year  | 203.34     | 203.54     | 3.21      | No          | 203.98     | 203.76     | 2.99      | No          |
|            | 100-Year | 203.47     | 203.66     | 3.09      | No          | 204.27     | 203.98     | 2.77      | No          |
|            | Regional | 207.04     | 207.06     | -0.31     | Yes         | 205.27     | 205.27     | 1.48      | No          |
| C3         | 10-Year  | 204.69     | 204.79     | 2.01      | No          | 204.69     | 204.38     | 2.42      | No          |
|            | 100-Year | 204.95     | 205.24     | 1.56      | No          | 204.95     | 204.38     | 2.42      | No          |
|            | Regional | 207.22     | 207.31     | -0.51     | Yes         | 207.14     | 207.3      | -0.50     | Yes         |
| C4         | 10-Year  | 208.83     | 209.07     | 2.98      | No          | 208.83     | 209.07     | 2.98      | No          |
|            | 50-Year  | 208.9      | 209.36     | 2.69      | No          | 208.9      | 209.36     | 2.69      | No          |
|            | 100-Year | 208.92     | 209.48     | 2.57      | No          | 208.92     | 209.48     | 2.57      | No          |
|            | Regional | 209.21     | 211.83     | 0.22      | No          | 209.21     | 211.83     | 0.22      | No          |

*OT = Overtopping (of roadway)*

*FB = Freeboard*

*TWL = Tailwater Level*

*HWL = Computed Headwater Level*

*Reg = Regional Storm*



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### 7.1.7.6 Stormwater Management

A range of SWM practices were identified to be considered for the proposed Regional Road 25 corridor. The recommended practices for this project include:

- Implementation of a treatment train approach that includes catchbasin shield units and oil-grit separator units;
- LID measures (where appropriate) to achieve additional total suspended solids removal;
- Relief culverts to reduce flooding along Regional Road 25 during a Regional storm event; and
- Replacing existing outlets downstream of Crossing C1 with two new source point outlets to a branch of Tributary N2-B.

Quantity control measures, such as SWM ponds, have already been implemented and are an effective method of managing water storage needs post-construction. Upsized storage pipes or chambers can provide the necessary storage volumes required for the additional road runoff. Details and a summary table of the proposed super-pipes, orifices and stage-storage-discharge tables are required at the detailed design stage.

Areas south of the Highway 401 require additional quality control measures, which may include treatment trains comprised of catchbasin shield units and two proposed oil-grit separator units. Used as a form of quantity control, LID strategies such as underground storage chambers, help to minimize runoff, ultimately reducing negative impacts on groundwater levels, water temperature, risk of flooding and stream channel erosion.

### 7.1.7.7 Impact of Proposed Improvement of Road Corridor

The proposed improvements for Regional Road 25 include widening from a 4-lane to a 6-lane cross section, including the addition of active transportation facilities along both sides of the roadway. The proposed roadway improvements will lead to an increase in impervious areas, thereby increasing peak flow rates. Several SWM facilities are proposed to address flows from the increased impervious areas.

The existing Regional Road 25 has an impervious ROW of approximately 58%, compared to the 68% imperviousness assumed by the SWM facility design, including Pond S36. Therefore, the pond provides the stormwater quantity control requirements for the existing Regional Road 25, and still has additional capacity to control runoff from the proposed 68% impervious right-of-way. Runoff from the proposed widening is provided in **Table 11**.

The runoff from Regional Road 25, south of the Highway 401 interchange and north of Steeles Avenue, will be controlled to pre-development levels. Upsized pipes (super-pipes) or underground storage chambers will be utilized to provide the necessary storage volume.



**Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

**Table 11: Impervious area to Pond S36 (5 Side Road to Highway 401)**

| <b>FROM<br/>MH</b> | <b>TO<br/>MH</b> | <b>AREA<br/>(ha)</b> | <b>Imp<br/>%</b> | <b>Imp x Area</b> |
|--------------------|------------------|----------------------|------------------|-------------------|
| DICB76             | CBMH77           | 2.51                 | 29%              | 0.72              |
| CBMH77             | CBMH78           | 0.437                | 100%             | 0.44              |
| CBMH78             | CBMH75           | 0.284                | 100%             | 0.28              |
| CBMH75             | CBMH72           | 0.896                | 79%              | 0.70              |
| CBMH72             | CBMH70           | 0.34                 | 79%              | 0.27              |
| CBMH70             | CBMH67           | 0.37                 | 79%              | 0.29              |
| CBMH67             | CBMH63           | 0.32                 | 79%              | 0.25              |
| CBMH63             | CBMH61           | 0.27                 | 79%              | 0.21              |
| CBMH61             | CBMH59           | 0.27                 | 79%              | 0.21              |
| CBMH59             | MHS56            | 0.24                 | 79%              | 0.19              |
| MHS56              | MHS48            | 0.63                 | 79%              | 0.50              |
| MHS48              | MHS39            | 0.76                 | 79%              | 0.60              |
| MHS39              | MHS33            | 0.62                 | 79%              | 0.49              |
| MHS33              | MHS28            | 0.49                 | 79%              | 0.39              |
| MHS28              | MHS21            | 1.03                 | 79%              | 0.81              |
| MHS21              | MHS13            | 0.83                 | 71%              | 0.59              |
| MHS13              | MHS6             | 0.71                 | 71%              | 0.51              |
| MHS6               | STC9000          | 0                    |                  |                   |
| <b>Totals</b>      |                  | <b>11.007</b>        | <b>67.6%</b>     | <b>7.44</b>       |



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **7.1.7.8 Proposed Stormwater Management Strategy**

As previously noted, Pond S36 has sufficient quantity control capacity to accommodate the widened Regional Road 25 corridor. The impervious surface of the right-of-way will increase from 58% to approximately 68%, allowing the existing pond to provide the necessary stormwater quantity control storage volume, and still provide additional capacity to control runoff from the roadway. The runoff north of Steeles Avenue and south of Highway 401 will be controlled to pre-development levels by implementing upsized pipes (“super-pipes”), which will provide the necessary storage volume.

The quality control measures proposed for the widened Regional Road 25 north of Highway 401 consists of a treatment train, which includes a Stormceptor STC9000 and Pond S36. The Stormceptor unit was analyzed along with Pond S36 and was confirmed to provide sufficient capacity to treat the additional impervious area of the widened Regional Road 25. The quality control for the proposed widening south of Highway 401 and north of Steeles Avenue will be provided via treatment trains. The treatment trains will include Catch Basin Shield units and two Oil-Grit Separator (OGS) units. Other alternative measures may be used to achieve the required 80% TSS removal such as Jellyfish Filters and LID measures (where appropriate). Analysis of these options will be provided during detailed design.

The existing and proposed storm sewer systems were both designed in accordance with the Halton Region and Town of Milton standards. The new proposed storm sewers were sized to convey the peak flows generated during the 5-year storm event. The overland flow route provided through Regional Road 25 which conveys major system flows in excess of the minor system up to the 100-year and Regional Storm events will be directed to the Pond S36 for the north side of Regional Road 25, and to the Tributary of Sixteen Mile Creek for the south side of the road. Calculations were completed to confirm that the major system flow would not exceed the width of the road allowance. The analysis verified that the flow would not exceed the road width, and that no cases resulted in the two centre lanes of the right-of-way being inundated with flooding.

The existing outlets downstream of Crossing C1 through roadside ditches will be replaced with two new source point outlets to a branch of Tributary N2-B. A permit from CH under Ontario Regulation 162/06 will be required prior to construction of the outlets.

### **7.1.7.9 Water Balance and Low Impact Development Measures**

Low Impact Development (LID) is a SWM strategy that seeks to mitigate the impacts of increased runoff and stormwater pollution by managing runoff as close to its source as possible. LID practices were considered in order to protect the health of the Sixteen Mile Creek watershed through the implementation of small-scale structural practices that mimic natural or predevelopment hydrology. The following LID treatments were considered:



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

- Suitable source treatment for roads, including permeable pavement and engineered soil cells;
- Stormwater detention/retention and infiltration systems; and
- Water balance and erosion and sediment control.

This will allow for minimization of runoff through implementing permeable surfaces, allowing stormwater to infiltrate through and provide the water balance requirement. Analysis of the above noted measures will be carried out during the detailed design stage.

### **7.1.8 Fluvial Geomorphology**

Assessments of the watercourses were undertaken to describe the existing conditions within the study area and determine potential impacts of the proposed works on the watercourses.

The downstream portion of the existing storm sewer servicing the area north of Highway 401 runs parallel to Tributary N2-B and discharges into High Point Pond (S36). Work was recently performed on the Tributary N2-B watercourse crossing Regional Road 25 immediately north of Highway 401 from the east end of the culvert to Pond S36. The existing concrete-lined trapezoidal channel downstream of Culvert C4 was transformed into a naturalized channel, which incorporates stabilization methods (i.e. vegetation) to provide long term stability. The channel has a meandering pattern with riffles, pools, woody debris structures, J-hook structures, cross-vanes, and constructed riffles. Additional coordination with MTO, MNRF, and Department of Fisheries and Oceans (DFO) may be required during detailed design. With a maximum storage of 97,400 m<sup>3</sup>, High Point Pond accommodates a total drainage area of 691 ha, including a development area of 251 ha, at an imperviousness of 68%. As it provides sufficient capacity for storm events, no additional work is required.

The existing CN Rail culvert however does not provide sufficient capacity during a Regional Storm event, resulting in flooding upstream of the CN Rail culvert, particularly along Regional Road 25 and Chisholm Drive.

### **7.1.9 Hydrogeology**

A Hydrogeological Assessment was conducted as part of the MCEA Study to broadly characterize the hydrogeological conditions in the overall study area between Steeles Avenue and 5 Side Road. A copy of the Hydrogeological Assessment report is included in **Appendix K**.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

The purpose of the hydrogeological investigation is to characterize the subsurface soil and groundwater conditions and assess temporary dewatering and groundwater control requirements in order to facilitate the design of the project. Dewatering involves controlling groundwater by pumping in order to locally lower groundwater levels in the vicinity of the excavation.

Groundwater conditions were observed in the advanced boreholes during and immediately upon completion of drilling. Based on the measured levels, groundwater is expected to flow southeast towards Sixteen Mile Creek, however, the extensive underground infrastructure in this urban setting may influence local groundwater flow patterns.

The Ontario Water Resources Act states that the diversion of surface water or the extraction of groundwater in excess of 50,000 L/day requires a Permit to Take Water (PTTW) to be obtained from MECP. If dewatering on a construction site is completed between 50,000 L/day and 400,000 L/day, the dewatering shall be registered through the Environmental Activity and Sector Registry (EASR). According to the preliminary dewatering rate estimates, dewatering rates can be controlled within 400,000 L/day should the works be conducted in stages and sections. However, if all excavations take place concurrently, the total concurrent pumping rate would exceed 400,000 L/day and therefore require a Category 3 PTTW. Dewatering rates will be confirmed during detail design.

Based on the MECP water well records, no water supply wells are present within the preliminary estimated zone of influence for temporary dewatering. The site and its neighbouring properties are to be serviced by municipal water sourced from Lake Ontario. As a result, no impacts to water supply wells are anticipated.

Based on observations made during site visits, the site and surrounding environments may be subject to contamination and/or additional environmental concerns. Tributaries of Sixteen Mile Creek cross the roadways of Regional Road 25 and Chisholm Drive via culvert crossings. Diversion of surface water may be considered for the culvert works. As a result, impacts to Sixteen Mile Creek, as well as temporary dewatering, should be anticipated.

Site observations noted catch basins, manholes, structures, and the CN Rail tracks within the study area. These structures are subject to risks resulting from the dewatering and associated ground settlement and subsidence. When groundwater levels are lowered in the soil deposits, effective stresses will be increased, and consolidation and subsequent settlement may occur. Therefore, potential impacts associated with the



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

temporary dewatering should be considered for the buildings, structures, roadways, CN Rail tracks and underground utilities, which are all located within the estimated zone of influence. Monitoring of structures should be completed to minimize impacts, including pre-excavation condition surveys, installation of settlement monitoring monuments, and reviews by qualified geotechnical and structural engineers.

Prior to any dewatering activities, a temporary dewatering plan shall be prepared by the selected contractor and reviewed by qualified individuals.

### **7.1.10 Landscaping**

Regional Road 25 will be a six-lane urban roadway functioning as a major arterial road which supports the movements of both people and goods. The roadway is characterized by commercial, industrial, and institutional properties and current landscaping is minimal. Active transportation facilities will be incorporated into the design to support various modes of transportation, and streetscaping/landscaping will support these active transportation facilities wherever right-of-way is available. In addition, landscaping will be added to existing/proposed watercourses to support terrestrial, aquatic, and avian habitat at the edges of the corridor, and to promote greening of the corridor wherever possible. A landscape plan will be developed during detailed design and adhere to the Region's Landscaping Guidelines and Specifications (2018).

### **7.1.11 Utilities**

Impacts to existing utilities were considered throughout the development of design alternatives. The study area contains overhead hydro, gas, telecommunications conduits (Bell, Rogers, interconnect cables), sanitary sewer, and watermain infrastructure. The preferred 'best-fit' alternative has the following potential impacts:

- **Overhead Hydro:** Existing overhead hydro has a high potential for impacts due to road widening and the addition of a multi-use path on both sides of the road, resulting in the relocation of most hydro poles on both sides of the roadway.
- **Underground Hydro:** There is a high potential to impact existing underground hydro north of Highway 401 on the west side of Regional Road 25 between Highway 401 and Peddie Road. Due to road widening the existing underground hydro will be under the proposed road and therefore will likely need relocation.
- **Gas Main:** There is high potential to impact the existing gas main resulting in relocation. Due to road widening, the existing gas main will be under the proposed road on the west side of Regional Road 25 from approximately 80 m south of High Point Drive to approximately 100 m north of James Snow Parkway, and on the east side of Regional Road 25 from approximately 230 m south of Peddie Road to approximately 70 m north of Peddie Road.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

- Telecommunications: There is a moderate potential for impacts to telecommunication impacts resulting in relocation. Due to road widening, existing underground Bell will be located under the proposed road between the CN Rail bridge and south of Highway 401, as well as between the area just south of High Point Drive and north of James Snow Parkway.
- Sanitary Sewer: There is a low potential for impacts to the sanitary sewer located on Regional Road 25 between James Snow Parkway and 5 Side Road resulting in relocation.
- Watermain: There is a low potential for watermain impacts resulting in relocation.

The impacts to all utilities must be reviewed and confirmed during detail design. Additional right-of-way may be required once the locations of utilities are confirmed.

### **7.1.12 Illumination**

It is proposed that Regional Road 25 be fully illuminated per Halton Region standards for arterial roadways.

### **7.1.13 Tree Inventory**

Tree impacts resulting from the proposed improvements were assessed based on the potential impacts of grading and construction. Tree removal has been assessed based on the overall impacts that will remove more than 1/3 of the root zone of the trees by cutting grade or filling that would exceed more than 150 mm in depth within the root zone, or by directly impacting the trees with new infrastructure or construction. A total of 128 trees have been recommended for removal based on impacts to the trees. The remaining 194 trees will be maintained and are recommended for preservation using tree protection fencing.

Impacted trees will be replaced with new trees where possible, and the new planting will be completed during construction. The tree inventory and potential tree removals are provided in Appendix I.

### **7.1.14 Property Requirements**

The nominal proposed ROW for Regional Road 25 is 47 m between Steeles Avenue and 5 Side Road. A narrower cross-section is possible in areas where constraints exist, although it is more likely that additional property will be required when widening to 6 lanes and adding exclusive turning lanes (i.e., right turn and left turn).



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

Potential property impacts are as follows:

- Steeles Avenue to Market Drive: East side of corridor to accommodate widening
- Market Drive to Chisholm Drive: East side of corridor to accommodate widening and moderate to commercial and private properties for restoration of parking lots and entrances;
- High Point Drive to James Snow Parkway: Minor frontage impacts and restoration to private industrial properties on west side of corridor;
- James Snow Parkway to Escarpment Way/Peddie Road: Temporary and permanent frontage impacts to private properties and along the road corridor on both the east and west side of Regional Road 25; and
- Escarpment Way/Peddie Road to 5 Side Road: Permanent impacts and restoration to properties at intersections to accommodate daylighting triangles and intersection construction.

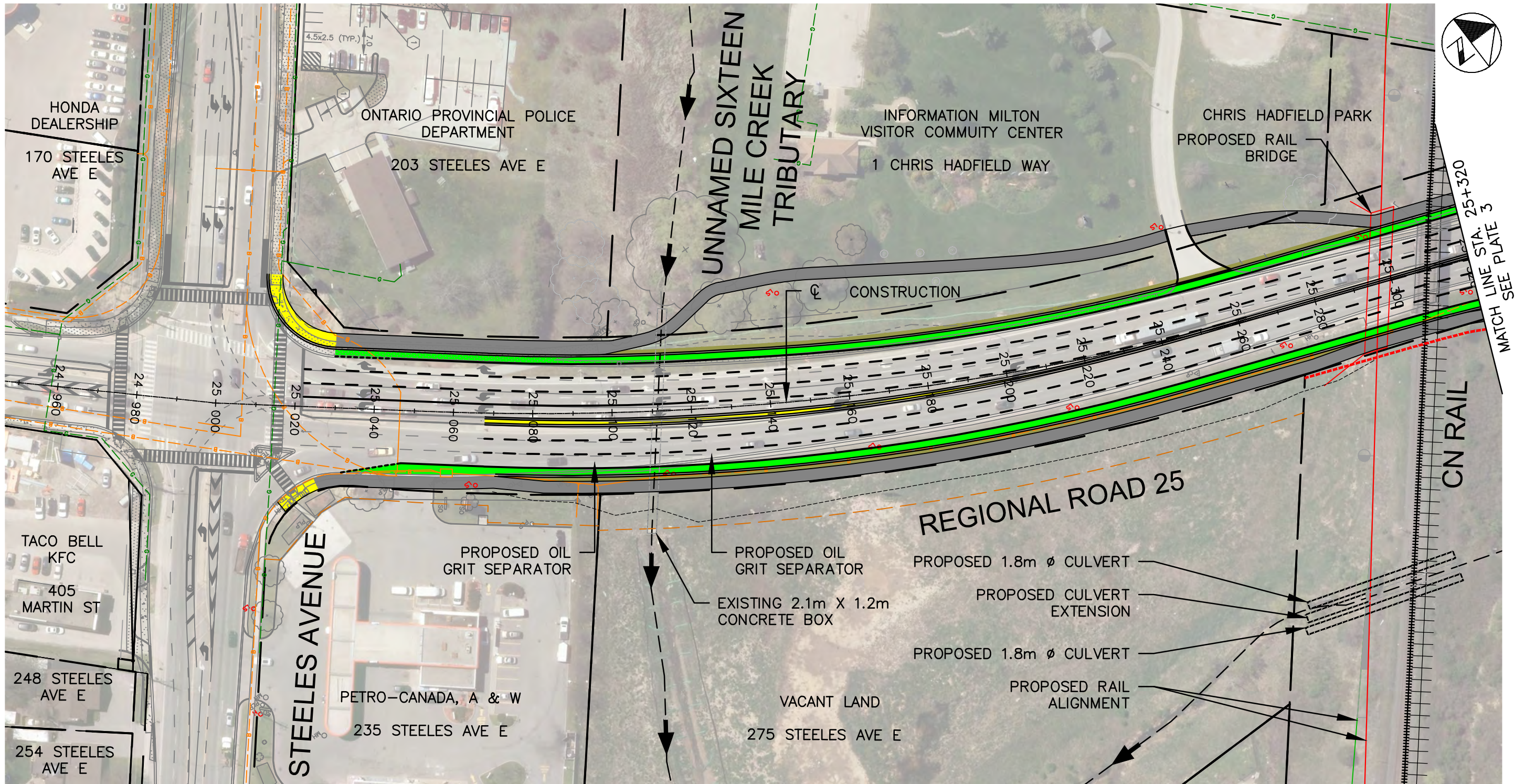
The proposed ROW and estimated easements are shown on **Plates 1 to 20**, following the text of the report. The proposed property lines are preliminary and subject to further review during detailed design.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

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SCALE  
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### REGIONAL ROAD 25 - PREFERRED ALTERNATIVE FROM STA. 25+000 TO STA. 25+320

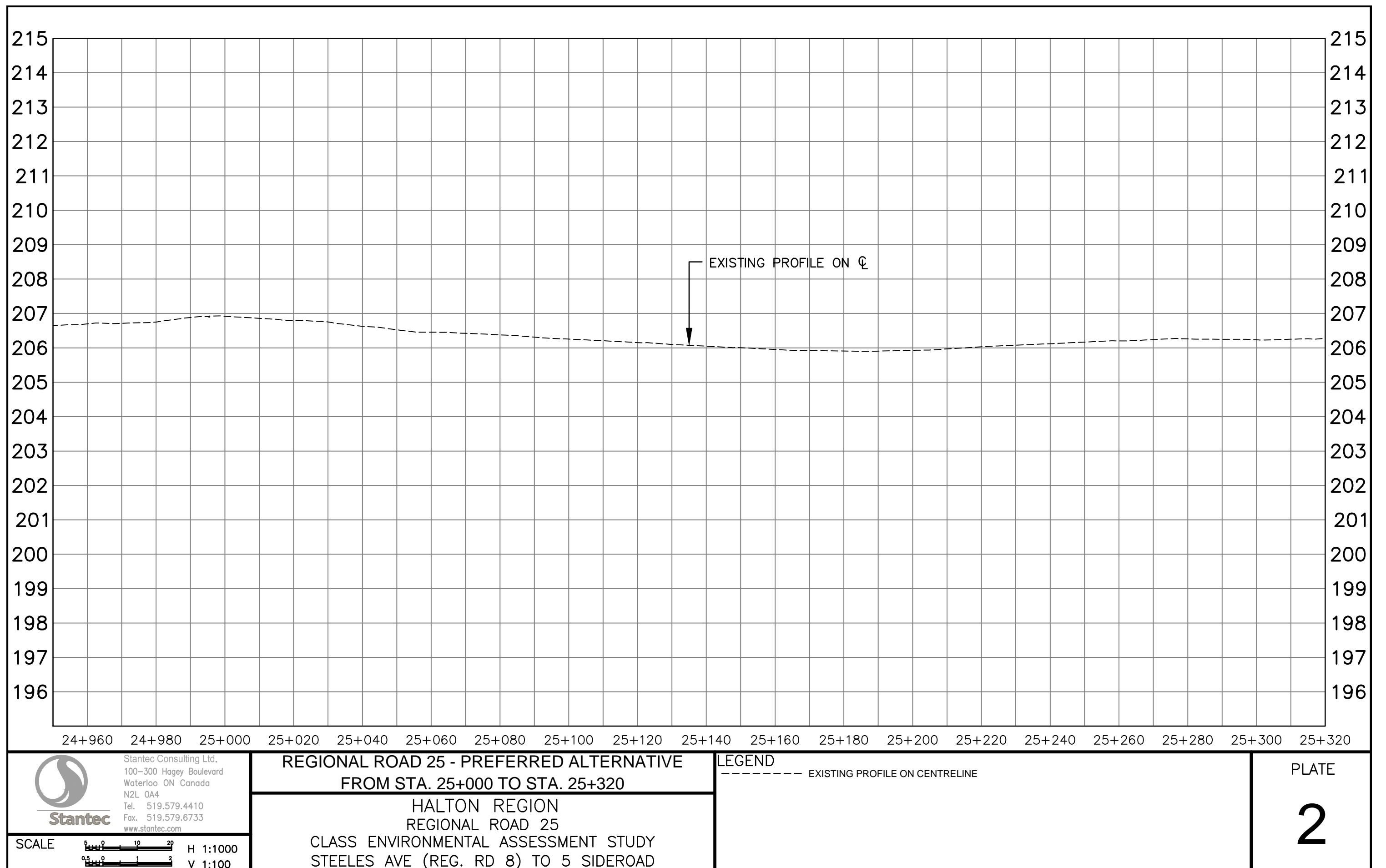
HALTON REGION  
REGIONAL ROAD 25  
CLASS ENVIRONMENTAL ASSESSMENT STUDY  
STEELES AVE (REG. RD 8) TO 5 SIDEROAD

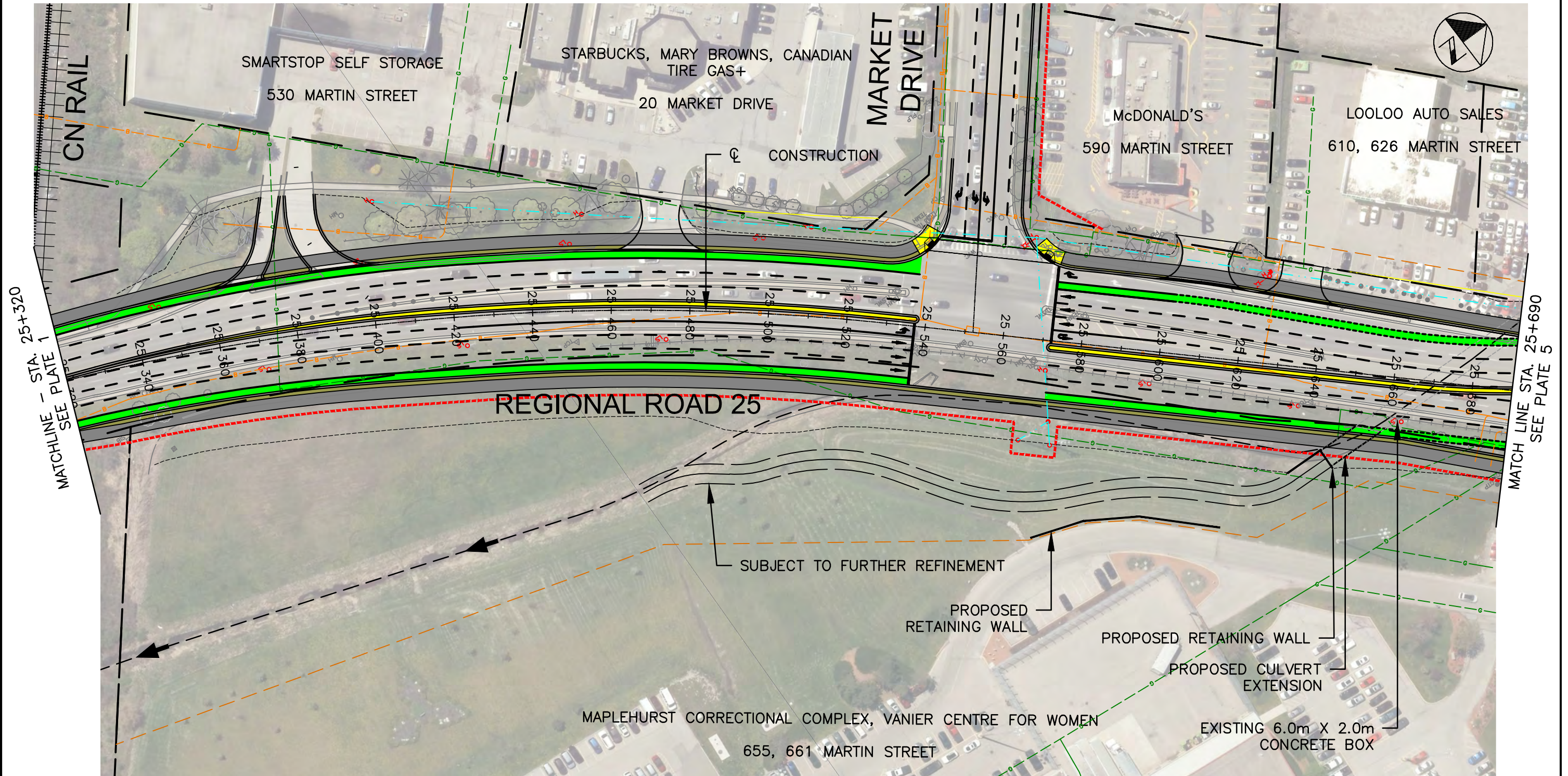
#### LEGEND

|  |                                 |  |                             |
|--|---------------------------------|--|-----------------------------|
|  | PROPOSED BIKE LANE              |  | PROPOSED GRADING LIMIT      |
|  | PROPOSED SPLASH PAD             |  | PROPOSED PERMANENT EASEMENT |
|  | PROPOSED MULTI-USE PATHWAY      |  | PROPOSED OVERHEAD HYDRO     |
|  | PROPOSED SIDEWALK / MEDIAN      |  | EXISTING UNDERGROUND HYDRO  |
|  | EXISTING PROPERTY               |  | EXISTING UNDERGROUND BELL   |
|  | PROPOSED RIGHT OF WAY           |  | EXISTING UNDERGROUND GAS    |
|  | PROPOSED AERIAL EASEMENT        |  | ABANDONED UNDERGROUND GAS   |
|  | TEMPORARY CONSTRUCTION EASEMENT |  |                             |

PLATE

1





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## REGIONAL ROAD 25 - PREFERRED ALTERNATIVE FROM STA. 25+320 TO STA. 25+690

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REGIONAL ROAD 25  
CLASS ENVIRONMENTAL ASSESSMENT STUDY  
STEELES AVE (REG. RD 8) TO 5 SIDEROAD

### LEGEND

|  |                                 |  |                             |
|--|---------------------------------|--|-----------------------------|
|  | PROPOSED BIKE LANE              |  | PROPOSED GRADING LIMIT      |
|  | PROPOSED SPLASH PAD             |  | PROPOSED PERMANENT EASEMENT |
|  | PROPOSED MULTI-USE PATHWAY      |  | PROPOSED OVERHEAD HYDRO     |
|  | PROPOSED SIDEWALK / MEDIAN      |  | EXISTING UNDERGROUND HYDRO  |
|  | EXISTING PROPERTY               |  | EXISTING UNDERGROUND BELL   |
|  | PROPOSED RIGHT OF WAY           |  | EXISTING UNDERGROUND GAS    |
|  | PROPOSED AERIAL EASEMENT        |  | ABANDONED UNDERGROUND GAS   |
|  | TEMPORARY CONSTRUCTION EASEMENT |  |                             |

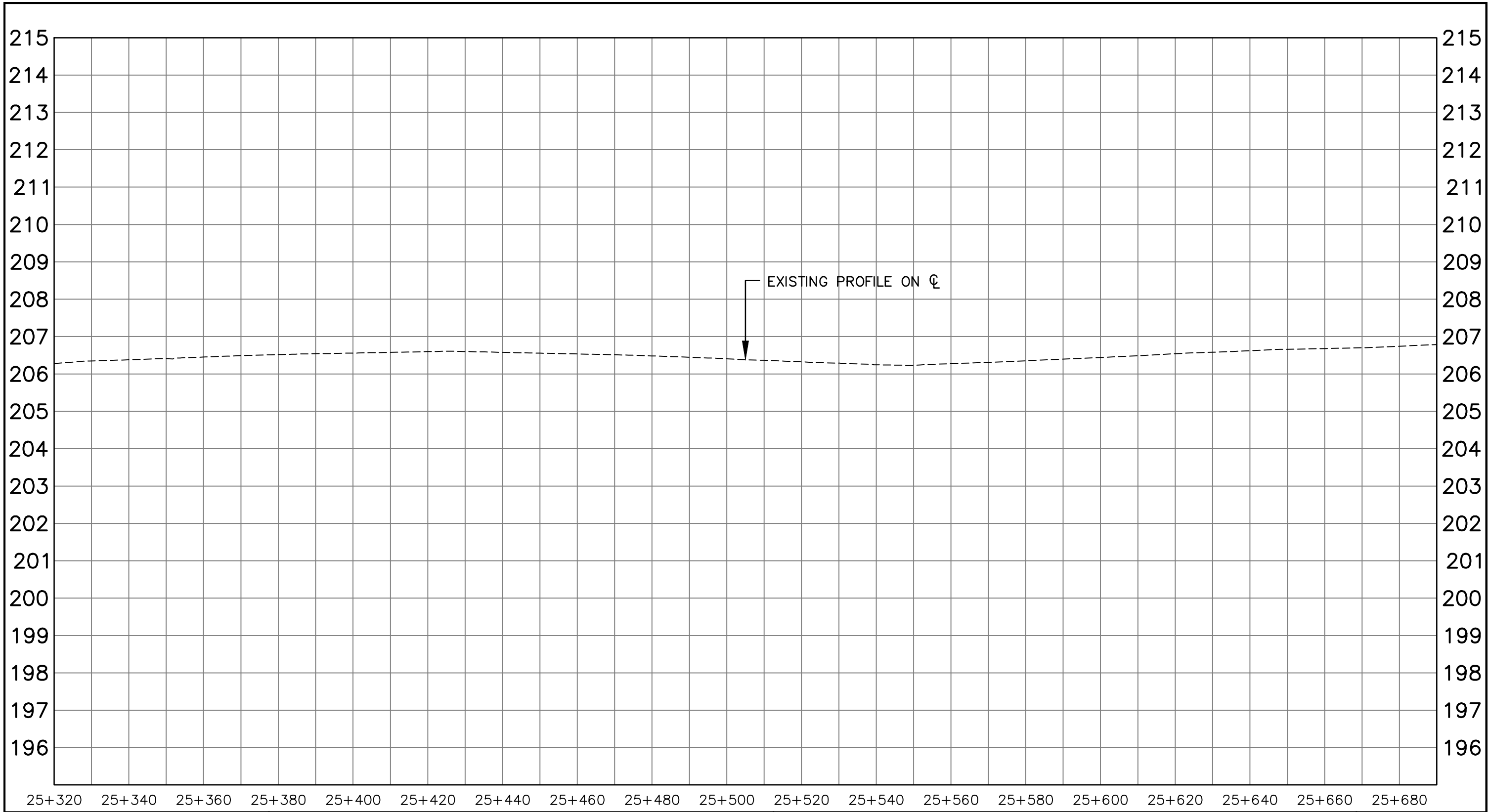
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PLATE

3



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**REGIONAL ROAD 25 - PREFERRED ALTERNATIVE  
FROM STA. 25+320 TO STA. 25+690**

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CLASS ENVIRONMENTAL ASSESSMENT STUDY  
STEELES AVE (REG. RD 8) TO 5 SIDEROAD

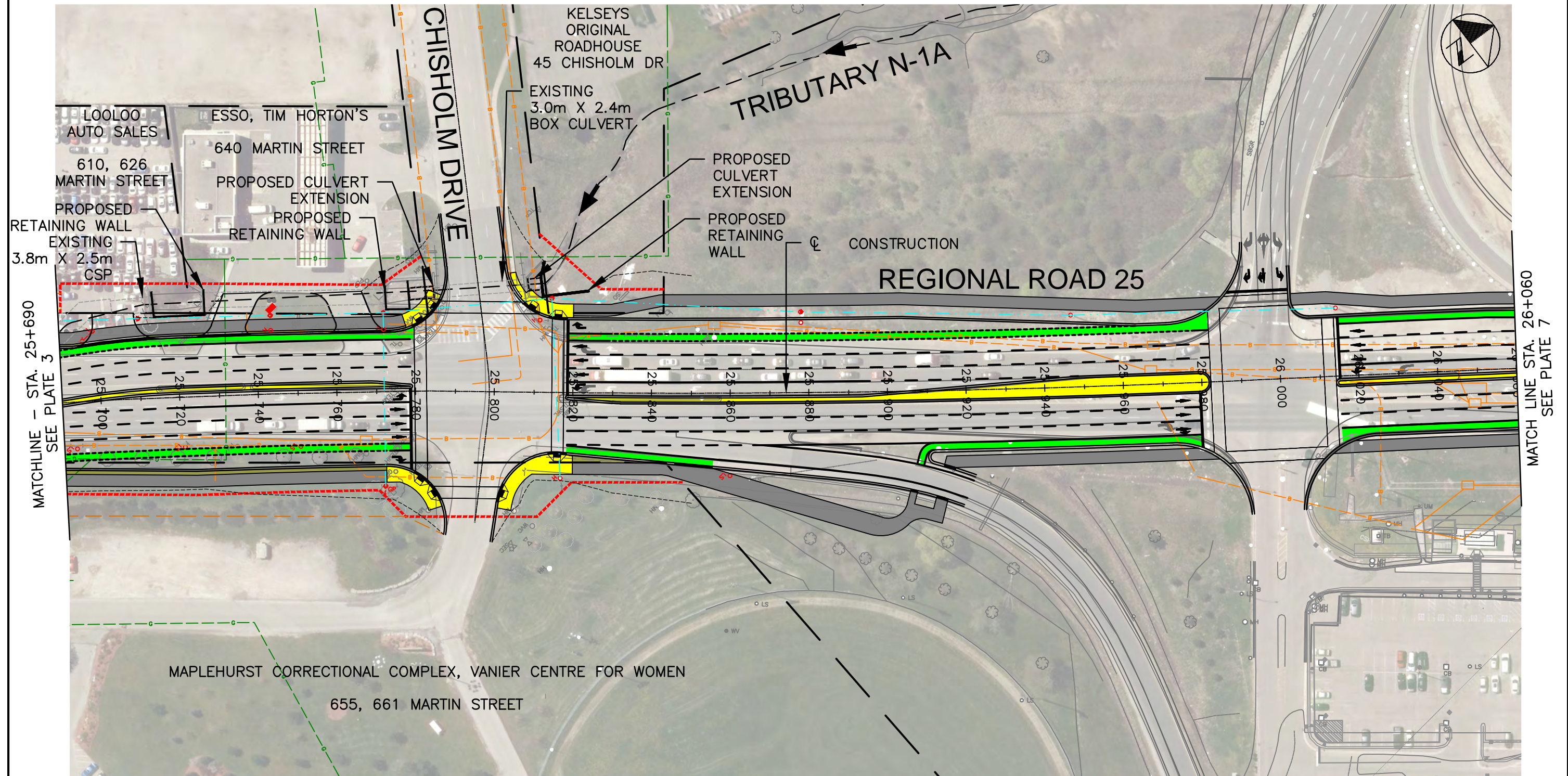
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----- EXISTING PROFILE ON CENTRELINE

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V 1:100

PLATE

4



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## REGIONAL ROAD 25 - PREFERRED ALTERNATIVE FROM STA. 25+690 TO STA. 26+060

HALTON REGION  
REGIONAL ROAD 25  
CLASS ENVIRONMENTAL ASSESSMENT STUDY  
STEELES AVE (REG. RD 8) TO 5 SIDEROAD

### LEGEND

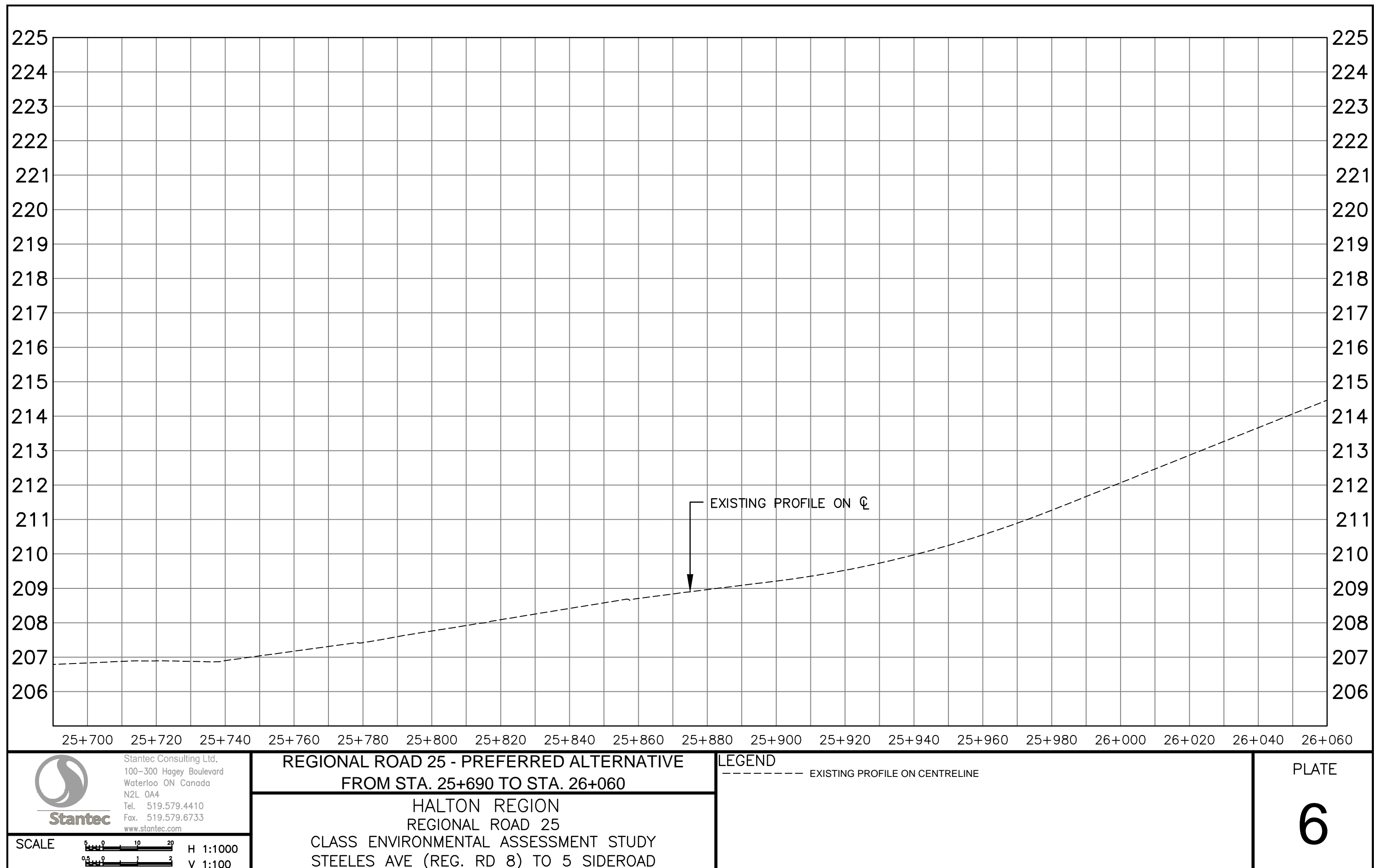
|  |                                 |  |                             |
|--|---------------------------------|--|-----------------------------|
|  | PROPOSED BIKE LANE              |  | PROPOSED GRADING LIMIT      |
|  | PROPOSED SPLASH PAD             |  | PROPOSED PERMANENT EASEMENT |
|  | PROPOSED MULTI-USE PATHWAY      |  | PROPOSED OVERHEAD HYDRO     |
|  | PROPOSED SIDEWALK / MEDIAN      |  | EXISTING UNDERGROUND HYDRO  |
|  | EXISTING PROPERTY               |  | EXISTING UNDERGROUND BELL   |
|  | PROPOSED RIGHT OF WAY           |  | EXISTING UNDERGROUND GAS    |
|  | PROPOSED AERIAL EASEMENT        |  | ABANDONED UNDERGROUND GAS   |
|  | TEMPORARY CONSTRUCTION EASEMENT |  |                             |

SCALE

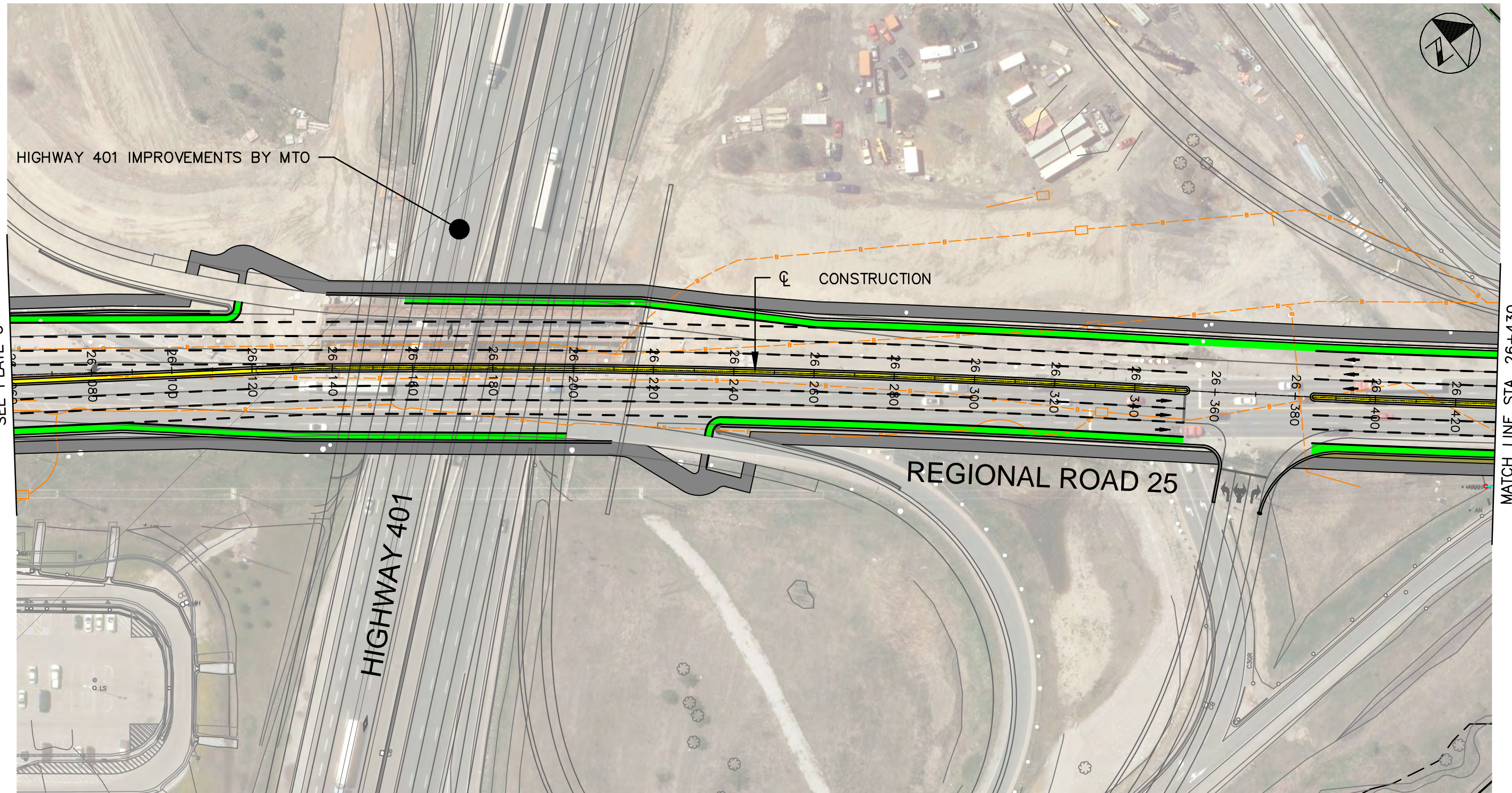


PLATE

5



MATCHLINE - STA. 26+060  
SEE PLATE 5



MATCH LINE STA. 26+430  
SEE PLATE 9

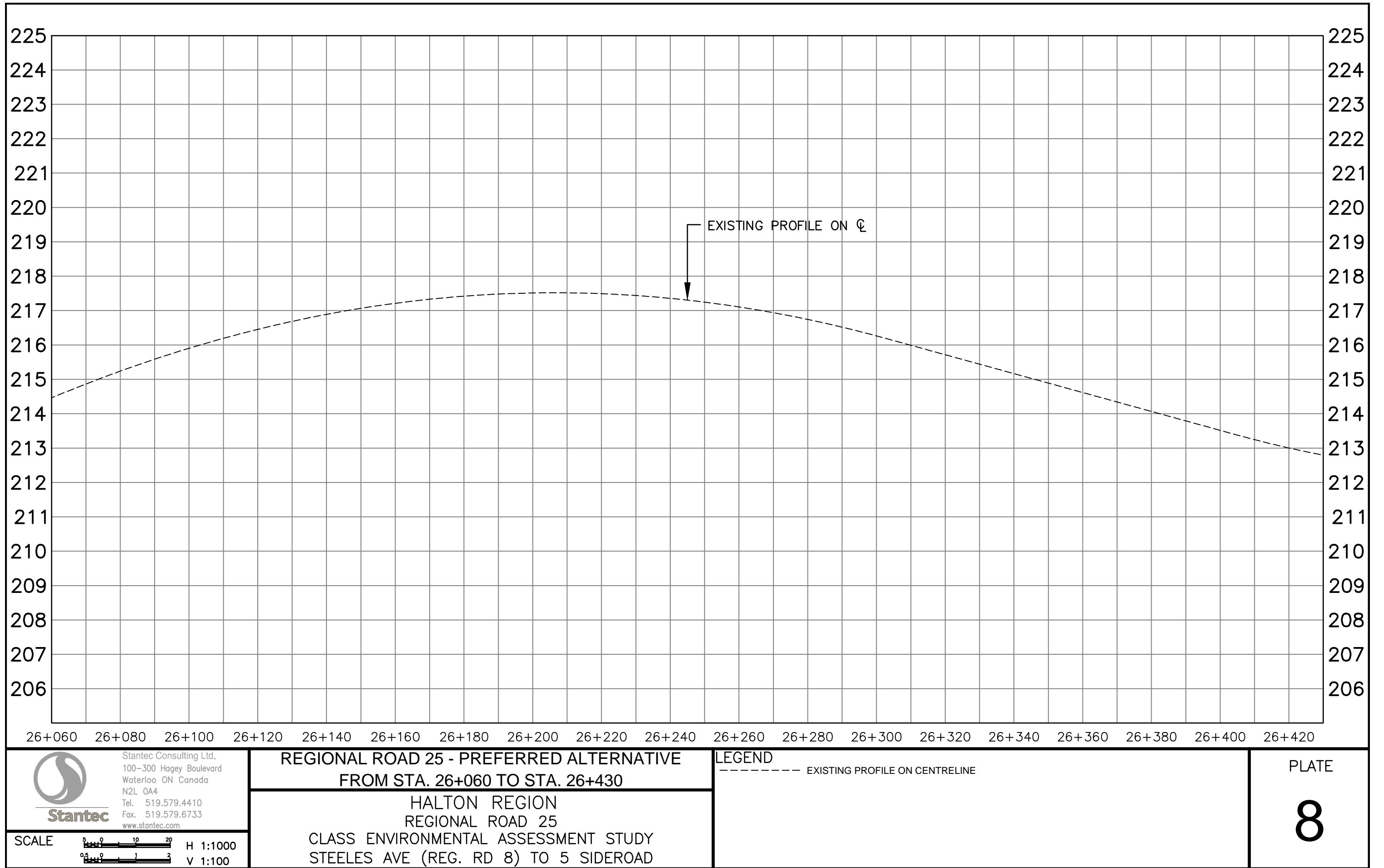


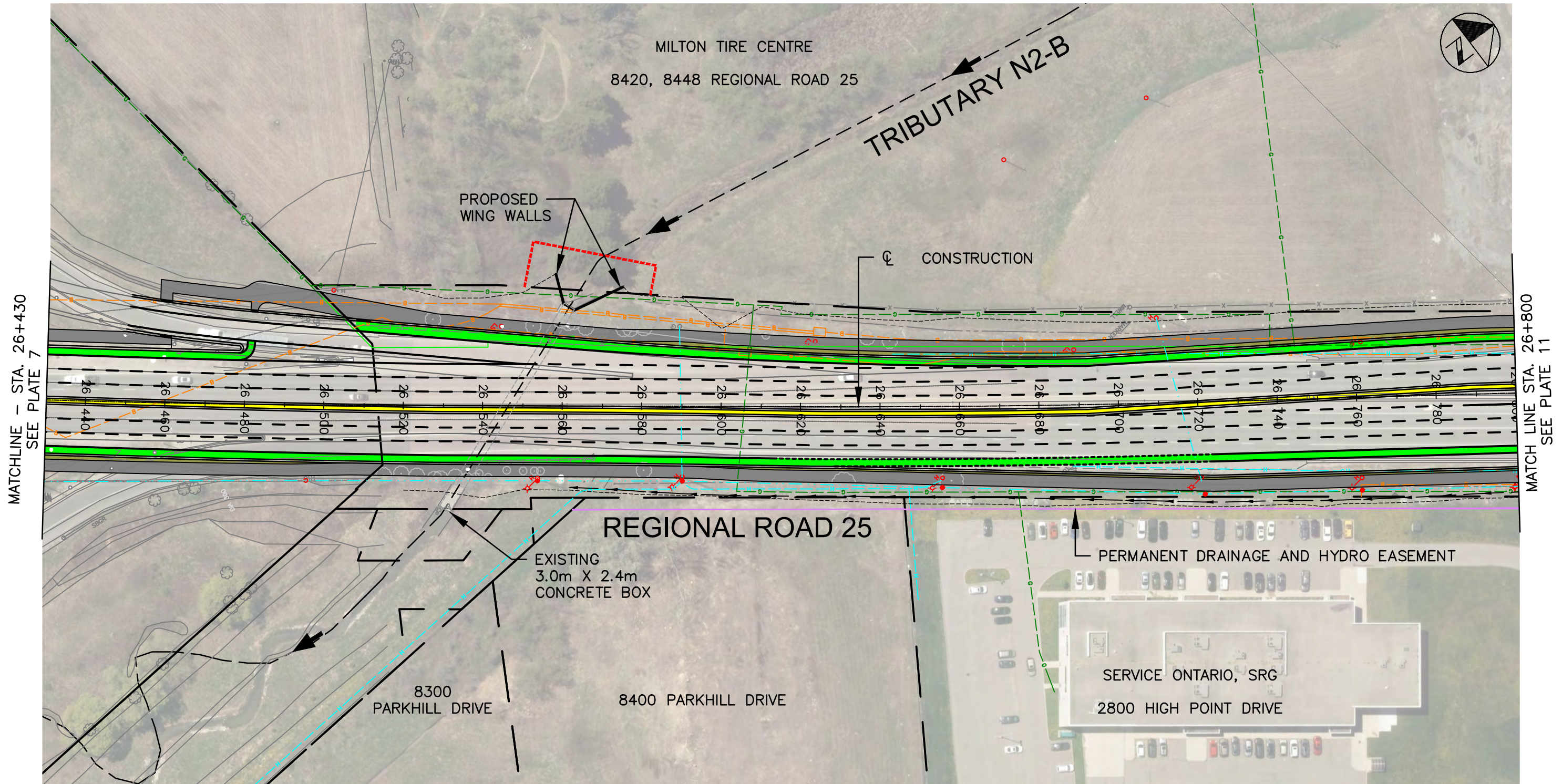
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REGIONAL ROAD 25 - PREFERRED ALTERNATIVE  
FROM STA. 26+060 TO STA. 26+430  
HALTON REGION  
REGIONAL ROAD 25  
CLASS ENVIRONMENTAL ASSESSMENT STUDY  
STEELES AVE (REG. RD 8) TO 5 SIDEROAD

| LEGEND |                                 |
|--------|---------------------------------|
|        | PROPOSED BIKE LANE              |
|        | PROPOSED SPLASH PAD             |
|        | PROPOSED MULTI-USE PATHWAY      |
|        | PROPOSED SIDEWALK / MEDIAN      |
|        | EXISTING PROPERTY               |
|        | PROPOSED RIGHT OF WAY           |
|        | PROPOSED AERIAL EASEMENT        |
|        | TEMPORARY CONSTRUCTION EASEMENT |
|        | PROPOSED GRADING LIMIT          |
|        | PROPOSED PERMANENT EASEMENT     |
|        | PROPOSED OVERHEAD HYDRO         |
|        | EXISTING UNDERGROUND HYDRO      |
|        | EXISTING UNDERGROUND BELL       |
|        | EXISTING UNDERGROUND GAS        |
|        | ABANDONED UNDERGROUND GAS       |





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## REGIONAL ROAD 25 - PREFERRED ALTERNATIVE FROM STA. 26+430 TO STA. 26+800

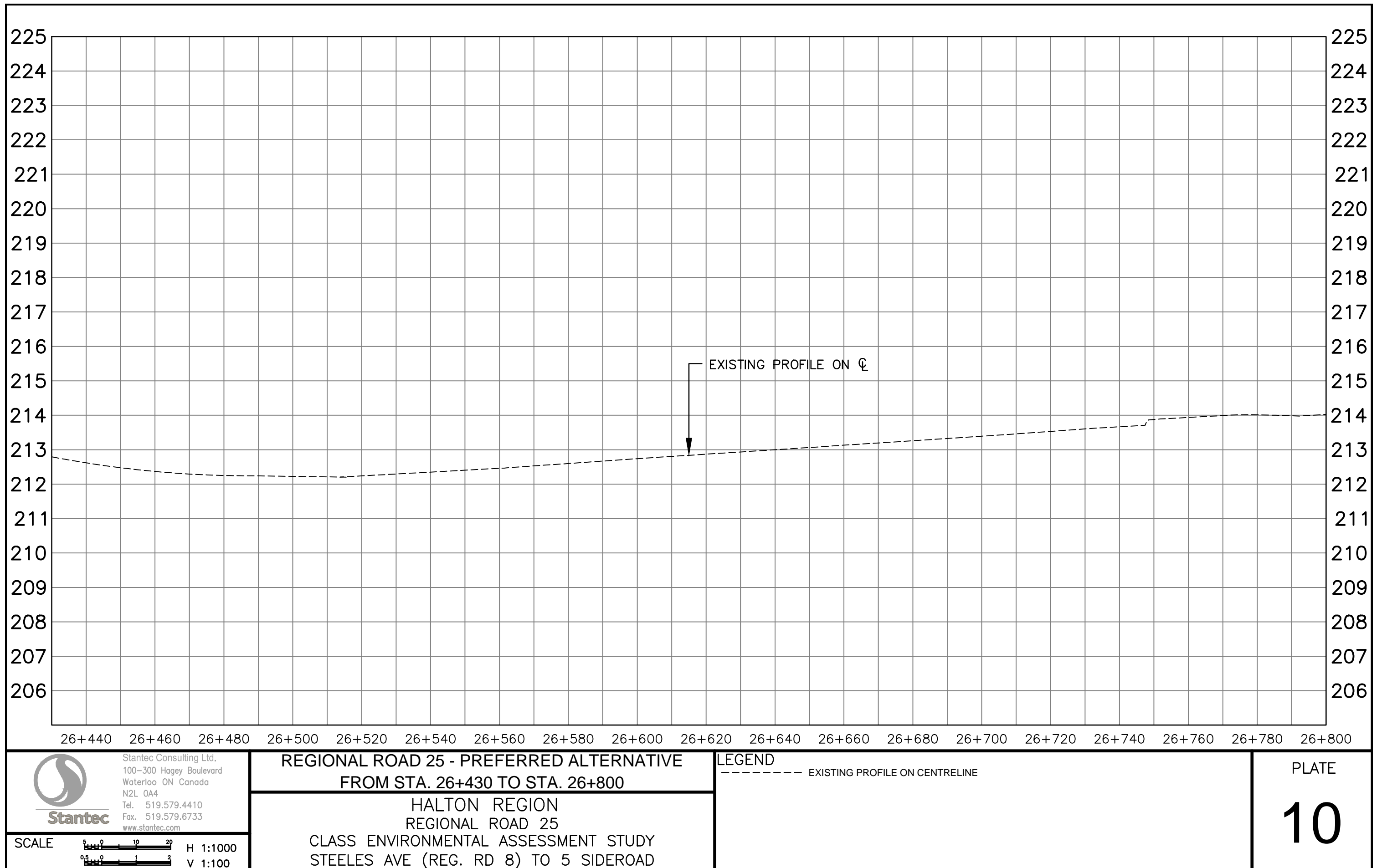
HALTON REGION  
REGIONAL ROAD 25  
CLASS ENVIRONMENTAL ASSESSMENT STUDY  
STEELES AVE (REG. RD 8) TO 5 SIDEROAD

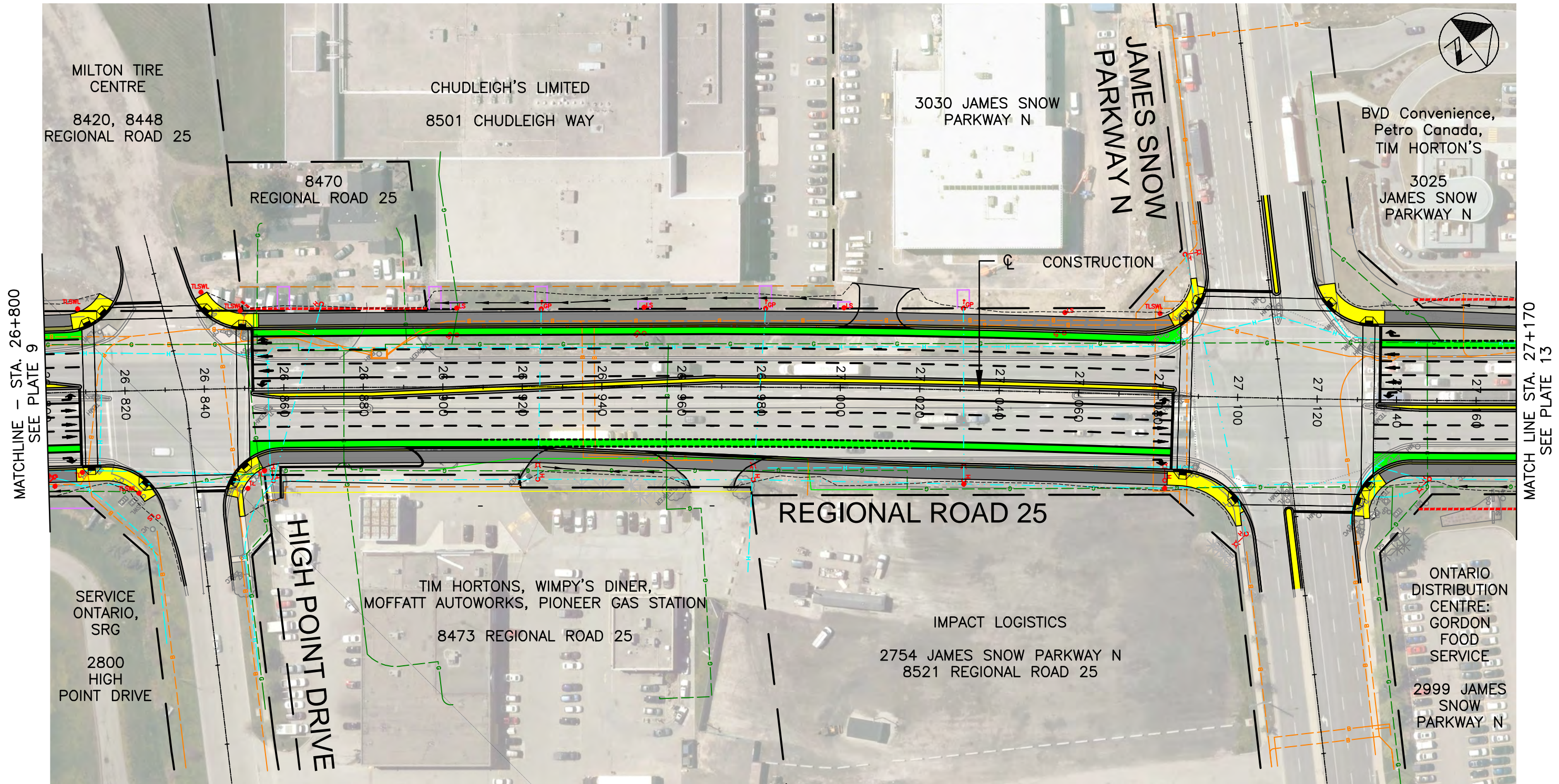
### LEGEND

|  |                                 |  |                             |
|--|---------------------------------|--|-----------------------------|
|  | PROPOSED BIKE LANE              |  | PROPOSED GRADING LIMIT      |
|  | PROPOSED SPLASH PAD             |  | PROPOSED PERMANENT EASEMENT |
|  | PROPOSED MULTI-USE PATHWAY      |  | PROPOSED OVERHEAD HYDRO     |
|  | PROPOSED SIDEWALK / MEDIAN      |  | EXISTING UNDERGROUND HYDRO  |
|  | EXISTING PROPERTY               |  | EXISTING UNDERGROUND BELL   |
|  | PROPOSED RIGHT OF WAY           |  | EXISTING UNDERGROUND GAS    |
|  | PROPOSED AERIAL EASEMENT        |  | ABANDONED UNDERGROUND GAS   |
|  | TEMPORARY CONSTRUCTION EASEMENT |  |                             |

PLATE

9





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## REGIONAL ROAD 25 - PREFERRED ALTERNATIVE FROM STA. 26+800 TO STA. 27+170

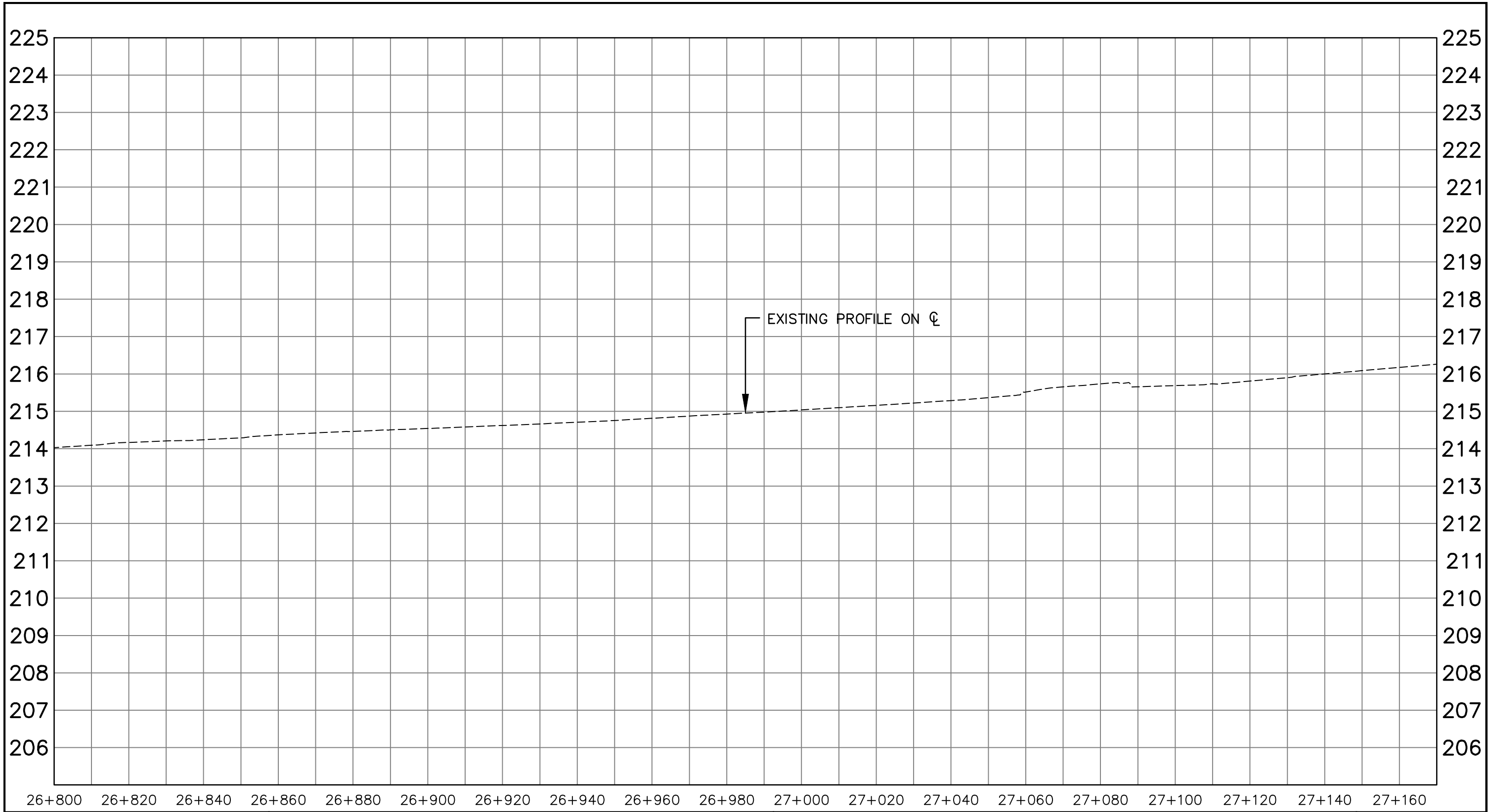
HALTON REGION  
REGIONAL ROAD 25  
CLASS ENVIRONMENTAL ASSESSMENT STUDY  
STEELES AVE (REG. RD 8) TO 5 SIDEROAD

### LEGEND

|  |                                 |  |                             |
|--|---------------------------------|--|-----------------------------|
|  | PROPOSED BIKE LANE              |  | PROPOSED GRADING LIMIT      |
|  | PROPOSED SPLASH PAD             |  | PROPOSED PERMANENT EASEMENT |
|  | PROPOSED MULTI-USE PATHWAY      |  | PROPOSED OVERHEAD HYDRO     |
|  | PROPOSED SIDEWALK / MEDIAN      |  | EXISTING UNDERGROUND HYDRO  |
|  | EXISTING PROPERTY               |  | EXISTING UNDERGROUND BELL   |
|  | PROPOSED RIGHT OF WAY           |  | EXISTING UNDERGROUND GAS    |
|  | PROPOSED AERIAL EASEMENT        |  | ABANDONED UNDERGROUND GAS   |
|  | TEMPORARY CONSTRUCTION EASEMENT |  |                             |

PLATE

11



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**REGIONAL ROAD 25 - PREFERRED ALTERNATIVE  
FROM STA. 26+800 TO STA. 27+170**

HALTON REGION  
REGIONAL ROAD 25  
CLASS ENVIRONMENTAL ASSESSMENT STUDY  
STEELES AVE (REG. RD 8) TO 5 SIDEROAD

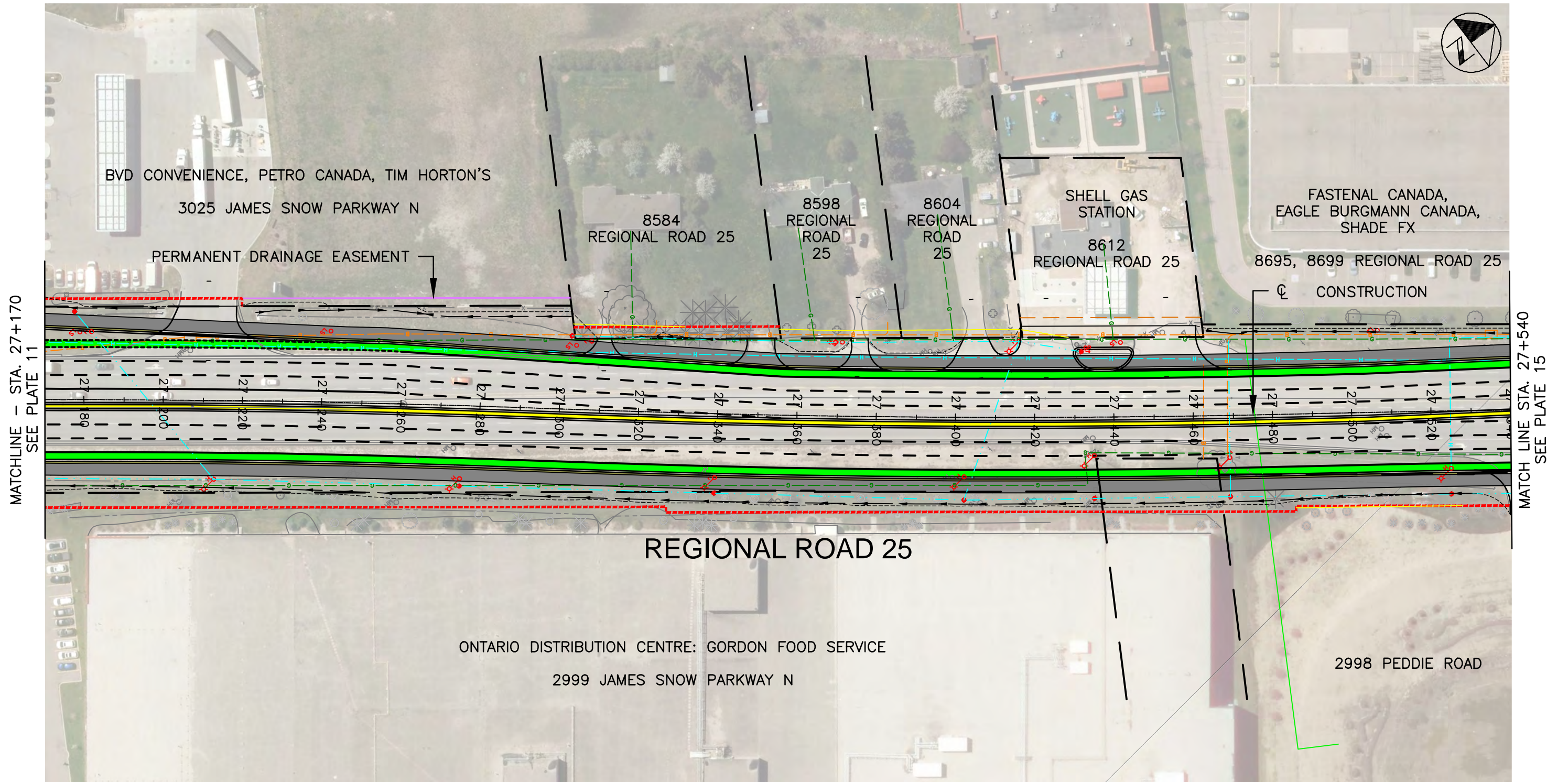
**LEGEND**

----- EXISTING PROFILE ON CENTRELINE

PLATE

12

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## REGIONAL ROAD 25 - PREFERRED ALTERNATIVE FROM STA. 27+170 TO STA. 27+540

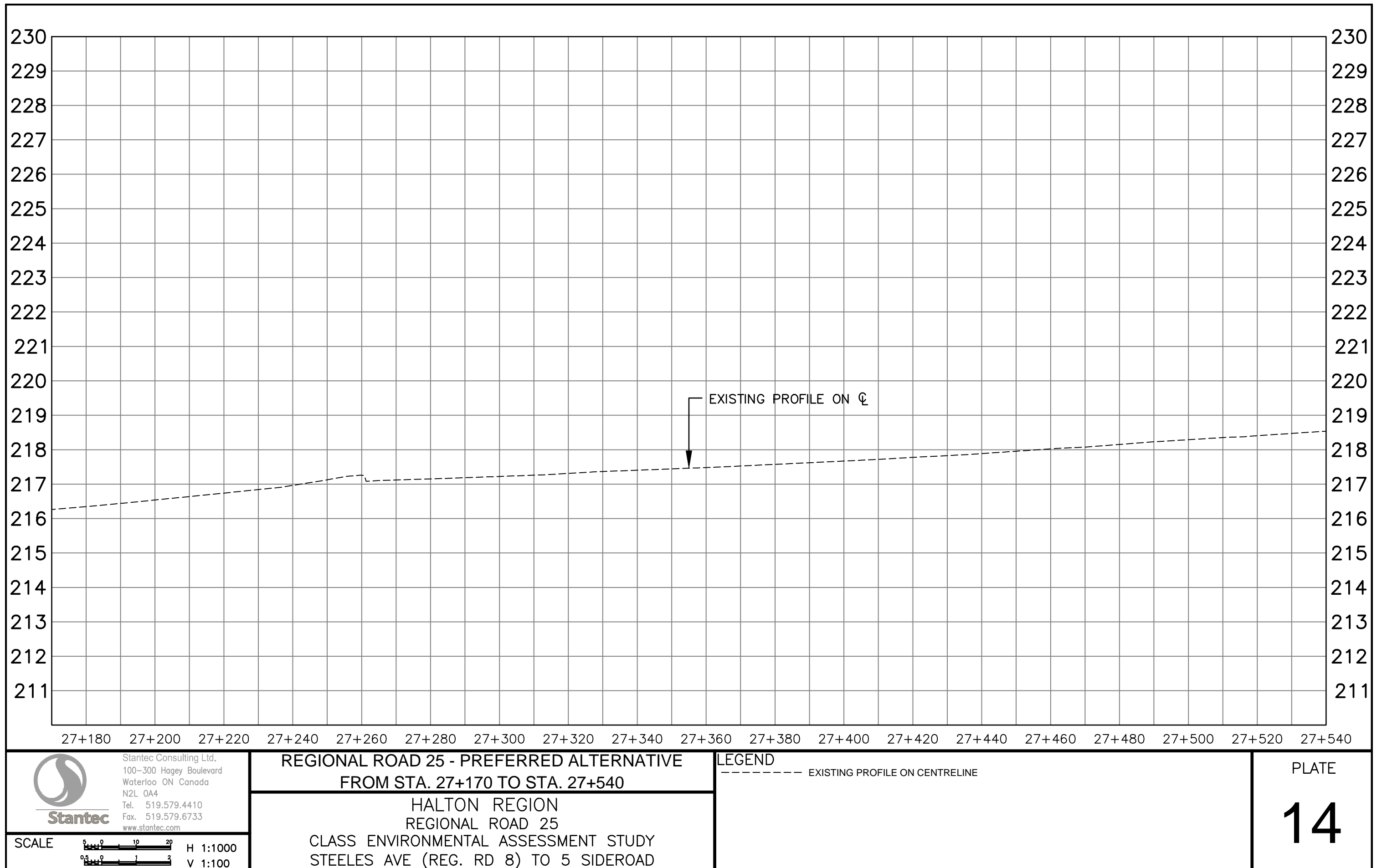
HALTON REGION  
REGIONAL ROAD 25  
CLASS ENVIRONMENTAL ASSESSMENT STUDY  
STEELES AVE (REG. RD 8) TO 5 SIDEROAD

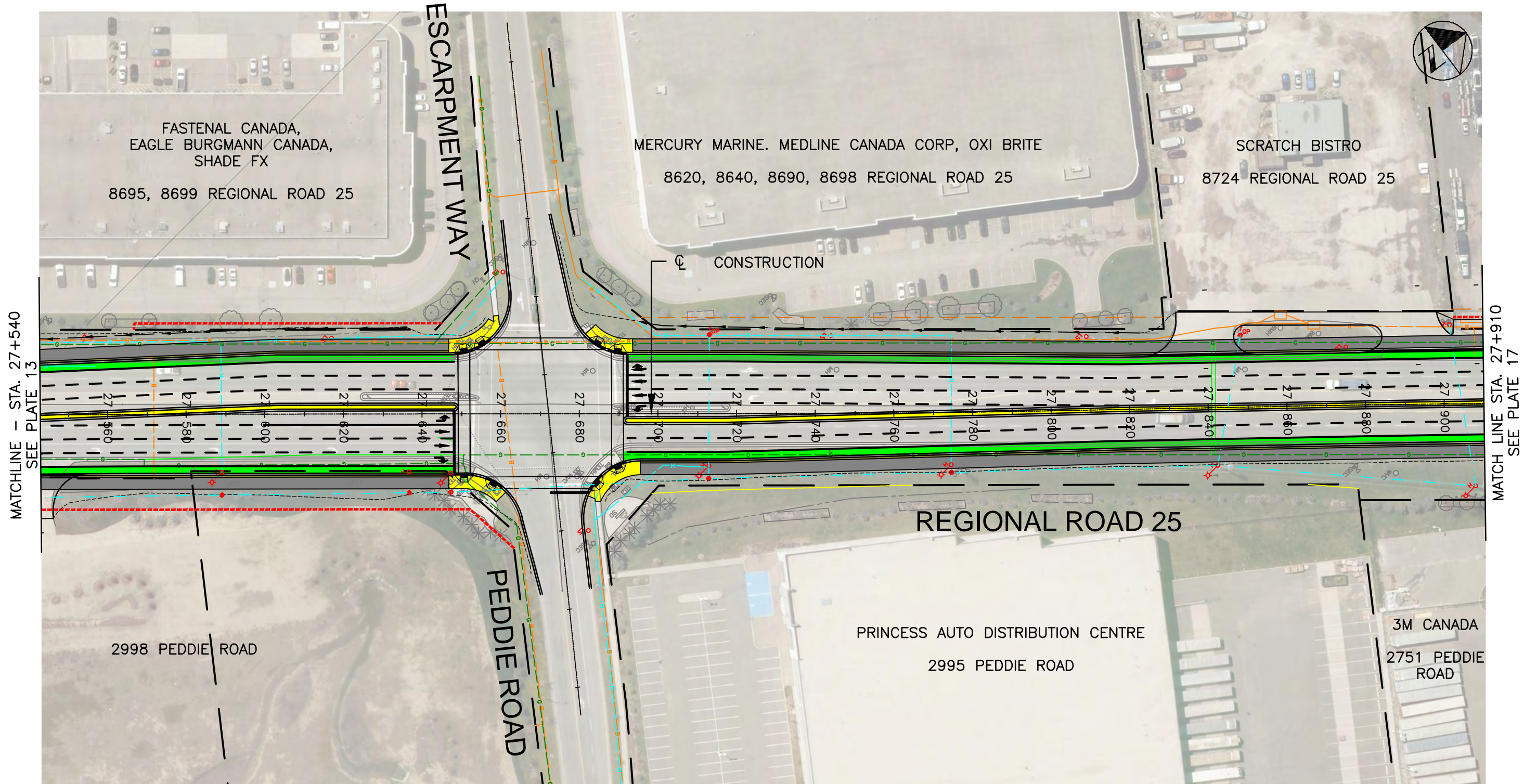
### LEGEND

|  |                                 |  |                             |
|--|---------------------------------|--|-----------------------------|
|  | PROPOSED BIKE LANE              |  | PROPOSED GRADING LIMIT      |
|  | PROPOSED SPLASH PAD             |  | PROPOSED PERMANENT EASEMENT |
|  | PROPOSED MULTI-USE PATHWAY      |  | PROPOSED OVERHEAD HYDRO     |
|  | PROPOSED SIDEWALK / MEDIAN      |  | EXISTING UNDERGROUND HYDRO  |
|  | EXISTING PROPERTY               |  | EXISTING UNDERGROUND BELL   |
|  | PROPOSED RIGHT OF WAY           |  | EXISTING UNDERGROUND GAS    |
|  | PROPOSED AERIAL EASEMENT        |  | ABANDONED UNDERGROUND GAS   |
|  | TEMPORARY CONSTRUCTION EASEMENT |  |                             |

PLATE

13





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## REGIONAL ROAD 25 - PREFERRED ALTERNATIVE FROM STA. 27+540 TO STA. 27+910

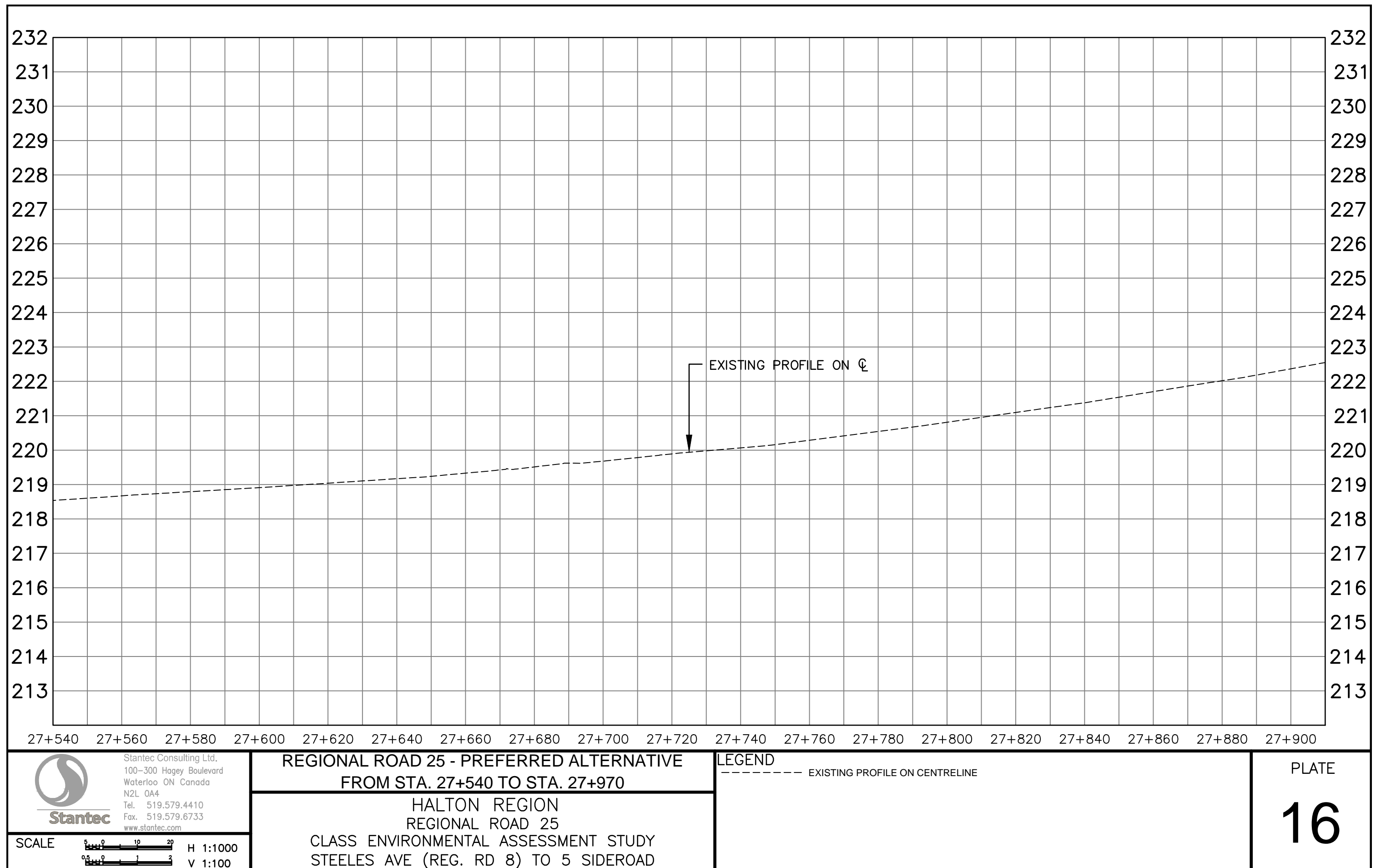
HALTON REGION  
REGIONAL ROAD 25  
CLASS ENVIRONMENTAL ASSESSMENT STUDY  
STEELES AVE (REG. RD 8) TO 5 SIDEROAD

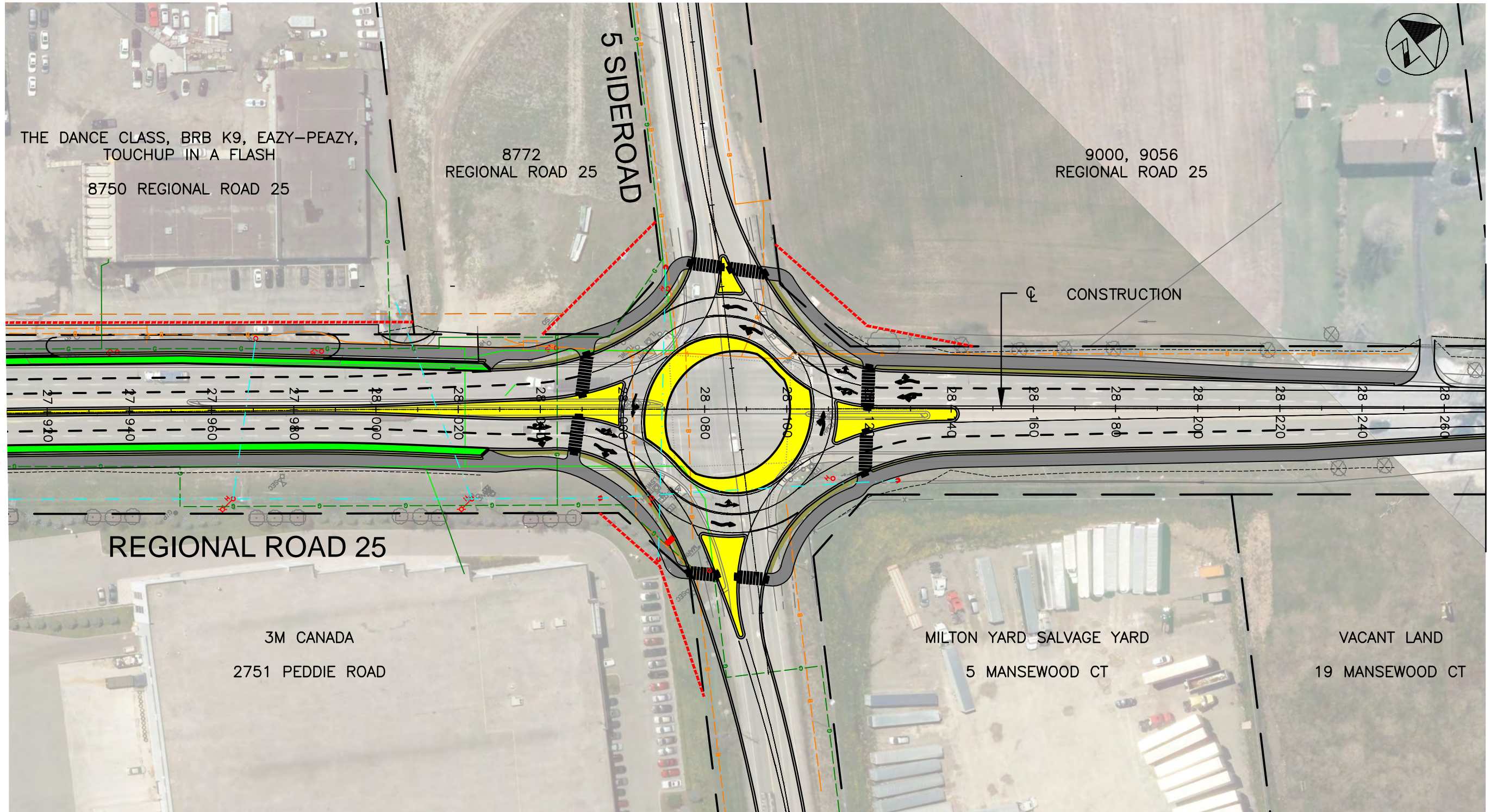
### LEGEND

|  |                                 |  |                             |
|--|---------------------------------|--|-----------------------------|
|  | PROPOSED BIKE LANE              |  | PROPOSED GRADING LIMIT      |
|  | PROPOSED SPLASH PAD             |  | PROPOSED PERMANENT EASEMENT |
|  | PROPOSED MULTI-USE PATHWAY      |  | PROPOSED OVERHEAD HYDRO     |
|  | PROPOSED SIDEWALK / MEDIAN      |  | EXISTING UNDERGROUND HYDRO  |
|  | EXISTING PROPERTY               |  | EXISTING UNDERGROUND BELL   |
|  | PROPOSED RIGHT OF WAY           |  | EXISTING UNDERGROUND GAS    |
|  | PROPOSED AERIAL EASEMENT        |  | ABANDONED UNDERGROUND GAS   |
|  | TEMPORARY CONSTRUCTION EASEMENT |  |                             |

PLATE

15





MATCHLINE - STA. 27+910  
SEE PLATE 15

MATCH LINE STA. 28+270  
SEE PLATE 19



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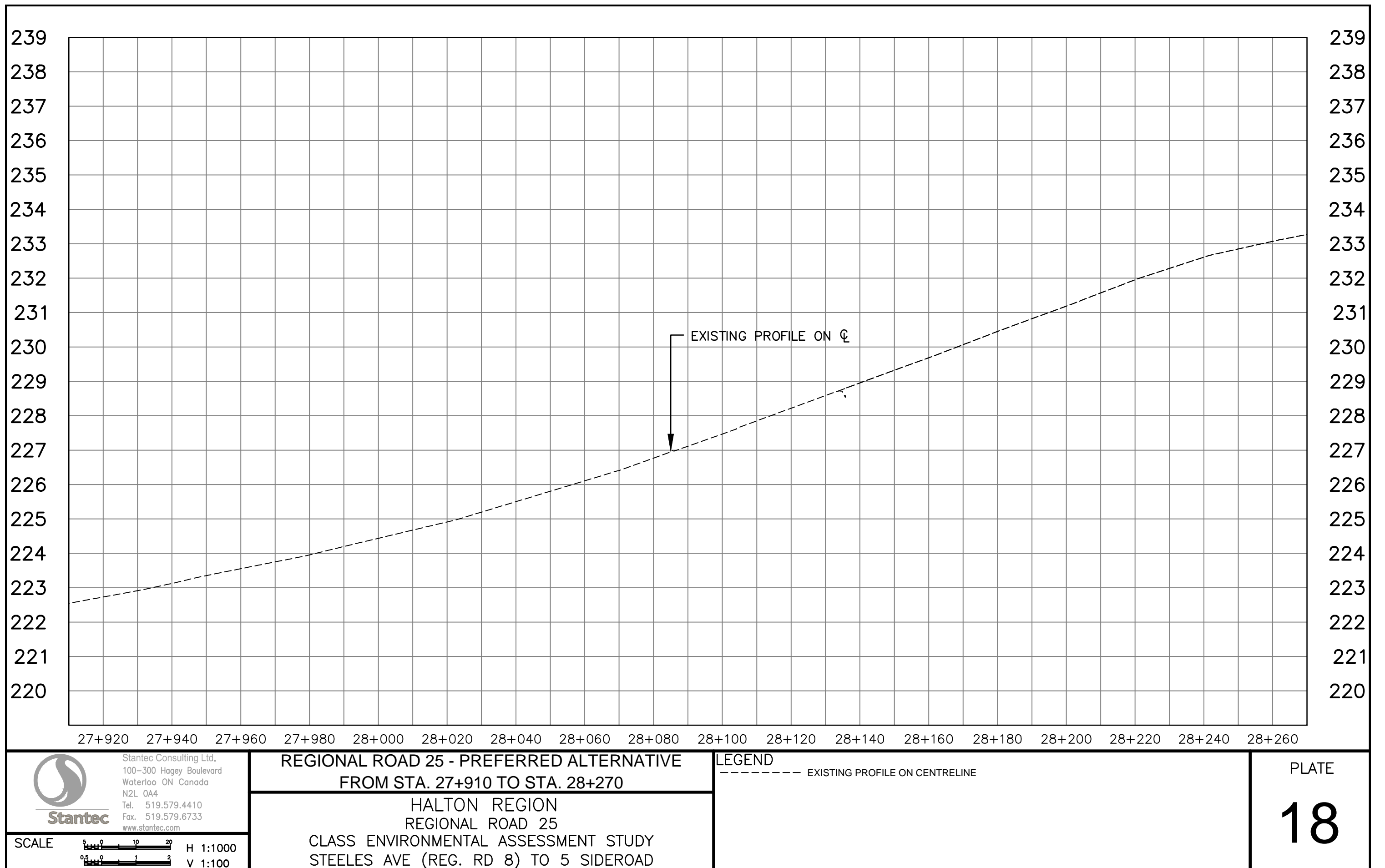
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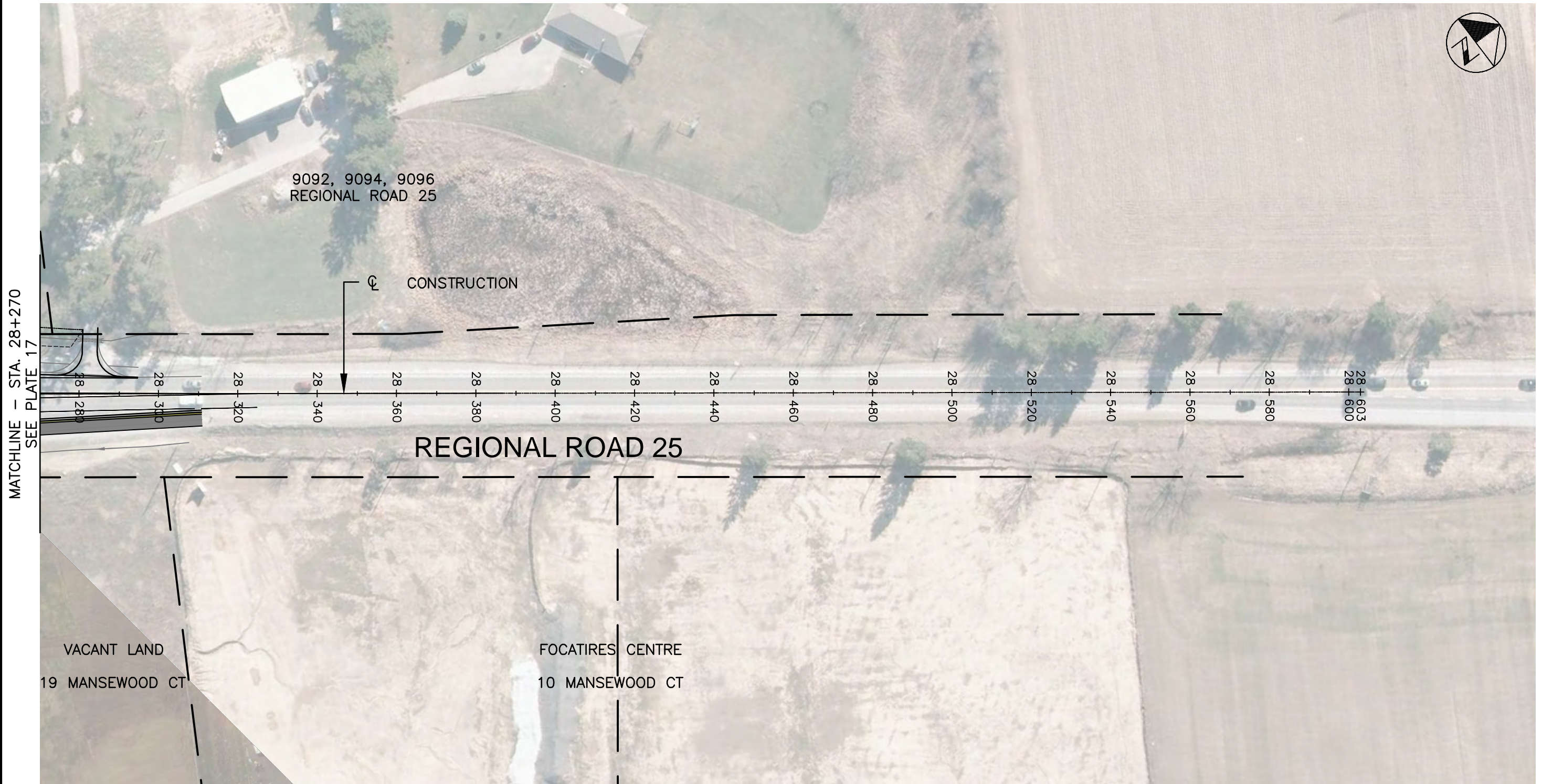
REGIONAL ROAD 25 - PREFERRED ALTERNATIVE  
FROM STA. 27+910 TO STA. 28+270

HALTON REGION  
REGIONAL ROAD 25  
CLASS ENVIRONMENTAL ASSESSMENT STUDY  
STEELES AVE (REG. RD 8) TO 5 SIDEROAD

LEGEND

- PROPOSED BIKE LANE
- PROPOSED SPLASH PAD
- PROPOSED MULTI-USE PATHWAY
- PROPOSED SIDEWALK / MEDIAN
- EXISTING PROPERTY
- PROPOSED RIGHT OF WAY
- PROPOSED AERIAL EASEMENT
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED GRADING LIMIT
- PROPOSED PERMANENT EASEMENT
- PROPOSED OVERHEAD HYDRO
- EXISTING UNDERGROUND HYDRO
- EXISTING UNDERGROUND BELL
- EXISTING UNDERGROUND GAS
- ABANDONED UNDERGROUND GAS





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## REGIONAL ROAD 25 - PREFERRED ALTERNATIVE FROM STA. 28+270 TO STA. 28+620

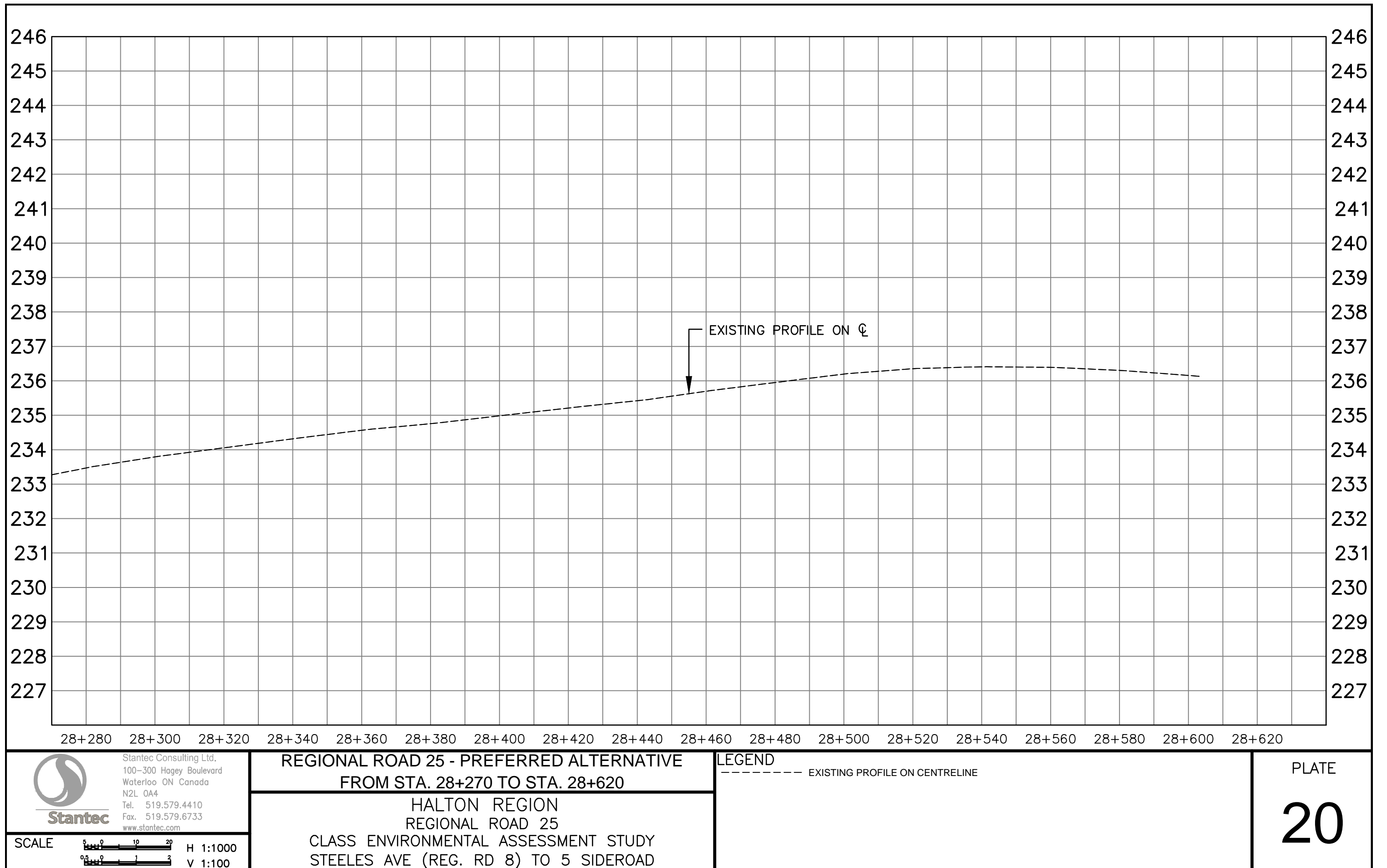
HALTON REGION  
REGIONAL ROAD 25  
CLASS ENVIRONMENTAL ASSESSMENT STUDY  
STEELES AVE (REG. RD 8) TO 5 SIDEROAD

### LEGEND

|  |                                 |  |                             |
|--|---------------------------------|--|-----------------------------|
|  | PROPOSED BIKE LANE              |  | PROPOSED GRADING LIMIT      |
|  | PROPOSED SPLASH PAD             |  | PROPOSED PERMANENT EASEMENT |
|  | PROPOSED MULTI-USE PATHWAY      |  | PROPOSED OVERHEAD HYDRO     |
|  | PROPOSED SIDEWALK / MEDIAN      |  | EXISTING UNDERGROUND HYDRO  |
|  | EXISTING PROPERTY               |  | EXISTING UNDERGROUND BELL   |
|  | PROPOSED RIGHT OF WAY           |  | EXISTING UNDERGROUND GAS    |
|  | PROPOSED AERIAL EASEMENT        |  | ABANDONED UNDERGROUND GAS   |
|  | TEMPORARY CONSTRUCTION EASEMENT |  |                             |

PLATE

19



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

**Table 12** provides a summary of the preliminary property requirements from privately owned or publicly owned properties.

**Table 12: Preliminary Property Requirements**

| <b>Location</b>             | <b>Preliminary Property Requirement (ha)</b> | <b>Preliminary Permanent Easement Requirements (ha)</b> |
|-----------------------------|----------------------------------------------|---------------------------------------------------------|
| 40 Chisholm Drive           | 0.02                                         | 0                                                       |
| 590 Martin Street           | 0.02                                         | 0                                                       |
| 626 Martin Street           | 0.02                                         | 0                                                       |
| 640 Martin Street           | 0.05                                         | 0                                                       |
| 655,661 Martin Street       | 0.45                                         | 0                                                       |
| 45 Chisholm Drive           | 0.03                                         | 0                                                       |
| 8420, 8448 Regional Road 25 | 0.03                                         | 0                                                       |
| 8400 Parkhill Drive         | 0                                            | 0.02                                                    |
| 2800 High Point Drive       | 0                                            | 0.05                                                    |
| 8470 Regional Road 25       | 0.003                                        | 0.002                                                   |
| 8501 Chudleigh's Way        | 0                                            | 0.006                                                   |
| 3030 James Snow Parkway     | 0                                            | 0.002                                                   |
| 3025 James Snow Parkway     | 0.02                                         | 0.02                                                    |
| 8584 Regional Road 25       | 0.02                                         | 0                                                       |
| 8695, 8699 Regional Road 25 | 0.01                                         | 0                                                       |
| 8750 Regional Road 25       | 0.03                                         | 0                                                       |
| 8772 Regional Road 25       | 0.03                                         | 0                                                       |
| 9000, 9056 Regional Road 25 | 0.03                                         | 0                                                       |
| CN Rail Right-of-Way        | 0.01                                         | 0                                                       |
| 2999 James Snow Parkway     | 0.12                                         | 0                                                       |
| 2998 Peddie Road            | 0.21                                         | 0                                                       |
| 2751 Peddie Road            | 0.02                                         | 0                                                       |

The impacts to surrounding properties will be reviewed and confirmed during detailed design.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### 7.1.15 Preliminary Cost Estimate

A preliminary cost estimate was prepared as part of this MCEA Study and is estimated at \$52,263,087 (2019 dollars). The preliminary estimate cost includes detailed design, contract administration, utility relocation and roadway construction, excluding property costs. A breakdown of the cost estimate is provided below in **Table 13**.

**Table 13: Preliminary Cost Estimate**

| #  | Item Description                                                          | Quantity | Unit | Estimated Price | Total         |
|----|---------------------------------------------------------------------------|----------|------|-----------------|---------------|
| 1  | Mobilization and Demobilization                                           |          | L.S. |                 | \$ 200,000.00 |
| 2  | Bonds and Insurance                                                       |          | L.S. |                 | \$ 50,000.00  |
| 3  | Field Office                                                              |          | L.S. |                 | \$ 40,000.00  |
| 4  | Construction Layout                                                       |          | L.S. |                 | \$ 75,000.00  |
| 5  | Maintenance of Traffic and Construction Staging                           |          | L.S. |                 | \$ 100,000.00 |
| 6  | Supply, Maintain, Operate and Remove PVMS Traffic Signs                   | 6        | each | \$ 15,000.00    | \$ 90,000.00  |
| 7  | Install and Remove Project Signboards                                     | 2        | each | \$ 700.00       | \$ 1,400.00   |
| 8  | Supply, Install, Maintain and Remove Temporary Advance Notification Signs | 7        | each | \$ 1,000.00     | \$ 7,000.00   |
| 9  | Utility and Agency Coordination and Liaison                               |          | L.S. |                 | \$ 75,000.00  |
| 10 | Contractor Site Specific Health and Safety Plan                           |          | L.S. |                 | \$ 5,000.00   |
| 11 | Clearing and Grubbing - Trees                                             | 147      | each | \$ 660.00       | \$ 97,020.00  |
| 12 | Removal of Existing Asphalt, Full Depth                                   | 60539    | m2   | \$ 6.11         | \$ 369,893.29 |
| 13 | Remove and Dispose of Concrete Curb and Gutter, All Types                 | 7309     | m    | \$ 17.00        | \$ 124,253.00 |
| 14 | Remove, Salvage and Reinstall Mailboxes and Address Markers               | 3        | each | \$ 500.00       | \$ 1,500.00   |



**Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

| #  | Item Description                                         | Quantity | Unit | Estimated Price | Total           |
|----|----------------------------------------------------------|----------|------|-----------------|-----------------|
| 15 | Removal of Storm Pipes, Culverts and Drainage            |          | L.S. |                 | \$ 100,605.00   |
| 16 | Remove and Dispose of Concrete Pavements, All Types      | 2600     | m2   | \$ 20.00        | \$ 52,000.00    |
| 17 | Remove Road Signs and Flex Bollards, All Types and Sizes | 69       | each | \$ 250.00       | \$ 17,250.00    |
| 18 | Remove and Dispose of Existing Guide Rails               | 535      | m    | \$ 25.00        | \$ 13,375.00    |
| 19 | Remove and Salvage Existing Hydrant Set                  | 12       | each | \$ 300.00       | \$ 3,600.00     |
| 20 | Earth Excavation (Grading)                               | 101821   | m3   | \$ 15.00        | \$ 1,527,315.00 |
| 21 | Tack Coat - SS-1 Emulsified Asphalt                      | 65840    | m2   | \$ 0.45         | \$ 29,628.00    |
| 22 | Super Pave 12.5 FC1                                      | 8230     | t    | \$ 110.00       | \$ 905,300.00   |
| 23 | Super Pave 19.0                                          | 21398    | t    | \$ 85.00        | \$ 1,818,830.00 |
| 24 | Multi-Use Pathway, Including Granular Base               | 18014    | m2   | \$ 50.00        | \$ 900,700.00   |
| 25 | Granular "A" (19mm Crusher Run Limestone)                | 28193    | t    | \$ 22.00        | \$ 620,246.00   |
| 26 | Granular "B", Type II (50mm Crusher Run Limestone)       | 107845   | t    | \$ 19.00        | \$ 2,049,055.00 |
| 27 | Asphalt Driveway                                         | 2672     | m2   | \$ 150.00       | \$ 400,800.00   |
| 28 | Concrete Sidewalk/Median                                 | 4630     | m2   | \$ 85.00        | \$ 393,550.00   |
| 29 | Concrete Kill Strip                                      | 4187     | m2   | \$ 65.00        | \$ 272,155.00   |
| 30 | Concrete Curb and Gutter - All Types                     | 13446    | m    | \$ 60.00        | \$ 806,760.00   |
| 31 | Subdrain Pipe (Includes Trench Wrap in SP)               | 7196     | m    | \$ 30.00        | \$ 215,880.00   |
| 32 | Dewatering                                               |          | L.S. |                 | \$ 51,200.00    |
| 33 | Pavement Markings (Durable), White and Yellow Lines      | 23231    | m    | \$ 10.00        | \$ 232,310.00   |



**Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

| #  | Item Description                                                                      | Quantity | Unit | Estimated Price | Total           |
|----|---------------------------------------------------------------------------------------|----------|------|-----------------|-----------------|
| 34 | Pavement Marking Symbols (Durable), All Types                                         | 39       | each | \$ 25.00        | \$ 975.00       |
| 35 | Sodding, Including 100mm Topsoil and Water                                            | 17476    | m2   | \$ 10.00        | \$ 174,760.00   |
| 36 | Guide Rail: Single Rail                                                               | 533      | m    | \$ 150.00       | \$ 79,950.00    |
| 37 | Steel Beam Energy Attenuators (OPSD 922.61)                                           | 6        | each | \$ 10,000.00    | \$ 60,000.00    |
| 38 | Leaving End Treatment (OPSD 912.235)                                                  | 6        | each | \$ 3,000.00     | \$ 18,000.00    |
| 39 | Replaceable Cast-in-Place Detectable / Tactile Warning Crossing Devices (1.8m x 0.6m) | 150      | each | \$ 350.00       | \$ 52,500.00    |
| 40 | Landscaping                                                                           |          | L.S. |                 | \$ 300,000.00   |
| 41 | Storm Sewer                                                                           |          | L.S. |                 | \$ 1,986,000.00 |
| 42 | SWM Facilities/Oil Grit Separator                                                     |          | L.S. |                 | \$ 240,000.00   |
| 43 | Concrete Culverts                                                                     |          |      |                 |                 |
|    | 6.0m x 2.0m Culvert Extension (Culvert 2)                                             | 26       | m    | \$ 15,000.00    | \$ 390,000.00   |
|    | 3.0m x 2.4m Culvert Extension (Culvert C3)                                            | 9        | m    | \$ 10,000.00    | \$ 90,000.00    |
|    | 1.8m Diameter Culvert (Crossing CN Rail)                                              | 81       | m    | \$ 3,500.00     | \$ 283,500.00   |
|    | 2.5m Diameter Culvert Extension (Crossing CN Rail)                                    | 16       | m    | \$ 7,000.00     | \$ 112,000.00   |
| 44 | Natural Channel Realignment                                                           | 180      | m    | \$ 2,500.00     | \$ 450,000.00   |
| 45 | Retaining Wall                                                                        |          |      |                 |                 |
|    | ◦ Sta. 25+600                                                                         | 128      | m2   | \$ 1,000.00     | \$ 128,000.00   |
|    | ◦ Sta. 25+640                                                                         | 48       | m2   | \$ 1,000.00     | \$ 48,000.00    |
|    | ◦ Sta. 25+720                                                                         | 64       | m2   | \$ 1,000.00     | \$ 64,000.00    |
|    | ◦ Sta. 25+780                                                                         | 50       | m2   | \$ 1,000.00     | \$ 50,000.00    |



**Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to  
5 Side Road, Town of Milton/Town of Halton Hills**

| #  | Item Description                         | Quantity | Unit | Estimated Price | Total                   |
|----|------------------------------------------|----------|------|-----------------|-------------------------|
|    | ◦ Sta. 25+820                            | 74       | m2   | \$ 800.00       | \$ 59,200.00            |
|    | ◦ Sta. 26+560                            | 69       | m2   | \$ 1,000.00     | \$ 69,000.00            |
| 46 | On-Road Active Transportation            |          | L.S. | \$719,186.00    | \$ 719,186.00           |
| 47 | CN Rail Overpass - Permanent Realignment |          |      |                 |                         |
|    | ◦ Site Mobilization and Environmental    |          | L.S. |                 | \$ 925,000.00           |
|    | ◦ Structure Removals                     |          | L.S. |                 | \$ 385,000.00           |
|    | ◦ Permanent Structures                   |          | L.S. |                 | \$ 3,086,000.00         |
|    | ◦ Earthworks and Shoring                 |          | L.S. |                 | \$ 2,435,000.00         |
|    | ◦ New Track Work                         |          | L.S. |                 | \$ 2,450,000.00         |
|    | ◦ Flagging                               |          | L.S. |                 | \$ 1,085,000.00         |
| 48 | Illumination                             |          |      |                 |                         |
|    | ◦ Permanent                              |          | L.S. |                 | \$ 875,000.00           |
|    | ◦ Temporary                              |          | L.S. |                 | \$ 437,500.00           |
| 49 | Traffic Signals                          |          |      |                 |                         |
|    | ◦ Permanent                              | 5        | each | \$250,000.00    | \$ 1,250,000.00         |
|    | ◦ Temporary                              | 5        | each | \$125,000.00    | \$ 625,000.00           |
| 50 | Utility Relocation                       |          |      |                 |                         |
|    | ◦ Bell Canada                            |          | L.S. | \$876,093.75    | \$ 876,093.75           |
|    | ◦ Union Gas                              |          | L.S. | \$149,875.00    | \$ 149,875.00           |
|    | ◦ Rogers                                 |          | L.S. | \$ 60,000.00    | \$ 60,000.00            |
|    | ◦ Milton Hydro                           |          | L.S. | \$600,000.00    | \$ 600,000.00           |
| 51 | Miscellaneous                            |          | L.S. |                 | \$ 6,452,233.01         |
|    | <b>Subtotal (Construction)</b>           |          |      |                 | <b>\$ 38,713,398.05</b> |
|    | Contingency                              |          |      |                 | \$ 3,871,339.80         |
|    | Engineering (Detailed Design & CA)       |          |      |                 | \$ 9,678,349.51         |
|    | <b>TOTAL (excluding HST)</b>             |          |      |                 | <b>\$ 52,263,087.36</b> |



## **7.2 Potential Environmental Impacts, Mitigation Measures, and Commitments to Future Work**

This section outlines the potential environmental impacts, including the natural environment, socio-economic environment, noise, air quality, cultural environment, and transportation. Potential direct and indirect impacts are highlighted, including mitigation measures, as well as commitments to future work during the detailed design and construction phases.

### **7.2.1 Natural Environment**

A Natural Heritage Assessment was conducted to characterize the significance and sensitivity of the natural heritage features within the study area. Potential impacts arising from the proposed improvements were analyzed by assessing the details of the preferred road alignment in relation to the known natural heritage features. Further analysis of potential impacts, recommendations, and effects can be found in **Appendix C**.

Potential impacts are discussed in two categories:

1. Direct Impacts – associated with the direct removal of natural features/habitats, caused directly by activities associated with the implementation of the proposed improvements (e.g., clearing and grubbing, grading, direct alteration of surface water features); and
2. Indirect Impacts – associated with site alteration (e.g., alterations to surface water and groundwater quality/quantity, flow patterns, etc.) and temporary disruption of features/habitats or displacement of species from active construction activities (e.g., impact to water quantity/quality, temporary physical disturbance, erosion, etc.).

The analysis of potential impacts, recommended mitigation measures, and overall final impacts after mitigation has been determined and summarized in the following sections.

The impact assessment has been completed based on preliminary conceptual design details and will be confirmed during detailed design, to ensure the identified impacts and proposed mitigation measures are still accurate and relevant.

#### **7.2.1.1 Vegetation - Impacts**

The vegetation communities observed during field investigations are all considered common throughout southern Ontario. Existing vegetation conditions within the study area have been outlined in **Section 3.3.6**. The proposed work is expected to impact seven vegetation community types within and beyond the right-of-way.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **Potential Direct Impacts**

Potential impacts to vegetation include vegetation disturbance, soil compaction, sedimentation, contamination from spills, noise, and dust generation. As vegetation removals are required to accommodate the proposed right-of-way, mitigation measures are provided to protect the natural area. These measures include minimizing the duration of soil exposure, retaining existing vegetation, encouraging re-vegetation, diverting runoff away from exposed soils, keeping runoff velocities low, and trapping sediment at the source. The use of silt fencing along natural areas and re-vegetating disturbed substrates to restore them to pre-construction conditions will be completed to mitigate any adverse impacts.

Minor removals of vegetation are required within the existing right-of-way. Vegetation affected is predominantly common and tolerant to disturbances. Limited impact to wildlife and wildlife habitat is anticipated. The removal of trees will be required in order to accommodate the proposed widening. No significant tree species were identified during field investigations, although confirmation will be required during detailed design. In addition to the mitigation measures mentioned above to protect the vegetation and control sediment and erosion, a strategy consistent with Halton Region's Tree Canopy Replacement Policy on Regionally Owned Lands (LPS31-08) will be developed during the detailed design phase to compensate for the removal of trees.

Any trees to be removed should be clearly marked to avoid unnecessary clearing. Additional measures such as native soil and seed bank retention, avoidance of root grubbing along disturbed edges and other edge management recommendations should be developed during the detailed design phase.

The study area is in a heavily urbanized landscape with many industrial developments. Therefore, there are limited natural habitats present. The isolated pockets of cultural woodland, thickets, meadows, and marsh habitat may provide habitat for wildlife. Candidate habitat for Monarch was identified in the southern section of the study area, near culvert C1. This area contains milkweed plants, which are the larval host plants for monarch. A population of Big Bluestem, a locally uncommon plant species, was present south of Highway 401 on the west side of Regional Road 25. Both the candidate habitat for monarch and the Big Bluestem habitats are outside of the construction limits, and therefore, no direct impacts are anticipated.

### **Potential Indirect Impacts**

Vegetation clearing and other construction activities have the potential to unintentionally destroy, damage, or degrade adjacent vegetation communities. These indirect impacts are predominantly caused by the use of construction equipment outside of the work zone, sedimentation, soil compaction, and spills.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

There is a risk for soil compaction within the study area due to the use to heavy machinery and the storing of heavy materials and stripped soils in one area. Soil compaction results in decreased permeability of soil, which affects their capability to retain water during rain/snow melt events. This can potentially result in increased surface water quantities which will ultimately increase the erosion potential and the amount of sediment being transported into adjacent features. In addition, soil compaction makes it difficult to establish roots in the soil, which prevents vegetation growth. The control of vehicle access routes and placement of staging away from natural features will minimize the impacts of soil compaction on surrounding environments.

Construction materials or debris from vegetation resulting from clearing activities that is stockpiled near a natural feature has potential to enter that feature if not properly contained. Debris entering adjacent natural features has potential to smother and/or damage vegetation, and negatively impact water quality. Staging and construction debris should be stabilized and moved away from all-natural features. Debris and refuse resulting from construction activities should be disposed appropriately off-site.

### **7.2.1.2 Wildlife and Wildlife Habitat - Impacts**

Existing wildlife habitats within the study area are described in **Sections 3.3.5 to 3.3.10**. The proposed improvements to Regional Road 25 will occur both within and beyond the existing right-of-way, as shown in **Plates 1 to 20**. Potential direct and indirect impacts to wildlife are summarized below.

#### **Potential Direct Impacts**

There was a low abundance and diversity of wildlife observations in this urbanized setting. However, there were three species at risk or species of conservation concern documented in the study area; Monarch, Barn Swallow and Big Bluestem. Habitat for Monarch and Big Bluestem are located outside the construction limits and no direct impacts are anticipated.

One Barn Swallow nest was observed at culvert C4, north of Highway 401, with all other culverts having suitable habitat for potential future nests. As a species at risk, Barn Swallow and its habitat are protected and therefore require registration of the project with the MNRF prior to the commencement of work. Any construction work at culvert C4 must abide by the guidelines outlined in the regulation, such as:

- Implementing exclusionary measures at culverts with nesting Barn Swallows prior to April 1 of the year of construction to dissuade Barn Swallows from nesting in the culvert.
- Removing nests from previous years to minimize effects on Barn Swallow.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

- Creating new habitat by installing nest cups or structures by either using a different structure within 1 km, modifying an existing structure, or building a new structure for any nests that were removed at a 1:1 ratio.

As per the Ecoregion Criterion Schedule, wildlife movement corridors must connect candidate or confirmed significant wildlife habitat features, including amphibian wetland breeding habitat, deer yarding, or deer winter congregation areas. No natural wildlife movement corridors were observed in the study area, although a dry ledge was identified at culvert C1. It was noted that although this is not a significant wildlife habitat, small mammals are using the culvert as a travel corridor.

Any vegetation clearing is to take place outside of the Regional Nesting Period from April 1 to August 30 to avoid active nests. If clearing is required within the window, a migratory bird mitigation plan must be developed. If a nest is located within the work area at any time, a no-disturbance buffer will be delineated based on the sensitivity of the nesting species and work within the buffer will be suspended until the nest is no longer active.

Candidate habitat for the Monarch Butterfly was observed in the southern section of the study area, located near culvert C1. As milkweed provides optimal habitat for Monarch, they will be tracked and replanted at culvert C1 as part of the restoration works once construction is complete.

It was noted that reptiles and ground-dwelling animals have the potential to enter the work area. As a result, standard mitigation protocols such as searching the area prior to work commencement each day have been implemented to reduce potential interactions, particularly with snakes. As snakes are active from April 1 to October 31, visual inspections of equipment and machinery will be completed to minimize additional impacts to snakes and other ground dwelling wildlife such as small mammals. Any encounters will be documented and work at that location will not commence until the identified wildlife has left the area. To improve connectedness and reduce impacts associated with the widening, a metal wildlife passage could be considered during detailed design and implemented at culvert C1 downstream on the east side of the crossing, if required. Wildlife exclusion fencing may also be implemented to keep wildlife out of the work zone. Mitigation protocols will be confirmed during detailed design.

### **Potential Indirect Impacts**

The proposed improvements may cause minor temporary disturbance in the form of excessive noise, increased human activity, and the generation of dust and vibrations. This may lead to certain wildlife abandoning the area and may discourage breeding birds from nesting in the area. These indirect impacts are expected to be minimal and localized within the work zone given the tolerance of species expected to use the area.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **7.2.1.3 Fish and Fish Habitat - Impacts**

Existing fish and fish habitat conditions within the study area are outlined in **Section 3.3.11**. This section covers the impacts of the proposed works and associated implications on the aquatic environments present in the study area. This impact assessment is considered preliminary and should be confirmed and refined at the detailed design phase, as part of the MECP species at risk permitting requirements.

#### **Potential Direct Impacts**

The proposed improvements to Regional Road 25 will include works at culverts C2 and C3. Works at culverts C1 and C4 are minor and not impactful. The works at culvert C3 will include associated in-water works and will therefore increase the risk for disturbance to the surrounding fish and aquatic environments. Both culverts C2 and C3 are located within regulated Redside Dace habitat and should therefore be designed according to the *Guidance for Development Activities in Redside Dace Protected Habitat* report (2016) published by MNRF. Near-water works should be scheduled to avoid sensitive life periods, particularly for Redside Dace, in order to limit direct disturbances when the fish and fish habitats are vulnerable. Culvert C1, C2, C3 and C4 are also required to have a 30 m buffer on either side of the watercourse meander belt width due to their classification as regulated Redside Dace habitat. In order to accommodate grading for the proposed widening, a permit under the *Endangered Species Act* may be required. Construction activities are to be completed between July 1 and September 15 as per MNRF guidelines.

#### **Potential Indirect Impacts**

The proposed improvements and associated construction activities have the potential to cause indirect impacts to the surrounding aquatic environments. Sedimentation of a watercourse resulting from construction activities can adversely affect the water quality as a result of increased turbidity and Total Suspended Solid (TSS) levels. Contamination due to spills will also negatively impact the water quality. Other potential indirect impacts on fish and fish habitats during construction include temporary disturbance to bed and banks, debris entering the water body, and temporary disruption of fish passages and vegetation. Under prolonged conditions where water quality remains at levels unacceptable for aquatic life, death of aquatic organisms may result.

Dewatering may be required at locations where groundwater levels are near the surface and excavation is required. Turbidity of the discharge water should not exceed 25 mg/L above the background stream level under baseflow conditions. Additional dewatering requirements will be identified during detailed design.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

Erosion and sediment control measures will be required to avoid adverse impacts to water quality, fish, and fish habitat for the duration of the project. This may include installing a double row of non-woven sediment fencing separated by straw bales or filter logs to prevent sediment from entering the aquatic environment. Access to the temporary workspace should be minimized to limit destabilization of soils near the work area, and all disturbed areas should be restored to the extent possible following construction. Ensuring the use of DFO *Measures to Avoid Harm to Fish and Fish Habitat* will aid in minimizing the impacts of erosion and sedimentation within the study area.

### 7.2.2 Socio-Economic Environment

The proposed undertaking would:

- Maintain four through lanes of traffic in both AM and PM time periods (two lanes in each direction) during construction to reduce potential traffic delays. A minimum of one lane in each direction should be maintained at all times, subject to MTO approval within the controlled access highway corridor.
- Provide six through lanes between Steeles Avenue and 5 Side Road.
- Accommodate pedestrians and cyclists through active transportation facilities on both sides of the road.
- Meet the Region's vision and objectives for Regional Road 25 (i.e. a major arterial road that serves both regional and interregional travel demands while designed with an enhanced approach to multi-use paths, on-road bike lanes and boulevards).
- Support future growth and development of Halton Region by distributing traffic to/from the provincial highway network and accommodating all traffic, including trucks.

The following is a description of the socio-economic effects, property impacts, access, pedestrians/cyclists, noise analysis, air quality, potential contaminated sites, proposed mitigation measures, and commitments to further address those effects.

#### 7.2.2.1 Property Impacts

Proposed property impacts are shown in **Plates 1 to 20**. All adjacent and potentially impacted property owners were notified of the MCEA Study and invited to attend both Public Information Centres (PICs). The proposed work for Regional Road 25 between Steeles Avenue and 5 Side Road will include a four-to-six lane widening using a 47 m ultimate right-of-way, a multi-use path and on-road bike lanes (both sides of the road), and a complete reconstruction of the CN Rail overpass.

Regional Road 25 will be widened using a best-fit approach (widening symmetrically or asymmetrically), as required, to minimize impact to existing developments/residents. In areas where there are significant constraints, the median will be reduced to 1.0 m with no landscaping to mitigate property impacts.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

Some properties will be directly impacted as a result of the widening of Regional Road 25. Individual meetings were held with these property owners to discuss the preliminary plan and associated property impacts. Affected property owners will be contacted again during detailed design to further address mitigation measures and discuss property and/or easement requirements.

Property impacts are generally along the frontage of properties adjacent to Regional Road 25 and are listed in **Section 7.1.14**. However, additional property may be required outside of the immediate study area to accommodate the construction of the new CN Rail bridge.

### **7.2.2.2 Access**

The widening of Regional Road 25 will result in the implementation of a raised concrete centre median along the entire length of the road within the study area. This will limit existing full-movements access for properties and businesses adjacent to the roadway, limiting access to right-in/right-out only. Impacted properties will require alternate ways to access/egress, including “U” turns at signalized intersections. To minimize property impacts, the centre median will be reduced to a width of 1.0 m at constrained locations.

### **7.2.2.3 Pedestrians/Cyclists**

As noted in **Section 7.1.6**, Halton Region is implementing an active transportation network in the Region to support and encourage multi-modal transportation as outlined in the Halton Region Active Transportation Master Plan (ATMP). Active transportation facilities within the study area include:

- 3.0 m multi-use paths on both sides of the road; and
- 1.8 m wide on-road bike lanes on both sides of the road.

It was also noted that between the completion of the MCEA Study and construction, there may be new designs for active transportation and the facilities being proposed may be updated during the detail design phase. The 47 m right-of-way, protected through the MCEA Study, will be able to accommodate variations of active transportation facilities, as well as intersection treatments.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

### 7.2.3 Noise Analysis

Based on the MTO/MECP Noise Protocol, where an existing roadway is proposed to be modified/widened adjacent to a Noise Sensitive Area (NSA), MECP requires that the future noise levels without the proposed improvements be compared to the future noise levels with the proposed improvements. The provision for noise mitigation is to be investigated should the noise level with the proposed improvements result in an increase greater than 5 dBA over the noise level without the proposed improvements, or the future noise level with the proposed improvements results in a noise level greater than 60 dBA. Mitigation will attempt to achieve levels as close to, or lower than, the objective level as is technically, economically, and administratively feasible.

Several NSAs exist in the study area, including rural residential properties located adjacent to Regional Road 25 between James Snow Parkway and Escarpment Way/Peddie Road on the west side. The noise assessment was undertaken based on the selection of three private residential homes within the study area which have been identified as NSAs and represent the potential noise impact to noise sensitive areas in proximity to Regional Road 25. The noise analysis is provided in **Appendix G**, including a table of the three selected receiver locations.

Noise modelling was carried out for the following two scenarios:

1. Future noise levels without improvements to Regional Road 25 (Year 2031).
2. Future noise levels with 6 lanes (+ turning lanes) on Regional Road 25 (Year 2031).

Traffic volume data for this section of Regional Road 25 (James Snow Parkway to 5 Side Road) was provided by Halton Region. It should be noted that future traffic volume projections remain unchanged between the improved and unimproved states. Therefore, noise generation values between these two conditions also remain unchanged.

Based on the MECP noise model, ORNAMENT, the difference in projected noise levels with and without the proposed improvements was found to be less than 5 dBA at the receiver locations. Therefore, the consideration of noise mitigation is not warranted based on MTO/MECP Noise Protocol.

Under Halton Region's Noise Abatement Policy, within the Existing Residential Development Policy section, 60 dBA is the threshold where noise mitigation may be considered. Per the policy, retrofitting noise mitigation barriers may be implemented in existing residential areas when all warrants are met in the Policy. All noise levels measured for "future with improvements" and "future without improvements" were measured under 60 dBA. Therefore, the consideration of noise mitigation is not warranted based on the MTO Noise Protocol and Halton Region Noise Abatement Policy within the Regional Road 25 corridor.



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

There are three noise sensitive areas located within the study limits. A noise analysis was carried out as part of the MCEA Study. Currently, the day care centre (Bright Path Escarpment Way) and Maplehurst Correctional Facility may be considered an Outdoor Living Area (OLA). Noise modelling was carried out to compare the potential increase in noise levels as a result of the proposed improvements. Noise modelling was carried out for 3 receiver locations identified throughout the study area. These are private residential houses (west side) located adjacent to, or in close proximity to Regional Road 25. Findings from the noise analysis indicated that the proposed Regional Road 25 improvements will not result in an increase in noise level greater than 5 dBA at receiver locations. As a result, the consideration of noise mitigation is not warranted under the MTO/MECP Noise Protocol.

Noise mitigation strategies have been addressed in order to minimize impacts resulting from construction activities. The contractor is to abide by the municipal noise control by-laws and ensure that all construction equipment is kept in good working order to limit additional noise. The contractor shall also ensure that the idling of construction equipment is kept to a minimum. Additional noise control measures will be addressed during detailed design.

### 7.2.4 Air Quality

An Air Quality Assessment was completed and is included in **Appendix H**. The study was carried out to characterize and assess the changes in air quality with reference to the following applicable contaminant guidelines:

- MECP Ambient Air Quality Criteria (AAQC)
- Canadian Council of Ministers of the Environment (CCME) Canadian Ambient Air Quality Standards (CAAQS)

The potential changes in air quality associated with changes in Criteria Air Contaminant (CAC) emissions resulting from the proposed improvements were assessed by analyzing percent changes in CAC emissions, existing emissions, and the future (2031) do-nothing alternative emissions. The analysis was completed based on the anticipated changes in traffic volumes.

Due to future growth in the Regional Road 25 corridor, traffic volumes are expected to increase to approximately 166% of current traffic volumes by 2031. Although there is potential for air quality to be impacted from increase in traffic volumes and traffic emissions, with the proposed improvements traffic flow will improve, with less idling and improved fuel combustion conditions. A comparison of vehicle emissions from the future no-build and future build scenarios shows significant reductions in contaminant



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

emission rates after construction. In addition, on road vehicles will gradually be replaced by newer, lower emission vehicles. The improvements also encourage the shift to other transportation options which would generate less traffic emissions (i.e., active transportation, transit, and transportation demand management). Therefore, a net benefit in air quality is expected for the future build scenario compared with the future no-build scenario.

During construction, best management practices will be applied to mitigate any air quality impacts caused by construction dust (non-chloride dust suppressants).

### **7.2.5 Potential Contaminated Sites**

Stantec conducted a cursory overview of existing site conditions, as well as land uses surrounding the study area that may have the potential to impact on-site soil conditions. As part of the review, Stantec conducted a desktop review of available mapping and aerial imagery to identify any Aboveground Storage Tanks (ASTs) or evidence of Underground Storage Tanks (USTs) (i.e., concrete pad a caps) and/or off-site activities that may have the potential for environmental concern. Based on the findings of this preliminary review, the following potential sources of contamination were noted:

- 235 Steeles Avenue East (Petro-Canada). Evidence of USTs located approximately 15 m north of the existing Steeles Avenue and Regional Road 25 intersection.
- 20 Market Drive (Canadian Tire Gas +). Evidence of USTs located approximately 55 m southwest of existing Regional Road 25 ROW.
- 640 Martin Street (Esso). Evidence of USTs located approximately 25 m southwest of existing Regional Road ROW.
- 8473 Regional Road 25 (Pioneer Gas Station and McFatt Autoworks). Evidence of USTs located approximately 12 m northeast of existing Regional Road 25 ROW, and potential for storage and incidental releases of oils, greases and/or solvents associated with automotive repair operations.
- 3025 James Snow Parkway (Petro Canada). Evidence of USTs located approximately 70 southwest of existing Regional Road 25 ROW.
- 8612 Regional Road 25 (Shell Gas Station). Evidence of USTs located approximately 12 m southwest of existing Regional Road 25 ROW.
- 610, 626 Martin Street (LooLoo Auto Sales). Potential for storage and incidental releases of oils, greases and/or solvents associated with automotive repair, storage and service operations.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

While not directly observed as part of the desktop review, road salt application activities also have the potential to impact soil conditions. The Region is not aware of any current or historical waste disposal sites located within the study area. Based on the potential sources of contamination described above, contaminants that may be present within proximity to the road ROW include both hydrocarbons (i.e., gasoline, diesel fuel, and fuel oils) and fuel additives, among others. It should be noted that these findings are preliminary in nature and based on a desktop cursory overview of existing study area conditions. Further investigations, if required, will be completed during detailed design.

### **7.2.6 Cultural Environment**

#### **7.2.6.1 Built Heritage Resources**

A Cultural Heritage Resource Assessment was carried out and is included in **Appendix D**. A list of the Built Heritage Resources and Cultural Heritage Landscape features are listed in **Section 3.6**. Based on the results of the background data collection, field review, and a review of the preliminary plan, the proposed work is not expected to adversely impact cultural heritage resources. The following recommendations have been developed:

- Two cultural heritage resources identified in the Cultural Heritage Resource Assessment: the train station located at 1 Chris Hadfield Way, and the Maplehurst Correctional Complex and Vanier Centre for Women located at 661, 665 Martin Street. These cultural heritage resources should be avoided during the proposed road widening within the study area.
- An impact assessment of the preferred alternative should be carried out to identify any impacts to heritage resources within and adjacent to the study area based on the selected alignment.
- To assist in the retention of historic information, copies of the Cultural Heritage Assessment Report should be deposited with a local repository of historical material.

Based on the alternative selected, no impacts to heritage resources within and adjacent to the study area are anticipated. This will be confirmed during detailed design.

#### **7.2.6.2 Archaeology Resources**

A Stage 1 Archaeological Assessment was completed to determine archaeological potential within the study area. As outlined in the Assessment, a large portion of the study area has been previously subject to land alterations, thus eliminating any archeological potential. However, other portions of the study area still exhibit moderate to high potential for the identification and recovery of archaeological resources. It is therefore recommended that a Stage 2 Archaeological Assessment be conducted during the detailed design stage in the following areas:



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

- West corner of the intersection of Chisholm Drive and Martin Street, immediately southeast of the Highway 401 off ramp;
- Northeast side of Martin Street straddling the Railway bridge overpass, and
- Southwest side of Martin Street and Chris Hadfield Way.

A copy of the Stage 1 Archaeological Assessment is provided in **Appendix E**.

### 7.2.7 Transportation

The proposed improvements on Regional Road 25 as described in this chapter support the transportation goals and objectives of Halton Region and the Town of Milton. All modes of travel will be accommodated on Regional Road 25 as the roadway transforms into a multi-modal corridor. The proposed undertaking supports Halton Region's Transportation Master Plan – The Road to Change (TMP) and Active Transportation Master Plan (ATMP).

### 7.2.8 Source Water Protection and Hydrogeology

Source water protection is discussed in **Chapter 3, Section 3.5.2** of the ESR. In summary, the Regional Road 25 MCEA study area is located within a Highly Vulnerable Aquifer, as defined in the Halton-Hamilton Source Protection Plan. Based on the Site setting, and reference materials provided, no significant threat activities have been identified, therefore, there are no applicable Source Protection Plan policies.

Recent changes to regulations governing dewatering activities outlined in *Ontario Regulation 63/16: Registrations Under Part II.2 of the Act – Water Taking* also place restrictions on where dewatering effluent may be discharged within Wellhead Protection Areas (WHPAs). The requirements of this regulation shall be considered during the dewatering planning and execution stages.

A Risk Management Plan (RMP) may be required for some of the policies noted in Section 3.5 and above. The plan should outline management measures that must be implemented to address any Significant Drinking Water Threat (SDWT) activities. Separate SDWTs may be required to cover activities during and post construction. RMPs are to be established between the organization engaged in the SDWT activity and Halton Region's Risk Management Official (RMO).



## **7.3 Design and Construction Considerations**

The mitigation of construction related impacts will follow the *Environmental Construction Guidelines for Municipal Road, Sewage and Water Projects*, issued by the Municipal Engineers Association.

### **7.3.1 Potential Impacts during Construction**

Impacts are discussed in various sections throughout this report, identifying the impacts during construction and the proposed mitigation measures. The following potential adverse effects are identified:

- Disruption/removal of existing vegetation;
- Construction noise and vibration from equipment;
- Dust generation altering air quality;
- Disruption to vehicular traffic including restricted access to businesses;
- Mud, sedimentation and soil compaction during construction;
- Contamination from spills;
- Impacts to water quality;
- Impacts to fish and wildlife, and their habitat;
- Vibration from equipment; and
- Potential impacts to archaeological resources.

Mitigation and monitoring conditions indicate a commitment on the part of the Region to mitigate potential environmental impacts and undertake a monitoring program post-construction. During the detailed design stage and prior to construction, Halton Region is responsible for obtaining various approvals and permits from the MECP and MNRF in order to proceed with project implementation. Permit approval will be required from Conservation Halton for all culvert installations, watercourse realignments, structures, site alteration, etc. within areas regulated pursuant to Ontario Regulation 162/06.

It is intended that the proposed works will be executed in a manner that minimizes any adverse impacts on the natural, socio-economic, and cultural environments within the study area. The contractor is responsible for ensuring work is carried out in a manner that minimizes environmental impacts. A qualified environmental inspector is to be assigned to ensure compliance with environmental objectives.



## **Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

### **7.3.2 Disposal of Excess Material**

Surplus excavated material shall be removed to locations arranged by the Contractor. Prior to the disposal of any surplus material, the Contractor shall provide the Engineer with a sketch of dumping site(s), including site access points. A written statement from the property owner(s) agreeing to allow the disposal of fill on the property must be approved by a Contract Administrator (CA). Furthermore, the placement of fill within any area associated with valleys, wetlands, shorelines and other hazardous lands that are regulated by Ontario Regulation 162/06 requires the written permission of Conservation Halton.

All approvals and permits will have to be obtained. Relevant MECP policy framework and best management practices should be referenced and applied where applicable.

Upon completion of the disposing, levelling, and grading of surplus excavated material on any property, a written statement shall be obtained from the property owner(s) releasing the Contractor and Region from any claims and accepting the condition of the property as satisfactory.

### **7.3.3 Measures for Proper Tree Removal and Preservation of Residual Plant Communities**

A Tree Protection Plan will be developed during the detailed design stage in order to provide guidelines for protecting and removing trees. Recommendations will be included outlining how to best manage trees, as well as guidelines for removed timber resource use and minimizing soil compaction. The plan should also include hazard tree monitoring, pruning, insect and disease control, aerating, watering, and mulching guidelines for maintenance both during and post-construction.

### **7.3.4 Mud and Dust Control**

All necessary measures should be taken during construction to prevent dust accumulation as a result of construction operations. The Contractor shall be responsible for all dirt and mud that it tracked onto the roadways from vehicles entering or leaving the job site. Upon request from the CA, the contractor shall immediately clean-up any mud or dirt resulting from construction activities. If the contractor is unable to sufficiently proceed with clean-up activities, the CA will perform the necessary clean-up. Erosion and sediment control measures outlined in earlier sections will aid in controlling mud and dust levels by keeping exposed soil at a minimum.



## **7.4 Monitoring and Maintenance**

During construction, the Region is responsible for ensuring that the environmental protection recommendations outlined in the ESR, as well as other subsequent agency approval conditions, are obeyed.

## **7.5 Detailed Design Commitments**

The above Chapter has outlined environmental concerns, anticipated impacts, and proposed mitigation measures in relation to the Regional Road 25 project. Many impacts have been mitigated through the selection of the recommended design. This section provides an additional list of standard commitments to be carried forward into the Implementation Phase. These commitments have been developed in accordance with various agencies throughout the study process. As certain decisions require specific agency input, a key component of detailed design is refining and detailing the impact assessment and mitigation measures as the design is further developed and refined in consultation with the agency staff.

Conservation Halton, as well as the Ministry of Natural Resources and Forestry have been consulted throughout the MCEA process, and their comments and preliminary concerns have been integrated. For example, commitments to CH may include but not be limited to refinement and conformation of drainage areas, refinement of Hydrologic and Hydraulic model, if necessary, and potential of LID options in consultation with a Landscape Architect.

Monitoring of construction activities must ensure all environmental standards and commitments for construction are met. Halton Region will work with Conservation Halton and various other agencies and authorities during detailed design and prior to construction commencement to ensure the proposed works follow the outlined procedures and obtain the required permits. Environmental monitoring and construction supervision will be combined to include periodic site visits and inspections throughout the duration of the project.

Installation of new water quality or quantity control systems (i.e., oil-grit separators, underground chambers, swales and ponds) will be inspected and/or flushed once per year over their lifetime. New watercourses and associated landscaping will be inspected once per year for the first 2-3 years to ensure they are functioning as intended. These requirements will be developed and finalized in consultation with CH and MNRF during detailed design.



## 7.6 Permit Requirements

Permits and approvals that may be required for this project are identified in **Table 14** below.

**Table 14: Permit Requirements**

| <b>Regulatory Agency</b>                            | <b>Legislation</b>                   | <b>Permit/Approval</b>                                              | <b>Comments</b>                                                                                             |
|-----------------------------------------------------|--------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Federal</b>                                      |                                      |                                                                     |                                                                                                             |
| Department of Fisheries and Oceans                  | Fisheries Act                        | Approval under the Fisheries Act                                    | The requirement for review by DFO under the Fisheries Act will be determined at detailed design.            |
| <b>Provincial Government</b>                        |                                      |                                                                     |                                                                                                             |
| Ministry of the Environment, Conservation and Parks | Ontario Environmental Assessment Act | Schedule 'C' Class EA (Municipal Engineer's Association Class EA)   | Satisfactory completion of EA requirements is a prerequisite for obtaining most other approvals             |
|                                                     | Ontario Water Resources Act          | Permit to take water <sup>1</sup>                                   | Required if >50,000 L/d of surface or groundwater taken, includes temporary dewatering during construction  |
|                                                     |                                      | Environmental Compliance Approval (ECA) for Industrial Sewage Works | Required if settling ponds or other water treatment methods are used during construction                    |
|                                                     | Environmental Protection Act         | Environmental Compliance Approval                                   | Storm water quality controls, including temporary facilities utilized during the project construction phase |
|                                                     |                                      | Environmental Compliance Approval                                   | Construction and operation of water quality treatment facilities, including the proposed                    |



**Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills**

| <b>Regulatory Agency</b>                   | <b>Legislation</b>                                                                                | <b>Permit/Approval</b>                                                                                                                                             | <b>Comments</b>                                                                                                                      |
|--------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|                                            |                                                                                                   |                                                                                                                                                                    | OGS and advanced filtration systems                                                                                                  |
|                                            | Endangered Species Act                                                                            | Should a species or its habitat that is afforded protection under the ESA have potential to be negatively impacted, compliance under the Act must be demonstrated. | The requirement for completion of an IGF or activity registration will be determined at detailed design                              |
| Ministry of Natural Resources and Forestry | Fish and Wildlife Conservation Act                                                                | A License to Collect Fish for Scientific Purposes                                                                                                                  | Removal of fish during installation of cofferdams for culvert extensions will also be determined at detailed design                  |
| Conservation Halton                        | Development, Interference with Wetlands & Alterations to Shorelines & Watercourses (O.Reg.162/06) | Permit                                                                                                                                                             | Will be required for any works occurring within a regulated area, this includes culvert extensions/replacements and widening of road |
| Ministry of Labour                         | Construction Projects Regulation (O. Reg. 213/91)                                                 | Notice of Project                                                                                                                                                  | Required before construction commences                                                                                               |
| <b>Municipal Government</b>                |                                                                                                   |                                                                                                                                                                    |                                                                                                                                      |
| Halton Region                              | Tree Bylaw                                                                                        | Permit                                                                                                                                                             | Required to remove trees on Region-owned property (i.e., within road right-of-way)                                                   |
| Town of Milton                             | Noise Control By-law                                                                              | Exemption                                                                                                                                                          | Required to allow construction works outside of normal hours (7pm to 7am) and on weekends                                            |



## Regional Road 25 Transportation Corridor Improvements from Steeles Avenue to 5 Side Road, Town of Milton/Town of Halton Hills

| Regulatory Agency | Legislation           | Permit/Approval | Comments                                                                    |
|-------------------|-----------------------|-----------------|-----------------------------------------------------------------------------|
|                   | Ontario Building Code | Building Permit | Required if temporary site trailers or other facilities are erected on-site |

### 7.7 Monitoring

During construction, the on-site Contract Administrator will ensure that implementation of mitigating measures and key design features are consistent with the contract and external commitments (e.g., permit conditions/requirements and EA commitments). In addition, the effectiveness of the environmental mitigating measures established during detailed design will be assessed to ensure that:

- Individual mitigation measures are providing the expected control and / or protection;
- Additional mitigation measures are provided, as required, for any unanticipated environmental problems that may develop during construction.

On-site construction administration staff will ensure that the environmental measures outlined in this report (Chapter 7) and further developed during detailed design are carried out. In the event that problems arise, appropriate agencies will be contacted to provide further input.

If the impacts of construction are different than anticipated, or if the method of construction is such that there are greater than anticipated impacts, the Contractor's methods of operation will be changed or modified to reduce those impacts.



