

DILLON
CONSULTING

CITY OF HAMILTON

**Southcote Road
(Garner Road to Golf Links Road)
Environmental Study Report**

FINAL

June 7, 2019



City of Hamilton
Engineering Services – Public Works Department
77 James Street North, Suite 320
Hamilton ON, L8R 2K3

Attention: Ms. Megan Salvucci
Project Manager, Asset Management

Southcote Road Municipal Class EA

Dear Ms. Salvucci:

Enclosed are four hard copies of the Environmental Study Report for the Southcote Road Class Environmental Assessment.

It has been a pleasure to work with you on this project.

Sincerely,

DILLON CONSULTING LIMITED

A handwritten signature in black ink that reads "Sabrina Stanlake-Wong".

Sabrina Stanlake-Wong, RPP
Project Manager

SNS:caw

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Table of Contents

Executive Summary

| | | |
|------------|---|-----------|
| 1.0 | Introduction | 1 |
| 1.1 | Purpose of the Study..... | 1 |
| 1.2 | Study Area | 1 |
| 1.3 | Ontario Municipal Class Environmental Assessment Process | 2 |
| 1.4 | Part II Order Request | 2 |
| 2.0 | Public and Stakeholder Consultation | 3 |
| 2.1 | Notice of Commencement and Public Information Centre No. 1..... | 3 |
| 2.2 | Public Information Centre No. 2 | 7 |
| 2.3 | Consultation with Indigenous Communities..... | 12 |
| 3.0 | Relevant City Documents | 12 |
| 3.1 | City of Hamilton Official Plan (2009)..... | 12 |
| 3.1.1 | Garner Neighbourhood Secondary Plan | 13 |
| 3.1.2 | Meadowlands Neighbourhood III Secondary Plan..... | 14 |
| 3.1.3 | Airport Employment Growth District Secondary Plan | 14 |
| 3.2 | Ancaster Transportation Master Plan (2011) | 15 |
| 3.3 | Shifting Gears Cycling Master Plan (2009)..... | 15 |
| 3.4 | Transportation Master Plan: City in Motion (2018)..... | 16 |
| 4.0 | Existing Conditions | 16 |
| 4.1 | Land Uses | 16 |
| 4.2 | Natural Environment..... | 17 |
| 4.2.1 | Tree Inventory..... | 18 |
| 4.2.2 | Source Water Protection | 19 |
| 4.3 | Municipal Infrastructure and Utilities..... | 19 |
| 4.4 | Archaeology and Cultural Heritage | 19 |
| 4.5 | Transportation Analysis | 20 |
| 4.6 | Drainage and Stormwater Management | 21 |
| 5.0 | Phase 1 and 2 Summary | 21 |
| 6.0 | Phase 3 Design Options | 23 |

6.1 Design Considerations..... 23

6.2 Design Options Considered..... 24

6.2.1 Evaluation Process 27

6.2.2 Recommended Option..... 28

6.3 Design Refinements 31

6.3.1 Multi-use Pathway Location 31

6.3.2 Bookjans Drive to Secinaro Avenue Frontage Road 31

6.3.3 Stonehenge Drive/Southcote Road Intersection 32

6.3.4 Traffic Calming 33

6.4 Preferred Design 34

6.4.1 Roadway Improvements 34

6.4.2 Active Transportation 35

6.4.3 Watermains..... 35

6.4.4 Sanitary Sewers..... 35

6.4.5 Storm Sewers and Culverts 36

6.4.6 Stormwater Management..... 36

6.4.7 Utilities 36

6.4.8 Traffic and Pedestrian Management 37

6.4.9 Illumination 37

6.4.10 Entrance and Access Management..... 37

6.4.11 Traffic Management during Construction 37

6.4.12 Preliminary Property Requirements 37

6.4.13 Landscape Plan..... 38

6.4.14 Climate Change 38

7.0 Implementation 39

7.1 Approvals Required Prior to Construction..... 41

7.1.1 Tree Removal and Maintenance 41

7.2 Functional Design Level Cost Estimates..... 41

7.3 Detailed Design Considerations 42



Figures

| | |
|---|----|
| Figure 1: Study Area | 1 |
| Figure 2: Option 1 – Continuous sidewalks and on-road bike lanes on both sides of the road..... | 25 |
| Figure 3: Option 2 – Continuous sidewalks and protected in-boulevard bike lanes on both sides of the road | 25 |
| Figure 4: Option 3 – Sidewalk on one side of the road and multi-use pathway (accommodating two directions of travel) on other side of the road | 26 |
| Figure 5: Option 4 – Multi-use pathways on both sides of the road..... | 26 |
| Figure 6: Option 5 – Sidewalk on one side of the road, multi-use pathway on the other side of the road and on-road bike lanes on both sides of the road | 27 |
| Figure 7: Frontage road option | 32 |

Tables

| | |
|--|----|
| Table 1: Comments Received as Part of Public Information Centre No. 1..... | 4 |
| Table 2: Comments Received as Part of Public Information Centre No. 2..... | 7 |
| Table 3: Design Criteria | 23 |
| Table 4: Evaluation Criteria | 27 |
| Table 5: Evaluation of Design Options..... | 29 |
| Table 6: Potential Impacts and Mitigation Measures | 39 |

Appendices

| | |
|---|-----------------------------|
| A | Consultation Materials |
| B | Transportation Analysis |
| C | Natural Environment Summary |
| D | Preferred Option |
| E | MTCS Checklists |
| F | Conceptual Landscape Plans |

Executive Summary

Introduction

Dillon Consulting Limited was retained by the City of Hamilton to complete a Schedule 'C' Municipal Class Environmental Assessment (EA) process to identify preferred improvements to Southcote Road. The study area is along the Southcote Road corridor, between Golf Links Road and Garner Road East, in the Community of Ancaster.

The need for improvements along Southcote Road was identified in the Ancaster Transportation Master Plan (ATMP) (2011), which fulfilled Phases 1 and 2 of the Class EA process. The ATMP identified a preferred alternative solution for the transportation network, including:

- Better utilization of existing roadway capacity by adding two-way left turn lanes to accommodate growth (population and employment)
- Promote active transportation by adding bike lanes and sidewalks.

The ATMP identified the need to widen Southcote Road to a three-lane urban cross-section. The current study fulfilled Phases 3 and 4 of the Class EA process, including identifying and evaluating alternative design options to implement the preferred alternative and selecting a preferred option. The study included public and agency consultation and the decision-making process is documented in this Environmental Study Report.

Existing Conditions

The project Study Area is a 2.1 km long north-south, two-lane minor arterial with a rural cross-section, consisting of unpaved shoulders (with an urban cross-section in some areas that have recently been developed) located in the south east area of Community of Ancaster. Southcote Road extends from Mohawk Road to Brook Road East and crosses Highway 403. There are currently no cycling facilities and there are sidewalks intermittently along both sides of the roadway. Overhead utility lines run the length of the west side, crossing over at Calder Street, and transitioning to the east side for the remainder of the Study Area. Land uses along Southcote Road are primarily residential with a cemetery at the northwest corner of Garner Road.

There are limited natural environment features within the study area. An inventory of trees along the corridor was completed. Based on the background review and field assessment, the potential for two species protected under the *Endangered Species Act, 2007* has been identified along the corridor. There is a potential for Butternut (listed as Endangered) and Kentucky Coffee Trees (listed as threatened). Further assessment is required during the detailed design phase to determine impacts and develop mitigation and protection plans.

A transportation analysis was completed to review existing and projected conditions to provide input on the design options developed. The centre two-way left-turn lane is recommended to allow left-turning motorists to complete their turn without negatively impacting the vehicular throughput of the roadway.

Much of the existing corridor is considered previously disturbed and does not retain potential for the discovery of archaeological artifacts. Garner's Corners Cemetery is a designated Cultural Heritage site.

Alternative Design Options

Five alternative cross-sections were developed for the corridor. All of the options developed include widening Southcote Road to a three-lane cross-section.

- **Option 1 – Continuous sidewalks and on-road bike lanes on both sides of the road.** This option is consistent with the recommendations of the Cycling Master Plan
- **Option 2 – Continuous sidewalks and protected in-boulevard bike lanes on both sides of the road.** This option provides fully separated pedestrian and cyclists facilities along both side of the roadway
- **Option 3 – Sidewalk on one side of the road and multi-use pathway (accommodating two directions of travel) on the other side of the road.** Based on existing conditions, the multi-use pathway is proposed on the east side of the right-of-way due to the existing mature trees on the west side. The pathway would be wide enough to accommodate two directions of travel. This is the preferred option
- **Option 4 – Multi-use pathways on both sides of the road.** The multi-use pathways would be wide enough to accommodate two directions of travel
- **Option 5 – Sidewalk on one side of the road, multi-use pathway (accommodating two directions of travel) on the other side of the road and on-road bike lanes on both sides of the road.** This option has the largest footprint of all of the options considered.

Preferred Option

Based on the evaluation completed, **Option 3** is recommended as it provides the best balance of improved active transportation facilities and minimizing impacts to mature trees.

Design Refinements

Several design refinements were developed to address site-specific issues along the corridor:

- The location for the multi- use pathway was reviewed, including adjacent to the east property line and offset from the back of curb 2 m. The preferred location is offset 2 m from the back of curb
- A frontage road was considered along the east side of Southcote Road from Bookjans Drive to Secinaro Avenue. The frontage road was not carried forward to the preferred design as it would create challenges for delivery vehicles, winter maintenance, and emergency vehicles to navigate while also reducing driveway length and lawn area for the existing homes
- A key concern raised by the public was many vehicles currently speed down Southcote Road. Several members of the public asked if there were opportunities to address vehicles traveling at high speeds through the design. There is currently no requirement for a vehicle to stop at an intersection along the corridor. The preferred design includes a traffic signal at the Stonehenge Drive intersection as well as two additional pedestrian crossings. The traffic signal could provide a traffic calming benefit by disrupting vehicle speeds. Reduction of the width of through lanes and the introduction of a horizontal curve to Southcote Road were considered as traffic calming measures. Introduction of an urban cross-section and reduction in lane widths would minimize the impacts on residential driveways, trees, and landscaping features, and could slow traffic. Introducing horizontal curves may increase the potential for conflicts at the existing intersections and would require a significant amount of property, and is not recommended as a traffic calming method on Southcote Road.

Preferred Design

The preferred design includes widening the roadway primarily to the east to accommodate a centre two-way left turn lane on Southcote Road between Secinaro Avenue and Calder Street, reconstruction to an urban cross-section with curb and gutter throughout the corridor, and the addition of northbound and southbound left turn lanes at the intersection of Southcote Road and Oldoakes Place/Dorval Drive.

New sidewalk is proposed on the west side of Southcote Road throughout the project and on the east side of Southcote Road between Oldoakes Place and Golf Links Road. A sidewalk is currently located on the west side of the structure over Highway 403 and will be maintained. Two pedestrian crossings are recommended along Southcote Road: at the Cabriolet Crescent sidewalk path, and Gray Court Drive. A third pedestrian crossing will be provided as part of the traffic signals recommended at Stonehenge Drive.

A 3.5 m wide multi-use path is proposed on the east side of Southcote Road from Garner Road to the existing pathway connection to Cabriolet Crescent. On-road bike lanes are proposed from the Cabriolet Crescent pathway to the south limit of the Highway 403 structure. As the existing width of the Highway 403 structure does not support the addition of bike lanes, shared use lanes are proposed over the bridge. No bike lanes are being recommended north of the structure as part of this EA. It is anticipated the future McNiven Road EA will review the bike lane configuration between the Highway 403 structure and Golf Link Road to ensure that a consistent cycling facility design can be accommodated with adjustments to horizontal, vertical or intersection updates as a result of a future Golf Links Road/McNiven Road/Southcote Road intersection.

Upgrades to the existing watermain and sanitary sewers are not anticipated. The storm sewer system, utility relocations and illumination will be reviewed during detailed design.

Construction Considerations

Existing residential entrances are to remain with no access management changes anticipated. A Traffic Management Plan will be developed during detailed design and will outline detours for local traffic, if required during construction. Access to individual properties will be maintained during construction.

Consultation Activities

A combined Notice of Study Commencement and Public Information Centre #1 (PIC) was sent to the contact list the week of May 7, 2018, and mailed to all property owners along the study corridor. It was also published in the Ancaster News on May 10, 2018, and May 17, 2018. Over 30 comments were received at and following the PIC held on May 24, 2018. Attendees provided input on:

- Vehicles travel well above the speed limit currently and requested traffic calming measures be considered
- Pedestrian crossings are required
- Traffic signals should be reviewed
- Existing overhead utilities should be buried
- Mature trees along the west side of Southcote Road should be protected.

A notice for PIC #2 was sent to the contact list on November 27, 2018, and mailed to all property owners along the study corridor. It was also published in the Ancaster News on November 29, 2018, and December 6, 2018. Sixteen comments were received at and following the PIC held on December 10, 2018. Most attendees indicated general agreement with the proposed plan. Some residents expressed safety-concerns regarding the two-way left turn lane. Based on public comments, the multi-use path width was reduced from 4.0 m to 3.5 m. The final width (between 3.0 m and 4.0 m) will be confirmed during detailed design. Attendees indicated a continued desire to have utility lines buried. The preferred design accommodates overhead or buried utilities. This will be confirmed during detailed design.

1.0 Introduction

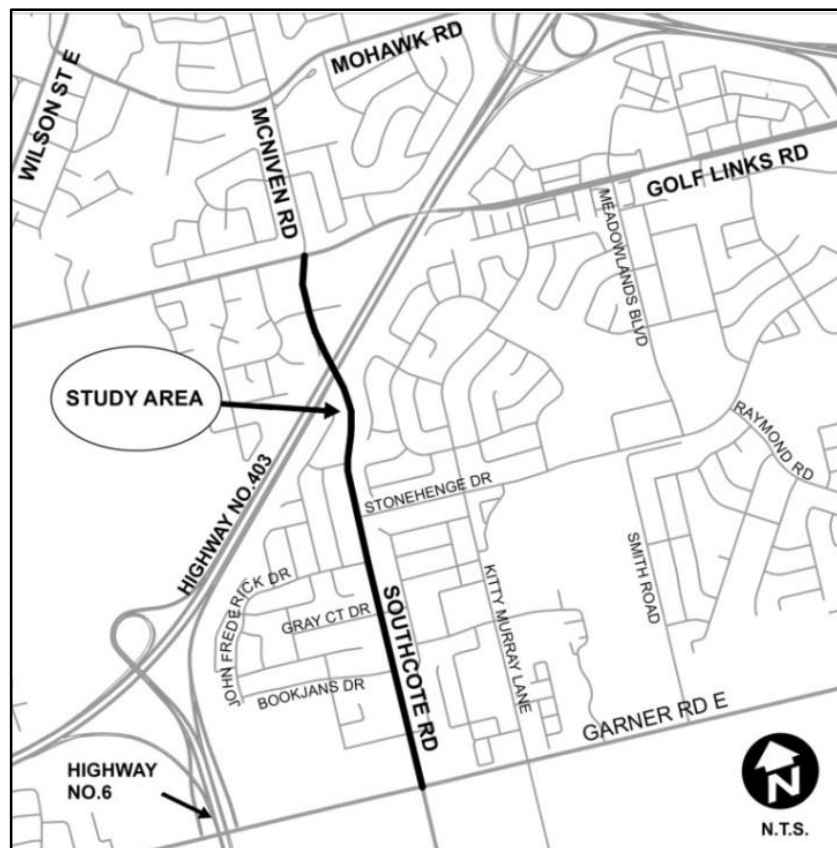
1.1 Purpose of the Study

Dillon Consulting Limited was retained by the City of Hamilton to complete the Municipal Class Environmental Assessment (EA) process to identify the preferred improvements to Southcote Road. The need for improvements was identified in the Ancaster Transportation Master Plan (ATMP) (2011).

1.2 Study Area

The study area is Southcote Road between Golf Links Road and Garner Road East, a 2.1 km long north-south minor arterial roadway located within the south east area of the community of Ancaster in the City of Hamilton (**Figure 1**). Southcote Road provides local access to major arterial roads, which in turn provide access to Provincial Highways (6 and 403), Parkways (Lincoln M. Alexander Parkway) and a local commercial area (Meadowlands Power Centre). Southcote Road crosses over Highway 403, via a structure owned by the Ministry of Transportation (MTO), which was recently rehabilitated. Southcote Road also serves as a local road with a number of homes fronting onto it. The land use in the immediate vicinity of the study area is predominately residential.

Figure 1: Study Area



1.3 Ontario Municipal Class Environmental Assessment Process

Municipal infrastructure projects must meet the requirements of the Ontario *Environmental Assessment (EA) Act*. The Municipal Class EA (October 2000, as amended in 2007, 2011 and 2015), applies to a group or “class” of municipal infrastructure projects which occur frequently and have relatively minor and predictable impacts. These projects are approved under the *EA Act*, as long as they are planned, designed and constructed according to the requirements of the Class EA.

The specific requirements of the Class EA for a particular project depend on the type of project, its complexity, the significance of environmental impacts and cost of the project. Four categories of projects are identified in the document, including Schedule ‘A’, ‘A+’, ‘B’ and ‘C’ projects. The Southcote Road Improvements project is categorized as the following type of Schedule ‘C’ project:

20. Reconstruction or widening where the reconstructed road or other linear paved facilities will not be for the same purpose, use, capacity or at the same location (e.g., additional motor vehicle lanes, continuous centre turn lane). The project is considered a Schedule C if the construction value is over \$2.4 Million (pg. 1-5 of the Municipal Class EA).

Schedule ‘C’ projects proceed through the full Class EA process and include the following phases prior to implementation:

- Phase 1 – Outline the Problem/Opportunity
- Phase 2 – Develop and evaluate “Alternative Solutions” and select a preferred solution
- Phase 3 – Develop and evaluate “Alternative Design Concepts” and select a preferred design
- Phase 4 – Environmental Study Report – Document the decision making process, including public and agency consultation completed.

Appendix A includes a copy of public and agency consultation completed during the study.

1.4 Part II Order Request

This report is available for a 30 day public and agency review period. During that period, any individual or agency with significant concerns about the project should contact the project team to discuss their concerns. If concerns cannot be resolved, any individual or agency may write to the Ministry of Environment, Conservation and Parks (MECP) requesting that the Minister issue a Part II Order to elevate the status of the project from a Class EA to an Individual EA. Any Part II Order request must be submitted to MECP using a standard form developed by MECP. The standard Part II Order request form is available on the Ontario government Forms Repository website (<http://www.forms.ssb.gov.on.ca/>) and is available by searching “Part II Order” on the Repository’s main page. A copy of the completed form and any supporting information must also be forwarded to the City of Hamilton. All requests are reviewed by the MECP Environmental Assessment and Approvals Branch. Criteria used to evaluate a request include:

- The purpose of the EA
- Any differences between the proposed undertaking and the other undertakings in the same group, as well as the significance of the differences
- The nature of the concerns raised by the requester(s)
- The benefits of carrying out an individual EA.

MECP staff also evaluate the applicability and effectiveness of other legislation and decision-making processes to address the concerns of the requester(s).

The Minister of the Environment, Conservation and Parks has four options for a decision on a Part II Order request:

- Deny the request
- Deny the request with conditions
- Refer the matter to mediation
- Grant the request and require the proponent to undergo an individual EA.

If no Part II Order requests are received by MECP during the 30-day period, the project may proceed to Detailed Design, permitting and construction.

2.0 Public and Stakeholder Consultation

This section of the report summarizes the consultation completed throughout the study. All consultation materials referred to are included in **Appendix A**.

2.1 Notice of Commencement and Public Information Centre No. 1

A combined Notice of Commencement and Public Information Centre (PIC) was issued to the Agency Contact List the week of May 7, 2018, and was published in the Ancaster News on May 10, 2018, and May 17, 2018. The Notice was also mailed to all property owners along the study corridor.

The Public Information Centre was held at Ancaster Town Hall, in the City of Hamilton, May 24, 2018, from 6:00 p.m. to 8:00 p.m. The Record of Attendance was signed by 28 individuals. The purpose of the PIC was to present the project overview, initial input on the alternative design concepts and obtain feedback from the public regarding site opportunities and constraints. Staff from Dillon and the City were available to answer questions.

The information panels included the following topics:

- EA Study Area
- Project overview of the Southcote Road Municipal Class Environmental Assessment
- Study and EA process
- Connections with the Ancaster Transportation Master Plan
- Existing conditions (including an activity panel, requesting feedback from attendees on the individual's preferences on the design alternatives)
- Phase 3 design options
- Next steps.

As part of the PIC panels, those in attendance were asked to put a sticker dot on the active transportation amenities they desire most on Southcote Road. The following was provided:

- 5 dots for on-road cycling lanes
- 11 dots for off-road cycling lanes
- 6 dots for multi-use paths
- 16 dots for sidewalks
- 7 dots for transit servicing.

Over 30 comments were received at and following the PIC. **Table 1** summarizes the input received as well as the study team response. A letter was sent to residents who provided comments at the PIC summarizing frequently asked questions and responses the week of September 10, 2018.

Table 1: Comments Received as Part of Public Information Centre No. 1

| Comment | Project Team Response |
|---|--|
| Agencies | |
| <p>Ministry of Natural Resources and Forestry (MNRF)</p> <p>There is a Potentially Significant Wetland (Tiffany Creek Wetland Complex) in the vicinity of the study area. MNRF provided an outline of potential Species at Risk (SAR) in the study area and recommends a comprehensive habitat inventory and surveys for these species be completed.</p> | <p>Comments noted. Dillon completed a background review and field investigations. The natural environment review is documented in Section 4.2 of this report.</p> |
| <p>Ministry of Environment, Conservation and Parks (MECP)</p> <p>Provided information on existing wells in the Study Area. The letter also outlined MECP's new project notification process.</p> | <p>Comments noted.</p> |
| <p>Union Gas</p> <p>The utility has a 4" gas main running along Southcote Road.</p> | <p>Comments noted.</p> |

| Comment | Project Team Response |
|--|---|
| Members of the Public | |
| <i>Vehicular traffic, speeding and safety</i> | |
| <p>A number of residents expressed concern over the speed vehicles travel on Southcote Road. Comments indicate a desire for traffic calming measures, including roundabouts, stop signs, and signalization of the Stonehenge Drive intersection.</p> | <p>The team reviewed opportunities to include traffic calming measures into the design. Traffic calming along the corridor must be balanced with the purpose of the roadway, which is to move traffic within the community as Southcote Road is designated a minor arterial roadway in the City’s Official Plan. Information on this issue was presented at the second PIC.</p> |
| <p>One resident indicated that due to the curves on Southcote Road (south of the bridge over Highway 403), lack of street lighting, and speeding vehicles, he has witnessed cars ending up in the ditch or in collisions numerous times in front of his home. Another resident indicated that while he has had little concern turning into his driveway on Southcote Road, he often finds it challenging to reverse out due to traffic volumes and speeds.</p> | <p>Comments noted.</p> |
| <p>Residents commented that with the road widening along Southcote Road, they are fearful of increases in traffic volume and noise. There is also concern that the proposed retirement facility (at the corner of Southcote Road and Golf Links Road) could further increase traffic volumes.</p> | <p>Comments noted.</p> |
| <i>Accessibility/Pedestrians:</i> | |
| <p>Need for sidewalks on the west side of Southcote Road, as the asphalt and pavement is cracking and the grading is uneven in areas.</p> | <p>Design includes pedestrian facilities on both sides of the road.</p> |
| <p>Need for sidewalks in the areas north of Garner Road where Southcote Road only has unpaved shoulders currently. One resident expressed concern over the addition of sidewalks in front of their home due to potential for loss of privacy and issues of personal safety.</p> | <p>Design includes pedestrian facilities on both sides of the road. Comments noted.</p> |

| Comment | Project Team Response |
|--|---|
| Desire for pedestrian-enabled crosswalks to provide safer crossing areas for children, seniors, and those with mobility challenges. | Pedestrian crossings are included in the design. |
| Cycling: | |
| Desire to implement bike lanes. However, residents have mixed opinions on the placement of the cycling infrastructure (either on the road or on a dedicated/mixed-use pathway). | Design includes cycling facilities. |
| Flooding and landscape: | |
| Save the mature trees on the west side of Southcote Road, as well as plant more trees on the public rights-of-way along the east side. | Based on the current right-of-way, much of the roadway widening is to the east. The evaluation of alternatives focused on a balance of improving the roadway, including sidewalks and cycling facilities, while minimizing the need to remove the mature trees. |
| Southcote Road is prone to flooding in high precipitation events, particularly the properties on the west side south of Golf Links Road, and also south of Stonehenge Drive. Residents indicated it appears the culverts are currently unable to handle the amount of water in these events, with much of it flowing over the roadway as the ditches become flooded (particularly the properties north of John Frederick Drive). | Comments noted. |
| Utilities: | |
| A 30-person petition signed by the residents along Southcote Road was delivered to the City following the PIC indicating the desire to bury the hydro and utility lines. | The City has reached out to the utility companies to obtain a cost estimate to bury the utilities. The cost to complete this has not been accounted for in the project budget at this time. The design accommodates overhead and buried utility lines. |

2.2 Public Information Centre No. 2

The Notice of Public Information Centre 2 was sent to agencies on the Agency Contact List who expressed interest in continued communication on November 27, 2018, by the City of Hamilton. The notice was also published in the Ancaster News on November 29, 2018, and December 6, 2018. The Notice was also emailed to interested property owners along the study corridor on November 27, 2018, by the City of Hamilton.

The Public Information Centre was held at Ancaster Town Hall on December 10, 2018, from 6:00 p.m. to 8:00 p.m. The Record of Attendance was signed by 32 individuals.

The purpose of the PIC was to present the project overview, stakeholder feedback from PIC 1, alternative design concepts, and the recommended design option for public input. Staff from the City and Dillon were available to answer questions.

The information panels included the following topics:

- Project overview, background and study process
- Stakeholder input received to date
- Traffic analysis
- Design options, evaluation process and the recommended option
- Tree inventory
- Next steps.

Sixteen comments were received at and following the PIC. **Table 2** summarizes the input received as well as the study team response.

Table 2: Comments Received as Part of Public Information Centre No. 2

| Comment | Project Team Response |
|---|---|
| <p>Agencies</p> <p>Public Health, City of Hamilton</p> <p>Concern over potential for increased conflict points on multi-use path with driveways, particularly for those on bikes. Preference is for Option 5 of alternative design options, as it accommodates all uses regardless of age or ability.</p> | <p>Comments noted. The preferred design was selected to balance the needs of road users, property owners and impacts to the natural environment. It is recommended the multiuse pathway be distinct from the driveways it crosses, potentially being slightly raised or of a different colour so drivers recognize they are crossing a multiuse pathway. This design detail will be confirmed during detailed design.</p> |

| Comment | Project Team Response |
|--|--|
| <p>Hamilton-Wentworth Catholic District School Board (HWCD SB)</p> <p>Include pedestrian-enabled crossings on Southcote Road, near Secarinaro Avenue/Burbridge Way, and at Stonehenge Drive and Gray Court Drive. No bus stops are located on Southcote Road where pedestrian-enabled crossings are proposed. Sidewalks along west side of Southcote Road and the multi-use path would be beneficial to school travel planning.</p> <p>Hamilton-Wentworth District School Board (HWDSB)</p> <p>The majority of students on the west side of Southcote Road receive bus service to Ancaster Meadow Elementary School. Any form of controlled traffic device is beneficial for students walking to school. There are two stops on Southcote Road closer to Garner Road for Ancaster Meadow Elementary School. Students are coming from the west side of Southcote Road thus not crossing Southcote Road.</p> | <p>Comments noted.</p> <p>Comments noted.</p> |
| <p>Ancaster Meadow Elementary School</p> <p>Sidewalk infill and providing a path is crucial for student safety. The plan does not address the roundabouts which will be a safety concern even with the addition of sidewalks and pedestrian crossings. Exact bus routes are subject to change as they are determined annually based on student addresses.</p> | <p>Comments noted.</p> |
| <p>Members of the Public</p> | |
| <p><i>Vehicular traffic, speeding and safety:</i></p> | |
| <p>A number of residents expressed concern over the speed vehicles travel on Southcote Road. One resident expressed concern over speed and “rolling stops” by drivers turning from Stonehenge Drive onto Southcote Road, placing pedestrians at a safety risk. The resident suggested sharper corners and narrowed lanes to encourage drivers to slow down and stop at the corner.</p> | <p>Comments noted. Measures to provide traffic calming have been included in the design.</p> |

| Comment | Project Team Response |
|---|--|
| <p>Most residents agreed with signaling Stonehenge Drive intersection. One individual requested the John Frederick Drive/Southcote Road intersection also be signalized.</p> | <p>Comments noted.</p> |
| <p>One resident expressed concern that the addition of intersection signalization may slow down traffic flows when Southcote Road is used as a detour during periods of high traffic volume or traffic problems along Highway 403.</p> | <p>Comments noted.</p> |
| <p>One resident commented that they are fearful the centre turn lane along Southcote Road will increase accidents. They requested to only have the turn lane at intersections.</p> | <p>Comments noted.</p> |
| <p>Accessibility/pedestrians:</p> | |
| <p>Residents agreed on addressing concerns with the existing sidewalks on the west side of Southcote Road. One resident asked that sidewalks in the areas north of Garner Road on Southcote Road be a priority, as it only has unpaved shoulders currently.</p> | <p>Comments noted.</p> |
| <p>One resident expressed concern that with the addition of curbs and sidewalks, as parking for the cemetery (which is currently along the shoulder on the west side of Southcote Road) will be lost.</p> | <p>Comments noted.</p> |
| <p>Most residents agreed on the locations of the pedestrian-enabled crosswalks.</p> <p>One resident expressed a desire for the addition of pedestrian-enabled crosswalks at Dorval Drive/Oldoakes Place and Southcote Road due to the mobility issues of their child. Another resident requested a pedestrian-enabled crosswalk at Gray Court Drive and Southcote Road.</p> | <p>Comments noted.</p> <p>It has been determined through traffic and pedestrian assessments of this area of Southcote Road that there is not enough demand to warrant the crossing at this time. In addition, there may be complications based on where accesses are proposed for the development at the corner of Southcote Road and Golf Links Road. Installing a pedestrian crossing in this vicinity on Southcote Road may result in greater safety concerns for pedestrians once the new development is in place.</p> |

| Comment | Project Team Response |
|---|--|
| Cycling: | |
| Most residents agreed on the location of the multi-use path with a separated buffer from the roadway. | Comments noted. |
| One resident requested moving the multi-use path closer to the roadway and the reduction of the buffer to increase their yard frontage. | Comments noted. The multi-use pathway was revised to 3.5 m wide based on input received from the public. The final width (between 3 m and 4 m) will be confirmed during the detailed design phase. |
| One resident requested the addition of dedicated bike lanes across the Highway 403 structure and north to Golf Links Road. | The existing width of the Highway 403 structure does not support the addition of bike lanes. Shared use lanes are proposed over the bridge. No bike lanes are being recommended north of the structure as part of this EA. It is anticipated that the future McNiven Road EA will review the bike lane configuration between the Highway 403 structure and Golf Link Road to ensure that a consistent cycling facility design can be accommodated with adjustments to horizontal, vertical or intersection updates as a result of a future Golf Links Road/McNiven Road/Southcote Road intersection. |
| Flooding and landscape: | |
| One resident indicated a need for a walkway bridge at the proposed pedestrian-enabled crossing at Cabriole Crescent and Southcote Road due to flooding concerns during high precipitation events. | Comments noted. |
| One resident expressed concern that the catch basins as part of the urban cross section may not be enough to ensure efficient diversion of water away from the roadway. | Comments noted. The roadway will be designed to meet the City's design requirements. |
| One resident expressed concern over impacts to a buried sprinkler system on their property and whether construction may disturb the system. | Impacts to the buried sprinkler system will be reviewed during the detail design phase and will be discussed with the condominium board. |

| Comment | Project Team Response |
|---|--|
| <p>One attendee inquired about a tree located on a property northwest of the intersection at John Frederick Drive, asking whether the tree was planned for removal.</p> | <p>The tree is likely not planned for removal, but final determination would be subject to detailed design.</p> |
| <p>One attendee provided comment about a group of approximately four trees located on a property south of Calder Street on the west side of Southcote Road, noting that maintenance and pruning work was conducted on those trees in Autumn 2017, and that they were noted as being in good condition at that time.</p> | <p>The trees are likely not planned for removal, which will be confirmed during detailed design.</p> |
| <p>Utilities:</p> | |
| <p>A number of residents expressed the desire for the burying of the utility lines.</p> | <p>The City has reached out to the utility companies to obtain a cost estimate to burying the utilities. The cost to complete this has not been accounted for in the project budget at this time. The design accommodates overhead and buried utility lines.</p> |
| <p>Additional feedback:</p> | |
| <p>One resident expressed a need to pave the access road to the private homes on Southcote Road on the west side, north of the bridge over Highway 403. Concern is that the access road is often used as a holding area for heavy vehicles thereby degrading the pavement.</p> | <p>Comments noted. The pavement condition will be reviewed during detailed design.</p> |
| <p>One resident expressed a need for bus stops and shelters along Southcote Road.</p> | <p>Comments noted. There is currently no existing or planned transit service along this route. Changes to transit routes are not included as part of this study. However, an extension of the multi-use pathway along the east side of Southcote Road, onto Garner Road East, is proposed to accommodate for a bus route along Garner Road East.</p> |
| <p>Two residents on the east side of Southcote Road requested detailed plans of their properties with the proposed multi-use path identified on the City-owned right-of-way.</p> | <p>Based on input received from the public the multi-use pathway width was revised to 3.5 m. The final width (between 3.0 m and 4.0 m) will be confirmed during detailed design.</p> |

2.3 Consultation with Indigenous Communities

Appendix A includes a log of consultation with Indigenous communities. The following communities were contacted as part of the study:

- Metis Nation of Ontario
- Six Nations Eco-Centre
- Six Nations of the Grand River Territory
- Haudenosaunee Confederacy Council
- Mississaugas of New Credit First Nation
- Huron-Wendat Nation Council.

Mississaugas of New Credit First Nation (MNCFN) advised it does not have any high level concerns regarding the study. MNCFN requested to be notified of the study progress and be provided with a copy of all associated environmental and archaeological reports.

3.0 Relevant City Documents

The following City documents were reviewed to provide background information on this study.

3.1 City of Hamilton Official Plan (2009)

The City of Hamilton Urban Hamilton Official Plan (Adopted by Council 2009) applies to the study area.

Roadway Designation:

Southcote Road is designated a Minor Arterial on Schedule C, Functional Road Classification. The following policies are included in Chapter C – City Wide Systems and Designations for a minor arterial (**Section 4.5.2 d**):

- The primary function of a minor arterial road shall be to carry moderate volumes of intra-municipal and inter-regional traffic through the City in association with other types of roads
- Land accesses shall be permitted with some controls
- The basic maximum right-of-way widths for minor arterial roads shall be 36.576 m unless otherwise specifically described in Schedule C-2 – Future Road Widening
- Minor arterial roads shall generally be organized in a grid pattern with collectors, major and minor arterials, parkways and provincial highways
- Bicycle lanes may be in place to accommodate cyclists and sidewalks shall generally be provided on both sides of the street for pedestrians
- Gateway features may be permitted where required
- On-street parking and loading may be prohibited or at minimum be restricted in the peak hours.

Land Use:

Lands adjacent to the roadway corridor are designated “Neighbourhoods” in the Official Plan. Neighbourhoods shall primarily consist of residential uses and complementary facilities and services intended to serve the residents. These facilities and services may include parks, schools, trails, recreation centres, places of worship, small retail stores, offices, restaurants, and personal and government services. Development, including the creation of infill lots involving the creation of new public streets or extensions, shall generally proceed by way of plan of subdivision. Other designations under Neighbourhoods include:

- Open Space of less than 4 ha is permitted within the designation, and includes parks for both active and passive recreational activities, publicly owned and operated recreation/community centres or historic sites; pedestrian pathways, trails, bikeways and walkways; marinas; forest, fish and wildlife management areas; and, cemeteries
- Utilities shall be permitted including, major facilities, corridors, easements and rights-of-way for utilities and services, such as electric power, natural gas and oil pipelines, telecommunication, storm water management, water and wastewater service; municipal works yards outside Employment Areas; parking lots in conjunction with adjacent uses; open space uses such as trails, urban farms and community gardens; transportation yards; heavy rail corridors and main lines; and, Waste management facilities.

3.1.1 Garner Neighbourhood Secondary Plan

Lands immediately west of Southcote Road, from Highway 403 to Garner Road are included in the Garner Neighbourhood Secondary Plan. Land use designations on the west side of Southcote Road include:

- Low-Density Residential (Existing): This designation reflects the existing Maple Lane Annex, Maple Land Gardens, Harmony Hall and Greenwood Estates subdivisions
- Low-Density Residential 1: Permitted uses shall be single detached dwellings; include lot frontages of a minimum of 10.7 m; and, density shall not exceed 20 dwelling units per gross/net residential hectare
- Low-Density Residential 1a: Permitted uses shall be single detached dwellings; include lot frontages of a minimum of 15 m; and, density shall not exceed 18 dwelling units per gross/net residential hectare.

The Secondary Plan indicates low-density residential shall have no more than three occupied storeys entirely above grade. Transition lands between existing and new developments require detached dwellings located on a minimum of 15 m frontage lots and larger. There is a stormwater management pond proposed along Southcote Road, north of Calder Avenue.

3.1.2 Meadowlands Neighbourhood III Secondary Plan

The western boundary of the Meadowlands Neighbourhood III Secondary Plan is the east side of Southcote Road EA Study Area, from Garner Road to the south and Stonehenge Drive to the north. Along the east side of Southcote Road, the Residential land use designations are low-density, including:

- Low Density Residential (Infill): The permitted use shall be single detached dwellings and the long frontages shall be a minimum of 15 m
- Low Density Residential 1: The permitted use shall be single detached dwellings, lot frontages shall be a minimum of 15 m, and density shall not exceed 18 dwelling units per gross/net residential hectare
- Low Density Residential 2a: The permitted use shall be single and semi-detached dwellings, lot frontages shall be a minimum of 10.7 m, and density shall not exceed 27 dwelling units per gross/net residential hectare.

The northwestern parcel at the corner of Southcote Road and Stonehenge Drive is designated General Open Space.

Urban Design policies within the Secondary Plan indicate the following applies to the Study Area:

- Existing trees, significant vegetation and distinctive site views, such as to the wooded areas, shall be protected and preserved through sensitive subdivision design
- Aesthetically pleasing streetscapes shall be encouraged through careful building, site and landscape design
- Building and site design, setbacks, landscaping, screening and buffering techniques shall be applied to minimize potential conflicts related to the physical compatibility of adjacent uses between new residential development and existing residential land uses located both within and adjacent to the neighbourhood.

3.1.3 Airport Employment Growth District Secondary Plan

The Airport Employment Growth District (AEGD) comprises over 1,200 ha of land south of the Southcote Road study area. Its intent is to increase employment opportunities alongside the John C. Munro Hamilton International Airport. The Secondary Plan boundaries extend between Garner Road and Twenty Road West in the north, Upper James Street in the east, and Highway 6 at the southern and western boundaries in some areas. The Secondary Plan establishes the phasing, land uses, transportation network, infrastructure requirements, design principles and development standards to guide development and/or redevelopment within the AEGD area in preparation for increased employment growth within the Secondary Plan area.

The AEGD designation adds 551 net developable hectares to the City's urban area, providing growth opportunities for a once rural area of the city. It is anticipated that the AEGD will offer a range of employment and employment-related land uses, particularly prestige industrial, light industrial, airport-related business and institutional development, while providing for the protection of surrounding land uses and character. In light of increasing development and employment opportunities south of the Southcote Road corridor, the AEGD has implications for transportation infrastructure on the study area, including vehicular traffic, transit, and active transportation requirements.

3.2 Ancaster Transportation Master Plan (2011)

The Ancaster Transportation Master Plan (ATMP) (2011) outlines Ancaster’s current and future transportation needs and demands, particularly addressing issues of traffic volumes in the urban areas, congestion and traffic infiltration to the year 2031. Hamilton is anticipated to experience population and employment growth by 2031 which will affect travel patterns across the region.

The ATMP recommends the Southcote Road corridor be expanded from two to three lanes, including a centre two-way left turn lane. Anticipated timing of this project is from 2017 to 2021 with a projected cost of \$3.4 M (\$2.1 M from Development Charges and \$1.4 M Capital Project Share). The northern project limit for the Southcote Road widening is intended to be Calder Road, but could extend to the north based on plans for cycling or multi-use path infrastructure.

Appendix B of this Environmental Study Report includes the Transportation Analysis completed, which includes an overview of the ATMP. Further information on the Master Plan as the basis for improvements to Southcote Road is included in **Section 4.0** of this report.

The Master Plan identifies the following for Southcote Road:

- **Cycling infrastructure:** The Southcote Road corridor is identified within the Master Plan as a “Cautionary Un-signed Bike Route”
- **Transit infrastructure:** There are currently no transit routes along Southcote Road
- **Traffic:** Collisions were not found to be sufficiently high as to require mitigation. However, as part of the solution to improve transportation safety, the addition of a two-way left turn lane is recommended. It is recommended the corridor be monitored for potential traffic operations issues as development occurs (e.g., through more detailed corridor analyses or traffic impact studies). Reduction in the speed limit to 50 km/h was recommended as part of the 2006 Base EMME/2 Network Modifications to better represent the existing network conditions, and has been implemented. Roundabouts were determined to be operationally viable and recommended as an alternative to signalized intersections at Golf Links Road and Southcote Road
- **Pedestrian safety:** As a result of resident feedback, the Master Plan recommends that opportunities be sought to implement crosswalks, Intersection Pedestrian Signals (where warranted), and other roadway treatments to increase safety for pedestrians in the study area. Sidewalks are recommended along both sides of Southcote Road (Calder Street to Garner Road).

3.3 Shifting Gears Cycling Master Plan (2009)

Shifting Gears Cycling Master Plan (2009) guides the development and operation of the City’s cycling infrastructure for a 20-year period. The vision of the Master Plan is to emphasize active transportation, public transit, and carpooling opportunities. As part of this Master Plan, Southcote Road from Golf Links to Garner Road is recommended for a dedicated bike lane as part of the recommended road widening.

3.4 Transportation Master Plan: City in Motion (2018)

The Transportation Master Plan: City in Motion (TMP; 2018) is a multi-modal plan that provides direction for future transportation-related studies, projects, initiatives, and decisions throughout Hamilton. The TMP incorporates recommendations from existing plans including the Ancaster Transportation Master Plan (2011) and the Shifting Gears Cycling Master Plan (2009). Southcote Road from Golf Links to Garner Road is identified in the TMP as being planned for road expansion and cycling lanes.

4.0 Existing Conditions

The following documents existing conditions within the Study Area. This overview includes a review of changes since the 2011 ATMP was completed and also identifies future development within and adjacent to the Study Area.

Southcote Road is a two-lane minor arterial with a rural cross-section, consisting of unpaved shoulders (with an urban cross-section in some areas that have recently been developed). There are no dedicated cycling lanes.

The sidewalk is intermittent along Southcote Road. On the east side, it runs from Golf Links Road to Oldoakes Place and then reconnects after the Highway 403 structure, south of Stonehenge Drive to just south of Gray Court Drive. On the west side, the sidewalk runs from Golf Links Road over Highway 403 and then south to Gray Court Drive.

Overhead utility lines run the length of Southcote Road on the west side, crossing the street at Calder Street and transitioning to the east side for the remainder of the study corridor.

4.1 Land Uses

Land uses along Southcote Road are primarily residential, with a cemetery at the northwest corner of Garner Road.

The Transportation Analysis (**Appendix B**) outlines developments planned within the Study Area, including:

- **“Parkland Ancaster” Retirement Living and Nursing Home Development.** A retirement living and nursing home development is proposed for the southeast corner of the Southcote Road and Golf Links Road intersection. The municipal address of this site is 558 Golf Links Road. The development includes approximately 380 residential dwelling units comprising 174 ‘lifestyle apartments’, 98 ‘hospitality & wellness suites’, and 108 ‘assisted living, enriched & memory care’ units distributed across two three-storey buildings. The primary entrance will be from Golf Links Road, with a service entrance planned to Southcote Road

- **“515 Garner Road” Townhouse Development.** A townhouse development is proposed for the vacant northwest corner of the Garner Road East and Southcote Road intersection. The development will be comprised of 55 residential townhouse units. The proposed development will have an entrance to Southcote Road and Secinero Avenue
- **“Elm Hill Boulevard” Townhouse Development.** A townhouse development is proposed for the vacant lands surrounded by Golf Links Road, Southcote Road, Dorval Drive and Elm Hill Boulevard. The development will be comprised of 20 residential townhouse units. The proposed development will likely have a single road access to Elm Hill Boulevard.

4.2 Natural Environment

The natural environment review completed for the project is included in **Appendix C**.

The existing natural environment conditions for the project area and a surrounding 120 m study area were documented through a background data review and preliminary field surveys. The data review included natural heritage information from consultation with the Ministry of Natural Resources and Forestry (MNRF), review of City of Hamilton Official Plan (OP) Schedules B and B1 – B8, and review of online mapping from MNRF, Hamilton Conservation Authority (HCA), and Fisheries and Oceans Canada (DFO). The data review identified the following:

- MNRF identified that historical occurrence records are known for provincial species at risk (SAR) listed under the *Endangered Species Act, 2007* (ESA) for the general project area, and provided a listing of SAR known to occur in Hamilton
- The reviewed MNRF and HCA mapping identified a number of woodland, wetland and watercourse features in the general project area
- HCA mapping also identified that a portion of Southcote Road in the project area is within the HCA approximate regulated area, just south of Bookjans Drive
- DFO mapping did not identify habitat for aquatic SAR (fish and mussels) in the 120 m project study area
- Schedule B of the OP identified a *Core Area* adjacent to Southcote Road, southeast of its intersection with Golf Links Road, coinciding with a woodland feature. Schedule B8 of the OP identified two stream features just west of Southcote Road, coinciding with those identified in MNRF and HCA mapping.

Preliminary field surveys were conducted by a Dillon biologist on five days in September to November 2018. The objective was to confirm and characterize the natural heritage features identified in the background review, and to identify areas that may provide habitat for the SAR identified from MNRF consultation. The surveys were conducted from City property within the City right-of-way (ROW).

The field surveys identified five natural vegetation communities adjacent to Southcote Road: three woodland communities and two meadow communities; one of which contains a wetland/marsh inclusion. These areas may provide habitat for wildlife, including SAR subject to protection under the ESA and migratory birds subject to protection under the *Migratory Birds Convention Act*. The field surveys confirmed the two watercourse features identified in the background review, located west of Southcote Road (one just north of Garner Road East, and one just south of Bookjans Drive). They both appeared to be marginal headwater features with no defined channel and densely filled with vegetation, with minimal potential for direct fish habitat. However, the features may provide supporting fish habitat

to Ancaster Creek several kilometres downstream, subject to protections under the *Fisheries Act*. Four trees identified as potential Butternuts (a SAR listed as *Endangered* under the ESA) were identified immediately adjacent to Southcote Road. One of the Butternut trees (identified in the tree inventory as tree #079) appeared to be affected by Butternut canker disease. It appeared to be in poor health and as such, is identified for potential removal. No other SAR were observed.

A habitat screening for SAR was conducted by comparing the habitat requirements of each SAR in the list provided by MNRF with the site conditions documented during the preliminary field surveys. The screening identified 13 SAR with potential habitat, including one bird species (Barn Swallow), four bats, and nine vegetation species (including Butternut). Recommendations and future considerations for further development and implementation of the project, with regard to SAR, wildlife, and natural heritage features are provided in **Appendix C**, and are outlined further below in conjunction with considerations for trees discussed in the tree inventory.

4.2.1 Tree Inventory

A tree inventory for the project is provided in **Appendix C**. The inventory was conducted by a Dillon arborist certified by the International Society of Arboriculture (ISA; certification #ON-2236) in October and November 2018. The inventory documented trees with diameter at breast height (DBH) ≥ 10 cm within the City ROW around Southcote Road and within 6 m of the ROW, including species (or genus where species was indeterminable), DBH, condition, hazard, and georeferencing.

The inventory documented 668 trees, comprising 59 different species/genera. One species (Butternut; four trees) is *Endangered* under the ESA as discussed above. One species (Kentucky Coffee Tree; three trees) is *Threatened* under the ESA, but only for naturally occurring stands, whereas the observed trees appeared to be landscaped individuals and therefore not considered to be subject to ESA legal protections. The other species observed are not listed under the ESA, and generally are considered common in Ontario, except for Honey-locust and Eastern Redbud, which are considered rare and extirpated in Ontario, respectively, but have no legal protection and are common landscape/cultivated species.

Considerations for tree removals are outlined in the inventory. In summary, 109 trees are identified as potentially requiring removal, while the remainder are identified as potentially retained. Of those identified for removal, 26 are in poor or dead condition and/or are hazard trees. For the other 83 trees, they potentially require removal because ground disturbance is anticipated to encroach by more than 30% into the trees' critical root zones, which would likely result in mortal health decline. Six of the 26 trees in poor or dead condition also have 30% or more of their critical root zone anticipated to be encroached by the project. Of the 109 trees identified as potentially requiring removal, nine are on private property while the remaining 100 are on City property.

The assessment of trees as potentially requiring removal or being retained is based on preliminary design. The development of the project through detailed design may result in different and/or additional potential impacts to the inventoried trees, which may change the assessment results. Similarly, the assessment of ownership is based on approximate interpretation of property boundaries at the time of the inventory. Final determination of tree ownership may require revision, subject to detailed design and implementation of the project, and subject to field verification of tree location and the proportion of each tree on City or private property.

4.2.2 Source Water Protection

As outlined in the Source Protection Plan for Hamilton (December 31, 2005, amended January 30, 2019), the Study Area is located in the Hamilton Region Source Protection Area. The primary objective of the Source Protection Plan, as provided for in the *Clean Water Act*, is to protect existing and future drinking water sources.

As shown in the Hamilton Region Source Protection Plan, the Study Area north of John Frederick Drive to Golf Links Road is located within a Highly Vulnerable Aquifer (HVA). Threats to source water protection in the HVA areas are considered high. The project area is not within any well-head protection zones. As the Southcote Road corridor is serviced by municipal water directly from Lake Ontario, there are minimal concerns over impacts to the source water protection area.

4.3 Municipal Infrastructure and Utilities

There are existing watermain and sanitary sewers along Southcote Road. The City has advised the existing sewers and watermains along the corridor are in good condition.

The MECP provided a letter dated May 24, 2018 (included in **Appendix A**), identifying a number of potential wells within the study area based on its database. The City confirmed it does not have records of drinking water wells within the study area.

A review of the City's records identified no significant flooding issues along the roadway.

Union Gas advised there is an existing 100 mm gas main along Southcote Road.

There are existing aerial hydro and communication lines along Southcote Road. The hydro poles are owned by Hydro One. As part of the EA, a petition from approximately 70 residents was received, requesting the overhead utilities be buried. The study team is currently reviewing this request with input from Hydro One.

4.4 Archaeology and Cultural Heritage

Much of the existing corridor is considered previously disturbed and does not retain potential for the discovery of archaeological artifacts.

In 2014, an EA was completed for the Garner Road/Rymal Road and Garth Street by the City of Hamilton. As part of the EA process, archaeological and cultural heritage assessments were completed for the study area. The analysis included the southern-most portion of the Southcote Road corridor. Within the Southcote Road EA study area, Garner's Corners Cemetery at the northwest corner of Garner Road and Southcote Road was identified as a cultural heritage resource. The archaeological assessment identified archaeological potential for the northeast corner of Garner Road and Southcote Road.

Two archaeological assessments were completed for 492 Southcote Road, north and west of Garner's Corners Cemetery. Recommendations from these assessments for mitigating impacts to the cemetery include:

- **Stage 1-3 Archaeological Assessment of the Southcote Rd and Garner Rd East Property Lot 47, Concession 3, City of Hamilton (2007):** Based on the proximity of Garner's Cemetery, there is a possibility of unmarked graves beyond the current cemetery limits. It is recommended that topsoil be mechanically removed all along the shared border with the cemetery prior to construction activities
- **Stage 1-2 Archaeological Assessment of 492 Southcote Road, Part of Lot 47, Concession 3, Geographic Township of Ancaster, City of Hamilton (2012):** No archaeological sites were encountered during the Stage 1-2 archaeological assessment of the subject property. However, the Garner's Corners Cemetery borders the southeastern section of the subject property. The first burial in the cemetery took place in 1842 and the cemetery is still in use today. The location of some headstones close to the edges of the cemetery indicate that there is some potential for unmarked graves which may extend outside the current boundaries of the cemetery and onto the subject property. It is therefore recommended that a 2.5 m buffer be placed around the current boundary of the cemetery to protect this area from any development activities. Alternatively, the buffer area could be subjected to a Stage 3 archaeological assessment to determine if there are any unmarked graves or human remains extending into the subject lands. These concerns must be addressed before the subject property is subjected to any further soil disturbance or development activities.

The Ministry of Tourism, Culture and Sport checklists for identifying archaeological and built heritage resources were completed for the study area and are included in **Appendix D**. It is recommended an archaeological investigation at the cemetery be completed, during the detailed design phase.

4.5 Transportation Analysis

As previously outlined, as part of the current study, a Transportation Analysis was completed (**Appendix B**) to review existing and projected conditions and to provide input on the design options developed.

The transportation analysis includes a summary of existing and future traffic volumes. Turning movement counts were completed in April and May of 2018 by the City of Hamilton. Future traffic volumes were determined for the years 2020 and 2031. These years were selected given that the construction of Southcote Road is expected to be complete by the year 2020, and the horizon year in the ATMP is 2031.

The addition of a centre two-way left turn lane is recommended as a result of the functional need of the roadway, coupled with the multiple driveways and intersections that exist along Southcote Road. This lane will enable left-turning motorists to complete their turn without negatively impacting the vehicular throughput of the roadway.

To assess whether signals would be warranted at the intersection of Southcote Road/Stonehenge Drive, signal warrant calculations were undertaken in accordance with the “Projected Volumes” justification methodology outlined in the *Ontario Traffic Manual Book 12 – Traffic Signals*. Based on the signal warrant calculations, traffic control signals are not warranted at the intersection of Southcote Road/Stonehenge Drive based strictly on volumes. While a signal is not warranted due to projected vehicle volumes, signals are recommended to improve pedestrian movements across Southcote Road.

Three proposed pedestrian crossings have also been recommended:

- Cabriole Crescent sidewalk path
- Stonehenge Drive (as part of the traffic signals)
- Gray Court Drive.

These crossings locations will provide improved connections between neighbourhoods on each side of Southcote Road and will support active travel to and from local schools.

4.6 Drainage and Stormwater Management

Existing storm water conveyance along Southcote Road is typically through roadside ditches, with intermittent storm sewer systems located along Southcote Road near Secinaro Avenue, Bookjans Drive, Stonehenge Drive and north of Highway 403.

5.0 Phase 1 and 2 Summary

Phases 1 and 2 of the Class EA process includes documenting the problem/opportunity statement, documenting existing conditions, and developing and evaluating alternative solutions to select a preferred alternative solution. Phases 1 and 2 of this study are documented in the Ancaster Transportation Master Plan (ATMP) which was completed in 2011.

The objectives of the ATMP study were established to:

- Identify mobility needs for people and goods that are consistent with Ancaster values
- Identify opportunities and targets for transportation mode choices, including public transit, cycling and pedestrian facilities
- Identify infrastructure improvements that are sensitive to the community character, including the existing heritage features
- Develop a transportation strategy that supports Ancaster’s urban land uses
- Integrate policies, programs, funding and infrastructure needs
- Develop a Transportation Master Plan for Ancaster
- Satisfy Phases 1 and 2 of the Municipal Class EA process.

The Master Plan identified the following transportation goals:

- Reduce commuter traffic infiltration and congestion
 - Single occupant vehicles mode split at 69% with a target to reduce to 52% by 2031
 - 2006 auto passenger mode split is 11% with a target to maintain or increase this by 2031
- Increase transit mode share
 - 2006 transit mode split at 3% with a target of 12% by 2031
- Provide facilities for alternative modes of transportation (e.g., walking and cycling):
 - 2006 walking/cycling mode split at 5% with a target of 15% by 2031
- Involve a range of Transportation Demand Management (TDM) measures (carpooling, telework, etc.) and promote Active Modes (walking, cycling, etc.).

The City of Hamilton’s transportation model was used to determine travel demand needs in Ancaster, factoring in the above mode share targets. Problem areas were identified and addressed through the development of 12 possible network alternatives for Ancaster, including existing conditions (i.e., a “do nothing” alternative).

The preferred alternative solution (Scenario 12) for the transportation network included the following principles:

- Better utilization of existing roadway capacity by adding two-way left turn lanes to accommodate growth (population and employment)
- Ability to maintain community and historical village character
- Ability to promote active transportation by adding bike lanes and sidewalks.

Many of the roadway improvements recommended in Scenario 12 include the use of a three-lane cross-section (i.e., one lane in each direction with a two-way left turn lane), where feasible depending on the right-of-way available. For roads identified within Scenario 12, sidewalks are recommended to be in place on both sides of the road as well as cycling lanes where identified in Hamilton’s Cycling Master Plan, *Shifting Gears 2009*.

The ATMP includes widening Southcote Road to a three-lane cross-section. The anticipated timing for widening Southcote Road was identified as 2017 to 2021.

6.0 Phase 3 Design Options

The following section outlines the design options developed to implement the preferred alternative solution and the decision-making process used to identify the preferred design. The existing conditions were used to evaluate the alternatives, along with input received from the public and agencies.

6.1 Design Considerations

The following key design considerations were used to develop and evaluate the options:

- Corridor will be designed to an urban cross-section
- Minimizing impacts to the large mature trees primarily along the west side of the roadway is a priority
- Based on the existing right-of-way, road widening will primarily be completed to the east of the existing edge of pavement. Impacts to private property will be minimized to the extent possible
- Structure crossing Highway 403 is owned by the Ontario Ministry of Transportation (MTO) and was recently rehabilitated. No improvements to the structure will be included with this project
- Vehicle speeds along Southcote Road was the primary concern raised by residents at the first Public Information Centre.

The design options were developed using the criteria outlined in **Table 3**. The table was developed based on input from the City.

Table 3: Design Criteria

| Description | Design Standards | Proposed Design | Reference |
|--------------------------------|---|--|---|
| Through Lane | 3.00 m – 3.70 m | 3.30 m | TAC GDG* (Table 4.2.3) |
| Centred Two-way Left Turn Lane | 3.50 m – 5.00 m | 3.50 m | TAC GDG* (Sections 4.3.3.3 and 8.6.2) |
| Left Turn Lane | 3.00 m – 3.50 m | 3.50 m | TAC GDG* (Section 4.3.2.3) |
| Multi-use Pathway | 3.00 m – 4.00 m (Class B) (1.00 m grassed shoulders) | 3.50 m (Final width to be confirmed during detail design) (1.00 m grassed shoulders) | CDGFP Manual** (Section C.12) City of Hamilton Trails Master Plan (Table 7) |
| Sidewalk | 1.50 m min | 1.50 m | CDGFP Manual** (Section C.10) |
| | 2.00 m min (high pedestrian areas) | 1.80 m when adjacent to curb | City of Hamilton's Pedestrian Mobility Plan (Table 16) |

| Description | Design Standards | Proposed Design | Reference |
|---|--|--|--|
| Bike Lanes | 1.50 m min. (to face of curb) | 1.50 m | Ontario Traffic Manual Book 18 (Section 4.2.1.1) |
| Boulevard Width (Setback from curb to cycling facility) | 1.0 m min. (for snow storage) | 2.0 m (for snow storage, utilities, street lighting) | Ontario Traffic Manual Book 18 (Section 4.4.1.1) |
| Frontage Roads | One-way 4.60 m – 4.80 m (no parking) 6.10 m – 6.30 m (parking) Two-way 6.60 m – 7.00 m (no parking) 9.40 m – 9.80 m (parking) | Not recommended (Available width for one-way frontage road with no parking) | TAC GDG* (Section 8.7.3) |

*Transportation Association of Canada – Geometric Design Guide for Canadian Roads (June 2017 version). Per City of Hamilton Comprehensive Development Guidelines and Financial Policies Manual, TAC standards shall be followed for Arterial Roads

**City of Hamilton Comprehensive Development Guidelines and Financial

6.2 Design Options Considered

Five cross-sections were developed for the corridor. All of the options considered include widening Southcote Road to a three-lane cross-section. The cross-sections focused on alternatives related to the active transportation facilities along the corridor.

Option 1 – Continuous sidewalks and on-road bike lanes on both sides of the road. This option is consistent with the recommendations of the Cycling Master Plan.

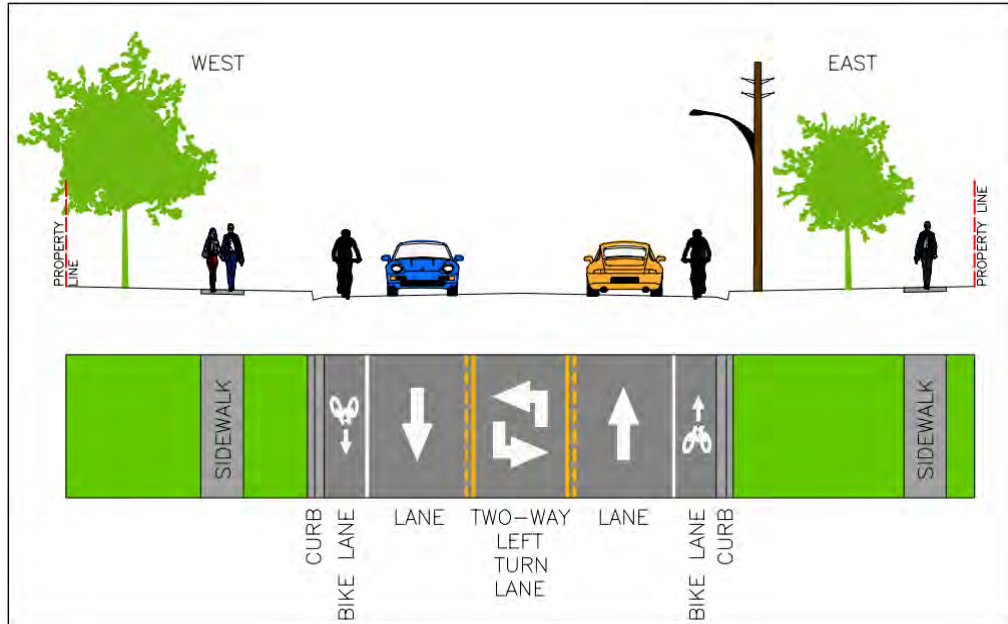


Figure 2: Option 1 – Continuous sidewalks and on-road bike lanes on both sides of the road

Option 2 – Continuous sidewalks and protected in-boulevard bike lanes on both sides of the road. This option provides fully separated pedestrian and cyclists facilities along both side of the roadway.

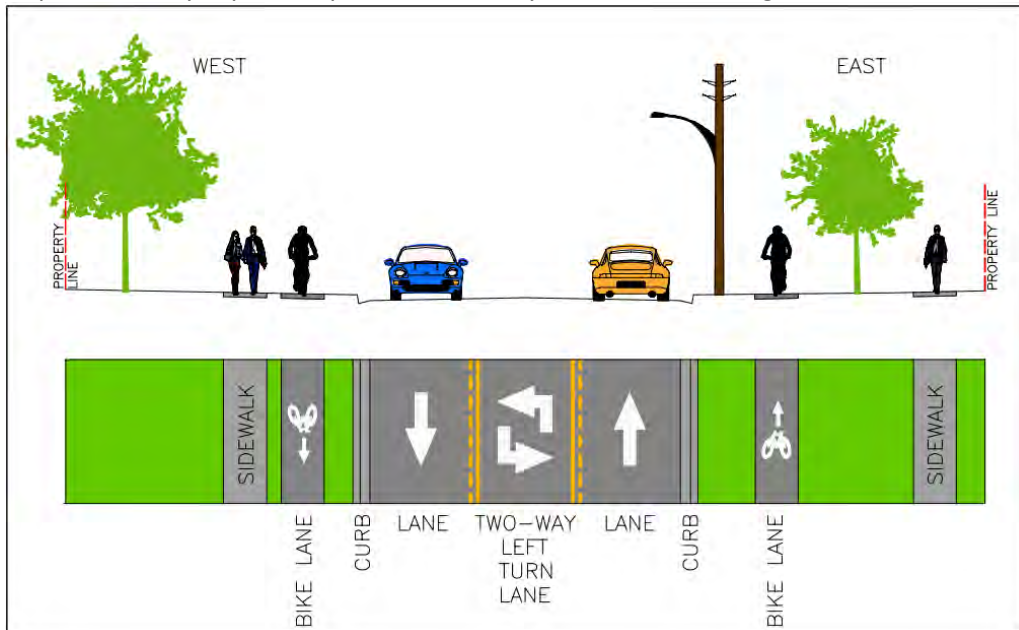


Figure 3: Option 2 – Continuous sidewalks and protected in-boulevard bike lanes on both sides of the road

Option 3 – Sidewalk on one side of the road and multi-use pathway (accommodating two directions of travel) on the other side of the road. Based on existing conditions, the multi-use pathway is proposed on the east side of the right-of-way due to the existing mature trees on the west side. The pathway would be wide enough to accommodate two directions of travel.

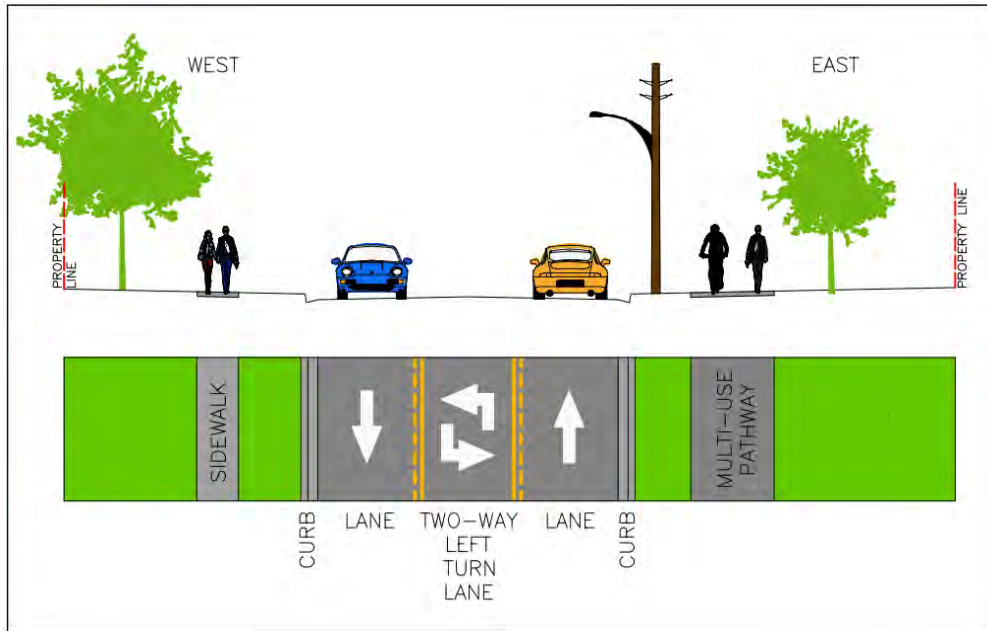


Figure 4: Option 3 – Sidewalk on one side of the road and multi-use pathway (accommodating two directions of travel) on other side of the road

Option 4 – Multi-use pathways on both sides of the road. The multi-use pathways would be wide enough to accommodate two directions of travel.

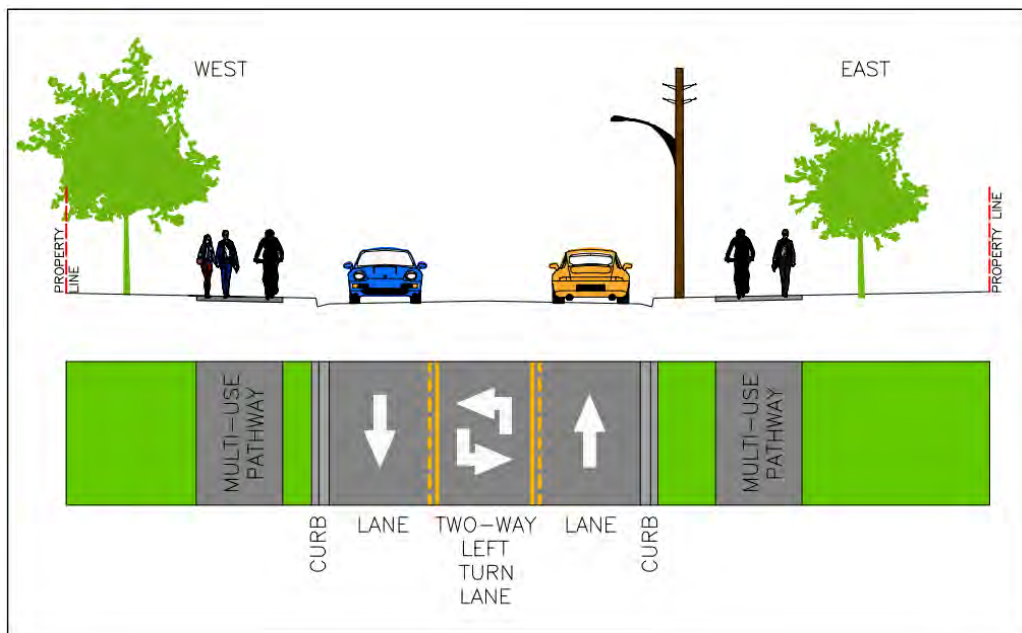


Figure 5: Option 4 – Multi-use pathways on both sides of the road

Option 5 – Sidewalk on one side of the road, multi-use pathway (accommodating two directions of travel) on the other side of the road and on-road bike lanes on both sides of the road. This option has the largest footprint of all of the options considered.

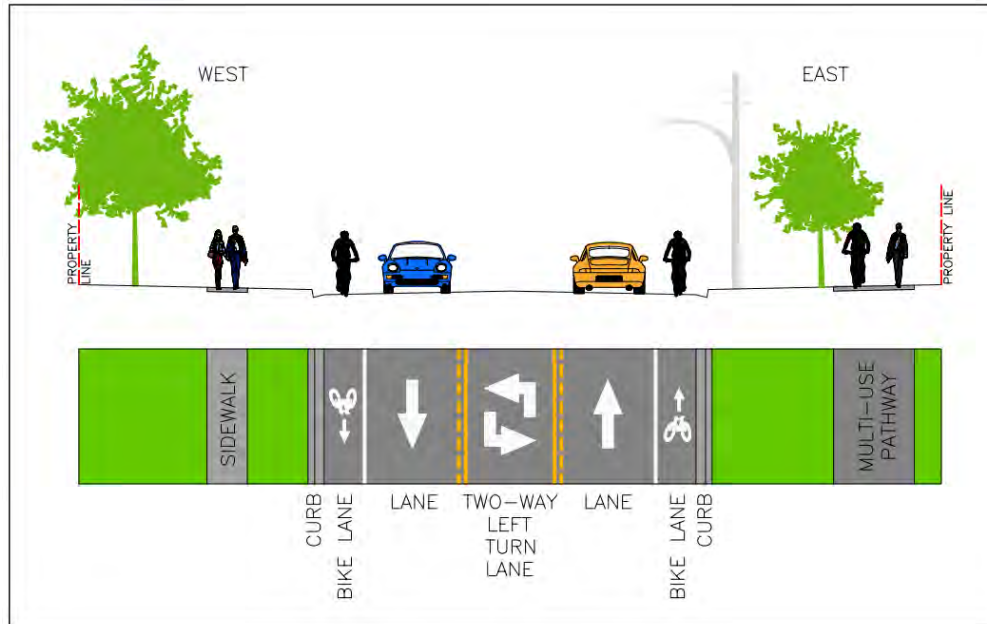


Figure 6: Option 5 – Sidewalk on one side of the road, multi-use pathway on the other side of the road and on-road bike lanes on both sides of the road

6.2.1 Evaluation Process

Table 4 outlines the criteria used in the evaluation of design options. The evaluation is included in **Table 5**.

Table 4: Evaluation Criteria

| Evaluation Factors | Evaluation Criteria |
|------------------------------|---|
| Traffic Operations | <ul style="list-style-type: none"> Improve existing traffic operations |
| Technical/Engineering | <ul style="list-style-type: none"> Impacts on municipal services/utilities |
| Land Use | <ul style="list-style-type: none"> Consistent with City policy documents Impacts on adjacent lands |
| Recreational User Experience | <ul style="list-style-type: none"> Provides a positive user experience for area residents, promoting an active lifestyle Provides facilities for users of various levels of ability |
| Natural Environment | <ul style="list-style-type: none"> Impacts on existing mature trees |
| Supportive of Public Input | <ul style="list-style-type: none"> Alternative is supportive of the public input received to date |
| Cultural Heritage | <ul style="list-style-type: none"> Impacts on archaeological resources and heritage resources |
| Economic/Financial | <ul style="list-style-type: none"> Relative cost (order of magnitude) Costs for utility relocations. |

6.2.2

Recommended Option

Based on the evaluation completed, **Option 3 – Sidewalk on one side of the road and multi-use pathway (accommodating two directions of travel) on the other side of the road** is the technically recommended option. This option provides the best balance of providing improved active transportation facilities along Southcote Road and minimizing impacts to mature trees.

Table 5: Evaluation of Design Options

| Evaluation Factors | Evaluation Criteria | Option 1 – Sidewalks, on-road bike lanes | Option 2 – Sidewalks, protected bike lanes on both sides of the road | Option 3 – Sidewalk on one side of the road and multi-use pathway (accommodating two directions of travel) on the other side of the road | Option 4 – Multi-use pathways on both sides of the road | Option 5 – Sidewalk on one side of the road, multi-use pathway on the other side of the road and on-road bike lanes on both sides of the road |
|-----------------------|---|---|---|---|---|--|
| Traffic Operations | Improves existing traffic operations | Impact on traffic operations would be roughly equal across all the options On-street bike lanes will result in a wider roadway width, which potentially encourages drivers to travel above the speed limit | Impact on traffic operations would be roughly equal across all the options | Impact on traffic operations would be roughly equal across all the options | Impact on traffic operations would be roughly equal across all the options | Impact on traffic operations would be roughly equal across all the options |
| Technical/Engineering | Impacts on municipal services/utilities | All options will require at least a portion of existing overhead utilities be relocated There is an option to bury overhead hydro as part of the relocation. Burying overhead hydro vs. relocating poles is approximately five times greater | All options will require at least a portion of existing overhead utilities be relocated There is an option to bury overhead hydro as part of the relocation. Burying overhead hydro vs. relocating poles is approximately five times greater | All options will require at least a portion of existing overhead utilities be relocated There is an option to bury overhead hydro as part of the relocation. Burying overhead hydro vs. relocating poles is approximately five times greater | All options will require at least a portion of existing overhead utilities be relocated There is an option to bury overhead hydro as part of the relocation. Burying overhead hydro vs. relocating poles is approximately five times greater | Option has the widest cross-section All options will require at least a portion of existing overhead utilities be relocated There is an option to bury overhead hydro as part of the relocation. Burying overhead hydro vs. relocating poles is approximately five times greater |
| Land Use | Is the alternative consistent with City policy documents? Impacts on adjacent lands | Option is consistent with Cycling Master Plan | Option is different than Cycling Master Plan, however is a similar approach in that pedestrians and cyclists are separated Option has a wider cross-section compared to Options 1, 3 and 4, however can be accommodated within the existing right-of way | Option is different than the Cycling Master Plan, and provides cycling facilities on one side of the roadway only (however does provide for two directions of travel) Option has narrowest cross-section, allowing some flexibility in siting sidewalk and pathway between existing trees to minimize impacts Multi-use pathway crossing multiple driveway entrances introduces conflict points | Option is different than Cycling Master Plan, however does provide cycling facilities on both sides of the roadway Multi-use pathway crossing multiple driveway entrances introduces conflict points. Option has more conflict points than Option 3 since pathway is on both side of the roadway | Option is consistent with the Cycling Master Plan Option has the widest cross-section, having the greatest impact on adjacent properties |

| Evaluation Factors | Evaluation Criteria | Option 1 – Sidewalks, on-road bike lanes | Option 2 – Sidewalks, protected bike lanes on both sides of the road | Option 3 – Sidewalk on one side of the road and multi-use pathway (accommodating two directions of travel) on the other side of the road | Option 4 – Multi-use pathways on both sides of the road | Option 5 – Sidewalk on one side of the road, multi-use pathway on the other side of the road and on-road bike lanes on both sides of the road |
|------------------------------|--|---|---|---|---|---|
| Recreational user experience | Provides a positive user experience for area residents, promoting an active lifestyle Provides facilities for users and various levels of ability | Least preferred option as it does not provide a space for cyclists who are not comfortable using on-road cycling lanes | Less preferred option compared to Options 3, 4 and 5 for cyclists who are not comfortable with cycling close to traffic | Accommodates leisure and family cycling however does not provide designated facilities for utilitarian cyclists | Accommodates leisure and family cycling however does not provide designated facilities for utilitarian cyclists | Provides the greatest variety for user experiences as it accommodates utilitarian and confident cyclists by providing uninterrupted bike lanes along the entire length of the Road; leisure and family cycling by providing a multi-use pathway; and pedestrians by providing sidewalks and a multi-use pathway |
| Natural Environment | Impacts on existing mature trees | Options 1, 2 and 5 have wide cross-sections and would require removal of a number of mature trees | Options 1, 2 and 5 have wide cross-sections and would require removal of a number of mature trees | Option has the greatest flexibility in siting sidewalk and pathway between existing trees to minimize impacts. Sidewalk on the west side can be designed to minimize impacts to mature trees as much as possible | Option has the potential to impact more mature trees than Option 3 as multi-use pathway is wider than sidewalk | Options 1, 2 and 5 have wide cross-sections and would require removal of a number of mature trees |
| Supportive of Public Input | Alternative is supportive of the public input received to date | Option is not supportive of public input – public preference for off-road cycling lanes | Options 2, 3, 4 and 5 are supportive of public input | Options 2, 3, 4 and 5 are supportive of public input | Options 2, 3, 4 and 5 are supportive of public input | Options 2, 3, 4 and 5 are supportive of public input |
| Cultural Heritage | What is the impact to archaeological resources? What is the impact to heritage resources? | No discernable difference between Options. Options with wider footprint have some potential to impact cemetery at Garner Road East | No discernable difference between Options. Options with wider footprint have some potential to impact cemetery at Garner Road East | No discernable difference between Options. Options with wider footprint have some potential to impact cemetery at Garner Road East | No discernable difference between Options. Options with wider footprint have some potential to impact cemetery at Garner Road East | No discernable difference between Options. Options with wider footprint have some potential to impact cemetery at Garner Road East |
| Economic/Financial | Relative cost (order of magnitude) Costs for utility relocations | Options 1 to 4 would have similar costs as amount of new infrastructure is similar There is an option to bury overhead hydro as part of the relocation. Burying overhead hydro vs. relocating poles is approximately five times greater. The cost is similar for all of the alternatives | Options 1 to 4 would have similar costs as amount of new infrastructure is similar There is an option to bury overhead hydro as part of the relocation. Burying overhead hydro vs. relocating poles is approximately five times greater. The cost is similar for all of the alternatives | Options 1 to 4 would have similar costs as amount of new infrastructure is similar There is an option to bury overhead hydro as part of the relocation. Burying overhead hydro vs. relocating poles is approximately five times greater. The cost is similar for all of the alternatives | Options 1 to 4 would have similar costs as amount of new infrastructure is similar There is an option to bury overhead hydro as part of the relocation. Burying overhead hydro vs. relocating poles is approximately five times greater. The cost is similar for all of the alternatives | Highest relative cost due to the greatest amount of new infrastructure in the corridor There is an option to bury overhead hydro as part of the relocation. Burying overhead hydro vs. relocating poles is approximately five times greater. The cost is similar for all of the alternatives |
| Preferred Option | | | | Preferred Option | | |

6.3 Design Refinements

Several design refinements were developed to address site-specific issues along the corridor.

6.3.1 Multi-use Pathway Location

The locations for the multi- use pathway were reviewed:

- Adjacent to the east property line
- Offset from the back of curb 2 m (to allow for adequate clear zone from utility poles).

Benefits to constructing the multi-use pathway adjacent to the east property line include:

- Allows for a greater perception of safety for trail users by providing a larger separation between vehicles and the pathway
- Allows for additional space for snow storage from the roadway.

Due to the significant setback from the road, this pathway option could restrict drivers' awareness of pathway users when accessing driveways. Available driveway space and front lawn areas for existing residences along the east side of Southcote Road would be reduced compared to locating the pathway off-set from the curb. The preferred location for the multi-use pathway is offset 2 m from the back of curb.

6.3.2 Bookjans Drive to Secinaro Avenue Frontage Road

A frontage road was considered along the east side of Southcote Road, directly adjacent to the east property line, from Bookjans Drive to Secinaro Avenue (**Figure 7**).

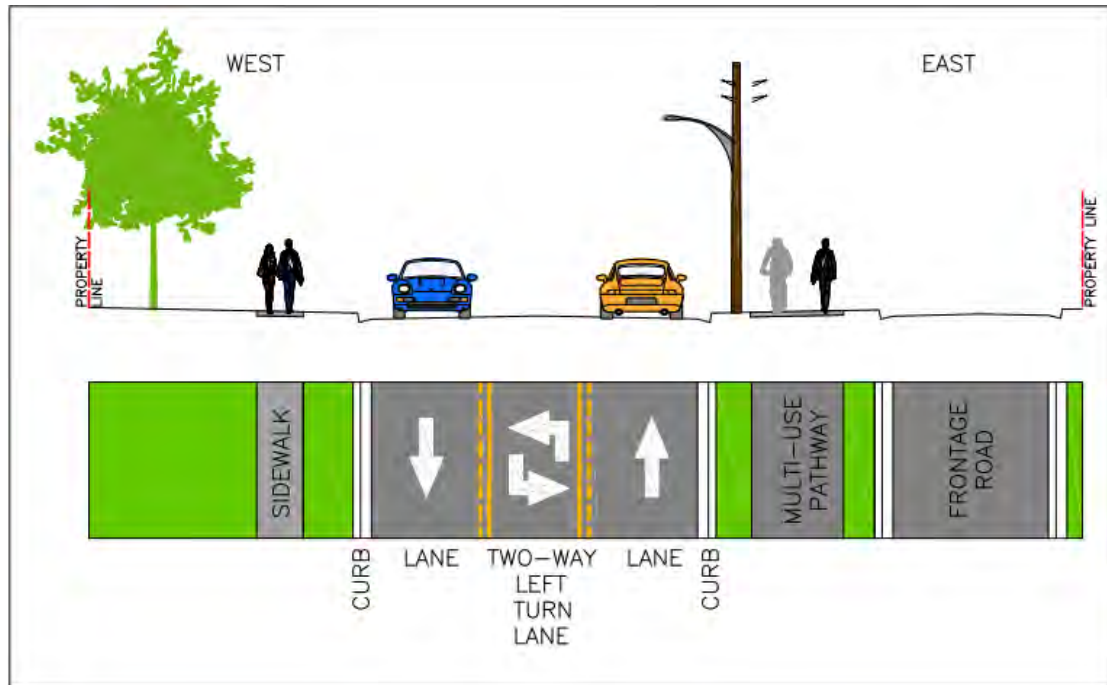


Figure 7: Frontage road option

The frontage road was considered to minimize the number of entrances onto Southcote Road, and potential points of conflict between users. However, due to limitations within the existing right-of-way, the width of the frontage road would be narrow (5 m wide) allowing for a one-way frontage road with no parking per design standards as shown in **Table 4**. The frontage road would create challenges for delivery vehicles, winter maintenance, and emergency vehicles to navigate while also reducing driveway length and lawn area for the existing residences. It would also require shifting the multi-use pathway closer to the road and utility poles.

The frontage road option was not carried forward to the preferred design.

6.3.3 Stonehenge Drive/Southcote Road Intersection

The primary concern raised by the public at the first Public Information Centre was related to traffic speeds. One related concern raised was there is currently no requirement for a vehicle to stop at an intersection along the corridor. In addition, there are no controlled pedestrian crossings along the corridor.

Stonehenge Drive is an east-west roadway that runs through the Meadowlands neighbourhood of Ancaster. It is a collector roadway with a two-lane cross-section and connects Southcote Road (in the west) to Stone Church Road (in the east). Stonehenge Drive has Two-Way Stop Control (TWSC) at the intersection with Southcote Road.

To address the concerns raised, three options were considered for the intersection of Stonehenge Drive and Southcote Road:

- Pedestrian crossing
- Traffic Signals
- Roundabout.

Pedestrian Crossing

Pedestrian crossings have lower initial and maintenance costs compared to traffic signals and roundabouts, and provide a designated area for pedestrians to cross. They also disrupt traffic flow which may reduce driver speeds and may be signalized where required. Pedestrian crossings could be installed within the existing right-of-way and would minimize the potential impacts with mature trees and driveways on the west side of the intersection.

Traffic Signals

Traffic signals would disrupt traffic flow and provide a designated area for pedestrians to cross Southcote Road. Traffic signals have higher initial and maintenance costs compared to pedestrian crossings, and are not warranted at this location based on the traffic and pedestrian volumes. However, as there is no current stop-controlled or signalized crossing on Southcote Road between Garner Road and Golf Links Road, a signalized intersection at Stonehenge Drive would provide a designated crossing for students walking from the neighbourhoods on the west side of Southcote Road to the elementary school on the east side of Southcote Road. A traffic signal could also provide a traffic calming benefit by disrupting vehicle speeds through the corridor.

Roundabout

Roundabouts are often used as an aesthetically pleasing traffic calming method, and reduce the severity of collisions at intersections and have been used along other corridors in the neighbouring area. However, a roundabout at the intersection of Stonehenge Drive and Southcote Road would require a significant amount of property and conflicts with existing driveways directly abutting the west side of the roundabout. Roundabouts are typically more difficult for pedestrians and cyclists to navigate, especially with steady traffic. Due to the property constraints at this intersection and the potential disruptions for pedestrian and cyclist movements, this design option was not recommended for this location.

6.3.4

Traffic Calming

As previously mentioned, the primary concern raised by the public at the first PIC was related to traffic speeds. Two traffic calming measures were considered:

- Reduce the width of the through lanes on Southcote Road
- Introduce horizontal curves to Southcote Road.

Through Lane Width

Wider lanes provide additional space for travelling vehicles and typically reduce sideswipes and promote the sense of safety on high-speed roadways, but encourage increased speeds. Providing a narrower through lane width combined with the introduction of curb, creates a greater space awareness for drivers which typically leads to a reduction of speed. Reducing lane widths would also minimize the impacts on residential driveways, trees, and landscaping features. Proposed lane widths are provided in **Table 3**.

Horizontal Curves

The introduction of horizontal curves to Southcote Road would encourage drivers to slow down, however a significant amount of property would be required to implement the curves into the existing corridor. Furthermore, introducing horizontal curves in urban areas may also increase the potential for conflicts at the existing intersections, and is not recommended as a traffic calming method along Southcote Road.

6.4 Preferred Design

This section describes the preferred design as shown **Appendix D**. The specific improvements are discussed in detail in the subsequent sections and the resulting benefits, impacts, environmental protection and mitigation measures to be implemented during the subsequent detailed design and construction phases is outlined in **Section 7**.

6.4.1 Roadway Improvements

The preferred design includes the addition of a centre two-way left turn lane on Southcote Road between Secinara Avenue and Calder Street and construction of curb and gutter throughout the corridor to provide a consistent urban corridor throughout the study area.

The existing horizontal alignment of Southcote Road will generally be maintained with the widening for the centered two-way left turn occurring on the east side of the road. This easterly widening will better situate the roadway in the centre of the existing ROW and will reduce overall impacts to abutting properties and vegetation as a result of the widening. Required profile adjustments to Southcote Road will be reviewed in conjunction with drainage requirements during the detailed design phase.

Improvements to Southcote Road between the Highway 403 structure and Golf Links Road will include the installation of curb and gutter throughout the corridor and the addition of northbound and southbound left turn lanes at the intersection of Southcote Road and Oldoakes Place/Dorval Drive. Further design considerations, such as cycling lanes, should be included during the future Environmental Assessment of the Golf Links Road/McNiven Road/Southcote Road intersection and McNiven corridor to ensure continuity from between McNiven and Southcote Road, especially with regards to the horizontal alignment, profile and lane layout at the intersection.

6.4.2 Active Transportation

As illustrated in the proposed plan figures in **Appendix D**, the new cross section will include improved accommodations for pedestrians and cyclists within the new corridor.

Sidewalks are proposed:

- On the west side of Southcote Road throughout the limits of work, with the exception of the Highway 403 structure crossing; an existing sidewalk is located on the west side of the structure and will be maintained
- On the east side of Southcote Road between Oldoakes Place and Golf Links Road.

Three pedestrian crossings are proposed within the project limits and are further discussed in **Section 6.4.7**.

A 3.5 m wide multi-use path is proposed on the east side of Southcote Road from Garner Road to the existing pathway connection to Cabriole Crescent, where a pedestrian crossing is proposed. From the Cabriole Crescent pedestrian crossing, on-street bike lanes will continue to the south limit of the Highway 403 structure. As the existing width of the Highway 403 structure does not support the addition of standard bike lanes, shared use lanes are proposed over the bridge. It is anticipated that the future McNiven Road EA will review the bike lane configuration between the Highway 403 structure and Golf Link Road to ensure that a consistent cycling facility design can be accommodated with adjustments to horizontal, vertical or intersection updates as a result of a future Golf Links Road/McNiven Road/Southcote Road intersection. Long-term development, planning, and design considerations between Golf Links Road and Calder Street, crossing Highway 403, should include the ultimate design of the multi-use facility to be continuous along the east side of Southcote Road.

The proposed width of the multi-use path is 3.5 m and will be confirmed during detailed design.

Due to the number of residential driveways between Burbridge Way and Bookjans Drive, pathway refinement options will be considered during detailed design to bring attention to these conflict points. Pathway options could include a raised pathway, different surface treatment or different texture for the pathway in this location.

6.4.3 Watermains

Per discussions with City staff, upgrades to the watermain will not be required unless there is a conflict with the proposed design. Watermain conflicts should be further reviewed as part of the detailed design phase.

6.4.4 Sanitary Sewers

Per discussions with city staff, upgrades to sanitary sewers will not be required unless there is a conflict with the proposed design. Sanitary sewer conflicts should be further reviewed as part of the detailed design phase.

6.4.5 Storm Sewers and Culverts

The proposed design includes updating Southcote Road to an urban corridor within the project limits. This includes replacing existing ditches, driveway culverts and roadway culverts with curb and gutter and catchbasins to convey roadway surface runoff into storm sewers. Storm sewer and culvert design will be completed during detailed design phase.

The detailed design of the storm sewers shall be based on the City of Hamilton Criteria and Guidelines for Stormwater Infrastructure Design Manual (2007) and include:

- Use of the 5-year intensity duration frequency (IDF) relationship and the Rational Method equation
- The conveyance of the 1:100 year event design storm in accordance with the MECP's SWM Planning and Design Manual (2017)
- Use of the Manning's formula to establish the flow capacity of the storm sewer
- Sewer sizing to be determined based on 85% maximum flow capacity
- Flow velocities in the range of 0.75 m/s to 3.65 m/s based on full pipe flow
- A minimum allowable storm sewer size of 300 mm diameter.

Currently, all driveway and roadway culverts are anticipated to be removed, however if the need for a culvert during detailed design arises, it is to be designed in accordance with the City of Hamilton Criteria and Guidelines for Stormwater Infrastructure Design Manual (2007).

New development along Southcote Road, north of Dorval Drive, should maintain existing drainage features on their property.

6.4.6 Stormwater Management

During detailed design, stormwater management (SWM) for the roadway should ensure that the proposed conveyance facilities meet the City and MECP requirements. In accordance with the MECP's SWM Planning and Design Manual (2017), the maximum peak flow rates must not exceed pre-development values for storms with return periods ranging from two years to 100 years. The proposed SWM pond indicated in the Garner Neighbourhood Secondary Plan will be reviewed in conjunction with the stormwater management design of Southcote Road during the detailed design phase.

Low Impact Development (LID) features dissipate stormwater velocity and filter roadway runoff using techniques such as settling and infiltration. The application and use of LID techniques to maintain or enhance existing water balance will be reviewed during detailed design, as well as a review of the existing roadside ditches. The MECP's Draft Low Impact Development SWM Guidance Manual (2017) will be used to guide LID opportunities and design.

6.4.7 Utilities

There are existing aerial hydro and communication lines along Southcote Road. The hydro poles are owned by Hydro One. The existing poles and overhead plant will be impacted by the proposed road widening and boulevard improvements. Discussions with Hydro One have been initiated and options for relocation of the line will include burying or relocation of the poles elsewhere in the boulevard. The

proposed relocation strategy will require coordination with all utility companies during the development of relocation plans during detailed design.

Union Gas has indicated that there is an existing 100 mm gasmain along the Southcote corridor. Impacts to the gasmain will be reviewed during detailed design as part of the grading and profile refinement.

6.4.8 Traffic and Pedestrian Management

A traffic signal is proposed at the intersection of Southcote Road and Stonehenge Drive and was developed as a design option to the preferred design. Further information regarding the addition of this traffic signal is included in **Section 6.3.3** and **Appendix B**.

Three pedestrian crossings of Southcote Road are proposed within the limits of the project:

- Gray Court Drive – This unsignalized crossing provides a connecting link from the west side of Southcote to Moorland Park and the Redeemer Sports Complex
- Stonehenge Drive – The pedestrian crossing is included as part of the proposed traffic signal
- At existing connection to Cabriole Drive - This unsignalized crossing also provides a transition crossing for cyclists from the end of the multi-use path to the on-street bike lanes.

6.4.9 Illumination

Light Standards will be relocated to the new boulevard. An illumination design plan will be developed during detailed design to city standards. Feasibility of pedestrian scale lighting adjacent to the multi-use pathway will be reviewed as part of the urban design review during detailed design.

6.4.10 Entrance and Access Management

Existing residential entrances are to remain with no access management changes anticipated.

It is recommended that the proposed development entrance onto Southcote Road, on the southwest side of Southcote Road and Secinero Avenue, be developed as a right-in/right-out access to avoid conflicts with the proposed left turn lanes on Southcote Road in this area.

An entrance to the Garner's Corners Cemetery will be provided on Southcote Road for maintenance access. The entrance should not be within 30 m of the intersection.

6.4.11 Traffic Management during Construction

A Traffic Management Plan will be developed during detailed design and will outline detours for local traffic. Access to individual properties will be maintained during construction.

6.4.12 Preliminary Property Requirements

Preliminary property requirements are shown as part of the preferred design figures in **Appendix D**. Property requirements are to be confirmed during detailed design to ensure all property acquisitions are identified for grading operations and construction.

6.4.13 Landscape Plan

A conceptual landscape plan was developed for the corridor and is included in **Appendix F**. The landscape plan will be updated and refined during the detail design phase.

6.4.14 Climate Change

The Ministry of the Environment, Conservation and Parks (MECP) guide “Considering Climate Change in the Environmental Assessment Process (available at <https://www.ontario.ca/page/considering-climate-change-environmental-assessment-process>) was reviewed as part of the preparation of the Class EA.

Changes in precipitation patterns is one important variable of climate change and includes changes in intensity, flooding return period, wettest/driest period and total annual precipitation. High volume and high intensity rainfall events could increase over time due to the impacts of climate change. By widening Southcote Road, this will increase the pervious surfaces, resulting in the potential for increased surface water runoff and reduced groundwater infiltration. To mitigate these potential impacts, the preferred design alternative adds a multi-use path to the east side Southcote Road and adds sidewalks to both sides of Southcote Road. This encourages individuals to use active transportations for commuting versus vehicular means. In addition, the preferred design alternative is minimizing impacts to mature trees by retaining as many as possible. Protection of mature trees increases bioretention of water and evapotranspiration, and shade along the pervious road corridor. This results in reduced median temperatures in the urban area and decreases the likelihood flooding events. During the detailed design phase, stormwater designs will be completed and meet the Provincial requirements for climate change.

7.0

Implementation

Table 6 summarizes potential impacts and mitigation measures for inclusion in the future design and construction phases of the project.

Table 6: Potential Impacts and Mitigation Measures

| Environmental Feature | Impacts and Mitigation |
|--------------------------------------|--|
| Engineering Considerations | |
| Utility Conflicts | Utility conflicts and relocation plans to be confirmed during detailed design |
| Private Property | Impacts to private property will be confirmed during detailed design |
| Impacts on Cultural Resources | |
| Archaeological Resources | <p>Due to previous disturbance in the area from development, much of the study area has been identified as having low potential for the discovery of archaeological artifacts.</p> <p>An archaeological assessment should be completed during detailed design, once impacts are confirmed.</p> <p>Should deeply buried artifacts be uncovered during construction, immediate contact with MTCS is required.</p> <p>The Ontario <i>Cemeteries Act</i> applies to discovery of unmarked human remains.</p> |
| Natural Environment | |
| Species At Risk – General | <p>Should on-site personnel be unable to allow an incidentally-encountered SAR individual to disperse from the active construction area on its own accord, a qualified person (i.e., biologist) should be contacted immediately for additional guidance.</p> <p>Observations of SAR should be reported to MECP within 48 hours of the observation, or the next working day, whichever comes first.</p> <p>Barn swallow nests were not observed within the Study Area. In the event Barn Swallow nest(s) are observed and will be disturbed by construction activities, the regulations specified under Section 23.5 (Barn Swallow) of <i>Ontario Regulation 242/08</i> shall be followed to avoid contravention under the <i>Endangered Species Act, 2007</i>.</p> |

| Environmental Feature | Impacts and Mitigation |
|---|---|
| Natural Environment - General | <p>The project is not anticipated to impact woodlands or meadow areas that may be habitat for SAR bats and SAR vegetation species. If impacts (e.g., vegetation clearing) may occur in woodland and/or meadow areas, consultation should be conducted with MECP to determine next steps for consideration of SAR bats and SAR vegetation, and detailed surveys may be required in these areas to determine potential SAR presence or absence.</p> <p>Timing considerations should be used for project works, such as tree removals or pruning outside the applicable bird nesting window (late March to late August) and outside the SAR bat active season (April to October) to avoid potential impacts to these species.</p> <p>For wildlife, measures should be implemented such as erecting temporary wildlife exclusion fencing adjacent to natural areas to prevent wildlife from entering the work area, and developing and implementing a wildlife encounter plan.</p> <p>Appropriate mitigation measures for protection of watercourses and wetland should be established adjacent to the watercourse/marsh areas (e.g., erosion and sediment control plan), based on the final detailed design.</p> |
| Butternut trees | <p>The project is not anticipated to cause grading/ground disturbance impacts to the four Butternut trees or areas of suitable habitat within 50 m of these trees, so no issues with regard to these species and the ESA are anticipated.</p> <p>However, if the project may cause impacts to any of these trees, such as removal, pruning, or grading/ground disturbance in areas suitable for seed dispersal within 50 m (including removal of Butternut tree #079), the tree should be assessed in detail by a qualified Butternut Health Assessor to determine if the trees are subject to protections of the ESA, and if so, further consultation with MECP should be conducted.</p> |
| Hamilton Conservation Authority Regulated Lands | <p>As the project area appears to be within the HCA regulated area south of Bookjans Drive, consultation should be conducted with HCA with regard to <i>Ontario Regulation 161/06</i> during detailed design.</p> |
| Socio-Economic Impacts | |
| Construction Measures | <p>Construction of the roadway improvements will cause localized disruptions in the immediate vicinity of the construction area along Southcote Road, typical of a construction project. Traffic control measures are required to follow Ontario Traffic Manual – Book 7. Standard mitigation measures in the Ontario Provincial Standard Specifications (OPSS) related to noise and dust during construction would apply.</p> |

7.1 Approvals Required Prior to Construction

7.1.1 Tree Removal and Maintenance

Tree removal and maintenance for the project is potentially subject to a number of City by-laws, including those listed and summarized as follows:

- *By-law No. 15-125 – To Regulate Trees on or Affecting Public Property*, which prohibits the injury or destruction of public trees on City property, except where permitted by the by-law or applicable policy or by a permit from the applicable City Director
- *By-law No. R00-054 – Woodland Conservation to Restrict and Regulate the Destruction of Trees in the Regional Municipality of Hamilton-Wentworth*, which prohibits the destruction of certain trees in woodlands of specific minimum size and tree density on City property, except where permitted by the by-law or applicable policy or by a permit from the applicable City Director
- *By-law No. 2000-118 – A By-law to prohibit the injury or destruction of specified classes of trees on public and private property in the Town of Ancaster*, which prohibits the destruction of certain trees in woodlands of specific minimum size and tree density on City property, except where permitted by the by-law or applicable policy or by a permit from the applicable City Director
- *By-law No. 17-094*, which amends portions of the latter two of the above-listed by-laws.

Implementation of the project should include preparation of an arborist report using the information contained in this tree inventory and updated subject to the detailed design as outlined above, to support the requirements of the above-listed by-laws and/or other applicable by-laws pertaining to tree removal and maintenance.

7.2 Functional Design Level Cost Estimates

Table 7 contains the functional design level cost estimate, based on 2019 costs:

Table 7: Functional Design Level Cost Estimate

| Item | Estimated Cost |
|---|---------------------|
| Roadworks and Earthworks | \$ 2,572,300 |
| Landscaping | \$ 499,300 |
| Storm Sewers and Appurtenances | \$ 750,000 |
| Pavement Markings | \$ 40,000 |
| Traffic Control | \$ 50,000 |
| Traffic Signals and Illumination | \$ 200,000 |
| Sub-total | \$ 4,111,600 |
| Miscellaneous Items and Contingency (20%) | \$ 822,400 |
| Engineering and Consulting (20%) | \$ 822,400 |
| TOTAL PRELIMINARY COST ESTIMATE | \$ 5,756,400 |

7.3 Detailed Design Considerations

The following should be reviewed during the next design phase:

- Need for an Environmental Compliance Approval
- Profile and grading design
- Confirm property requirements
- Stormwater management and hydrology review completed
- Review impacts to municipal infrastructure
- Lighting plan and traffic signal design
- Developed a detailed landscape plan
- Complete archaeological investigations for areas previously undisturbed
- Review proposed width of multi-use pathway and refine design between Burbridge Way and Bookjans Drive to reduce the potential for collisions due to large number of driveways
- Develop a utility relocation plan
- Signed vs Signalized pedestrian crossings to be confirmed during detailed design
- Construction is currently planned for 2022, subject to funding and approvals

McNiven EA Considerations:

- Due to the potential for an alignment shift at the intersection of Golf Links/McNiven/Southcote that could affect Southcote alignment/profile/curb placement, it is suggested a 3-lane cross section between Dorval Drive and Golf Links Road and the addition of on-road bike lanes be reviewed as part of the McNiven EA.