
TO: GENERAL COMMITTEE

SUBJECT: BRYNE DR. (CAPLAN AVENUE TO ESSA ROAD)
MASTER PLAN UPDATE ADDENDUM #1
MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT PHASES 1 AND 2
EVALUATION OF ALTERNATIVE SOLUTIONS

WARD: 6, 7 & 8

**PREPARED BY AND
KEY CONTACT:** R. SCHEUNEMANN, P. Eng. *RS* *WS*
SENIOR INFRASTRUCTURE PLANNING ENGINEER (Ext. 4782)

SUBMITTED BY: J. WESTON, M.A.Sc., P. Eng., PMP *JWeston*
DIRECTOR OF ENGINEERING

**GENERAL MANAGER
APPROVAL:** R. FORWARD, MBA, M.Sc., P. Eng. *RForward*
GENERAL MANAGER OF INFRASTRUCTURE & GROWTH MANAGEMENT

**CHIEF ADMINISTRATIVE
OFFICER APPROVAL:** C. LADD *CL*
CHIEF ADMINISTRATIVE OFFICER

RECOMMENDED MOTION

1. That the Preferred Alternative associated with the Municipal Class Environmental Assessment for Bryne Drive from Caplan Avenue to Essa Road, Phases 1 & 2 be adopted as outlined in Staff Report ENG007-16.
2. That in accordance with the requirements of the Municipal Class Environmental Assessment process, the Engineering Department complete Phase 3 & 4 of the Schedule C Class Environmental Assessment and report back to General Committee.

PURPOSE & BACKGROUND

3. Phases 1 and 2 of the Class Environmental Assessment (Class EA) Study for Bryne Drive has been updated to reassess the alignment for the unopened portions of Bryne Drive between Caplan Avenue and Essa Road (see attached Figure 1 for study area).
4. For background information related to the history of the project, please see Appendix A.

ANALYSIS

5. The Bryne Drive (Caplan Avenue to Essa Road) Master Plan Update Addendum #1 presents the updated preferred alignment of Bryne Drive.
6. Comments received throughout the Class EA process, along with the Engineering Department's responses to the comments, are summarized in the Class EA Report which is available in the Councillors' Lounge for review and on the City of Barrie website at www.barrie.ca/eastudies. Areas of concern include:
 - Impacts to development of adjacent lands;
 - Impact to Whiskey Creek;
 - Structural adequacy of storm pond berm;
 - Impact to potential future interchange; and,
 - Impact to residential areas.

7. Section 5 of the Class EA Report summarizes the evaluation of the various alternative alignments with respect to their impact on the physical/natural, social, cultural and economic environments and with respect to the comments and concerns raised during the public consultation process. A summary of this evaluation has been included in Appendix B.
8. In consideration of all concerns raised by review agencies and the public, the recommended preferred alternative alignment is a modified version of Alternative 3 (Alternative 3R). Alternative 3R has a slight westerly alignment shift north of Harvie Road, over Alternative 3, making it more acceptable for future development in that area (see Appendix B of the Class EA Report for drawings of Alternative 3R).
9. Alternative 3R was preferred primarily due to the fact that it offers benefits similar to those available in Alternative 3 (i.e. compatibility with all geometric requirements, potential for a possible future Highway 400 interchange, lesser negative social, environmental and cultural impacts,) while meeting the needs of the property owners. The differences between Alternatives 3 and 3R are summarized as follows:
 - a) Alternative 3 did not indicate a geometrically acceptable connection to existing Bryne Dr. north of Caplan Ave. Alternative 3R includes a junction with the portion of Bryne Dr. that ends at the cul-de-sac at the Harley Davidson Outlet; and,
 - b) Alternative 3, north of Harvie Rd. begins to curve east immediately after crossing Harvie Rd. whereas Alternative 3R stays straight north for a longer length before curving east to match into the Alternative 3 Alignment.
10. The traffic analysis completed as part of this Class EA concluded that there will be no queue spill back onto Highway 400 (see Appendix G of Class EA Report) however this analysis associated with the future interchange has not been accepted by MTO.
11. The preferred alternative alignment plan profile drawings can be reviewed in Appendix B of the Class EA Report. Alternative 3R is recommended for the following reasons:
 - a) Provides for the efficient movement of goods and services within the south end of Barrie, thereby providing a relief in traffic congestion on Mapleview Drive and Essa Road in an environmentally responsible manner;
 - b) Best supports the proposed Harvie Road/Big Bay Point Road/Highway 400 interchange location and configuration, having regard for intersection/interchange spacing and operational constraints;
 - c) Accommodates future development of adjacent lands by balancing the impacts and potential restrictions to the severed land parcels;
 - d) Impacts to private property are comparable to the other alternative alignments;
 - e) Provides good opportunity to mitigate impacts to environmentally sensitive features, including Lover's Creek and Whiskey Creek watercourses;
 - f) Minimizes impacts to the existing SWM pond and communications tower; and,
 - g) Capital costs are significantly less than Alternative 4 or 5.
12. Subject to Council adoption of the preferred alternative, the Engineering Department will proceed with Phases 3 and 4 of the Schedule "C" Municipal Class EA.
13. The Class EA report lists additional assessments and tasks which will need to be completed as part of the Phase 3 & 4 Class EA. Major items include:
 - a) Stage 2 archaeological study;
 - b) Stormwater management study;
 - c) Development and evaluation of various design alternatives (including the MMATMP recommended bike lanes);
 - d) Refined cost estimates;

- e) Holding another PIC;
- f) Drafting the Environmental Study Report; and,
- g) Filing a Notice of Completion (subject to direction from Council).

ENVIRONMENTAL MATTERS

14. This project has followed the guidelines for a Municipal Class EA. Physical/natural, social, cultural and economic environmental matters have been considered in the development of the recommended preferred alternative. The preferred alternative alignment minimizes impact to Whiskey Creek by crossing the existing Whiskey Creek stormwater management pond berm and by crossing the tributary to Whiskey Creek where the tributary currently crosses Harvie Road. Mitigation measures identified in the Class EA report will be further developed and refined during Phase 3 & 4 of the Class EA process.

ALTERNATIVES

15. The following alternative is available for consideration by General Committee:

Alternative A

General Committee could alter the proposed recommendation by selecting another Alternative Solution alignment.

This Alternative is not recommended because the Preferred Alternative provides for transportation improvements which minimize the effects to the physical/natural, social, cultural/heritage and economic environments while protecting for a potential future interchange.

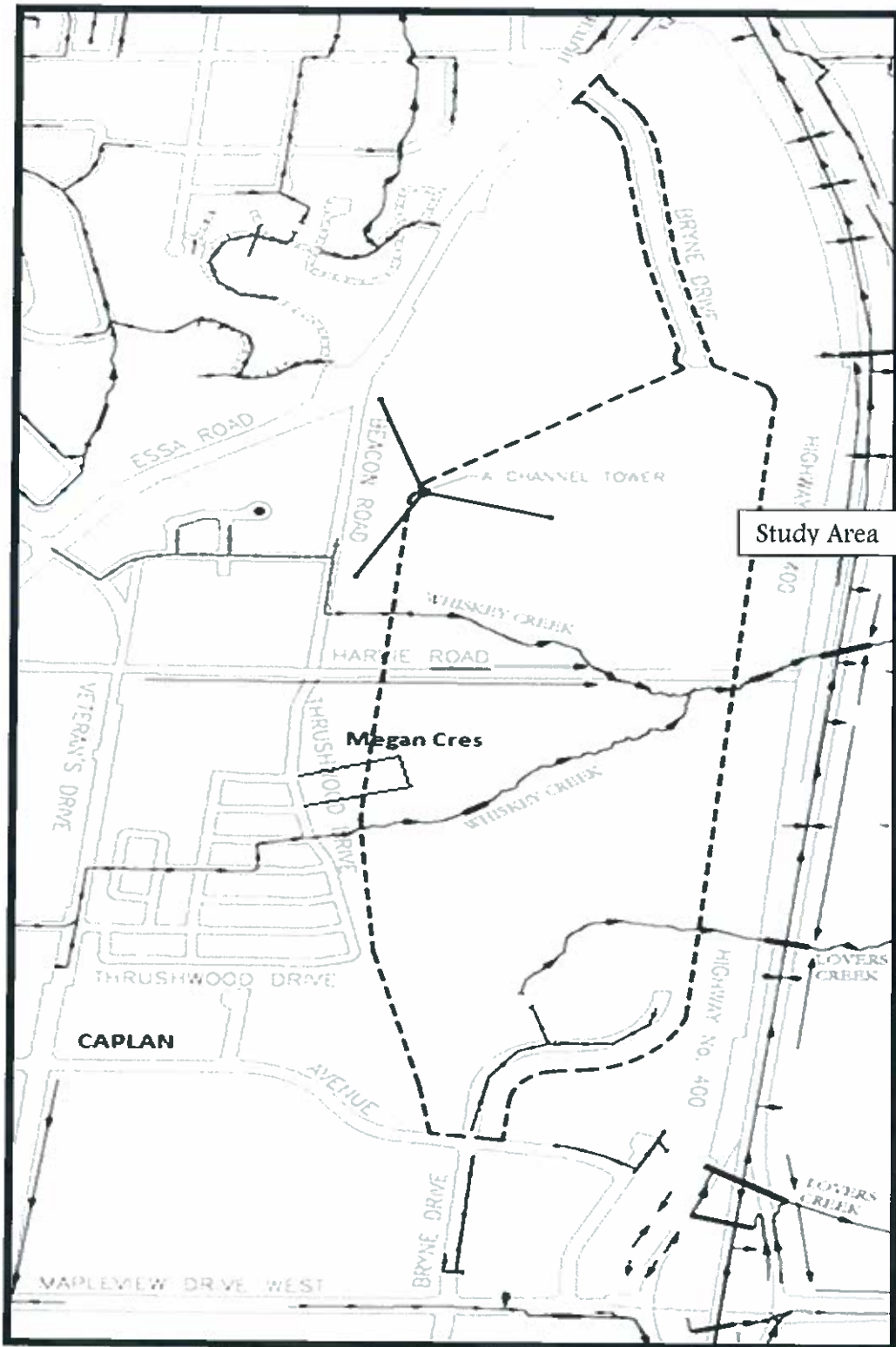
FINANCIAL

16. The estimated annual increase in maintenance cost for the recommended design alternative alignment associated with the 1.65 km of new road is \$150,000 per year.
17. Direction Memo 15-G-200 allocated \$150,000 to complete Phase 3 & 4 of the Class EA in 2016 (65% development charges (DC) and 35% from the tax capital reserve).
18. The 2016 - 2020 Capital Plan includes design funds of \$879,000 in 2017 and an additional \$11.6 million from 2018 to 2021 for property acquisition, utility relocates and construction.
19. The 2014 DC has \$7,765,000 in funding allocated (65% development charges and 35% benefit to existing). This amount will be adjusted in the next DC update to reflect the revised estimate of \$12.5 million.
20. Cost estimates will be updated during Phase 3 & 4 of the Class EA process.

LINKAGE TO 2014 – 2018 COUNCIL STRATEGIC PLAN

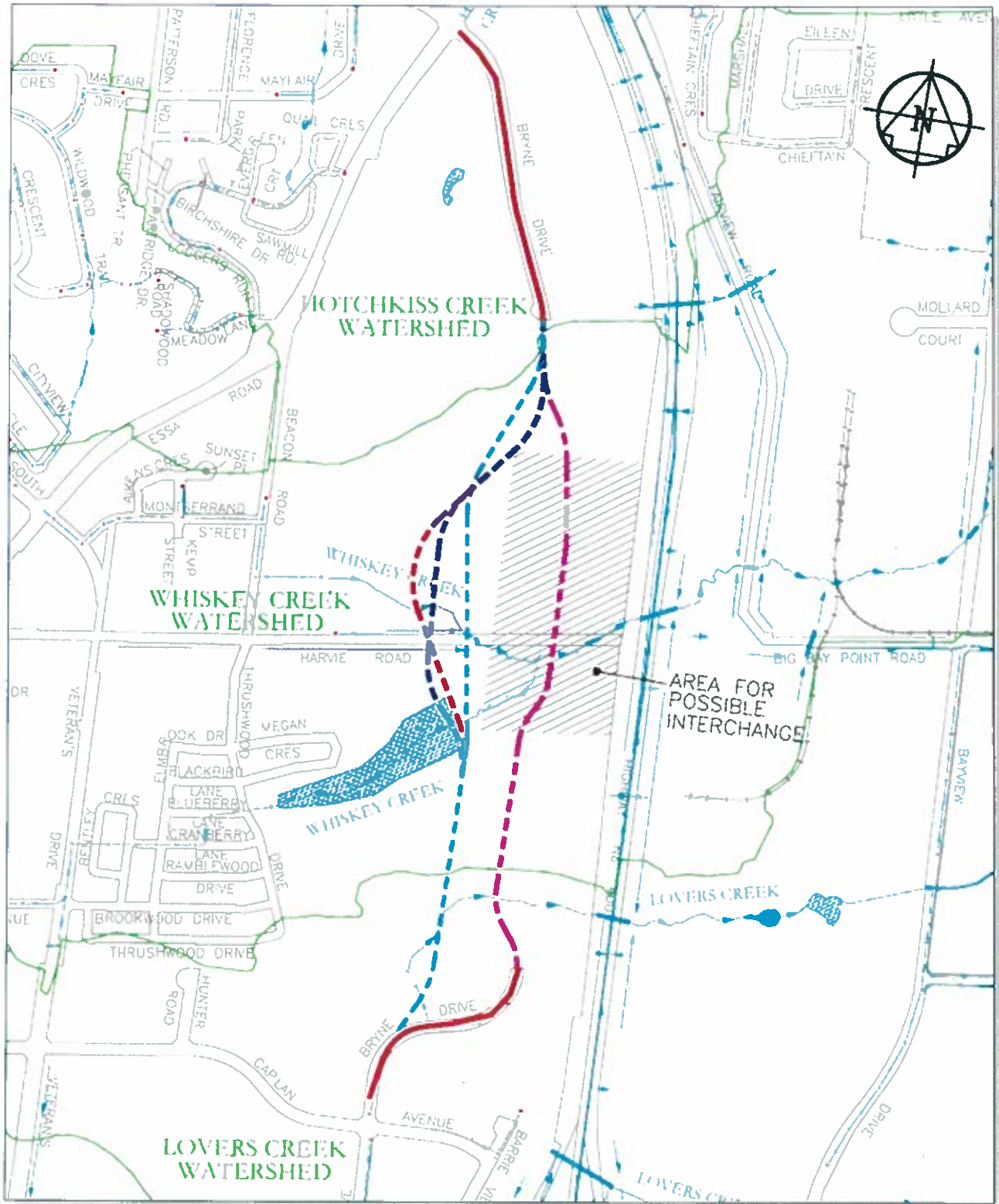
21. The recommendation(s) included in this Staff Report support the following goals identified in the 2014-2018 Strategic Plan:
- Responsible Spending
 - Well Planned Transportation
22. The construction of the unopened portions of Bryne Drive between Caplan Avenue and Essa Road is required to maximize the utilization of the Bryne Drive Crossing of Highway 400 once constructed, thereby reducing traffic congestion on Mapleview Drive and Essa Road at Highway 400.

Figure 1 - Map of Study Area



LEGEND:
STUDY AREA BOUNDARY - - - -

Figure 2 – Alternative Alignments



- Alt 1
- - - -
Alt 2
- - - -
Alt 3R
- - - -
Alt 4
- - - -
Alt 5

Appendix A – Background History

The Bryne Drive Master Plan Update was put on hold in 2010 to allow the completion of the Multi-Modal Active Transportation Master Plan (MMATMP) and the Harvie Road / Big Bay Point Road / Highway 400 Phase 3 & 4 Class EA (Harvie EA). The horizontal and vertical alignment of Bryne Drive is linked to the horizontal and vertical profile of the Harvie Road / Big Bay Point Road crossing of Highway 400.

On December 2, 2013, City Council adopted Motion 13-G-289 regarding Growth Management Update: Infrastructure Master Plans and Fiscal Impact Analysis as follows:

“That the six Infrastructure Master Plans (Water Supply, Water Storage and Distribution, Wastewater Treatment, Wastewater Collection, Drainage and Stormwater Management, and Multi-Modal Active Transportation) related to growth from 2012-2031 be approved so that staff may complete the public consultation process in accordance with the Municipal Class Environmental Assessment process.”

The preferred alternative solution from Phase 1 & 2 of the Class EA process completed as part of the MMATMP endorsed by Council, recommended five lanes on Bryne Drive with regular bike lanes from south of Essa to north of Caplan and a new partial Highway 400 interchange / crossing implemented in phases.

On October 5, 2015, City Council adopted Motion 15-G-200 associated with the Harvie Road/ Big Bay Point Road / Highway 400 Phase 3 & 4 Class EA. The preferred design solution included the following elements:

- Harvie Road / Big Bay Point Road crossing over Highway 400;
- Removal of the existing railway crossing on Big Bay Point Road between Bayview Drive and Fairview Drive;
- Buffered bike lanes and sidewalks on both sides;
- Five (5) lanes in the interim and ultimate seven (7) lanes between Bryne Drive and Bayview Drive; and,
- Protection of land for a potential future highway interchange.

The potential future highway interchange will be subject to a future Class EA study.

A Public Information Centre (PIC) was held on Thursday, August 21, 2008 in Huronia Room B - 2nd Floor City Hall. The public was invited to attend the PIC to review and provide comments on the proposed alternative solutions which have been summarized below (see attached Figure 2 for alignment alternatives presented at the PIC).

Alternative 1 - Do Nothing (Direct Future Traffic onto Surrounding Streets)

Under this Alternative, existing and future traffic would be required to use existing roadways such as Highway 400, Mapleview Drive West, Veteran's Drive and Essa Road.

Alternative 2 - Original December 2005 Class EA Alignment

This Alternative is the five-lane roadway alignment that was previously outlined in the December 2005 Class EA.

Alternative 3 – Central Alignment

This five-lane roadway alignment is located approximately 180 m (measured along Harvie Road) west of Alternative 2. The southern half begins part way along existing Bryne Drive just east of Princess Auto, which is north of Caplan Avenue and extends north to Harvie Road just west of the existing satellite dishes. The alignment would require a crossing of the existing Whiskey Creek stormwater management pond berm.

Alternative 4 – Western Alignment – 90° Crossing of Harvie Road

This five-lane roadway alignment is located approximately 260 m (measured along Harvie Road) west of Alternative 2 and is otherwise similar to Alternative 3.

Alternative 5 – Western Alignment – Angled Crossing of Harvie Road

This five-lane roadway alignment is similar to Alternative 4 except the intersection proposed at Harvie Road includes a deflection angle of 70°.

Appendix B - Alternative Evaluation Summary

Physical Environment	Alternative 1 Do Nothing	Alternative 2 2006 Pre. Alternative	Alternative 3/3R Central Alignment	Alternative 4 90° Crossing Harvie	Alternative 5 Angled Crossing Harvie
Accommodation of Existing and Future Traffic Demand	Traffic congestion in south Barrie continues	Does not accommodate future interchange	Reduced traffic congestion in south end of Barrie		
Compatibility With Ex. & Future Road Network	Not compatible	Does not accommodate Highway Crossing or Interchange	Accommodate Highway Crossing and Interchanges		
Emergency Services	No improved service	Less opportunity for improved service	Improves service		
Transit Service	No improved service	Less opportunity for improved service	Improves service		
Safety	Traffic incidents related to congestion will continue	Some traffic incidents related to congestion will continue	Less traffic congestion will result in fewer traffic incidents		
Impact on Rd Capacity During Construction	n/a	Temporary minor traffic disruptions limited to impacts on Harvie Road and the north and south existing extents of Bryne Drive.			
Major Services / Utility Conflicts	n/a	Some impact to existing utilities			
Impacting on Vehicle Parking	n/a	No Impact			
Fisheries and Aquatic Habitat	n/a	Additional thermal pollution and new creek crossings	Additional thermal pollution and some additional impact to some creek crossings	Additional thermal pollution and greatest impact to creek crossings	
Wildlife Habitat	n/a	Minor impact to urban wildlife habitat	Additional impact to urban wildlife habitat	Greatest impact to urban wildlife habitat	
Vegetation	n/a	Minor impact to vegetation. Greatest impact on trees.	Additional impact to vegetation. Second least impact to trees.	Greatest impact to vegetation. Least impact on trees.	
Groundwater Resources	n/a	Minor impact to groundwater resources			
Water Quality / Stormwater Management	n/a	Additional runoff from new road	Additional runoff from new road. Impact to existing storm ponds.	Additional runoff from new road. Greatest impact to existing storm ponds.	
Social Environment					
Existing Buildings	n/a	No Impact	Conflict with satellite dishes	No Impact	No Impact
Existing Properties	n/a	Less development opportunity	Greatest Development Opportunity	Increased Development Opportunity. Greatest impact to existing residential areas	
Noise	n/a	Minimal potential noise increases	Some potential noise increases.	Greatest potential for noise increase which on existing residential areas	
Pedestrian / Cyclist Facilities	No new pedestrian or cycling facilities	Proposed sidewalks not compatible with Highway Crossing	New sidewalks compatible with active transportation elements on Highway 400 Crossing and future interchange		
Aesthetics	n/a	Landscape opportunities in boulevards			
Access to existing properties	Traffic congestion will limit access	Some reduced traffic congestion would increase access	Due to compatibility with Highway Crossing and potential future interchange, these alternatives will result in the greatest reduction in traffic congestion which will increase access to existing properties in the south end of Barrie		
Cultural Environment					
Archaeological / Heritage Resources	n/a	Potential impact to archaeological resources	Greater potential impact to archaeological resources		
Economic Environment					
Impact on Business	Traffic congestion will negatively impact business	Reduce traffic congestion will positively impact business	Due to compatibility with Highway Crossing and potential future interchange, these alternatives will result in the greatest reduction in traffic congestion which will have the greatest positive impact on business.		
Infrastructure Maintenance Costs	n/a	Additional costs due to infrastructure to maintain			
Property Costs	n/a	Similar costs			
Construction Costs	n/a	Least Cost	Second least Cost	Higher Costs	Highest Costs