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**TO:** GENERAL COMMITTEE


**SUBJECT:** DUNLOP STREET CORRIDOR IMPROVEMENT (TORONTO STREET TO MULCASTER STREET) MUNICIPAL CLASS EA PHASES 1 & 2

**WARD:** 2

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

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**RECOMMENDED MOTION**

1. That the Preferred Alternative for the Dunlop Street Corridor Improvements – Toronto Street to Mulcaster Street Municipal Class Environmental Assessment Phase 1 & 2 (Class EA) be adopted as:
  - a) Alternative 5 – Reconfigurable street between Toronto Street and Mulcaster Street.
2. That staff undertake the additional design associated with incorporating the proposed Dunlop Street streetscape elements into the Memorial Square Redevelopment Project at a cost not to exceed \$10,000 and be funded from the Tax Capital Reserve (13-04-0440).

**PURPOSE & BACKGROUND**

3. The core of downtown Barrie is Dunlop Street between Toronto Street and Mulcaster Street. The vibrancy of the Dunlop corridor between Toronto Street and Mulcaster Street is critical to the success of the downtown area. There have been ongoing discussions about creating a more pedestrian focused street with wider sidewalks.
4. On June 17, 2013, City Council proposed an amendment to Motion 13-G-153 regarding the Memorial Square Development directing staff to develop and assess alternatives to provide wider sidewalks in the downtown and to investigate the feasibility of coordinating the redevelopment of Memorial Square with the proposed sidewalk widening improvements.
5. The Study Area shown in Appendix "A" was used to assess impacts of the various alternatives on adjacent transportation corridors.
6. In accordance with the Class EA process, a Public Information Centre (PIC) was held on Wednesday, June 18, 2014, in the Sir Robert Barrie Room from 4:00 pm to 7:00 pm to give the interested public and review agencies the opportunity to provide input into the alternatives. Eighty-six (86) people attended the PIC.
7. The alternatives impact east-west transportation links within the downtown, therefore the Ross/Collier/Bayfield Street intersection realignment was considered and re-evaluated as part of this study. Additional traffic modelling is required to fully quantify traffic and pedestrian operations at Ross/Collier/Bayfield Street for both the existing and future conditions. Subject to available budgets, this will be completed as a standalone Schedule "B" Class EA.

8. The following alternatives were presented to the public and review agencies at the PIC:
- Alternative 1 – Do Nothing;
  - Alternative 2 – Temporary Vehicular Closure During Summer;
  - Alternative 3 – Pedestrian Promenade (Permanent Vehicular Closure) + Additional Two Lanes on Collier Street;
  - Alternative 4 – One-Way Eastbound Dunlop Street + Additional Lane on Collier Street; and
  - Alternative 5 – Reconfigurable Street.
- A copy of the Class EA Report with the drawings associated with each alternative is available for review in the Councillor's Lounge as well as on the 6th Floor of City Hall, at the Libraries, Clerks Office and the City of Barrie website, [www.barrie.ca/leastudies](http://www.barrie.ca/leastudies).
9. Renewal needs have been identified for the existing pedestrian surfaces on Dunlop Street in the section included in this project as the unistone pavers are degrading due to corrosion. Pavers are requiring replacement due to general failure and unevenness. Roads, Parks & Fleet submitted an intake form for a 5 year replacement program with a budget of \$325,000. This was not incorporated into the Capital Budget as it conflicted with this project.
10. The existing streetlights have also been identified for renewal due to corrosion issues at the base of the structures resulting in instances of falling luminaries from minor impacts. The weak condition of the existing fixtures has precluded placement of banners, hanging planters and speakers (as proposed by the Downtown Business Improvement Association (BIA)).
11. The 2015 – 2019 Capital Budget identifies this project for design funding in 2018 and 2019, with a budget of \$270,000 each year.

## **ANALYSIS**

12. A transportation analysis was conducted using the City of Barrie Emme traffic model comparing the alternatives for both current (2011 base scenario) and future volumes (2031 horizon year) for PM peak hour illustrating level of service (LOS) and auto volumes.

Arranged in order of greatest impact; Alternatives 3 – Pedestrian Promenade, Alternative 2 - Temporary Closure during the Summer and Alternative 4 – One-Way Eastbound Dunlop had the greatest impact on the transportation network resulting in lower levels of service on adjacent corridors, with Simcoe Street and Ross/Collier Street being impacted greatest. For these alternatives, the modelling illustrated that the realignment of the Ross/Collier/Bayfield intersection was necessary to make Ross/Collier Street a viable east-west alternative for motorists if capacity on Dunlop Street was reduced. Alternative 1 – Do Nothing and Alternative 5 – Reconfigurable Street had no effect on the transportation network as they both maintain two-way traffic.

The analysis also demonstrated that in the existing configuration (two-way Dunlop Street) there is capacity constraints on east-west links in the downtown area; any reduction in east-west capacity is undesirable as Simcoe Street and Dunlop Street are operating near capacity in the 2011 base scenario and exceeding capacity in the 2031 horizon. These results are consistent with the Multi-Modal Active Transportation Master Plan (MMATMP), which indicates these links will be operating at a volume to capacity ratio exceeding 1.0 indicating extremely low speeds caused by intersection congestion, high delay and adverse signal progression.

Road widening opportunities in the downtown area are not feasible due to property impacts; the optimization of Ross Street and Collier Street is recommended to reinforce east-west links in the downtown and is consistent with recommendations in the MMATMP.

13. Comment sheets containing public/review agency comments and concerns from the PIC have been considered in the development of the Preferred Alternative. Please see the Final Draft Class EA Report for detailed comments and responses. For a summary of the major concerns raised, and the City's response to those concerns, please see Appendix "C" of this Staff Report. Areas of major concerns include:
- a) Loss of parking;
  - b) Winter months/shoulder seasons impacting viability of pedestrian promenade;
  - c) Increased traffic on other downtown streets due to loss of capacity on Dunlop Street (Alternative 2, 3 and 4); and
  - d) Reduced access impacting businesses.

14. The public responses from the consultation process indicated the following as their preferred alternative:

Alternative	1 Do Nothing	2 Temporary Closure	3 Pedestrian Promenade	4 One-Way Eastbound	5 Reconfigurable Street
Instances Ranked No. 1	18	25	25	17	25

The public preferred Alternatives 2, 3 and 5.

15. The alternatives were evaluated in consideration of comments received to determine the best design alternative based on pre-determined criteria and the relative importance of the criteria. The Preferred Alternative is Alternative 5 – Reconfigurable Street as illustrated in Appendix "C". This alternative can be considered a combination of the design alternatives presented at the PIC as it includes elements of Alternative 2 and 3. The scoring of the alternatives can be found in the Class EA Report.
16. The Preferred Alternative consists of a reconfigurable street design similar to King Street West in Kitchener, Ontario. This alternative features a reconfigurable boulevard area on each side of the street that can be used for either pedestrian space or parallel vehicle parking. The space is repurposed by relocating moveable bollards from the edge of the permanent sidewalk to immediately adjacent to the travelled roadway (eliminating parking/allowing increased pedestrian space).
17. The Preferred Alternative is recommended for the following reasons:
- a) Provides flexibility to adjust pedestrian space and parking depending on demand and/or season;
  - b) Impacts to on-street parking will be similar to current impacts resulting from outdoor patios on Dunlop Street;
  - c) Accommodates outdoor patios and cafés without the need for wood boardwalks in parking stalls to accommodate pedestrian traffic;
  - d) Allows for strategic implementation of streetscape elements to maximize pedestrian space (planters/refuse receptacles/bike racks at curb bulb-outs);
  - e) Minimizes impact to traffic operations as two-way traffic is maintained;

- f) Facilitates and enhances the existing practice of closing Dunlop Street for special events by creating a reduced barrier environment; and
  - g) Accommodates cyclists through prominent shared-lane markings (also called “sharrows”) placed in the center of a travel lane. The marking indicates that a cyclist may use the full lane.
18. The BIA was involved throughout the Class EA study; they support Alternative 5 – Reconfigurable Street (Preferred Alternative).
19. Prior to implementation of the Preferred Alternative, the City and the BIA will consider interim options including the implementation of continuous boardwalks during the outdoor patio season where sufficient interest from BIA members exists. Preliminary discussions focused on infilling parking stalls between existing patios to create a continuous boardwalk to increase pedestrian space and provide improved flow. The limits of implementation will be determined through coordination with the BIA and its members, but the intent is to maximize the length of boardwalks where they are generally located.
20. The \$10,000 design funding request for the coordination of the Dunlop Street streetscape design with the Memorial Square project will allow:
- a) Determination of final grading/curb elevations compatible with the Dunlop Street Project allowing for curb replacement as part of the Memorial Square Project; and
  - b) Evaluate options to accommodate future street lighting fronting Memorial Square with minimal disruption to the area.
- Construction costs associated with the installation of new curb and street lighting accommodation components will be funded from the Memorial Square construction contingency allowance and are expected not to exceed \$20,000.
21. As part of detailed design, Engineering Staff will complete a design charrette with stakeholders and report back to the Infrastructure, Investment and Development Services Committee (IIDC) on proposed streetscape elements and materials prior to finalizing the streetscape design.

### **ENVIRONMENTAL MATTERS**

22. This project has followed the guidelines for a Municipal Class EA, and physical, natural, social, cultural and economic environmental matters have been considered in the development of the recommendations. The Class EA report discusses how environmental matters have been considered in the development of the recommended alternative. The ranking and scoring process considered all natural, social and economic environmental matters and includes such elements as property, noise, pedestrian, cyclists etc.

### **ALTERNATIVE**

23. There is one Alternative available for consideration by General Committee:

#### **Alternative #1**

General Committee could alter the proposed recommendations by selecting another alternative.

This is not recommended as it the Preferred Alternative solution improves the pedestrian realm and provides wider sidewalks which minimize the effects to the physical, natural, social, cultural and economic (financial) environments.

**FINANCIAL**

24. Cost estimates for the Preferred Alternative have been developed that include the following scenarios:
- a) The existing road base and existing storm sewer will not be replaced.
  - b) The existing road base will be replaced; the existing storm sewer will not be replaced.
  - c) The existing road base and storm sewer will be replaced.

A geotechnical engineering investigation is required to provide guidance on the road base condition and it's suitability to remain in place.

The existing storm sewer system was constructed in 1989/1990 and has a significant remaining life span. To account for climate change, the City's rainfall intensity-duration-frequency curves (IDF) have been increased by 15% in 2009; likely resulting in the existing storm sewers having insufficient capacity when compared against the current standards. A stormwater management report will be required as part of detailed design to quantify the capacity of the current stormwater management system and provide recommendations on replacement.

The following cost estimate includes reconstruction from Toronto Street to Mulcaster Street.

Scenario	Construction Cost Estimate
A – Ex. Base/Ex. Storm	\$5,800,000
B – New Base/Ex. Storm	\$6,350,000
C – New Base/New Storm	\$7,000,000

25. Construction phasing is recommended as follows (cost estimate assuming existing base granular and storm sewer will remain):

Phase	Section	Cost
1	Bayfield Street to East Limit of Memorial Square	\$2,000,000
2	East Limit of Memorial Square to Mulcaster Street	\$1,400,000
3	Mary Street to Bayfield Street	\$1,500,000
Future	Toronto Street to Mary Street	\$900,000

26. Parking revenue is expected to be minimally impacted as any loss of revenue due to parking spaces being temporarily removed during the summer season (by both the interim condition and the Preferred Alternative) will be offset by revenues generated at nearby metered parking locations. In addition, it is anticipated that the downtown improvements will increase the number of visits.
27. Operating and maintenance costs will increase due to additional effort required for snow removal and the bi-annual relocation of bollards. Based on operating experience in Kitchener, it is recommended that both the sidewalk and the flexible area be cleared with sidewalk snow removal equipment. The implementation of bollards is not expected to significantly impact snow removal operations as operators currently contend with parking meters, street trees and streetlights; it is anticipated that parking meters will be replaced with pay and display terminals. Bollard relocation is estimated to cost approximately \$3000 per year based on 1.5 days per seasonal relocation utilizing two employees and one half-ton pickup truck. This estimate is dependent on the bollard system utilized.

28. Consideration should be given to allowing bollard relocation by the Downtown BIA pending receipt of application as occurring with the Outdoor Patio Program.
29. For both capital and operating costs; it is recommended that opportunities for cost sharing be pursued with the BIA.

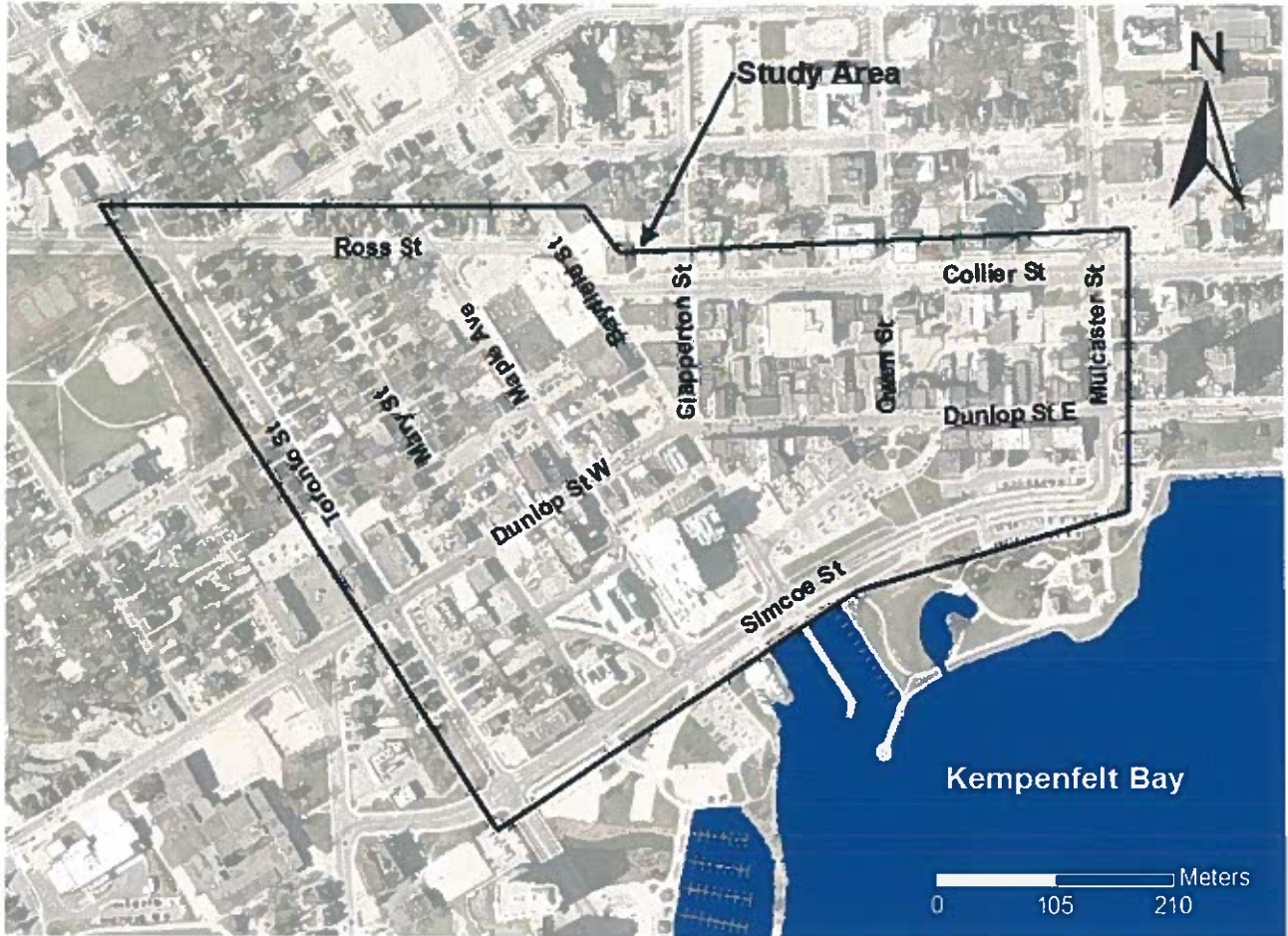
**LINKAGE TO 2014 – 2018 COUNCIL STRATEGIC PLAN**

30. The recommendation included in this Staff Report support the following goals identified in the 2014-2018 Strategic Plan:
  - Vibrant Business Environment
  - Inclusive Community
  - Well Planned Transportation
31. This Class EA Study for the Dunlop Street Corridor Improvements supports Council's Strategic Plan by:
  - a) Demonstrating the City's commitment to downtown businesses through the implementation of an innovative solution that provides benefits to both residents and businesses through the implementation of a flexible streetscape design.
  - b) Improving the public realm by providing additional pedestrian space and encouraging more liveliness within the street corridor; helping create a sense of place and community.
  - c) Recognizing the importance of east-west linkages in the downtown area and the importance of Dunlop Street to the downtown transportation network.



APPENDIX "A"

Study Area



**APPENDIX "B"**

**Ross/Collier/Bayfield Realignment Alternatives**

1. This intersection was studied as part of the Waterfront/Downtown Transportation Improvements Class EA identifying the future need to realign the intersection. Council, per Motion 06-G-281, directed staff to adopt Alternative 2 (realignment on the south west corner of the Ross/Bayfield intersection) for the realignment of the Ross/Collier/Bayfield Street intersection for planning purposes (see Appendix "B"). The Multi-Modal Active Transportation Master Plan (MMATMP) approved by Council also includes the realignment of this intersection to improve traffic operations in the downtown transportation network.
2. The Ross/Collier/Bayfield Street Intersection alternatives developed as part of the Waterfront/Downtown Transportation Improvements Class EA were re-evaluated as part of this Class EA. The existing intersection intersects Bayfield Street at an angle of approximately 60 degrees. Generally, new intersections are designed with intersecting streets between 90 degrees (perpendicular) to 70 degrees (maximum skew) to ensure sufficient intersection sight distance and proper sight lines.
3. Due to the existing skew of Bayfield Street and Ross Street and proximity of Maple Street and Clapperton Street, it is challenging to develop realignment alternatives that reduce the existing skew while minimizing impacts to adjacent property (elimination of the skew would require a significant acquisition of private property). The alternatives presented in the Waterfront/Downtown Transportation Improvements Class EA included skews that exceeded 70 degrees as well as directional changes within the intersection. Directional changes within an intersection are not recommended as they are associated with increased accident rates due to loss of control and improper lane positioning.
4. Additional alternatives were generated that reduced impacts to property and allow for better integration with the existing geometry. The following preliminary alternatives were assessed internally to determine their impacts on network capacity at the intersection and the downtown area:
  - a) Signalized Intersection at Ross Street and Bayfield Street
  - b) Roundabout at Ross Street and Bayfield Street
5. The initial assessment identified the need to further study pedestrian and traffic operations for both existing and future conditions including growth considerations in the downtown. Subject to available budgets, a standalone Schedule "B" Class EA study will be completed.

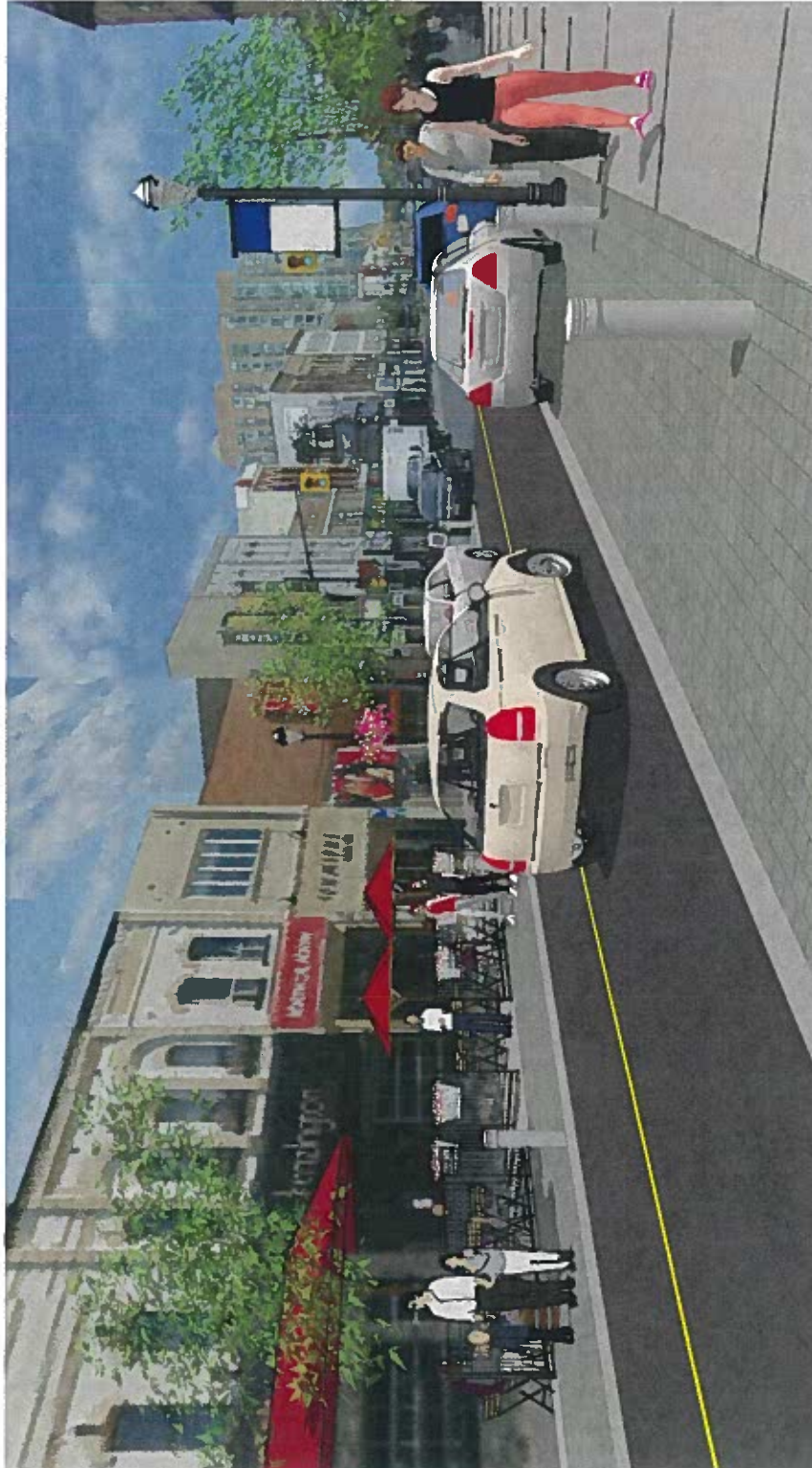


**Ross/Collier/Bayfield Realignment Alternatives (continued)**

<p>Alternative 1 – Ross Street realignment south</p>	
<p>Alternative 2 – Ross Street realignment south with channelized right- turn</p> <p><b>Adopted for Planning Purposes</b></p>	
<p>Alternative 3 – Collier Street realignment north</p>	
<p>Alternative 4 – Ross and Collier Street realignment</p>	

APPENDIX "C"

Preferred Alternative Rendering





**Preferred Alternative Rendering – Cross-Section and Plan View**

