



TO: GENERAL COMMITTEE


SUBJECT: DUCKWORTH STREET – BELL FARM ROAD TO ST VINCENT STREET
CLASS EA PHASES 3 AND 4

WARD: 1 AND 2

**PREPARED BY AND
KEY CONTACT:** L. SPOONER, C.E.T. 
SENIOR WATER TECHNOLOGIST (Ext. 4491)

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

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

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

RECOMMENDED MOTION

1. That the Preferred Design Alternative for the Municipal Class Environmental Assessment for Duckworth Street from Bell Farm Road to St Vincent Street, Phases 3 & 4 be adopted as outlined in Staff Report ENG009-15.
2. That in accordance with the requirements of the Class Environmental Assessment process, the Engineering Department publish a Notice of Completion for the Duckworth Street Environmental Study Report.

PURPOSE & BACKGROUND

3. This Staff Report presents the preferred design alternative to address active transportation issues on Duckworth Street (Bell Farm Road to St Vincent Street).
4. 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.”
5. The preferred alternative solution from Phase 1 & 2 of the Class Environmental Assessment (Class EA) process completed as part of the Multi-Modal Active Transportation Master Plan (MMATMP) endorsed by Council, recommended transportation improvements including bike lanes and sidewalk improvements on Duckworth between Bell Farm Road and St Vincent Street.
6. Completion of Phase 3 & 4 of the Class EA process developed alternative design concepts for the preferred solution identified in the MMATMP and documented the process and methodology employed throughout the study to prepare the Environmental Study Report (ESR).
7. Duckworth Street from St Vincent Street to Bell Farm Road is a renewal project that proposes improvements with linkages to other infrastructure projects. See Appendix “A” for a map of the Study Area.

8. In coordination with the need to reconstruct Duckworth Street a new 300 mm watermain will be constructed as identified in the Water Distribution and Storage Master Plan.
9. In coordination with the ESR, a Stormwater Management Analysis was undertaken which indicates that the storm sewer pipes for the Duckworth South system are currently undersized.
10. It is also noted that Duckworth Street between Codrington Street and Georgian Drive has been identified as an intensification corridor in Schedule 1 of the Official Plan.
11. The Preferred Design Alternative proposes that the location of existing curb lines from St Vincent Street to Grove Street will be maintained so there will be no renewal impacts relating to the road surface. Whereas, there will be an impact on renewal from Grove Street to Bell Farm Road since the curb lines will need to be widened to accommodate the proposed buffered bike lane.
12. The Preferred Design Alternative will increase the operational unit costs for the additional 4 m of asphalt width for the bike lanes between Grove Street and Bell Farm Road and for the additional 370 m of new sidewalk required along the length of the study area.
13. The second Public Information Centre (PIC) associated with Phase 3 & 4 of the Class EA was held on Thursday, April 16, 2015, 4:00 pm to 7:00 pm, in Sir Robert Barrie Room - 2nd Floor City Hall. The public was invited to attend the PIC to review and provide comments on the proposed design alternative solutions. Comments and responses received from the PIC were considered in the development of the preferred design alternative solution.

Alternative 1 - "Do Nothing"

The "Do Nothing" alternative corresponds to the existing conditions. Under this option, no geometric improvements to the road system would be made.

Alternative 2 - Recommended Improvements from the Multi-Modal Active Transportation Master Plan

This alternative incorporates the recommended improvements based on the MMATMP with 5 lanes of vehicular traffic from Bell Farm Road to Davies Street, 4 lanes from Davies Street to Wellington Street and 2 Lanes from Wellington Street to St Vincent Street. Bike lanes and sidewalks are recommended from Bell Farm Road to St Vincent Street.

Alternative 3 - Recommended Improvements from the Multi-Modal Active Transportation Master Plan with some reduced features.

This alternative is similar to Alternative 2 except with reduced vehicular lane, bike lane and boulevard widths.

Alternative 4 - Incorporate a 3 Lane Cross Section between Davies Street and St Vincent Street

This alternative is similar to Alternative 3 except a 3 Lane Cross Section is proposed between Davies Street and St Vincent Street.

ANALYSIS

14. The Duckworth Street ESR presents the recommended transportation improvements required to accommodate active transportation. The transportation improvements include the addition of bike lanes/buffered bike lanes, sidewalks on both sides of the street, addition of a two way left turning lane between Wellington Street and Davies Street, and standardization of turning radii for intersecting side streets.

-
15. Comments received throughout the Class EA process, along with the Engineering Department's responses to the comments, are summarized in the ESR which is available in the Councillors' Lounge for review and on the City of Barrie website at www.barrie.ca/eastudies. Areas of major concern include:
- Loss of property and proximity of vehicular lanes to property lines.
 - Loss of driveway parking space and trees from adding sidewalks.
 - Snow storage and removal operations.
 - Traffic volumes related to safety of adding bicycle lanes.
 - Driveway and pedestrian access during construction phase.
16. Sixteen (16) people signed the attendance register at the second PIC held on Thursday April 16, 2015. Forty-six (46) comment sheets/responses were received. Preferred rankings were received on thirty-six (36) comment sheets and the results are as follows:
- Alternative 1 – 14
 - Alternative 2 – 15
 - Alternative 3 – 3
 - Alternative 4 – 4
17. The design alternatives were evaluated in consideration of comments received to determine the best design alternative based on the evaluation criteria. The evaluation criteria used for the design alternatives can be found in the (ESR). The Preferred Design Alternative is a combination of the design alternatives presented at the second PIC. For the summary and cross sections of the Preferred Design Alternative by Segment, see Appendix "B" and "C". The Preferred Design Alternative is summarized below; refer to the drawings in the ESR for more detail.
18. The Preferred Design Alternative has minimized property impacts along the Study Area by incorporating reduced vehicular lane, boulevard and sidewalk widths.
19. The Preferred Design Alternative has minimized driveway and tree impacts along the Study Area by incorporating a reduced sidewalk width and allowing for a variable sidewalk location, between St Vincent Street and Wellington Street,
20. **Summary of the Preferred Design Alternative:**
- Segment 1 - St Vincent Street to Wellington Street**
- 2 vehicle lanes - one north and one south.
 - 1.5 m bike lanes on both sides of the street.
 - 2.0 m boulevard widths both sides of the street.
 - 1.5 m sidewalks both sides of the street.
 - 10.0 m pavement width and 20.1 m right of way width.
 - No additional property except for daylighting triangles at intersections.

Segment 2 - Wellington Street to Davies Crescent

- 2 vehicle lanes – one north and one south 3.3 m wide.
- Continuous two way left turning lane 3.8 m wide.
- 1.5 m bike lanes both sides of the street plus 0.5 m buffer.
- Variable boulevard width on east side of the street; 2.0 m boulevard width from Wellington Street to Howard Crescent and 1.5 m boulevard from Howard Crescent to Highview Street.
- 2.0 m sidewalks on both sides of the street.
- 14.4 m pavement width.
- Maintain existing right of way width.
- Additional 2 m of property required at taper on east side between Melrose Street and Wellington Street plus daylighting triangles at intersections.

Segment 3 - Davies Crescent to Bell Farm Road

- 4 vehicle lanes – two north and two south 3.3 m wide.
- Continuous two way left turning lane 4.2 m wide.
- 1.5 m bike lanes both sides of the street plus 0.5 m buffer.
- 1.0 m boulevard width on both sides of the street.
- 2.0 m sidewalks on both sides of the street.
- Centre medians at Grove Street, Rose/Bernick and Bell Farm Road. The median on the north approach of Grove Street will be extended to the north to restrict the movements at the south commercial access to right-in/right-out.
- 21.4 m pavement width and 28.8 m right of way width.
- Additional 2.1 m to 4.2 m of property required plus daylighting triangles at intersections.

21. The following preliminary cost estimate for the Preferred Design Alternative is based on full reconstruction of existing roads including storm sewers. The estimated cost does not include Land acquisition, utility relocation or increased storm sewer capacity but does include 15% for Design and 20% for Contingency.

Cross Section	Total Cost (\$)
Segment 1 –St Vincent Street to Wellington Street	\$2,305,000
Segment 2 – Wellington Street to Davies Crescent	\$1,177,000
Segment 3 – Davies Crescent to Bell Farm Road	\$2,754,000
Total	\$6,236,000

22. There will be an increase to the Operational Unit costs for the additional 4 m of asphalt width for the buffered bike lanes between Grove Street and Bell Farm Road and for the additional 370 m of new sidewalk required along the length of the Study Area.
23. Staff are recommending that the Preferred Design Alternative be adopted by Council at this time, in order that a Notice of Completion can be filed as required as part of the Class EA process. The Notice of Completion is the final point in the public process where the public can express their concerns if they feel issues raised through the Class EA process have not been sufficiently addressed. If there are no Part II Requests received, Phases 3 and 4 of the Class EA process can be considered complete and the City can proceed with the implementation of the Preferred Design Alternative. This implementation would include the detailed design phase and construction of the infrastructure.
24. This project coordinates with other transportation, watermain, sanitary and storm renewal projects and active transportation capital projects planned for Duckworth Street and in the study area.

ENVIRONMENTAL MATTERS

25. This project has followed the guidelines for a Municipal Class EA, and physical, natural, social, cultural/heritage and economic environmental matters have been considered in the development of the recommendations. The ESR discusses how environmental matters have been considered in the development of the recommended preferred design alternative. The evaluation process considered criteria for natural, social, cultural/heritage and economic environmental matters and physical environment criteria such as traffic, pedestrians, cyclists, transit, property, noise, utilities, municipal services and driveway grades/operations.

ALTERNATIVES

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

Alternative #1 General Committee could alter the proposed recommendation by selecting another Design Alternative.

This Alternative is not recommended because the Preferred Design Alternative provides for transportation improvements which minimize the effects to the physical, natural, social, cultural/heritage and economic (financial) environments.

FINANCIAL

27. The 2015 - 2020 Capital Plan includes Design funds of \$351,000 in 2016, and Construction funds of \$3,510,000 in 2017, and \$3,510,000 in 2018 respectively.
28. The Duckworth Class EA has been completed within 6 months, on time and on budget.

LINKAGE TO 2014 – 2018 COUNCIL STRATEGIC PLAN

29. The recommendation(s) included in this Staff Report support the following goals identified in the 2014-2018 Strategic Plan:

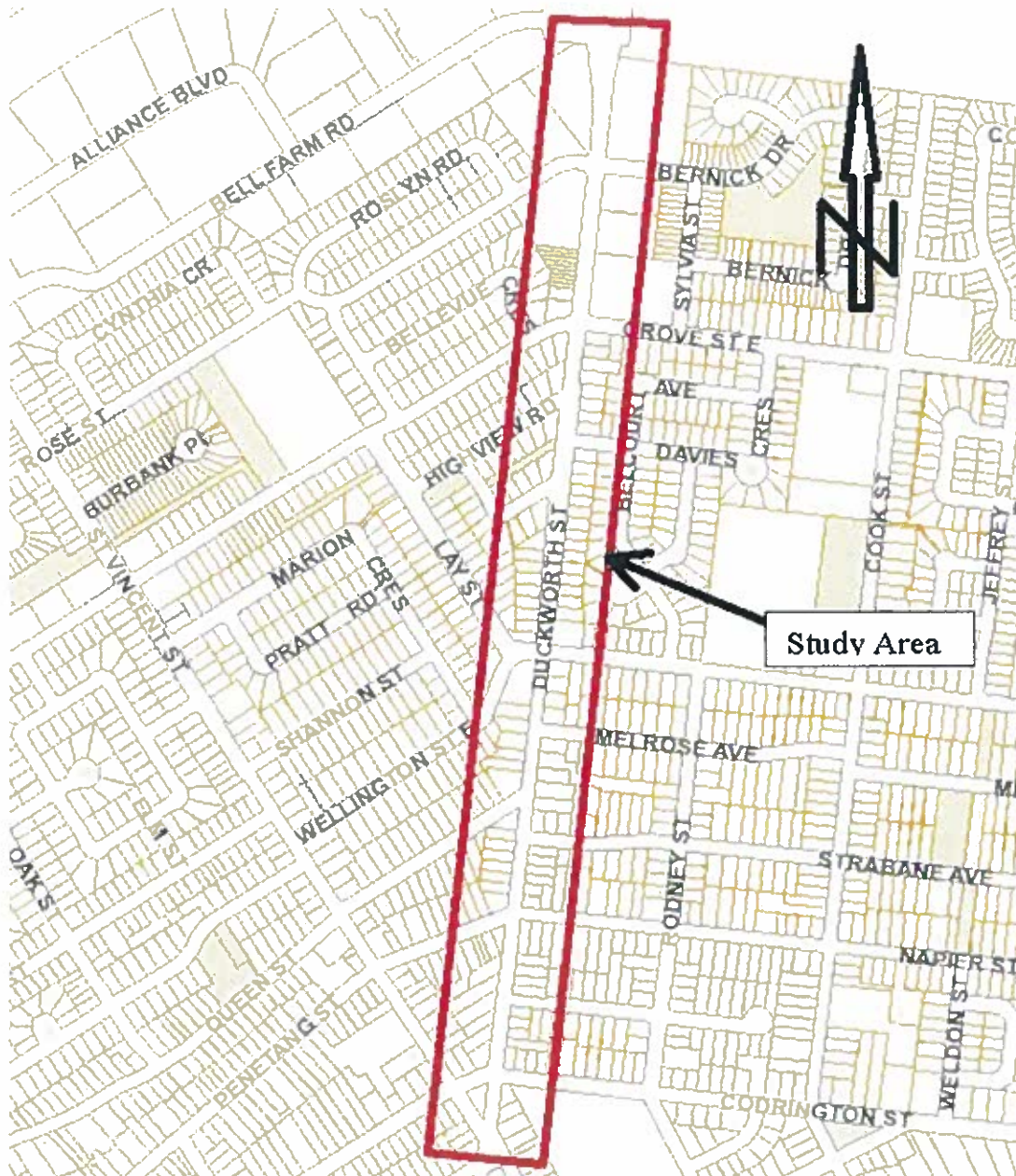
- Responsible Spending
- Well Planned Transportation

30. The preferred alternative solution from Phase 1 & 2 of the Class EA process completed as part of the MMATMP endorsed by Council, recommended transportation improvements including bike lanes and sidewalk improvements on Duckworth between Bell Farm Road and St Vincent Street.

31. This Class EA completes Phase 3 & 4 of the process and implementation of the Preferred Design Alternative, provides necessary linkages within the City's transportation system, and specifically for this area which is planned as an intensification corridor. The Preferred Design Alternative will also provide key elements for Active Transportation such as bicycle lanes and sidewalks in consideration of Georgian College and the Royal Victoria Hospital. This linkage is also critical in planning for, and accommodating future growth in the City of Barrie.

Appendix A

Study Area



Appendix B

Duckworth Street - Bell Farm Road to St Vincent Street Class EA - Phases 3 and 4 - Preferred Design Alternative Summary

Preferred Design Alternative	Number of Through Lanes	Lane Width (meters)	Continuous Two Way Left Turning Lane	Boulevard Width (meters)	Bicycle Lane Width (meters)	Buffered Bicycle Lane Width (meters)	Sidewalk Width (meters)	Median at Intersection	Pavement Width (meters)	Additional ROW Required Width (meters)
Segment 1 (St Vincent Street to Wellington Street)	2	3.5	na	2.0	1.5 - Both sides	na	1.5 - Both sides	na	10.0	Daylighting at Intersections
Segment 2 (Wellington Street to Davies Crescent)	2	3.3	3.8	East side - variable West side - 2.0 from Wellington Street to Howard Crescent and 1.5 from Howard Crescent to Highview Street.	n/a	1.5 with 0.5 Buffer - Both sides	2.0 Both sides	n/a	14.4	2 for taper on east side between Melrose Street and Wellington Street plus Daylighting at Intersections
Segment 3 (Davies Street to Bell Farm Road)	4	3.3	4.2	1.0	n/a	1.5 with 0.5 Buffer - Both sides	2.0	Grove Street, Rose/Bemick and Bell Farm Road	21.4	2.1 to 4.2 plus Daylighting at Intersections

Appendix C

Preferred Design Alternative Segment Cross Sections

