



City of
Peterborough

To: Members of the Committee of the Whole

From: W. H. Jackson, Director of Utility Services

Meeting Date: August 31, 2015

Subject: Report USEC15-020
Brealey Drive Reconstruction Design
Lansdowne Street to Sherbrooke Street

Purpose

A report to update Council on the concept design for the reconstruction of Brealey Drive from Lansdowne Street West to Sherbrooke Street.

Recommendations

That Council approve the recommendations outlined in Report USEC15-020 dated August 31, 2015, of the Director of Utility Services, as follows:

- a) That the design concept for Brealey Drive from Lansdowne Street West to Sherbrooke Street as described in Report USEC15-020 be adopted as the basis for detailed design; and
- b) That staff be directed to consider closing Brealey Drive to through traffic and detour traffic during the reconstruction works.

Budget and Financial Implications

There are no budget and financial implications associated with receiving this report. The 2015 Capital Budget (Reference 5-2.05) includes monies for the detailed design, and some monies for property acquisition and utility relocation for the reconstruction of Brealey Drive from Lansdowne Street to Sherbrooke Street.

The current budget cost estimate for the project as recommended in this report is \$7,000,000 which will be included in future capital budget submissions.

Background

Brealey Drive between Lansdowne Street and Sherbrooke Street has been identified for reconstruction and operational improvements in the 2015 approved budget and was identified for reconstruction in the current Development Charges By-law. The pavement is in poor condition, and the corridor lacks sidewalks, cycling facilities, urban drainage systems, and turning lanes at major intersections.

Traffic counts undertaken in the fall of 2014 show that Brealey Drive carries between 9,200 and 10,800 vehicles per day within the study area, with the heavier volumes recorded in the section between Lansdowne Street and Cherryhill Road. This is comparable to the volumes using Brealey Drive to the south of Lansdowne Street, which is currently under reconstruction. Since 2010, traffic on this section of Brealey Drive has been increasing by about 1.5% - 2.4% per year, as the subdivisions in the west end continue to build out. The majority of traffic delays currently being experienced in the corridor are related to the two all-way stop intersections at Cherryhill Road and Hewitt Drive.

Both the City's 2012 and 2002 Comprehensive Transportation Plans concluded that from a capacity view point Brealey Drive between Lansdowne Street West and Sherbrooke Street is currently functioning, and will continue to function, at acceptable levels of service into the foreseeable future. Accordingly, for the upcoming works Brealey Drive from Lansdowne Street West to Sherbrooke Street will be reconstructed as a 2-lane urban arterial street with intersection improvements designed to optimize the existing capacity of the two lane roadway to support future growth.

Inasmuch as the subject section of Brealey Drive will be reconstructed "...for the same purpose, use, capacity and at the same location..." from an Environmental Assessment (EA) perspective, this project is pre-approved. In other words, there is no need to undertake an EA for the reconstruction of this road.

The 2012 Comprehensive Transportation Master Plan and more recent traffic investigations and studies carried out as part of The Parkway Corridor EA indicate that a reconstructed Brealey Drive will function adequately as a two-lane arterial into the foreseeable future provided The Parkway corridor is developed as recommended and approved by Council. If The Parkway corridor is not developed as recommended, further investigations would be needed to confirm if Brealey Drive should be reconstructed (widened) to provide increased capacity. This would trigger the need to initiate an EA study to assess the widening needs and design.

Public Consultation

The design concepts were presented at a Public Open House, held June 24, 2015 at the Wellness Centre. The Open House was attended by approximately 40 people (36 signed in). Information was also made available on the City website and advertised in both local newspapers. The following table provides a summary of the main comments received with respect to the project and provides a response from staff.

Comments Expressed	Staff Response
Continuity of cycling facilities with Brealey Drive to south.	On-street bicycle lanes were recommended as part of the 2012 Transportation Plan and will tie into on-street bicycle lanes on Lansdowne Street West and the future Sherbrooke Street reconstruction project. These on-street lanes will transition to the off-road cycling track that is being constructed as part of the current Brealey Drive reconstruction, south of Lansdowne Street.
Concern about number of traffic signals.	The proposed design would introduce three new traffic signals and eliminate two all-way stop controlled intersections. Elimination of the all-way stop intersections will optimize the capacity of the existing 2 lane Brealey Drive, avoiding the need for expensive widening as volumes continue to grow. Replacing the all-way stop with a traffic light will reduce overall intersection delays and lower overall vehicle emissions and noise due to stop and start traffic flows, particularly when there is no side street demand. The signals are spaced to provide protected pedestrian crossings at key intersections to link residential neighbourhoods on the east side of the road to the multi-use trail serving the schools on the west side of Brealey Drive.
Replace traffic lights with roundabouts or keep all way stops to calm traffic	Constructing roundabouts requires significantly more property than constructing a normal signalized intersection. At Cherryhill Road, Kawartha Heights Boulevard and Hewitt Drive there are developed properties on most of the corners of these intersections, limiting the available space to construct a proper roundabout that can safely accommodate trucks and buses, which use Brealey Drive regularly. While pedestrian crossings can be designed to work safely with roundabouts, care must be taken when installing them near school areas with young children

	<p>as the roundabout does not provide the right-of-way to pedestrians like a traffic signal does. In our experience pedestrians crossing with a traffic light receive better compliance from drivers than pedestrians crossing at a stop sign or an uncontrolled intersection.</p> <p>While all vehicles are required to stop at an all-way stop, this does not necessarily ensure that speeds will be lower downstream of the intersection. Research has shown that many motorists will increase their mid-block speed to make up lost time due to stopping “unnecessarily” at an all-way stop.</p>
Concern regarding loss of trees / impact of trees on private property.	<p>During detailed design surveys of the existing trees will be completed and efforts will be made to retain trees that do not conflict with the proposed improvements. Where tree removals are necessary within the right-of-way new trees will be replanted. Where tree removals are required on private property, further consultation will be undertaken with property owners to develop a restoration plan for the property including replanting of new trees.</p>
Continue multi-use trail on the west side of Brealey Drive between Cherryhill Road and Lansdowne Street	<p>This may be able to be accommodated using a narrower trail width of 2.0 m instead of the standard 3.0 width subject to available property and grading constraints. This will be reviewed in more detail as the design progresses and will be included if feasible.</p>

Of the comments expressed at the public house and those received, the vast majority were in favour of the recommended concept plan to upgrade Brealey Drive as described in this report.

Recommended Design Concept

Brealey Drive between Lansdowne Street West and Sherbrooke Street is proposed to be reconstructed as a 2-lane urban arterial road with buffered on-street bicycle lanes, a 2.0 - 3.0 m wide multi-use trail on the west side of the road and a pedestrian sidewalk on the east side of the road. The on-street bicycle lanes were recommended as part of the 2012 Transportation Plan and will tie into the recently constructed on-street bicycle lanes on Lansdowne Street West and the on-street bike lanes proposed as part of the future Sherbrooke Street reconstruction project. When Lansdowne Street West was widened provisions were made during the construction for on-street bicycle lanes on Brealey Drive through the intersection. These on street lanes will transition to the off-

road cycling track that is being constructed as part of the current Brealey Drive reconstruction, south of Lansdowne Street.

The pedestrian sidewalks will complete missing, priority 2 and 3, sidewalk segments as recommended under the Sidewalk Strategic Plan, and will provide sidewalks on both sides of this busy arterial road in accordance with the current sidewalk policy. A new multi-use trail is proposed along the west side of Brealey Drive to provide walking and cycling access from the adjacent subdivisions to the Mapleridge Centre and to James Strath Public and Crestwood Secondary schools, located on the west side of Brealey Drive at Sherbrooke Street.

The reconstruction will include concrete curbs and gutters, as well as stormwater collection and treatment systems to address aging and deteriorating road infrastructure as well as poor drainage conditions. It is anticipated that sanitary sewers will be provided as part of the reconstruction where appropriate and possible to allow for future servicing of properties that currently do not have sanitary services along portions of Brealey Drive. The costs to connect to the future sanitary sewers will be the responsibility of property owners who desire to connect.

The intersection work at Cherryhill Road will include new traffic signals with dedicated left turn lanes on all four legs of the intersection. This intersection meets the minimum traffic volume warrants for signalization and converting the current all-way stop at this intersection will improve pedestrian safety for crossing Brealey Drive, reduce vehicle delays along Brealey Drive, reduce vehicle emissions and noise, and optimize the through capacity along Brealey Drive so that the corridor can accommodate future growth.

A northbound left turn lane will be provided at Mapleridge Drive and the widening will continue north to connect to the proposed turn lanes at Kawartha Heights Boulevard due to the close spacing of these intersections. The wider pavement surface between the left turn lanes will provide a refuge for motorists to improve the safety as they turn to and from driveways.

New left turn lanes and traffic signals will also be provided on Brealey Drive at the intersection of Kawartha Heights Boulevard to improve the safety at this intersection, facilitate traffic turning in and out of the Mapleridge Seniors Centre, and to provide a protected pedestrian crossing opportunity for residents to access the trail along the west side of the road. This should facilitate a safer walking and cycling environment for kids wishing to walk or bicycle to school which in turn, may reduce the congestion at the James Strath Public School entrance during school pick up and drop off times.

At the intersection of Hewitt Drive, the existing all-way stop will also be replaced with traffic signals, which will be actuated by side road traffic or pedestrian crossing demand. This should dramatically reduce current delays that occur at this intersection during peak periods, while providing a better and safer pedestrian crossing operation for school children accessing James Strath Public School.

Construction limits for the reconstruction of Brealey Drive will be from just north of Lansdowne Street West to south of Sherbrooke Street. Future upgrades to the Brealey Drive / Sherbrooke Street intersection were approved as part of the Sherbrooke Street Class EA, and will be completed as part of the Sherbrooke Street reconstruction. In the 2015 approved capital budget the Sherbrooke Street work was scheduled for 2018.

Appendix A provides a sketch of the proposed design concept for the subject section of Brealey Drive.

Construction Staging Considerations

The reconstruction of this section of Brealey Drive presents some challenges from a construction staging perspective. The work would be completed faster and at a lesser cost if Brealey Drive was to be closed (in sections) to facilitate the work. A similar construction staging approach was adopted for the current project on the south portion of Brealey Drive. It is difficult to estimate the cost savings with any degree of certainty, but a conservative estimate suggests approximately 20% cost savings may be possible with the road closure approach.

Unlike the project to the south, the adjacent road network is not as well suited for detouring through traffic in this portion of the City. While Kawartha Heights Boulevard is classified as a High Capacity Collector (similar to Spillsbury Drive), accessing this route from Brealey Drive is not as direct as the access to Spillsbury Drive for the project to the south. This less direct detour routing significantly increases the potential for traffic infiltration onto lower class collector roads, such as Denure Drive and Cherryhill Road.

There are many more driveways on Kawartha Heights Boulevard and the detour route would increase auto and truck traffic adjacent to Kawartha Heights Public School and Kawartha Heights Park. With the current schedule for reconstruction to begin in 2017, there is potential that Parkhill Road West (beyond Ravenwood Drive) and this portion of Brealey Drive could be closed at the same time. This would likely result in increased traffic infiltration not only in the adjacent Kawartha Heights neighbourhood, but other neighbourhood collector roads to the north (such as Ravenwood Drive, Glenforest Boulevard, and Woodglade Boulevard) could be expected to see significant increases in through traffic during the construction period. There are no alternate north-south routes through this section of the City.

It is proposed to close Brealey Drive to through traffic during the construction phases to take advantage of reduced costs and shorter construction duration. This will however likely result in more complaints about traffic volumes on the lower class designated streets where the detour will run. A detour signing plan will be developed to direct traffic to the official detour route and will help reduce the occurrence of through traffic using local neighbourhood streets.

Next Steps

The remaining property required to bring the Brealey Drive right-of-way to a consistent 30-meter width as designated in the City's Official Plan will be acquired and detailed design will proceed in anticipation of a 2016-2018 reconstruction schedule, pending budget approval.

Summary

Brealey Drive, from Lansdowne Street West to south of Sherbrooke Street, is to be reconstructed as an urban, 2-lane, arterial. This reconstruction meets the EA requirements of a pre-approved Schedule A+ project.

Submitted by,

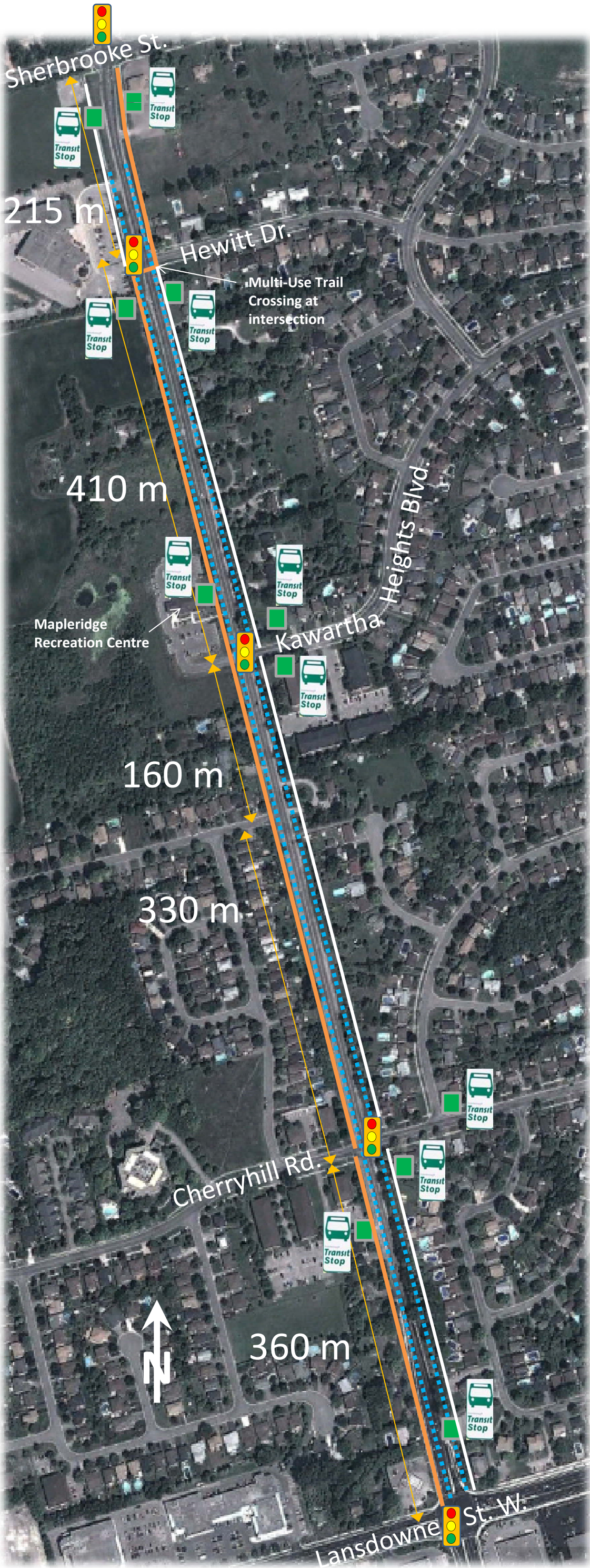
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Attachment:

Appendix A: Brealey Drive – Lansdowne Street West to south of Sherbrooke Street
Proposed Design Concept Sketch

Brealey Drive Reconstruction

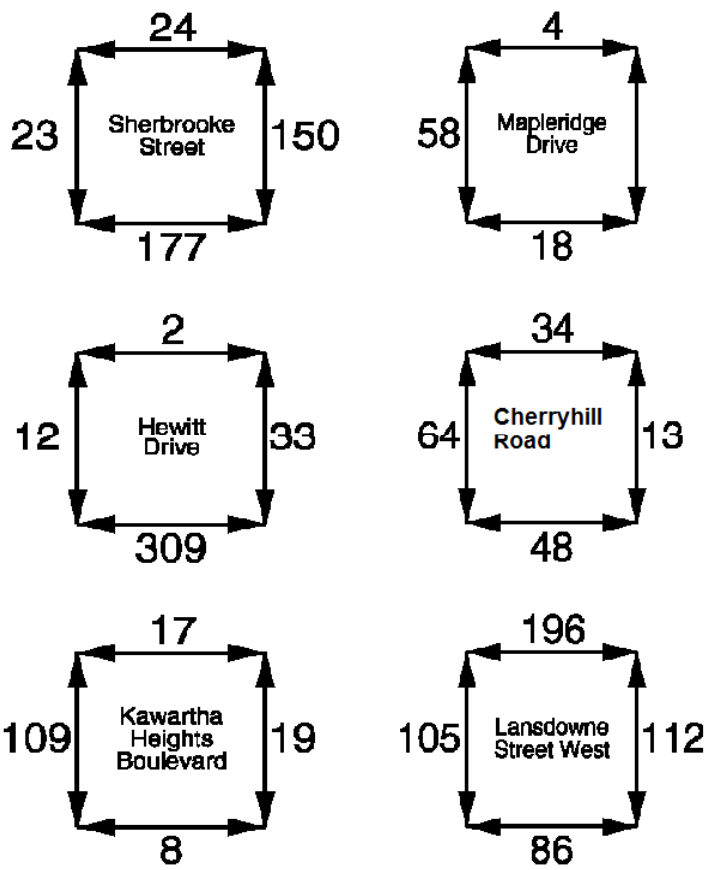



Existing 4-way stop at Cherryhill Road (facing north)





Existing 4-way stop at Hewitt Drive (facing north)


Daily Pedestrian Counts (2014 / 2015)




 Traffic Signals

 Multi-use Asphalt Path (min. 2.0m wide, max. 3.0m wide)

 1.5 m wide Concrete Sidewalk

 On-Street Bicycle Lane

 Transit Stop