



SUBJECT: New Street pilot project review and resurfacing

TO: Committee of the Whole

FROM: Transportation Services

Report Number: TS-11-17

Wards Affected: 2, 4, 5

File Numbers: 830-06

Date to Committee: November 27, 2017

Date to Council: December 11, 2017

Recommendation:

Direct the Director of Transportation Services and Executive Director of Capital Works to include cycle tracks on New Street between Guelph Line and Burloak Drive for consideration in the 2019 to 2028 capital budget and forecast and pursue senior level government funding for the implementation costs; and

Direct the Director of Transportation Services to convert the existing bike lane pilot project (New Street from Guelph Line to Walkers Line) to the original four-lane cross section; and

Direct the Executive Director of Capital Works to carry out the resurfacing and storm sewer replacement from Cumberland Avenue to Walkers Line in 2018 in conjunction with the completion of Contract CW 16-04 New Street and Drury Lane Area – Various Streets Rehabilitation at a total price of \$1,042,000 provided from Capital Order RA0210; and

Approve as a single source, the resurfacing of New Street from Cumberland Avenue to Walkers Line to King Paving & Construction Company as outlined in transportation services department report TS-11-17.

Alignment with Strategic Plan

The development of a multi-modal transportation system is an important objective of the city and contributes to the health, well being, and quality of life for our residents. The need for a connected, multi-modal transportation system has been identified in Burlington's Strategic Plan. This initiative aligns with the following strategic objectives:

A City that Moves

- Increased Transportation Flows and Connectivity

A Healthy and Greener City

- Healthy Lifestyles

Staff recognized that the inclusion of cycling facilities as part of the capital project to resurface New Street clearly aligned with the following key strategic objective:

- **Mobility Choices – more choice within the city and region through improved public transportation, active transportation and intensification that allows more residents to get where they need to go efficiently and with more choice.**

Providing cycling facilities, particularly throughout key transportation corridors, such as New Street, serves to provide more mobility choice to the residents of Burlington, and ensures that all road users, including cyclists, have access to safe facilities.

Purpose:

The purpose of the pilot project was to provide an opportunity to evaluate the impacts and benefits of on-road cycling infrastructure on New Street between Guelph Line and Walkers Line. While the pilot was two kilometers in length and not ideally integrated into a larger east-west cycling facility, it did provide an opportunity to examine the impacts on cycling volumes, vehicular delay, diversion and safety. The overall objectives of the pilot project were to reduce risk for all road users by providing a dedicated space for cyclists, as well as encouraging more people to travel by bicycle.

The outcomes of the pilot project will be used to help inform the development of future cycling projects and the Cycling Master Plan Update which is currently underway.

Background:

On July 18, 2016, City Council approved transportation services department report TS-10-16 (Cycling Alternatives for New Street - Guelph Line to Burloak Drive) with the following direction:

- Direct the Executive Director of Capital Works and Director of Transportation Services to report back on the performance of the pilot project prior to the top layer of asphalt being placed on the section of New Street between Guelph Line and Cumberland Avenue;

Following Council approval, staff converted New Street (between Guelph Line and Walkers Line) from a four-lane cross section to a three-lane cross section consisting of two through lanes and a centre two-way left-turn lane. The revised three-lane cross section included buffered on-road bike lanes. The pilot officially “launched” on August 23rd, 2016.

Considerable before and after data was collected throughout the duration of the pilot project in order to evaluate the performance of the on-road bike lanes and resulting impacts to vehicle travel times on New Street as well as impacts to parallel routes. Staff are also in receipt of extensive public feedback which helped shape public opinion of the pilot project and inform the recommendation.

Discussion:

A. Existing Transportation Conditions

The following provides a general overview of geometric and traffic conditions throughout the study corridor:

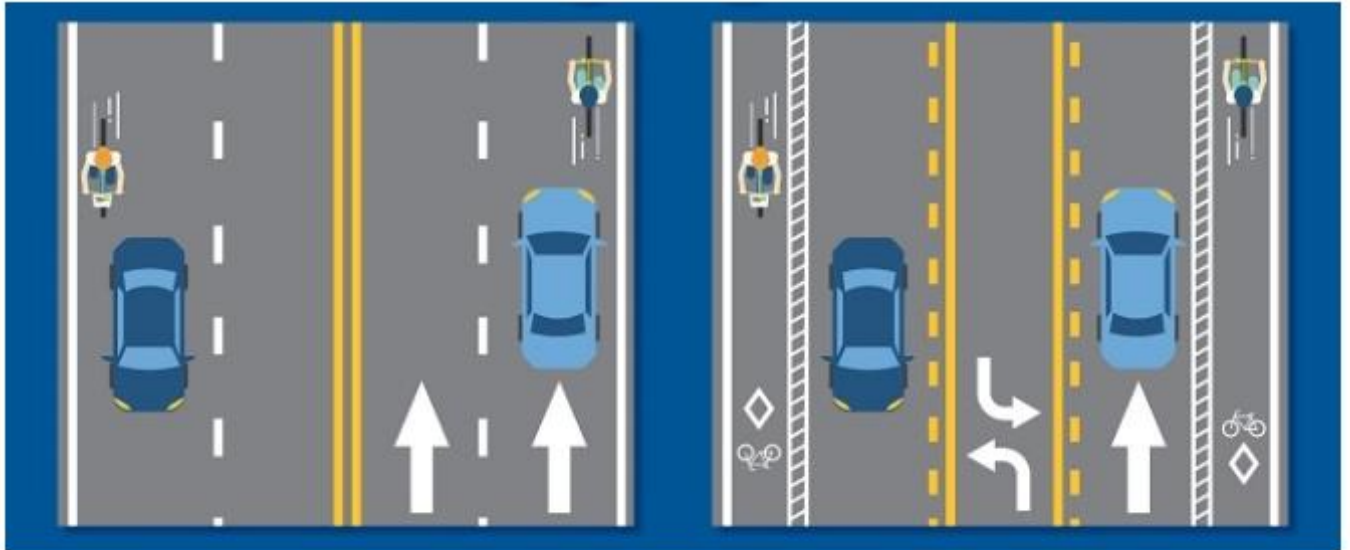
- New Street is a minor east-west arterial that runs parallel to the QEW and Fairview Street, providing key connections to the major north-south arterial road system.
- New Street accommodates both residential and commuter traffic and provides access to adjacent residential, commercial and institutional developments as well as the surrounding established neighbourhoods.
- Current 24-hour traffic volumes along New Street range between 15,000 and 20,000 vehicles per day. Prior to installation of on-road bike lanes, an average of 60 cyclists per day used New Street.
- Prior to the pilot project, this section of New Street consisted of a four-lane cross-section (two travel lanes per direction) within an overall roadway width of 14.0 metres.
- The posted maximum speed limit throughout the corridor is 60 km/h exclusive of school zones.

B. Pilot Project Design

- Reallocation of the existing roadway through the removal of two through vehicle lanes and introduction of a centre two-way left-turn lane. The preferred design achieved dedicated cycling facilities and reprioritized the function of the street in order to better accommodate both vehicular and cyclist traffic.

- Throughout the pilot project, the cross section consisted of one travel lane per direction, a two-way left turn lane, and buffered bike lanes on each side of the road.

Figure 1: Lane configuration prior to the bike lane installation (left graphic) and lane configuration during the pilot project (right graphic)



C. Evaluation

Performance evaluation of the pilot project involved data collection in order to assess the impacts and benefits of the project in the following areas:

1. Cycling environment, cycling counts, user experience and opinion on safety and comfort
2. Motoring environment:
 - 2.1. Traffic Diversion
 - 2.2. Travel Times
 - 2.3. Collision Analysis
3. Community Feedback
4. Other Considerations

1. Cycling Environment, Cycling Counts, User Experience and Opinion on Safety and Comfort

New Street has been identified as a key commuter cycling corridor given its continuous length, topography, and proximity to GO Stations. Under the previous lane configuration, New Street averaged 60 cyclists a day (June, 2016). Installation of the pilot has increased cycling use to an average of 80 cyclists per day. Cycling volume

data was obtained from a traffic camera situated at the intersection of New Street and Cumberland Avenue.

Based on feedback received from bike lane users, the pilot project has increased levels of comfort, safety and enjoyment of this mode of travel. Users also noted that extending the buffered bike lanes to Burloak Drive and connect to cycling infrastructure in Oakville should be pursued.

2. Motoring Environment

2.1. Traffic Diversion

Vehicle volumes were collected using automatic traffic recorders used to measure the volume, direction of traffic flow, traffic speed and vehicle classification.

Recognizing that a reduction in lane capacity on New Street had potential to result in diversion, traffic data was collected to substantiate the impact of the pilot project to nearby neighbourhood streets. Traffic volume data is summarized in Table 1.

Table 1: Daily Vehicle Volumes on Parallel Streets to New Street

Location	Daily Traffic Before Pilot Project	Daily Traffic June 2017	% Change
Woodward Avenue	1,949 vpd	2,266 vpd	+16%
Rexway Drive	2,682 vpd	2,474 vpd	-8%
Spruce Avenue (west of Myers Lane)	1,841 vpd	2,002 vpd	+9%
Spruce Avenue (east of Starview Road)	2,090 vpd	1,845 vpd	-12%

The most notable change in traffic volumes (net increase) was recorded along Woodward Avenue where the daily traffic volumes rose by 16% and while the volume is within acceptable limits of the roadways classification it is an increase nonetheless. The pilot project resulted in negligible impacts to the other surrounding roadways.

2.2. Travel Times

Vehicle travel times were recorded before and during the pilot project in order to quantify the increase in travel times as a result of reducing lane capacity and introduction of on-road bike lanes. Bluetooth technology was utilized as a means to collect a large data sample of vehicles (30,000 vehicle sample) traveling through a predetermined section of the corridor.

Vehicle travel times were recorded before and during the installation of the pilot project and excluded the period during which watermain and other sewer work was actively under way and disruptive to traffic flow. Average vehicle travel times during the afternoon peak hour, which is the most critical time period of the day, are summarized in Table 2 below.

Table 2: Comparison of Vehicle Travel Times

Direction	Time	Travel Time (Before)	Travel Time (After)	
Westbound (Walkers Line to Guelph Line)	PM Peak (4 to 6pm)	2 min. 27 seconds	4 mins	+ 1 min. 33 sec.
	Weekday (7am to 6pm)	2 min. 14 seconds	2 min. 30 seconds	+ 16 sec.
Eastbound (Guelph Line to Walkers Line)	PM Peak (4 to 6pm)	2 min. 10 seconds	2 min. 13 seconds	+ 4 sec.
	Weekday (7am to 6pm)	2 min. 12 seconds	2 min. 13 seconds	+ 1 sec.

Data collected under stabilized conditions (post watermain work) indicates that the travel times have increased on average by approximately one and a half minutes during the evening peak hour in the westbound direction.

2.3. Collision Analysis

Collision experience was also examined as part of the evaluation of the pilot project. Before and after analysis appears to indicate a downward trend, however, with less than one year of collision data available under unimpeded road pilot conditions, staff are not comfortable drawing conclusions as it relates to the overall safety of New Street.

3. Community Feedback

Staff received over 1100 comments and suggestions via e-mail, telephone, social media and in person. Feedback predominantly showed a lack of support for the on-street bike lane installation. Increase to travel time, increased traffic congestion and lack of use by cyclists were recurring themes in opposition to the pilot project.

Positive feedback cited sense of improved traffic and safety conditions for those residents who reside on New Street. Cyclists who utilized the on-road bike lanes noted that they experienced greater comfort and convenience and felt they promoted safer cycling.

The general themes pertaining to feedback received are summarized in Tables 3 and 4.

Table 3: Feedback Themes – Opposition of the Pilot Project

Availability of multi-use trails
Bicycle lanes used by few/no cyclists
Congestion worsened on New St.
Lane reduction benefits minority of cyclists over majority of drivers
Waste of taxpayer money
Sidewalks are used by cyclists, not Roads
Winter conditions will reduce bicycle lane use
Space to add paved bike lane adjacent to sidewalk
Increased time & difficulty when exiting side streets onto New St.
New St. is an Important Arterial Road

Table 4: Feedback Themes – Support for the Pilot Project

Centre turn lanes make turning in and out easier, New St residents no longer need wait behind other drivers
Traffic calming effect
Bicycle Safety Improvement
Cycling Made More Enjoyable (added comfort & convenience)
Traffic Impact Minimal
Noise Reduction Along New St.
Fewer Lanes Easier for Pedestrians to Cross
Hope Lanes become part of City Fully-Integrated Cycling Network
Promotes Safe Cycling
Reduced dangerous lane changes

4. Other Considerations

Cycling Master Plan Update

The 2009 Council approved Cycling Master Plan is currently being updated to determine the next critical steps in the evolution of the city’s cycling infrastructure. The focus of this study, which is being undertaken by Alta Planning and Design and led by Transportation Services staff, is to provide guidance and expert opinion on facility types and locations and to recommend a minimum network for cycling in the City of Burlington.

Within the scope of this study, New Street was examined to confirm its suitability as an east-west cycling spine and evaluate the most appropriate type of cycling for the corridor. The existing buffered on road bike lanes were not identified to be problematic

and are an appropriate facility type, however, based on a preliminary review, a continuous higher order cycling facility on New Street would provide an important east-west connection for the City and is more likely to generate new cyclists to the corridor.

Transit Network

In recent months, Transit, Planning and Transportation staff have been working together towards developing a frequent transit network for the City of Burlington. The lane configuration on New Street will play a prominent role in providing the necessary road infrastructure to accommodate high frequency transit service. From a transit perspective, a four-lane cross section best serves the needs of passengers when being dropped off at the curb without blocking bicycle traffic and having to merge back into traffic flow.

Summary

While cycling numbers have increased by 20 per day along the New Street corridor, it is not apparent that it can be attributed solely to the on-road bike lanes. Vehicle travel times have risen somewhat and traffic diversion to parallel routes has also increased. Before and after collision data does not provide any conclusive evidence of any safety improvement at this time. Future frequent transit service along New Street is better served by a four-lane cross section.

An increase in cycling volume is not the only measureable considered however, with no clear indication that cycling volumes have increased as a result of the pilot coupled with the negative impacts to travel times, diversion and future transit, staff do not recommend carrying on with the pilot project or extending it to Burloak Drive.

New Street provides an opportunity to create a critical spine for a cycling network in the City of Burlington. The length, location and cross section can accommodate a number of alternative cycling facility types. The test of any selected facility is its ability to attract more regular everyday “commuter” type users if we are to achieve the goal within our strategic plan of a higher cycling modal share.

After considering which facility best fits our goal to increase the cycling mode share, staff have concluded that dedicated, off road paved cycle tracks provide the greatest advantage.

The cycle track option was presented in transportation services department report TS-10-16 in July 2016 with some preliminary assessment completed to determine cost implications. Recognizing the considerable cost of such a facility, staff recommend pursuing senior government funding which has been available in the past for cycling related infrastructure.

Next Steps – New Street Resurfacing:

Single Source Contract Extension

Contract CW16-04 included for the rehabilitation of New Street from Guelph Line to Cumberland Avenue and the final layer of asphalt was deferred to 2018.

Resurfacing of New Street from Cumberland Avenue to Walkers Line was included in the 2017 Capital Budget and was deferred to provide for full test of the New Street pilot project. With Council approval of this report the lane configuration for New Street will be confirmed and the resurfacing of New Street from Guelph Line to Walkers Line can be completed. To complete this work staff are proposing a single source contract extension to Contract CW16-04.

Contract CW 16-04 being constructed by King Paving & Construction Company includes contract obligations and warranties for works between Guelph Line and Cumberland Avenue. To maintain these obligations, staff have extended the unit prices from Contract CW16-04 (2016 tendered unit prices) to complete the resurfacing from Cumberland Avenue to Walkers Line as an extension to this contract. Single sourcing this work to King will maintain our contractual obligations with respect to warranties on works completed to date. As well, there are savings on mobilization, traffic control and tendering cost.

Finally, this will ensure we do not have overlapping constructor issues. The additional single source cost to complete the resurfacing is estimated to be \$505,000. The total cost including, inspection, testing, net HST and contingency is \$650,000.

Storm Sewer Repairs

During completion of the asphalt rehabilitation on New Street, east of Guelph Line a significant storm sewer failure occurred. Upon detailed investigation, it was determined that full replacement of 340 metres storm sewer and 3 maintenance holes was warranted. To ensure motorist safety and have the work completed as soon as possible to allow the road lanes impacted to be reopened; King completed much of this work in 2017, with a small section of sewer work still to be completed. This work has been agreed to as an extra to Contract CW16-04. The unit prices provided by King to complete this work was reviewed against expected unit rates from previous similarly tendered works. The additional cost to complete the storm sewer replacement is estimated to be \$335,000. The total cost including, inspection, testing, HST and contingency is \$392,000.

Financial Matters:

The 2017 Capital Budget included \$1,630,000 in funding for the resurfacing of New Street from Cumberland Avenue to Walkers Line. Staff are recommending that the costs identified above in the amount of \$1,042,000 be funded from Capital Order RA0210.

The proposed 2018 Capital Budget and Forecast includes resurfacing New Street from Walkers Line to Burloak Drive in the year 2020 for \$5,050,000. The proposed budget and forecast does not include cycle tracks on New Street. Report TS-10-16 provided an estimated cost for these facilities of \$4,950,000.

Connections:

The recommendations contained in this report align with both Burlington's Strategic Plan 2015 – 2040 and the forthcoming Transportation Plan.

Public Engagement Matters:

As part of this pilot project, City staff created a project website (www.burlington.ca/newstreetpilot) where all the information was posted and where residents were able to provide their input.

Based on the emails, letters, social media posts and telephone conversations, staff produced a summary of comments received in favour and opposition of the pilot project. This summary can be found in Table 3 and 4 located in 'Community Feedback' section of this report. As part of public engagement, staff also received a petition that contained over 2,700 signatures of Burlington residents who are in opposition to the pilot project.

Conclusion:

The evaluation and subsequent analysis indicates that desired increase in cycling activity has not materialized based on the data collected before and after the pilot project. It is difficult to confidently attribute the increase in bicycle volume of 20 per day solely on the buffered bike lanes. However, there is also a recognition that the cycling volume may have been negatively impacted by the limited length and lack of connectivity to a larger east-west cycling network.

Travel time, during the evening peak hour has increased and while not excessive, does add time to motorists evening commute. There has been some nominal traffic diversion to Spruce and Woodward Avenues and while considered to be within the volume

threshold of both roadways classification, it is not the function of a collector roadway to facilitate what is essentially “through” volume.

New Street is expected to play an important role in supporting a frequent transit network that is currently being evaluated. The preferred lane configuration for higher frequency transit operation on New Street is a four-lane cross section.

Cycle tracks, provide the greatest level of protection and encourages more people to use cycling as a commuting mode of transportation. Increasing the cycling mode share is aligned with the goals and objectives of the Strategic Plan and upcoming Transportation Plan.

The implementation of cycle tracks on New Street presents funding challenges, however, senior levels of government are continuing to invest in cycling infrastructure and New Street is an ideal candidate for consideration. Staff will consider for inclusion, the implementation of cycle tracks in the capital budget and forecast in future years and will continue to pursue funding opportunities from both the provincial and federal governments.

Respectfully submitted,

Vito Tolone

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Notifications:

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Report Approval:

All reports are reviewed and/or approved by Department Director, Director of Finance and Director of Legal. Final approval is by the City Manager.