MEDIA RELEASE: Friday, February 1, 2013, 4:30 p.m.

REGIONAL MUNICIPALITY OF WATERLOO
PUBLIC MEETING OF THE
PLANNING AND WORKS COMMITTEE
AGENDA

Wednesday, February 6, 2013
6:00 p.m.
Council Chamber
2nd Floor, Regional Administration Building
150 Frederick Street, Kitchener, Ontario

1. DECLARATIONS OF PECUNIARY INTEREST UNDER THE MUNICIPAL CONFLICT OF INTEREST ACT

2. REPORT – PLANNING, HOUSING AND COMMUNITY SERVICES - COMMUNITY PLANNING

   a) Report E-13-010, Victoria Street Improvements from Edna Street to Bruce Street, City of Kitchener – Public Input Meeting for the Preferred Design Concept

   STAFF PRESENTATION

3. DELEGATIONS

   a) Ian Rutledge and Harry Froussios, Zelinka Priamo Ltd., Representing LCBO

4. ADJOURN
TO: Chair Jim Wideman and Members of the Planning and Works Committee

DATE: January 29, 2013

FILE CODE: T04-20, 5110

SUBJECT: VICTORIA STREET IMPROVEMENTS FROM EDNA STREET TO BRUCE STREET, CITY OF KITCHENER – PUBLIC INPUT MEETING FOR THE PREFERRED DESIGN CONCEPT

RECOMMENDATION:

For information in advance of the Public Input Meeting for the Victoria Street (Edna Street to Bruce Street) Class Environmental Assessment Study to be held on Wednesday, February 6 at 6:00 p.m. in the Regional Council Chamber at 150 Frederick Street, Kitchener, Ontario.

SUMMARY:

The Region of Waterloo is undertaking a Class Environmental Assessment study to develop an operational and safety improvement strategy for the Victoria Street corridor between Edna Street and Bruce Street, in the City of Kitchener. The study limits are indicated on the Key Plan in Appendix “A”. The study is being guided by a Project Team consisting of staff from the Region of Waterloo and City of Kitchener Councillors Daniel Glenn-Graham and Scott Davey, along with input from the Ontario Ministry of Transportation (MTO).

The Victoria Street (Edna Street to Bruce Street) Class Environmental Assessment was initiated in 2010 to address the need for improvements to reduce mid-block collisions largely associated with congestion and turning movements at commercial driveway locations. Two workshops were held with business and property owners located within the study area to gather feedback, discuss the nature of the problem and develop possible solutions. Those who attended the workshops generally agreed with the need to address the collision problems and participated in developing Alternative Design Concepts for consideration. The Project Team has reviewed and made modifications to the Alternative Design Concepts and evaluated them with particular emphasis on safety benefits, traffic operations, potential impacts on the natural environment and the social/economic environment, and costs.

In August 2012, the Provincial Government announced that the MTO would begin construction on New Highway 7 in 2015. This reversed a previous decision by the MTO (in 2010) to remove the new highway project from their five year plan. The New Highway 7 project will include replacement of the Conestoga Expressway bridge on Victoria Street and changes to the existing on and off ramp configurations. The Project Team has reviewed anticipated impacts of the new highway construction on the Victoria Street corridor and generated a modified Design Concept that will serve as a solution to meet present needs with an opportunity to adapt to future needs when New Highway 7 is open.

Based on the evaluation of Alternative Design Concepts, a thorough review of all public input received, and in consideration of the MTO’s plans for proceeding with New Highway 7 construction, the Project Team has identified Alternative Design Concept 2A – Narrow Centre Concrete Median and Widening for Future Two Way Left Turn Lane - as the Preferred Design Concept. Alternative Design Concept 2A includes: a continuous narrow centre concrete median on Victoria
Street between Edna Street and Bruce Street; widening of Victoria Street from Edna Street to the Conestoga Expressway bridge to accommodate a future two way left turn lane and; infill sidewalk along the south side of Victoria Street between Edna Street and the Conestoga Expressway bridge. Cross sections for the Preferred Design Concept are included in Appendix “B”.

The Preferred Design Concept is to be presented for further public review and comment at a Public Input Meeting (PIM) of Regional Planning and Works Committee on February 6, 2013, in the Regional Council Chamber at 150 Frederick Street, Kitchener at 6:00 pm. Following the PIM, the Project Team will review comments received and report back to Regional Planning and Works Committee with responses and identification of a Recommended Design Concept for approval by Regional Council in early 2013. Subject to approval by Regional Council, the Environmental Assessment Project File will be made available for a 30-day public review and subsequent approval by the Minister of Environment.

The estimated cost for the Project Team’s Preferred Design Concept is $1.4 million with anticipated construction of the improvements scheduled for 2014.

REPORT:

1. Background

The Region of Waterloo is undertaking a Class Environmental Assessment (Class EA) study for the development of an operational and safety improvement strategy primarily to address high mid-block collision rates at commercial driveways along the Victoria Street Corridor between Edna Street and Bruce Street in the City of Kitchener. The study is following Schedule “B” of the Municipal Class EA process (2011). The study limits are indicated on the Key Plan in Appendix “A”. The study is being guided by a Project Team consisting of staff from the Region of Waterloo and City of Kitchener Councillors Daniel Glenn-Graham and Scott Davey, along with input from the Ontario Ministry of Transportation (MTO).

For more than 10 years, the study area along Victoria Street has consistently been included on the Region’s list of worst collision locations. This section of Victoria Street experiences unique collision patterns resulting from congested peak hour operations, extensive intersection queuing, high turning volumes in and out of commercial driveways and tight spacing of commercial driveway locations. A key contributor to existing congestion in this corridor is traffic attempting to access the Conestoga Expressway ramps on Edna Street and Bruce Street. During peak times, the queuing at the ramp locations often reaches Victoria Street which, in turn, results in queuing on Victoria Street at the Edna Street and Bruce Street intersections.

The Region periodically reviews and optimizes traffic signal timing within the corridor; however, this has not been successful in resolving all the operational and safety concerns, primarily due to operational constraints on the system. Additional improvements are required within the study area to address current operational issues and safety concerns.

The existing pavement structure in the study area requires rehabilitation and existing traffic signal infrastructure needs to be replaced at the Edna Street and Bruce Street intersections due to age and condition. These improvements will need to be incorporated in the final Design Concept.

1.1 New Highway 7

One of the challenges encountered with this Victoria Street Class EA study has been the uncertain timing of New Highway 7. When the Ministry of Transportation (MTO) constructs New Highway 7 between Kitchener and Guelph it will attract most of the commuters that are presently using Victoria Street as a route between the two cities. It will also significantly change the highway ramp configuration in the vicinity of Victoria Street. Primary access to both the Conestoga Expressway
and the new highway will shift from the Edna Street and Bruce Street ramps to new ramps that will be constructed at Wellington Street and Shirley Avenue. A copy of the preliminary layout plan for New Highway 7 at the Conestoga Expressway is included in Appendix “C”.

Once New Highway 7 is constructed, the change in highway access and reduced traffic volumes will significantly alter traffic operations on Victoria Street between Edna Street and Bruce Street. Therefore, decisions made within the Victoria Street study area are heavily influenced by the proposed configuration and construction timing of the new highway. MTO’s schedule for New Highway 7 construction has changed several times over the last ten years and the uncertainty has prompted the Region to delay the start of the Victoria Street Class EA on several occasions. The mid-block collision rate on Victoria Street between Edna Street and Bruce Street has continued to rise and Regional staff made a decision to formally initiate the Victoria Street Class EA study (at a time when New Highway 7 was not in the MTO’s five year plan) to address the operational and safety concerns in this corridor under the assumption that New Highway 7 would not be constructed in the near future.

In August 2012, the Provincial Government advanced the anticipated timing of New Highway 7 by announcing that it would proceed to construction within three years. Based on this announcement, with a construction duration estimated at approximately 5 years, New Highway 7 could be operational as early as 2020. Rather than placing the Victoria Street EA on hold again, the Project Team decided to focus on selecting a Preferred Design Concept that would accommodate ultimate needs in the corridor once New Highway 7 is open, while still addressing the immediate collision concerns that are present today.

1.2 Collisions

Collision data compiled by Region staff for the section of Victoria Street from Edna Street to Bruce Street identifies 75 actual collisions versus 31 expected collisions in the mid-block for the period of 2007 to 2011. This location is historically prone to collisions and the ranking has been getting worse over time. Victoria Street from Edna Street to Bruce Street ranked as the 11th worst location in the Region’s most recent annual collision report. It is important to note that the Region’s annual collision report compiles intersections and mid-block locations together. Among mid-block locations only, this section of Victoria Street ranked as the 3rd worst location in the Region.

The type of collisions occurring along this section of Victoria Street often result in injuries (1 in 5 collisions between 2007-2011 involved injury) and there was a fatality in this location in 2005. Typically, 75% of the collisions in the study area are either rear-end or sideswipe type collisions. Although other factors can be involved, many of these collisions within the study area occur when a vehicle is waiting in the through lane to turn left into a driveway and the driver behind either does not stop in time (rear-end) or makes a last second decision to change lanes (sideswipe).

1.3 Speed Survey

A speed survey at a mid-block location within the study area was undertaken by Region staff for a 24 hour period on June 5th and 6th, 2012. The posted speed in the corridor is 60 km/hr. The survey data indicates that the average speed is 54 km/hr and the 85th percentile speed is 66 km/hr (ie. 85% of all vehicles travel at less than 66 km/hr). The 85th percentile speed is quite low and the small spread between the average speed and 85th percentile speed suggests that speeds are fairly consistent most of the time. Approximately 65% of vehicles travel under the speed limit, likely due to the congestion in this area during peak times.

Collision data indicates that 96% of collisions take place between 9:00am and 7:00pm when the average speed is 53 km/hr. More than half of collisions (54%) take place in the three hour afternoon peak from 3:00pm to 6:00pm when the average speed is 52 km/hr.
Based on the results of the speed survey study and comparative collision review, the vast majority of collisions are taking place during periods of congestion when speeds are low. This data, combined with the type of collisions reported (rear-end, sideswipe and turning) suggests that the accidents are more directly related to the turning movements taking place, rather than to high speeds.

1.4 Operational Issues

The Victoria Street intersections at Edna Street and Bruce Street are congested during peak times. The westbound left turn movement at Edna Street and the eastbound right turn movement at Bruce Street are particularly heavy as many vehicles are destined for the Conestoga Expressway on-ramps located on Edna Street and Bruce Street. During peak periods these Expressway on-ramp intersections experience traffic queuing that extends to Victoria Street.

During peak times, the traffic queuing from the Expressway on-ramps has a major impact on the traffic operations on Victoria Street between Edna Street and Bruce Street. At these peak times, left turns from Victoria Street to Edna Street are delayed during the traffic signal green time and the resulting left turn queue on Victoria Street extends as far back as the Expressway bridge. The left-turn queuing on Victoria Street at Edna Street encroaches into the Victoria Street west bound through lanes forcing through traffic to a single curb lane which in-turn experiences significant queuing. East bound drivers on Victoria Street looking to turn left into the north side commercial driveways along this section of Victoria Street have a difficult time finding a gap in the west bound traffic (left turn and through traffic queuing) and block the inside eastbound lane while waiting, thereby forcing east bound drivers to a single curb lane.

Similarly, during peak times, right turns from Victoria Street to Bruce Street are delayed by queuing at the Bruce Street Expressway ramp and the resulting right turn queue on Victoria Street extends as far back as the Expressway bridge. The right turn queuing on Victoria Street at Bruce Street forces east bound through traffic to the inside lane which in-turn experiences significant queuing.

The congestion during peak traffic times described above results in drivers weaving from lane to lane and stopping suddenly which frequently leads to collisions. At these times, operations at the commercial entrances also suffer from this congestion as it makes left turns in or out difficult and queues form in the driveways. Frustrated drivers trying to make left turns often start moving across one lane at a time in an attempt to ‘force’ gaps in traffic which can also result in collisions.

1.5 Cycling, Pedestrian and Transit Needs

The section of Victoria Street between Edna Street and the Conestoga Expressway bridge has been previously identified as a corridor requiring infill sidewalk on the south side of the road. This recommendation is also included in the current draft of the Region’s Active Transportation Master Plan (ATMP). There is currently a narrow paved maintenance strip behind the curb along this section of Victoria Street that is often mistaken for a sidewalk. Although pedestrian activity is currently fairly low along this corridor, the sidewalk connection is required on the south side to help complete the walking network in the area and provide a more comfortable pedestrian environment.

The Regional Cycling Master Plan and the current draft of the ATMP both identify alternate cycling routes in the area that route cyclists around this portion of the Victoria Street corridor. Therefore, no short or long term cycling needs have been identified within the project limits.

There are no current transit routes along this section of Victoria Street; however, the Region’s Official Plan identifies Victoria Street as a future transit priority corridor. Transportation Planning has indicated that the approximate time frame for adding a transit route through this section is 2016/2017. Provisions for future transit facilities will be considered as part of the detailed design process.
2. Public Consultation

2.1 Business and Property Owners Workshops

Two workshops were held with business and property owners adjacent to the road allowance within the project limits. For the first workshop, letters were mailed out and hand delivered to business and property owners on Victoria Street between Edna Street and the Conestoga Expressway bridge inviting them to attend the workshop with Project Team members to introduce the project and gather feedback. The objectives of the first workshop were to identify current problems, develop alternative solutions, and identify the evaluation criteria for the assessment of impacts and benefits of the alternative solutions.

Representatives from three of the eleven businesses attended the first workshop (KW Surplus, Suzuki of KW and Weston Bakeries). The workshop attendees identified many of the collision and operational issues outlined in Section 1 of this report. They also noted that some drivers already avoid making left turns directly in or out of driveways, choosing to make right turns and U-turns instead, or turning in to driveways at less congested locations and cutting through adjacent properties to reach their destination. A variety of suggested improvements were developed at the workshop and condensed into four Alternative Design Concepts for further consideration by the Project Team:

**Design Concept 1 - Centre Two Way Left Turn Lane (TWLTL):** Similar to other sections of Victoria Street, a centre turn lane would be provided as a refuge for drivers headed in either direction, waiting to turn left in to driveways, or for drivers turning left out of driveways and waiting to merge with traffic. The TWLTL would tie in to the existing westbound left turn lane at Edna Street and taper out at the west side of the Conestoga Expressway bridge.

**Design Concept 2 - Centre Concrete Median:** The centre concrete median would extend between the Edna Street intersection and Bruce Street intersection and eliminate left in and left out movements from driveways within this section of Victoria Street. U-turns would be permitted at the Edna Street and Bruce Street intersections for cars and small trucks.

**Design Concept 3 - Centre Concrete Median with Roundabouts at Victoria/Edna and Victoria/Bruce:** Similar to Design Concept 2 with the addition of roundabouts at the Edna Street and Bruce Street intersections. Roundabouts would allow all vehicles to make U-turns at the Edna Street and Bruce Street intersections.

**Design Concept 4 - Centre Concrete Median with Traffic Signals Mid-Block:** Similar to Design Concept 2 with the addition of a new signalized intersection at a mid-block location that would provide an alternate location for left turn access to the commercial properties within this section of Victoria Street. Internal driveway connections between properties would need to be implemented for this Design Concept.

A brief review of the impacts and benefits of each of the four Alternative Design Concepts was undertaken at the first workshop in conjunction with the business/property owners. Sketches of the Design Concepts have subsequently been created by the Project Team and further evaluated with particular emphasis on safety benefits, impacts on traffic operations, implementation costs, and potential impacts on the natural environment and social/economic environment.

A second workshop was held with business and property owners adjacent to the road allowance within the project limits in the spring of 2012. Again, letters were mailed out and hand delivered to business and property owners on Victoria Street between Edna Street and the Conestoga Expressway bridge inviting them to attend the second workshop with Project Team members. At the
second workshop, Alternative Design Concepts 3 and 4 were identified as having been assessed and screened out from further consideration by the Project Team. Alternative Design Concept 3 had been screened out primarily due to the considerable property impacts that the roundabouts would have along with very high costs. Alternative Design Concept 4 had been screened out as a mid-block signalized intersection would not meet conventional warrants and would result in increased operational problems within the corridor and within the driveways on private property.

The Project Team presented Alternative Design Concepts 1 and 2 as the short-listed alternatives with Alternative Design Concept 2 (Centre Concrete Median) as the Project Team's Preliminary Preferred Design Concept. The second workshop was organized with business and property owners to outline the rationale in screening out Alternative Design Concepts 3 and 4, review the assessment and comparative evaluation of Alternative Design Concepts 1 and 2, and discuss the Project Team’s Preliminary Preferred Design Concept and any other concerns.

Representatives from five of the eleven businesses attended the second workshop (Ashton Pools, Factory Shoe, KW Surplus, Suncor and Suzuki of KW). The workshop attendees recognized the safety benefits associated with Alternative Design Concept 2 (Centre Concrete Median) but expressed concerns regarding property access. KW Surplus indicated a preference for Alternative Design Concept 2 as long as delivery truck access to their loading bays could be accommodated. The other participants generally indicated a preference for an alternative that would not restrict left turns in and out of driveways. The Project Team noted that since the Edna Street and Bruce Street intersections are in close proximity, U-turns would be available for vehicles wishing to “turn left” to their properties. The Project Team also noted that the Edna Street/Frederick Street/Bruce Street block provides an alternate means of access for delivery vehicles and for those drivers uncomfortable making U-turns.

Although KW Surplus expressed a preference for Alternative Design Concept 2, there was little support by the other business and property owners attending the workshop for either of the short-listed design alternatives. Instead, several attendees suggested addressing perceived speed issues in the corridor without altering the roadway configuration. In essence, their preference was for a ‘Do Nothing’ Alternative with enhanced speed control. When prompted for a preference between the two short-listed options, three of the five business/property owners in attendance expressed a preference for Alternative Design Concept 1 - Centre Two Way Left Turn Lane, to maintain full access at driveway locations. A summary of the main issues raised at the workshop and responses by the Project Team are included in Section 4 and Appendix “D” of this report.

3. Assessment and Evaluation of Alternative Design Concepts

The Alternative Design Concepts have been assessed and evaluated by the Project Team with respect to impacts on the project environment related to:

- Safety (ability to address collision history concerns in this corridor)
- Traffic Operations (ability to accommodate expected vehicular and pedestrian traffic needs)
- Economic Environment (impact on commercial activities, anticipated capital/property costs)
- Property (impact on access, parking, buildings)
- Social Environment (impacts on pedestrians, noise impacts, air quality)
- Natural Environment (effect on existing vegetation, storm drainage, wildlife and wildlife habitat)

In 2010, the Ministry of Transportation (MTO) had removed New Highway 7 from their 5 year construction plan, so during the time that the Project Team initially assessed the Alternative Design Concepts for Victoria Street, the time frame for construction of the new highway was indefinite. Based on this, the Project Team had agreed that for the purpose of the Victoria Street study, it would be assumed that the existing Highway 7 and Conestoga Expressway infrastructure would remain in its current configuration well into the future. Thus the base assumption in assessing the
alternatives initially was that Victoria Street traffic volumes would continue to rise in the foreseeable future and that congestion and queueing at the Edna and Bruce Street intersections would increase accordingly.

The announcement in August 2012 that New Highway 7 will proceed to construction by 2015 altered the Project Team’s base assumption about the project’s timing. If the MTO moves ahead with its current plan, the Victoria Street bridge would be replaced with a longer and wider structure, three of the four on ramps to the Conestoga Expressway would be closed at Edna Street and Bruce Street, and the new highway would carry most of the commuter traffic between Kitchener and Guelph (possibly by 2020). As such, the Project Team re-assessed its Preliminary Preferred Design Concept in consideration of the New Highway 7 construction timing and considered a “modified” Design Concept that would address the immediate collision concerns that are present today while still accommodating ultimate needs in the corridor once New Highway 7 is open.

**Design Concept 2A - Narrow Centre Concrete Median and Widening for Future Two Way Left Turn Lane (TWLTL)** – The narrow centre concrete median would extend between the Edna Street intersection and Bruce Street intersection and eliminate left in and left out movements from driveways within this section of Victoria Street. U-turns would be permitted at the Edna Street and Bruce Street intersections for cars and small trucks. Victoria Street would be widened to provide a long westbound left turn lane to Edna Street in the short term until New Highway 7 is operational. This short term widening will be constructed wide enough to accommodate a future TWLTL (when New Highway 7 is constructed) which would “tie in” to the existing westbound left turn lane at Edna Street and a future lengthened left turn lane at Bruce Street (over the widened Conestoga Expressway bridge). During New Highway 7 construction (at the time that the Victoria Street bridge is replaced), the narrow concrete median would be removed as a retrofit and the road converted to the TWLTL configuration.

The Project Team has now selected Alternative Design Concept 2A as the Preferred Design Concept. A full assessment of all Alternative Design Concepts and rationale for this selection is included in Appendix “E” and a comparative analysis of the short-listed Alternative Design Concepts is included in Appendix “F”.

**4. Concerns Raised by Business Owners**

In general, business owners recognize the current collision problem, traffic congestion and operational difficulties within the study area. They acknowledge the challenge that their customers face trying to turn left in or left out of the commercial entrances in this area during peak traffic periods. Some have even noted that they personally adjust their own route in to work or heading home such that they don’t need to make a left turn movement in or out of one of the driveways. Many have witnessed collisions (or heard them taking place) just in front of their businesses; however, several business owners have expressed concerns with those Design Concepts that include a centre concrete median due to perceived impacts on their business access and operations. In implementing the Preferred Design Concept (Alternative 2A), the Project Team expects that the key issue for business owners will be the changes in the way that customers and delivery truck drivers access their properties in the short term.

As the centre concrete median would prevent left turns into and out of commercial entrances, drivers wanting to access the opposite side of the street would either need to plan their route accordingly (use the Edna/Frederick/Bruce block as a means of changing their direction of travel) or make a U-turn at the Victoria/Edna or Victoria/Bruce intersection. Local widening would be provided to allow cars and small trucks to make U-turn movements easily and the Region could consider additional signage to make drivers aware that U-turns are permissible at these locations.

Larger delivery vehicles would need to alter their route (using the Edna/Frederick/Bruce block) to
change their direction of travel. Further discussion would take place with individual business owners during the detailed design stage to ensure that this transition would take place smoothly and to address any outstanding concerns. The Region has been working with KW Surplus to determine turning movement requirements and establish a practical driveway configuration at that location. Turning movement needs at other individual driveway locations may also need to be addressed during detailed design. There are many options that could be considered to improve the existing access configurations such as larger entrance radii, semi-mountable portions of the boulevard, and semi-mountable portions of the centre median.

It is acknowledged that these route changes are undesirable to property and business owners in the short term. New Highway 7 construction will permit the removal of the centre concrete median and its conversion to a TWLTL when the Victoria Street bridge is replaced and the Expressway ramps are reconfigured; however, the timing of the MTO’s bridge replacement is currently undetermined and may not take place for several years. Because of the serious collision problem currently occurring in the corridor, the Project Team unanimously agreed that it is necessary to implement a centre concrete median in the interim as it is the most effective solution available to address existing collision and congestion issues. The Project Team notes that the aforementioned mitigating factors (U-turns and short alternate routes) will minimize any potential adverse access impacts to the adjacent properties. The Preferred Design Concept also allows for a future retrofit to a Two Way Left Turn Lane (as the Victoria Street bridge is reconstructed and the Expressway ramps are reconfigured at Victoria Street) when it is expected that reduced traffic volumes will make it a viable and effective configuration for this project.

A more comprehensive list of questions and concerns raised at the workshops are summarized in Appendix “D” along with responses from the Project Team.

5. Project Team Preferred Design Concept

Based on a review of the technical information gathered for this project, and in consideration of the evaluation of the benefits/opportunities of the Alternative Design Concepts, as well as a thorough review of all public comments received, the Project Team has identified Alternative Design Concept 2A – Narrow Centre Concrete Median and Widening for Future Two Way Left Turn Lane as the Preferred Design Concept for this Class EA Study.

Until the Victoria Street bridge is replaced as part of New Highway 7 construction, it is expected that traffic volumes on Victoria Street will remain high and likely continue to rise. Although the Ministry of Transportation (MTO) has set a start date for New Highway 7 construction, the exact timing of the Victoria Street bridge replacement is uncertain.

The Project Team recognizes the need for Victoria Street improvements to address the safety and operational issues that currently exist in the corridor and may continue to exist at least in the short term until New Highway 7 is operational. The Preferred Design Concept effectively addresses the collision problems identified under current traffic conditions and can be easily adapted to a TWLTL configuration during construction of New Highway 7 when the Victoria Street bridge is replaced and the Expressway ramps are reconfigured.

Additional property along Victoria Street is not required for Alternative Design Concept 2A, except possibly for Hydro easements at some pole locations. New sidewalk will be provided along the south side of Victoria Street and existing sidewalk will be replaced where impacted in areas of roadway widening. The existing pavement structure will be rehabilitated and the traffic signal infrastructure at the Edna Street and Bruce Street intersections will be replaced.

It is recognized that the centre concrete median will require route changes for customers and delivery vehicles wanting to turn left in or out of commercial entrances along this section of Victoria
Street in the short term. These effects would be mitigated through design elements at the Edna Street and Bruce Street intersections to allow U-turns for cars and small trucks and by the availability of the relatively short alternate route of the Edna/Frederick/Bruce block for larger delivery trucks or for those uncomfortable making a U-turn.

If the Ministry of Transportation (MTO) is able to provide a construction schedule for the New Highway 7 project, prior to the Region’s Victoria Street project proceeding, that confirms the Victoria Street bridge replacement is scheduled early in the MTO’s Highway 7 project (ie. 2015/2016), staff would recommend that the Region construct Victoria Street to the ultimate TWLTL configuration in conjunction with the MTO project rather than constructing the centre concrete median first. If the Victoria Street bridge replacement is scheduled later in the staging process, or the timing remains uncertain at the time that the Region’s Victoria Street project proceeds, the centre concrete median would be constructed initially and removed in conjunction with the future MTO bridge replacement. The “throw-away costs” associated with installing and subsequently removing the centre concrete median would be approximately $120,000.

The Project Team has identified Alternative Design Concept 2A as the solution that offers the most flexibility to effectively address the current collision and operational problems while providing the ability to adapt the design at an appropriate time to meet future traffic needs.

6. Project Cost
The capital cost for the Preferred Design Concept is estimated to be $1.4 million. The final cost will be further refined as part of the detailed design phase and will depend in part on costs for relocation of utilities. New sidewalks included in the conceptual estimate are expected to cost approximately $30,000.

7. Next Steps
After the Public Input Meeting on February 6, 2013, the Project Team will consider and address any additional issues raised by the public in order to develop a Recommended Design Concept. It is anticipated that the Project Team’s Recommended Design Concept will be presented to the Planning and Works Committee of the Region of Waterloo for their consideration in March 2013, and pending Committee’s endorsement, a recommendation will be considered by Regional Council in late March/early April 2013. All members of the public who have expressed an interest in this project will be notified directly of all future opportunities to comment before a final decision is made for this project.

Subject to Regional Council approval of the Recommended Design Concept, the Project File will be completed and a “Notice of Study Completion” will be filed in the public record for a 30 day review period. This filing will be advertised by mail-outs and notices in newspapers. If someone feels that the study did not fully address all of the issues, they can request that the Minister of Environment order the project to a more detailed environmental assessment, referred to as a Part II Order request. The Minister of Environment must receive such requests in writing, with a copy sent to the Region’s Commissioner of Transportation and Environmental Services. The Minister will determine if a more detailed environmental assessment is required and the Minister’s decision will be final.

If there are no significant unresolved objections following the 30 day review period, the project will proceed to detailed design and construction. It is anticipated that implementation of improvements will begin with utility relocations in late 2013 or early 2014 and roadway construction in the summer/fall of 2014.

Staff will continue to liaise with the MTO with respect to the New Highway 7 construction schedule. Notwithstanding the timing noted above, the Victoria Street bridge replacement timing would dictate the Region’s course of action with respect to the centre concrete median. If New Highway 7 construction is delayed in the MTO’s construction program, the narrow concrete median would be
constructed on Victoria Street as an interim safety measure. If New Highway 7 moves ahead as planned, but the Victoria Street bridge reconstruction is scheduled in the latter stages, the Region would construct the concrete centre median initially and remove it in conjunction with the bridge replacement. If New Highway 7 goes ahead and the bridge replacement is scheduled early in the construction process, the Region could consider adjusting its timing of the Victoria Street project and construct the ultimate TWLTL configuration initially, instead of constructing the centre concrete median.

CORPORATE STRATEGIC PLAN:

This project is consistent with the development of Strategic Focus Area 2 (Growth Management and Prosperity) in terms of developing, optimizing and maintaining infrastructure to meet current and projected needs. It is also consistent with the development of Strategic Focus Area 3 (Sustainable Transportation) in terms of developing, promoting and integrating active forms of transportation (walking) and optimizing existing road capacity to safely manage traffic.

FINANCIAL IMPLICATIONS:

The 2013 Transportation Capital Program includes $1.51 million over the years 2013 to 2015 for the design and construction of this project to be funded from the Region Development Charges Reserve Fund.

OTHER DEPARTMENT CONSULTATIONS/CONCURRENCE:

Nil

ATTACHMENTS

Appendix A – Key Plan
Appendix B – Alternative Design Concept 2A (Preferred Design Concept)
Appendix C – Preliminary Layout Plan – New Highway 7 at the Conestoga Expressway
Appendix D – Questions and Concerns Raised by Property and Business Owners
Appendix E – Assessment of Alternative Design Concepts
Appendix F – Comparative Analysis of Alternative Design Concepts

PREPARED BY: Frank Kosa, Senior Project Manager, Transportation Expansion

APPROVED BY: Thomas Schmidt, Commissioner of Transportation and Environmental Services
APPENDIX “A”

KEY PLAN OF STUDY AREA
VICTORIA STREET FROM EDNA STREET TO BRUCE STREET
CLASS ENVIRONMENTAL ASSESSMENT
ALTERNATIVE DESIGN CONCEPT 2A (PREFERRED DESIGN CONCEPT)
NARROW CENTRE CONCRETE MEDIAN AND WIDENING FOR FUTURE TWO WAY LEFT TURN LANE
PRELIMINARY LAYOUT PLAN
NEW HIGHWAY 7 AT THE CONESTOGA EXPRESSWAY

PROPOSED NEW BRIDGE(S)

X – ON/OFF RAMP TO BE CLOSED
APPENDIX “D”
QUESTIONS AND CONCERNS RAISED BY PROPERTY AND BUSINESS OWNERS

Questions and concerns raised at the public consultation workshops by the business and property owners within the study area are summarized below, along with responses from the Project Team.

Two Way Left Turn Lanes

Several business owners noted that Two Way Left Turn Lanes (TWLTLs) seem to be working well on other sections of Victoria Street and questioned why the Project Team had concerns about a similar configuration for this project.

Project Team Response:

Other sections of Victoria Street with a Two Way Left Turn Lane (TWLTL) are working reasonably well (although some still demonstrate similar collision patterns related to turns in and out of driveways). The main difference along this section of Victoria Street is the operation of the intersections at Edna Street and Bruce Street in association with the traffic queuing from the Expressway on ramps. These intersections have heavy turning movements and are very congested at peak times, primarily because they serve as main access points to the Expressway. This results in increased congestion within the Victoria Street mid-block which would limit the effectiveness of a TWLTL during those peak times under current traffic conditions.

The eastbound left turn lane at Victoria/Edna often has 200 metre to 300 metre long queues during peak times. During these times, queued vehicles would occupy the entire length of a TWLTL if implemented at the present time.

The number of driveways between Edna Street and the Expressway bridge would also limit the effectiveness of a TWLTL with the current level of congestion. When several vehicles are attempting to turn left into a business on either side of Victoria Street and occupy the TWLTL at the same time, drivers in the through lanes may not be sure which driveways these vehicles are trying to access or whether they are in the queue to turn left at Edna Street. This could result in additional traffic weaving in and out of the TWLTL and through traffic lanes, and raise the potential for sideswipe and rear-end accidents. The confusion generated during peak times would also create a potential for head on collisions within the TWLTL.

Two Way Left Turn Lanes generally function well when Average Annual Daily Traffic (AADT) volumes are moderate (10,000 to 28,000 vehicles/day). Victoria Street, between Edna and Bruce has an existing AADT of approximately 30,000 vehicles/day, and is expected to increase over the short term. The traffic volumes, combined with the intersection queuing and tight driveway spacing suggests that a TWLTL will not function well under current traffic conditions and may result in increased collision rates over the existing condition.

As future traffic levels on Victoria Street are projected to drop significantly when New Highway 7 is open, a TWLTL would be a viable alternative for this corridor at that time, particularly as reduced intersection queuing at Edna Street and Bruce Street is also anticipated.
Signal Timing Adjustments

A number of workshop attendees suggested that the advanced left turn signal time should be increased at Edna Street to reduce queuing.

Project Team Response:

The signal timing at Edna Street needs to be balanced with the signal timing at the Expressway ramp. All movements at each intersection need to be taken into consideration in balancing this timing as increasing green time for one movement takes green time away from other movements. Major adjustments to signal timing in favour of Victoria Street traffic could result in longer queues for vehicles exiting the Expressway which would be a more significant concern.

During detailed design, once the lane configuration is established on Victoria Street, the Region will investigate opportunities to further improve the signal timing at Victoria Street intersections at Edna Street and Bruce Street.

Route changes

One of the primary questions expressed by business owners is how customers and delivery vehicles would access businesses on the opposite side of the street if a centre concrete median is implemented.

Project Team Response:

Drivers wanting to access the opposite side of the street would either need to plan their route accordingly (use the Edna/Frederick/Bruce block as a means of changing their direction of travel), or make a U-turn at the Victoria/Edna or Victoria/Bruce intersection.

Although U-turns are legal at intersections that are not signed otherwise, many drivers are not aware of this. The Region could consider additional signage to make drivers aware that U-turns are permissible at these locations.

It is recognized that U-turns may add to the congestion at the Victoria/Edna and Victoria/Bruce intersections and may have further impacts on signal timing. The anticipated U-turn volumes would need to be considered when making adjustments to the signal timing at these intersections.

Large delivery vehicles would need to alter their route (using the Edna/Frederick/Bruce block) to change their direction of travel. Further discussion would be required with individual business owners during the detailed design stage to ensure that this transition would take place smoothly and to address any outstanding concerns.

Truck Turning Movements Into Driveways

Concerns were raised about truck movements in and out of driveways if a centre concrete median is implemented. It was noted that some businesses have delivery trucks that currently use the full width of Victoria Street for manoeuvres, particularly where loading bays are close to the roadway.

Project Team Response:

The Region has been working with KW Surplus to determine turning movement requirements and establish a practical driveway configuration at that location. Turning movement needs at other individual driveway locations may also need to be addressed during detailed design. There are many options that could be considered to improve the existing access configurations such as larger entrance radii, semi-mountable portions of the boulevard, and semi-mountable portions of the centre median. It is however noted by the
Project Team that discouraging manoeuvres across the entire roadway width is a positive effect of the centre concrete median option, as long as appropriate measures are implemented to allow for truck access where required. During detailed design, the Region will meet with each property owner to confirm truck access needs.

Speed Concerns and Speed Reduction Measures

A primary concern raised at the second workshop relates to concerns about speeds along this stretch of Victoria Street. In particular, there were concerns expressed regarding the posted speed (60km/h as opposed to 50km/h which is posted further west). It was also noted that motorists speed up considerably heading west from Bruce Street as they cross the Expressway bridge and several workshop attendees expressed a desire to see the speed limit reduced in this area. It was suggested by some of the business owners that speed may be the major contributor to the accident rates experienced within the corridor.

Project Team Response:

In test cases studied by the Region, operating speeds have not been reduced in locations where posted speeds were reduced (in many cases, the operating speed increased). Region Transportation staff attribute this to the fact that drivers tend to drive at speeds that feel comfortable to them based on their surroundings, rather than according to the posted speed. The Region has found that physically changing road corridors by reducing lane widths and adding other features such as curbing, trees etc. that give a more ‘crowded’ feel to the roadway has been more effective in reducing speeds.

Speed plays a role in most collisions, but it is not the only factor to consider. The collision pattern on Victoria Street, between Edna and Bruce is clearly indicative of problems associated with turning movements. Many of the collisions are directly with vehicles making a turn in or out of a driveway. Many of the other collisions (rear end or sideswipe) are associated with drivers hitting a vehicle waiting to turn into a driveway or making a last second decision to change lanes to try to avoid hitting a stopped vehicle.

Based on data from the period 2006-2010, 96% of collisions are taking place between 9:00am and 7:00pm. Based on a speed survey study on Victoria Street between Edna Street and Bruce Street conducted by the Region in June 2012, the average speed on this section of Victoria Street is 53 km/hr at this time of day with an 85th percentile speed of 64 km/hr.

The same data indicates that 54% of collisions are taking place during the afternoon peak (3:00pm – 6:00pm) when the average speed is 52 km/hr and the 85th percentile speed is 64 km/hr.

The collision and speed data indicate that the vast majority of collisions are taking place during periods of congestion when speeds are low. This data, combined with the type of collisions reported (rear-end, sideswipe and turning) suggests that the accidents are more directly related to the turning movements taking place, rather than to high speeds.

Speed Reduction Measures

A variety of measures were suggested by business and property owners to reduce operating speeds including: ongoing enforcement, speed notification signs, rumble strips, flashing yellow lights, and installation of a ‘singing median’.

Project Team Response:

Based on Regional pilot studies, police enforcement is rarely an effective means of reducing operating speeds. In test areas, operating speeds were found to stay about the same, or in
some cases increase, both during and after intensified speed enforcement. Long term, ongoing enforcement may be more effective, but can be quite costly. Requests for increased enforcement can be made by Region staff should speeding become a safety concern but ultimately it is up to Police Services staff to prioritize locations..

Speed notification signs (electronic signs that detect and display vehicular speeds) can be used in instances where the speed limit has been reduced to draw further attention to the change; however, the effectiveness of these signs is reduced over time, particularly if drivers come to realize that there are no associated implications (ie. if enforcement is not present on a regular and ongoing basis).

Rumble strips are intended to notify drivers that there is a stop ahead. If the Region were to start installing them for other applications (such as on Victoria Street), their meaning would become confused which could reduce their effectiveness in areas of intended use.

Flashing yellow lights are used by the Region to draw attention to signage that is particularly important for safety reasons (school zones, speed advisory signs on sharp curves, etc.). Overuse of flashing lights would limit their effectiveness (ie. if every speed limit sign had a flashing light, over time, drivers would not notice the light any more than they would notice the sign).

Singing medians (continuous rumble strips down the centre median) are intended to notify drivers to stay off of that section of roadway. This would not be an appropriate treatment for a Two Way Left Turn Lane or if the intent is to allow drivers to cross over the median.

The Region will consider appropriate measures to encourage driving at reasonable speeds as part of the detailed design.
APPENDIX “E”
ASSESSMENT OF ALTERNATIVE DESIGN CONCEPTS

The Project Team has selected Alternative Design Concept 2A as the Preferred Design Concept. An assessment of the alternatives considered and the rationale for this selection is included below.

Assessment of Alternative Design Concept 1 (Centre Two Way Left Turn Lane)

Upon initial consideration, the Project Team viewed Alternative Design Concept 1 as a viable alternative to help address turning collision issues in the study area. Two Way Left Turn Lanes (TWLTLs) are commonly implemented in corridors where mid-block turning movements are problematic. The TWLTL can act as a refuge area for those waiting to turn left in to a driveway, or for those turning out of a driveway waiting to merge with traffic. However, based on a review of traffic operations within the study area, the Project Team expects that collision rates could be as high or higher than the ‘Do Nothing’ alternative if Alternative Design Concept 1 is implemented under current traffic conditions on Victoria Street.

Traffic levels on Victoria Street are currently higher than the threshold at which a TWLTL is typically considered effective. Based on current queuing for the westbound left turn movement at the Victoria/Edna intersection, most of the TWLTL would be occupied during peak periods, further reducing its effectiveness. Turning left out of driveways is currently difficult during peak periods (when most accidents are occurring) with the existing four lane configuration. Adding a TWLTL that is frequently occupied (and difficult to turn in to) would add another lane to cross. It may also be more difficult to judge traffic gaps on the opposite side of the road. This could dissuade more drivers from turning left out of driveways, or it could result in more collisions.

With drivers trying to access the many driveways between Edna Street and the Expressway bridge from both directions, combined with the anticipated queuing from the Edna Street intersection, it would be difficult to judge when a driver wanting to turn left into one of the driveways should enter the TWLTL. This confusion could result in more sudden braking and rear-end collisions, more drivers moving in and out of the TWLTL causing side-swipe collisions, possible head on collisions in the TWLTL and more angle-type collisions with people trying to cross the TWLTL.

This alternative is potentially less effective than the ‘Do Nothing’ option if implemented under current traffic conditions as it would not likely reduce (and may actually increase) current collision rates. A TWLTL could be effective in reducing collisions if traffic volumes were lower and intersection queuing was reduced (particularly the left turn queuing at Edna Street). When New Highway 7 is open, these reductions are likely, which would allow for implementation of a TWLTL. It would serve as a continuous connection between the left turn lane at Edna Street and the future lengthened left turn lane at Bruce Street (over the widened Conestoga Expressway bridge).

Assessment of Alternative Design Concept 2 (Centre Concrete Median)

Alternative Design Concept 2 achieves the primary objective of this study (to reduce mid-block collisions) under the current traffic conditions as it would be expected to reduce collisions by at least 25%. The Project Team initially preferred this alternative prior to the MTO’s latest announcement regarding New Highway 7. A modified version of this alternative has been developed (Alternative Design Concept 2A) to take into account the impacts of the new highway construction on the Victoria Street corridor.

It is expected that a centre concrete median will result in a significant reduction in collisions under current traffic conditions. Left turns in and out of driveways would no longer be feasible which would eliminate collisions directly related to these turning movements entirely, and significantly reduce collisions that are indirectly related to these movements (rear-end and side-swipe). Potential impacts to businesses in eliminating the left turns in and out of driveways can be mitigated through properly designed intersections at Edna and Bruce to allow U-turns and by the availability of a
relatively short alternate route (Edna/Frederick/Bruce block) for large delivery trucks or for those uncomfortable making a U-turn.

This alternative would help ease congestion on this section of Victoria Street during peak times as vehicles would no longer block the through lane while waiting to make left turn movements at driveways. Driveways would operate more effectively as drivers would not be waiting for long periods of time to attempt a left out movement. An extension of the westbound left turn lane at Edna Street would be feasible which may further reduce congestion in the through lanes. Introducing a centre median and reducing lane widths will also help give the roadway a more constrained feel which may help to reduce travel speeds.

As it is currently anticipated that New Highway 7 construction will significantly reduce traffic on Victoria Street and reduce left turn queues at the Edna Street intersection, the net benefit of a centre concrete median may be diminished in the ultimate condition. With lesser congestion and better operations in the corridor, a Two Way Left Turn Lane may ultimately provide comparable safety benefits while still offering ease of access to adjacent commercial properties.

**Assessment of Alternative Design Concept 2A (Narrow Centre Concrete Median and Widening for Potential Future Two Way Left Turn Lane)**

Alternative Design Concept 2A combines the immediate benefits of Alternative Design Concept 2 with the ultimate benefits of Alternative Design Concept 1. The centre concrete median would achieve the primary objective of this study (to reduce mid-block collisions) under current traffic conditions, with the flexibility to adapt to a TWLTL when New Highway 7 is constructed and traffic volumes are lower. The Project Team has identified Alternative Design Concept 2A as the Preferred Design Concept.

The narrow centre concrete median would offer all of the safety benefits as outlined above for Alternative Design Concept 2 under current traffic conditions. When the Victoria Street bridge is replaced as part of New Highway 7 construction, the centre concrete median can be removed with minimal additional reconstruction. With lower traffic volumes and reduced intersection queuing, a TWLTL would act as an effective refuge area for vehicles turning left in to or out of commercial driveways. The TWLTL would form a continuous connection between the left turn lane at Edna Street and the future lengthened left turn lane at Bruce Street (over the widened Conestoga Expressway bridge).

The timing of the Victoria Street bridge replacement would dictate the Region’s course of action with respect to the centre concrete median. If New Highway 7 construction is delayed in the MTO’s construction program, the narrow concrete median would be constructed on Victoria Street as an interim safety measure. If New Highway 7 moves ahead as planned, but the Victoria Street bridge reconstruction is scheduled in the latter stages, the Region would construct the concrete centre median initially and remove it in conjunction with the bridge replacement. If New Highway 7 goes ahead and the bridge replacement is scheduled early in the construction process, the Region could consider adjusting its timing of the Victoria Street project and construct the ultimate TWLTL configuration initially, instead of constructing the centre concrete median.

**Assessment of Alternative Design Concept 3 (Centre Concrete Median with Roundabouts)**

Alternative Design Concept 3 is a modified version of Alternative Design Concept 2 developed during the first workshop as a means of providing easier access to commercial driveways. The centre concrete median prevents drivers from turning left in to and out of the commercial entrances. Roundabouts at both ends of the corridor would provide an easy means of making a U-turn both for customers and for delivery truck drivers. This would be more convenient than making a U-turn at the traffic signals or having to change routes to use the Edna Street/Frederick Street/Bruce Street block to turn around.
Although this alternative offers easier driveway access within the study area, the Project Team screened out Alternative Design Concept 3 from further consideration due to the extensive property purchase that would be required to implement roundabouts at the Edna Street and Bruce Street intersections. Full buy-outs of at least six businesses would be necessary along with major impacts to at least two others. Estimated costs for Alternative Design Concept 3 is approximately 7 to 10 times that of the other Alternative Design Concepts and conventional warrants for roundabouts are not present at these intersections (i.e. there are no other significant improvements required at either intersection nor any significant safety or operational concerns that would be mitigated by a roundabout).

**Assessment of Alternative Design Concept 4 (Centre Concrete Median with Mid-Block Traffic Signal)**

Alternative Design Concept 4 also represents a modified version of Alternative Design Concept 2 developed at the first workshop. This alternative would allow drivers to turn left in and out of commercial areas at one specific mid-block location, at a new signalized intersection.

While this concept has worked reasonably well in other locations (Hespeler Road for example), the Project Team screened out Alternative Design Concept 4 from further consideration for several reasons. The existing building and parking lot configuration in the study area does not readily lend itself to a single access point. There is no practical location for internal driveway connections and there is insufficient space to accommodate internal queuing at a new signalized intersection.

Conventional warrants for signals would not be present at this location as there would be insufficient volumes from the ‘plaza’. Mid-block signals would also result in significant operational issues at adjacent intersections due to the close proximity (particularly at Edna where the existing left turn lane would be reduced in length). Shared access to businesses would be required with links between parking areas which may present liability concerns and internal queuing within the ‘plaza’ at the intersection location would result in operational issues within the driveways and parking areas.

**Assessment of the ‘Do Nothing’ Alternative**

Several attendees at the second workshop suggested a ‘Do Nothing’ alternative in conjunction with measures to try to control travel speeds. This approach would have little to no effect on addressing the existing collision problems or operational challenges and is not preferred by the Project Team.

With a ‘Do Nothing’ alternative, the current high rate of collisions is expected to continue and possibly increase in the short term as traffic volumes increase, resulting in many more injuries. As data collected suggests that current collision patterns are more directly related to congestion and turning movements, speed reduction measures or increased enforcement are likely to have very little effect in reducing accident rates. Therefore, the ‘Do Nothing’ alternative, even with speed reduction measures, does not address the core issues identified in this study.
### APPENDIX "F"

#### COMPARITIVE ANALYSIS OF SHORT-LISTED ALTERNATIVE DESIGN CONCEPTS

<table>
<thead>
<tr>
<th>EVALUATION CRITERIA</th>
<th>ALTERNATIVE DESIGN CONCEPT 1 CENTRE TWO-WAY LEFT TURN LANE</th>
<th>ALTERNATIVE DESIGN CONCEPT 2 CENTRE CONCRETE MEDIAN</th>
<th>ALTERNATIVE DESIGN CONCEPT 2A NARROW CENTRE CONCRETE MEDIAN AND WIDENING FOR POTENTIAL FUTURE TWNLTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAFETY (ability to address collision history concerns in this corridor)</td>
<td>Does not adequately address safety concerns identified in this study for current traffic conditions. Potentially creates new safety concerns.</td>
<td>Addresses safety concerns identified in this study for current traffic conditions well.</td>
<td>Concrete median addresses safety concerns identified in this study for current traffic conditions well. Potential TWNLTI would address safety needs if future traffic volumes and intersection queuing are reduced.</td>
</tr>
<tr>
<td>TRAFFIC OPERATIONS (ability to accommodate expected vehicular and pedestrian traffic needs)</td>
<td>Does not improve existing traffic operation challenges. Potentially creates new operational issues.</td>
<td>Provides a moderate level of improvement to existing traffic operations.</td>
<td>Provides a moderate level of improvement to existing traffic operations. If future traffic volumes and intersection queuing are reduced, a TWNLTI would function well.</td>
</tr>
<tr>
<td>ECONOMIC ENVIRONMENT (impact on commercial activities, impact on property access)</td>
<td>No significant impact on commercial activities or property access.</td>
<td>Restricts left in/left out access to properties. Mitigating factors included to minimize potential impact on commercial activities.</td>
<td>Concrete median restricts left in/left out access to properties. Mitigating factors included to minimize potential impact on commercial activities. TWNLTI may enhance property access if future traffic volumes and intersection queuing are reduced.</td>
</tr>
<tr>
<td>PROPERTY (impact on access, parking, buildings)</td>
<td>No significant impacts on property. Potential utility easements only.</td>
<td>No significant impacts on property. Potential utility easements only.</td>
<td>No significant impacts on property. Potential utility easements only.</td>
</tr>
<tr>
<td>SOCIAL ENVIRONMENT (impacts on pedestrians, cyclists, noise impacts, air quality)</td>
<td>No significant impact on social environment. New sidewalk on south side of Victoria Street to accommodate pedestrians.</td>
<td>No significant impact on social environment. New sidewalk on south side of Victoria Street to accommodate pedestrians.</td>
<td>No significant impact on social environment. New sidewalk on south side of Victoria Street to accommodate pedestrians.</td>
</tr>
<tr>
<td>NATURAL ENVIRONMENT (effect on existing vegetation, storm drainage, wildlife and wildlife habitat)</td>
<td>No significant impact on natural environment.</td>
<td>No significant impact on natural environment.</td>
<td>No impact on natural environment.</td>
</tr>
<tr>
<td>COST (capital cost and property cost)</td>
<td>$1.2 million.</td>
<td>$1.4 million.</td>
<td>$1.4 million.</td>
</tr>
</tbody>
</table>

| OVERALL RANK | 3rd | 2nd | 1st |