

City of Kingston Environment, Infrastructure & Transportation Policies Committee Meeting Number 02-2024 Agenda

Tuesday, February 13, 2024 at 6:00 p.m. Hosted in City Hall in Council Chamber

Please provide regrets to Iain Sullivan, Committee Clerk at 613-546-4291, extension 1864 or isullivan@cityofkingston.ca

Committee Composition

Councillor Cinanni, Chair Councillor Amos Councillor Chaves Councillor Hassan Councillor Stephen Councillor Tozzo

- 1. Meeting to Order
- 2. Approval of the Agenda

3. Confirmation of Minutes

- a) That the minutes of Environment, Infrastructure and Transportation Policies Committee Meeting Number 01-2024, held Tuesday, December 12, 2023, be approved.
- 4. Disclosure of Pecuniary Interest

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5. Delegations

 a) Jane Kirby will be present to speak to the Committee regarding the Williamsville Corridor Study, Neighbourhood Cycling Network, and Green Streets Report.

6. Briefings

a) Ian Semple, Director, Transportation & Transit, will be present and speak to the Committee regarding the Williamsville Corridor Study, Neighbourhood Cycling Network and Green Streets Report.

7. Business

a) Williamsville Corridor Study, Neighbourhood Cycling Network, and Green Streets

The Report of the Commissioner, Infrastructure, Transportation & Emergency Services (EITP-24-008) is attached.

Schedule Pages 1 – 333

Recommendation:

This report is for information only.

b) Pollinator Gardens

The Report of the Commissioner, Infrastructure, Transportation & Emergency Services (EITP-24-002) is attached.

Schedule Pages 334 – 343

Recommendation:

That the Environment, Infrastructure & Transportation Policy Committee recommend to Council:

That Council endorse the community perennial/wildflower/pollinator garden model, which is currently being practiced, and direct staff to incorporate it into the Community Gardens Policy as part of the scheduled review; and

That Council approve the creation of a simplified process for allowing community groups to convert designated naturalized areas within parks to pollinator gardens and to enhance existing pollinator gardens; and

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That Council endorse Public Works continuing to assist community groups in the ongoing development and maintenance of pollinator gardens, and Public Works supporting efforts to educate residents on planting pollinator gardens; and

That Council approve the community groups maintaining community perennial/wildflower/pollinator gardens in using seed stock from the garden to expand pollinator gardens on other public or private lands; and

That Council authorize the Director, Public Works & Solid Waste to approve any documents or agreements required to implement the pollinator garden program described in Report Number EITP-24-002 and to create, administer, manage, operate, and amend, as required, any and all policies or procedures required to give effect to the pollinator garden program; and

c) Street Patio Program Update

The Report of the Commissioner, Infrastructure, Transportation & Emergency Services (EITP-24-006) is attached.

Schedule Pages 344 – 386

Recommendation:

That the Environment, Infrastructure and Transportation Policies Committee recommends to Council on February 20, 2024:

That Council approve the updated Street Patio Program as outlined in Report Number EITP-24-006, and as per Exhibit A to Report Number EITP-24-006, "Street Patio Standards and Application Guide"; and

That Council approve temporary exemptions to the approved Street Patio Standards, in the form attached as Exhibit B to Report Number EITP-24-006, "Temporary Exemptions – Non-Compliant Patios", for existing nonconforming street patios that were established prior to the City's COVID-19 temporary patio program and that are or were authorized by a valid licence agreement with the City. Environment, Infrastructure & Transportation Policies Committee Meeting Number 02-2024 – Tuesday, February 13, 2024 at 6:00 p.m.

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d) Update on the Municipal Class Environmental Assessment for the Kingston Regional Biosolids & Biogas Facility

The Report of the President & CEO, Utilities Kingston (EITP-24-010) is attached.

Schedule Pages 387 – 398

Recommendation:

This report is for information only.

- 8. Motions
- 9. Notices of Motion
- 10. Other Business
- 11. Correspondence
 - a) Correspondence received from Matt Rogalsky regarding the Williamsville Corridor Study, Neighbourhood Cycling Network and Green Streets Report, dated February 8, 2024

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12. Date of Next Meeting

The next meeting of the Environment, Infrastructure and Transportation Policies Committee is a Special Meeting scheduled for Tuesday, March 26, 2024 at 6:00 p.m.

13. Adjournment



City of Kingston Information Report to Environment, Infrastructure & Transportation Policies Committee Report Number EITP-24-008 To: Chair and Members of the Environment, Infrastructure & **Transportation Policies Committee** From: Brad Joyce, Commissioner, Infrastructure, Transportation & **Emergency Services Resource Staff:** Ian Semple, Director, Transportation & Transit Date of Meeting: February 13, 2024 Subject: Williamsville Corridor Study, Neighbourhood Cycling Network, and Green Streets

Council Strategic Plan Alignment:

Theme: 3. Build an Active and Connected Community

Goal: 3.3 Improve public transit and active transportation options.

Executive Summary:

This report provides the technical analysis and engagement completed to date on the Williamsville Transportation Study, with discussion of the next steps that will be undertaken ahead of the study being presented to Council.

The scope of the Williamsville Transportation Study (Exhibit A) includes design concepts for the Princess Street corridor from Bath Road to Division Street, development of a neighbourhood cycling network, and exploration of Green Street concepts that can be implemented on neighbourhood streets. This transportation study is a critical component of the City's intensification and redevelopment strategy for the neighbourhood, aligning with next steps to be undertaken to support the land use changes adopted in December 2020 as part of the updates to the Williamsville Main Street Study.

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Design concepts for Princess Street were developed from the transportation operations analysis (Exhibit B) which concluded that the short- and long-term development envisioned for the corridor could be accommodated provided non-auto trips were supported and prioritized, particularly as it related to transit and pedestrians. It was also concluded that simultaneously providing infrastructure to support pedestrians, cyclists, transit, and automobiles was not possible given the limited public right-of-way for this arterial roadway.

The study developed six design alternatives for Princess Street to understand the fit and function of the various modes in the right-of-way. The alternatives all removed on-street parking and minimized vehicle travel lane width to allocate the maximum space to the non-auto modes. The concept that allowed for the widest pedestrian area, transit priority, and greatest space for trees, benches, and other pedestrian elements, identified as Alternative 1 in this report, was shared with the public in spring 2023 for input. The removal of the existing on-street cycling lanes was a point of great concern in the public engagement with requests for additional information and options to be developed that retained two-way cycling facilities on Princess Street.

In response to these concerns a design concept that includes the on-street cycling lanes and transit priority measures was developed further and shared with the public in October 2023 for comment and comparison with Alternative 1. This concept, referred to as Alternative 5 in this report, allows the existing cycling infrastructure to be retained however providing a 2.0 metre sidewalk is compromised in many locations with some sections below the required 1.5 metre width and as little as 0.8 metres in some areas. Providing greening elements such as street trees, benches, and other landscaping is limited to the eastern sections of Princess Street closer to Division Street. Despite these issues public engagement showed a strong preference for Alternative 5 while consultation with the accessibility stakeholders noted a desire to maximize the available area for pedestrians and transit users best represented by Alternative 1.

From a technical standpoint, a review with City and Utilities Kingston staff highlighted several challenges in both alternatives, including issues related to constructability, utility conflicts, and operational considerations such as snow removal, parking, and emergency services access that must be addressed in the detailed design stage. Each alternative presents unique challenges and potential benefits to different users given the constrained area available in the public right-of-way.

The study also evaluated various configurations for a neighbourhood cycling network, aiming to create a supportive network that would support cyclist needs within the neighbourhood. The cycling network developed includes a variety of facilities that can be retrofit onto the existing streets to prioritize cycling and other active travel.

In addition, Green Street concepts were developed with a goal of improving pedestrian safety and environmental sustainability on neighbourhood streets through infrastructure changes such as bulb-outs, raised crosswalks, plantings, and additional trees. Three concepts, varying in level

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of intervention, were developed with a strong preference from participants for the highest level of intervention, although concerns were raised related to the trade-off required in the removal of on-street parking.

The information presented in this report and exhibits provides detailed analysis on two design concepts for Princess Street, both of which can be supported by formalizing a neighbourhood cycling network and incorporating Green Street design into local roadway reconstruction. Next steps for the full Williamsville Transportation Study are as follows:

- Incorporate input received from the EITP Committee on the design alternatives, neighbourhood cycling network, and Green Streets into a report for Council planned for spring 2024.
- Use direction provided by Council to finalize the preferred design concept for Princess Street and commence detailed design on the segment from Alfred Street to Division Street.
- Incorporate direction on the cycling network into capital projects planned for identified streets.
- Adopt the Green Street definition and concepts and further integrate design details into neighbourhood streets slated for reconstruction in the approved capital budget.

Recommendation:

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Authorizing Signatures:

ORIGINAL SIGNED BY COMMISSIONER

Brad Joyce, Commissioner, Infrastructure, Transportation & Emergency Services

ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER

Lanie Hurdle, Chief Administrative Officer

Consultation with the following Members of the Corporate Management Team:

Paige Agnew, Commissioner, Growth & Development Services	Not required
Jennifer Campbell, Commissioner, Community Services	Not required
Neil Carbone, Commissioner, Corporate Services	Not required
David Fell, President & CEO, Utilities Kingston	Not required
Peter Huigenbos, Commissioner, Major Projects & Strategic Initiatives	Not required
Desirée Kennedy, Chief Financial Officer & City Treasurer	Not required

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Options/Discussion:

This report provides a summary of the analysis, engagement, technical considerations, and next steps of the transportation study for the Princess Street corridor in Williamsville, along with the associated neighbourhood cycling network and Green Street concept development that was completed in addition to the original scope of the study.

Detailed information is contained within the Williamsville Transportation Study included in Exhibit A and associated appendices contained in Exhibits B through E with this report focused on summarizing important considerations ahead of a future Council report.

Background

The Princess Street corridor within the Williamsville neighbourhood is identified as an important area for population and housing growth through intensification and redevelopment. The land use and growth planned for this area was updated through a comprehensive review and adopted by Council in December 2020. In support of this work, a transportation operational needs assessment was completed to understand how the transportation network would perform in the short and long term with this anticipated growth.

The transportation operations analysis concluded that the increased transportation demand could be accommodated and recommended the prioritization of pedestrian and transit modes within the area. The analysis also noted that the limited width of the right-of-way would limit the street from simultaneously prioritizing all modes of travel with a recommendation to look at reducing travel lanes for vehicles, removing on-street parking, and exploring alternate routes for cyclists through the area if required. Full details of the 2020 study can be found in <u>Report</u> <u>Number PC-20-065</u> and the transportation operations analysis is included in this report as Exhibit B.

The adoption of the land use changes in 2020 also included a recommendation to complete a more detailed transportation study of Princess Street within this area to develop a conceptual design of what the street and intersections would look like to support this growth and prioritize these transportation modes. This second more detailed transportation study, referred to as the Williamsville Transportation Study, was commissioned to deliver on these objectives.

Analysis

The Williamsville Transportation Study began in spring 2022 with technical and design work that identified alternative design concepts for review that were analyzed against the transportation goals and priorities adopted in the 2020 update to the Williamsville Main Street Study.

From this work, a concept aligned with the transportation priorities adopted was shared with the public and stakeholders for comment in February 2023. The analysis also considered how to

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best accommodate the goals within the known constraints that exist along this section of Princess Street including:

- Relatively narrow public right-of-way that varies from 18 metres to 22 metres along the length of the study area.
- Short block lengths with 13 intersections that increase the complexity of incorporating continuous features.
- Limited opportunities to acquire additional right-of-way in the short term to provide space for all desired elements.

This conceptual design, referred to as Alternative 1 for the remainder of this report, included the following elements: widened pedestrian sidewalks to a minimum of 2 metres, transit priority areas at two locations, and expanded areas for benches, street trees and other landscaping or amenities. To accommodate these elements, vehicle travel lanes are minimized, on-street parking is removed, and the existing on-street cycling lanes are removed and shifted to other streets in Williamsville. Details of this technical analysis are included in Exhibit C – Princess Street Cross Section Study.

Engagement on Alternative 1 showed a strong desire from the Williamsville community and active transportation groups to retain the cycling lanes on Princess Street and to better understand the other alternatives considered and technical analysis completed. There was also a strong desire to understand how the neighbourhood cycling network could be developed further and how Green Street concepts could be included.

Based on this input the project team modified the deliverables of the project to provide the following:

- Sharing of additional technical information related to the alternatives considered for Princess Street, presentation of this information at a public information session, and further developing an alternative concept that included cycling lanes to allow direct comparison.
- Expanded bicycle network scope to further develop the neighbourhood cycling concepts that could be implemented within Williamsville.
- Development and public engagement on Green Streets concepts that can be used in Williamsville and other areas of the city as part of the reconstruction of neighbourhood streets.

A summary of these three deliverables is provided below with full details found in Exhibit A.

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Princess Street Corridor Alternatives

The Princess Street Cross-Section Study (Exhibit C) developed concepts that could provide an improved environment for pedestrians, cyclists, and transit users along the Williamsville section of Princess Street.

The alternative concepts developed considered the following features as most desirable based on the conclusions reached in the 2020 study:

- Maximize areas for street trees and furniture to create a more welcoming streetscape,
- Sidewalks at least 2 metres wide to recognize the growing pedestrian trips and to ensure accessibility for all users.
- Transit priority measures to allow Kingston Transit to operate with headways of five minutes.
- Two-way cycling facilities to enhance cycling access.
- Reduced lane width for vehicles to encourage traffic calming and maximize space available for other amenities.

Six alternatives were developed for review based on these desirable features with all alternatives prioritizing spaces for active and transit modes by removing parking and reducing travel lane width to the minimum possible. A summary of the alternatives is as follows:

- Alternative 1 (Widened Pedestrian Realm): Prioritized the pedestrian realm by removing bike lanes and adding street trees and rest areas where possible to maximum extent of available space. Widened sidewalks to 2.0 metre minimum where possible.
- Alternative 2 (Cycle Tracks): Substituted existing street-level bike lanes with grade separated cycle tracks. Cycle tracks would be a minimum of 2.0 metre wide on both sides of the street. Sidewalks would be designed to 2.0 metre widths where possible.
- Alternative 3 (Bi-directional Cycle Track): Replaced the existing street-level bike lanes with a bi-directional cycle track on the north side of Princess Street. Bidirectional cycle track would be a minimum of 3.5 metre wide. Sidewalks would be designed to 2.0 metre widths where possible.
- Alternative 4 (One-way Cycle Track): Replaced existing street-level bike lanes with a one-way cycle track on the north side of Princess Street. Cycle track would be a minimum of 2.0 metre wide, with additional space between cycle tracks and sidewalks. Sidewalks would be designed to 2.0 metre widths where possible.
- Alternative 5 (On-road Cycle Lanes): Provide conventional street-level cycling lanes, similar to the current condition. Cycle lanes would be a minimum of 1.5 metre wide plus a 0.3 metre wide gutter to provide extra width for maneuvering. Sidewalks would be designed to 2.0 metre where possible.
- Alternative 6 (Continuous Transit Lane): Created a dedicated westbound transit lane throughout Princess Street to improve transit travel times. Sidewalks would be designed to 1.5 metre widths where possible.

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Alternative 1 was identified to best address the pedestrian and transit objectives set forward in the adopted plan for Williamsville and was determined to be feasible with the public space available in the right-of-way. However, this option did not include on-street dedicated cycling infrastructure. This alternative was advanced to more detailed review and comment from the public in spring 2023.

Alternative 5 was also determined to be feasible within the right-of-way while maintaining twoway cycling facilities and allowing transit to be prioritized. However, this alternative cannot meet the minimum pedestrian infrastructure design throughout the corridor. This alternative was advanced to more detailed design following feedback received from the public engagement held in spring 2023 that indicated a desire to better understand if cycling lanes could be maintained.

Alternate 2 and 3 could not fit continuously through the corridor and Alternative 4 only provided one-way cycling infrastructure so all three were not advanced further. Alternative 6 would create unacceptable delays for eastbound transit service, removed all cycling infrastructure, and required sidewalk widths of 1.5 metres so was similarly not advanced further.

A more detailed description of Alternative 1 and Alternative 5 is provided below.

Alternative 1

Alternative 1 prioritizes the pedestrian experience along Princess Street while allowing for transit priority to be included. A rendering of this alternative compared to existing conditions is shown below in Figure 1.



Figure 1 – Existing Conditions and Conceptual Drawing of Alternative 1

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This alternative provides a 2.0 metre sidewalk along 98% of the corridor and protects an additional minimum 1.85 metre area for benches, street trees, and other amenities along 60% of the corridor. Cyclists and vehicles will share the travel lanes and the design can include infrastructure at intersections where possible to assist cyclists in making turns. Vehicle travel lanes are reduced to between 3.3 metres and 3.5 metres and parking lanes are removed, which creates a maximum vehicle area of 7.0 metres in mid-block sections. This configuration is expected to lead to slower traffic speeds creating safer shared spaces for cyclists and drivers.

No on-street parking is included in this alternative with the expectation that these needs are accommodated on the side streets or within the private developments. It is expected that some motorists may attempt to park or stop illegally by pulling up onto the curb, blocking the travel lane. However, the narrow, single lane of travel in each direction is expected to discourage this behaviour to a much greater degree than other alternatives where at-grade cycling lanes or transit priority lanes may be improperly used for this purpose. Appropriate side street loading and parking areas along with enforcement will be necessary to minimize illegal parking and stopping. Some parking to address accessible or loading concerns may be able to be included in the eastern sections of Princess Street close to Division Street if the pedestrian realm is reduced.

Alternative 1 addresses accessibility requirements for pedestrian areas and would encourage increased pedestrian use for trips within the neighbourhood and to comfortably access transit. It also allows greening elements to be provided more consistently along the entire corridor. Transit priority needs are protected where warranted and vehicle operation is slowed to allow shared use with cyclists.

Alternative 5

Alternative 5 maintains on-road cycling lanes in both directions as a priority and encourages cycling as a sustainable option of transportation along Princess Street. A rendering of this alternative compared to existing conditions is shown below in Figure 2.



Figure 2 – Existing Conditions and Conceptual Drawing of Alternative 5

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The narrowing of vehicles lanes to between 3.3 metres and 3.5 metres along with the removal of on-street parking allows for a continuous on-road, unbuffered 1.5 metre cycling lanes to be retained in both directions. This continuous cycling lane and removal of on-street parking obstacles will maintain the current level of infrastructure for confident cyclists that are comfortable traveling in on-road cycling lanes. This on-road cycling lane configuration is no longer recommended in the updated Ontario Traffic Manual guidelines in this situation but is recognized as an existing condition.

The remaining area is allocated to the pedestrian realm with 86% of the corridor able to provide a 2.0 metre sidewalk however the areas where the sidewalk width cannot be accommodated, mostly located in the central and western areas of Princess Street, includes sections that are below AODA standards of 1.5 metres and in some cases expected to be as narrow as 0.8 metres. Some areas, largely in the eastern section of Princess Street closest to Division Street will allow for some pedestrian amenities such as benches and street trees.

The overall asphalt width of the roadway with cycling lanes will be approximately 9.7 metres to 10.0 metres wide in mid-block areas. As the cycling lanes are not physically buffered, there will be increased instances of vehicles stopping or parking within the cycling lane area compared to Alternative 1. Appropriate side street loading and parking areas along with enforcement of correct use of the cycling lane will be necessary to minimize these occurrences.

This alternative provides the best option to retain cycling infrastructure in this section of Princess Street and best encourages neighbourhood and city-wide cycling trips. It does not address accessibility issues for pedestrian areas and may discourage increased pedestrian trips within the neighbourhood. It also reduces the opportunity for greening opportunities, including planters, particularly in the western half of the study area. Transit priority needs are protected where warranted and vehicle speeds may be slowed through this section if cycling lanes are respected.

Engagement on Alternative 1 and Alternative 5

Following completion of the initial Princess Street Cross-Section study (Exhibit B), Alternative 1 was shared on the City's Get Involved platform to allow questions and feedback from the public and interested stakeholders. Public feedback through the Get Involved platform and at a town hall meeting organized by the Williamsville Community Association indicated a strong concern over the lack of cycling lanes in the design and a strong desire to better understand the alternatives that were considered that could allow cycling to be included in the final design.

To address these concerns and to increase transparency for the design process, the Princess Street Cross-Section study was revised to add more details about the alternatives considered and the technical analysis completed. The design concept for Alternative 5 was advanced to a similar stage as Alternative 1 to be shared with the public. This expanded information, including updated concepts for Alternative 1 and 5, was presented at a public information session on

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October 26, 2023, and made available on the Get Involved platform through late November 2023 for comment.

Comments and survey results from this engagement indicated a preference for keeping and/or enhancing the existing cycling lanes along Princess Street. Cycling lanes were ranked as the most important feature to include in the design, followed by wider sidewalks, street trees and furniture, and transit priority lanes. Residents noted that the existing Princess Street cycling lanes do not feel safe to ride on and preferred physically separated cycling lanes. This prioritization is best reflected in the Alternative 5 concept although the physically separated cycling lanes cannot be accommodated in the available space while protecting for other required features.

Participants also noted that the existing Princess Street corridor in Williamsville does not feel inviting from a pedestrian standpoint and should be enhanced particularly for persons with accessibility needs. It was noted that some existing intersections along Princess Street do not have accessible elements such as tactile plates or audible cues. Other concerns raised pertained to short crossing times at intersections, which are not suitable for individuals with accessibility concerns. Participants also noted that the removal of on-street parking on Princess Street would make it harder to find accessible parking. Pedestrian enhancements, including crossing areas at the intersections, sidewalks that meet accessibility requirements, and space for rest areas is best addressed by the Alternative 1 concept.

Consultation with Municipal Accessibility Committee on Alternatives 1 and 5

Consultation with the Municipal Accessibility Advisory Committee (MAAC) was completed with a three-person project team. The MAAC project team noted that there is a requirement to comply with the Access for Ontario Disabilities Act (AODA) where possible and that maintaining and improving transit service in the Williamsville area is critical for ensuring the Williamsville area remains accessible to residents who rely on the service. It was noted that for many individuals, transit serves as the gateway to the rest of the city, particularly for those that do not drive as their primary mode of travel.

The MAAC project team expressed concerns with the sidewalk widths proposed for Alternative 5, particularly in the western end of the study area where sidewalk widths in the Drayton Avenue area, will be compromised below 1.0 metre unless additional land can be acquired. It was also noted that there are a number of medical institutions that require accessibility accommodation within the corridor and it is important to provide accessible infrastructure where possible. The team also stressed that the success of accessible infrastructure relies on its continuity with gaps or barriers being a significant concern for the accessibility at intersections so that they do not become a barrier themselves with suggestions to include raised intersections, scramble crossing signals, and shortening the crossing distance for larger intersections during detailed design.

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The MAAC representatives noted challenges with the existing cycling lanes on Princess Street and concern that the cycling lanes proposed in Alternative 5 would not address these issues. The lack of physical barriers may not prevent vehicles from encroaching on the cycling lanes and cyclists may be forced into the roadway if there are stopped vehicles blocking the cycling lanes. In the discussions about Alternative 1, it was noted that unintended impacts to accessibility can also occur with the removal of the existing on-street cycling lanes as the likelihood of non-confident cyclists riding on the sidewalk may increase, posing a hazard for pedestrians. It was also noted that for many residents, cycling is an easier way to travel and preferable to walking longer distances. There is also concern that non-confident cyclists would need to alter their traveling routes, potentially increasing the total distance travelled significantly.

The MAAC project team offered some compromises for consideration during detailed design including add cycling lanes to the eastern side of the corridor where there is enough space to allow a minimally accessible sidewalk or adding a cycling lane in the westbound direction.

Constructability and Operations Review on Alternative 1 and 5

Technical staff from Public Works, Engineering, Transportation, Transit, and Utilities Kingston completed a preliminary constructability review of Alternative 1 and Alternative 5 to compare the impacts for multiple areas including: utility conflicts, maintenance, snow removal, intersections, traffic signals, emergency services, operating costs, and safety.

The technical group noted that the constrained right-of-way in this section of Princess Street is expected to create reconstruction challenges in any scenario, particularly as it relates to unknown or unexpected historic infrastructure. Staff noted that Alternative 1 best addresses accessibility requirements under the AODA and there is an identified need to reduce barriers for pedestrian and transit riders in this area. As portions of Alternative 5 cannot accommodate AODA-compliant sidewalks with existing right-of-way, acquiring additional public lands will be required.

It was noted that the narrower streets proposed for Alternative 1 limits the available space for utilities and increases the cost of repairs and maintenance if needed, whereas Alternative 5 provides more space to work within the right-of-way. It was also noted that there is a significant amount of telecommunications utility infrastructure throughout the corridor, creating challenges for locating remaining utilities. That said, Alternative 5 provides limited space to install traffic signals and street lighting, particularly in the western areas of the study at Drayton Avenue. Single poles could be used to reduce pole pollution and free up space while turning movements to and from constrained intersections may need to be limited or removed. Similarly, street trees and the associated Silva Cells may be difficult to implement and maintain in either alternative due to the depth needed for the soil and drainage interfering with utilities. These issues are mitigated if raised planters or plants with shallow roots are used but space to accommodate these elements in Alternative 5 are very limited.

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From an operational perspective, both alternatives pose challenges for snow removal as the elimination of the parking lanes restricts the snow storage capacity for the initial clearing of vehicle travel lanes. To meet City minimum maintenance standards, snow removal is most challenging in Alternative 5. Alternative 1 has some snow storage capacity and would allow Public Works to return to clear snow from the boulevard and sidewalk. The narrow roadway in both alternatives may cause traffic delays during snow removal operation however this can be mitigated by completing this work overnight or in off-peak hours. Snow removal costs would likely increase to levels similar to existing costs for lower Princess Street in both alternatives.

Removal of accessible parking is a concern for both alternatives, however, with Alternative 1 there is more space available to include accessible parking in the eastern section in the final design at the expense of some of the pedestrian realm or greening space. Alternative 5 does not include space within the right-of-way to accommodate temporary on-street parking or passenger loading. Lack of loading zones is a concern for both alternatives and there may be traffic delays if vehicles stop in the middle of the road to load/unload. There is a concern that the on-street cycling lane proposed in Alternative 5 will attract illegally parked vehicles to a greater degree than Alternative 1. Staff noted that the side streets will need to accommodate all parking and loading in both alternatives as there is limited rear lane access to buildings along Princess Street.

Waste collection is currently done on-street with curbside placement. Solid Waste staff noted concerns that collection vehicles could block traffic movement when collecting waste under both alternatives. Off-peak waste collection and vehicle assignment similar to that used within other areas of the downtown core may be required to minimize disruption.

There is concern that the narrow roadway in Alternative 1 could impact emergency response time as there is less space for vehicles to maneuver to make way for emergency vehicles. Using mountable curb instead of barrier curb may alleviate this issue although this may lead to undesirable parking behaviours by motorists who can more easily mount the curb area.

Neighbourhood Cycling Network

In addition to developing a future concept for Princess Street there is a need to develop supporting infrastructure within the Williamsville neighbourhood to further encourage active travel and shift trips away from vehicles. As part of the transportation study, a network of potential neighbourhood cycling routes was developed for public engagement in spring 2023.

The network developed through this process is shown in Figure 3 with the green lines representing the corridors most preferred.

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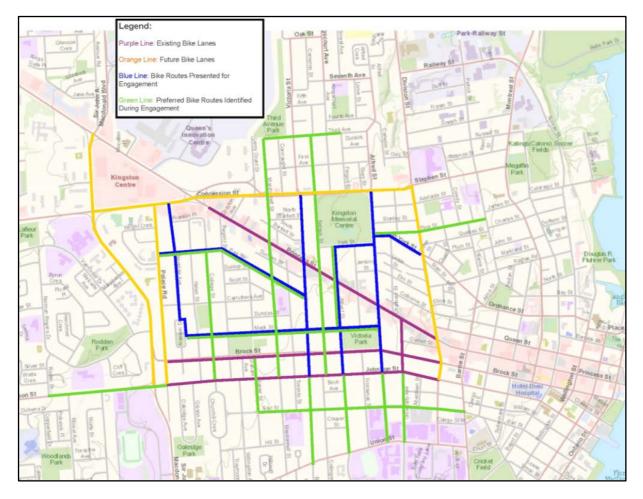
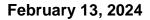


Figure 3 – Cycling Network Options Developed for Williamsville

Using these network options, the study developed a recommended facility type for the proposed network. These facility types were determined using the Cycling Facilities guidelines of the Ontario Traffic Manual (OTM Book 18). Based on this review and technical analysis there are three facility types recommended for the Williamsville neighbourhood streets – shared streets, neighbourhood bikeways, and advisory bike lanes. Details of each of these facility types are presented in the WTS (Exhibit A) and further in Exhibit E. The resulting network and recommended facility type is captured in Figure 4.

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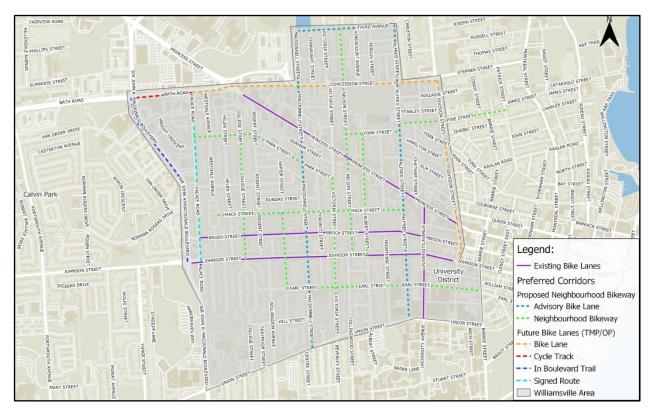


Figure 4 – Recommended Cycling Network and Facility Type

This neighbourhood network can be developed in conjunction with either Alternative 1 or Alternative 5 for Princess Street. The priority of developing key east-west routes along Mack and Park streets may be greater if Alternative 1 is selected as the preferred concept for Princess Street.

Public engagement on the neighbourhood cycling network was completed in spring 2023, with additional comments gathered on the facility types at an in-person open house and online through the Get Involved platform in October and November 2023. Participants in the engagement were generally supportive of the network that was being developed and the proposed locations for the advisory cycling lanes.

Participants in the engagement expressed a desire for more robust vehicle restrictions on local roads, including modal filters, traffic diverters and bollards. There were mixed responses to using bump-outs as a traffic-calming measure, with concerns related to diverting cyclists to the centre of the road and visibility of the bump-outs, especially during winter.

Consultation with the MAAC project team noted strong support for additional cycling infrastructure in the surrounding area for residents with accessibility needs. It was noted that the importance of a holistic approach to the overall design should be a priority so that the additions

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to the neighbourhood cycling network are included as part of the design of the Princess Street areas. The MAAC project team noted a concern that the options proposed consisted primarily of painted cycling lanes and stated a preference for more robust infrastructure that included physical barriers between cyclists and vehicles, particularly if the cycling lanes along Princess Street are removed.

The MAAC project team also noted a concern that vehicles may not respect advisory cycling lanes and that a public education campaign would not be sufficient for maintaining the safety of cyclists, particularly with larger vehicles that are commonly used in the city. There was concern with the use of bump-outs and the possibility that they would force cyclists into the centre of the road.

Green Street Concept Development

The Green Street concept was developed at a high level within the original Williamsville Main Street Study and carried through in the 2020 update as a concept that the community strongly desired to see on neighbourhood streets in the future. This concept was further supported in Council's Strategic Plan directing staff to "explore other options to support 'greening' the city, such as green infrastructure in municipal rights-of-way".

Five Principles

Based on this direction and the interest expressed by the Williamsville residents, the study scope was expanded to develop Green Street concepts that could be used on neighbourhood and local roadways. The work developed five principles that would define the Green Street approach as follows:

- 1. Intersections should be designed with a focus on vulnerable user safety. Techniques to consider should include intersection narrowing, reduced curb radii, raised crossings/intersections, conspicuous pavement marking, and improved lighting.
- 2. Vehicular lane widths will be minimized to encourage reduced travel speeds and reduce impermeable surface area within the road right-of-way.
- 3. Traffic calming techniques should be considered for local roadways where speed or volume is a demonstrated concern to improve multi-modal safety and discourage use of private vehicles within the Williamsville area.
- 4. Planting of street trees and landscaped boulevards/islands should be considered to provide shade and visual interest. If required, existing on-street parking should be considered for removal to provide additional space. Where parking cannot be removed, parking lane widths will be minimized.

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5. Where feasible, based on space and soil conditions, low-impact development features, including rain gardens and permeable pavements, should be used to improve the quality and decrease the volume of stormwater entering waterways.

From these principles, three preliminary concepts – lite, medium, and heavy – were developed for public engagement. These concepts can all be implemented regardless of the final direction of the Princess Street design however there could be conflicts with some of the features considered for the neighbourhood cycling network that would be reviewed at a detailed design stage. A summary of these concepts is as follows:

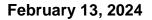
Green Lite Concept

As the name suggests, the Green Lite concept requires the fewest infrastructure changes on the street and can be implemented at the lowest cost. The concept focuses on adding bump-outs at the intersections, seasonal centreline bollards, and minimizes the loss of on-street parking and opportunities for green elements to be added. A rendering of this cross-section concept and the layout on a block of Frontenac Street is shown in Figure 5 and 6.



Figure 5 – Green Lite Cross-Section Rendering

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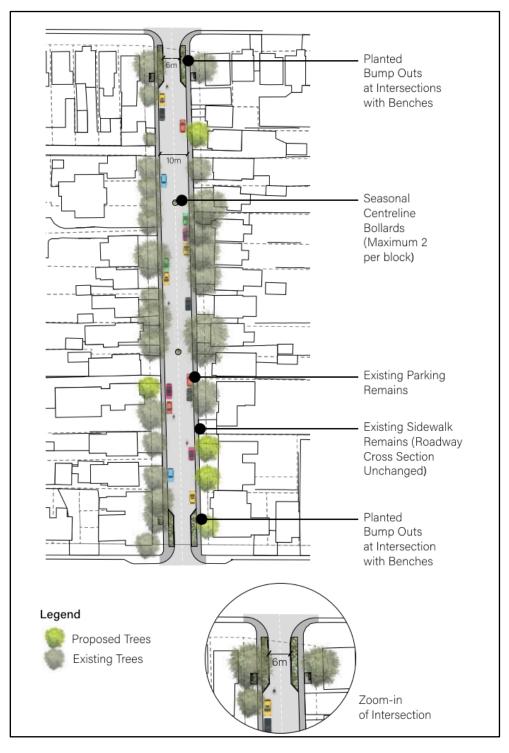


Figure 6 – Green Lite Concept Layout

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Green Mid Concept

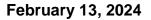
The Green Mid concept expands on the features developed for the Lite concept and includes some additional mid-block bump-outs that would provide opportunities for additional traffic calming and greening elements. This concept requires removal of existing on-street parking areas to a greater degree than the lite concept.

A rendering of this cross-section concept and the layout on a block of Frontenac Street is shown in Figure 7 and 8.



Figure 7 – Green Mid Cross-Section Rendering

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Figure 8 – Green Mid Concept Layout

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Green Heavy Concept

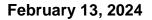
The final concept, Green Heavy, represents the greatest degree of change to the streetscape with a focus on bumped-out areas at along the entire street length and at the intersections. This concept maximizes the traffic-calming elements and provides the greatest space for additional trees and other greening elements to be added. Raised crosswalks are also introduced at the intersections to further enhance the pedestrian elements.

A rendering of this cross-section concept and the layout on a block of Frontenac Street is shown in Figure 9 and 10.



Figure 9 – Green Heavy Cross Section Rendering

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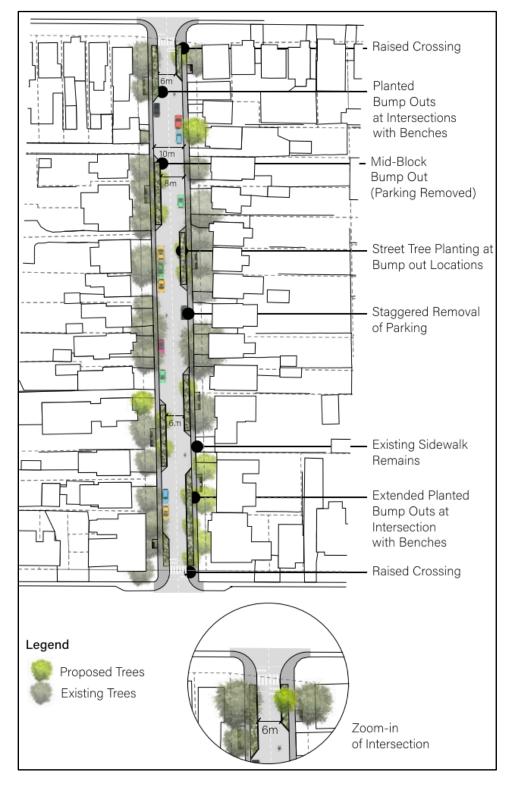


Figure 10 – Green Heavy Concept Layout

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Public engagement on the Green Streets concepts was undertaken in October and November 2023 as part of an in-person information session and through the Get Involved platform. Participants were asked to rank their preferred alternative for the Green Streets concepts with strong preference shown for the Heavy concept and the Lite concept being the least preferred.

Participants were receptive to the idea of Green Streets and when asked about the Green Street elements that were most important the responses indicated that the preferred design should involve wide sidewalks and tree planting where possible. Participants were least receptive to the use of bump-outs and removal of on-street parking suggesting that support for the implementation of the Heavy option may not be as broadly supported as it is at the conceptual level. Adding Green Street elements will require the reduction of on-street parking.

Consultation with the MAAC project team noted broad support for the Green Street concepts, particularly as it pertains to the added rest areas and greenery. Comments supporting maintaining and enhancing access for crossings, especially on major arterials such as Johnson and Brock Streets, was noted as being vital in reducing a major barrier to access.

Public Engagement

Public engagement for the project has been an iterative process with initial review of Alterative 1 and the neighbourhood cycling network completed through the Get Involved platform in February and March 2023, followed by participation at a town hall organized by the Williamsville Community Association in April 2023.

Comments received during this phase of the project informed the expansion of scope to include additional development on Alternative 5, the refinement of the cycling facility types, and the inclusion of preliminary work on the Green Street concepts.

Engagement on the findings contained in Exhibit A occurred during a public information session held on October 26th within the Williamsville neighbourhood and through the opportunity to review and provide comments on the materials through the Get Involved site through late November 2023.

A summary of the feedback received during the project to date can be reviewed in Exhibit D.

Next Steps

The information presented in this report and exhibits provides detailed analysis on two design concepts for Princess Street, both of which can be supported by formalizing a neighbourhood cycling network and incorporating Green Street design into local roadway reconstruction. Next steps for the full Williamsville Transportation Study are as follows:

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- Incorporate input received from the EITP Committee on the design alternatives, neighbourhood cycling network, and Green Streets into a report for Council planned for Spring 2024.
- Use direction provided by Council to finalize the preferred design concept for Princess Street and commence detailed design on the segment from Alfred Street to Division Street.
- Incorporate direction on the cycling network into capital projects planned for identified streets.
- Adopt the Green Street definition and concepts and further integrate design details into neighbourhood streets slated for reconstruction in the approved capital budget.

Climate Risk Considerations

The concepts considered as part of all three aspects of this report contribute to increased active transportation, opportunities for lower green house gas emissions, and the addition of additional trees and greening elements in neighbourhoods.

Indigenization, Inclusion, Diversity, Equity & Accessibility (IIDEA) Considerations

The concepts considered in this information report consider how to prioritize access and use of a section of Princess Street and the surrounding neighbourhood by those who may walk, roll, cycle, use transit, or drive a vehicle. The work completed to date is informed by Council direction, public engagement, and work with members of the Municipal Accessibility Advisory Committee on the project team.

The findings in this report were reviewed with the MAAC project team in detail, with comments incorporated into this report summary based on the section presented.

Financial Considerations

There are no direct financial considerations associated with the information provided in this report however the concepts for Princess Street, neighbourhood bikeways, and Green Streets will provide direction for future capital projects.

Contacts:

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Other City of Kingston Staff Consulted:

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Tarita Diczki, Project Manager, Engineering Services

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- Luke Follwell, Director, Engineering Services
- Karen Santucci, Director, Public Works

Exhibits Attached:

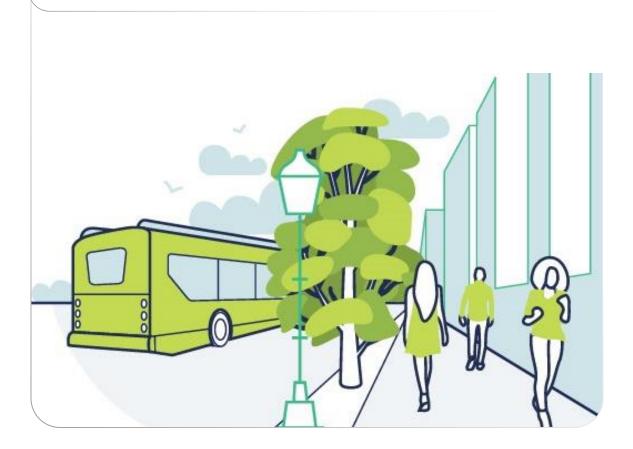
- Exhibit A Williamsville Transportation Study, January 2024
- Exhibit B Appendix Operational Needs Analysis
- Exhibit C Appendix Princess Street Cross Section Study
- Exhibit D Appendix Princess Street Study Engagement Results
- Exhibit E Appendix Neighbourhood Bikeway Design Toolbox



City of Kingston

Williamsville Transportation Study

January 2024 - 23-6663



January 08, 2023

City of Kingston Henk Brilliams, P.Eng Project Manager, Transportation Infrastructure 1211 John Counter Blvd Kingston, ON K7L 2Z3

Williamsville Transportation Study Report - Draft

Dear Henk Brilliams:

Dillon Consulting Limited (Dillon) is pleased to provide you with an initial draft of the Williamsville Transportation Study Report. We trust that the report covers the topics request by the City in a way that is logical and presented in plain language.

Please let us know if you have any questions or concerns as we work towards preparation of a final report.

Sincerely,

DILLON CONSULTING LIMITED

Maria King, P.Eng. Project Manager, Associate

cc: Ian Semple

Our file: 23-6663

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Executive Summary

Dillon Consulting Limited (Dillon) was retained by the City of Kingston (City) to conduct a transportation study of the Princess Street corridor, specifically within the Williamsville neighbourhood between Bath Road/Concession Street and Division Street. This study aims to support the planned growth of the Williamsville area and prioritize sustainable modes of transportation to mitigate potential traffic impacts. To this end, the study has been divided into three parts, which all relate to each other and support the overall vision for a sustainable and accessible Williamsville area.

Part one of the study focuses on Princess Street and the work which has been completed to date related to the traffic operations analysis, proposed cross-section alternatives, and previous engagement. The two shortlisted alternatives are the widened pedestrian realm and cycle lane alternatives. These alternatives most closely aligned with the priorities of the Williamsville area and it is recommended that these alternatives be presented to City council for further consideration. The responses received from the public engagement indicated that the public has a strong preference for keeping bike lanes on Princess Street.

Part two of the study relates to Neighbourhood Bikeways concepts for the surrounding Williamsville neighbourhood area. These bikeways were introduced as supportive infrastructure to enhance the cycling experience and provide additional signed connections to other cycling routes. Based on previous engagement, a list of preferred corridors was selected for neighbourhood bikeway treatments. These corridors were then further analyzed to determine which neighbourhood bikeway treatments would be most appropriate for them. Both advisory bike lanes and neighbourhood bikeways were selected as appropriate facilities for the area and sample renderings and designs were developed. MacDonnell Street, Alfred Street, Mack Street, and Park Street were selected as the key north-south and east-west corridors to prioritize. Additional studies should be conducted to explore the transition between these shared facilities and dedicated facilities at major intersections.

Part three of the study involves implementation of 'green streets' within the broader Williamsville area. These design concepts refer to streets that are intentionally designed to reduce impacts on the social and natural environments. These types of streets are



being considered for multiple local roads in the Williamsville area. The green street concepts included traffic calming measures, increased greenery, and reduced on-street parking. Public engagement revealed that the top priorities for green streets were tree plantings, wide sidewalks, and curb bump-outs. Participants ranked the "Green Heavy" alternative as the most preferred. It is recommended that the next steps for this part of the study are the identification of candidate sites within the Williamsville area and development of a prioritization plan for implementation.

It is recommended that the following additional steps are taken:

- Investigate opportunities to maximize accessibility of the short-listed alternative options presented for Princess Street and select a preferred design option.
- Develop an implementation plan and identify preferred traffic calming measures for the neighbourhood bikeways. Determine a timeline for implementing the proposed network with a focus on the priority corridors.
- Identify and screen candidate corridors for implementing the green streets concepts. Determine a preferred green-street design given the public feedback and preferred alternative.

1.0 Introduction

Dillon Consulting Limited (Dillon) was retained by the City of Kingston (City) to conduct a transportation study of the Princess Street corridor, specifically within the Williamsville neighbourhood between Bath Road/Concession Street and Division Street. Princess Street is identified in the Official Plan as an area for intensification in the City and as an important transportation corridor. Similarly, the Williamsville neighbourhood serves as a major destination and connection to Downtown Kingston, characterised by its high use and continued growth of active and sustainable modes of travel, including walking, cycling, and transit. More recently, the City has explored options for defining success in Williamsville, including aspirations for strategic and timely infill development to meet smart growth goals by updating the area secondary plan. As smart growth becomes more embedded in the principles and mandates of the City, there is an emphasis on ensuring the transportation network is refined to meet the changing needs of the community, primarily through a multimodal lens. This multimodal lens prioritizes active



and sustainable modes of travel throughout Williamsville, providing safer and more equitable access for all users.

1.1 Scope

One of the overarching transportation goals for Williamsville is supporting growth in walking, cycling, and transit mode share as they relate to the significant development and evolution of character the area is experiencing. The scope of this transportation study has three main parts that support Kingston in creating an implementation strategy that is well-suited to accommodate priority transit and active transportation in Williamsville. Part One looks at multi-mobility options along the Princess Street corridor between Bath Road/Concession Street and Division Street. This includes exploring alternative design solutions that emphasize shifting mode share in favour of transit and active transportation. While the intention is not to eliminate vehicular use along Princess Street, there is a great need to explore ways to minimize auto-dependency. The redesign of Princess Street will provide a strong foundation for establishing a more comprehensive multimodal network within Williamsville. Part Two explores implementation of a more comprehensive cycling network throughout the Williamsville neighbourhood, accomplished through the principles of "Green Streets", which are explored in Part Three of this report. The goal of Parts Two and Three is to determine the most feasible approach to increase the desirability of cycling at all ability levels. This includes layering concepts such as Neighbourhood Bikeways and Advisory Bike Lanes on top of the facilities already proposed through the City's Active Transportation Master Plan. The outcomes of Parts Two and Three will complement the redevelopment of Princess Street by improving transportation options and implementing design changes that encourage reduced auto dependency.

1.2 Background

The 2012 *Williamsville Main Street Study* was originally completed to examine existing land uses and redevelopment potential in the Williamsville area. It provided recommendations about transportation, servicing, and cultural heritage in the area. The *Study* was approved by City Council on February 21, 2012 and included a provision for cycling infrastructure on Princess Street.



As per the direction of City Council, an updated Williamsville Main Street Study began in 2019 and included the *Williamsville Transportation Plan Operational Needs Assessment*. On December 1, 2020 City Council passed amendments to implement the update to the Williamsville Main Street Study including adopting the conclusions from the Operational Needs Assessment. This resulted in an update to the Official Plan and Zoning By-law for the Williamsville Main Street Secondary Plan. Further direction was given to undertake a more detailed second phase to develop a design concept for the Princess Street corridor.

In the 2020 transportation study, the City confirmed that Princess Street is theoretically capable of accommodating additional growth and related transportation demand, inclusive of walking, cycling, and transit use. The physical constraints of the Princess Street right-of-way (ROW) could, however, limit the street's actual ability to meet the demands of all modes. This means that it may not be feasible for Princess Street to simultaneously serve as a transit priority corridor, cycling spine route, pedestrian-friendly corridor, and a primary vehicular connection to the Downtown core.

The current study is an extension of the *Williamsville Transportation Plan Operational Needs Assessment Study* completed in 2020 and explores how all modes can be accommodated on Princess Street, and within Williamsville as a whole. This study and report have been prepared in three parts:

- Part 1: Princess Street Study,
- Part 2: Neighbourhood Bikeways, and
- Part 3: Green Streets Concepts.





2.0 **Existing Policy Context**

The City of Kingston is the largest municipality in southeastern Ontario, with considerable opportunity to continue to grow. To promote growth, while simultaneously meeting the community's unique and evolving needs, the City of Kingston requires policy frameworks that guide its development into the future.

The following section speaks to the policies in several overarching planning documents and guidelines that are related to sustainable transportation and community development. The policies are augmented by the City's studies and guidelines, which guide towards establishing more inclusive and accessible rights-of-way that promote compatibility between mobility and land use.

2.1 City of Kingston Official Plan

The City of Kingston Official Plan (OP), consolidated in December 2022, provides direction on how the City will grow to the year 2036. The OP outlines goals, objectives, and policies that manage and direct the physical changes of the City and its effect on the social, economic, built, and natural environments. The policies that are contained in the OP guide how development will evolve over the prescribed planning horizon and how initiatives must be adapted to support the forecasted growth.

The OP's Vision strives to attain sustainability of development to become the most sustainable municipality in Canada. To successfully achieve this Vision, the OP details a set of policies that are focused on implementing green infrastructure, managing growth through sustainable planning principles, and promoting compact development within the Urban Boundary. All of these will reduce the need for automobile-dependent travel. The OP recognizes:

- The importance of intensification and redevelopment along major corridors, continuing to grow within the City's existing urban boundary.
- The need to utilize existing City infrastructure more efficiently to address climate change resiliency, including mitigation and adaptation strategies.
- The need to carry out expansion of the transportation system in a systematic and timely fashion to maximize use of facilities and minimize associated costs and disruption.



• The importance of implementing an integrated and diverse transportation system through land use patterns and a multi-modal network that supports walking, cycling, and transit, fostering sustainable community development.

More specific to the role of transportation planning, the OP acknowledges the important role long-term transportation planning plays in readying the City for future travel needs, while meeting its goals for fostering sustainability. To this end, the **City's OP has included policies that are supportive of transit, active transportation, and pedestrian-friendly facilities that will increase usage, safety, and access for all.** Part of the OP's strategic direction is to reduce reliance on the automobile by satisfying travel demand through the efficient use of existing infrastructure, providing facilities and services that prioritize walking, cycling and transit as universal modes.

2.2 City of Kingston Official Plan - Princess Street Corridor Specific Policy Area (2022)

The Princess Street Corridor Specific Policy Area is a detailed policy directive that provides a cohesive plan for future development along the Princess Street Corridor. It includes consideration for principles such as sustainability, active transportation, and economic development. The Specific Policy Area extends from Ontario Street to Midland Avenue, including the Williamsville Main Street Study, which extends between the westerly limits of the Central Business District at Division Street and the Bath Road/Concession Street Intersection. The Williamsville Main Street policies focus on development in a pedestrian-oriented form that will provide support for the Princess Street transit corridors and more sustainable means of growth. The primary vision for the Williamsville Main Street is to establish a corridor that is vibrant and active, inclusive of improved, pedestrian-oriented streetscape. Additionally, the Williamsville Main Street policies denotes a set of directives for Green Streets. Policy 10E.1.43 states that "Green streets are defined as tree-lined corridors that establish important visual links and enhance active transportation connections between areas within and surrounding the Williamsville Main Street." This policy directive is directly linked to Part 3 of this report, where the City explores options for green street treatments along specific streets within the broader Williamsville area.





City of Kingston Transportation Master Plan (2015) 2.3

The City of Kingston Transportation Master Plan (TMP) provides the long-term direction for the development of transportation networks, supporting policies, programs, and services for the next 20 years. The TMP, originally received by Council in 2015, intended to support the City of Kingston with achieving its Official Plan and overall strategic vision of sustainability. It established mode share goals, based on afternoon peak period travel, for the purposes of identifying policies, programs, and initiatives that put the City on the trajectory of change. Council ultimately adopted aspirational mode share goals for the TMP to reduce reliance on the automobile and instead support mobility needs through sustainable modes of travel. The mode share goals are as follows:

- Active Transportation (Walking and Cycling): 20%
- Transit: 15%
- Auto: 65% •

These mode share goals are increased for the Williamsville neighbourhood to further prioritize active transportation and transit as follows:

- Active Transportation (Walking and Cycling): 50%
- Transit: 15%
- Auto: 35%

The mode share goals noted above are critical to the design and operation of Princess Street. They serve as rationale for why potential trade-offs may be required if the City is to meet its objectives and strategic policy directions highlighted in both the Official Plan and the policies adopted specifically for Williamsville.

City of Kingston Active Transportation Master Plan (2018)

The City's Active Transportation Master Plan (ATMP) is a strategic document that builds upon the Official Plan and further develops the active transportation elements included at a high level in the TMP. The goal of the ATMP is to achieve the long-term city-wide active transportation mode share target of 20%. It encompasses a series of tools and strategies that are specific to neighbourhood transportation planning, including: traffic calming, expanded pedestrian crossings, cycle routes, and neighbourhood programs. The Williamsville neighbourhood falls within "Area K" of Kingston's Transportation



2.4

Focus Area in the ATMP. Through the ATMP, it was identified that a more detailed multi-modal transportation study is required to guide future decision-making and support the City with identifying improved conditions and facilities for pedestrians, cyclists, and transit users.



3.0 Part 1: Princess Street Study

Part 1, the Princess Street Study, reviews the operational needs and design options of the Princess Street Corridor in Williamsville, aiming to support the growth and intensification projected along the Corridor. This Princess Street Study is a continuation of the *Williamsville Transportation Plan Operational Needs Analysis (2020)* and the *Princess Street Corridor Cross-Section Study (2023)*.

It is important to note that as per the City's Official Plan, Princess Street is identified as the corridor meant to accommodate significant infill and intensification. The City's Transportation Master Plan (2015) and the Active Transportation Master Plan (2018) consider Princess Street as a corridor that would be at once pedestrian friendly and serve as an arterial for vehicular movement, a transit priority corridor, and a cyclingspine. The feasibility of simultaneously achieving all of these objectives is challenged by Princess Street's narrow right-of-way, which has sections that are less than 20 metres between Bath Road/Concession Street and Division Street. It is not possible to provide ideal facility widths for all modes (automobiles, transit, cycling, and walking) within the constrained 20 m right-of-way. Compromises must be made, with a focus on meeting both City of Kingston and Accessibility for Ontarians with Disabilities Act requirements.

3.1 **Previous Studies**

Background context from previous studies is required to establish an underlying understanding of existing conditions and to arrive at the proposed alternative designs for this Study. The following sections summarize the key findings and recommendations from the previous studies that have informed the development of this present study. More details are provided in the following sections.

- Princess Street Operational Needs Analysis (2020) recommended that a specific strategy be developed to reduce single occupancy vehicle dependence and improve the safety and desirability of transit and active modes; and
- Princess Street Cross-Section Study (2023) looked at alternative design solutions that could provide an improved environment for pedestrians, cyclists and transit users along Princess Street between Bath Road and Division Street.



• These studies were recommendation of the OP and Zoning updates for the Williamsville Main Street Study in December 2020.

3.1.1 Williamsville Transportation Plan - Operational Needs Analysis (2020)

The Williamsville Transportation Plan - Operational Needs Analysis (2020) study was completed by Dillon to review the road network's existing performance and assess how the network may perform under two future land use/development scenarios. This study focused on performing traffic modelling for the following primary transportation corridors in Williamsville:

- Princess Street between Bath Road/Concession Street and Division Street.
- Concession Street between Princess Street and Division Street.
- Division Street between Concession Street / Stephen Street and Princess Street.

The ultimate development conditions considered a total of 3,265 person trips in the PM peak period by the 2036 planning horizon. The analysis of transportation network impacts resulting from the planned growth was completed for two mode share scenarios:

- Auto mode share of 22% (based on previous studies of existing residential developments within the Princess Street Corridor), and
- Auto mode share of 35% (based on the preliminary mode share results for Williamsville from the City's 2019 household travel survey).

Travel times were predicted to increase along Princess Street and Division Street under both mode share scenarios. This outcome was anticipated based on the approved growth and the city's desire to avoid widening of roadways. The analysis indicated that intersections will only operate at satisfactory levels to 2036 if aggressive modal split targets are achieved within Williamsville. **The study recommended that a specific strategy be developed to reduce single occupancy vehicle dependence and improve the safety and desirability of transit and active modes.** The current study is a component of this strategy.

Further details on the land use scenarios and operational analysis can be found in **Appendix A**.



3.1.2 Princess Street Cross-Section Study (2023)

In 2023, Dillon conducted the *Princess Street Cross-Section Study* to identify alternative design solutions that could provide an improved environment for pedestrians, cyclists and transit users along Princess Street between Bath Road and Division Street. The study included a review of transit operations and transit travel time for Princess Street needed to achieve the City's goal of providing transit headways of 5 minutes or less.

The features identified as most desirable for Princess Street included the following:

- Street trees and furniture,
- 2 metre sidewalks,
- Transit priority measures (queue jump lanes), and
- Two-way cycle facilities.

Traffic modelling identified that without any mitigation measures, one-way peak hour transit travel time on Princess Street will increase by approximately one to two minutes by the year 2036. In combination with increased transit frequency, this could result in up to 20 minutes of transit delay per hour compared to existing travel times.

Design alternatives such as queue jump lanes, left turn lanes, and transit signal priority were considered as potential mitigation measures for Princess Street. Queue jump lanes act as a transit priority measure that allow transit vehicles to "jump" the queue of vehicles by introducing a "transit only lane" at intersections that buses may pull into. The following recommended operational improvements were made based on the traffic modelling analysis:

- Signalize the intersection and implement a westbound queue jump lane and transit signal priority at Princess Street and Drayton Avenue.
- Provide an eastbound left turn lane at Princess Street and MacDonnell Avenue.
- Provide an eastbound left turn lane at Princess Street and Victoria Street.
- Implement a curbside queue jump lane in the westbound direction and implement transit signal priority at Princess Street and Albert Street.

More detail regarding the recommendations and the results of the traffic and transit analysis can be found in **Appendix B**.



Six alternative design concepts were developed for Princess Street, each of which prioritized combinations of transit amenities, widening pedestrian realm, cycling amenities, and landscaping. Compromises were made as necessary. Two lanes of vehicular traffic were maintained in every alternative to facilitate bi-directional transit movements and minimize the risk of traffic bypassing using local streets. **However**, **vehicular lanes were reduced to minimum widths of 3.3 m in all alternatives to prioritize space for alternative modes. Parking was recommended for removal in all alternatives to make space for improved active transportation facilities and discourage auto trips to the area.** The six alternative cross-sections developed as part of the *Princess Street Cross-Section Study* included the following list. Minimum crosssection dimensions are provided for each alternative for comparative purposes only. The Princess Street right-of-way ranges between 18 to 20 m wide.

- Alternative 1 (Wide Sidewalks): Prioritized the pedestrian realm by removing bike lanes and adding street trees and rest areas where possible. Widened sidewalks to 2.0 m minimum where possible. Minimum cross-section width: 13.2 m mid-block, 16.5 m at intersections.
- Alternative 2 (Cycle Tracks): Substituted existing street-level bike lanes with grade separated cycle tracks. Cycle tracks would be a minimum of 2.0 m wide on both sides of the roadway. Sidewalks would be designed to 2.0 m widths where possible. Design did not include desirable separation between cyclists and pedestrians. Minimum cross-section width: 17.2 m mid-block, 20.5 m at intersections.
- Alternative 3 (Bi-directional cycle track): Replaced the existing street-level bike lanes with a bi-directional cycle track on the north side of Princess Street. Bi-directional cycle track would be a minimum of 3.5 m wide. Design did not include desirable separation between cyclists and pedestrians. Sidewalks would be designed to 2.0 m widths where possible. Minimum cross-section width: 16.7 m mid-block, 20 m at intersections.
- Alternative 4 (One-way Cycle Track): Replaced existing street-level bike lanes with a one-way cycle track on the north side of Princess Street. Cycle track would be a minimum of 2.0 m wide, with additional space between cycle tracks and sidewalks. Sidewalks would be designed to 2.0 m widths where possible. Minimum cross-section width: 15.2 m mid-block, 18.5 m at intersections.



- Alternative 5 (On-road cycle lanes): Provide conventional street-level cycling lanes, similar to the current condition. Cycle lanes would be a minimum of 1.5 m wide, making use of the 0.3 m wide gutter to provide extra width for maneuvering. No buffer would be provided between cycling and vehicular lanes. Sidewalks would be designed to 2.0 m where possible. Minimum cross-section width: 16.2 m mid-block, 19.5 m at intersections.
- Alternative 6 (Continuous Transit Lane): Created a dedicated westbound transit lane throughout Princess Street to improve transit travel times. Required the removal of bike lanes and left turn lanes. Sidewalks would be designed to 1.5 m widths where possible. Minimum cross-section width: 16.5 m, continuous.

A high-level overview of the evaluation of the six long-listed design alternatives is provided in **Table 1**. Note that this evaluation considered application of the six alternative cross-sections along the length of Princess Street and therefore included the impact of the varying right-of-way width. Additional details are provided in **Appendix B**. Two of the design alternatives were identified as being 'feasible' and were carried forward to the current study. These short-listed design alternatives are explored in greater detail in **Section 3.2**.

Table 1 Rationale

Alternative 1 was carried forward because it provides many of the desired elements except for two-way cycling facilities. Alternative 2 does not provide desired elements except for cycle tracks, while Alternative 3 does not provide street trees or left turn lanes or queue jump lanes, which would result in delays to buses and cars as noted by traffic analysis. Alternative 4 does not provide the two-way cycling facilities that are preferred, such as in Alternative 5. Alternative 5 was carried forward because it maintains Princess Street as spine cycling route, although cycle tracks would be preferred. Traffic analysis revealed that the removal of all left turn lanes in Alternative 6 would cause significant delay for general traffic and non-prioritized transit service direction.



Features Generally Accommodated	Street Trees	Minimum 2 metre sidewalks	Left turn lanes or transit queue jumps	Two-way Cycle Facilities	Carried forward
Alternative 1: Wide Pedestrian Realm	Yes	Yes	Yes	No	Yes
Alternative 2: Cycle Tracks (Both Sides)	No	No	No	Yes	No
Alternative 3: Bi- Directional Cycle Track	No	Yes	No	Yes	No
Alternative 4: One- way (northwest) cycle track	Yes, in most blocks	Yes	Yes, in most blocks	No	No
Alternative 5: On- road cycle lanes	No	Yes	Yes, in most blocks	Yes	Yes
Alternative 6: Continuous transit lane	Yes, in most blocks	Yes	No	No	No

Table 1: Long-List Cross-Section Alternatives - Ability to Provide Desired Elements

3.2 Alternative Designs

The Princess Street Cross-Section Study shortlisted two alternatives for further analysis. These were Alternative 1 (Wide Pedestrian Realm) and Alternative 5 (On-Road Cycle Lanes). The two short-listed alternatives are detailed in Section 3.2.1 and Section 3.2.2.

A set of design criteria were developed which indicate minimum facility widths to be applied when designing the shortlisted alternatives for further review. **Table 2** explains the design criteria established for Princess Street, as well as the rationale behind them.

Table 2 Rationale

The furnishing zone width ensures that the placement of furniture does not obstruct the walkway zone by providing space for access, use and maintenance of furniture elements. 1.5 m is the absolute minimum width for a walkway zone indicated by AODA, while 2.0 metres is the recommended width for areas with a peak pedestrian flow rate greater than 400 pedestrians per 15 minutes. Additionally, a minimum width of 3.5m is preferred for the bus lane.



Right of Way Component	Minimum Dimensions	Factors and Guidelines References			
Frontage Zone	0.5 metres	Transportation Association of Canada Geometric Design Guidelines (TAC GDG) Chapter 6 Section 6.3.1.1.			
Walkway Zone	1.5 metres to 2.0 metres	AODA standards for Accessible Exterior Paths of Travel (2019) TAC GDG Chapter 6 Table 6.3.1.			
Furnishing Zone	1.85 metres	TAC GDG Chapter 6 Section 6.3.1.3.			
Transit Shelter:	Landing Pad: 9 m x 2.5 m min Ramp Deployment: 1.5 m x 2.5 m min Clearway: 1.5 m min width	City of Hamilton HSR Stop Accessibility Guidelines.			
Cycle Track	2.0 metres (One way) 3.5 metres (Two way)	OTM Book 18 Table 4.4.			
Curb/Gutter	0.5 metres	City of Kingston Technical Standards and Specifications. References OPSD 600.100			
Cycle Lane	1.5 metres + 0.3 m buffer	OTM Book 18 Table 4.7.			
Bus Lane	3.3 metres	Minimum width indicated by City staff and supported by TAC GDG Table 4.2.3.			
Through Lane/Turn Lane	3.3 metres	TAC GDG Table 4.2.3.			

Table 2: Design Criteria for Princess Street





3.2.1 Alternative 1 - Widened Pedestrian Realm with Transit Priority

Alternative 1 prioritizes enhancing the pedestrian experience along Princess Street while providing additional transit amenities.

As discussed in **Section 3.1.2**, transit expansion and pedestrian experience are key priorities for Princess Street. First, Princess Street is identified as a priority transit corridor within the City. Second, for transit corridors to serve their purpose, users must also feel that the area is walkable. As a result, this alternative considers reducing vehicle travel lane widths and turning lanes, removing on-street parking, removing on-street cycling lanes, and widening the pedestrian walkways to a minimum of 2.0 metres where possible. The remaining space within the right-of-way would be allocated for street furniture, street trees, and amenities as a means of livening the corridor. A sample rendering of this alternative can be seen below in **Figure 1**.

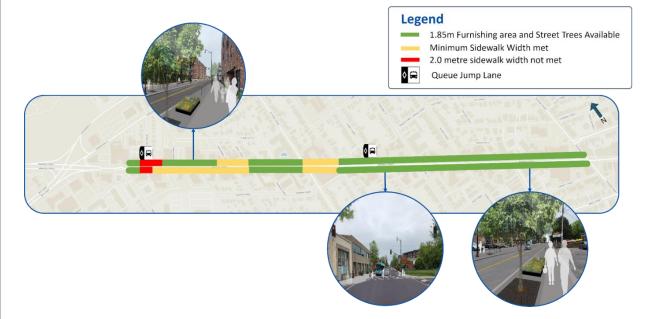
Figure 1: Alternative 1 Rendering





Based on preliminary drawings, high level constraints were mapped out in Figure 2.

Figure 2: Alternative 1 Constraints



Referring to Figure 2, two metre desirable sidewalks widths are met throughout 98% of the corridor, with an additional 1.85 metres for furnishing and street trees available on both sides of Princess Street for 60% of the corridor. These improvements have been made possible by reducing the vehicle travel lanes to 3.3 metres, as explained in Section 3.1.2, removing on-street parking, and the removal of on-street bike lanes. It is expected that these improvements would encourage increased pedestrian traffic on Princess Street, which in turn has the potential to increase transit use. Additionally, this would improve Williamsville from an accessibility perspective as there are many existing locations where there are narrow sidewalks or physical barriers in the sidewalk as shown in Figure 3. Wider sidewalks would allow for two people with mobility devices to comfortably travel side-by-side or pass each other with no issues compared to existing conditions. Additionally, wider sidewalks allow for groups of pedestrians to walk sideby-side and encourages a social space. A wider pathway and fewer physical barriers also improve mobility in these areas as there are fewer obstacles to maneuver around. Cyclists would continue to be allowed to use Princess Street as a shared facility as explored in Section 4.3.1. The narrower travel lanes and the removal of on-street parking is expected to slow down vehicle traffic which results in safer shared spaces for cyclists and drivers.



Figure 3: Comparison of Existing (Left) and Proposed (Right) Sidewalk Conditions (Source: Google Maps, 2020)



Conceptual drawings have been prepared for Alternative 1 which highlight the areas of concern along Princess Street. The drawings have been provided in **Appendix C.** The plans also identify the locations of proposed transit queue jump lanes.

3.2.2 Alternative 5 - Cycle Lanes with Transit Priority

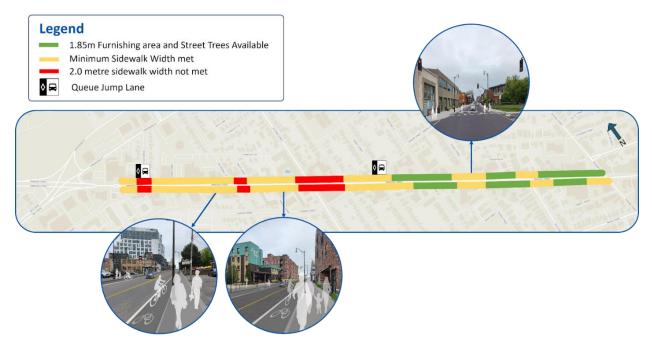
Alternative 5 maintains cycling infrastructure as a priority and encourages cycling as a sustainable mode of transportation on Princess Street. This alternative would take advantage of the removal of on-street parking and narrowing of vehicle travel lanes to realign the bike lanes creating a continuous network along Princess Street as well as expanding the existing sidewalks, where possible. Transit queue jump lanes would be provided at key intersections to continue to promote and grow transit usage in Williamsville.





A sample rendering of the alternative is shown below in **Figure 5**. Based on preliminary drawings, rough constraints were mapped out in **Figure 4**.

Figure 4: Alternative 5 Constraints

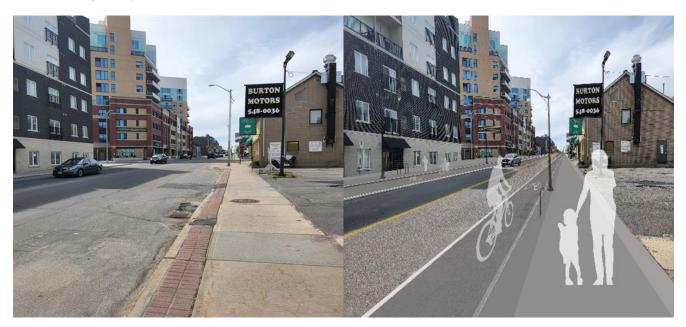


Compared to **Alternative 1**, a 2.0 metre sidewalk is only feasible for 86% of the length of the corridor. In some cases, sidewalks may be narrowed to approximately 1.4 metres to accommodate the proposed elements in this alternative. However, wider sidewalks are possible in many locations with some areas, primarily in the section closest to Division Street, having sufficient space for some furnishings and street trees.

In addition, the preservation of the bike lanes in conjunction with the removal of onstreet parking is expected to encourage cyclists to continue to use Princess Street and the opportunity of drawing cyclists back who were previously concerned about being "doored" by parked cars. **Figure 5** below is an image of existing conditions along Princess Street, where on-street parking conflicts with the bike lane. One of the concerns brought up at previous engagement sessions (**Section 3.3**) was that drivers tend to park illegally and block bike lanes. It is expected that this may still be a concern with on-street bike lanes although on-street parking is removed. It is recommended that parking enforcement is reviewed upon removal of on-street parking along Princess Street.



Figure 5: Comparison of Existing (Left) and Proposed (Right) Bike Lane Conditions (Source: Google Maps, 2020)



Conceptual drawings have been prepared for Alternative 2 which highlight the areas of concern along Princess Street. The drawings have been provided in **Appendix C.** The plans also identify the locations of proposed transit queue jump lanes.

3.3 Engagement

The cross-sections for the two shortlisted alternatives were presented to residents at a Town Hall in April 2023 and an Open House in October 2023. During the April 2023 Town Hall, only Alternative 1 (Wide sidewalks) was presented. During the October 2023 Open House, the preliminary design drawings for both shortlisted alternatives (Alternative 1 and Alternative 5) were presented. An online survey was also posted on Kingston's Get Involved website to collect feedback about the presented cross-sections. The following section outlines each stage of engagement and what we heard. Additional information on the engagement sessions and the feedback received can be found in **Appendix D.**





3.3.1 April 2023 Town Hall

The purpose of the April 2023 Town Hall was to collect feedback on a potential redesign of Princess Street which included a focus on wider pedestrian realms and transit priority measures. Attendees also provided feedback on key local roads that could be used to provide connections for a potential neighbourhood bikeway network.

Three main topic areas of feedback were received at this session.

- There was a strong preference towards keeping bike lanes on Princess Street as well as support for the neighbourhood bikeway network. On the topic of neighbourhood bikeway networks specifically, attendees requested that additional traffic calming measures be introduced alongside them to encourage vehicles to drive slowly and share the roadway with cyclists.
- 2. There was support for a widened pedestrian realm and "greening" of the corridor.
- 3. There were concerns about the removal of on-street parking along Princess Street, suggesting it may result in additional vehicles parking on local roads adjacent to Princess Street with already limited spaces.

Attendees expressed a lack of clarity in the design selection process, noting missed opportunities for additional engagement sessions, which could have provided more options and considerations. Although the City of Kingston staff noted multiple alternatives had been considered, attendees expressed transparency of design and limitations of the alternatives would have been beneficial to understand the decisionmaking process to date.

3.3.2 October 2023 Open House

An Open House was hosted on October 26, 2023, at St. Luke's Anglican Church. The purpose of the Open House was to present additional details for the long list of six alternative designs for Princess Street. Details on the trade-offs and restrictions present in each alternative were explained further. Additional information was also provided about the required widths of the facilities.



Preliminary roll plans for the two short-listed alternatives were brought to the Open House to show attendees the restrictions they would have on the pedestrian realm and what trade-offs would be required between the two short-listed alternatives:

- Wider sidewalks and transit priority; and
- Bike lane and transit priority.

Attendees continued to support bike lanes on Princess Street. Potential advisory bike lanes and neighbourhood bikeways were also introduced as a potential alternative for the local bike network and are explored further in **Section 4.0**. Attendees were able to provide comments on both the panels and sheets that were presented.

3.3.3 What We Heard

Based on feedback received from both public engagement events, the cycling alternatives were most preferred by the attendees. Many attendees indicated they would strongly prefer to keep bike lanes on Princess Street even though it would impose restrictions on the pedestrian realm (See **Figure 6** below). Feedback from both the Open House and online feedback forms also emphasized the need for separated cycling infrastructure to improve safety for cyclists. In terms of the pedestrian realm itself, there were some concerns about cross-sections where the sidewalks were less than 1.5 m wide. Concerns about accessibility were also voiced for the alternative with bike lanes since narrow sidewalks would make it difficult for individuals with disabilities to travel. Additionally, it was noted that many of the existing intersections along Princess Street do not have accessible features (tactile walking surface indicators, accessible push buttons, etc.). Attendees also voiced safety concerns with existing right turn lanes along Princess Street, indicating that it's dangerous for both cyclists and pedestrians.





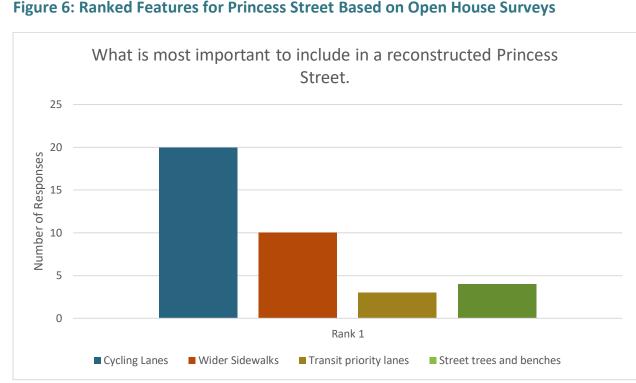


Figure 6: Ranked Features for Princess Street Based on Open House Surveys

Next Steps 3.4

It is recommended that Alternatives 1 and 5 be presented to City Council for further consideration along with supporting information from Section 4.0 and Section 5.0.

Based on the technical design and policy analysis that was undertaken for the Princess Street Corridor, Alternative 1 provides a design that is most consistent with the direction adopted by Council as part of the Williamsville Main Street Study update in December 2020 as well the Official Plan strategic directions. It can prioritize pedestrians, greening opportunities, and transit priority within the available space. Moreover, Alternative 1 also best addresses accessibility concerns raised as part of this study by community members and the Municipal Accessibility Advisory Committee.

As mentioned in Section 3.3.3, many of the community members are supportive of maintaining bike lanes along Princess Street, represented by Alternative 5, even after understanding the potential trade-offs of narrower sidewalks reduced accessibility, greening opportunities, and street furniture.

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It is recommended that the City investigate opportunities to maximize accessibility during the detailed design phase with whichever design is selected. A feasibility study should be conducted for the preferred design which should focus on the ability to widen sidewalks and the benefit and feasibility of the proposed transit queue jump lanes.

Additional studies will be required as part of the detailed design process including, but not limited to, a full topographic survey of Princess Street.



4.0 Part 2: Neighbourhood Bikeways

The concept of 'supportive infrastructure' was first formally introduced to the City of Kingston through the City's 2018 Active Transportation Master Plan. Supportive infrastructure is an approach that improves cycling network connectivity using quiet, low volume, low speed streets within the existing transportation network. Streets can either be selected based on their existing characteristics, or they can be modified through signage and physical changes to meet the low speed/volume requirements.

Implementation of supportive infrastructure within Williamsville will not only improve cycling connectivity throughout the area, but also reduce vehicle dependency. Reduced private vehicle dependency is required to accomplish the target modal splits noted in **Section 2.0** of this report as well as to address directives of the City's *Climate Leadership Plan*.

In Part 2 of this report, preferred cycling corridors and facility types are identified and analyzed for the purposes of establishing "Neighbourhood Bikeways" within the Williamsville neighbourhood, with opportunities for extending into the City's broader cycling network.

4.1 Policy Background

Section 2.0 of this report discussed the policy documents that were reviewed as part of the Williamsville Transportation Study. By extension of the Official Plan (OP), the Transportation Master Plan (TMP), and the Active Transportation Master Plan (ATMP), and the overall vision for shaping the Princess Street Corridor, this report explores infrastructure opportunities that can support cycling along commonly used routes in the Williamsville neighbourhood. The ATMP is a direct response to Council approved directions focusing on sustainable development and transportation network prioritization in favour of active transportation. Building off the mode share goals noted in **Section 2.0**, the ATMP identifies a city-wide transportation network that provides key north-south and east-west connections, split into focus areas that inform context-specific solutions for implementing the appropriate infrastructure. The Williamsville neighbourhood falls within Focus Area "K" – bordered by Concession Street to the north, Division Street to the east, Johnson Street to the south and Sir John A.



MacDonald Boulevard to the west. This neighbourhood-level information is an important component for ongoing land use, development planning, and policy initiatives tied to the OP and other growth and development-related planning initiatives.

The following sections discuss candidate neighbourhood streets that would both benefit from and contribute to a multimodal shift in Williamsville, and the City more broadly, focusing on cycling as a viable mobility option for meeting growing travel demands.

4.2 **Preferred Corridors**

The addition of designated neighbourhood bikeways in the Williamsville area will improve cyclist wayfinding and access throughout the neighborhood. These new eastto-west and north-to-south signed and traffic calmed connections will link the bicycle routes identified in the ATMP and the existing cycling routes on Brock Street and Johnson Street. They will also improve access to key destination throughout, and adjacent to, the Williamsville area. This includes improved connections to the Leroy Grant Trail, the various parks in the area (Victoria Park, Compton Park, Third Avenue Park, etc.), and destinations along Princess Street.

The concept of a Williamsville local street bike network was presented to the public for comment during the April 2023 Town Hall meeting. The public was also encouraged to provide feedback through an online survey hosted on Get Involved Kingston between October 13, 2023 and November 17, 2023. Public input, together with technical analysis completed by the City, resulted in identification of the list of preferred local street cycling corridors listed below and illustrated in **Figure 7**.



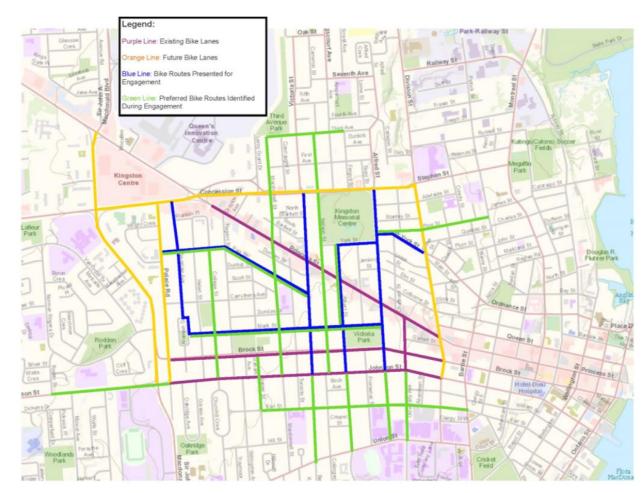


Figure 7: Preferred Neighbourhood Corridors Identified

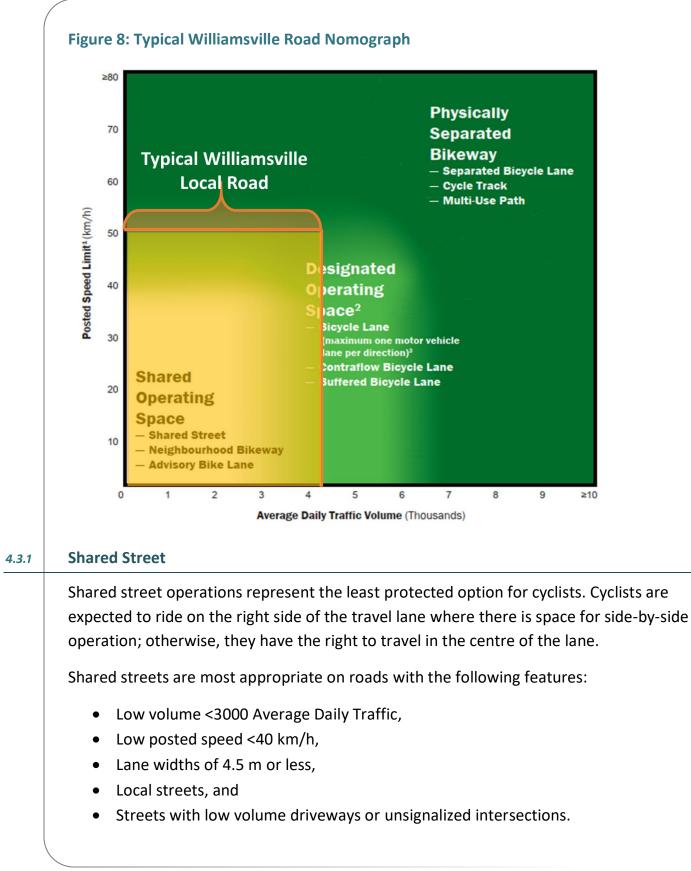
College Street	Park Street	MacDonnell Street
Park Street	Nelson Street	Mack Street
Albert Street	Napier Street	Earl Street
Pine Street	Victoria Street	

4.3 Alternative Facility Types

Appropriate facility types for the preferred neighborhood bikeway corridors identified in **Section 4.2** were determined using guidance from Ontario Traffic Manual (OTM) Book 18: Cycling Facilities. OTM Book 18 recommends three alternative cycle facility types for streets with the speed and volume profiles measured along local streets within the Williamsville area. Recommended facility types include, shared streets, neighborhood bikeways, and advisory bike lanes. Each of these facility types is explained in more detail below the nomograph shown in **Figure 8**.

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No provisions are required for shared streets other than signage to indicate to drivers that cyclists share the lane. Optional sharrow pavement markings can be used to further denote that the lane is shared by cyclists and drivers. A sample shared street facility is shown in **Figure 9**.

Figure 9: Shared Street Facility (Source: OTM Book 18, 2021)



4.3.2 Neighborhood Bikeway

Neighbourhood bikeways, also referred to as bicycle boulevards, build on the concepts introduced in shared street facilities by prioritizing through movements for people riding on bikes while discouraging through trips by motorized traffic¹. This treatment is most appropriate on roads with the following features:

- Low volume <3000 Average Daily Traffic,
- Low posted speed <40 km/h,
- No heavy vehicle traffic,
- Local streets,
- One travel lane in each direction,
- Limited on-street parking,
- Lane widths of 4.0 m or less, and
- Streets with low volume driveways or unsignalized intersections.

¹ OTM Book 18 Section 4.5.2



Neighbourhood bikeways utilize the same signage and sharrow pavement markings as shared street facilities, but further encourage cyclist activity by introducing additional restrictions on motorized vehicle traffic. These restrictions are explored further in **Section 4.5** and include measures to reduce traffic volumes and traffic speeds to encourage cycling on local roads. A sample neighbourhood bikeway is shown below in **Figure 10**.

Figure 10: Sample Neighbourhood Bikeway (Source: BC Active Transportation Guide, 2019)



4.3.3 Advisory Bike Lane

Advisory bike lanes are a relatively new facility in Canada but have begun to see application in a handful of cities across the country. It is originally a European approach to delineate space for cyclists on narrow roadways and clarify operating positions for





cyclists and motorists and increase comfort for cyclists². This treatment is most appropriate on roads with the following features:

- Low volume <4000 Average Daily Traffic,
- Low posted speed <50 km/h,
- Restricted heavy vehicle traffic,
- Local streets,
- Geometry is straight and level,
- 6.6 m to 8 m roadway width without parking lane,
- 10 m to 11.5 m roadway width with parking lane, and
- Streets with low volume driveways or unsignalized intersections.

Advisory bike lanes contain no centreline and motorists are expected to travel in both directions in a shared centre travel lane which is typically between 3.0 and 4.0 m wide, or 5.0 to 5.7 m wide. The bike lanes are distinct in that they are temporarily shared spaces with motor vehicles during turning, approaching, and passing manoeuvres. A sample advisory bike lane facility is shown in **Figure 11** below.

² OTM Book 18 Section 4.5.1



Figure 11: Sample Advisory Bike Lane Facility in Ottawa, Ontario.

(Source: CBC News)



4.4 Recommended Facility Types

The screening criteria touched on in **Section 4.3** was used to identify appropriate cycle facility types for each of the preferred local street cycling corridors. **Table 3** below outlines the existing facilities on they key corridors considered and the recommended facility type on each corridor.



Corridor	Roadway Width (m)	Posted Speed Limit (km/h)	Max Annual Average Daily Traffic (AADT)	Existing On-Street Parking	Recommended Facility
College Street	9	50	238 ³	Both	Neighbourhood Bikeway
Alfred Street	11	50	46614	Both	Advisory Bike Lane/Neighbourhood Bikeway
Park Street	9	50	1549 ⁵	One	Neighbourhood Bikeway
Mack Street	8/9	50	885 ⁶	Both	Neighbourhood Bikeway
MacDonnell Street	9	40	21417	Both	Advisory Bike Lane/Neighbourhood Bikeway
Nelson Street	7/8	50	621 ⁸	One	Neighbourhood Bikeway
Albert Street	9/10	50	1771 ⁹	One	Neighbourhood Bikeway

 Table 3: Recommended Local Cycling Infrastructure

The addition of these local street facilities will create a more comprehensive 'Neighbourhood Bikeway Network' within the Williamsville area. The location of all existing and proposed cycling facilities within the study area are illustrated on the map provided as **Figure 12**.



³ College Street @ Carruthers Avenue Traffic Count (2023)

⁴ Alfred Street @ Johnson Street (2017)

⁵ Park Street @ MacDonnell Street (2017)

⁶ Mack Street @ MacDonnell Street (2017)

⁷ MacDonnell Street @ Princess Street (2017)

⁸ Nelson Street @ Concession Street (2016)

⁹ Albert Street @ Johnson Street (2018)



Figure 12: Proposed Neighbourhood Bikeway Network

Neighborhood Bikeway Facility Treatments 4.5

The following sections provide guidance on the types of treatments that could be considered to reduce vehicular volumes and speeds, as well as improve wayfinding, along the local street cycling corridors.

Applicable Guidelines 4.5.1

The following guidelines were referenced when identifying appropriate treatments for the streets within the proposed Williamsville neighborhood bikeway network:

- Ontario Traffic Manual (OTM) Book 18: Cycling Facilities (2021) •
- Transportation Association of Canada (TAC) Chapter 5 Bicycle Integrated Design • (2017)
- City of Kingston's Active Transportation Master Plan (ATMP) (2018) •
- British Columbia Active Transportation Design Guide (2019)¹⁰ •
- National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide (2014)



¹⁰ Used as a reference for the design and application of advisory bike lanes through case studies.

4.5.2 Design Toolbox

The successful implementation of cycling supportive infrastructure requires that affected streets have low operating speeds (<40km/h) and low average daily traffic volumes (<3,000 ADT). Streets are often selected for inclusion in a cycling supportive network because they exhibit these characteristics in their existing condition. Streets that don't exhibit these characteristics will often be added to the network to provide improved north-south and east-west connectivity. These streets may require additional pavement markings and signage, as well as physical modification to reduce vehicular speeds and volumes to suitable levels. The City of Kingston's Traffic Calming Guidelines were referenced for approved traffic calming measures in the City.

Design techniques can be used to reduce vehicular speeds and volumes, as well as to help prioritize cycling over cars all into the following five categories^{11 12}:

- Traffic Reduction Design Measures
- Major Intersection Treatments
- Minor intersection treatments
- Speed Management
- Signs and Pavement Markings

The following sections provided additional detail regarding how each of the techniques can be applied within the City of Kingston context. Additional information about the expected cost for implementation of the each of the alternative techniques can be found in **Appendix E**.

4.5.3 Traffic Reduction Design Measures

Traffic reduction, commonly referred to as traffic calming, design measures are typically applied at intersections to restrict vehicle movements at intersections while permitting cyclists. The *City of Kingston Traffic Calming Guidelines* is developed in accordance with standards set out in the Transportation Association of Canada (TAC) Canadian Guide to Traffic Calming. It encompasses two main approaches. Type I approaches are classified as minor adjustments such as pavement markings, speed-display devices, vertical centreline treatments. Type II approaches are classified as engineered-based which are

¹¹ Ontario Traffic Manual Book 18 (2021)



¹² National Association of City Transportation Officials (2014)

more permanent in nature and involve planning, designing, and constructing. Type II approaches can include horizontal deflections such as curb extensions, vertical deflections such as speed cushions, intersection treatments and/or cross-sectional treatments.

Traffic reduction measures may not be applicable in all cases; however, they do provide the greatest benefit for cyclists, pedestrians, and residents through reduced exposure to collision risks, traffic noise and emissions (OTM Book 18, 2021).

4.5.4 Major Intersection Treatments

Major intersection treatments improve cyclists' ability to cross a major roadway with higher vehicle volumes and speeds. These treatments improve driver awareness of cyclists, help with cyclist navigation, minimize crossing distances, and reduce vehicle/bicycle conflicts. Examples of intersection treatments are provided in the list below. The City of Kingston's ATMP recommends the use of bike boxes and cross-rides as potential intersection treatments at major intersections as they have lower implementation costs and are familiar to both drivers and cyclists. Local and International Examples of Major Intersection Treatment include:

- 1. **Bike Boxes** (Image source: Google Maps, Kingston, ON, Princess Street and Division Street)
- 2. Advanced Stop Bars (Image source: NACTO, Portland, OR)
- 3. **Bicycle actuated signals** (Image source: Google Maps, Kingston, ON, Highway 15 and Gore Road)
- 4. **Crossrides/Intersection Crossing Markings** (Image source: Google Maps, Kingston, ON, John Counter Boulevard and Portsmouth Avenue)
- 5. Refuge Islands (Image source: NACTO, Portland, OR)
- 6. Curb Extension (Bump Outs) (Image source: NACTO, Portland, OR)





The preferred corridors identified in **Section 4.4** intersect with major roads such as Princess Street, Concession Street and Johnson Street. The following major intersections should be analyzed in more detail and could benefit from one of the major intersection treatments listed above:

- MacDonnell Street & Princess Street,
- Albert Street & Princess Street,
- Nelson Street & Princess Street,
- MacDonnell Street & Concession Street, and
- Victoria Street & Johnson Street.

4.5.5 Minor Intersection Treatments

Fewer treatments are necessary where a neighbourhood bikeway intersects with a minor road due to lower speeds and vehicle volumes. It is desirable, however, to minimize stop controls on cycling corridors and slow vehicle speeds through intersections. For the preferred corridors, it is recommended that stop signs, where not warranted, be removed in the direction of cyclist travel at minor intersection.



4.5.6 Speed Management

Speed management on neighbourhood bikeways is one of the best ways to improve safety for cyclists and thereby encourage the use of bicycles. Reducing posted speed limits is generally not effective at reducing operating speeds below 40km/h, and typically requires the use of physical speed management tools. Reduced vehicle operating speeds can improve the perception time of both motorists and cyclists and further improve safety for both users.

Some examples of speed management measures, including traffic calming devices and minor road design changes, are listed, and illustrated below:

- 1. Speed humps (Image source: NACTO, Portland, OR)
- 2. Raised crosswalks (Image source: Google Maps, Toronto, ON)
- 3. Curb extensions/ Bump Outs (Image source: NACTO, Portland, OR)
- 4. Chicanes (Image source: NACTO, Seattle, WA)
- 5. Narrowing of motor vehicle lanes
- 6. Dynamic "watch your speed" signs (Image source: Google Maps, Toronto, ON)





4.5.7 Signs and Pavement Markings

Providing appropriate signage and pavement markings along neighbourhood bikeways and advisory bicycle lanes has the following benefits:

- Brings attention to the existence of the facility, encouraging use;
- Heightens driver awareness that the space is to be shared with cyclists; and
- Improves
- cyclist navigation through intersections and towards key destinations and network connections.

The most common signs used to denote shared cycling facilities on Ontario streets are signs Wc-19 OTM (Share the Road) and Wc-24 OTM (Single File), which are illustrated in **Figure 13**. These signs indicate the intended relative position of vehicles and cyclists within the roadway. The green bike route sign, Rb-69, should also be used to identify designated cycling corridors. This sign is illustrated in **Figure 14**.

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Figure 13: Shared Facility Signs



Figure 14: Rb-69.





Shared facility pavement markings such as "sharrows" can be used to improve the visibility of cyclists and to clarify that the roadway is a shared-use lane. Bicycle lane markings should be used for advisory bike lanes with a buffer between bicycle lanes and parking lanes. Examples of sharrows and advisory bike lane pavement markings are provided in **Figure 15**. At the time of writing, neither OTM Book 18, or TAC GDG have a standard advisory bicycle lane sign to inform drivers how to operate with these facilities. Both Gibbons, BC and Ottawa, ON have created custom signs to inform both cyclists and drivers.

Figure 15: Example pavement markings for shared cycling facilities



Sharrow pavement marking in London, ON Advisory bike lane, Ottawa, ON

4.5.8 Sample Designs

A variety of sample drawings and renderings were created to illustrate what neighbourhood bikeways and advisory cycling lanes could look like in Williamsville. These are shown in **Figure 16** to **Figure 18**. Note that local roads in the Williamsville area have narrow road right-of-way widths that vary between 15 m and 20 m and provide limited space for additional landscaping.





Figure 16: Typical 15 Metre Right-of-way Neighbourhood Bikeway

Figure 17: Typical 20 Metre Right-of-way Neighbourhood Bikeway





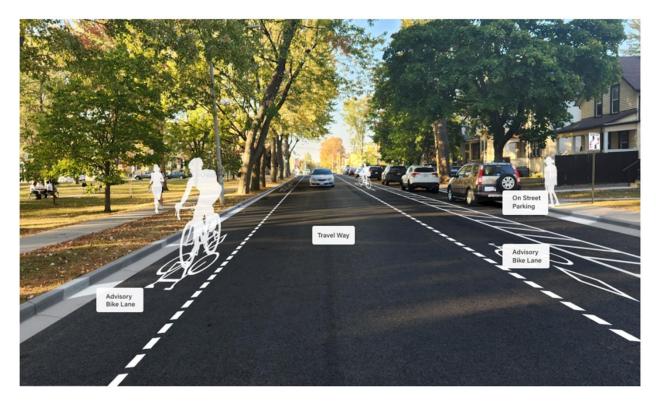


Figure 18: Typical 20 Metre Right-of-way Advisory Bike Lane

Detailed cross section drawings can be found in Appendix E.

4.6 Engagement

Alternative design concepts for the local street cycling facilities were presented during the October 26, 2023 Open House. Information and imagery were also provided on the 'Williamsville Bikeway' page of Get Involved Kingston. During the Open House attendees were asked to provide comments on the routes, facilities and traffic calming measures that were proposed. The Get Involved page included a survey where the public could provide comments between October 13 and November 17th, 2023.

The attendees at the Open House were generally supportive of the proposed designs for the neighbourhood bikeways and the proposed locations for advisory bike lanes. Feedback from the online survey was similarly supportive of the potential changes – including the recommended streets.



Traffic calming and speed control measures were included as part of the recommended design for the neighbourhood bikeways. Speed control measures such as lowering the posted speed limit were appreciated by attendees, who felt that it would make the streets feel safer to bike on. There were mixed reactions to traffic calming measures, including the use of bump outs. Bump outs were positively viewed by some who noted a benefit to people with disabilities through reduced crossing distances. Some attendees, however, were concerned that snowplows would not be able to clear them properly during the winter.

Attendees also recommended additional bike routes to consider for neighbourhood bikeways. One of the routes that was recommended was to add bike infrastructure on York Street between Alfred Street and Barrie Street as an alternative to Princess Street. After further discussions with attendees and City staff, it was also noted that Concession Street, Division Street, and York Street may also serve as appropriate alternative routes for cyclists.

Feedback collected through Get Involved Kingston also suggested that dedicated bike lanes should be added on Pine Street, Albert Street, Mark Street, Bath Road as well as on Brock Street and Johnson Street. Respondents who recommended these routes expressed that they should be used for pass-by trips and that the bike lanes on Princess Street should not be removed.

4.7 Next Steps

It is recommended that a detailed implementation plan be developed to introduce and construct the local cycling facilities. This plan should include confirmation of preferred cycle facility type, recommended traffic management techniques, identification of project budgets, and specific timeframes for implementation. Key north-south corridors and east-west corridors that should be developed first to provide the most significant improvements for cyclists through Williamsville include the following:

North-South	East-West
MacDonnell Street	Mack Street
Alfred Street	Park Street



These corridors provide the longest continuous local routes within Williamsville and connections to the existing cycling routes. Immediate, low cost, changes to these corridors could include the addition of pavement markings, signage and temporary intersection narrowing that uses of flexible bollards. Construction of planted bump outs and the addition of street trees can progress as budget becomes available. Other immediate actions could include strategic removal of some on-street parking to begin encouraging mobility behaviour change amongst residents.

Facility transitions and connections should also be explored further once the preferred facilities have been confirmed for each cycling corridor. A feasibility study for the removal of stop signs, removal of on-street parking, introduction of traffic circles, and traffic calming measures including modal filters and diverters, should be conducted. The effectiveness of traffic calming, and speed management measures should be monitored following implementation to inform the design of additional corridors.

There was an overall positive response to the advisory bike lane concepts, and as such it is recommended that these relatively new cycling facilities be piloted in Williamsville and monitored to understand impacts. There were some requests from the attendees to introduce advisory bike lanes on additional corridors which may be explored after a pilot program has been completed. This pilot program should review conflicts, operating speeds of vehicles, and vehicle compliance with the lane markings and signage. By prioritizing the routes listed above, it would also be possible to pilot an advisory bike lane on either MacDonnell Street or Alfred Street, or both.



5.0 Part 3: Green Streets

The City of Kingston is exploring opportunities to implement 'Green Streets' within the broader Williamsville area. Discussed more fully in **Section 5.2**, the 'Green Streets' concept generally refers to streets that are intentionally designed to reduce impact on the social and natural environments. The desire to implement green streets within the Williamsville area was one of the key themes that was part of the Williamsville Main Street Study and showed up in consultation on the Princess Street and neighborhood bikeway concepts. Within the Williamsville area, 'greening' of streets can be used to discourage auto traffic, promote sustainable transportation options, improve treatment of stormwater, and beautify the area. It is necessary to have a more fulsome understanding of what this means to the City of Kingston, and particularly the residents of Williamsville, before moving forward with any roadway modifications within the neighborhood.

The following content is intended to provide the reader with a baseline understanding of the design elements and benefits associated with the proposed changes. This includes visualization of alternative green streets concepts that could be applied to corridors with sections of Frontenac Street used to represent the concepts.

5.1 Policy Background

The concept of Green Streets is embedded in the City's Official Plan Section 10E.1.43 as "Green Streets", as previously detailed in **Section 2.0** of this report. Green Streets for the City of Kingston are intended to be pedestrian-focused with added greenery, rest areas, and space to increase pedestrian comfort, supporting active travel along commonly used neighbourhood routes. Green streets also include traffic calming measures as a mechanism for slowing traffic down along local roadways.

Green Streets also support the City of Kingston with its Official Plan vision for sustainability. In December 2021, the City of Kingston adopted a *Climate Leadership Plan* which sets out a strategy to reach carbon neutrality by 2040. The Plan sets out short- and long-term objectives across the sectors of buildings and energy, waste, transportation, and food and forestry. Within the transportation sector, Council identified the objective of "[Developing] active transportation connections and

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foster[ing] transit-oriented development to encourage a shift to sustainable modes and a reduced reliance on personal vehicle use."¹³ Specific actions recommended under the plan include:

- Continued implementation of the Active Transportation Master Plan, which is focussed on improving connectivity and safety for pedestrians and cyclists,
- Increasing transit ridership through such things as the addition of express routes (like what is planned on Princess Street), and
- Implementation of parking, car-share, and micro-mobility sharing solutions that reduce reliance on single occupancy automobile trips.

The priorities of the Climate Leadership Plan are also reflected in the City's OP, TMP and ATMP, as discussed in **Section 2.0**. All of these put sustainable transportation at the forefront of their policy directives and recommended approaches, with a goal of reducing dependency on the automobile and single-occupant use. Implementation of green streets concepts will help advance policy objectives by making active transportation more inviting and reducing the environmental impact of vehicle operations.

5.2 Kingston's Definition of 'Green Street'

It is important to define what 'Green Streets' mean to the City of Kingston before rolling out the concept in Williamsville and the rest of the city. As previously mentioned, the term is generally used to describe the transformation of streets to more resilient and sustainable designs. How this definition is realized in terms of actual implementation, however, differs significantly between municipalities.

Two distinct definitions are provided by the cities of Toronto and Seattle. The City of Toronto defines Green Streets as "roads that include green infrastructure – natural and human-made – that capture rainwater and direct it to plants and trees, acting as a natural filter that cleans the water before it makes its way into local waterways." On the other hand, the City of Seattle, Washington defines a Green Street as "a street right-ofway that, through a variety of design and operational treatments, gives priority to pedestrian circulation and open space over other transportation uses. The treatments

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¹³ City of Kingston (2021). Climate Leadership Plan. Pg. 86.

may include sidewalk widening, landscaping, traffic calming, and other pedestrianoriented features." While the two definitions seem divergent, designing road right-ofway according to either definition would result in roads that accomplish the following objectives:

- Protection and restoration of natural resources,
- Promotion of a healthy and equitable human habitat,
- Climate change resiliency, and
- Performance optimization.

The City of Kingston has used the combination of the definitions above to develop its own green street design principles for the Williamsville area. These principles should be considered when working on transformational roads projects through the study area, including work on Princess Street:

- Intersections should be designed with a focus on vulnerable user safety. Techniques to consider should include intersection narrowing, reduced curb radii, raised crossings/intersections, conspicuous pavement marking, and improved lighting,
- Vehicular lane widths will be minimized to encourage reduced travel speeds and reduce impermeable surface area within the road right-of-way (ROW),
- Traffic calming techniques should be considered for local roadways where speed or volume is a demonstrated concern in order to improve multi-modal safety and discourage use of private vehicles within the Williamsville area,
- Planting of street trees and landscaped boulevards / islands should be considered to provide shade and visual interest. If required, existing on-street parking should be considered for removal to provide additional space. Where parking cannot be removed, parking lane widths will be minimized, and
- Where feasible, based on space and soil conditions, Low Impact Development (LID) features, including rain gardens and permeable pavements, should be used to improve the quality, and decrease the volume, of stormwater entering waterways.



5.3 Green Street Concept

Frontenac Street was used as a preliminary sample for developing concepts of how green streets could be implemented in Williamsville and other areas of the city. Before moving forward, the City wanted to be able to gauge public interest in green streets, as well as the degree of transformation. To assist with this, three alternative green streets designs were developed for Frontenac Street as a sample segment.

The three alternatives include the following, which are detailed in the following subsections:

- 1. Green 'Lite',
- 2. Green 'Mid-Level', and
- 3. Green 'Heavy'

The three alternatives have increasing levels of changes to the local streets, with the Green 'Lite' alternative retaining the most amount of on-street parking and existing number of street trees, while the Green 'Heavy' option resulted in the greatest reduction of on-street parking and the largest increase in number of street trees.

5.3.1 Green Lite

The Green 'Lite' concept was designed as the lowest cost alternative for implementation, requiring the fewest infrastructure changes. In this alternative, bumpouts are only included at intersections, with no additional bump-outs or traffic calming mid-block. On the sample Frontenac Street corridor (**Figure 19** and **Figure 20**), the Green 'Lite' alternative would result in a total of five additional trees (20% increase), and a reduction of two on-street parking spaces (3% reduction).





Figure 19: Green 'Lite' Cross-Section Rendering



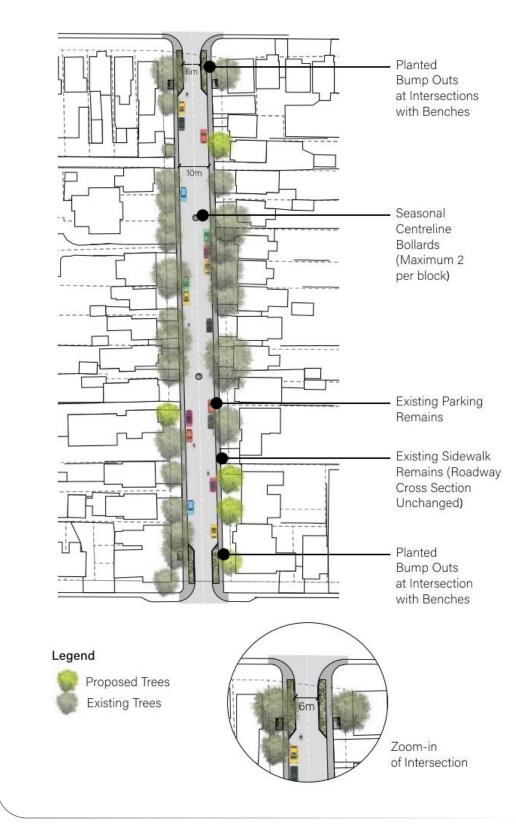


Figure 20: Green 'Lite' Alternative Concept Layout



5.3.2 Green Mid-Level

The Green 'Mid-Level' concept was designed as the "additional improvement" alternative compared to the Green 'Lite' alternative. The mid-level alternative provides some additional bump-outs throughout the street as well as the bump-outs at the intersections. These bump-outs are intended to provide additional space for trees and benches throughout the street. On the sample Frontenac Street corridor (**Figure 21** and **Figure 22**), the Green 'Mid-Level' alternative would result in a total of eight additional trees (32% increase), and a reduction of thirty on-street parking spaces (53% reduction).

Figure 21: Green 'Mid-Level' Cross-Section Rendering









Figure 22: Green 'Mid-Level' Alternative Concept Layout



5.3.3 Green Heavy

The Green 'Heavy' was designed as the "greatest change" alternative, when compared to existing conditions. The heavy-level alternative provides mid-block bump-outs in addition to the bump-outs at the intersections and has limited space for on-street parking. These bump-outs are intended to provide additional space for trees and benches throughout the street, while slowing vehicles down as they navigate around them. On the sample Frontenac Street corridor (**Figure 23** and **Figure 24**), the Green 'Heavy' alternative would result in a total of 16 additional trees (64% increase), and a reduction of 36 on-street parking spaces (63% reduction).

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Figure 23: Green 'Heavy' Cross-Section Rendering





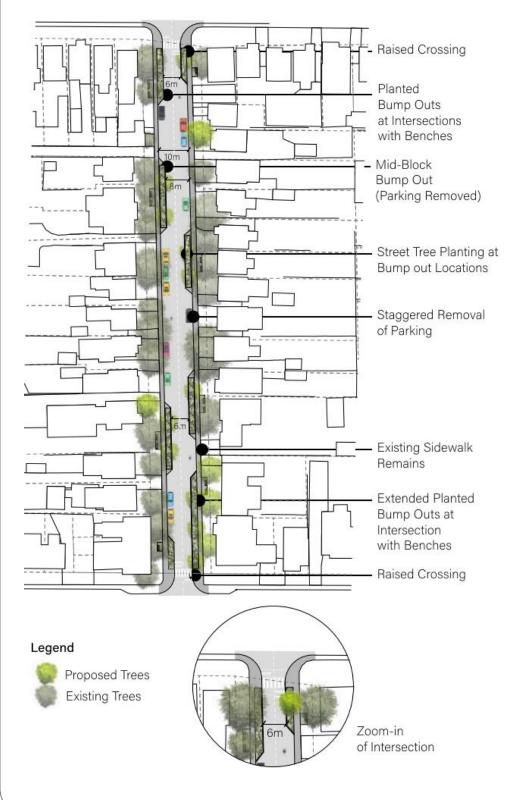


Figure 24: Green 'Heavy' Alternative Concept Layout



5.4 Engagement

The concept of green streets and the alternative designs for Frontenac Street were presented October 5th at the Councillor's Town Hall. The public was also invited to provide feedback through completion of an online survey on the 'Frontenac Green Streets Concepts' page of *Get Involved Kingston* between October 2 and November 17, 2023. Additionally, printed copies of the cross-sections and renderings were available for attendees of the October 26, 2023, Open House to collect additional feedback. A total of 213 survey responses were received either at the in-person events or through the online survey. The following sections provide an overview of the feedback collected through those two methods.

The results of the webpage survey found that walking and biking were the most used modes of active transportation in Williamsville. In terms of barriers to using active transportation, participants were most concerned with sharing the road with vehicle traffic and the speed of traffic. The survey found that most participants were familiar with green street concepts. When asked to rank the three green streets concepts for use within Williamsville, participants ranked the "green heavy" option as the most preferred with "green lite" rated as the least preferred. A breakdown of participant preferences is illustrated in **Figure 25**.





Additionally, participants noted that the following features are most desired on green streets:

- Tree planting (ranked most important),
- Wide sidewalks (ranked second most important), and
- Curb bump-outs and reduced parking (tied for third most important).

5.5 Next Steps

There is strong support for implementation of green street concepts within the Williamsville area based on community feedback. Most survey responses indicated that the green 'heavy' option was the most preferred. However, there was some discrepancy between the most preferred option and the most desired features on green streets. Curb bump-outs and reduction of on-street parking were the least preferred design feature; however, those are the most prominent features in the Green 'Heavy' alternative. Based on the overall support for green streets, it is recommended that the City move forward with identification and screening of additional candidate sites within the Williamsville area and throughout the City.



6.0 Looking Forward

Building off the Williamsville Transportation Plan Operational Needs Assessment Study that was completed in 2020, the intent of this present study was to explore alternative options for how to best accommodate all modes of travel on Princess Street, and more widely within the Williamsville neighbourhood. The alternatives were explored through three distinct sections: Princess Street Study, Neighbourhood Bikeways, and Green Street Concepts. The intent of the three parts was to allow for the City to pursue one or more of the initiatives independent of one another.

Part 1: Princess Street

Looking forward to next steps, the City will investigate opportunities to maximize the accessibility of the short-listed alternative options presented in this report. Recognizing the right-of-way constraints, a feasibility study will need to be undertaken for the preferred design option, focusing on the need to widen sidewalks and the feasibility of the proposed transit queue jump lanes. Considering recent subsurface initiatives along the corridor, there is an opportunity to maximize City resources and combine this with the Princess Street alternative approach as a means to minimize community disruption and financial constraints.

It is important to note that additional studies will be required as part of the detailed design process in support of implementation, including but not limited to a full topographic survey of Princess Street.

Part 2: Neighbourhood Bikeways

The City of Kingston's Official Plan policy directives focus on sustainable community development, favouring mechanisms that advance active transportation and reduce vehicle dependency. Implementation of supportive infrastructure is an approach that can allow the city to improve cycling network connectivity through quiet, low volume, and low speed streets within the existing Williamsville neighbourhood. The recommendations that are proposed are intended to guide the City with the development of a detailed Implementation Plan. The Implementation Plan should confirm the preferred cycling facility type for constructability and continuity purposes, recommended traffic management techniques, as well as budgeting and scheduling.



Prioritization of corridors should provide the most significant improvements for cyclists through Williamsville, and into the City's broader cycling network.

Part 3: Green Streets

In the City's Official Plan, more specifically the Princess Street Corridor Specific Policy Area, there is a vision for Kingston to establish corridors that are vibrant and active, inclusive of improved pedestrian-oriented streetscapes. Green Streets will help achieve this goal. As a newer concept for the City, a series of recommendations are explored in this report with the intent of guiding implementation of a comprehensive Green Street Concept. Looking forward from this report, the City can identify and screen candidate corridors to further explore implementing Green Street concepts as part of planned capital projects. A Green Streets Guideline can be developed which would further define desirable design elements, decision-making processes, and steps for implementation.

The City of Kingston will be required to undertake additional detailed analysis, focusing on design and constructability to identify the preferred alternative for the Princess Street Corridor. The preferred alternative has the potential to both inform and compliment the efforts put into analyzing the benefits of Neighbourhood Bikeways and Green Streets as a mechanism for achieving reduced dependency on private automobiles and increase in multimodality throughout both the Williamsville neighbourhood and the broader city. It is critical for the City to develop a transportation network that supports the growth in Williamsville and the City of Kingston, while improving multi-modal facilities that promote sustainable community development.



Figures





Tables





Appendix A

Princess Street Operational Needs Analysis (2020)





Appendix B

Princess Street Cross-Section Study (2023)





Appendix C

Preliminary Design Drawings





Appendix D

Princess Street Study Engagement Results





Appendix E

Neighbourhood Bikeway Design Toolbox





References





City of Kingston

Williamsville Transportation Plan

Operational Needs Analysis

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1.0 Introduction

The purpose of this memorandum is to document the results of the operational transportation network assessment undertaken for the Williamsville area.

Dillon Consulting Limited (Dillon) was retained by the City of Kingston to undertake an operational assessment of the Williamsville area for the 2036 horizon. The goal of the assessment was to review the road network's existing performance and assess how the road network may perform under two future land use/development scenarios. This also included consideration of alternate mode share scenarios for trip generations of future new development within the neighbourhood. The future land use scenarios are discussed further in Section 4.0.

The following sections describe the study area, analysis parameters, results, conclusions, and next steps.



2.0 Study Area

The focus of the study was on the main transportation corridors in Williamsville:

- Princess Street between Bath Road / Concession Street and Division Street;
- Concession Street between Princess Street and Division Street; and,
- Division Street between Concession Street / Stephen Street and Princess Street.

Williamsville contains a mix of residential, commercial and office land uses. The majority of the commercial land uses and high density residential land uses are located on Princess Street.



3.0 Methodology

3.1 Transportation Demands

City staff provided 2036 population and employment forecasts for the C.M.A. and for Williamsville specifically, based on two potential development scenarios within the Princess Street corridor: approved and active development, and ultimate development.

These population and employment forecasts were added to the C.M.A.¹ transportation demand model (VISUM) and used to estimate the future traffic volumes through Williamsville at the transportation corridor level.

The C.M.A.¹ transportation model is intended for strategic corridor-level analysis. To provide for more detailed intersection-level analysis, traffic generated by the proposed Williamsville developments was distributed to the road network manually outside of the C.M.A. model¹.

3.2 Operational Assessment

The operational analysis applied PTV Group's VISSIM microsimulation software, which is the industry-leading software for transportation microsimulation. Microsimulation involves simulating the behaviour of individual cars, buses, and pedestrians on a simulated transportation network. The model is used to assess the impact to motor vehicles in terms of delays, queuing, and travel time.

Cars in the model are given an origin and destination and are allowed to find their own routes through the simulated road network. The route finding process is iterative and allows vehicles to react and adapt to congestion in the model. This iterative route finding process allows the model to accurately assess future conditions.

Before testing future conditions, it was necessary to construct a model that replicated existing conditions. This step allows the model to better assess future conditions. Calibration involves adjustments to the transportation demands in the model and other parameters to match the travel patterns, travel times, and vehicle behaviour.



¹ Formerly referred to as the 'City-Wide model'

.0	Study Foundations
	The following sections document the population, employment, road network, and public transit assumptions that were used for the analysis.
1	Williamsville Growth
	City staff provided population and employment projections for various 'blocks' in the study area for the 2036 horizon.
	Figure 1 illustrates the location of the development blocks and the assumed location of vehicle driveways for each block.
.1.1	Williamsville Population and Employment
	Table 1 summarizes the population and employment for each block in the study area. There are two development levels that are being evaluated:
	 Approved & active development level; and, Ultimate development level.
	The following abbreviations are used for the table below and the rest of the document:
	 Ex. for existing Units for residential dwelling units Appr. for approved and active development scenario Ult. for ultimate development scenario.
(



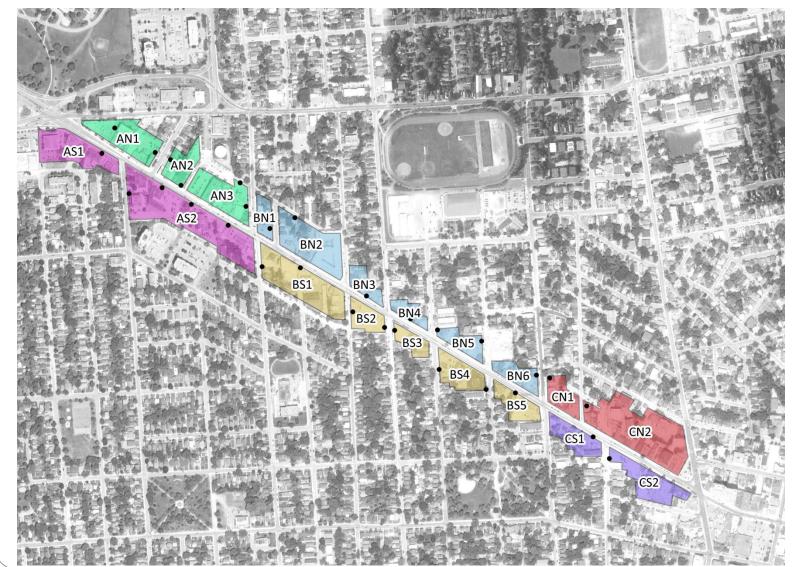


Figure 1: Williamsville Blocks and Assumed Vehicle Driveway Locations

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Total	456	1,049	831	2,639	6,070	1,138	5,639	12,970	2,088
Growth				+2,183	+5,021	+307		+11,921	
CS2	18	41	56	222	511	108	252	580	118
CS1	14	32	31	14	32	31	94	216	56
CN2	104	239	81	299	688	101	949	2,183	306
CN1	11	25	18	312	718	66	372	856	85
BS5	7	16	21	7	16	21	47	108	34
BS4	18	41	27	18	41	27	118	271	59
BS3	0	0	7	31	71	26	91	209	45
BS2	7	16	0	332	764	34	332	764	34
BS1	83	191	35	177	407	35	227	522	51
BN6	13	30	33	184	423	62	234	538	78
BN5	6	14	4	608	1,398	53	608	1,398	53
BN4	5	12	33	5	12	33	115	265	68
BN3	1	2	26	1	2	26	131	301	66
BN2	88	202	15	233	536	41	273	628	54
BN1	12	28	18	12	28	18	72	166	37
AS2	59	136	109	174	400	139	264	607	168
AS1	1	2	71	1	2	71	901	2,072	356
AN3	7	16	156	7	16	156	207	476	219
AN2	2	5	78	2	5	78	52	120	94
AN1	0	0	12	0	0	12	300	690	107
Block	Ex. Units	Ex. People	Ex. Jobs	Appr. Units	Appr. People	Appr. Jobs	Ult. Units	Ult. People	Ult. Jobs

Table 1: Residential Dwellings, Population, and Employment by Block

Growth in the above table is compared to existing.

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4.1.2 Trip Generation - Person

Table 2 lists the person trip generation rate, number of people and jobs, and the total person trip generation for the future development scenarios. The residential trip generation rate is consistent with the observed trip generation rates at 117 Park Street². It is worth noting that the P.M. rate is 2.6x the A.M. rate and therefore the P.M. peak hour is very likely to govern the analysis.

Given the uncertainty with the type of employment, the employment trip generation rate was set was set to 0.6 trips per job, which assumes that 60% of employees will travel during the peak hour. This is reasonable and conservative for this analysis.

	A.M. Peak Outbound	A.M. Peak Inbound	P.M. Peak Outbound	P.M. Peak Inbound
Trip generation rate per residential dwelling unit	0.24			0.63
Trip generation rate per job		0.6	0.6	
Person Trips - Approved +2,183 dwelling units +307 jobs	524	184	184	1,375
Person Trips - Ultimate +5,183 dwelling units +1,257 jobs	1,244	754	754	3,265

Table 2: Williamsville Trip Generation - Persons

4.1.3 Trip Generation - Vehicles

The Williamsville area is very close to downtown Kingston and Queen's University and therefore the number of vehicle trips generated by the proposed residential developments is anticipated to be relatively low. It should be noted that a lower vehicle mode share means the new development within Williamsville will have less impact on the road network than may be expected.



² City of Kingston Princess Street Corridor and Residential Area of Williamsville Neighbour Traffic Impact Study (September 12, 2018), Table 3.3.

Two mode share scenarios were developed to assess the impact of the mode share assumption on the study area road network:

- The first mode share scenario was based on previous studies of existing residential developments within the Princess Street corridor which showed an auto mode share of 22%; and,
- 2. The second mode share scenario was 35% auto mode share, which was based on the preliminary mode share results for Williamsville from the City's 2019 household travel survey.

It should be noted that these residential auto mode shares, including observations from existing residential land uses along the Princess Street corridor, are significantly lower than the City-wide 2034 target of 65% auto mode share. The employment auto mode share was held constant at 60%. The proximity to downtown is anticipated to influence the employment auto mode share slightly but not to the same extent to which it influences the residential auto mode share.

Table 3 summarizes the vehicle trip generation for the Approved and Ultimate land usesfor the two auto mode share scenarios. The following abbreviations are used:

- M.S. for mode share
- Res. for residential and Emp. for Employment
- I.B. for inbound and O.B. for outbound

Тгір Туре	Land Use	Res. M.S.	Emp. M.S.	A.M. Peak O.B.	A.M. Peak I.B.	P.M. Peak O.B.	P.M. Peak I.B.
Person	Appr.	N/A	N/A	524	184	184	1,375
Person	Ult.	N/A	N/A	1,244	754	754	3,265
Auto	Appr.	22%	60%	115	111	111	303
Auto	Appr.	35%	60%	183	111	111	481
Auto	Ult.	22%	60%	274	453	453	718
Auto	Ult.	35%	60%	435	453	453	1,143

Table 3: Williamsville Trip Generation - Vehicles



Table 4 and **Table 5** summarize the trip generation by block for the two mode sharescenarios. The 22%/35% values designate the applied auto mode share.

Block	Appr. 22% O.B.	Appr. 22% I.B.	Appr. 35% O.B.	Appr. 35% I.B.	Ult. 22% O.B.	Ult. 22% I.B.	Ult. 35% O.B.	Ult. 35% I.B.
AN1	0	0	0	0	16	34	25	34
AN2	0	0	0	0	3	6	4	6
AN3	0	0	0	0	11	23	17	23
AS1	0	0	0	0	48	103	76	103
AS2	6	11	10	11	11	21	17	21
BN1	0	0	0	0	3	7	5	7
BN2	8	9	12	9	10	14	16	14
BN3	0	0	0	0	7	14	11	14
BN4	0	0	0	0	6	13	9	13
BN5	32	18	51	18	32	18	51	18
BN6	9	10	14	10	12	16	19	16
BS1	5	0	8	0	8	6	12	6
BS2	17	12	27	12	17	12	27	12
BS3	2	7	3	7	5	14	8	14
BS4	0	0	0	0	5	12	8	12
BS5	0	0	0	0	2	5	3	5
CN1	16	17	25	17	19	24	30	24
CN2	10	7	16	7	45	81	71	81
CS1	0	0	0	0	4	9	7	9
CS2	11	19	17	19	12	22	20	22
Total	115	111	183	111	274	453	435	453

Table 4: Williamsville Trip Generation by Block - Vehicles – AM Peak Hour



Block	Appr. 22% O.B.	Appr. 22% I.B.	Appr. 35% O.B.	Appr. 35% I.B.	Ult. 22% O.B.	Ult. 22% I.B.	Ult. 35% O.B.	Ult. 35% I.B.
AN1	0	0	0	0	34	42	34	66
AN2	0	0	0	0	6	7	6	11
AN3	0	0	0	0	23	28	23	44
AS1	0	0	0	0	103	125	103	198
AS2	11	16	11	25	21	28	21	45
BN1	0	0	0	0	7	8	7	13
BN2	9	20	9	32	14	26	14	41
BN3	0	0	0	0	14	18	14	29
BN4	0	0	0	0	13	15	13	24
BN5	18	83	18	133	18	83	18	133
BN6	10	24	10	38	16	31	16	49
BS1	0	13	0	21	6	20	6	32
BS2	12	45	12	72	12	45	12	72
BS3	7	4	7	7	14	13	14	20
BS4	0	0	0	0	12	14	12	22
BS5	0	0	0	0	5	6	5	9
CN1	17	42	17	66	24	50	24	80
CN2	7	27	7	43	81	117	81	186
CS1	0	0	0	0	9	11	9	18
CS2	19	28	19	45	22	32	22	52
Total	111	303	111	481	453	718	453	1,143

Trip Distribution - Vehicles 4.1.4

Traffic generated by the Williamsville development was manually distributed to the local road network using a cardinal distribution.

Table 6 summarizes the trip distribution used for the analysis. The distribution was based on the location of employment and residential land uses relative to the Williamsville area.



Cardinal Direction	Percent	Gateways in Study Area
North	30%	Division Street N, Princess Street N/W
East	20%	Stephen Street, Princess Street S/E
South	20%	Division Street S, Princess Street S/E
West	30%	Concession Street W, Princess Street N/W
Total	100%	

Trip Assignment - Vehicles 4.1.5

Traffic generated by the Williamsville development was added to the microsimulation model and the model was used to assign traffic to the transportation network. The microsimulation model uses an iterative process to determine the quickest path from the origin to the destination for each vehicle trip.

This assignment method was used because it allows vehicles to adapt to changing conditions and avoid congestion, as drivers do in real life. Williamsville has a grid-like road network and therefore it is anticipated that vehicles will use Collector and Local roads to avoid congestion on Arterial roads such as Princess Street, Division Street, and Concession Street. The amount to which this occurs will be quantified during the operational assessment.

Other Growth in Kingston 4.2

The growth occurring in Williamsville is anticipated to represent approximately 20% of the total population growth in Kingston between 2020 and 2036. The C.M.A. transportation demand model³ was used to estimate the transportation impact of the other 80% of population growth outside Williamsville.

The transportation demand model uses population and employment data and mode share assumptions to estimate the number of vehicle trips generated in the future.

³ Formerly called the 'City-Wide' model



4.2.1 C.M.A. Population and Employment

Table 7 summarizes the C.M.A. population and employment assumptions for four (4)land use scenarios. All scenarios include the student population.

The first land use scenario is the existing conditions scenario which was calibrated to existing traffic volumes. The second land use scenario is the forecasted population and employment based on the approved and active developments; this matches the C.M.A. population and employment projections⁴.

The third land use scenario is the "Ultimate Williamsville Land Use scenario" which exceeds the City's population and employment projections. The additional growth is all located in Williamsville for this scenario.

The fourth land use scenario includes all approved C.M.A. growth except for growth in Williamsville. The growth in Williamsville was accounted for explicitly (as described in the previous section) and therefore the growth in Williamsville was removed from the C.M.A. model⁵ to avoid double-counting for the operational assessment.

This fourth scenario shows that **without the Williamsville growth**, vehicle trips within and **through Williamsville itself** are only anticipated to increase by 2% total between 2020 and 2036. This shows that growth in other areas of Kingston do not significantly increase traffic volumes on Princess Street, Concession Street, or Division Street. This is likely due to a combination of factors such as:

- the three largest projected population growth areas are located northwest of Williamsville (along Princess Street) and east of Williamsville (North King's Town);
- these growth areas are anticipated to have good transit, walking, and cycling facilities and therefore the auto mode share will be lower and the vehicle trips generated by these developments will be lower;
- a large portion of the employment growth occurs north and west of Williamsville and therefore it does not travel through Williamsville; and,

⁵ Formerly called the 'City-Wide' model



⁴ Figure 4-3 and Figure 6-1 from the *Population, Housing, and Employment Growth Forecast, 2016 to 2046, City of Kingston, Final Report (Watson & Associates Economists Ltd., March 5, 2019)*

_ the grid network in near the study area, which allows vehicles to use other routes if there is congestion on major roadways.

Land Use Scenario	C.M.A. Population	C.M.A. Employment	Williamsville Vehicle Trips
1.2016 Model Base	194,500	83,315	7,873
2.2036 Approved	220,208	92,201	8,410
3.2036 Approved + 'Ultimate' W.M.V. Growth	227,108	93,151	9,056
4.2036 Approved without any W.M.V. Growth	215,187	91,816	7,993

Table 7: C.M.A Population and Employment, and Williamsville Vehicle Trips

Table 8 summarizes the population change that was assumed for this analysis. Figure 2 and Figure 3, respectively, illustrate the location of population and employment change areas and the amount of change for the Approved scenario.

Approved Pop. Change Approved Pop. Change Area **Ult. Pop Change** 15.0% 3,585 N.K.T. Williamsville 20.9% 5,020 11,921 (+6,901) 1.2% 286 1 2 0.6% 143 3 15.0% 3,579 787 4 3.3% 5 12.3% 2,935 6 14.8% 3,531 7 2.7% 644 1,241 8 5.2% 9 0.5% 119

Table 8: C.M.A. Population Change

10

11

12 13

Total

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1.5%

0.6% 5.0%

1.4%

100%



3,585

286

143

3,579

787

2,935

3,531

644

1,241

119

358

143

1,193

334

30,801

358

143

1,193

334

23,900

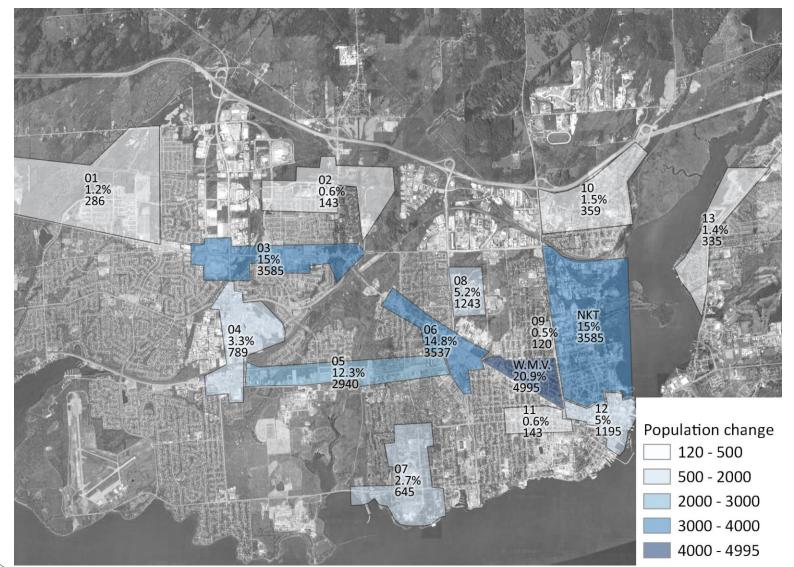


Figure 2: C.M.A. Population Change (Approved Scenario)

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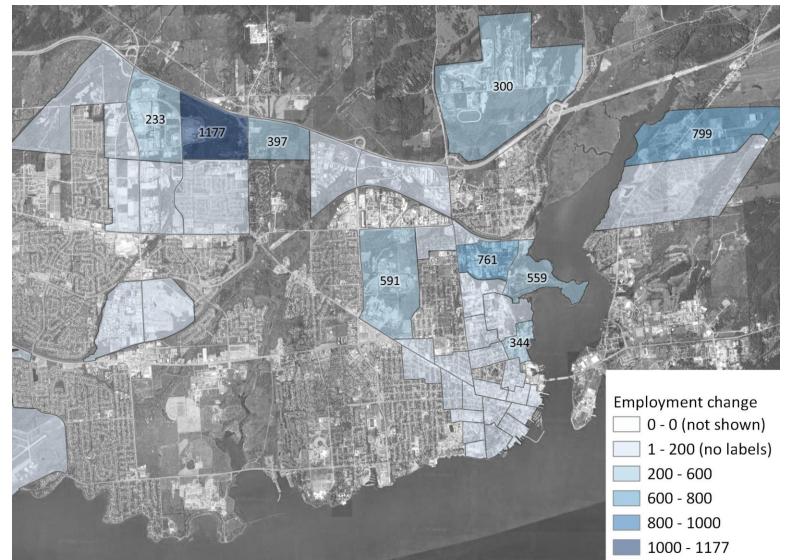
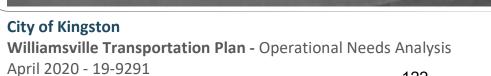


Figure 3: C.M.A. Employment Change (Approved Scenario)





4.2.2 Mode Share

The C.M.A. model⁶ includes assumptions from the City of Kingston *Transportation Master Plan* (2015), which recommended a 2034 target of 9% transit trips, 17% active transportation, and 5% reduction from Transportation Demand Management (T.D.M.) for the 2034 horizon. These targets were referred to as the "Base" mode share.

For the analysis in this report, more aggressive targets were applied, as directed by City of Kingston council on December 1, 2015. These are referred to as the "Reduced" demand scenario and targeted 15% transit usage, 20% active transportation, and 5% T.D.M. "Reduced" refers to the reduction of auto trips on the network through increased use of sustainable travel modes.

Table 9 lists the C.M.A. model⁶ mode share targets. The reduced mode share results in transit trips increasing from 9% to 15%, and an increase in active transportation trips from 17% to 20%, when compared to the base demand mode share.

Mode	2008 Household Travel Survey	2036 Base Mode Share	2036 Reduced Mode Share
Auto	81%	74%	65%
Transit	5%	9%	15%
Active Transportation	14%	17%	20%
Total	100%	100%	100%

Table 9: C.M.A. Model Mode Share Targets

4.2.3 Trip Distribution and Assignment

The vehicle trips resulting from population and employment growth were distributed to different areas within the model based on the location of new residential developments and employment locations. The model assigned these new vehicle trips to the road

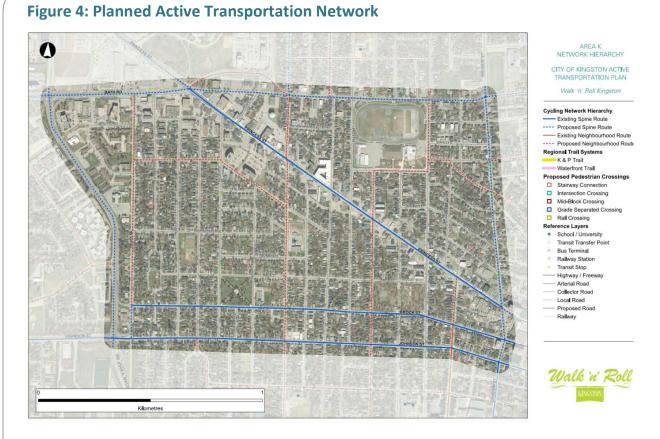


⁶ Formerly called the 'City-Wide' model

network through an iterative process of trial and error to reduce the overall delay to all road users. This is similar to how people select routes in reality.

4.3	Transportation Network Changes						
4.3.1	Road Network						
	Within the study area itself, Division Street and Princess Street are identified for corridor optimization.						
	The assessment assumed that the following transportation projects would be implemented by the 2036 horizon, as per the K.T.M.P.:						
	 Third Crossing bridge across the Cataraqui River; J.C.B. widening between Division Street and Elliott Avenue; J.C.B. widening between Portsmouth Avenue and Princess Street; and, Leroy Grant Drive extension from Concession Street to Elliott Avenue / J.C.B. 						
	The importance of these transportation projects as they relate to the Approved and Ultimate land uses will be considered in future modelling.						
4.3.2	Public Transit						
	Princess Street is the main transit corridor in the City and there has been some consideration for transit priority lanes on Princess Street. This may prove a challenge in the future since Princess Street has a relatively narrow right-of-way of approximately 20 metres.						
4.3.3	Active Transportation						
	Figure 4 illustrates the existing and planned active transportation network within the study area.						
	Princess Street is currently a designated spine cycling route. Concession Street and Division Street are identified as proposed spine cycling routes.						
	MacDonnell Street, Albert Street, Alfred Street, University Avenue, and York Street are identified as proposed neighbourhood cycling routes.						





Source: City of Kingston Active Transportation Master Plan, "Walk 'n' Roll Kingston" – Technical Appendix G – Neighbourhood Focus - Area G (June 2018)



5.0 **Operational Assessment**

An operational assessment was completed using transportation microsimulation software to evaluate:

- 1. the capacity of the Williamsville transportation network;
- 2. the impact on travel times through the study area;
- 3. the potential for vehicles to infiltrate residential areas; and,
- 4. the impact on intersection operations.

Before conducting the operational assessment it was necessary to calibrate the microsimulation model.

5.1 Calibration

Model calibration was performed to ensure the transportation demands are correct and that the model accurately represents the travel patterns and traveller behaviours that occur in reality.

A set of calibration standards were employed to measure the accuracy of the model. The standards used in this analysis are based on FHWA's *Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic Microsimulation Models*, and include a set of statistical tests to verify the validity of the model results in comparison to observed field data.

Table 10 presents the FHWA Calibration standards.

The model was also calibrated for travel time through the major corridors. The Google Distance Matrix Application Programming Interface (API) was queried to determine realworld travel times; it is crowd-sourced from mobile phones running Google Maps and uses historical averages which represent hundreds of measurements. It was used as it allowed a much larger sample size than would otherwise be possible.

Table 11 compares the target observed travel time against the modelled travel times. Allmodelled travel times are within 15% or within 60 seconds otherwise. Thisdemonstrates that the model is well calibrated in terms of travel times.



Criteria and Measures	Calibration Acceptance Targets
Hourly Flows, Model Versus Observed	
Individual Link Flows	
Within 15%, for 700 veh/h < Flow < 2700 veh/h	> 85% of cases
Within 100 veh/h, for Flow < 700 veh/h	> 85% of cases
Within 400 veh/h, for Flow > 2700 veh/h	> 85% of cases
Sum of All Link Flows	Within 5% of sum of all link counts
GEH Statistic < 5 for Individual Link Flows*	> 85% of cases
GEH Statistic for Sum of All Link Flows	GEH < 4 for sum of all link counts
Travel Times, Model Versus Observed	
Journey Times, Network	
Within 15% (or 1 min, if higher)	> 85% of cases
Visual Audits	
Individual Link Speeds	
Visually Acceptable Speed-Flow Relationship	To analyst's satisfaction
Bottlenecks	
Visually Acceptable Queuing	To analyst's satisfaction

Table 10: FHWA Calibration Standards

*The GEH statistic is computed as follows:

$$GEH = \sqrt{\frac{\left(E - V\right)^2}{\left(E + V\right)/2}}$$

where:

E = model estimated volume V = field count

Source: "Freeway System Operational Assessment," *Paramics Calibration and Validation Guidelines* (Draft), Technical Report I-33, Wisconsin DOT, District 2, June 2002.

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(4)

Scenario	Princess St. E.B.	Princess St. W.B.	Concession St. E.B.	Concession St. W.B.	Division St.	Division St. S.B.
A.M. Obs.	5:30	4:30	3:15	3:15	2:30	2:45
A.M. Model	5:00	5:15	4:00	3:45	2:45	2:30
A.M. Diff.	30s	45s	45s	30s	15s	15s
A.M. Diff. %	9%	17%	23%	15%	10%	9%
P.M. Obs.	6:30	5:30	3:45	4:00	3:15	3:00
P.M. Model	5:45	5:00	4:45	5:00	2:45	3:00
P.M. Diff.	45s	30s	60s	60s	30s	Os
P.M. Diff. %	12%	9%	27%	25%	15%	0%

 Table 11: Model Calibration – Travel Times

Table 12 and **Table 13** summarize the model calibration results for intersection volumes.The calibration was checked for turns (at intersections) and links (betweenintersections). The results show the model is within a reasonable calibration range.

In many cases there are only one or two turns or links for a particular criteria which are below the targets (e.g. 14/17 or 4/5). The overall volumes during the AM peak hour are higher than the counted volumes; however, this is conservative and therefore it is not considered an issue.

Overall, the model is suitably calibrated for assessing the impacts of the proposed Williamsville developments.



Turns		Passed 4 of 6									
Criteria	Flow Range		inge Criteria		Goal	Current	Count	Model	Pass		
Within 75 veh/h, for Flow < 400 veh/h > 85% of cases	0	400	75	veh	85%	97%	144	139	\checkmark		
Within 0.2%, for 400 veh/h < Flow < 1200 > 85% of case	400	1,200	20%	%	85%	82%	17	14	×		
Within 300 veh/h, for Flow > 1200 veh/h > 85% of case	1,200		300	veh	85%		0	0			
Sum of all flows within 0.05% of sum of all counts	Overall		5%	%	5%	4%	19,200	20,021	\checkmark		
GEH < 5 for individual flows > 85% of cases	Overall		5	GEH	85%	89%	161	144	\checkmark		
GEH < 10 for individual flows, 95% of cases	Overall		10	GEH	95%	100%	161	161	\checkmark		
GEH < 4 for sum of all counts	Overall		4	GEH	4.0	5.9	19,200	20,021	×		

Links		Passed 4 of 6									
Criteria	Flow Range		Range Criteria		Goal	Current	Count	Model	Pass		
Within 100 veh/h, for Flow < 700 veh/h > 85% of cases	0	700	100	veh	85%	95%	56	53	\checkmark		
Within 0.15%, for 700 veh/h < Flow < 2700 > 85% of ca	700	2,700	15%	%	85%	80%	5	4	×		
Within 400 veh/h, for Flow > 2700 veh/h > 85% of case	2,700		400	veh	85%		0	0			
Sum of all flows within 5% of sum of all counts	Overall		5	%	5%	4%	19,200	20,021	\checkmark		
GEH < 5 for individual flows > 85% of cases	Overall		5	GEH	85%	85%	61	52	\checkmark		
GEH < 10 for individual flows, 95% of cases	Overall		10	GEH	95%	97%	61	59	\checkmark		
GEH < 4 for sum of all counts	Overall		4	GEH	4.0	5.9	19,200	20,021	×		

Table 13: Model Calibration – Turns and Link Volumes - Weekday PM Peak

Turns		Passed 5 of 6									
Criteria	Flow Range		ge Criteria		Goal	Current	Count	Model	Pass		
Within 75 veh/h, for Flow < 400 veh/h > 85% of cases	0	400	75	veh	85%	96%	135	129	\checkmark		
Within 0.2%, for 400 veh/h < Flow < 1200 > 85% of case	400	1,200	20%	%	85%	83%	29	24	×		
Within 300 veh/h, for Flow > 1200 veh/h > 85% of case	1,200		300	veh	85%		0	0			
Sum of all flows within 0.05% of sum of all counts	Overall		5%	%	5%	1%	25,959	25,804	\checkmark		
GEH < 5 for individual flows > 85% of cases	Overall		5	GEH	85%	86%	164	141	\checkmark		
GEH < 10 for individual flows, 95% of cases	Overall		10	GEH	95%	98%	164	161	\checkmark		
GEH < 4 for sum of all counts	Overall		4	GEH	4.0	1.0	25,959	25,804	\checkmark		

Links		Passed 5 of 6									
Criteria	Flow Range		ange Criteria		Goal	Current	Count	Model	Pass		
Within 100 veh/h, for Flow < 700 veh/h > 85% of cases	0	700	100	veh	85%	90%	50	45	\sim		
Within 0.15%, for 700 veh/h < Flow < 2700 > 85% of ca	700	2,700	15%	%	85%	73%	11	8	×		
Within 400 veh/h, for Flow > 2700 veh/h > 85% of case	2,700		400	veh	85%		0	0			
Sum of all flows within 5% of sum of all counts	Overall		5	%	5%	1%	25,959	25,804	\sim		
GEH < 5 for individual flows > 85% of cases	Overall		5	GEH	85%	85%	61	52	\sim		
GEH < 10 for individual flows, 95% of cases	Overall		10	GEH	95%	98%	61	60	\sim		
GEH < 4 for sum of all counts	Overall		4	GEH	4.0	1.0	25,959	25,804	\sim		

5.2 Results

The analysis was performed using a combination of performance metrics including: overall network capacity, travel time measurements, vehicle-kilometers travelled (VKT), and intersection-level delay, queues, and level-of-service (LOS). The use of multiple performance metrics allows for a better understanding of what is happening and why it is happening.



5.2.1 Network Capacity

Table 14 summarizes the overall network capacity results for the 'no mitigation' scenario. The operational model is for a relatively small area. Unmet demand refers to vehicles that could not "enter" the model due to congestion in the model.

These results show that the Williamsville transportation network is able to accommodate the future demands for all scenarios except the Ultimate development PM peak hour scenario. This scenario shows a reduction in the percentage of trips completed (93-95%), a reduction in the average speed (16-18 km/h), and an increase of the trips in progress (426-539).

Scenario	Total Demand	Trips Completed	Trips in Progress	Unmet Demand	Average Speed	Trips Completed
AM 2019 Ex.	6,151	5,990	161	0	28	97%
AM 2036 No WMV Growth	6,274	6,084	162	0	28	97%
AM 2036 Appr. Auto 22%	6,387	6,220	167	0	28	97%
AM 2036 Appr. Auto 35%	6,489	6,318	171	0	27	97%
AM 2036 Ult. Auto 22%	7,071	6,881	190	0	27	97%
AM 2036 Ult. Auto 35%	7,484	7,285	199	0	26	97%
PM 2019 Ex.	9,015	8,775	240	0	25	97%
PM 2036 No WMV Growth	9,124	8,884	240	0	24	97%
PM 2036 Appr. Auto 22%	9,250	8,981	260	9	24	97%
PM 2036 Appr. Auto 35%	9,352	9,044	269	39	23	97%
PM 2036 Ult. Auto 22%	10,295	9,790	426	79	18	95%
PM 2036 Ult. Auto 35%	10,843	10,122	539	182	16	93%

Table 14: Network Capacity - No Mitigation



5.2.2 Travel Times

Travel times provide an easy to understand measure which takes into account the combined impacts of several intersections and the impact on traffic progression through the corridor.

Table 15 summarizes the travel time results for the 'no mitigation' scenario.

For the Approved land use, travel times are anticipated to increase by 30 seconds or less during both the AM and PM peak hours which is not significant.

For the Ultimate land use, travel times are anticipated to increase significantly during the PM peak hour for Princess Street eastbound, Concession Street eastbound, Concession Street westbound, and Division Street southbound.

The increases are from 6:45 to 8:15, 4:45 to 9:45, 5:00 to 8:30, and 3:00 to 6:30. These are increases of 3-5 minutes over a relatively short distance (2 km for Princess Street, 1.5 km for Concession Street, and 1 km for Division Street).

Sconorio	Princess	Princess	Concession	Concession	Division	Division
Scenario	St. E.B.	St. W.B.	St. E.B.	St. W.B.	St. N.B.	St. S.B.
AM 2019 Ex.	5:00	5:15	4:00	3:45	2:45	2:30
AM 2036 No WMV Growth	5:00	5:15	4:15	4:00	2:45	2:45
AM 2036 Appr. Auto 22%	5:00	5:15	4:00	3:45	2:45	2:45
AM 2036 Appr. Auto 35%	5:15	5:15	4:00	3:45	2:45	2:45
AM 2036 Ult. Auto 22%	5:15	5:30	4:15	4:15	2:45	2:45
AM 2036 Ult. Auto 35%	5:30	5:30	4:30	4:15	2:45	2:45
PM 2019 Ex.	5:45	5:00	4:45	5:00	2:45	3:00
PM 2036 No WMV Growth	6:15	5:00	5:00	4:45	2:45	2:45
PM 2036 Appr. Auto 22%	6:15	5:00	5:45	5:30	3:00	3:00
PM 2036 Appr. Auto 35%	6:15	5:00	5:45	5:30	3:00	3:00
PM 2036 Ult. Auto 22%	7:30	5:15	8:30	7:00	3:15	6:00
PM 2036 Ult. Auto 35%	8:15	5:45	9:45	8:30	3:30	6:30

Table 15: Travel Time Results – No Mitigation



5.2.3 Vehicle-Kilometres Travelled by Road Class

Table 16 summarizes thousand-vehicle-kilometers-travelled (k.V.K.T.) by road class for the for the 'no mitigation' scenario.

The Arterials include Princess Street, Concession Street, Division Street, Leroy Grant Drive, Stephen Street; the Collectors include Alfred Street and Victoria Street, and the Local roads are all other roadways.

All scenarios and time periods show an increase in the amount of traffic on local roads. This is particularly true during the Ultimate PM peak hour scenario which shows Local traffic has increased 75% compared to Existing and 30% compared to the Approved scenario.

Some of this is due to the development being located on a local roadway, but some is due to traffic infiltration through residential areas to avoid congestion elsewhere. This is not surprising given that Williamsville has a grid network. Mitigating this will likely require a combination of turn prohibitions, traffic calming, and traffic signal optimization.

Scenario	k.V.K.T. Arterial	k.V.K.T. Collector	k.V.K.T. Local	k.V.K.T. Total	% Art.	% Coll.	% Local
AM 2019 Ex.	3,800	400	400	4,600	83%	9%	9%
AM 2036 No WMV Growth	3,800	400	400	4,600	83%	9%	9%
AM 2036 Appr. Auto 22%	3,950	400	450	4,800	82%	8%	9%
AM 2036 Appr. Auto 35%	4,000	450	450	4,900	82%	9%	9%
AM 2036 Ult. Auto 22%	4,300	400	550	5,250	82%	8%	10%
AM 2036 Ult. Auto 35%	4,500	450	600	5,550	81%	8%	11%
PM 2019 Ex.	5,450	450	600	6,500	84%	7%	9%
PM 2036 No WMV Growth	5,500	450	600	6,550	84%	7%	9%
PM 2036 Appr. Auto 22%	5,500	450	800	6,750	81%	7%	12%
PM 2036 Appr. Auto 35%	5,550	450	800	6,800	82%	7%	12%
PM 2036 Ult. Auto 22%	5 <i>,</i> 850	550	1,050	7,450	79%	7%	14%
PM 2036 Ult. Auto 35%	6,000	600	1,100	7,700	78%	8%	14%

Table 16: Results - V.K.T. by Road Class – No Mitigation

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5.2.4 Intersection Performance

The scenarios were also compared in terms of intersection performance (delay, queues, and level of service) for study area intersections.

The Approved land use shows all intersections operating at LOS C or better. There are several turning movements operating at a LOS E or F, which shows there is room for improvement.

The Ultimate land use shows four intersections operating at LOS D or worse and the sum of the delays for all study area intersections is 100% higher than existing conditions and 50% higher than the approved land use during the PM peak hour.

This reinforces the findings from the previous sections which demonstrate that the Approved land use can be accommodated without significant issues, but without mitigation there is a lack of capacity for vehicle trips to accommodate the Ultimate land use during the PM peak hour.

Appendix A contains the detailed intersection performance worksheets, which list the number of vehicles, delay, level-of-service (LOS), 50th and 95th percentile queues for each turning movement and the overall intersection for study area intersections.



6.0 Conclusion

Overall the study area roads appear capable of accommodating the additional traffic fairly well except for the Ultimate land use during the weekday PM peak hour. This conclusion is based on analysis without any optimization or mitigation in the Williamsville study area.

The ability of Williamsville to accommodate this growth is due largely to the low auto mode share that was assumed for the residential growth; the low auto mode share means the growth will result in relatively "few" vehicle trips.

"Few" in this case is still 400-600 vehicles per hour for the Approved land use and 900-1,500 vehicles per hour for the Ultimate land use. This vehicle trip generation has an impact on the road network and results in increased travel times, delays, queuing, etc., as well as traffic infiltration through the residential areas.

The growth in Williamsville will have relatively high walking, cycling, and transit mode shares and therefore it is important to have adequate facilities to accommodate the additional demands for these modes.

Improvements to walking, cycling, and transit facilities are key to maintaining the low auto mode share, which is critical to maintaining the viability of the Williamsville growth. The issue, however, is the narrow right-of-way for the Princess Street corridor (20 metres) which is an important Arterial road through the study area.

Due to the limited right-of-way, it is likely not possible for Princess Street to simultaneously be a transit priority corridor, a cycling spine route, a pedestrian-friendly corridor, and an Arterial class roadway leading to the downtown core. Therefore, compromises will need to be made in a way that improves multi-modal mobility, but recognizes the limited space to accommodate all modes of travel in a narrow corridor.

It is critical to develop a vision for the study area transportation network. This operational assessment should be revisited once this vision has been developed to determine how the needs of transportation modes can be balanced to support the growth in Williamsville and the City of Kingston.



7.0 Next Steps

The next steps for the analysis are to identify the preferred role, function, and crosssection for the Princess Street, Concession Street, and Division Street transportation corridors.

We suggest additional analysis using optimized traffic control signal timings to improve throughput in the corridors based on their identified role and function. We also suggest investigating turn prohibitions and other traffic calming measures and the impact they may have on traffic infiltration and network operations.



Appendix A

Intersection Performance Worksheets





2019 AM Peak Hour



ID	Intersection Name	Control Type	Number of Vehicles	50th %'ile Queue (m)	95th %'ile Queue (m)	Avg. Vehicle Delay (sec)	Avg. Stop Delay (sec)	LO S
10	Princess St / Concession St	Signalized	2,606	43.3	65.8	26.9	21.4	С
20	Princess St / Regent St	TWSC	1,009	0.2	36.7	2.3	0.1	-
30	Princess St / Drayton Av	TWSC	957	0.0	50.8	1.9	0.1	-
40	Princess St / Macdonnell Av	Signalized	887	51.0	94.4	16.1	9.5	В
50	Princess St / Smith St	TWSC	733	28.8	33.0	1.6	0.0	-
60	Princess St / Victoria St	Signalized	879	8.4	52.7	7.0	3.5	Α
70	Princess St / Nelson St	TWSC	786	0.3	3.8	1.6	0.1	-
80	Princess St / Albert St	Signalized	828	30.4	80.4	13.1	9.0	В
90	Princess St / Frontenac St	TWSC	775	0.0	0.1	1.0	0.1	-
100	Princess St / Alfred St	Signalized	1,109	44.4	74.2	23.7	16.7	С
110	Princess St / Chatham St	TWSC	747	0.0	25.8	1.5	0.0	-
120	Princess St / University Av	Signalized	723	15.0	56.2	5.4	2.4	Α
130	Princess St / Division St	Signalized	950	18.2	45.8	16.9	12.3	В
140	Concession St / Drayton Av	TWSC	954	0.2	140.2	7.0	2.8	-
150	Concession St / Leroy Grant Dr (S)	TWSC	912	44.8	74.7	6.9	2.9	-
155	Concession St / Leroy Grant Drive (N)	TWSC	750	0.2	1.0	0.6	0.2	-
160	Concession St / Macdonnell St	Signalized	1,559	50.3	72.6	9.8	6.1	Α
170	Concession St / Connaught St	TWSC	1,346	0.0	52.4	1.7	0.6	-
180	Concession St / Victoria St	Signalized	1,426	38.9	88.3	11.3	7.0	В
190	Concession St / Nelson St	TWSC	1,303	0.1	60.4	1.3	0.1	-
200	Concession St / Kingscourt Av	TWSC	1,283	0.2	40.4	1.3	0.4	-
210	Concession St / Fergus St	TWSC	1,315	0.2	40.3	2.7	1.4	-
220	Concession St / Grey St	TWSC	1,351	10.2	53.2	7.5	4.1	-
230	Concession St / Alfred St	Signalized	1,416	41.6	62.2	13.1	8.0	В
240	Concession St / Lansdowne St	TWSC	968	0.0	19.3	1.1	0.0	-
250	Concession St / Division St	Signalized	1,635	39.8	97.4	21.4	15.5	С
260	Adelaide St / Division St	TWSC	692	0.0	25.4	0.7	0.1	-
270	Stanley St / Division St	TWSC	777	0.5	20.8	2.6	0.9	-
280	Pine St / Division St	Signalized	837	18.4	48.2	8.7	5.1	Α
290	Quebec St / Division St	TWSC	718	0.0	29.9	0.8	0.0	-
300	York St / Division St	Signalized	787	15.7	35.7	6.6	4.1	Α
310	Main St / Division St	TWSC	644	21.3	30.1	0.9	0.4	-
320	Hamilton St / Division St	TWSC	622	0.0	0.0	0.0	0.0	-
330	Raglan St / Division St	TWSC	625	0.0	0.0	0.1	0.0	-
340	Elm St / Division St	TWSC	614	0.0	0.0	0.1	0.0	-
350	Ellice St / Division St	TWSC	617	0.0	0.1	0.2	0.0	-
360	Colborne St / Division St	TWSC	612	0.0	13.5	1.0	0.0	-
370	Queen St / Division St	Signalized	836	25.8	47.6	13.8	7.8	В
	Total		37,588	548	1,673	241	143	

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Node	Location	Control	Mvmt.	Volume		ıe (m)	Stop	Delay	LOS		Mvmt		ection
				(AII)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
10	Princess St / Concession St	Signalized	NBL	141	25	40	42	50	D	50.0	D	26.9	С
10	Princess St / Concession St	Signalized	NBT	110	25	40	38	45	D				
10 10	Princess St / Concession St	Signalized Signalized	NBR SBL	37 490	25 70	40 95	0 29	3 37	A D				
10	Princess St / Concession St Princess St / Concession St	Signalized	SBL	490	70	95	29	37	D				
10	Princess St / Concession St	Signalized	SBR	31	70	95	14	18	B				
10	Princess St / Concession St	Signalized	EBT	418	35	60	26	32	C				
10	Princess St / Concession St	Signalized	EBR	190	35	60	0	2	A				
10	Princess St / Concession St	Signalized	WBT	236	20	40	26	31	C				
10	Princess St / Concession St	Signalized	WBR	343	20	40	0	0	A				
10	Princess St / Concession St	Signalized	WBL	129	20	40	1	4	Α				
20	Princess St / Regent St	TWSC	NBL	3	5	10	1	9	Α	11.0	В	2.3	A
20	Princess St / Regent St	TWSC	NBR	29	5	10	3	11	В				
20	Princess St / Regent St	TWSC	EBT	618	0	55	0	3	Α				
20	Princess St / Regent St	TWSC	EBR	49	0	55	0	2	А				
20	Princess St / Regent St	TWSC	WBL	7	0	0	6	9	Α				
20	Princess St / Regent St	TWSC	WBT	303	0	0	0	0	Α				
30	Princess St / Drayton Av	TWSC	SBL	0	0	5	0	0	A	8.0	Α	1.9	A
30	Princess St / Drayton Av	TWSC	SBR	12	0	5	2	8	A				
30 30	Princess St / Drayton Av Princess St / Drayton Av	TWSC TWSC	EBL	100 548	0	75 75	1	3	A				
30	Princess St / Drayton Av	TWSC	WBT	295	0	0	0	2	A				
30	Princess St / Drayton Av	TWSC	WBR	275	0	0	0	1	A				
40	Princess St / Macdonnell Av	Signalized	NBL	41	5	20	12	18	B	20.0	В	16.1	В
40	Princess St / Macdonnell Av	Signalized	NBT	18	5	20	15	20	B	2010		1011	
40	Princess St / Macdonnell Av	Signalized	NBR	27	5	20	3	9	Α				
40	Princess St / Macdonnell Av	Signalized	SBL	11	40	40	13	19	В				
40	Princess St / Macdonnell Av	Signalized	SBT	19	40	40	14	19	В				
40	Princess St / Macdonnell Av	Signalized	SBR	42	40	40	3	12	В				
40	Princess St / Macdonnell Av	Signalized	EBL	7	70	135	12	18	В				
40	Princess St / Macdonnell Av	Signalized	EBT	467	70	135	10	17	В				
40	Princess St / Macdonnell Av	Signalized	EBR	28	70	135	9	16	В				
40	Princess St / Macdonnell Av	Signalized	WBL	0	30	50	0	0	A				
40	Princess St / Macdonnell Av	Signalized	WBT	219	30	50	9	15 12	B				
40 50	Princess St / Macdonnell Av Princess St / Smith St	Signalized TWSC	WBR SBL	8	30 40	50 40	5	0	A	12.0	В	1.6	A
50	Princess St / Smith St	TWSC	SBR	22	40	40	1	12	B	12.0	Б	1.0	A
50	Princess St / Smith St	TWSC	EBL	22	40	40	0	0	A				-
50	Princess St / Smith St	TWSC	EBT	503	40	40	0	1	A				
50	Princess St / Smith St	TWSC	WBT	205	0	15	0	2	A				
50	Princess St / Smith St	TWSC	WBR	0	0	15	0	0	A				
60	Princess St / Victoria St	Signalized	NBL	19	10	25	14	21	С	30.0	С	7.0	A
60	Princess St / Victoria St	Signalized	NBT	33	10	25	18	25	С				
60	Princess St / Victoria St	Signalized	NBR	45	10	25	6	13	В				
60	Princess St / Victoria St	Signalized	SBL	4	5	20	20	30	С				
60	Princess St / Victoria St	Signalized	SBT	57	5	20	16	21	С				
60	Princess St / Victoria St	Signalized	SBR	3	5	20	0	0	А				
60	Princess St / Victoria St	Signalized	EBL	1	10	70	0	0	А				
60	Princess St / Victoria St	Signalized	EBT	491	10	70	1	4	А				
60	Princess St / Victoria St	Signalized	EBR	7	10	70	1	4	Α				
60	Princess St / Victoria St	Signalized	WBL	24	5	35	5	10	Α				
60	Princess St / Victoria St	Signalized	WBT	180	5	35	2	4	A				
60	Princess St / Victoria St	Signalized	WBR	15	5	35	0	4	A	4	-		
70	Princess St / Nelson St	TWSC	NBL	2	0	5	0	0	A	17.0	С	1.6	A
70	Princess St / Nelson St	TWSC	NBT	0	0	5	0	0	A				
70	Princess St / Nelson St	TWSC	NBR	7	0	5	1	8	A				
70	Princess St / Nelson St	TWSC	SBL	8	5	5	3	17	C				
70 70	Princess St / Nelson St Princess St / Nelson St	TWSC TWSC	SBT SBR	4 29	5 5	5 5	5	15 8	B				
70	Princess St / Nelson St	TWSC	EBL	29 13	5	5	0	8	A				
70	Princess St / Nelson St	TWSC	EBT	532	0	5	0	1	A				
70	Princess St / Nelson St	TWSC	EBR	3	0	5	0	0	A				
70	Princess St / Nelson St	TWSC	WBL	1	0	0	5	9	A				
70	Princess St / Nelson St	TWSC	WBT	187	0	0	0	7	A				
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Node	Location	Control	Mvmt.	Volume		ie (m)	Stop Delay (s)	Delay	LOS	Critical		Inters	
80	Princess St / Albert St	Signalized	NBL	(All) 13	50th 5	95th 15	15	(s) 21	С	Delay 26.0	LOS C	Delay 13.1	LOS B
80	Princess St / Albert St	Signalized	NBT	16	5	15	13	18	B	20.0	U	13.1	D
80	Princess St / Albert St	Signalized	NBR	25	5	15	1	6	A				
80	Princess St / Albert St	Signalized	SBL	2	0	10	5	9	A				
80	Princess St / Albert St	Signalized	SBT	30	0	10	10	13	B				
80	Princess St / Albert St	Signalized	SBR	3	0	10	0	5	A				
80	Princess St / Albert St	Signalized	EBL	0	40	100	0	0	A				
80	Princess St / Albert St	Signalized	EBT	535	40	100	10	14	В				
80	Princess St / Albert St	Signalized	EBR	16	40	100	8	12	B				
80	Princess St / Albert St	Signalized	WBL	8	15	55	22	26	C				
80	Princess St / Albert St	Signalized	WBT	180	15	55	6	10	A				
80	Princess St / Albert St	Signalized	WBR	0	15	55	0	0	A				
90	Princess St / Frontenac St	TWSC	NBL	1	0	5	0	0	A	11.0	В	1.0	Α
90	Princess St / Frontenac St	TWSC	NBT	0	0	5	0	0	A		_		
90	Princess St / Frontenac St	TWSC	NBR	1	0	5	0	0	A				
90	Princess St / Frontenac St	TWSC	SBL	0	0	5	0	0	A				
90	Princess St / Frontenac St	TWSC	SBT	8	0	5	3	11	В				
90	Princess St / Frontenac St	TWSC	SBR	13	0	5	1	7	A				
90	Princess St / Frontenac St	TWSC	EBL	9	0	0	1	5	A				
90	Princess St / Frontenac St	TWSC	EBT	544	0	0	0	1	A				
90	Princess St / Frontenac St	TWSC	EBR	5	0	0	0	1	A				
90	Princess St / Frontenac St	TWSC	WBL	4	0	0	0	1	A				
90	Princess St / Frontenac St	TWSC	WBT	189	0	0	0	0	A				
90	Princess St / Frontenac St	TWSC	WBR	1	0	0	0	0	A				
100	Princess St / Alfred St	Signalized	NBL	25	15	45	15	22	C	35.0	С	23.7	С
100	Princess St / Alfred St	Signalized	NBT	103	15	45	12	18	B	33.0	0	23.7	0
100	Princess St / Alfred St	Signalized	NBR	68	15	45	6	12	B				
100	Princess St / Alfred St	Signalized	SBL	27	25	45	14	22	C				
100	Princess St / Alfred St	Signalized	SBT	129	25	45	14	21	C				
100	Princess St / Alfred St	Signalized	SBR	51	25	45	7	13	B				
100	Princess St / Alfred St	Signalized	EBL	48	70	105	18	25	C				
100	Princess St / Alfred St	Signalized	EBT	484	70	105	21	29	C				
100	Princess St / Alfred St	Signalized	EBR	7	70	105	18	25	C				
100	Princess St / Alfred St	Signalized	WBL	7	20	45	26	35	C				
100	Princess St / Alfred St	Signalized	WBT	137	20	45	19	25	C				
100	Princess St / Alfred St	Signalized	WBR	23	20	45	0	3	A				
110	Princess St / Chatham St	TWSC	SBL	0	0	43	0	0	A	2.0	A	1.5	А
110	Princess St / Chatham St	TWSC	SBR	0	0	0	0	0	A	2.0	A	1.5	
110	Princess St / Chatham St	TWSC	EBL	12	0	20	0	2	A				
110	Princess St / Chatham St	TWSC	EBT	563	0	20	0	2	A				
110	Princess St / Chatham St	TWSC	WBT	169	0	45	0	0	A				
110	Princess St / Chatham St	TWSC	WBR	3	0	45	0	0	A				
120	Princess St / University Av	Signalized	NBL	21	5	10	19	24	C	24.0	С	5.4	А
	Princess St / University Av	Signalized	NBR	20	5	10	2	7	A	24.0	U	3.4	~
	Princess St / University Av	Signalized	EBT	482	20	70	2	5	A				
	Princess St / University Av	Signalized	EBR	49	20	70	1	5	A				
	Princess St / University Av	Signalized	WBL	2	0	20	0	3	A				
	Princess St / University Av	Signalized	WBT	149	0	20	2	4	A				
	Princess St / University Av	Signalized	NBT	0	5	10	0	0	A				
	Princess St / University Av	Signalized	SBL	0	0	0	0	0	A				
	Princess St / University Av	Signalized	SBT	0	0	0	0	0	A				
120	Princess St / University Av	Signalized	SBR	0	0	0	0	0	A				
	Princess St / University Av	Signalized	EBL	0	20	70	0	0	A				
	Princess St / University Av	Signalized	WBR	0	0	20	0	0	A				
130	Princess St / Division St	Signalized	NBL	16	5	20	12	24	C	28.0	С	16.9	В
	Princess St / Division St	Signalized	NBT	53	5	20	11	17	B	20.0	0		5
130	Princess St / Division St	Signalized	NBR	1	5	20	0	0	A				
	Princess St / Division St	Signalized	SBL	142	5	45	4	6	A				
130	Princess St / Division St	Signalized	SBT	96	5	45	3	4	A				
	Princess St / Division St	Signalized	SBR	141	5	45	0	4	A				
	THINGSS ST / DIVISION ST	Jighanzeu											
	Princoss St / Division St	Signalized	EDI	12/	20								
130 130 130	Princess St / Division St Princess St / Division St	Signalized Signalized	EBL	134 355	30 30	50 50	21 20	28 27	C C				

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Node	Location	Control	Mvmt.	Volume (All)	Queue (m)		Stop	Delay	LOS	Critical Mvmt		Intersection	
Noue	Location				50th	95th	Delay (s)) (s)	LUS	Delay	LOS	Delay	LOS
140	Concession St / Drayton Av	TWSC	NBR	34	5	10	23	32	D	32.0	D	7.0	А
140	Concession St / Drayton Av	TWSC	EBT	908	0	145	2	6	Α				
140	Concession St / Drayton Av	TWSC	EBR	12	0	145	8	15	В				
150	Concession St / Leroy Grant Dr (S)	TWSC	SBL	4	0	5	8	20	С	20.0	С	6.9	Α
150	Concession St / Leroy Grant Dr (S)	TWSC	EBL	33	45	75	1	4	Α				
150	Concession St / Leroy Grant Dr (S)	TWSC	EBT	875	45	75	3	7	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	NBL	22	5	10	2	10	Α	15.0	В	0.6	А
155	Concession St / Leroy Grant Drive (N)	TWSC	NBT	11	5	10	6	15	В				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBT	4	0	5	2	14	В				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBR	79	0	5	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBT	608	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBR	26	0	0	0	1	Α				
160	Concession St / Macdonnell St	Signalized	NBL	0	0	5	0	0	Α	34.0	С	9.8	Α
160	Concession St / Macdonnell St	Signalized	NBT	0	0	5	0	0	Α				
160	Concession St / Macdonnell St	Signalized	NBR	7	0	5	1	6	Α				
160	Concession St / Macdonnell St	Signalized	SBR	46	0	5	1	3	Α				
160	Concession St / Macdonnell St	Signalized	EBL	36	75	75	14	21	C				
160	Concession St / Macdonnell St	Signalized	EBT	702	75	75	7	11	В				
160	Concession St / Macdonnell St	Signalized	EBR	141	75	75	5	9	Α				
160	Concession St / Macdonnell St	Signalized	WBL	37	20	75	26	34	С				
160	Concession St / Macdonnell St	Signalized	WBT	590	20	75	4	7	Α				
160	Concession St / Macdonnell St	Signalized	WBR	0	20	75	0	0	Α				
170	Concession St / Connaught St	TWSC	SBL	9	0	5	6	16	С	16.0	С	1.7	Α
170	Concession St / Connaught St	TWSC	SBR	7	0	5	4	11	В				
170	Concession St / Connaught St	TWSC	EBL	15	0	95	4	8	Α				
170	Concession St / Connaught St	TWSC	EBT	694	0	95	1	2	Α				
170	Concession St / Connaught St	TWSC	WBT	618	0	5	0	1	Α				
170	Concession St / Connaught St	TWSC	WBR	3	0	5	0	0	Α				
180	Concession St / Victoria St	Signalized	NBL	12	5	15	23	29	С	33.0	С	11.3	В
180	Concession St / Victoria St	Signalized	NBT	17	5	15	15	19	В				
180	Concession St / Victoria St	Signalized	NBR	13	5	15	8	14	В				
180	Concession St / Victoria St	Signalized	SBL	7	5	15	26	33	С				
180	Concession St / Victoria St	Signalized	SBT	27	5	15	21	26	С				
180	Concession St / Victoria St	Signalized	SBR	47	5	15	1	9	Α				
180	Concession St / Victoria St	Signalized	EBL	21	35	100	10	15	В				
180	Concession St / Victoria St	Signalized	EBT	658	35	100	6	9	А				
180	Concession St / Victoria St	Signalized	EBR	7	35	100	8	15	В				
180	Concession St / Victoria St	Signalized	WBL	47	50	90	19	27	С				
180	Concession St / Victoria St	Signalized	WBT	569	50	90	6	11	В				
180	Concession St / Victoria St	Signalized	WBR	1	50	90	0	0	Α				
190	Concession St / Nelson St	TWSC	NBL	11	0	5	10	19	С	19.0	С	1.3	А
190	Concession St / Nelson St	TWSC	NBT	0	0	5	0	0	Α				
190	Concession St / Nelson St	TWSC	NBR	0	0	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBL	0	5	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBT	0	5	5	0	0	A				
190	Concession St / Nelson St	TWSC	SBR	23	5	5	0	6	Α				
190	Concession St / Nelson St	TWSC	EBL	43	0	85	1	3	A				
190	Concession St / Nelson St	TWSC	EBT	640	0	85	0	1	A				
190	Concession St / Nelson St	TWSC	EBR	0	0	85	0	0	A				
190	Concession St / Nelson St	TWSC	WBL	8	0	35	3	6	Α				
190	Concession St / Nelson St	TWSC	WBT	578	0	35	0	1	A				
190	Concession St / Nelson St	TWSC	WBR	0	0	35	0	0	A				

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Nede	lti	Control	N de une de	Volume	Queu	ie (m)	Stop	Delay	1.00	Critica	l Mvmt	Inters	ection
Node	Location	Control	Mvmt.	(AII)	50th	95th	Delay (s)	(s)	LOS	Delay	LOS	Delay	LOS
200	Concession St / Kingscourt Av	TWSC	SBL	39	5	15	10	20	С	20.0	С	1.3	Α
200	Concession St / Kingscourt Av	TWSC	SBR	5	5	15	5	19	С				
200	Concession St / Kingscourt Av	TWSC	EBL	24	0	80	2	6	А				
200	Concession St / Kingscourt Av	TWSC	EBT	616	0	80	0	1	А				
200	Concession St / Kingscourt Av	TWSC	WBT	578	0	0	0	0	А				
200	Concession St / Kingscourt Av	TWSC	WBR	21	0	0	0	0	Α				
210	Concession St / Fergus St	TWSC	SBL	44	5	15	11	20	С	20.0	С	2.7	Α
210	Concession St / Fergus St	TWSC	SBR	2	5	15	2	10	А				
210	Concession St / Fergus St	TWSC	EBL	23	0	80	3	6	А				
210	Concession St / Fergus St	TWSC	EBT	630	0	80	2	4	А				
210	Concession St / Fergus St	TWSC	WBT	595	0	0	0	0	А				
210	Concession St / Fergus St	TWSC	WBR	21	0	0	0	0	А				
220	Concession St / Grey St	TWSC	SBL	41	5	15	32	43	E	43.0	E	7.5	А
220	Concession St / Grey St	TWSC	SBR	11	5	15	19	28	D				
220	Concession St / Grey St	TWSC	EBL	21	20	105	6	12	В				
	Concession St / Grey St	TWSC	EBT	656	20	105	6	12	В				
220	Concession St / Grey St	TWSC	WBT	601	0	0	0	0	А				
220	Concession St / Grey St	TWSC	WBR	21	0	0	0	0	А				
230	Concession St / Alfred St	Signalized	NBL	174	25	50	17	28	С	31.0	С	13.1	В
230	Concession St / Alfred St	Signalized	NBT	10	25	50	22	31	С				
230	Concession St / Alfred St	Signalized	NBR	29	25	50	11	19	В				
230	Concession St / Alfred St	Signalized	SBL	2	5	15	21	30	С				
230	Concession St / Alfred St	Signalized	SBT	37	5	15	14	19	В				
230	Concession St / Alfred St	Signalized	SBR	38	5	15	3	8	А				
230	Concession St / Alfred St	Signalized	EBL	33	55	60	12	18	В				
230	Concession St / Alfred St	Signalized	EBT	488	55	60	7	11	В				
230	Concession St / Alfred St	Signalized	EBR	170	55	60	2	3	А				
230	Concession St / Alfred St	Signalized	WBL	22	35	80	9	16	В				
230	Concession St / Alfred St	Signalized	WBT	411	35	80	7	12	В				
230	Concession St / Alfred St	Signalized	WBR	2	35	80	0	0	А				
240	Concession St / Lansdowne St	TWSC	NBL	0	0	0	0	0	А	5.0	Α	1.1	Α
240	Concession St / Lansdowne St	TWSC	NBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	EBT	519	0	10	0	1	А				
240	Concession St / Lansdowne St	TWSC	EBR	0	0	10	0	0	Α				
	Concession St / Lansdowne St	TWSC	WBL	13	0	30	2	5	Α				
	Concession St / Lansdowne St	TWSC	WBT	436	0	30	0	1	Α				
	Concession St / Division St	Signalized	NBL	16	25	60	19	27	С	43.0	D	21.4	С
250	Concession St / Division St	Signalized	NBT	222	25	60	16	21	С				
250	Concession St / Division St	Signalized	NBR	13	25	60	11	17	В				
250	Concession St / Division St	Signalized	SBL	32	50	110	18	26	С				
	Concession St / Division St	Signalized	SBT	362	50	110	16	22	С				
250	Concession St / Division St	Signalized	SBR	201	50	110	2	6	Α				
250	Concession St / Division St	Signalized	EBL	160	35	110	16	22	С				
250	Concession St / Division St	Signalized	EBT	345	35	110	12	17	В				
250	Concession St / Division St	Signalized	EBR	13	35	110	4	8	Α				
250	Concession St / Division St	Signalized	WBL	22	40	80	33	43	D				
250	Concession St / Division St	Signalized	WBT	234	40	80	29	38	D				
250	Concession St / Division St	Signalized	WBR	15	40	80	20	27	С				

2019 AM Peak Hour



N. 1		0.1.1		Volume	Queu	ie (m)	Stop	Delay	1.00	Critical	Mvmt	Inters	ection
Node	Location	Control	Mvmt.	(AII)	50th	95th	Delay (s)	(s)	LOS	Delay	LOS	Delay	LOS
260	Adelaide St / Division St	TWSC	NBL	39	0	20	1	3	Α	12.0	В	0.7	Α
260	Adelaide St / Division St	TWSC	NBT	239	0	20	0	1	А				
260	Adelaide St / Division St	TWSC	NBR	3	0	20	0	1	А				
260	Adelaide St / Division St	TWSC	SBL	11	0	30	0	1	А				
260	Adelaide St / Division St	TWSC	SBT	374	0	30	0	0	А				
260	Adelaide St / Division St	TWSC	SBR	11	0	30	0	0	А				
260	Adelaide St / Division St	TWSC	EBL	4	0	10	2	9	А				
260	Adelaide St / Division St	TWSC	EBT	2	0	10	3	11	В				
260	Adelaide St / Division St	TWSC	EBR	0	0	10	0	0	А				
260	Adelaide St / Division St	TWSC	WBL	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBT	2	0	5	2	12	В				
260	Adelaide St / Division St	TWSC	WBR	7	0	5	1	8	А				
270	Stanley St / Division St	TWSC	NBL	51	0	20	1	4	Α	10.0	Α	2.6	Α
270	Stanley St / Division St	TWSC	NBT	268	0	20	0	1	Α				
270	Stanley St / Division St	TWSC	SBT	373	0	25	1	2	Α				
270	Stanley St / Division St	TWSC	SBR	0	0	25	0	0	Α				
270	Stanley St / Division St	TWSC	EBL	15	5	5	2	9	Α				
270	Stanley St / Division St	TWSC	EBR	70	5	5	3	10	Α				
280	Pine St / Division St	Signalized	NBL	0	5	25	0	0	Α	34.0	С	8.7	Α
280	Pine St / Division St	Signalized	NBT	269	5	25	3	5	Α				
280	Pine St / Division St	Signalized	NBR	6	5	25	0	0	А				
280	Pine St / Division St	Signalized	SBL	43	30	70	5	9	A				
280	Pine St / Division St	Signalized	SBT	406	30	70	4	8	Α				
280	Pine St / Division St	Signalized	SBR	0	30	70	0	0	Α				
280	Pine St / Division St	Signalized	EBL	0	5	10	0	0	А				
280	Pine St / Division St	Signalized	EBT	23	5	10	24	29	С				
280	Pine St / Division St	Signalized	EBR	3	5	10	0	7	А				
280	Pine St / Division St	Signalized	WBL	20	5	20	26	34	С				
280	Pine St / Division St	Signalized	WBT	16	5	20	18	25	С				
280	Pine St / Division St	Signalized	WBR	51	5	20	5	11	В				
290	Quebec St / Division St	TWSC	NBT	268	0	0	0	0	Α	10.0	А	0.8	Α
290	Quebec St / Division St	TWSC	NBR	3	0	0	0	0	A				
290	Quebec St / Division St	TWSC	SBL	3	0	50	0	2	Α				
290	Quebec St / Division St	TWSC	SBT	425	0	50	0	1	A				
290	Quebec St / Division St	TWSC	WBL	13	0	5	2	10	A				
290	Quebec St / Division St	TWSC	WBR	6	0	5	1	7	A				
300	York St / Division St	Signalized	NBL	1	30	35	0	0	A	29.0	С	6.6	Α
300	York St / Division St	Signalized	NBT	240	30	35	3	5	A				
300	York St / Division St	Signalized	NBR	9	30	35	1	4	A				
300	York St / Division St	Signalized	SBL	54	10	40	2	4	A				
300	York St / Division St	Signalized	SBT	385	10	40	2	4	A				
300	York St / Division St	Signalized	SBR	0	10	40	0	0	A				
300	York St / Division St	Signalized	EBL	0	5	15	0	0	A				
300	York St / Division St	Signalized	EBT	32	5	15	24	29	C				
300	York St / Division St	Signalized	EBR	3	5	15	18	22	C				
300	York St / Division St	Signalized	WBL	2	5	20	0	0	A				
300	York St / Division St	Signalized	WBT	31	5	20	22	28	C				
300	York St / Division St	Signalized	WBR	30 245	5 0	20 15	5	11 2	B	12.0	P	0.9	٨
310	Main St / Division St	TWSC	NBT						A	13.0	В	0.9	A
310 310	Main St / Division St	TWSC	NBR SBL	0	0 35	15 40	0	0	A				
	Main St / Division St	TWSC	SBL	15 377	35 35	40	0	2	A				
310	Main St / Division St	TWSC		3//									
310	Main St / Division St	TWSC	WBL	-	0	5	0	0	A				
310	Main St / Division St	TWSC	WBR	7	0	5	4	13	В				

2019 AM Peak Hour



NodeLocationControlMvmt.(All)320Hamilton St / Division StTWSCNBL0320Hamilton St / Division StTWSCSBT377320Hamilton St / Division StTWSCSBR0320Hamilton St / Division StTWSCSBR0320Hamilton St / Division StTWSCEBL3320Hamilton St / Division StTWSCNBT236330Raglan St / Division StTWSCNBT236330Raglan St / Division StTWSCNBR6330Raglan St / Division StTWSCSBL8330Raglan St / Division StTWSCSBT369330Raglan St / Division StTWSCWBR4340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBT329350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBR3350Ellice St / Division StTWSCNBR0360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCNBR0<	e Que	/olume	ue (m)	Stop	Delay	LOS	Critica	l Mvmt	Inters	ection
320Hamilton St / Division StTWSCNBT242320Hamilton St / Division StTWSCSBT377320Hamilton St / Division StTWSCSBR0320Hamilton St / Division StTWSCEBL3320Raglan St / Division StTWSCEBR0330Raglan St / Division StTWSCNBT236330Raglan St / Division StTWSCNBT236330Raglan St / Division StTWSCSBL8330Raglan St / Division StTWSCSBT369330Raglan St / Division StTWSCWBR4340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBT388340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR3350Ellice St / Division StTWSCSBR3350Ellice St / Division StTWSCSBT359350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCSBT352360 <th>50th</th> <th>(AII)</th> <th>95th</th> <th>Delay (s)</th> <th>(s)</th> <th>103</th> <th>Delay</th> <th>LOS</th> <th>Delay</th> <th>LOS</th>	50th	(AII)	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
320Hamilton St / Division StTWSCSBT377320Hamilton St / Division StTWSCSBR0320Hamilton St / Division StTWSCEBL3320Hamilton St / Division StTWSCEBR0330Raglan St / Division StTWSCNBT236330Raglan St / Division StTWSCNBT236330Raglan St / Division StTWSCSBT369330Raglan St / Division StTWSCSBT369330Raglan St / Division StTWSCWBL2330Raglan St / Division StTWSCWBL2330Raglan St / Division StTWSCWBL2330Raglan St / Division StTWSCNBT238340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2350Ellice St / Division StTWSCSBR2350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCNBR226360Colborne St / Division StTWSCNBR226360Colborne St / Division StTWSCSBL0 <td>0</td> <th>0</th> <td>0</td> <td>0</td> <td>0</td> <td>Α</td> <td>9.0</td> <td>Α</td> <td>0.0</td> <td>Α</td>	0	0	0	0	0	Α	9.0	Α	0.0	Α
320Hamilton St / Division StTWSCSBR0320Hamilton St / Division StTWSCEBL3320Raglan St / Division StTWSCNBT236330Raglan St / Division StTWSCNBR6330Raglan St / Division StTWSCSBL8330Raglan St / Division StTWSCSBL8330Raglan St / Division StTWSCSBL8330Raglan St / Division StTWSCWBL2330Raglan St / Division StTWSCWBL2330Raglan St / Division StTWSCWBL2340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2350Ellice St / Division StTWSCNBT28350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCNBR3350Ellice St / Division StTWSCNBR26360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL0360C	0	242	0	0	0	Α				
320Hamilton St / Division StTWSCEBL3320Raglan St / Division StTWSCNBT236330Raglan St / Division StTWSCNBR6330Raglan St / Division StTWSCSBL8330Raglan St / Division StTWSCSBL8330Raglan St / Division StTWSCSBT369330Raglan St / Division StTWSCWBR4340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBT238340Elm St / Division StTWSCSBT238340Elm St / Division StTWSCSBT238340Elm St / Division StTWSCSBT238340Elm St / Division StTWSCSBT229350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBT352	0	377	0	0	0	Α				
320Hamilton St / Division StTWSCEBR0330Raglan St / Division StTWSCNBT236330Raglan St / Division StTWSCNBR6330Raglan St / Division StTWSCSBL8330Raglan St / Division StTWSCSBT369330Raglan St / Division StTWSCWBR4340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBR0360<	0	0	0	0	0	Α				
330Raglan St / Division StTWSCNBT236330Raglan St / Division StTWSCNBR6330Raglan St / Division StTWSCSBL8330Raglan St / Division StTWSCSBT369330Raglan St / Division StTWSCWBL2330Raglan St / Division StTWSCWBR4340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Ellice St / Division StTWSCSBR2350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCNBR2360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBL0360 <t< td=""><td>0</td><th>3</th><td>5</td><td>2</td><td>9</td><td>Α</td><td></td><td></td><td></td><td></td></t<>	0	3	5	2	9	Α				
330Raglan St / Division StTWSCNBR6330Raglan St / Division StTWSCSBL8330Raglan St / Division StTWSCSBT369330Raglan St / Division StTWSCWBL2330Raglan St / Division StTWSCWBR4340Elm St / Division StTWSCNBL0340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBT2340Elm St / Division StTWSCSBT2340Elm St / Division StTWSCSBT2340Elm St / Division StTWSCSBT2350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCSBT359350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBL0360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBT352 </td <td>0</td> <th>0</th> <td>5</td> <td>0</td> <td>0</td> <td>Α</td> <td></td> <td></td> <td></td> <td></td>	0	0	5	0	0	Α				
330Raglan St / Division StTWSCSBL8330Raglan St / Division StTWSCSBT369330Raglan St / Division StTWSCWBL2330Raglan St / Division StTWSCWBR4340Elm St / Division StTWSCNBL0340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBL0360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCSBR0360	0	236	0	0	0	Α	8.0	Α	0.1	А
330Raglan St / Division StTWSCSBT369330Raglan St / Division StTWSCWBL2330Raglan St / Division StTWSCWBR4340Elm St / Division StTWSCNBL0340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCEBL6340Elm St / Division StTWSCEBR0350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCNBL0360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBL10	0	6	0	0	0	Α				
330Raglan St / Division StTWSCWBL2330Raglan St / Division StTWSCWBR4340Elm St / Division StTWSCNBL0340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCEBL6340Elm St / Division StTWSCEBR0350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBL0360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBL10 <td< td=""><td>0</td><th>8</th><td>0</td><td>0</td><td>1</td><td>Α</td><td></td><td></td><td></td><td></td></td<>	0	8	0	0	1	Α				
330Raglan St / Division StTWSCWBR4340Elm St / Division StTWSCNBL0340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCEBL6340Elm St / Division StTWSCEBR0350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCNBL0360Colborne St / Division StTWSCNBL0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBL0360 <td>0</td> <th>369</th> <td>0</td> <td>0</td> <td>0</td> <td>Α</td> <td></td> <td></td> <td></td> <td></td>	0	369	0	0	0	Α				
340Elm St / Division StTWSCNBL0340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCEBL6340Elm St / Division StTWSCBR229350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBL0360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCSBR0360 <td>0</td> <th>2</th> <td>5</td> <td>0</td> <td>8</td> <td>Α</td> <td></td> <td></td> <td></td> <td></td>	0	2	5	0	8	Α				
340Elm St / Division StTWSCNBT238340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCEBL6340Elm St / Division StTWSCEBR0350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBL4360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL4 <td>0</td> <th>4</th> <td>5</td> <td>1</td> <td>8</td> <td>Α</td> <td></td> <td></td> <td></td> <td></td>	0	4	5	1	8	Α				
340Elm St / Division StTWSCSBT368340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCEBL6340Elm St / Division StTWSCEBR0350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCSBT359350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBL9350Ellice St / Division StTWSCWBL9360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBL4360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL	0	0	0	0	0	Α	8.0	Α	0.1	А
340Elm St / Division StTWSCSBR2340Elm St / Division StTWSCEBL6340Elm St / Division StTWSCEBR0350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCSBT359350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBT0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBL4360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL	0	238	0	0	0	Α				
340Elm St / Division StTWSCEBL6340Elm St / Division StTWSCEBR0350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCSBT359350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBL9360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBL4360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL </td <td>0</td> <th>368</th> <td>0</td> <td>0</td> <td>0</td> <td>Α</td> <td></td> <td></td> <td></td> <td></td>	0	368	0	0	0	Α				
340Elm St / Division StTWSCEBR0350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCSBT359350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBL9360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSC <td>0</td> <th>2</th> <td>0</td> <td>0</td> <td>0</td> <td>Α</td> <td></td> <td></td> <td></td> <td></td>	0	2	0	0	0	Α				
350Ellice St / Division StTWSCNBT229350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCSBT359350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBL4360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWS	0	6	5	1	8	Α				
350Ellice St / Division StTWSCNBR8350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCSBT359350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBL0360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSC <td>0</td> <th>0</th> <td>5</td> <td>0</td> <td>0</td> <td>Α</td> <td></td> <td></td> <td></td> <td></td>	0	0	5	0	0	Α				
350Ellice St / Division StTWSCSBL9350Ellice St / Division StTWSCSBT359350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBL0360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBL0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSC <td>0</td> <th>229</th> <td>0</td> <td>0</td> <td>0</td> <td>Α</td> <td>8.0</td> <td>Α</td> <td>0.2</td> <td>Α</td>	0	229	0	0	0	Α	8.0	Α	0.2	Α
350Ellice St / Division StTWSCSBT359350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBL0360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBR3370Queen St / Division StSignalizedNBT64370Queen St / Division StSignalizedNBR121	0	8	0	0	0	Α				
350Ellice St / Division StTWSCWBL3350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBL0360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBL4360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL4360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBR3370Queen St / Division StSignalizedNBT64370Queen St / Division StSignalizedNBR121	0	9	0	0	2	Α				
350Ellice St / Division StTWSCWBR9360Colborne St / Division StTWSCNBL0360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBT4360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBR3370Queen St / Division StSignalizedNBT64370Queen St / Division StSignalizedNBR121	0	359	0	0	0	Α				
360Colborne St / Division StTWSCNBL0360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBT4360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBR3370Queen St / Division StSignalizedNBT64370Queen St / Division StSignalizedNBR121	0	3	5	0	8	Α				
360Colborne St / Division StTWSCNBT226360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBR4360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4370Queen St / Division StSignalizedNBT64370Queen St / Division StSignalizedNBR121	0	9	5	0	7	Α				
360Colborne St / Division StTWSCNBR0360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBL4360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4370Queen St / Division StSignalizedNBT64370Queen St / Division StSignalizedNBR121	0	0	20	0	0	Α	11.0	В	1.0	А
360Colborne St / Division StTWSCSBL10360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBT4360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBT4370Queen St / Division StSignalizedNBT64370Queen St / Division StSignalizedNBR121	0	226	20	0	0	Α				
360Colborne St / Division StTWSCSBT352360Colborne St / Division StTWSCSBR0360Colborne St / Division StTWSCEBL8360Colborne St / Division StTWSCEBT4360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCEBR0360Colborne St / Division StTWSCWBL5360Colborne St / Division StTWSCWBT4360Colborne St / Division StTWSCWBR3370Queen St / Division StSignalizedNBT64370Queen St / Division StSignalizedNBR121	0	0	20	0	0	Α				
360 Colborne St / Division St TWSC SBR 0 360 Colborne St / Division St TWSC EBL 8 360 Colborne St / Division St TWSC EBT 4 360 Colborne St / Division St TWSC EBR 0 360 Colborne St / Division St TWSC EBR 0 360 Colborne St / Division St TWSC WBL 5 360 Colborne St / Division St TWSC WBT 4 360 Colborne St / Division St TWSC WBT 4 370 Queen St / Division St Signalized NBT 64 370 Queen St / Division St Signalized NBR 121	0	10	10	0	1	Α				
360 Colborne St / Division St TWSC SBR 0 360 Colborne St / Division St TWSC EBL 8 360 Colborne St / Division St TWSC EBT 4 360 Colborne St / Division St TWSC EBR 0 360 Colborne St / Division St TWSC EBR 0 360 Colborne St / Division St TWSC WBL 5 360 Colborne St / Division St TWSC WBT 4 360 Colborne St / Division St TWSC WBT 4 370 Queen St / Division St Signalized NBT 64 370 Queen St / Division St Signalized NBR 121	0	352	10	0	1	Α				
360 Colborne St / Division St TWSC EBT 4 360 Colborne St / Division St TWSC EBR 0 360 Colborne St / Division St TWSC WBL 5 360 Colborne St / Division St TWSC WBL 4 360 Colborne St / Division St TWSC WBT 4 360 Colborne St / Division St TWSC WBR 3 370 Queen St / Division St Signalized NBT 64 370 Queen St / Division St Signalized NBR 121	0	0	10	0	0	Α				
360 Colborne St / Division St TWSC EBR 0 360 Colborne St / Division St TWSC WBL 5 360 Colborne St / Division St TWSC WBT 4 360 Colborne St / Division St TWSC WBT 4 360 Colborne St / Division St TWSC WBR 3 370 Queen St / Division St Signalized NBT 64 370 Queen St / Division St Signalized NBR 121	0	8	5	2	9	А				
360 Colborne St / Division St TWSC WBL 5 360 Colborne St / Division St TWSC WBT 4 360 Colborne St / Division St TWSC WBT 4 360 Colborne St / Division St TWSC WBR 3 370 Queen St / Division St Signalized NBT 64 370 Queen St / Division St Signalized NBR 121	0	4	5	1	9	Α				
360 Colborne St / Division St TWSC WBL 5 360 Colborne St / Division St TWSC WBT 4 360 Colborne St / Division St TWSC WBT 4 360 Colborne St / Division St TWSC WBR 3 370 Queen St / Division St Signalized NBT 64 370 Queen St / Division St Signalized NBR 121	0	0	5	0	0	Α				
360 Colborne St / Division St TWSC WBT 4 360 Colborne St / Division St TWSC WBR 3 370 Queen St / Division St Signalized NBT 64 370 Queen St / Division St Signalized NBR 121	0	5	5	2	11	В				
360 Colborne St / Division St TWSC WBR 3 370 Queen St / Division St Signalized NBT 64 370 Queen St / Division St Signalized NBR 121	0		5	0	9	Α				
370 Queen St / Division St Signalized NBT 64 370 Queen St / Division St Signalized NBR 121	0	3	5	0	7	Α				
370 Queen St / Division St Signalized NBR 121	15	64	30	7	10	Α	21.0	С	13.8	В
	15	121	30	1	10	Α				
370 Queen St / Division St Signalized SBL 111	40		75	14	21	С				
370 Queen St / Division St Signalized SBT 249	40		75	13	19	B				
370 Queen St / Division St Signalized WBL 129	15		25	9	14	B				
370 Queen St / Division St Signalized WBR 162	15		25	0	5	A				

2019 PM Peak Hour



ID	Intersection Name	Control Type	Number of Vehicles	50th %'ile Queue (m)	95th %'ile Queue (m)	Avg. Vehicle Delay (sec)	Avg. Stop Delay (sec)	LO S
10	Princess St / Concession St	Signalized	3,218	46.8	80.8	28.8	23.5	С
20	Princess St / Regent St	TWSC	1,458	0.1	60.7	2.9	1.1	-
30	Princess St / Drayton Av	TWSC	1,374	15.3	50.1	2.4	0.4	-
40	Princess St / Macdonnell Av	Signalized	1,353	70.6	146.5	19.5	12.9	В
50	Princess St / Smith St	TWSC	1,116	36.2	65.2	5.1	2.6	-
60	Princess St / Victoria St	Signalized	1,323	23.4	72.9	10.6	6.4	В
70	Princess St / Nelson St	TWSC	1,127	5.6	61.4	3.3	0.9	-
80	Princess St / Albert St	Signalized	1,117	43.8	90.8	16.4	11.6	В
90	Princess St / Frontenac St	TWSC	1,108	2.7	72.4	3.8	1.4	-
100	Princess St / Alfred St	Signalized	1,443	68.8	97.4	26.5	18.8	С
110	Princess St / Chatham St	TWSC	1,210	20.5	92.7	6.9	3.6	-
120	Princess St / University Av	Signalized	1,166	30.1	47.3	7.2	4.3	Α
130	Princess St / Division St	Signalized	1,457	18.7	57.5	14.3	9.4	В
140	Concession St / Drayton Av	TWSC	1,014	24.4	166.5	21.4	12.9	-
150	Concession St / Leroy Grant Dr (S)	TWSC	1,084	68.7	73.6	22.4	14.5	-
155	Concession St / Leroy Grant Drive (N)	TWSC	1,202	2.4	7.7	4.1	1.9	-
160	Concession St / Macdonnell St	Signalized	2,016	72.6	77.1	15.0	9.3	В
170	Concession St / Connaught St	TWSC	1,751	30.0	104.3	6.7	3.1	-
180	Concession St / Victoria St	Signalized	1,956	90.0	95.1	15.9	9.9	В
190	Concession St / Nelson St	TWSC	1,730	0.0	89.3	3.5	1.5	-
200	Concession St / Kingscourt Av	TWSC	1,667	0.0	94.2	3.6	1.6	-
210	Concession St / Fergus St	TWSC	1,659	0.0	69.4	4.2	2.2	-
220	Concession St / Grey St	TWSC	1,659	22.3	52.1	7.5	4.5	-
230	Concession St / Alfred St	Signalized	1,796	53.8	86.2	16.5	11.2	В
240	Concession St / Lansdowne St	TWSC	1,182	0.0	32.5	1.7	0.6	-
250	Concession St / Division St	Signalized	2,160	68.0	136.9	29.2	22.3	С
260	Adelaide St / Division St	TWSC	1,097	0.0	71.6	4.0	1.8	-
270	Stanley St / Division St	TWSC	1,064	0.0	24.0	1.5	0.4	-
280	Pine St / Division St	Signalized	1,134	18.3	65.7	9.3	5.4	Α
290	Quebec St / Division St	TWSC	976	0.0	48.1	1.6	0.5	-
300	York St / Division St	Signalized	1,056	24.6	42.5	7.2	4.6	Α
310	Main St / Division St	TWSC	938	25.9	49.2	3.7	1.8	-
320	Hamilton St / Division St	TWSC	936	0.0	20.4	0.6	0.0	-
330	Raglan St / Division St	TWSC	931	0.0	0.1	0.1	0.0	-
340	Elm St / Division St	TWSC	962	0.0	9.1	0.2	0.0	-
350	Ellice St / Division St	TWSC	927	0.0	27.6	0.2	0.0	-
360	Colborne St / Division St	TWSC	911	0.0	23.3	0.7	0.5	-
370	Queen St / Division St	Signalized	1,429	41.2	81.8	17.6	9.7	В
	Total		51,707	925	2,544	346	217	

2019 PM Peak Hour



Node	Location	Control	Mvmt.	Volume		ıe (m)	Stop	Delay	LOS		Mvmt		ection
				(AII)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
10	Princess St / Concession St	Signalized	NBL	307	45	115	33	40	D	44.0	D	28.8	C
10	Princess St / Concession St	Signalized	NBT	333	45	115	33	40	D				
10 10	Princess St / Concession St	Signalized Signalized	NBR SBL	19 517	45 70	115 105	8 36	14 44	B				
10	Princess St / Concession St Princess St / Concession St	Signalized	SBL	463	70	105	30	44	D				
10	Princess St / Concession St	Signalized	SBR	403	70	105	0	44 0	A				
10	Princess St / Concession St	Signalized	EBT	228	20	35	30	35	C				
10	Princess St / Concession St	Signalized	EBR	313	20	35	0	1	A				
10	Princess St / Concession St	Signalized	WBT	400	40	60	32	38	D				
10	Princess St / Concession St	Signalized	WBR	610	40	60	0	0	A				
10	Princess St / Concession St	Signalized	WBL	28	40	60	1	4	Α				
20	Princess St / Regent St	TWSC	NBL	18	5	10	8	17	С	17.0	С	2.9	Α
20	Princess St / Regent St	TWSC	NBR	17	5	10	2	10	Α				
20	Princess St / Regent St	TWSC	EBT	689	0	55	1	3	Α				
20	Princess St / Regent St	TWSC	EBR	71	0	55	0	2	А				
20	Princess St / Regent St	TWSC	WBL	33	0	70	5	8	Α				
20	Princess St / Regent St	TWSC	WBT	630	0	70	1	2	Α				
30	Princess St / Drayton Av	TWSC	SBL	4	5	45	9	22	С	22.0	С	2.4	A
30	Princess St / Drayton Av	TWSC	SBR	73 42	5	45	5	15	B				
30 30	Princess St / Drayton Av Princess St / Drayton Av	TWSC TWSC	EBL	42 664	0	55 55	0	5	A				
30	Princess St / Drayton Av	TWSC	WBT	591	35	45	0	2	A				
30	Princess St / Drayton Av	TWSC	WBR	0	35	45	0	0	A				
40	Princess St / Macdonnell Av	Signalized	NBL	69	40	55	14	20	B	29.0	С	19.5	В
40	Princess St / Macdonnell Av	Signalized	NBT	28	40	55	12	21	C	2,110		1710	
40	Princess St / Macdonnell Av	Signalized	NBR	67	40	55	6	15	B				
40	Princess St / Macdonnell Av	Signalized	SBL	2	10	40	15	23	С				
40	Princess St / Macdonnell Av	Signalized	SBT	39	10	40	13	18	В				
40	Princess St / Macdonnell Av	Signalized	SBR	43	10	40	4	13	В				
40	Princess St / Macdonnell Av	Signalized	EBL	41	100	245	21	29	С				
40	Princess St / Macdonnell Av	Signalized	EBT	590	100	245	16	24	С				
40	Princess St / Macdonnell Av	Signalized	EBR	27	100	245	9	16	В				
40	Princess St / Macdonnell Av	Signalized	WBL	6	50	55	19	28	С				
40	Princess St / Macdonnell Av	Signalized	WBT	437	50	55	10	14	B				
40 50	Princess St / Macdonnell Av Princess St / Smith St	Signalized TWSC	WBR SBL	4	50 40	55 40	5	9 0	A	23.0	С	5.1	A
50	Princess St / Smith St	TWSC	SBR	29	40	40	10	23	C	23.0	C	5.1	A
50	Princess St / Smith St	TWSC	EBL	27	40	60	2	4	A				
50	Princess St / Smith St	TWSC	EBT	632	40	60	0	1	A				
50	Princess St / Smith St	TWSC	WBT	428	30	75	6	10	A				
50	Princess St / Smith St	TWSC	WBR	0	30	75	0	0	A				
60	Princess St / Victoria St	Signalized	NBL	15	10	35	19	26	C	28.0	С	10.6	В
60	Princess St / Victoria St	Signalized	NBT	76	10	35	17	24	С				
60	Princess St / Victoria St	Signalized	NBR	57	10	35	6	12	В				
60	Princess St / Victoria St	Signalized	SBL	14	5	20	20	28	С				
60	Princess St / Victoria St	Signalized	SBT	38	5	20	15	21	С				
60	Princess St / Victoria St	Signalized	SBR	14	5	20	3	6	А				
60	Princess St / Victoria St	Signalized	EBL	94	20	100	9	16	В				
60	Princess St / Victoria St	Signalized	EBT	534	20	100	2	5	А				
60	Princess St / Victoria St	Signalized	EBR	14	20	100	2	6	Α				
60	Princess St / Victoria St	Signalized	WBL	17	35	55	13	17	В				
60	Princess St / Victoria St	Signalized	WBT	388	35	55	8	12	В				
60	Princess St / Victoria St	Signalized	WBR	62	35	55	6	10	A				
70	Princess St / Nelson St	TWSC	NBL	14	0	5	11	20	С	20.0	С	3.3	A
70	Princess St / Nelson St	TWSC	NBT	0	0	5	0	0	A				
70	Princess St / Nelson St	TWSC	NBR	0	0	5	0	0	A				
70	Princess St / Nelson St	TWSC	SBL	2	0	5	0	6	A				
70	Princess St / Nelson St	TWSC	SBT	1	0	5	0	0	A				
70	Princess St / Nelson St	TWSC	SBR	0 95	0 10	5 110	0	0	A				
70	Princess St / Nelson St	TWSC	EBL				3		A				
70 70	Princess St / Nelson St Princess St / Nelson St	TWSC TWSC	EBT	527	10 10	110 110	1 0	5 1	A				
70	Princess St / Nelson St	TWSC	EBR WBL	6	0	0	0	0	A				
70			WBL	468	0	0	0	0	A				
70	Princess St / Nelson St	TWSC											

2019 PM Peak Hour



Node	Location	Control	Mvmt.	Volume		ie (m)	Stop	Delay	LOS	Critical		Inters	
90	Dripcoss St / Albert St	Signalized	NDI	(All) 49	50th 10	95th 20	Delay (s)	(S)	В	Delay 39.0	LOS D	Delay	LOS B
80 80	Princess St / Albert St Princess St / Albert St	Signalized	NBL NBT	49 18	10	20	13 11	18 16	B	39.0	D	16.4	В
80	Princess St / Albert St	Signalized Signalized	NBR	39	10	20	3	8	A				
80	Princess St / Albert St	Signalized	SBL	0	0	0	0	0	A				
80	Princess St / Albert St	Signalized	SBT	0	0	0	0	0	A				
80	Princess St / Albert St	Signalized	SBR	7	0	0	0	3	A				
80	Princess St / Albert St	Signalized	EBL	21	50	115	23	33	C				
80	Princess St / Albert St	Signalized	EBT	500	50	115	13	18	B				
80	Princess St / Albert St	Signalized	EBR	21	50	115	13	18	B				
80	Princess St / Albert St	Signalized	WBL	28	45	80	31	39	D				
80	Princess St / Albert St	Signalized	WBT	434	45	80	9	13	B				
80	Princess St / Albert St	Signalized	WBR	0	45	80	0	0	A				
90	Princess St / Frontenac St	TWSC	NBL	4	0	5	14	23	C	23.0	С	3.8	Α
90	Princess St / Frontenac St	TWSC	NBT	8	0	5	10	21	С				
90	Princess St / Frontenac St	TWSC	NBR	0	0	5	0	0	A				
90	Princess St / Frontenac St	TWSC	SBL	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBT	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBR	3	0	5	0	7	Α				
90	Princess St / Frontenac St	TWSC	EBL	63	5	135	5	11	В				
90	Princess St / Frontenac St	TWSC	EBT	531	5	135	2	6	Α				
90	Princess St / Frontenac St	TWSC	EBR	0	5	135	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBL	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBT	490	0	0	0	0	А				
90	Princess St / Frontenac St	TWSC	WBR	9	0	0	0	0	А				
100	Princess St / Alfred St	Signalized	NBL	31	25	50	15	22	С	35.0	С	26.5	С
100	Princess St / Alfred St	Signalized	NBT	115	25	50	13	20	В				
100	Princess St / Alfred St	Signalized	NBR	104	25	50	6	12	В				
100	Princess St / Alfred St	Signalized	SBL	36	10	30	15	22	С				
100	Princess St / Alfred St	Signalized	SBT	49	10	30	12	18	В				
100	Princess St / Alfred St	Signalized	SBR	26	10	30	5	11	В				
100	Princess St / Alfred St	Signalized	EBL	5	80	140	26	34	С				
100	Princess St / Alfred St	Signalized	EBT	529	80	140	23	33	С				
100	Princess St / Alfred St	Signalized	EBR	14	80	140	24	35	С				
100	Princess St / Alfred St	Signalized	WBL	33	90	90	12	19	В				
100	Princess St / Alfred St	Signalized	WBT	445	90	90	21	27	С				
100	Princess St / Alfred St	Signalized	WBR	56	90	90	16	22	С				
110	Princess St / Chatham St	TWSC	SBL	0	0	0	0	0	Α	22.0	С	6.9	Α
110	Princess St / Chatham St	TWSC	SBR	0	0	0	0	0	А				
110	Princess St / Chatham St	TWSC	EBL	69	25	115	5	11	В				
110	Princess St / Chatham St	TWSC	EBT	601	25	115	3	8	А				
110	Princess St / Chatham St	TWSC	WBT	533	15	65	4	5	А				
110	Princess St / Chatham St	TWSC	WBR	7	15	65	14	22	С				
120	Princess St / University Av	Signalized	NBL	55	5	20	16	21	С	21.0	С	7.2	Α
120	Princess St / University Av	Signalized	NBR	28	5	20	3	9	Α				
120	Princess St / University Av	Signalized	EBT	528	55	70	5	9	Α				
120	Princess St / University Av	Signalized	EBR	21	55	70	3	7	Α				
120	Princess St / University Av	Signalized	WBL	15	5	25	7	12	В				
120	Princess St / University Av	Signalized	WBT	482	5	25	2	3	Α				
120	Princess St / University Av	Signalized	NBT	0	5	20	0	0	Α				
120	Princess St / University Av	Signalized	SBL	0	0	0	0	0	Α				
	Princess St / University Av	Signalized	SBT	0	0	0	0	0	Α				
120	Princess St / University Av	Signalized	SBR	0	0	0	0	0	Α				
	Princess St / University Av	Signalized	EBL	37	55	70	7	14	В				
	Princess St / University Av	Signalized	WBR	0	5	25	0	0	А				
130	Princess St / Division St	Signalized	NBL	53	20	40	14	22	С	27.0	С	14.3	В
	Princess St / Division St	Signalized	NBT	152	20	40	13	20	В				
	Princess St / Division St	Signalized	NBR	11	20	40	9	15	В				
	Princess St / Division St	Signalized	SBL	134	5	65	5	8	Α				
130	Princess St / Division St	Signalized	SBT	109	5	65	3	4	Α				
-	Princess St / Division St	Signalized	SBR	440	5	65	0	1	А				
130	Princess St / Division St	Signalized	EBL	153	35	55	16	25	С				
400	Princess St / Division St	Signalized	EBT	381	35	55	19	27	С				
130	FTILCESS ST / DIVISION ST	Jighanzeu	LDT	301	35	55	9	21	B				

2019 PM Peak Hour



Location Concession St / Drayton Av Concession St / Drayton Av Concession St / Drayton Av Concession St / Leroy Grant Dr (S) Concession St / Leroy Grant Dr (S) Concession St / Leroy Grant Drive (N) Concession St / Macdonnell St Concession S	Control TWSC TWSC TWSC TWSC TWSC TWSC TWSC TWSC	Mvmt. NBR EBT SBL EBL EBT NBL NBT SBT SBR WBT WBR NBL NBR SBR	(All) 28 942 44 22 184 878 95 88 22 5 951 41 31 26 83	50th 5 25 5 70 70 15 15 5 5 5 0 0 0 10 10	95th 45 170 5 75 50 50 50 5 5 5 0 0 0 35	Delay (s) 213 7 13 7 18 14 11 12 9 0 0 0 0 0 0	(s) 231 15 26 19 25 22 24 24 24 20 0 0 0 1	LOS F B D C C C C C C C C C A A A	Delay 231.0 25.0 225.0 24.0	LOS F C	Delay 21.4 22.4 4.1	LOS C C A
Concession St / Drayton Av Concession St / Drayton Av Concession St / Leroy Grant Dr (S) Concession St / Leroy Grant Dr (S) Concession St / Leroy Grant Drive (N) Concession St / Macdonnell St Concession St / Macdonnell St	TWSC TWSC TWSC TWSC TWSC TWSC TWSC TWSC	EBT EBR SBL EBL EBT NBL SBT SBR WBT WBR NBL NBT NBR SBR	942 44 22 184 878 95 88 22 5 951 41 31 26	25 25 70 70 15 15 5 5 0 0 0 10	170 170 5 75 50 50 50 5 5 0 0 0 35	7 13 7 18 14 11 12 9 0 0 0 0	15 26 19 25 22 24 24 24 20 0 0	B D C C C C C C C A A	25.0	C	22.4	С
Concession St / Drayton Av Concession St / Leroy Grant Dr (S) Concession St / Leroy Grant Dr (S) Concession St / Leroy Grant Dr (S) Concession St / Leroy Grant Drive (N) Concession St / Macdonnell St Concession St / Macdonnell St	TWSC TWSC TWSC TWSC TWSC TWSC TWSC TWSC	EBR SBL EBL NBL NBT SBT SBR WBT WBR NBL NBT SBR	44 22 184 878 95 88 22 5 951 41 31 26	25 5 70 70 15 15 5 5 0 0 0 10	170 5 75 50 50 5 5 5 0 0 0 35	13 7 18 14 11 12 9 0 0 0 0	26 19 25 22 24 24 24 20 0 0	D C C C C C C A A				
Concession St / Leroy Grant Dr (S) Concession St / Leroy Grant Dr (S) Concession St / Leroy Grant Dr (S) Concession St / Leroy Grant Drive (N) Concession St / Macdonnell St Concession St / Macdonnell St	TWSC TWSC TWSC TWSC TWSC TWSC TWSC TWSC	SBL EBL EBT NBL SBT SBR WBT WBR NBL NBT NBR SBR	22 184 878 95 88 22 5 951 41 31 26	5 70 70 15 15 5 5 0 0 0 10	5 75 50 50 5 5 5 0 0 35	7 18 14 11 12 9 0 0 0 0	19 25 22 24 24 20 0 0	C C C C C C A A				
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Concession St / Leroy Grant Dr (S) Concession St / Leroy Grant Drive (N) Concession St / Macdonnell St Concession St / Macdonnell St	TWSC TWSC TWSC TWSC TWSC Signalized Signalized Signalized Signalized	EBT NBL NBT SBR WBT WBR NBL NBT NBR SBR	878 95 88 22 5 951 41 31 26	70 15 15 5 5 0 0 0 10	75 50 50 5 5 0 0 35	14 11 12 9 0 0 0 0	22 24 24 20 0 0	C C C C A A	24.0	C	4.1	A
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Concession St / Leroy Grant Drive (N) Concession St / Macdonnell St Concession St / Macdonnell St	TWSC TWSC TWSC TWSC Signalized Signalized Signalized Signalized Signalized	NBT SBT SBR WBT WBR NBL NBT NBR SBR	88 22 5 951 41 31 26	15 5 5 0 0 10	50 5 5 0 0 35	12 9 0 0 0	24 20 0 0	C C A A	24.0	C	4.1	A
Concession St / Leroy Grant Drive (N) Concession St / Macdonnell St Concession St / Macdonnell St	TWSC TWSC TWSC Signalized Signalized Signalized Signalized Signalized	SBT SBR WBT WBR NBL NBT NBR SBR	22 5 951 41 31 26	5 5 0 0 10	5 5 0 0 35	9 0 0 0	20 0 0	C A A				
Concession St / Leroy Grant Drive (N) Concession St / Macdonnell St Concession St / Macdonnell St	TWSC TWSC TWSC Signalized Signalized Signalized Signalized Signalized	SBR WBT WBR NBL NBT NBR SBR	5 951 41 31 26	5 0 0 10	5 0 0 35	0	0	A				
Concession St / Leroy Grant Drive (N) Concession St / Leroy Grant Drive (N) Concession St / Leroy Grant Drive (N) Concession St / Macdonnell St Concession St / Macdonnell St	TWSC TWSC Signalized Signalized Signalized Signalized Signalized	SBR WBT WBR NBL NBT NBR SBR	5 951 41 31 26	5 0 0 10	5 0 0 35	0	0	A				
Concession St / Leroy Grant Drive (N) Concession St / Leroy Grant Drive (N) Concession St / Macdonnell St Concession St / Macdonnell St	TWSC TWSC Signalized Signalized Signalized Signalized Signalized	WBT WBR NBL NBT NBR SBR	951 41 31 26	0 0 10	0 0 35	0	0	A				
Concession St / Leroy Grant Drive (N) Concession St / Macdonnell St Concession St / Macdonnell St	TWSC Signalized Signalized Signalized Signalized	WBR NBL NBT NBR SBR	41 31 26	0 10	0 35	0	-					
Concession St / Macdonnell St Concession St / Macdonnell St	Signalized Signalized Signalized Signalized Signalized	NBL NBT NBR SBR	31 26	10	35							
Concession St / Macdonnell St Concession St / Macdonnell St	Signalized Signalized Signalized Signalized	NBT NBR SBR	26			23	30	С	45.0	D	15.0	В
Concession St / Macdonnell St Concession St / Macdonnell St	Signalized Signalized Signalized	NBR SBR		10	35	26	35	C	10.0	0	10.0	
Concession St / Macdonnell St Concession St / Macdonnell St Concession St / Macdonnell St Concession St / Macdonnell St Concession St / Macdonnell St	Signalized Signalized	SBR		10	35	7	14	B				
Concession St / Macdonnell St Concession St / Macdonnell St Concession St / Macdonnell St Concession St / Macdonnell St	Signalized		68	5	20	5	9	A				
Concession St / Macdonnell St Concession St / Macdonnell St Concession St / Macdonnell St	<u> </u>	EBL	58	75	80	36	45	D				
Concession St / Macdonnell St Concession St / Macdonnell St	Signalizeu	EBT	783	75	80	8	14	B				
Concession St / Macdonnell St	Signalized	EBR	64	75	80	7	12	B				
	Signalized	WBL	17	85	85	35	44	D				
	Signalized	WBT	886	85	85	8	13	B				
Concession St / Macdonnell St Concession St / Macdonnell St	Signalized	WBR	0	85	85	0	0	A				
Concession St / Connaught St	TWSC	SBL	0	0	5	0	0	A	28.0	D	6.7	А
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St / Nelson StTWSCEBToncession St / Nelson StTWSCEBToncession St / Nelson St <td>oncession St / Connaught StTWSCEBL0oncession St / Connaught StTWSCEBT860oncession St / Connaught StTWSCWBT877oncession St / Connaught StTWSCWBR0oncession St / Connaught StTWSCWBR0oncession St / Victoria StSignalizedNBL54oncession St / Victoria StSignalizedNBR81oncession St / Victoria StSignalizedSBL9oncession St / Victoria StSignalizedSBT24oncession St / Victoria StSignalizedSBR35oncession St / Victoria StSignalizedEBL56oncession St / Victoria StSignalizedEBL56oncession St / Victoria StSignalizedEBR20oncession St / Victoria StSignalizedWBR15oncession St / Nelson StTWSCNBR0oncession St / Nelson StTWSCSBL0oncession St / Nelson StTWSCSBL0oncession St / Nelson StTWSCSBL0oncession St / Nelson StTWSCSBL10oncession St / Nelson StTWSCSBL10oncession St / Nelson StTWSC<td< td=""><td>oncession St / Connaught StTWSCEBL010oncession St / Connaught StTWSCEBT86010oncession St / Connaught StTWSCWBT87750oncession St / 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9 5 15 Display Signalized SBR 35 5 15 Display Signalized SBR 35 5 15 Display Signalized SBR 35 5 15 Display Signalized EBR 20 115 115</td><td>Display TWSC EBL O 10 95 0 Display TWSC EBT 860 10 95 2 Display TWSC EBT 860 10 95 2 Display TWSC WBT 877 50 115 4 Display TWSC WBR 0 50 115 0 Display TWSC WBR 0 50 115 0 Display TWSC WBR 0 50 115 0 Display Signalized NBL 54 20 50 28 Display Signalized NBT 31 20 50 20 Display Signalized SBL 9 5 15 27 Display Signalized SBT 24 5 15 2 Display Signalized SBR 35 5 15 2 <td< td=""><td>oncession St / Connaught St TWSC EBL 0 10 95 0 0 oncession St / Connaught St TWSC EBT 860 10 95 2 5 oncession St / Connaught St TWSC WBT 877 50 115 4 8 oncession St / Connaught St TWSC WBR 0 50 115 0 0 oncession St / Victoria St Signalized NBL 54 20 50 29 38 oncession St / Victoria St Signalized NBT 31 20 50 28 36 oncession St / Victoria St Signalized SBL 9 5 15 27 35 oncession St / Victoria St Signalized SBT 24 5 15 2 12 oncession St / Victoria St Signalized EBT 793 115 115 8 14 oncession St / Victoria St Signalized EBR 20 115 11</td><td>Dancession St / Connaught St TWSC EBL 0 10 95 0 0 A concession St / Connaught St TWSC EBT 860 10 95 2 5 A concession St / Connaught St TWSC WBT 877 50 115 4 8 A concession St / Victoria St Signalized NBL 54 20 50 29 38 D concession St / Victoria St Signalized NBT 31 20 50 29 C concession St / Victoria St Signalized NBR 81 20 50 20 29 C concession St / Victoria St Signalized SBL 9 5 15 27 35 C concession St / Victoria St Signalized SBR 35 5 15 2 12 B concession St / Victoria St Signalized EBL 793 115 115 814 B</td><td>Discression St / Connaught St TWSC EBL 0 10 95 0 0 A concession St / Connaught St TWSC EBT 860 10 95 2 5 A concession St / Connaught St TWSC WBT 877 50 115 4 8 A concession St / Connaught St TWSC WBR 0 50 115 0 0 A concession St / Victoria St Signalized NBT 31 20 50 28 36 D concession St / Victoria St Signalized NBR 81 20 50 20 29 C concession St / Victoria St Signalized SBL 9 5 15 27 33 C concession St / Victoria St Signalized SBL 24 5 15 27 33 C concession St / Victoria St Signalized EBR 20 115 115 11 24 <td< td=""><td>Discression St / Connaught St TWSC EBL 0 10 95 0 0 A concession St / Connaught St TWSC EBT 860 10 95 2 5 A concession St / Connaught St TWSC WBR 877 50 115 4 8 A concession St / Connaught St TWSC WBR 0 50 115 0 0 A concession St / Victoria St Signalized NBL 54 20 50 28 36 D concession St / Victoria St Signalized NBR 81 20 50 29 28 6 D C 0</td><td>Oncession St / Connaught St TWSC EBL 0 10 95 0 0 A Image: Connect St / St</td></td<></td></td<></td></td<></td>	oncession St / Connaught StTWSCEBL0oncession St / Connaught StTWSCEBT860oncession St / Connaught StTWSCWBT877oncession St / Connaught StTWSCWBR0oncession St / Connaught StTWSCWBR0oncession St / Victoria StSignalizedNBL54oncession St / Victoria StSignalizedNBR81oncession St / Victoria StSignalizedSBL9oncession St / Victoria StSignalizedSBT24oncession St / Victoria StSignalizedSBR35oncession St / Victoria 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15 2 Display Signalized SBR 35 5 15 2 <td< td=""><td>oncession St / Connaught St TWSC EBL 0 10 95 0 0 oncession St / Connaught St TWSC EBT 860 10 95 2 5 oncession St / Connaught St TWSC WBT 877 50 115 4 8 oncession St / Connaught St TWSC WBR 0 50 115 0 0 oncession St / Victoria St Signalized NBL 54 20 50 29 38 oncession St / Victoria St Signalized NBT 31 20 50 28 36 oncession St / Victoria St Signalized SBL 9 5 15 27 35 oncession St / Victoria St Signalized SBT 24 5 15 2 12 oncession St / Victoria St Signalized EBT 793 115 115 8 14 oncession St / Victoria St Signalized EBR 20 115 11</td><td>Dancession St / Connaught St TWSC EBL 0 10 95 0 0 A concession St / Connaught St TWSC EBT 860 10 95 2 5 A concession St / Connaught St TWSC WBT 877 50 115 4 8 A concession St / Victoria St Signalized NBL 54 20 50 29 38 D concession St / Victoria St Signalized NBT 31 20 50 29 C concession St / Victoria St Signalized NBR 81 20 50 20 29 C concession St / Victoria St Signalized SBL 9 5 15 27 35 C 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St TWSC WBR 0 50 115 0 0 A concession St / Victoria St Signalized NBL 54 20 50 28 36 D concession St / Victoria St Signalized NBR 81 20 50 29 28 6 D C 0	Oncession St / Connaught St TWSC EBL 0 10 95 0 0 A Image: Connect St / St

2019 PM Peak Hour



Nede	lti	Constant	N de une de	Volume	Queu	ie (m)	Stop	Delay	1.00	Critica	l Mvmt	Inters	ection
Node	Location	Control	Mvmt.	(AII)	50th	95th	Delay (s)	(s)	LOS	Delay	LOS	Delay	LOS
200	Concession St / Kingscourt Av	TWSC	SBL	0	0	15	0	0	Α	15.0	В	3.6	Α
	Concession St / Kingscourt Av	TWSC	SBR	16	0	15	6	15	В				
200	Concession St / Kingscourt Av	TWSC	EBL	4	0	95	6	13	В				
200	Concession St / Kingscourt Av	TWSC	EBT	819	0	95	2	4	Α				
200	Concession St / Kingscourt Av	TWSC	WBT	828	0	95	1	3	А				
200	Concession St / Kingscourt Av	TWSC	WBR	0	0	95	0	0	А				
210	Concession St / Fergus St	TWSC	SBL	11	0	5	23	35	D	35.0	D	4.2	А
210	Concession St / Fergus St	TWSC	SBR	0	0	5	0	0	А				
	Concession St / Fergus St	TWSC	EBL	5	0	100	10	14	В				
210	Concession St / Fergus St	TWSC	EBT	813	0	100	3	6	А				
210	Concession St / Fergus St	TWSC	WBT	827	0	40	1	2	А				
210	Concession St / Fergus St	TWSC	WBR	3	0	40	0	0	А				
220	Concession St / Grey St	TWSC	SBL	0	0	5	0	0	А	15.0	В	7.5	Α
220	Concession St / Grey St	TWSC	SBR	15	0	5	4	11	В				
220	Concession St / Grey St	TWSC	EBL	4	45	105	9	15	В				
	Concession St / Grey St	TWSC	EBT	819	45	105	9	15	В				
220	Concession St / Grey St	TWSC	WBT	816	0	0	0	0	А				
220	Concession St / Grey St	TWSC	WBR	5	0	0	0	0	А				
230	Concession St / Alfred St	Signalized	NBL	213	35	90	20	31	С	31.0	С	16.5	В
230	Concession St / Alfred St	Signalized	NBT	37	35	90	19	29	С				
230	Concession St / Alfred St	Signalized	NBR	38	35	90	11	19	В				
230	Concession St / Alfred St	Signalized	SBL	0	5	15	0	0	А				
230	Concession St / Alfred St	Signalized	SBT	34	5	15	18	25	С				
230	Concession St / Alfred St	Signalized	SBR	21	5	15	5	10	А				
230	Concession St / Alfred St	Signalized	EBL	27	55	60	17	23	С				
230	Concession St / Alfred St	Signalized	EBT	545	55	60	10	13	В				
230	Concession St / Alfred St	Signalized	EBR	251	55	60	2	4	А				
230	Concession St / Alfred St	Signalized	WBL	39	65	125	12	19	В				
230	Concession St / Alfred St	Signalized	WBT	591	65	125	12	18	В				
230	Concession St / Alfred St	Signalized	WBR	0	65	125	0	0	А				
240	Concession St / Lansdowne St	TWSC	NBL	0	0	0	0	0	А	7.0	Α	1.7	Α
240	Concession St / Lansdowne St	TWSC	NBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	EBT	532	0	5	0	1	А				
240	Concession St / Lansdowne St	TWSC	EBR	0	0	5	0	0	Α				
	Concession St / Lansdowne St	TWSC	WBL	40	0	55	3	7	Α				
	Concession St / Lansdowne St	TWSC	WBT	610	0	55	1	2	Α				
	Concession St / Division St	Signalized	NBL	64	90	110	28	37	D	57.0	E	29.2	С
250	Concession St / Division St	Signalized	NBT	552	90	110	19	25	С				
250	Concession St / Division St	Signalized	NBR	0	90	110	0	0	Α				
250	Concession St / Division St	Signalized	SBL	26	50	140	33	44	D				
	Concession St / Division St	Signalized	SBT	399	50	140	17	23	С				
250	Concession St / Division St	Signalized	SBR	187	50	140	4	9	Α				
250	Concession St / Division St	Signalized	EBL	219	45	105	23	32	С				
250	Concession St / Division St	Signalized	EBT	228	45	105	12	17	В				
250	Concession St / Division St	Signalized	EBR	63	45	105	3	6	А				
250	Concession St / Division St	Signalized	WBL	11	90	210	42	52	D				
250	Concession St / Division St	Signalized	WBT	379	90	210	47	57	E				
250	Concession St / Division St	Signalized	WBR	32	90	210	38	48	D				

2019 PM Peak Hour



		0 1 1		Volume	Queu	ie (m)	Stop	Delay	1.00	Critica	l Mvmt	Interse	ection
Node	Location	Control	Mvmt.	(AII)	50th	95th	Delay (s)	(s)	LOS	Delay	LOS	Delay	LOS
260	Adelaide St / Division St	TWSC	NBL	0	0	105	0	0	Α	23.0	С	4.0	A
260	Adelaide St / Division St	TWSC	NBT	613	0	105	3	6	Α				
260	Adelaide St / Division St	TWSC	NBR	0	0	105	0	0	Α				
260	Adelaide St / Division St	TWSC	SBL	6	0	30	2	5	A				
260	Adelaide St / Division St	TWSC	SBT	441	0	30	0	1	A				
260	Adelaide St / Division St	TWSC	SBR	25	0	30	0	1	A				
260	Adelaide St / Division St	TWSC	EBL	3	0	5	10	23	C				
260	Adelaide St / Division St	TWSC	EBT	0	0	5	0	0	A				
260	Adelaide St / Division St	TWSC	EBR	0	0	5	0	0	A				
260	Adelaide St / Division St	TWSC	WBL	3	0	5	8	18	C				
260	Adelaide St / Division St	TWSC	WBT	6	0	5	6	16	C				
260	Adelaide St / Division St	TWSC	WBR	0	0	5	0	0	A				
270	Stanley St / Division St	TWSC	NBL	3	0	20	0	1	A	19.0	С	1.5	А
270	Stanley St / Division St	TWSC	NBT	602	0	20	0	1	A	17.0	0	1.5	~
270	Stanley St / Division St	TWSC	SBT	376	0	30	1	2	A				
270	Stanley St / Division St	TWSC	SBR	69	0	30	0	1	A				
270	Stanley St / Division St	TWSC	EBL	8	0	5	4	19	C				
270	Stanley St / Division St	TWSC	EBR	6	0	5	4	7	A				
270	Pine St / Division St	Signalized	NBL	30	20	75	8	14	B	32.0	С	9.3	А
280	Pine St / Division St	Signalized	NBT	539	20	75	3	6	A	32.0	U	7.5	Λ
280	Pine St / Division St	Signalized	NBR	14	20	75	4	6	A				
280	Pine St / Division St	Signalized	SBL	32	20	70	4	14	B				
280	Pine St / Division St	Signalized	SBT	345	20	70	5	9	A				
280	Pine St / Division St	Signalized	SBR	6	20	70	2	6	A				
280	Pine St / Division St	Signalized	EBL	0	5	20	0	0	A				
	Pine St / Division St	Signalized	EBT	28	5	20	25	30	C				
280													
280 280	Pine St / Division St Pine St / Division St	Signalized	EBR WBL	26 5	5 10	20 25	4 24	10 32	A C				
		Signalized		43									
280	Pine St / Division St	Signalized	WBT WBR		10	25	22	28	C				
280	Pine St / Division St	Signalized		66	10	25	6	12	B	10.0	В	1/	٨
290	Quebec St / Division St	TWSC	NBT	586	0	35	0	1	A	12.0	В	1.6	А
290	Quebec St / Division St	TWSC	NBR	0	0	35 70	3	0	A				
290	Quebec St / Division St	TWSC	SBL	8	0			6	A				
290	Quebec St / Division St	TWSC	SBT	368	0	70	1	2	A				
290	Quebec St / Division St	TWSC	WBL	14	0	5	4	12	B				
290	Quebec St / Division St	TWSC	WBR	0	0	5	0	0	<u>A</u>	00.0	0	7.0	•
300	York St / Division St	Signalized	NBL	7	35	35	6	8	A	32.0	С	7.2	А
300	York St / Division St	Signalized	NBT	526	35	35	2	4	A				
300	York St / Division St	Signalized	NBR	12	35	35	2	3	A				
300	York St / Division St	Signalized	SBL	32	15	60	10	15	B				
300	York St / Division St	Signalized	SBT	349	15	60	4	6	A				
300	York St / Division St	Signalized	SBR	0	15	60	0	0	A				
300	York St / Division St	Signalized	EBL	0	5	15	0	0	A				
300	York St / Division St	Signalized	EBT	28	5	15	23	28	C				
300	York St / Division St	Signalized	EBR	1	5	15	0	0	A				
300	York St / Division St	Signalized	WBL	32	10	25	25	31	C				
300	York St / Division St	Signalized	WBT	11	10	25	25	32	С				
300	York St / Division St	Signalized	WBR	58	10	25	6	13	B	40.0	-	0.7	
310	Main St / Division St	TWSC	NBT	545	20	60	3	6	A	13.0	В	3.7	Α
310	Main St / Division St	TWSC	NBR	0	20	60	0	0	A				
310	Main St / Division St	TWSC	SBL	7	35	35	4	6	A				
310	Main St / Division St	TWSC	SBT	377	35	35	0	0	A				
310	Main St / Division St	TWSC	WBL	9	0	5	4	13	В				
310	Main St / Division St	TWSC	WBR	0	0	5	0	0	А				

2019 PM Peak Hour



Node	Location	Control	Mvmt.	Volume	Queu	ie (m)	Stop	Delay	105	Critical	Mvmt	Inters	ection
Noue	Eccation	Control	iviviiit.	(AII)	50th	95th	Delay (s)	(s)	205	Delay	LOS	Delay	LOS
320	Hamilton St / Division St	TWSC	NBL	1	0	35	0	0	Α	6.0	А	0.6	А
320	Hamilton St / Division St	TWSC	NBT	544	0	35	0	1	А				
320	Hamilton St / Division St	TWSC	SBT	362	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	SBR	24	0	0	0	0	А				
320	Hamilton St / Division St	TWSC	EBL	0	0	5	0	0	А				
320	Hamilton St / Division St	TWSC	EBR	5	0	5	0	6	А				
330	Raglan St / Division St	TWSC	NBT	542	0	0	0	0	Α	13.0	В	0.1	Α
330	Raglan St / Division St	TWSC	NBR	8	0	0	0	0	А				
330	Raglan St / Division St	TWSC	SBL	0	0	0	0	0	А				
330	Raglan St / Division St	TWSC	SBT	368	0	0	0	0	А				
330	Raglan St / Division St	TWSC	WBL	11	0	5	3	10	Α				
330	Raglan St / Division St	TWSC	WBR	2	0	5	5	13	В				
340	Elm St / Division St	TWSC	NBL	32	0	15	1	3	Α	10.0	А	0.2	Α
340	Elm St / Division St	TWSC	NBT	547	0	15	0	0	Α				
340	Elm St / Division St	TWSC	SBT	347	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBR	31	0	0	0	1	Α				
340	Elm St / Division St	TWSC	EBL	5	0	5	3	10	А				
340	Elm St / Division St	TWSC	EBR	0	0	5	0	0	Α				
350	Ellice St / Division St	TWSC	NBT	565	0	45	0	0	Α	9.0	А	0.2	А
350	Ellice St / Division St	TWSC	NBR	2	0	45	0	0	Α				
350	Ellice St / Division St	TWSC	SBL	6	0	0	3	6	А				
350	Ellice St / Division St	TWSC	SBT	341	0	0	0	0	Α				
350	Ellice St / Division St	TWSC	WBL	0	0	5	0	0	А				
350	Ellice St / Division St	TWSC	WBR	13	0	5	1	9	Α				
360	Colborne St / Division St	TWSC	NBL	1	0	20	0	1	А	11.0	В	0.7	Α
360	Colborne St / Division St	TWSC	NBT	540	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	NBR	0	0	20	0	0	А				
360	Colborne St / Division St	TWSC	SBL	6	0	30	2	5	Α				
360	Colborne St / Division St	TWSC	SBT	335	0	30	1	1	А				
360	Colborne St / Division St	TWSC	SBR	0	0	30	0	0	A				
360	Colborne St / Division St	TWSC	EBL	15	0	5	3	11	В				
360	Colborne St / Division St	TWSC	EBT	1	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	EBR	0	0	5	0	0	А				
360	Colborne St / Division St	TWSC	WBL	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBT	0	0	5	0	0	А				
360	Colborne St / Division St	TWSC	WBR	13	0	5	3	11	В				
370	Queen St / Division St	Signalized	NBT	199	20	50	8	11	B	29.0	С	17.6	В
370	Queen St / Division St	Signalized	NBR	108	20	50	1	10	A				
370	Queen St / Division St	Signalized	SBL	93	40	80	19	29	C				
370	Queen St / Division St	Signalized	SBT	245	40	80	14	20	B				
370	Queen St / Division St	Signalized	WBL	440	50	95	15	27	C				
370	Queen St / Division St	Signalized	WBR	344	50	95	1	7	A				
370	Queen St / DIVISION St	signalized	I WRK	344	50	90		1	А				

2036 No Mitigation - No Williamsville Growth - AM Peak



ID	Intersection Name	Control Type	Number of Vehicles	50th %'ile Queue (m)	95th %'ile Queue (m)	Avg. Vehicle Delay (sec)	Avg. Stop Delay (sec)	LO S
10	Princess St / Concession St	Signalized	2,554	39.9	64.5	27.5	21.9	С
20	Princess St / Regent St	TWSC	986	0.1	41.0	2.3	0.1	-
30	Princess St / Drayton Av	TWSC	931	0.0	51.4	1.8	0.1	-
40	Princess St / Macdonnell Av	Signalized	861	50.4	101.8	15.3	9.1	В
50	Princess St / Smith St	TWSC	712	29.0	31.7	0.9	0.3	-
60	Princess St / Victoria St	Signalized	852	8.5	49.5	6.7	3.6	Α
70	Princess St / Nelson St	TWSC	767	0.3	0.3	2.1	0.2	-
80	Princess St / Albert St	Signalized	806	36.4	73.1	13.6	9.6	В
90	Princess St / Frontenac St	TWSC	747	0.0	0.1	0.9	0.0	-
100	Princess St / Alfred St	Signalized	1,071	45.3	68.6	23.4	17.0	С
110	Princess St / Chatham St	TWSC	736	0.0	21.6	1.6	0.0	-
120	Princess St / University Av	Signalized	719	11.4	56.4	5.1	2.1	Α
130	Princess St / Division St	Signalized	938	18.4	46.0	17.2	12.2	В
140	Concession St / Drayton Av	TWSC	940	0.1	166.6	10.9	5.8	-
150	Concession St / Leroy Grant Dr (S)	TWSC	908	44.9	74.8	8.0	4.0	-
155	Concession St / Leroy Grant Drive (N)	TWSC	706	0.2	1.0	0.5	0.1	-
160	Concession St / Macdonnell St	Signalized	1,528	50.9	71.6	10.5	6.7	В
170	Concession St / Connaught St	TWSC	1,320	0.0	51.2	1.7	0.6	-
180	Concession St / Victoria St	Signalized	1,389	36.8	83.6	11.7	7.5	В
190	Concession St / Nelson St	TWSC	1,274	0.1	55.1	1.9	0.7	-
200	Concession St / Kingscourt Av	TWSC	1,256	0.2	30.9	1.2	0.4	-
210	Concession St / Fergus St	TWSC	1,286	0.2	33.2	2.0	1.2	-
220	Concession St / Grey St	TWSC	1,327	12.8	53.8	6.4	3.5	-
230	Concession St / Alfred St	Signalized	1,386	39.8	67.3	13.0	8.1	В
240	Concession St / Lansdowne St	TWSC	966	0.0	10.4	0.6	0.0	-
250	Concession St / Division St	Signalized	1,638	41.4	102.4	21.2	15.4	С
260	Adelaide St / Division St	TWSC	698	0.0	29.6	0.8	0.2	-
270	Stanley St / Division St	TWSC	762	0.5	17.4	2.0	0.8	-
280	Pine St / Division St	Signalized	812	15.9	46.9	7.8	4.7	Α
290	Quebec St / Division St	TWSC	711	0.0	29.9	0.8	0.0	-
300	York St / Division St	Signalized	781	14.2	38.5	7.5	5.0	Α
310	Main St / Division St	TWSC	634	21.2	28.9	1.3	0.4	-
320	Hamilton St / Division St	TWSC	613	0.0	0.0	0.1	0.0	-
330	Raglan St / Division St	TWSC	617	0.0	0.0	0.1	0.0	-
340	Elm St / Division St	TWSC	607	0.0	0.1	0.1	0.0	-
350	Ellice St / Division St	TWSC	609	0.0	0.1	0.8	0.0	-
360	Colborne St / Division St	TWSC	605	0.0	22.5	1.5	0.6	-
370	Queen St / Division St	Signalized	833	25.7	48.4	13.8	8.0	В
	Total		36,886	544	1,671	245	150	

2036 No Mitigation - No Williamsville Growth - AM Peak





Node	Location	Control	Mvmt.	Volume	Queu		Stop	Delay	LOS		l Mvmt	-	ection
				(AII)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
10	Princess St / Concession St	Signalized	NBL	143	25	40	39	46	D	46.0	D	27.5	С
10	Princess St / Concession St	Signalized	NBT	103	25	40	36	43	D				
10	Princess St / Concession St	Signalized	NBR	31	25	40	0	2	Α				
10	Princess St / Concession St	Signalized	SBL	494	60	90	30	38	D				
10	Princess St / Concession St	Signalized	SBT	485	60	90	29	37	D				
10	Princess St / Concession St	Signalized	SBR	29	60	90	17	22	с				
10	Princess St / Concession St	Signalized	EBT	422	35	60	26	32	С				
10	Princess St / Concession St	Signalized	EBR	184	35	60	1	2	Α				
10	Princess St / Concession St	Signalized	WBT	232	20	40	26	32	С				
10	Princess St / Concession St	Signalized	WBR	334	20	40	0	0	Α				
10	Princess St / Concession St	Signalized	WBL	97	20	40	2	5	Α				
20	Princess St / Regent St	TWSC	NBL	2	5	10	3	10	Α	13.0	В	2.3	Α
20	Princess St / Regent St	TWSC	NBR	22	5	10	4	13	В				
20	Princess St / Regent St	TWSC	EBT	620	0	60	0	3	Α				
20	Princess St / Regent St	TWSC	EBR	50	0	60	0	1	Α				
20	Princess St / Regent St	TWSC	WBL	2	0	0	0	5	A				
20	Princess St / Regent St	TWSC	WBT	290	0	0	0	0	A	7.0	•	1.0	
30	Princess St / Drayton Av	TWSC	SBL	0	0	5	0	0	A	7.0	Α	1.8	A
30	Princess St / Drayton Av	TWSC	SBR	8	0	5	1	7	A				
30 30	Princess St / Drayton Av Princess St / Drayton Av	TWSC	EBL	90 547	0	75 75	0	3	A				
30	Princess St / Drayton Av	TWSC	WBT	286	0	0	0	1	A				
30	Princess St / Drayton Av	TWSC	WBR	0	0	0	0	0	A				
40	Princess St / Macdonnell Av	Signalized	NBL	44	5	20	12	18	B	18.0	В	15.3	В
40	Princess St / Macdonnell Av	Signalized	NBT	21	5	20	9	14	В	10.0		10.0	
40	Princess St / Macdonnell Av	Signalized	NBR	17	5	20	5	10	A				
40	Princess St / Macdonnell Av	Signalized	SBL	11	40	40	11	15	В				
40	Princess St / Macdonnell Av	Signalized	SBT	18	40	40	11	14	B				
40	Princess St / Macdonnell Av	Signalized	SBR	34	40	40	2	10	A				
40	Princess St / Macdonnell Av	Signalized	EBL	8	70	145	8	13	B				
40	Princess St / Macdonnell Av	Signalized	EBT	467	70	145	10	17	B				
40	Princess St / Macdonnell Av	Signalized	EBR	27	70	145	9	15	B				
40	Princess St / Macdonnell Av	Signalized	WBL	0	25	50	0	0	A				
40	Princess St / Macdonnell Av	Signalized	WBT	210	25	50	8	13	B				
40	Princess St / Macdonnell Av	Signalized	WBR	4	25	50	1	5	A				
50	Princess St / Macdonnen Av	TWSC	SBL	4	40	40	0	0	A	12.0	В	0.9	A
50	Princess St / Smith St	TWSC	SBR	20	40	40	1	12	В	12.0	Б	0.5	~
50	Princess St / Smith St	TWSC	EBL	0	40	40	0	0	A				
50	Princess St / Smith St	TWSC	EBT	496	40	40	0	0	A				
50	Princess St / Smith St	TWSC	WBT	196	40	10	1	2	A				
50	Princess St / Smith St	TWSC	WBR	0	0	10	0	0	A				
60	Princess St / Sinth St Princess St / Victoria St	Signalized	NBL	20	10	20	13	20	B	26.0	с	6.7	A
60	Princess St / Victoria St	Signalized	NBT	33	10	20	19	26	C	20.0	L	0.7	A
60	Princess St / Victoria St	Signalized	NBR	43	10	20	7	13	B				
60	Princess St / Victoria St	Signalized	SBL	2	5	20	18	22	C				
60	Princess St / Victoria St	-	SBT	61	5	20	10	19	B				
60	Princess St / Victoria St	Signalized Signalized	SBR	0	5	20	0	0	A				
	Princess St / Victoria St		EBL	0	10	65	0	0					
		Signalized							A				
60	Princess St / Victoria St	Signalized	EBT	486	10	65	1	4	A				
60	Princess St / Victoria St	Signalized	EBR	6	10	65	0 7	5	A				
60	Princess St / Victoria St	Signalized	WBL	20	5	35		10	A				
60	Princess St / Victoria St	Signalized	WBT	169	5	35	2	3	A				
60	Princess St / Victoria St	Signalized	WBR	12	5	35	0	2	A	16.0	<u> </u>	24	
70	Princess St / Nelson St	TWSC	NBL	0	0	5	0	0	A	16.0	с	2.1	A
70	Princess St / Nelson St	TWSC	NBT	0	0	5	0	0	A				
70	Princess St / Nelson St	TWSC	NBR	8	0	5	2	9	A				
70	Princess St / Nelson St	TWSC	SBL	13	5	5	4	16	C				
70	Princess St / Nelson St	TWSC	SBT	4	5	5	8	16	c				
70	Princess St / Nelson St	TWSC	SBR	25	5	5	1	9	Α				
70	Princess St / Nelson St	TWSC	EBL	11	0	0	0	2	A				
70	Princess St / Nelson St	TWSC	EBT	522	0	0	0	2	Α				
70	Princess St / Nelson St	TWSC	EBR	2	0	0	0	1	Α				
70	Princess St / Nelson St	TWSC	WBL	0	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	WBT	182	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	WBR	0	0	0	0	0	Α				

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Node	Location	Control	Mvmt.	Volume		ue (m)	Stop	Delay	LOS	Critical		Inters	
				(AII)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
80	Princess St / Albert St	Signalized	NBL	12	5	10	12	16	В	23.0	С	13.6	В
80	Princess St / Albert St	Signalized	NBT	16	5	10	14	19	В				
80	Princess St / Albert St	Signalized	NBR	25	5	10	1	6	Α				
80	Princess St / Albert St	Signalized	SBL	0	0	10	0	0	Α				
80	Princess St / Albert St	Signalized	SBT	29	0	10	10	12	В				
80	Princess St / Albert St	Signalized	SBR	0	0	10	0	0	Α				
80	Princess St / Albert St	Signalized	EBL	0	50	95	0	0	Α				
80	Princess St / Albert St	Signalized	EBT	532	50	95	11	15	В				
80	Princess St / Albert St	Signalized	EBR	14	50	95	13	17	В				
80	Princess St / Albert St	Signalized	WBL	8	10	35	17	23	С				
80	Princess St / Albert St	Signalized	WBT	170	10	35	5	9	Α				
80	Princess St / Albert St	Signalized	WBR	0	10	35	0	0	Α				
90	Princess St / Frontenac St	TWSC	NBL	0	0	0	0	0	Α	11.0	В	0.9	A
90	Princess St / Frontenac St	TWSC	NBT	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	NBR	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBL	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBT	5	0	5	1	11	В				
90	Princess St / Frontenac St	TWSC	SBR	12	0	5	0	6	Α				
90	Princess St / Frontenac St	TWSC	EBL	8	0	0	0	1	Α				
90	Princess St / Frontenac St	TWSC	EBT	539	0	0	0	1	Α				
90	Princess St / Frontenac St	TWSC	EBR	4	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBL	3	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBT	176	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBR	0	0	0	0	0	Α				
100	Princess St / Alfred St	Signalized	NBL	20	20	40	12	18	В	33.0	с	23.4	с
100	Princess St / Alfred St	Signalized	NBT	106	20	40	12	17	В				-
100	Princess St / Alfred St	Signalized	NBR	70	20	40	4	10	A				
100	Princess St / Alfred St	Signalized	SBL	27	20	45	17	26	С				
100	Princess St / Alfred St	Signalized	SBT	129	20	45	14	20	В				
100	Princess St / Alfred St	Signalized	SBR	34	20	45	6	11	В				
100	Princess St / Alfred St	Signalized	EBL	42	70	95	17	23	c				
100	Princess St / Alfred St		EBT	477	70	95	22	29	c				
100	Princess St / Alfred St	Signalized	EBR	6	70	95	19	25	c				
		Signalized	WBL	6	25	45	26	33	c				
100	Princess St / Alfred St	Signalized			25								
100	Princess St / Alfred St	Signalized	WBT	138	25	45	18 1	24	C				
100	Princess St / Alfred St	Signalized	WBR	16		45		3	A	20	•	1.0	•
110	Princess St / Chatham St	TWSC	SBL	0	0	0	0	0	<u>A</u>	3.0	Α	1.6	A
110	Princess St / Chatham St	TWSC	SBR	0	0	0	0	0	A				
110	Princess St / Chatham St	TWSC	EBL	8	0	15	0	3	A				
110	Princess St / Chatham St	TWSC	EBT	565	0	15	0	2	Α				
110	Princess St / Chatham St	TWSC	WBT	159	0	45	0	0	Α				
110	Princess St / Chatham St	TWSC	WBR	4	0	45	0	0	Α				
120	Princess St / University Av	Signalized	NBL	22	5	10	15	20	В	20.0	В	5.1	A
120	Princess St / University Av	Signalized	NBR	23	5	10	2	7	Α				
120	Princess St / University Av	Signalized	EBT	481	15	70	2	5	Α				
120	Princess St / University Av	Signalized	EBR	52	15	70	1	4	Α				
120	Princess St / University Av	Signalized	WBL	0	0	20	0	0	Α				
120	Princess St / University Av	Signalized	WBT	141	0	20	1	3	Α				
120	Princess St / University Av	Signalized	NBT	0	5	10	0	0	Α				
120	Princess St / University Av	Signalized	SBL	0	0	0	0	0	Α				
120	Princess St / University Av	Signalized	SBT	0	0	0	0	0	Α				
120	Princess St / University Av	Signalized	SBR	0	0	0	0	0	Α				
120	Princess St / University Av	Signalized	EBL	0	15	70	0	0	Α				
120	Princess St / University Av	Signalized	WBR	0	0	20	0	0	Α				
130	Princess St / Division St	Signalized	NBL	12	5	20	14	27	С	27.0	С	17.2	В
130	Princess St / Division St	Signalized	NBT	50	5	20	11	17	В				
130	Princess St / Division St	Signalized	NBR	0	5	20	0	0	Α				
130	Princess St / Division St	Signalized	SBL	143	5	45	4	6	Α				
130	Princess St / Division St	Signalized	SBT	99	5	45	3	4	Α				
130	Princess St / Division St	Signalized	SBR	131	5	45	0	1	Α				
130	Princess St / Division St	Signalized	EBL	138	30	50	19	27	С				
130	Princess St / Division St	Signalized	EBT	357	30	50	20	27	c				
									-				

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Node	Location	Control	Mymt.	Volume	Queu	e (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
toue	Location	control		(AII)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
140	Concession St / Drayton Av	TWSC	NBR	21	5	20	77	88	F	88.0	F	10.9	В
140	Concession St / Drayton Av	TWSC	EBT	911	0	170	4	9	Α				
140	Concession St / Drayton Av	TWSC	EBR	8	0	170	19	28	D				
150	Concession St / Leroy Grant Dr (S)	TWSC	SBL	2	0	5	18	30	D	30.0	D	8.0	Α
150	Concession St / Leroy Grant Dr (S)	TWSC	EBL	32	45	75	2	6	Α				
150	Concession St / Leroy Grant Dr (S)	TWSC	EBT	874	45	75	4	8	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	NBL	20	5	10	2	10	Α	11.0	В	0.5	Α
155	Concession St / Leroy Grant Drive (N)	TWSC	NBT	12	5	10	3	11	В				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBT	2	0	5	0	8	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBR	71	0	5	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBT	576	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBR	25	0	0	0	1	Α				
160	Concession St / Macdonnell St	Signalized	NBL	0	0	5	0	0	A	38.0	D	10.5	В
160	Concession St / Macdonnell St	Signalized	NBT	0	0	5	0	0	A				_
160	Concession St / Macdonnell St	Signalized	NBR	9	0	5	7	12	В				
160	Concession St / Macdonnell St	Signalized	SBR	41	0	5	1	4	A				
160	Concession St / Macdonnell St	Signalized	EBL	36	75	80	11	17	В				
160	Concession St / Macdonnell St	Signalized	EBT	701	75	80	7	12	В				
160	Concession St / Macdonnell St	Signalized	EBR	140	75	80	6	10	A				
160	Concession St / Macdonnell St	Signalized	WBL	39	20	65	30	38	D				
160	Concession St / Macdonnell St	Signalized	WBT	562	20	65	5	7	A				
160	Concession St / Macdonnell St	Signalized	WBR	0	20	65	0	0	A				
170		TWSC	SBL	8	0	5	6	14	 B	14.0	В	1.7	А
	Concession St / Connaught St		-	° 7	0	5	3	9		14.0	D	1.7	A
170 170	Concession St / Connaught St	TWSC	SBR EBL	17	0	95	5	9	A				
170	Concession St / Connaught St	TWSC	EBL	694	0	95	1	2	A				
	Concession St / Connaught St				0	0	0	1					
170	Concession St / Connaught St	TWSC	WBT	590	-	-	-		A				
170	Concession St / Connaught St	TWSC	WBR	4	0	0	0	0	A		-		_
180	Concession St / Victoria St	Signalized	NBL	12	5	15	26	32	c	32.0	С	11.7	В
180	Concession St / Victoria St	Signalized	NBT	15	5	15	24	31	C				
180	Concession St / Victoria St	Signalized	NBR	11	5	15	3	9	Α				
180	Concession St / Victoria St	Signalized	SBL	8	5	10	24	30	с				
180	Concession St / Victoria St	Signalized	SBT	26	5	10	23	28	С				
180	Concession St / Victoria St	Signalized	SBR	42	5	10	2	10	Α				
180	Concession St / Victoria St	Signalized	EBL	20	35	90	9	13	В				
180	Concession St / Victoria St	Signalized	EBT	660	35	90	7	10	Α				
180	Concession St / Victoria St	Signalized	EBR	6	35	90	11	17	В				
180	Concession St / Victoria St	Signalized	WBL	40	45	90	17	24	С				
180	Concession St / Victoria St	Signalized	WBT	548	45	90	6	11	В				
180	Concession St / Victoria St	Signalized	WBR	1	45	90	0	0	Α				
190	Concession St / Nelson St	TWSC	NBL	11	0	5	15	25	С	25.0	с	1.9	Α
190	Concession St / Nelson St	TWSC	NBT	0	0	5	0	0	Α				
190	Concession St / Nelson St	TWSC	NBR	0	0	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBL	0	5	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBT	0	5	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBR	19	5	5	0	6	Α				
190	Concession St / Nelson St	TWSC	EBL	41	0	70	2	4	Α				
190	Concession St / Nelson St	TWSC	EBT	636	0	70	0	1	Α				
190	Concession St / Nelson St	TWSC	EBR	0	0	70	0	0	Α				
190	Concession St / Nelson St	TWSC	WBL	11	0	40	3	6	Α				
190	Concession St / Nelson St	TWSC	WBT	556	0	40	1	2	Α				
190	Concession St / Nelson St	TWSC	WBR	0	0	40	0	0	Α				

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Node	Location	Control	Mvmt.	Volume	Queu	e (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Noue	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
200	Concession St / Kingscourt Av	TWSC	SBL	36	5	15	11	19	С	19.0	С	1.2	Α
200	Concession St / Kingscourt Av	TWSC	SBR	7	5	15	2	13	В				
200	Concession St / Kingscourt Av	TWSC	EBL	24	0	60	2	6	Α				
200	Concession St / Kingscourt Av	TWSC	EBT	612	0	60	0	1	Α				
200	Concession St / Kingscourt Av	TWSC	WBT	557	0	0	0	0	Α				
200	Concession St / Kingscourt Av	TWSC	WBR	20	0	0	0	0	Α				
210	Concession St / Fergus St	TWSC	SBL	44	5	15	18	28	D	28.0	D	2.0	Α
210	Concession St / Fergus St	TWSC	SBR	0	5	15	0	0	Α				
210	Concession St / Fergus St	TWSC	EBL	20	0	65	3	6	Α				
210	Concession St / Fergus St	TWSC	EBT	627	0	65	1	2	Α				
210	Concession St / Fergus St	TWSC	WBT	575	0	0	0	0	Α				
210	Concession St / Fergus St	TWSC	WBR	20	0	0	0	0	Α				
220	Concession St / Grey St	TWSC	SBL	42	5	20	43	54	F	54.0	F	6.4	Α
220	Concession St / Grey St	TWSC	SBR	8	5	20	16	28	D				
220	Concession St / Grey St	TWSC	EBL	20	25	105	4	9	Α				
220	Concession St / Grey St	TWSC	EBT	650	25	105	4	9	Α				
220	Concession St / Grey St	TWSC	WBT	588	0	0	0	0	Α				
220	Concession St / Grey St	TWSC	WBR	19	0	0	0	0	Α				
230	Concession St / Alfred St	Signalized	NBL	155	20	50	20	30	С	30.0	С	13.0	В
230	Concession St / Alfred St	Signalized	NBT	8	20	50	21	27	с				
230	Concession St / Alfred St	Signalized	NBR	29	20	50	13	19	В				
230	Concession St / Alfred St	Signalized	SBL	0	5	15	0	0	Α				
230	Concession St / Alfred St	Signalized	SBT	33	5	15	16	22	С				
230	Concession St / Alfred St	Signalized	SBR	37	5	15	3	10	Α				
230	Concession St / Alfred St	Signalized	EBL	30	55	60	9	15	В				
230	Concession St / Alfred St	Signalized	EBT	492	55	60	6	10	Α				
230	Concession St / Alfred St	Signalized	EBR	168	55	60	1	2	Α				
230	Concession St / Alfred St	Signalized	WBL	22	30	95	12	18	В				
230	Concession St / Alfred St	Signalized	WBT	412	30	95	8	13	В				
230	Concession St / Alfred St	Signalized	WBR	0	30	95	0	0	Α				
240	Concession St / Lansdowne St	TWSC	NBL	0	0	0	0	0	Α	4.0	Α	0.6	Α
240	Concession St / Lansdowne St	TWSC	NBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	EBT	523	0	15	0	1	Α				
240	Concession St / Lansdowne St	TWSC	EBR	0	0	15	0	0	Α				
240	Concession St / Lansdowne St	TWSC	WBL	8	0	5	1	4	Α				
240	Concession St / Lansdowne St	TWSC	WBT	435	0	5	0	0	Α				
250	Concession St / Division St	Signalized	NBL	14	25	60	20	28	С	35.0	С	21.2	С
250	Concession St / Division St	Signalized	NBT	221	25	60	17	23	с				
250	Concession St / Division St	Signalized	NBR	8	25	60	11	16	В				
250	Concession St / Division St	Signalized	SBL	30	50	130	18	26	с				
250	Concession St / Division St	Signalized	SBT	367	50	130	16	22	С				
250	Concession St / Division St	Signalized	SBR	199	50	130	2	6	Α				
250	Concession St / Division St	Signalized	EBL	164	40	105	15	22	С				
250	Concession St / Division St	Signalized	EBT	350	40	105	13	18	B				
250	Concession St / Division St	Signalized	EBR	12	40	105	6	10	A				
250	Concession St / Division St	Signalized	WBL	21	40	75	27	35	C				
250	Concession St / Division St	Signalized	WBT	236	40	75	27	34	c				
250	Concession St / Division St	Signalized	WBR	16	40	75	15	22	c				

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	Location	Control	Mvmt.										
				(All)	50th	95th	Delay (s)	(s)	LOS	Delay	LOS	Delay	LOS
	Adelaide St / Division St	TWSC	NBL	50	0	30	2	4	Α	15.0	В	0.8	Α
260	Adelaide St / Division St	TWSC	NBT	235	0	30	0	1	Α				
260	Adelaide St / Division St	TWSC	NBR	4	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	SBL	13	0	30	0	1	Α				
260	Adelaide St / Division St	TWSC	SBT	379	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	SBR	7	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	EBL	4	0	5	1	9	Α				
260	Adelaide St / Division St	TWSC	EBT	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	EBR	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBL	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBT	2	0	5	3	15	В				
260	Adelaide St / Division St	TWSC	WBR	4	0	5	0	6	Α				
270	Stanley St / Division St	TWSC	NBL	31	0	5	1	2	Α	10.0	Α	2.0	Α
270	Stanley St / Division St	TWSC	NBT	282	0	5	0	0	Α				
270	Stanley St / Division St	TWSC	SBT	377	0	30	1	2	Α				
270	Stanley St / Division St	TWSC	SBR	0	0	30	0	0	Α				
270	Stanley St / Division St	TWSC	EBL	7	5	5	1	8	Α				
270	Stanley St / Division St	TWSC	EBR	65	5	5	3	10	Α				
280	Pine St / Division St	Signalized	NBL	0	5	20	0	0	Α	31.0	С	7.8	Α
280	Pine St / Division St	Signalized	NBT	266	5	20	3	4	Α				
280	Pine St / Division St	Signalized	NBR	6	5	20	4	5	Α				
280	Pine St / Division St	Signalized	SBL	38	25	70	4	7	Α				
280	Pine St / Division St	Signalized	SBT	404	25	70	4	8	Α				
280	Pine St / Division St	Signalized	SBR	0	25	70	0	0	Α				
280	Pine St / Division St	Signalized	EBL	0	5	10	0	0	Α				
280	Pine St / Division St	Signalized	EBT	20	5	10	20	26	с				
	Pine St / Division St	Signalized	EBR	4	5	10	4	9	Α				
	Pine St / Division St	Signalized	WBL	17	5	20	25	31	с				
	Pine St / Division St	Signalized	WBT	8	5	20	19	26	c				
	Pine St / Division St	Signalized	WBR	49	5	20	5	10	Α				
	Quebec St / Division St	TWSC	NBT	267	0	0	0	0	Α	10.0	Α	0.8	Α
	Quebec St / Division St	TWSC	NBR	2	0	0	0	0	A			0.0	
	Quebec St / Division St	TWSC	SBL	4	0	50	0	0	A				
	Quebec St / Division St	TWSC	SBT	420	0	50	0	1	A				
	Quebec St / Division St	TWSC	WBL	14	0	5	2	10	A				
	Quebec St / Division St	TWSC	WBR	4	0	5	1	7	A	_			
	York St / Division St	Signalized	NBL	0	25	35	0	0	A	35.0	с	7.5	A
	York St / Division St	Signalized	NBT	241	25	35	3	5	A	33.0	Ľ	7.5	~
	York St / Division St	Signalized	NBR	10	25	35	0	2	A				
	York St / Division St	Signalized	SBL	57	10	45	3	5	A				
	York St / Division St	Signalized	SBT	378	10	45	3	5	A				
	York St / Division St		SBR	0	10	45	0	0	A				
	York St / Division St	Signalized Signalized	EBL	0	5	15	0	0	A				
			EBT	30	5	15	23	27	C				
	York St / Division St	Signalized		30 6	5	15	23	27	c				
	York St / Division St	Signalized	EBR WBL	0	5	20	20	28	A				
	York St / Division St	Signalized	WBL			-	28	-					
	York St / Division St	Signalized		31	5	20	-	35	C				
_	York St / Division St	Signalized	WBR	28	5	20	7	14	B		•	1.2	
	Main St / Division St	TWSC	NBT	244	0	20	1	3	A	8.0	Α	1.3	Α
	Main St / Division St	TWSC	NBR	0	0	20	0	0	A				
	Main St / Division St	TWSC	SBL	16	35	35	0	2	A				
	Main St / Division St	TWSC	SBT	368	35	35	0	0	A				
	Main St / Division St Main St / Division St	TWSC TWSC	WBL WBR	0	0	5 5	0	0 8	A				

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Node	Location	Control	Mymt.	Volume	Queu	e (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Node	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
320	Hamilton St / Division St	TWSC	NBL	0	0	0	0	0	Α	8.0	Α	0.1	Α
320	Hamilton St / Division St	TWSC	NBT	241	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	SBT	368	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	SBR	0	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	EBL	4	0	5	1	8	Α				
320	Hamilton St / Division St	TWSC	EBR	0	0	5	0	0	Α				
330	Raglan St / Division St	TWSC	NBT	237	0	0	0	0	Α	7.0	Α	0.1	Α
330	Raglan St / Division St	TWSC	NBR	8	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	SBL	6	0	0	0	1	Α				
330	Raglan St / Division St	TWSC	SBT	362	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	WBL	0	0	5	0	0	Α				
330	Raglan St / Division St	TWSC	WBR	4	0	5	0	7	Α				
340	Elm St / Division St	TWSC	NBL	0	0	0	0	0	Α	8.0	Α	0.1	Α
340	Elm St / Division St	TWSC	NBT	237	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBT	362	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBR	0	0	0	0	0	Α				
340	Elm St / Division St	TWSC	EBL	8	0	5	1	8	Α				
340	Elm St / Division St	TWSC	EBR	0	0	5	0	0	Α				
350	Ellice St / Division St	TWSC	NBT	229	0	0	0	0	Α	9.0	Α	0.8	Α
350	Ellice St / Division St	TWSC	NBR	6	0	0	0	0	Α				
350	Ellice St / Division St	TWSC	SBL	6	0	0	0	2	Α				
350	Ellice St / Division St	TWSC	SBT	356	0	0	0	1	Α				
350	Ellice St / Division St	TWSC	WBL	4	0	5	1	9	Α				
350	Ellice St / Division St	TWSC	WBR	8	0	5	0	7	Α				
360	Colborne St / Division St	TWSC	NBL	0	0	20	0	0	Α	14.0	В	1.5	Α
360	Colborne St / Division St	TWSC	NBT	225	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	NBR	0	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	SBL	11	0	25	1	2	Α				
360	Colborne St / Division St	TWSC	SBT	349	0	25	1	2	Α				
360	Colborne St / Division St	TWSC	SBR	0	0	25	0	0	Α				
360	Colborne St / Division St	TWSC	EBL	6	0	5	1	8	Α				
360	Colborne St / Division St	TWSC	EBT	2	0	5	3	14	В				
360	Colborne St / Division St	TWSC	EBR	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBL	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBT	8	0	5	2	11	В				
360	Colborne St / Division St	TWSC	WBR	4	0	5	0	8	Α				
370	Queen St / Division St	Signalized	NBT	64	15	25	8	10	Α	20.0	В	13.8	В
370	Queen St / Division St	Signalized	NBR	125	15	25	1	10	Α				
370	Queen St / Division St	Signalized	SBL	109	40	80	13	20	В				
370	Queen St / Division St	Signalized	SBT	246	40	80	14	20	В				
370	Queen St / Division St	Signalized	WBL	126	15	25	9	15	В				
370	Queen St / Division St	Signalized	WBR	163	15	25	0	4	Α				

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ID	Intersection Name	Control Type	Number of Vehicles	50th %'ile Queue (m)	95th %'ile Queue (m)	Avg. Vehicle Delay (sec)	Avg. Stop Delay (sec)	LO S
10	Princess St / Concession St	Signalized	3,254	46.7	85.9	29.2	23.9	С
20	Princess St / Regent St	TWSC	1,502	0.1	76.1	2.9	1.2	-
30	Princess St / Drayton Av	TWSC	1,417	15.3	69.0	2.4	0.8	-
40	Princess St / Macdonnell Av	Signalized	1,409	79.4	157.1	19.5	12.8	В
50	Princess St / Smith St	TWSC	1,168	36.3	70.0	5.3	3.1	-
60	Princess St / Victoria St	Signalized	1,383	28.7	107.9	13.6	7.9	В
70	Princess St / Nelson St	TWSC	1,178	14.3	66.1	5.1	2.6	-
80	Princess St / Albert St	Signalized	1,170	58.2	99.9	21.4	15.4	С
90	Princess St / Frontenac St	TWSC	1,153	18.9	97.4	7.4	3.5	-
100	Princess St / Alfred St	Signalized	1,473	90.8	100.4	32.0	22.8	С
110	Princess St / Chatham St	TWSC	1,235	36.7	99.5	9.1	4.8	-
120	Princess St / University Av	Signalized	1,190	37.6	53.8	8.2	4.4	Α
130	Princess St / Division St	Signalized	1,480	23.4	61.7	14.3	9.5	В
140	Concession St / Drayton Av	TWSC	1,009	4.9	158.2	13.0	6.6	-
150	Concession St / Leroy Grant Dr (S)	TWSC	1,069	63.9	73.8	20.5	14.0	-
155	Concession St / Leroy Grant Drive (N)	TWSC	1,174	2.3	7.9	4.1	1.9	-
160	Concession St / Macdonnell St	Signalized	1,981	72.9	77.1	14.8	9.5	В
170	Concession St / Connaught St	TWSC	1,737	32.9	104.3	7.2	4.1	-
180	Concession St / Victoria St	Signalized	1,930	87.8	97.4	17.0	11.3	В
190	Concession St / Nelson St	TWSC	1,699	0.0	89.3	4.4	2.5	-
200	Concession St / Kingscourt Av	TWSC	1,643	0.0	96.7	5.2	2.6	-
210	Concession St / Fergus St	TWSC	1,636	0.0	59.5	6.0	2.9	-
220	Concession St / Grey St	TWSC	1,636	27.5	52.5	7.6	5.0	-
230	Concession St / Alfred St	Signalized	1,762	55.0	88.7	16.9	11.2	В
240	Concession St / Lansdowne St	TWSC	1,159	0.0	32.8	1.6	0.6	-
250	Concession St / Division St	Signalized	2,185	67.1	128.2	28.6	21.6	С
260	Adelaide St / Division St	TWSC	1,126	0.0	51.7	2.7	1.2	-
270	Stanley St / Division St	TWSC	1,089	0.0	13.3	1.1	0.1	-
280	Pine St / Division St	Signalized	1,162	22.5	67.7	9.2	5.6	Α
290	Quebec St / Division St	TWSC	991	0.0	39.3	1.6	0.5	-
300	York St / Division St	Signalized	1,067	22.7	44.9	7.0	4.4	Α
310	Main St / Division St	TWSC	941	23.1	46.5	3.0	1.2	-
320	Hamilton St / Division St	TWSC	942	0.0	8.8	0.6	0.0	-
330	Raglan St / Division St	TWSC	938	0.0	0.1	0.1	0.0	-
340	Elm St / Division St	TWSC	974	0.0	15.3	0.1	0.0	-
350	Ellice St / Division St	TWSC	947	0.0	27.8	0.2	0.0	-
360	Colborne St / Division St	TWSC	929	0.0	17.7	0.7	0.5	-
370	Queen St / Division St	Signalized	1,447	39.9	99.6	18.4	10.6	В
	Total		52,185	1,009	2,644	362	230	

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Node	Location	Control	Mvmt.	Volume	Queu	• •	Stop	Delay	LOS		l Mvmt	-	ection
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
10	Princess St / Concession St	Signalized	NBL	309	45	135	34	41	D	45.0	D	29.2	С
10	Princess St / Concession St	Signalized	NBT	354	45	135	33	40	D				
10	Princess St / Concession St	Signalized	NBR	18	45	135	7	11	В				
10	Princess St / Concession St	Signalized	SBL	501	75	105	36	44	D				
10	Princess St / Concession St	Signalized	SBT	488	75	105	36	45	D				
10	Princess St / Concession St	Signalized	SBR	0	75	105	0	0	Α				
10	Princess St / Concession St	Signalized	EBT	245	20	40	30	36	D				
10	Princess St / Concession St	Signalized	EBR	314	20	40	0	1	Α				
10	Princess St / Concession St	Signalized	WBT	399	35	60	31	37	D				
10	Princess St / Concession St	Signalized	WBR	596	35	60	0	0	Α				
10	Princess St / Concession St	Signalized	WBL	30	35	60	1	3	Α		-		
20	Princess St / Regent St	TWSC	NBL	18	5	10	7	17	С	17.0	С	2.9	Α
20	Princess St / Regent St	TWSC	NBR	16	5	10	4	12	В				
20	Princess St / Regent St	TWSC	EBT	717	0	80	1	3	A				
20	Princess St / Regent St	TWSC	EBR	70	0	80	1	2	Α				
20	Princess St / Regent St	TWSC	WBL	34	0	75	5	8	A				
20	Princess St / Regent St	TWSC	WBT	647	0	75	1	2	A	20.0	-	2.4	•
30	Princess St / Drayton Av	TWSC	SBL	4	5	45	22	39	E	39.0	E	2.4	Α
30	Princess St / Drayton Av Princess St / Drayton Av	TWSC	SBR	76	0	45	4	15					
30 30	Princess St / Drayton Av	TWSC	EBL	29 702	0	75 75	0	6 1	A				
30	Princess St / Drayton Av	TWSC	WBT	606	35	65	1	2	A				
30	Princess St / Drayton Av	TWSC	WBR	0	35	65	0	0	A				
40	Princess St / Macdonnell Av	Signalized	NBL	69	45	55	13	21	c	48.0	D	19.5	В
40	Princess St / Macdonnell Av	Signalized	NBT	24	45	55	11	20	В	40.0		19.5	B
40	Princess St / Macdonnell Av	Signalized	NBR	68	45	55	9	18	B				-
40	Princess St / Macdonnell Av	Signalized	SBL	2	15	40	3	13	В				
40	Princess St / Macdonnell Av	Signalized	SBT	41	15	40	14	20	B				-
40	Princess St / Macdonnell Av	Signalized	SBR	41	15	40	4	12	B				
	Princess St / Macdonnell Av	Signalized		37	115	260	22	30	C				
40 40	Princess St / Macdonnell Av	Signalized	EBL	633	115	260	15	23	c				
40		-	EBR	27	115	260	13	20	B				
40	Princess St / Macdonnell Av	Signalized	WBL	8	50	60	38	48	D				
	Princess St / Macdonnell Av	Signalized		456	50								
40	Princess St / Macdonnell Av	Signalized	WBT			60	10	14	B				
40	Princess St / Macdonnell Av	Signalized TWSC	WBR	0	50 40	60	0	0	A	22.0	с	5.2	•
50 50	Princess St / Smith St		SBL	29	40	40 40	0	0 23	C	23.0	L	5.3	A
50	Princess St / Smith St	TWSC	EBL	23	40	40 65	2	4	A				
50	Princess St / Smith St		EBL	677	40	65	1	4	A				
	Princess St / Smith St	TWSC											
50	Princess St / Smith St	TWSC	WBT	435	30	80	6	11	B				
50	Princess St / Smith St	TWSC	WBR	0	30	80	0	0	A	27.0		12.0	-
60	Princess St / Victoria St	Signalized	NBL	14	15	35	19	27	c	27.0	с	13.6	В
60	Princess St / Victoria St	Signalized	NBT	80	15	35	18	25	C				_
60	Princess St / Victoria St	Signalized	NBR	58	15	35	11	18	B				
60	Princess St / Victoria St	Signalized	SBL	22	5	15	18	24	c				_
60	Princess St / Victoria St	Signalized	SBT	37	5	15	18	26	C				
60	Princess St / Victoria St	Signalized	SBR	14	5	15	2	5	A				
60	Princess St / Victoria St	Signalized	EBL	95	30	170	13 F	22	C				
60	Princess St / Victoria St	Signalized	EBT	579	30	170	5	11	B				
60	Princess St / Victoria St	Signalized	EBR	14	30	170	4	9	A				
60	Princess St / Victoria St	Signalized	WBL	14	35	55	18	23	C				
60	Princess St / Victoria St	Signalized	WBT	394	35	55	7	11	B				
60	Princess St / Victoria St	Signalized	WBR	62	35	55	5	9	A	10.0			-
70	Princess St / Nelson St	TWSC	NBL	14	0	5	11	19	c	19.0	с	5.1	Α
70	Princess St / Nelson St	TWSC	NBT	0	0	5	0	0	A				
70	Princess St / Nelson St	TWSC	NBR	0	0	5	0	0	A				
70	Princess St / Nelson St	TWSC	SBL	0	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	SBT	0	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	SBR	0	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	EBL	97	25	115	6	12	В				
70	Princess St / Nelson St	TWSC	EBT	569	25	115	4	8	Α				
70	Princess St / Nelson St	TWSC	EBR	10	25	115	1	2	Α				
70	Princess St / Nelson St	TWSC	WBL	0	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	WBT	475	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	WBR	13	0	0	0	0	Α				

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Node	Location	Control	Mvmt.	Volume		ıe (m)	Stop	Delay	LOS		l Mvmt	Inters	
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
80	Princess St / Albert St	Signalized	NBL	50	10	20	13	18	В	34.0	С	21.4	C
80	Princess St / Albert St	Signalized	NBT	19	10	20	13	18	В				
80	Princess St / Albert St	Signalized	NBR	38	10	20	2	7	Α				
80	Princess St / Albert St	Signalized	SBL	0	0	0	0	0	Α				
80	Princess St / Albert St	Signalized	SBT	0	0	0	0	0	Α				
80	Princess St / Albert St	Signalized	SBR	3	0	0	0	5	Α				
80	Princess St / Albert St	Signalized	EBL	25	70	115	21	31	С				
80	Princess St / Albert St	Signalized	EBT	538	70	115	18	24	С				
80	Princess St / Albert St	Signalized	EBR	21	70	115	11	16	В				
80	Princess St / Albert St	Signalized	WBL	27	55	100	27	34	С				
80	Princess St / Albert St	Signalized	WBT	449	55	100	13	19	В				
80	Princess St / Albert St	Signalized	WBR	0	55	100	0	0	Α				
90	Princess St / Frontenac St	TWSC	NBL	4	0	5	4	11	В	24.0	С	7.4	Α
90	Princess St / Frontenac St	TWSC	NBT	8	0	5	12	24	С				
90	Princess St / Frontenac St	TWSC	NBR	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBL	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBT	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBR	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	EBL	61	35	155	8	16	с				
90	Princess St / Frontenac St	TWSC	EBT	563	35	155	6	12	В				
90	Princess St / Frontenac St	TWSC	EBR	0	35	155	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBL	0	0	30	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBT	510	0	30	0	1	Α				
90	Princess St / Frontenac St	TWSC	WBR	7	0	30	0	0	Α				
100	Princess St / Alfred St	Signalized	NBL	31	25	50	12	19	В	51.0	D	32.0	с
100	Princess St / Alfred St	Signalized	NBT	113	25	50	15	23	с				
100	Princess St / Alfred St	Signalized	NBR	99	25	50	10	18	В				
100	Princess St / Alfred St	Signalized	SBL	36	10	30	21	31	c				
100	Princess St / Alfred St	Signalized	SBT	50	10	30	14	21	c				
100	Princess St / Alfred St	Signalized	SBR	26	10	30	5	11	В				
100	Princess St / Alfred St	Signalized	EBL	2	135	145	34	51	D				
100	Princess St / Alfred St	Signalized	EBT	560	135	145	30	43	D				
100	Princess St / Alfred St	Signalized	EBR	15	135	145	28	40	D				
100	Princess St / Alfred St	Signalized	WBL	37	90	90	24	32	c				
100	Princess St / Alfred St	Signalized	WBT	461	90	90	22	28	c				
100	Princess St / Alfred St	Signalized	WBR	43	90	90	13	19	В				
110	Princess St / Chatham St	TWSC	SBL	-+5	0	0	0	0	A	33.0	D	9.1	A
110	Princess St / Chatham St	TWSC	SBR	0	0	0	0	0	A	33.0		5.1	~
110	Princess St / Chatham St	TWSC	EBL	75	50	115	6	13	B				
110		TWSC	EBT	614	50	115	5	11	В				
	Princess St / Chatham St Princess St / Chatham St		-	538	20	80	4	6					
110		TWSC	WBT	8	20	80	25	33	A D				
110	Princess St / Chatham St				5	20	17	22	c	22.0	с		•
120	Princess St / University Av	Signalized	NBL	54						22.0	L	8.2	Α
120	Princess St / University Av	Signalized	NBR	32	5	20	5	10	A				
120	Princess St / University Av	Signalized	EBT	544	65	70	5	10	A				
120	Princess St / University Av	Signalized	EBR	23	65	70	5	10	A				
120	Princess St / University Av	Signalized	WBL	16	10	40	2	6	A				
120	Princess St / University Av	Signalized	WBT	483	10	40	2	4	A				_
120	Princess St / University Av	Signalized	NBT	0	5	20	0	0	A				
120	Princess St / University Av	Signalized	SBL	0	0	0	0	0	A				_
120	Princess St / University Av	Signalized	SBT	0	0	0	0	0	A				
120	Princess St / University Av	Signalized	SBR	0	0	0	0	0	A				
120	Princess St / University Av	Signalized	EBL	38	65	70	8	16	В				
120	Princess St / University Av	Signalized	WBR	0	10	40	0	0	Α				
130	Princess St / Division St	Signalized	NBL	55	20	40	12	22	с	27.0	С	14.3	В
130	Princess St / Division St	Signalized	NBT	155	20	40	12	18	В				
130	Princess St / Division St	Signalized	NBR	10	20	40	3	8	Α				
130	Princess St / Division St	Signalized	SBL	138	15	70	6	10	Α				
130	Princess St / Division St	Signalized	SBT	111	15	70	3	4	Α				
130	Princess St / Division St	Signalized	SBR	441	15	70	0	1	Α				
130	Princess St / Division St	Signalized	EBL	163	35	60	17	25	С				
130	Princess St / Division St	Signalized	EBT	384	35	60	19	27	С				
130	Princess St / Division St	Signalized	EBR	23	35	60	10	19	В				

2036 No Mitigation - No Williamsville Growth - PM Peak



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
toue	Location	control		(All)	50th	95th	Delay (s)	(s)	105	Delay	LOS	Delay	LOS
140	Concession St / Drayton Av	TWSC	NBR	12	0	5	38	47	E	47.0	E	13.0	В
140	Concession St / Drayton Av	TWSC	EBT	952	5	160	6	12	В				
140	Concession St / Drayton Av	TWSC	EBR	45	5	160	12	24	С				
150	Concession St / Leroy Grant Dr (S)	TWSC	SBL	18	0	5	13	25	С	27.0	D	20.5	С
150	Concession St / Leroy Grant Dr (S)	TWSC	EBL	183	65	75	19	27	D				
150	Concession St / Leroy Grant Dr (S)	TWSC	EBT	868	65	75	13	19	с				
155	Concession St / Leroy Grant Drive (N)	TWSC	NBL	92	15	50	9	21	С	27.0	D	4.1	Α
155	Concession St / Leroy Grant Drive (N)	TWSC	NBT	90	15	50	13	27	D				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBT	18	0	5	10	20	С				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBR	8	0	5	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBT	926	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBR	40	0	0	0	1	Α				
160	Concession St / Macdonnell St	Signalized	NBL	31	10	35	19	26	С	50.0	D	14.8	В
160	Concession St / Macdonnell St	Signalized	NBT	26	10	35	19	27	c				
160	Concession St / Macdonnell St	Signalized	NBR	73	10	35	10	17	В				
160	Concession St / Macdonnell St	Signalized	SBR	67	5	15	4	7	A				
160	Concession St / Macdonnell St	Signalized	EBL	58	75	80	41	50	D				
160	Concession St / Macdonnell St	Signalized	EBT	762	75	80	8	13	B				
160	Concession St / Macdonnell St	Signalized	EBR	67	75	80	7	11	В				
160	Concession St / Macdonnell St	Signalized	WBL	26	85	85	35	46	D				
160	Concession St / Macdonnell St	Signalized	WBT	871	85	85	8	13	В				
160	Concession St / Macdonnell St	Signalized	WBR	0	85	85	0	0	A				
170		TWSC	SBL	0	0	5	0	0	A A	27.0	D	7.2	A
	Concession St / Connaught St		-	-	0	5	17	27	D	27.0	U	1.2	A
170 170	Concession St / Connaught St	TWSC	SBR EBL	16 0	5	95	0	0	A				
	Concession St / Connaught St			-	-		-	-					
170	Concession St / Connaught St	TWSC	EBT	838	5	95	3	6	A				
170	Concession St / Connaught St	TWSC	WBT	883	60	115	5	8	A				
170	Concession St / Connaught St	TWSC	WBR	0	60	115	0	0	A		_	47.0	_
180	Concession St / Victoria St	Signalized	NBL	55	25	80	40	52	D	52.0	D	17.0	В
180	Concession St / Victoria St	Signalized	NBT	33	25	80	30	38	D				
180	Concession St / Victoria St	Signalized	NBR	80	25	80	27	37	D				
180	Concession St / Victoria St	Signalized	SBL	12	5	15	27	36	D				
180	Concession St / Victoria St	Signalized	SBT	22	5	15	23	29	С				
180	Concession St / Victoria St	Signalized	SBR	36	5	15	3	13	В				
180	Concession St / Victoria St	Signalized	EBL	54	110	115	19	27	С				
180	Concession St / Victoria St	Signalized	EBT	770	110	115	9	14	В				
180	Concession St / Victoria St	Signalized	EBR	22	110	115	10	20	В				
180	Concession St / Victoria St	Signalized	WBL	44	85	90	23	30	С				
180	Concession St / Victoria St	Signalized	WBT	790	85	90	8	13	В				
180	Concession St / Victoria St	Signalized	WBR	12	85	90	0	1	Α				
190	Concession St / Nelson St	TWSC	NBL	0	0	0	0	0	Α	6.0	Α	4.4	Α
190	Concession St / Nelson St	TWSC	NBT	0	0	0	0	0	Α				
190	Concession St / Nelson St	TWSC	NBR	0	0	0	0	0	Α				
190	Concession St / Nelson St	TWSC	SBL	0	0	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBT	0	0	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBR	12	0	5	0	6	Α				
190	Concession St / Nelson St	TWSC	EBL	0	0	85	0	0	Α				
190	Concession St / Nelson St	TWSC	EBT	813	0	85	2	4	Α				
190	Concession St / Nelson St	TWSC	EBR	46	0	85	2	2	Α				
190	Concession St / Nelson St	TWSC	WBL	0	0	95	0	0	Α				
190	Concession St / Nelson St	TWSC	WBT	828	0	95	3	5	Α				
190	Concession St / Nelson St	TWSC	WBR	0	0	95	0	0	Α				

2036 No Mitigation - No Williamsville Growth - PM Peak



Node	Location	Control	Mymt.	Volume	Queu	e (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
200	Concession St / Kingscourt Av	TWSC	SBL	0	0	15	0	0	Α	20.0	С	5.2	Α
200	Concession St / Kingscourt Av	TWSC	SBR	17	0	15	10	20	С				
200	Concession St / Kingscourt Av	TWSC	EBL	2	0	100	0	3	Α				
200	Concession St / Kingscourt Av	TWSC	EBT	813	0	100	4	8	Α				
200	Concession St / Kingscourt Av	TWSC	WBT	811	0	95	1	2	Α				
200	Concession St / Kingscourt Av	TWSC	WBR	0	0	95	0	0	Α				
210	Concession St / Fergus St	TWSC	SBL	12	0	5	59	70	F	70.0	F	6.0	Α
210	Concession St / Fergus St	TWSC	SBR	0	0	5	0	0	Α				
210	Concession St / Fergus St	TWSC	EBL	4	0	100	19	32	D				
210	Concession St / Fergus St	TWSC	EBT	806	0	100	5	10	Α				
210	Concession St / Fergus St	TWSC	WBT	810	0	20	0	1	Α				
210	Concession St / Fergus St	TWSC	WBR	4	0	20	0	0	Α				
220	Concession St / Grey St	TWSC	SBL	0	0	5	0	0	Α	19.0	С	7.6	Α
220	Concession St / Grey St	TWSC	SBR	16	0	5	4	12	В				
220	Concession St / Grey St	TWSC	EBL	4	55	105	14	19	С				
220	Concession St / Grey St	TWSC	EBT	813	55	105	10	15	В				
220	Concession St / Grey St	TWSC	WBT	799	0	0	0	0	Α				
220	Concession St / Grey St	TWSC	WBR	4	0	0	0	0	Α				
230	Concession St / Alfred St	Signalized	NBL	191	30	95	20	30	С	31.0	С	16.9	В
230	Concession St / Alfred St	Signalized	NBT	35	30	95	22	31	С				
230	Concession St / Alfred St	Signalized	NBR	34	30	95	16	23	С				
230	Concession St / Alfred St	Signalized	SBL	0	5	15	0	0	Α				
230	Concession St / Alfred St	Signalized	SBT	34	5	15	18	23	С				
230	Concession St / Alfred St	Signalized	SBR	24	5	15	4	8	Α				
230	Concession St / Alfred St	Signalized	EBL	29	55	60	18	25	С				
230	Concession St / Alfred St	Signalized	EBT	541	55	60	10	14	В				
230	Concession St / Alfred St	Signalized	EBR	245	55	60	2	4	Α				
230	Concession St / Alfred St	Signalized	WBL	41	70	130	12	20	В				
230	Concession St / Alfred St	Signalized	WBT	588	70	130	12	19	В				
230	Concession St / Alfred St	Signalized	WBR	0	70	130	0	0	Α				
240	Concession St / Lansdowne St	TWSC	NBL	0	0	0	0	0	Α	6.0	Α	1.6	Α
240	Concession St / Lansdowne St	TWSC	NBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	EBT	526	0	0	0	1	Α				
240	Concession St / Lansdowne St	TWSC	EBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	WBL	26	0	60	3	6	Α				
240	Concession St / Lansdowne St	TWSC	WBT	607	0	60	1	2	Α				
250	Concession St / Division St	Signalized	NBL	57	80	110	27	39	D	65.0	E	28.6	С
250	Concession St / Division St	Signalized	NBT	562	80	110	19	25	с				
250	Concession St / Division St	Signalized	NBR	0	80	110	0	0	Α				
250	Concession St / Division St	Signalized	SBL	28	65	140	31	42	D				
250	Concession St / Division St	Signalized	SBT	421	65	140	17	23	С				
250	Concession St / Division St	Signalized	SBR	177	65	140	4	9	A				
250	Concession St / Division St	Signalized	EBL	221	35	105	21	29	С				
250	Concession St / Division St	Signalized	EBT	228	35	105	13	18	B				
250	Concession St / Division St	Signalized	EBR	64	35	105	5	8	A				
250	Concession St / Division St	Signalized	WBL	12	90	165	54	65	E				
250	Concession St / Division St	Signalized	WBT	381	90	165	43	53	D				
250	Concession St / Division St	Signalized	WBR	34	90	165	39	50	D				

2036 No Mitigation - No Williamsville Growth - PM Peak





Node	Location	Control	Mymt.	Volume	Queu	e (m)	Stop	Delay	LOS	Critica	Mvmt	Inters	ection
Noue	Location	Control	www.itt.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
260	Adelaide St / Division St	TWSC	NBL	0	0	70	0	0	Α	16.0	С	2.7	Α
260	Adelaide St / Division St	TWSC	NBT	617	0	70	2	4	Α				
260	Adelaide St / Division St	TWSC	NBR	0	0	70	0	0	Α				
260	Adelaide St / Division St	TWSC	SBL	8	0	30	2	4	Α				
260	Adelaide St / Division St	TWSC	SBT	450	0	30	0	1	Α				
260	Adelaide St / Division St	TWSC	SBR	40	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	EBL	1	0	0	0	0	Α				
260	Adelaide St / Division St	TWSC	EBT	0	0	0	0	0	Α				
260	Adelaide St / Division St	TWSC	EBR	0	0	0	0	0	Α				
260	Adelaide St / Division St	TWSC	WBL	7	0	5	5	14	В				
260	Adelaide St / Division St	TWSC	WBT	3	0	5	6	16	С				
260	Adelaide St / Division St	TWSC	WBR	0	0	5	0	0	Α				
270	Stanley St / Division St	TWSC	NBL	11	0	5	3	5	Α	21.0	С	1.1	Α
270	Stanley St / Division St	TWSC	NBT	606	0	5	0	0	Α				
270	Stanley St / Division St	TWSC	SBT	383	0	25	0	2	Α				
270	Stanley St / Division St	TWSC	SBR	71	0	25	0	1	Α				
270	Stanley St / Division St	TWSC	EBL	12	0	5	6	21	С				
270	Stanley St / Division St	TWSC	EBR	6	0	5	2	10	Α				
280	Pine St / Division St	Signalized	NBL	39	25	80	8	14	В	28.0	С	9.2	Α
280	Pine St / Division St	Signalized	NBT	542	25	80	4	7	Α				
280	Pine St / Division St	Signalized	NBR	14	25	80	3	5	Α				
280	Pine St / Division St	Signalized	SBL	36	25	70	9	15	В				
280	Pine St / Division St	Signalized	SBT	353	25	70	5	8	Α				
280	Pine St / Division St	Signalized	SBR	6	25	70	2	6	Α				
280	Pine St / Division St	Signalized	EBL	0	5	20	0	0	Α				
280	Pine St / Division St	Signalized	EBT	26	5	20	22	28	С				
280	Pine St / Division St	Signalized	EBR	34	5	20	4	9	Α				
280	Pine St / Division St	Signalized	WBL	2	10	20	14	18	В				
280	Pine St / Division St	Signalized	WBT	33	10	20	21	27	С				
280	Pine St / Division St	Signalized	WBR	77	10	20	6	12	В				
290	Quebec St / Division St	TWSC	NBT	593	0	30	0	1	Α	13.0	В	1.6	Α
290	Quebec St / Division St	TWSC	NBR	0	0	30	0	0	Α				
290	Quebec St / Division St	TWSC	SBL	9	0	55	3	7	Α				
290	Quebec St / Division St	TWSC	SBT	375	0	55	1	2	Α				
290	Quebec St / Division St	TWSC	WBL	14	0	5	5	13	В				
290	Quebec St / Division St	TWSC	WBR	0	0	5	0	0	Α				
300	York St / Division St	Signalized	NBL	6	35	35	5	7	Α	32.0	С	7.0	Α
300	York St / Division St	Signalized	NBT	532	35	35	2	4	Α				
300	York St / Division St	Signalized	NBR	12	35	35	0	0	Α				
300	York St / Division St	Signalized	SBL	38	10	65	11	17	В				
300	York St / Division St	Signalized	SBT	352	10	65	3	5	Α				
300	York St / Division St	Signalized	SBR	0	10	65	0	0	Α				
300	York St / Division St	Signalized	EBL	0	0	10	0	0	Α				
300	York St / Division St	Signalized	EBT	23	0	10	24	28	С				
300	York St / Division St	Signalized	EBR	0	0	10	0	0	Α				
300	York St / Division St	Signalized	WBL	33	10	30	25	32	С				
300	York St / Division St	Signalized	WBT	10	10	30	21	28	С				
300	York St / Division St	Signalized	WBR	61	10	30	8	15	В				
310	Main St / Division St	TWSC	NBT	550	15	55	2	5	Α	12.0	В	3.0	Α
310	Main St / Division St	TWSC	NBR	0	15	55	0	0	Α				
310	Main St / Division St	TWSC	SBL	6	35	35	2	5	Α				
310	Main St / Division St	TWSC	SBT	379	35	35	0	0	Α				
310	Main St / Division St	TWSC	WBL	6	0	5	3	12	В				
310	Main St / Division St	TWSC	WBR	0	0	5	0	0	Α				

2036 No Mitigation - No Williamsville Growth - PM Peak



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Node	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
320	Hamilton St / Division St	TWSC	NBL	0	0	15	0	0	Α	6.0	Α	0.6	Α
320	Hamilton St / Division St	TWSC	NBT	549	0	15	0	1	Α				
320	Hamilton St / Division St	TWSC	SBT	362	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	SBR	24	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	EBL	0	0	5	0	0	Α				
320	Hamilton St / Division St	TWSC	EBR	7	0	5	0	6	Α				
330	Raglan St / Division St	TWSC	NBT	549	0	0	0	0	Α	12.0	В	0.1	Α
330	Raglan St / Division St	TWSC	NBR	10	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	SBL	0	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	SBT	369	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	WBL	10	0	5	3	12	В				
330	Raglan St / Division St	TWSC	WBR	0	0	5	0	0	Α				
340	Elm St / Division St	TWSC	NBL	36	0	25	1	3	Α	3.0	Α	0.1	Α
340	Elm St / Division St	TWSC	NBT	560	0	25	0	0	Α				
340	Elm St / Division St	TWSC	SBT	348	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBR	30	0	0	0	1	Α				
340	Elm St / Division St	TWSC	EBL	0	0	0	0	0	Α				
340	Elm St / Division St	TWSC	EBR	0	0	0	0	0	Α				
350	Ellice St / Division St	TWSC	NBT	582	0	45	0	0	Α	9.0	Α	0.2	Α
350	Ellice St / Division St	TWSC	NBR	2	0	45	0	0	Α				
350	Ellice St / Division St	TWSC	SBL	6	0	0	2	4	Α				
350	Ellice St / Division St	TWSC	SBT	343	0	0	0	0	Α				
350	Ellice St / Division St	TWSC	WBL	0	0	5	0	0	Α				
350	Ellice St / Division St	TWSC	WBR	14	0	5	2	9	Α				
360	Colborne St / Division St	TWSC	NBL	0	0	20	0	0	Α	12.0	В	0.7	Α
360	Colborne St / Division St	TWSC	NBT	556	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	NBR	0	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	SBL	6	0	15	0	1	Α				
360	Colborne St / Division St	TWSC	SBT	337	0	15	1	1	Α				
360	Colborne St / Division St	TWSC	SBR	0	0	15	0	0	Α				
360	Colborne St / Division St	TWSC	EBL	14	0	5	4	12	В				
360	Colborne St / Division St	TWSC	EBT	2	0	5	0	9	Α				
360	Colborne St / Division St	TWSC	EBR	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBL	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBT	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBR	14	0	5	2	9	Α				
370	Queen St / Division St	Signalized	NBT	209	20	70	8	11	В	30.0	С	18.4	В
370	Queen St / Division St	Signalized	NBR	111	20	70	1	9	Α				
370	Queen St / Division St	Signalized	SBL	92	35	80	20	30	С				
370	Queen St / Division St	Signalized	SBT	247	35	80	14	20	В				
370	Queen St / Division St	Signalized	WBL	442	50	120	18	30	С				
370	Queen St / Division St	Signalized	WBR	346	50	120	1	7	Α				

2036 No Mitigation - Approved Growth, 22% Auto M.S. - AM Peak



ID	Intersection Name	Control Type	Number of Vehicles	50th %'ile Queue (m)	95th %'ile Queue (m)	Avg. Vehicle Delay (sec)	Avg. Stop Delay (sec)	LO S
10	Princess St / Concession St	Signalized	2,644	40.4	61.9	26.2	21.1	С
20	Princess St / Regent St	TWSC	1,035	0.2	52.6	2.4	0.2	-
30	Princess St / Drayton Av	TWSC	986	0.0	53.5	1.9	0.1	-
40	Princess St / Macdonnell Av	Signalized	926	51.1	113.6	16.1	10.3	В
50	Princess St / Smith St	TWSC	770	28.6	32.9	0.8	0.3	-
60	Princess St / Victoria St	Signalized	993	11.1	59.6	7.5	3.9	Α
70	Princess St / Nelson St	TWSC	902	0.1	7.6	1.8	0.3	-
80	Princess St / Albert St	Signalized	930	22.6	57.6	12.3	8.7	В
90	Princess St / Frontenac St	TWSC	832	0.0	27.3	0.8	0.0	-
100	Princess St / Alfred St	Signalized	1,172	43.9	65.8	23.7	17.2	С
110	Princess St / Chatham St	TWSC	828	0.0	23.2	1.4	0.0	-
120	Princess St / University Av	Signalized	804	15.2	53.2	5.4	2.7	Α
130	Princess St / Division St	Signalized	1,001	17.6	54.0	16.6	11.5	в
140	Concession St / Drayton Av	TWSC	941	0.2	131.0	11.3	7.0	-
150	Concession St / Leroy Grant Dr (S)	TWSC	913	49.9	74.9	7.8	3.9	-
155	Concession St / Leroy Grant Drive (N)	TWSC	768	0.3	0.8	0.6	0.1	-
160	Concession St / Macdonnell St	Signalized	1,555	49.7	61.5	9.9	6.5	Α
170	Concession St / Connaught St	TWSC	1,298	0.0	46.9	0.8	0.1	-
180	Concession St / Victoria St	Signalized	1,384	31.1	79.4	10.8	7.4	В
190	Concession St / Nelson St	TWSC	1,235	0.1	52.2	1.8	0.6	-
200	Concession St / Kingscourt Av	TWSC	1,224	0.2	37.7	1.8	0.4	-
210	Concession St / Fergus St	TWSC	1,257	0.2	43.0	3.0	1.1	-
220	Concession St / Grey St	TWSC	1,288	16.4	57.3	6.9	3.9	-
230	Concession St / Alfred St	Signalized	1,362	41.4	61.5	12.0	7.7	В
240	Concession St / Lansdowne St	TWSC	997	0.0	0.0	0.6	0.0	-
250	Concession St / Division St	Signalized	1,661	39.8	91.6	20.9	15.0	С
260	Adelaide St / Division St	TWSC	658	0.0	25.8	0.2	0.1	-
270	Stanley St / Division St	TWSC	678	0.3	14.2	1.8	0.8	-
280	Pine St / Division St	Signalized	752	13.2	49.9	8.8	5.1	Α
290	Quebec St / Division St	TWSC	650	0.0	31.8	0.9	0.1	-
300	York St / Division St	Signalized	741	12.0	32.7	7.5	5.4	Α
310	Main St / Division St	TWSC	610	23.2	26.6	0.8	0.3	-
320	Hamilton St / Division St	TWSC	591	0.0	0.1	0.1	0.0	-
330	Raglan St / Division St	TWSC	585	0.0	0.1	0.1	0.0	-
340	Elm St / Division St	TWSC	568	0.0	0.0	0.1	0.0	-
350	Ellice St / Division St	TWSC	575	0.0	0.1	0.2	0.0	-
360	Colborne St / Division St	TWSC	576	0.0	16.1	1.8	0.7	-
370	Queen St / Division St	Signalized	837	27.7	48.6	14.7	8.7	В
	Total		37,527	536	1,647	242	151	



Node	Location	Control	Mvmt.	Volume		ue (m)	Stop	Delay	LOS	Critical		-	ection
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
10	Princess St / Concession St	Signalized	NBL	142	25	35	39	46	D	46.0	D	26.2	С
10	Princess St / Concession St	Signalized	NBT	91	25	35	35	42	D				
10	Princess St / Concession St	Signalized	NBR	32	25	35	0	1	A				
10 10	Princess St / Concession St Princess St / Concession St	Signalized Signalized	SBL SBT	505 497	65 65	95 95	29 29	36 37	D				
10	Princess St / Concession St	Signalized	SBR	30	65	95	14	18	B				
10	Princess St / Concession St	Signalized	EBT	398	30	50	28	33	c				
10	Princess St / Concession St	Signalized	EBR	224	30	50	0	2	A				
10	Princess St / Concession St	Signalized	WBT	243	20	35	26	32	c				
10	Princess St / Concession St	Signalized	WBR	394	20	35	0	0	A				
10	Princess St / Concession St	Signalized	WBL	88	20	35	2	5	Α				
20	Princess St / Regent St	TWSC	NBL	0	5	10	0	0	Α	11.0	В	2.4	Α
20	Princess St / Regent St	TWSC	NBR	33	5	10	4	11	В				
20	Princess St / Regent St	TWSC	EBT	669	0	75	0	3	Α				
20	Princess St / Regent St	TWSC	EBR	52	0	75	0	1	Α				
20	Princess St / Regent St	TWSC	WBL	7	0	0	7	9	Α				
20	Princess St / Regent St	TWSC	WBT	274	0	0	0	0	Α				
30	Princess St / Drayton Av	TWSC	SBL	0	0	0	0	0	Α	3.0	Α	1.9	Α
30	Princess St / Drayton Av	TWSC	SBR	0	0	0	0	0	A				
30	Princess St / Drayton Av	TWSC	EBL	137	0	75 75	1	3	A				
30 30	Princess St / Drayton Av Princess St / Drayton Av	TWSC	WBT	567 280	0	0	0	1	A				
30	Princess St / Drayton Av	TWSC	WBR	200	0	0	0	0	A				
40	Princess St / Macdonnell Av	Signalized	NBL	43	5	25	13	19	B	28.0	с	16.1	В
40	Princess St / Macdonnell Av	Signalized	NBT	17	5	25	12	17	В	_0.0	•		-
40	Princess St / Macdonnell Av	Signalized	NBR	26	5	25	6	12	В				
40	Princess St / Macdonnell Av	Signalized	SBL	9	40	40	14	18	В				
40	Princess St / Macdonnell Av	Signalized	SBT	14	40	40	12	16	В				
40	Princess St / Macdonnell Av	Signalized	SBR	26	40	40	2	10	Α				
40	Princess St / Macdonnell Av	Signalized	EBL	33	70	160	14	20	В				
40	Princess St / Macdonnell Av	Signalized	EBT	499	70	160	11	17	В				
40	Princess St / Macdonnell Av	Signalized	EBR	27	70	160	8	13	В				
40	Princess St / Macdonnell Av	Signalized	WBL	7	25	50	19	28	С				
40	Princess St / Macdonnell Av	Signalized	WBT	215	25	50	9	14	В				
40	Princess St / Macdonnell Av	Signalized	WBR	10	25	50	6	11	В				
50	Princess St / Smith St	TWSC	SBL	2	40	40	0	10	Α	12.0	В	0.8	Α
50	Princess St / Smith St	TWSC	SBR	12	40	40	1	12	В				
50	Princess St / Smith St	TWSC	EBL	4	40	40	0	2	A				
50	Princess St / Smith St	TWSC	EBT	532	40	40	0	0	Α				
50	Princess St / Smith St	TWSC	WBT	220	0	15	1	2	A				
50	Princess St / Smith St	TWSC	WBR	0	0	15	0	0 23	<u>А</u> С	26.0	с	7.5	•
60 60	Princess St / Victoria St Princess St / Victoria St	Signalized	NBL	24 29	10	35 35	16 18	23	c	26.0	ι	7.5	A
60	Princess St / Victoria St	Signalized Signalized	NBR	29 44	10	35	6	11	B				
60	Princess St / Victoria St	Signalized	SBL	7	5	20	18	23	C				
60	Princess St / Victoria St	Signalized	SBT	61	5	20	15	23	c			-	
60	Princess St / Victoria St	Signalized	SBR	2	5	20	0	0	A				
	Princess St / Victoria St	Signalized	EBL	10	10	80	10	15	B				
60	Princess St / Victoria St	Signalized	EBT	516	10	80	1	4	A				
60	Princess St / Victoria St	Signalized	EBR	8	10	80	1	4	A				
60	Princess St / Victoria St	Signalized	WBL	22	15	40	13	17	В				
60	Princess St / Victoria St	Signalized	WBT	192	15	40	3	6	A				
60	Princess St / Victoria St	Signalized	WBR	78	15	40	2	6	Α				
70	Princess St / Nelson St	TWSC	NBL	5	5	45	6	17	С	18.0	С	1.8	Α
70	Princess St / Nelson St	TWSC	NBT	8	5	45	6	18	С				
70	Princess St / Nelson St	TWSC	NBR	7	5	45	5	14	В				
70	Princess St / Nelson St	TWSC	SBL	8	0	5	5	18	С				
70	Princess St / Nelson St	TWSC	SBT	0	0	5	0	0	Α				
70	Princess St / Nelson St	TWSC	SBR	8	0	5	1	13	В				
70	Princess St / Nelson St	TWSC	EBL	31	0	0	1	3	Α				
70	Princess St / Nelson St	TWSC	EBT	533	0	0	0	1	Α				
70	Princess St / Nelson St	TWSC	EBR	7	0	0	0	1	Α				
70	Princess St / Nelson St	TWSC	WBL	14	0	20	4	7	Α				
70	Princess St / Nelson St	TWSC	WBT	281		20	0	1	Α				



	Location	Control	Mvmt.	Volume		ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Node	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	203	Delay	LOS	Delay	LOS
80	Princess St / Albert St	Signalized	NBL	13	5	15	13	18	В	29.0	С	12.3	В
80	Princess St / Albert St	Signalized	NBT	17	5	15	12	16	В				
80	Princess St / Albert St	Signalized	NBR	27	5	15	3	8	Α				
80	Princess St / Albert St	Signalized	SBL	3	5	15	17	29	С				
80	Princess St / Albert St	Signalized	SBT	31	5	15	12	15	В				
80	Princess St / Albert St	Signalized	SBR	29	5	15	3	9	Α				
80	Princess St / Albert St	Signalized	EBL	2	30	80	18	21	С				
80	Princess St / Albert St	Signalized	EBT	533	30	80	11	14	В				
80	Princess St / Albert St	Signalized	EBR	15	30	80	8	11	В				
80	Princess St / Albert St	Signalized	WBL	8	15	30	18	25	С				
80	Princess St / Albert St	Signalized	WBT	251	15	30	4	8	Α				
80	Princess St / Albert St	Signalized	WBR	1	15	30	0	0	Α				
90	Princess St / Frontenac St	TWSC	NBL	2	0	5	2	11	В	11.0	В	0.8	Α
90	Princess St / Frontenac St	TWSC	NBT	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	NBR	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBL	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBT	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBR	8	0	5	0	7	Α				
90	Princess St / Frontenac St	TWSC	EBL	29	0	40	0	2	Α				
90	Princess St / Frontenac St	TWSC	EBT	529	0	40	0	1	Α				
90	Princess St / Frontenac St	TWSC	EBR	8	0	40	0	2	Α				
90	Princess St / Frontenac St	TWSC	WBL	4	0	0	0	1	Α				
90	Princess St / Frontenac St	TWSC	WBT	251	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBR	1	0	0	0	0	Α				
100	Princess St / Alfred St	Signalized	NBL	27	20	40	14	21	С	36.0	D	23.7	С
100	Princess St / Alfred St	Signalized	NBT	109	20	40	13	19	В				
100	Princess St / Alfred St	Signalized	NBR	75	20	40	6	11	В				
100	Princess St / Alfred St	Signalized	SBL	26	20	50	15	24	С				
100	Princess St / Alfred St	Signalized	SBT	133	20	50	13	20	В				
100	Princess St / Alfred St	Signalized	SBR	60	20	50	6	11	В				
100	Princess St / Alfred St	Signalized	EBL	12	70	90	29	36	D				
100	Princess St / Alfred St	Signalized	EBT	497	70	90	22	29	С				
100	Princess St / Alfred St	Signalized	EBR	7	70	90	18	25	с				
100	Princess St / Alfred St	Signalized	WBL	8	30	50	21	29	С				
100	Princess St / Alfred St	Signalized	WBT	192	30	50	20	26	с				
100	Princess St / Alfred St	Signalized	WBR	26	30	50	2	6	Α				
110	Princess St / Chatham St	TWSC	SBL	0	0	0	0	0	А	2.0	Α	1.4	Α
110	Princess St / Chatham St	TWSC	SBR	1	0	0	0	0	Α				
110	Princess St / Chatham St	TWSC	EBL	15	0	15	0	2	Α				
	Princess St / Chatham St	TWSC	EBT	584	0	15	0	2	Α				
110	Princess St / Chatham St	TWSC	WBT	224	0	45	0	0	Α				
	Princess St / Chatham St	TWSC	WBR	4	0	45	0	0	Α				
120	Princess St / University Av	Signalized	NBL	33	5	10	18	23	с	24.0	с	5.4	Α
	Princess St / University Av	Signalized	NBR	21	5	10	3	8	A		-		
120	Princess St / University Av	Signalized	EBT	484	20	70	2	5	Α				
120	Princess St / University Av	Signalized	EBR	61	20	70	1	4	Α				
	Princess St / University Av	Signalized	WBL	8	5	20	16	24	c				
	Princess St / University Av	Signalized	WBT	197	5	20	2	3	A				
	Princess St / Division St	Signalized	NBL	23	5	20	15	26	c	28.0	с	16.6	В
	Princess St / Division St	Signalized	NBT	52	5	20	11	17	В	_0.0	•		5
	Princess St / Division St	Signalized	NBR	1	5	20	0	0	A				
	Princess St / Division St	Signalized	SBL	142	5	65	3	6	A				
	Princess St / Division St	Signalized	SBT	97	5	65	3	4	A				
	Princess St / Division St	Signalized	SBR	182	5	65	0	0	A				
	Princess St / Division St	Signalized	EBL	182	30	50	20	28	C				
100	Princess St / Division St	Signalized	EBL	359	30	50	20	28	c				
130					30	50	20	40	C C	1			



Node	Location	Control	Mymt.	Volume	-	e (m)	Stop	Delay	LOS	Critical		Inters	
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
140	Concession St / Drayton Av	TWSC	NBR	36	5	30	83	95	F	95.0	F	11.3	В
140	Concession St / Drayton Av	TWSC	EBT	905	0	135	4	8	Α				
140	Concession St / Drayton Av	TWSC	EBR	0	0	135	0	0	Α				
150	Concession St / Leroy Grant Dr (S)	TWSC	SBL	1	0	0	25	36	E	36.0	E	7.8	A
150	Concession St / Leroy Grant Dr (S)	TWSC	EBL	42	50	75	1	4	Α				
150	Concession St / Leroy Grant Dr (S)	TWSC	EBT	870	50	75	4	8	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	NBL	31	5	15	2	10	Α	11.0	В	0.6	Α
155	Concession St / Leroy Grant Drive (N)	TWSC	NBT	12	5	15	2	11	В				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBT	1	0	0	0	8	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBR	76	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBT	622	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBR	26	0	0	0	1	Α				
160	Concession St / Macdonnell St	Signalized	NBL	60	5	20	21	27	С	27.0	С	9.9	Α
160	Concession St / Macdonnell St	Signalized	NBT	0	5	20	0	0	Α				
160	Concession St / Macdonnell St	Signalized	NBR	4	5	20	13	22	с				
160	Concession St / Macdonnell St	Signalized	SBR	45	0	5	1	3	Α				
160	Concession St / Macdonnell St	Signalized	EBL	36	75	75	10	17	В				
160	Concession St / Macdonnell St	Signalized	EBT	714	75	75	7	11	В				
160	Concession St / Macdonnell St	Signalized	EBR	123	75	75	5	9	Α				
160	Concession St / Macdonnell St	Signalized	WBL	28	20	50	19	26	с				
160	Concession St / Macdonnell St	Signalized	WBT	545	20	50	4	6	Α				
160	Concession St / Macdonnell St	Signalized	WBR	0	20	50	0	0	Α				
170	Concession St / Connaught St	TWSC	SBL	8	0	5	8	16	С	16.0	С	0.8	Α
170	Concession St / Connaught St	TWSC	SBR	8	0	5	3	10	A		-		
170	Concession St / Connaught St	TWSC	EBL	17	0	85	3	6	Α				
170	Concession St / Connaught St	TWSC	EBT	698	0	85	0	1	Α				
170	Concession St / Connaught St	TWSC	WBT	563	0	0	0	0	Α				
170	Concession St / Connaught St	TWSC	WBR	4	0	0	0	0	A				
180	Concession St / Victoria St	Signalized	NBL	40	5	20	20	26	C	35.0	С	10.8	В
180	Concession St / Victoria St	Signalized	NBT	14	5	20	22	27	c	33.0	•	10.0	
180	Concession St / Victoria St	Signalized	NBR	19	5	20	10	16	В				
180	Concession St / Victoria St	Signalized	SBL	7	5	15	30	35	c				
180	Concession St / Victoria St	Signalized	SBT	30	5	15	25	30	c				
180	Concession St / Victoria St	Signalized	SBR	45	5	15	23	9	A				
180	Concession St / Victoria St	Signalized	EBL	20	30	85	7	10	A				
180	Concession St / Victoria St	Signalized	EBT	663	30	85	6	8	A				
		Signalized		8	30	85	7	13	B				
180 180	Concession St / Victoria St		EBR WBL	48	40	90	18	25	C				
180	Concession St / Victoria St	Signalized	WBL	48	40	90	6	10	A				
	Concession St / Victoria St	Signalized			-								
180	Concession St / Victoria St	Signalized	WBR	4	40	90	0	1 17	A C	17.0	с	1.0	•
190	Concession St / Nelson St	TWSC	NBL		0	5		0		17.0	L	1.8	Α
190 190	Concession St / Nelson St	TWSC	NBT	0	0	-	0		A				
	Concession St / Nelson St	TWSC	NBR	3	0	5		7					
190	Concession St / Nelson St	TWSC	SBL	0	5	5	0	0	A				
190	Concession St / Nelson St	TWSC	SBT	0	5	5	0	0	A				
190	Concession St / Nelson St	TWSC	SBR	25	5	5	0	6	A				
190	Concession St / Nelson St	TWSC	EBL	39	0	60	2	5	A				
190	Concession St / Nelson St	TWSC	EBT	647	0	60	0	1	A				
190	Concession St / Nelson St	TWSC	EBR	0	0	60	0	0	Α				
190	Concession St / Nelson St	TWSC	WBL	10	0	45	5	8	A				
190	Concession St / Nelson St	TWSC	WBT	504	0	45	1	2	Α				
190	Concession St / Nelson St	TWSC	WBR	0	0	45	0	0	Α				



Node	Location	Control	Mymt.	Volume	Queu	e (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Noue	Location	control	www.	(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
200	Concession St / Kingscourt Av	TWSC	SBL	43	5	15	9	18	С	21.0	С	1.8	Α
200	Concession St / Kingscourt Av	TWSC	SBR	4	5	15	5	21	С				
200	Concession St / Kingscourt Av	TWSC	EBL	24	0	70	2	5	Α				
200	Concession St / Kingscourt Av	TWSC	EBT	625	0	70	0	2	Α				
200	Concession St / Kingscourt Av	TWSC	WBT	508	0	0	0	0	Α				
200	Concession St / Kingscourt Av	TWSC	WBR	20	0	0	0	0	Α				
210	Concession St / Fergus St	TWSC	SBL	43	5	15	15	25	С	25.0	С	3.0	Α
210	Concession St / Fergus St	TWSC	SBR	1	5	15	0	6	Α				
210	Concession St / Fergus St	TWSC	EBL	21	0	80	2	5	Α				
210	Concession St / Fergus St	TWSC	EBT	647	0	80	1	4	Α				
210	Concession St / Fergus St	TWSC	WBT	525	0	0	0	0	Α				
210	Concession St / Fergus St	TWSC	WBR	20	0	0	0	0	Α				
220	Concession St / Grey St	TWSC	SBL	29	5	20	44	54	F	54.0	F	6.9	Α
220	Concession St / Grey St	TWSC	SBR	14	5	20	16	24	С				
220	Concession St / Grey St	TWSC	EBL	21	30	105	8	14	В				
220	Concession St / Grey St	TWSC	EBT	674	30	105	5	10	Α				
220	Concession St / Grey St	TWSC	WBT	529	0	0	0	0	Α				
220	Concession St / Grey St	TWSC	WBR	21	0	0	0	0	Α				
230	Concession St / Alfred St	Signalized	NBL	109	15	35	17	24	С	27.0	С	12.0	В
230	Concession St / Alfred St	Signalized	NBT	10	15	35	20	27	С				
230	Concession St / Alfred St	Signalized	NBR	41	15	35	9	15	В				
230	Concession St / Alfred St	Signalized	SBL	2	5	20	14	22	С				
230	Concession St / Alfred St	Signalized	SBT	32	5	20	13	17	В				
230	Concession St / Alfred St	Signalized	SBR	34	5	20	4	9	Α				
230	Concession St / Alfred St	Signalized	EBL	34	55	60	9	14	В				
230	Concession St / Alfred St	Signalized	EBT	500	55	60	7	11	В				
230	Concession St / Alfred St	Signalized	EBR	163	55	60	1	3	Α				
230	Concession St / Alfred St	Signalized	WBL	33	35	80	10	18	В				
230	Concession St / Alfred St	Signalized	WBT	404	35	80	8	12	В				
230	Concession St / Alfred St	Signalized	WBR	0	35	80	0	0	Α				
240	Concession St / Lansdowne St	TWSC	NBL	0	0	0	0	0	Α	5.0	Α	0.6	Α
240	Concession St / Lansdowne St	TWSC	NBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	EBT	545	0	0	0	1	Α				
240	Concession St / Lansdowne St	TWSC	EBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	WBL	12	0	0	3	5	Α				
240	Concession St / Lansdowne St	TWSC	WBT	440	0	0	0	0	Α				
250	Concession St / Division St	Signalized	NBL	15	25	50	22	31	С	38.0	D	20.9	С
250	Concession St / Division St	Signalized	NBT	213	25	50	15	20	В				
250	Concession St / Division St	Signalized	NBR	7	25	50	15	22	С				
250	Concession St / Division St	Signalized	SBL	32	50	105	18	26	С				
250	Concession St / Division St	Signalized	SBT	368	50	105	16	22	С				
250	Concession St / Division St	Signalized	SBR	202	50	105	2	6	Α				
250	Concession St / Division St	Signalized	EBL	184	35	105	14	21	С				
250	Concession St / Division St	Signalized	EBT	359	35	105	12	17	В				
250	Concession St / Division St	Signalized	EBR	13	35	105	6	8	Α				
250	Concession St / Division St	Signalized	WBL	19	40	70	29	38	D				
250	Concession St / Division St	Signalized	WBT	232	40	70	28	36	D				
250	Concession St / Division St	Signalized	WBR	17	40	70	21	29	с				



Node	Location	Control	Mvmt.	Volume		ıe (m)	Stop	Delay	LOS		Mvmt		section
				(AII)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
260	Adelaide St / Division St	TWSC	NBL	19	0	20	2	3	Α	8.0	Α	0.2	Α
260	Adelaide St / Division St	TWSC	NBT	232	0	20	0	0	Α				
260	Adelaide St / Division St	TWSC	NBR	0	0	20	0	0	Α				
260	Adelaide St / Division St	TWSC	SBL	14	0	30	0	1	Α				
260	Adelaide St / Division St	TWSC	SBT	375	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	SBR	9	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	EBL	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	EBT	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	EBR	2	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBL	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBT	2	0	5	0	8	Α				
260	Adelaide St / Division St	TWSC	WBR	5	0	5	0	7	Α				
270	Stanley St / Division St	TWSC	NBL	16	0	0	1	3	Α	10.0	Α	1.8	Α
270	Stanley St / Division St	TWSC	NBT	245	0	0	0	0	Α				
270	Stanley St / Division St	TWSC	SBT	375	0	25	1	2	Α				
270	Stanley St / Division St	TWSC	SBR	1	0	25	0	0	Α				
270	Stanley St / Division St	TWSC	EBL	5	5	5	2	9	Α				
270	Stanley St / Division St	TWSC	EBR	36	5	5	3	10	Α				
280	Pine St / Division St	Signalized	NBL	9	5	30	10	17	В	30.0	С	8.8	A
280	Pine St / Division St	Signalized	NBT	203	5	30	3	5	Α				
280	Pine St / Division St	Signalized	NBR	4	5	30	3	4	Α				
280	Pine St / Division St	Signalized	SBL	33	20	70	4	7	Α				
280	Pine St / Division St	Signalized	SBT	378	20	70	4	8	Α				
280	Pine St / Division St	Signalized	SBR	0	20	70	0	0	Α				
280	Pine St / Division St	Signalized	EBL	0	5	15	0	0	A				
280	Pine St / Division St	Signalized	EBT	32	5	15	24	30	c				
280	Pine St / Division St	Signalized	EBR	13	5	15	4	9	A				
280	Pine St / Division St	Signalized	WBL	13	5	20	20	26	c				
280	Pine St / Division St	Signalized	WBT	5	5	20	17	23	c				
280	Pine St / Division St	Signalized	WBR	57	5	20	4	9	A	10.0	•		
290	Quebec St / Division St	TWSC	NBT	218	0	0	0	0	A	10.0	Α	0.9	A
290	Quebec St / Division St	TWSC	NBR	3	0	0	0	0	A				
290	Quebec St / Division St	TWSC	SBL	4	0	50	1	3	A				
290	Quebec St / Division St	TWSC	SBT	407	0	50	0	1	A				
290	Quebec St / Division St	TWSC	WBL	17	0	5	2	10	A				
290	Quebec St / Division St	TWSC	WBR	1	0	5	0	6	Α		-		
300	York St / Division St	Signalized	NBL	0	20	35	0	0	Α	30.0	С	7.5	Α
300	York St / Division St	Signalized	NBT	191	20	35	3	5	Α				
300	York St / Division St	Signalized	NBR	12	20	35	2	4	Α				
300	York St / Division St	Signalized	SBL	38	10	35	4	8	Α				
300	York St / Division St	Signalized	SBT	388	10	35	3	4	Α				
300	York St / Division St	Signalized	SBR	0	10	35	0	0	Α				
300	York St / Division St	Signalized	EBL	0	5	20	0	0	Α				
300	York St / Division St	Signalized	EBT	46	5	20	24	28	С				
300	York St / Division St	Signalized	EBR	7	5	20	21	27	С				
300	York St / Division St	Signalized	WBL	9	5	20	22	26	С				
300	York St / Division St	Signalized	WBT	23	5	20	22	30	с				
300	York St / Division St	Signalized	WBR	27	5	20	4	11	В				
310	Main St / Division St	TWSC	NBT	200	0	10	1	2	Α	9.0	Α	0.8	Α
310	Main St / Division St	TWSC	NBR	0	0	10	0	0	Α				
	Main St / Division St	TWSC	SBL	15	35	35	0	2	Α				
310	Main St / Division St	TWSC	SBT	390	35	35	0	0	Α				
	Main St / Division St	TWSC	WBL	0	0	5	0	0	Α				
310	Main St / Division St	TWSC	WBR	5	0	5	1	9	Α				
	Hamilton St / Division St	TWSC	NBL	0	0	0	0	0	A	9.0	Α	0.1	A
320	Hamilton St / Division St	TWSC	NBT	192	0	0	0	0	A				
	Hamilton St / Division St	TWSC	SBT	383	0	0	0	0	A				
320	Hamilton St / Division St	TWSC	SBR	6	0	0	0	0	A				
320	Hamilton St / Division St	TWSC	EBL	8	0	5	1	9	A				
		10030	LDL		0	5	1	3	A				



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Node	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
330	Raglan St / Division St	TWSC	NBT	186	0	0	0	0	Α	11.0	В	0.1	Α
330	Raglan St / Division St	TWSC	NBR	6	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	SBL	15	0	0	0	1	Α				
330	Raglan St / Division St	TWSC	SBT	371	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	WBL	2	0	5	3	11	В				
330	Raglan St / Division St	TWSC	WBR	5	0	5	0	7	Α				
340	Elm St / Division St	TWSC	NBL	2	0	0	0	1	Α	6.0	Α	0.1	Α
340	Elm St / Division St	TWSC	NBT	188	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBT	371	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBR	2	0	0	0	0	Α				
340	Elm St / Division St	TWSC	EBL	4	0	5	1	6	Α				
340	Elm St / Division St	TWSC	EBR	1	0	5	0	6	Α				
350	Ellice St / Division St	TWSC	NBT	182	0	0	0	0	Α	8.0	Α	0.2	Α
350	Ellice St / Division St	TWSC	NBR	8	0	0	0	0	Α				
350	Ellice St / Division St	TWSC	SBL	8	0	0	0	1	Α				
350	Ellice St / Division St	TWSC	SBT	366	0	0	0	0	Α				
350	Ellice St / Division St	TWSC	WBL	4	0	5	1	8	Α				
350	Ellice St / Division St	TWSC	WBR	7	0	5	0	7	Α				
360	Colborne St / Division St	TWSC	NBL	0	0	20	0	0	Α	12.0	В	1.8	Α
360	Colborne St / Division St	TWSC	NBT	177	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	NBR	0	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	SBL	11	0	15	0	2	Α				
360	Colborne St / Division St	TWSC	SBT	360	0	15	1	2	Α				
360	Colborne St / Division St	TWSC	SBR	0	0	15	0	0	Α				
360	Colborne St / Division St	TWSC	EBL	10	0	5	2	9	Α				
360	Colborne St / Division St	TWSC	EBT	4	0	5	3	10	Α				
360	Colborne St / Division St	TWSC	EBR	2	0	5	0	11	В				
360	Colborne St / Division St	TWSC	WBL	4	0	5	1	10	Α				
360	Colborne St / Division St	TWSC	WBT	4	0	5	2	12	В				
360	Colborne St / Division St	TWSC	WBR	4	0	5	0	7	Α				
370	Queen St / Division St	Signalized	NBT	56	15	25	7	9	Α	20.0	В	14.7	В
370	Queen St / Division St	Signalized	NBR	123	15	25	1	10	Α				
370	Queen St / Division St	Signalized	SBL	115	40	75	13	20	В				
370	Queen St / Division St	Signalized	SBT	250	40	75	14	20	В				
370	Queen St / Division St	Signalized	WBL	174	20	30	10	16	В				
370	Queen St / Division St	Signalized	WBR	119	20	30	0	4	Α				

2036 No Mitigation - Approved Growth, 22% Auto M.S. - PM Peak



ID	Intersection Name	Control Type	Number of Vehicles	50th %'ile Queue (m)	95th %'ile Queue (m)	Avg. Vehicle Delay (sec)	Avg. Stop Delay (sec)	LO S
10	Princess St / Concession St	Signalized	3,314	51.1	84.9	31.2	25.5	С
20	Princess St / Regent St	TWSC	1,376	0.1	42.1	2.3	0.6	-
30	Princess St / Drayton Av	TWSC	1,305	3.6	32.6	2.4	0.4	-
40	Princess St / Macdonnell Av	Signalized	1,302	71.0	123.8	17.9	12.5	В
50	Princess St / Smith St	TWSC	1,063	35.6	66.3	5.2	3.2	-
60	Princess St / Victoria St	Signalized	1,362	27.3	71.9	11.2	6.3	в
70	Princess St / Nelson St	TWSC	1,298	10.6	85.7	4.9	2.0	-
80	Princess St / Albert St	Signalized	1,206	35.5	67.5	15.7	11.0	В
90	Princess St / Frontenac St	TWSC	1,063	0.0	32.7	2.2	0.7	-
100	Princess St / Alfred St	Signalized	1,422	58.6	77.3	25.1	17.9	С
110	Princess St / Chatham St	TWSC	1,168	12.4	78.2	5.8	2.2	-
120	Princess St / University Av	Signalized	1,095	25.2	49.7	7.3	4.0	Α
130	Princess St / Division St	Signalized	1,454	20.7	57.0	13.7	9.1	В
140	Concession St / Drayton Av	TWSC	1,128	123.0	296.4	48.1	29.8	-
150	Concession St / Leroy Grant Dr (S)	TWSC	1,187	73.6	73.7	34.4	21.8	-
155	Concession St / Leroy Grant Drive (N)	TWSC	1,263	3.1	7.6	4.3	2.0	-
160	Concession St / Macdonnell St	Signalized	2,163	72.9	78.9	17.0	11.6	В
170	Concession St / Connaught St	TWSC	1,808	35.1	104.3	7.2	3.6	-
180	Concession St / Victoria St	Signalized	1,917	91.9	97.5	16.6	10.7	В
190	Concession St / Nelson St	TWSC	1,694	4.9	46.3	3.9	2.2	-
200	Concession St / Kingscourt Av	TWSC	1,637	0.0	79.4	2.2	1.1	-
210	Concession St / Fergus St	TWSC	1,636	0.0	66.9	2.2	0.6	-
220	Concession St / Grey St	TWSC	1,645	12.4	54.6	5.3	3.8	-
230	Concession St / Alfred St	Signalized	1,807	58.4	88.6	16.8	11.0	в
240	Concession St / Lansdowne St	TWSC	1,121	0.0	8.7	0.7	0.0	-
250	Concession St / Division St	Signalized	2,167	70.4	145.3	29.7	23.0	С
260	Adelaide St / Division St	TWSC	1,107	0.0	51.3	2.3	1.2	-
270	Stanley St / Division St	TWSC	1,092	0.3	12.2	1.6	0.5	-
280	Pine St / Division St	Signalized	1,157	22.2	66.5	9.2	5.7	Α
290	Quebec St / Division St	TWSC	988	0.0	60.9	1.2	0.1	-
300	York St / Division St	Signalized	1,118	21.7	38.7	7.4	4.8	Α
310	Main St / Division St	TWSC	971	26.4	47.9	3.4	1.7	-
320	Hamilton St / Division St	TWSC	981	0.0	11.0	1.2	0.6	-
330	Raglan St / Division St	TWSC	993	0.1	0.1	0.3	0.1	-
340	Elm St / Division St	TWSC	1,043	0.0	11.3	0.8	0.1	-
350	Ellice St / Division St	TWSC	1,005	0.0	14.3	0.5	0.0	-
360	Colborne St / Division St	TWSC	991	0.0	28.0	1.0	0.5	-
370	Queen St / Division St	Signalized	1,507	45.2	85.2	17.0	9.5	В
	Total		52,554	1,013	2,445	379	241	



Node	Location	Control	Mvmt.	Volume		ue (m)	Stop	Delay	LOS	Critical			ection
				(AII)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
10	Princess St / Concession St	Signalized	NBL	317	40	80	33	40	D	51.0	D	31.2	С
10	Princess St / Concession St	Signalized	NBT	258	40	80	34	41	D				
10	Princess St / Concession St	Signalized	NBR	0	40	80	0	0	A				
10 10	Princess St / Concession St Princess St / Concession St	Signalized Signalized	SBL SBT	606 453	80 80	135 135	42 39	51 48	D				
10	Princess St / Concession St	Signalized	SBR	433	80	135	0	40	A				
10	Princess St / Concession St	Signalized	EBT	310	30	55	30	36	D				
10	Princess St / Concession St	Signalized	EBR	264	30	55	0	2	A				
10	Princess St / Concession St	Signalized	WBT	396	40	55	32	39	D				
10	Princess St / Concession St	Signalized	WBR	686	40	55	0	0	A				
10	Princess St / Concession St	Signalized	WBL	24	40	55	13	17	В				
20	Princess St / Regent St	TWSC	NBL	1	5	10	0	0	Α	10.0	Α	2.3	Α
20	Princess St / Regent St	TWSC	NBR	33	5	10	3	10	Α				
20	Princess St / Regent St	TWSC	EBT	646	0	15	0	2	Α				
20	Princess St / Regent St	TWSC	EBR	72	0	15	0	1	Α				
20	Princess St / Regent St	TWSC	WBL	34	0	75	5	8	Α				
20	Princess St / Regent St	TWSC	WBT	590	0	75	1	2	Α				
30	Princess St / Drayton Av	TWSC	SBL	4	45	55	17	35	D	35.0	D	2.4	Α
30	Princess St / Drayton Av	TWSC	SBR	101	45	55	4	17	С			-	
30	Princess St / Drayton Av	TWSC	EBL	31	0	35	3	5	A				
30 30	Princess St / Drayton Av Princess St / Drayton Av	TWSC	EBT WBT	647 522	0	35 25	0	1	A				
30	Princess St / Drayton Av	TWSC	WBR	0	0	25	0	0	A				
40	Princess St / Macdonnell Av	Signalized	NBL	26	10	25	14	20	B	33.0	с	17.9	В
40	Princess St / Macdonnell Av	Signalized	NBT	84	10	25	12	17	B	55.0		17.5	
40	Princess St / Macdonnell Av	Signalized	NBR	14	10	25	5	10	A			-	
40	Princess St / Macdonnell Av	Signalized	SBL	0	15	40	0	0	A				
40	Princess St / Macdonnell Av	Signalized	SBT	39	15	40	12	17	В				
40	Princess St / Macdonnell Av	Signalized	SBR	35	15	40	4	11	В				
40	Princess St / Macdonnell Av	Signalized	EBL	29	105	200	25	33	с				
40	Princess St / Macdonnell Av	Signalized	EBT	573	105	200	14	21	С				
40	Princess St / Macdonnell Av	Signalized	EBR	33	105	200	9	15	В				
40	Princess St / Macdonnell Av	Signalized	WBL	8	50	60	20	29	С				
40	Princess St / Macdonnell Av	Signalized	WBT	461	50	60	11	14	В				
40	Princess St / Macdonnell Av	Signalized	WBR	0	50	60	0	0	Α				
50	Princess St / Smith St	TWSC	SBL	4	40	40	8	16	С	25.0	С	5.2	Α
50	Princess St / Smith St	TWSC	SBR	10	40	40	13	25	С				
50	Princess St / Smith St	TWSC	EBL	9	40	60	2	3	Α				
50	Princess St / Smith St	TWSC	EBT	577	40	60	0	1	Α				
50	Princess St / Smith St	TWSC	WBT	463	30	75	7	10	Α				
50	Princess St / Smith St	TWSC	WBR	0	30	75	0	0	Α				
60	Princess St / Victoria St	Signalized	NBL	15	20	50	20	31	C	31.0	С	11.2	В
60	Princess St / Victoria St	Signalized	NBT	44	20	50	18	26	C				
60	Princess St / Victoria St	Signalized	NBR	100	20	50	9	16	B				
60 60	Princess St / Victoria St Princess St / Victoria St	Signalized	SBL SBT	9 43	5	20 20	15 17	22 23	C C				
60	Princess St / Victoria St	Signalized Signalized	SBR	12	5	20	2	5	A				
	Princess St / Victoria St	Signalized	EBL	14	15	90	13	18	B				
60	Princess St / Victoria St	Signalized	EBT	546	15	90	2	6	A				
60	Princess St / Victoria St	Signalized	EBR	25	15	90	3	7	A				
60	Princess St / Victoria St	Signalized	WBL	18	45	65	15	19	B				
60	Princess St / Victoria St	Signalized	WBT	447	45	65	8	13	B				
60	Princess St / Victoria St	Signalized	WBR	89	45	65	6	11	В				
70	Princess St / Nelson St	TWSC	NBL	16	5	45	15	25	с	25.0	с	4.9	Α
70	Princess St / Nelson St	TWSC	NBT	5	5	45	6	20	С				
70	Princess St / Nelson St	TWSC	NBR	2	5	45	7	19	С				
70	Princess St / Nelson St	TWSC	SBL	0	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	SBT	0	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	SBR	0	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	EBL	198	20	105	3	8	Α				
70	Princess St / Nelson St	TWSC	EBT	481	20	105	2	6	Α				
70	Princess St / Nelson St	TWSC	EBR	3	20	105	0	5	Α				
70	Princess St / Nelson St	TWSC	WBL	29	0	65	5	8	Α				
70	Princess St / Nelson St	TWSC	WBT	550	0	65	1	2	Α				
70	Princess St / Nelson St	TWSC	WBR	14	0	65	2	3	Α				



Node	Location	Control	Mvmt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Noue	Location	Control	iviviiite.	(All)	50th	95th	Delay (s)	(s)	105	Delay	LOS	Delay	LOS
80	Princess St / Albert St	Signalized	NBL	50	10	25	17	23	С	35.0	С	15.7	В
80	Princess St / Albert St	Signalized	NBT	13	10	25	13	19	В				
80	Princess St / Albert St	Signalized	NBR	43	10	25	4	9	Α				
80	Princess St / Albert St	Signalized	SBL	1	5	15	0	0	Α				
80	Princess St / Albert St	Signalized	SBT	27	5	15	16	20	В				
80	Princess St / Albert St	Signalized	SBR	30	5	15	3	7	Α				
80	Princess St / Albert St	Signalized	EBL	37	45	80	26	35	С				
80	Princess St / Albert St	Signalized	EBT	447	45	80	12	17	В				
80	Princess St / Albert St	Signalized	EBR	13	45	80	12	17	В				
80	Princess St / Albert St	Signalized	WBL	8	35	70	17	21	С				
80	Princess St / Albert St	Signalized	WBT	525	35	70	9	13	В				
80	Princess St / Albert St	Signalized	WBR	12	35	70	14	20	В				
90	Princess St / Frontenac St	TWSC	NBL	2	0	5	2	9	Α	13.0	В	2.2	Α
90	Princess St / Frontenac St	TWSC	NBT	10	0	5	4	13	В				
90	Princess St / Frontenac St	TWSC	NBR	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBL	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBT	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBR	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	EBL	58	0	70	4	7	Α				
90	Princess St / Frontenac St	TWSC	EBT	437	0	70	1	4	Α				
90	Princess St / Frontenac St	TWSC	EBR	0	0	70	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBL	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBT	544	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBR	12	0	0	0	1	Α				
100	Princess St / Alfred St	Signalized	NBL	47	25	55	13	21	С	49.0	D	25.1	С
100	Princess St / Alfred St	Signalized	NBT	116	25	55	13	19	В				
100	Princess St / Alfred St	Signalized	NBR	116	25	55	7	14	В				
100	Princess St / Alfred St	Signalized	SBL	61	10	25	19	27	С				
100	Princess St / Alfred St	Signalized	SBT	51	10	25	16	22	С				
100	Princess St / Alfred St	Signalized	SBR	15	10	25	10	17	В				
100	Princess St / Alfred St	Signalized	EBL	12	60	90	41	49	D				
100	Princess St / Alfred St	Signalized	EBT	426	60	90	19	27	С				
100	Princess St / Alfred St	Signalized	EBR	15	60	90	18	26	С				
100	Princess St / Alfred St	Signalized	WBL	34	85	90	13	20	В				
100	Princess St / Alfred St	Signalized	WBT	492	85	90	22	29	С				
100	Princess St / Alfred St	Signalized	WBR	37	85	90	6	10	Α				
110	Princess St / Chatham St	TWSC	SBL	0	0	5	0	0	Α	31.0	D	5.8	Α
110	Princess St / Chatham St	TWSC	SBR	3	0	5	14	31	D				
110	Princess St / Chatham St	TWSC	EBL	110	10	105	4	9	Α				
110	Princess St / Chatham St	TWSC	EBT	491	10	105	2	7	Α				
110	Princess St / Chatham St	TWSC	WBT	557	15	50	2	4	Α				
110	Princess St / Chatham St	TWSC	WBR	7	15	50	1	3	Α				
120	Princess St / University Av	Signalized	NBL	73	5	25	16	22	С	22.0	С	7.3	Α
120	Princess St / University Av	Signalized	NBR	23	5	25	4	9	Α				
120	Princess St / University Av	Signalized	EBT	448	45	70	4	8	Α				
120	Princess St / University Av	Signalized	EBR	40	45	70	3	7	Α				
120	Princess St / University Av	Signalized	WBL	25	10	35	8	13	В				
120	Princess St / University Av	Signalized	WBT	486	10	35	2	4	Α				
130	Princess St / Division St	Signalized	NBL	72	20	40	13	23	С	27.0	С	13.7	В
130	Princess St / Division St	Signalized	NBT	156	20	40	14	20	В				
130	Princess St / Division St	Signalized	NBR	10	20	40	8	13	В				
130	Princess St / Division St	Signalized	SBL	195	15	70	6	10	Α				
130	Princess St / Division St	Signalized	SBT	108	15	70	3	4	Α				
130	Princess St / Division St	Signalized	SBR	443	15	70	0	1	Α				
130	Princess St / Division St	Signalized	EBL	127	30	45	19	26	С				
130	Princess St / Division St	Signalized	EBT	309	30	45	19	27	С				
130	Princess St / Division St	Signalized	EBR	34	30	45	7	14	В				



Node	Location	Control	Mvmt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
140	Concession St / Drayton Av	TWSC	NBR	22	20	115	665	695	F	695.0	F	48.1	E
140	Concession St / Drayton Av	TWSC	EBT	1,066	125	300	17	35	D				
140	Concession St / Drayton Av	TWSC	EBR	40	125	300	21	42	E				
150	Concession St / Leroy Grant Dr (S)	TWSC	SBL	22	0	5	12	26	D	48.0	E	34.4	D
150	Concession St / Leroy Grant Dr (S)	TWSC	EBL	190	75	75	37	48	E				
150	Concession St / Leroy Grant Dr (S)	TWSC	EBT	975	75	75	19	32	D				
155	Concession St / Leroy Grant Drive (N)	TWSC	NBL	101	20	50	12	25	С	28.0	D	4.3	Α
155	Concession St / Leroy Grant Drive (N)	TWSC	NBT	89	20	50	13	28	D				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBT	22	5	5	6	17	С				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBR	6	5	5	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBT	1,007	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBR	38	0	0	0	1	Α				
160	Concession St / Macdonnell St	Signalized	NBL	101	20	35	22	28	С	71.0	E	17.0	В
160	Concession St / Macdonnell St	Signalized	NBT	26	20	35	21	27	С				
160	Concession St / Macdonnell St	Signalized	NBR	36	20	35	20	27	С				
160	Concession St / Macdonnell St	Signalized	SBR	68	5	15	5	9	Α				
160	Concession St / Macdonnell St	Signalized	EBL	60	75	80	49	60	E				
160	Concession St / Macdonnell St	Signalized	EBT	848	75	80	8	13	В				
160	Concession St / Macdonnell St	Signalized	EBR	97	75	80	7	12	В				
160	Concession St / Macdonnell St	Signalized	WBL	50	85	90	58	71	E				
160	Concession St / Macdonnell St	Signalized	WBT	877	85	90	9	14	В				
160	Concession St / Macdonnell St	Signalized	WBR	0	85	90	0	0	Α				
170	Concession St / Connaught St	TWSC	SBL	0	0	5	0	0	Α	23.0	С	7.2	Α
170	Concession St / Connaught St	TWSC	SBR	15	0	5	14	23	С		-		
170	Concession St / Connaught St	TWSC	EBL	0	10	95	0	0	A				
170	Concession St / Connaught St	TWSC	EBT	883	10	95	2	5	Α				
170	Concession St / Connaught St	TWSC	WBT	910	60	115	5	9	A				
170	Concession St / Connaught St	TWSC	WBR	0	60	115	0	0	A				
180	Concession St / Victoria St	Signalized	NBL	69	20	65	38	48	D	54.0	D	16.6	В
180	Concession St / Victoria St	Signalized	NBT	45	20	65	45	54	D	54.0		10.0	
180	Concession St / Victoria St	Signalized	NBR	23	20	65	39	50	D				
180	Concession St / Victoria St	Signalized	SBL	0	0	10	0	0	A				
180	Concession St / Victoria St	Signalized	SBL	20	0	10	21	26	C				
180	Concession St / Victoria St		SBR	34	0	10	7	17	В				
180		Signalized	EBL	34	115	115	15	22	C				
180	Concession St / Victoria St	Signalized	EBL	793	115	115	7	13	B				
	Concession St / Victoria St	Signalized			115				В				
180	Concession St / Victoria St	Signalized	EBR	64	-	115	8	15					
180	Concession St / Victoria St	Signalized	WBL	22	85	90	24	32	C				
180	Concession St / Victoria St	Signalized	WBT	802	85	90	9	14	В				
180	Concession St / Victoria St	Signalized	WBR	14	85	90	0	1	A		-		
190	Concession St / Nelson St	TWSC	NBL	7	0	5	25	36	E	36.0	E	3.9	Α
190	Concession St / Nelson St	TWSC	NBT	0	0	5	0	0	Α				
190	Concession St / Nelson St	TWSC	NBR	39	0	5	7	15	В				
190	Concession St / Nelson St	TWSC	SBL	0	0	5	0	0	A				
190	Concession St / Nelson St	TWSC	SBT	0	0	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBR	11	0	5	0	6	Α				
190	Concession St / Nelson St	TWSC	EBL	0	0	0	0	0	Α				
190	Concession St / Nelson St	TWSC	EBT	765	0	0	0	0	Α				
190	Concession St / Nelson St	TWSC	EBR	50	0	0	0	0	Α				
190	Concession St / Nelson St	TWSC	WBL	7	10	95	5	10	Α				
190	Concession St / Nelson St	TWSC	WBT	815	10	95	4	7	Α				
190	Concession St / Nelson St	TWSC	WBR	0	10	95	0	0	Α				



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Interse	ection
Noue			www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
200	Concession St / Kingscourt Av	TWSC	SBL	0	0	15	0	0	Α	23.0	С	2.2	Α
200	Concession St / Kingscourt Av	TWSC	SBR	16	0	15	11	23	С				
200	Concession St / Kingscourt Av	TWSC	EBL	2	0	65	1	9	Α				
200	Concession St / Kingscourt Av	TWSC	EBT	808	0	65	1	1	Α				
200	Concession St / Kingscourt Av	TWSC	WBT	811	0	95	1	3	Α				
200	Concession St / Kingscourt Av	TWSC	WBR	0	0	95	0	0	Α				
210	Concession St / Fergus St	TWSC	SBL	11	0	5	20	30	D	30.0	D	2.2	Α
210	Concession St / Fergus St	TWSC	SBR	0	0	5	0	0	Α				
210	Concession St / Fergus St	TWSC	EBL	0	0	95	0	0	Α				
210	Concession St / Fergus St	TWSC	EBT	807	0	95	1	3	Α				
210	Concession St / Fergus St	TWSC	WBT	813	0	40	0	1	Α				
210	Concession St / Fergus St	TWSC	WBR	5	0	40	0	0	Α				
220	Concession St / Grey St	TWSC	SBL	6	0	5	57	68	F	68.0	F	5.3	Α
220	Concession St / Grey St	TWSC	SBR	10	0	5	14	22	С				
220	Concession St / Grey St	TWSC	EBL	0	25	100	0	0	Α				
220	Concession St / Grey St	TWSC	EBT	816	25	100	7	10	Α				
220	Concession St / Grey St	TWSC	WBT	808	0	10	0	0	Α				
220	Concession St / Grey St	TWSC	WBR	5	0	10	0	0	Α				
230	Concession St / Alfred St	Signalized	NBL	214	40	90	18	28	С	33.0	С	16.8	В
230	Concession St / Alfred St	Signalized	NBT	32	40	90	24	33	С				
230	Concession St / Alfred St	Signalized	NBR	34	40	90	13	22	С				
230	Concession St / Alfred St	Signalized	SBL	0	5	20	0	0	Α				
230	Concession St / Alfred St	Signalized	SBT	34	5	20	15	21	С				
230	Concession St / Alfred St	Signalized	SBR	20	5	20	4	9	Α				
230	Concession St / Alfred St	Signalized	EBL	23	55	60	18	24	С				
230	Concession St / Alfred St	Signalized	EBT	480	55	60	11	15	В				
230	Concession St / Alfred St	Signalized	EBR	322	55	60	2	4	Α				
230	Concession St / Alfred St	Signalized	WBL	68	75	130	13	23	С				
230	Concession St / Alfred St	Signalized	WBT	580	75	130	12	19	В				
230	Concession St / Alfred St	Signalized	WBR	0	75	130	0	0	Α				
240	Concession St / Lansdowne St	TWSC	NBL	0	0	0	0	0	Α	5.0	Α	0.7	Α
240	Concession St / Lansdowne St	TWSC	NBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	EBT	468	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	EBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	WBL	27	0	15	2	5	Α				
240	Concession St / Lansdowne St	TWSC	WBT	626	0	15	0	1	Α				
250	Concession St / Division St	Signalized	NBL	37	85	115	25	34	С	58.0	E	29.7	С
250	Concession St / Division St	Signalized	NBT	547	85	115	19	25	С				
250	Concession St / Division St	Signalized	NBR	13	85	115	14	19	В				
250	Concession St / Division St	Signalized	SBL	29	65	180	28	38	D				
250	Concession St / Division St	Signalized	SBT	449	65	180	19	25	С				
250	Concession St / Division St	Signalized	SBR	195	65	180	5	10	Α				
250	Concession St / Division St	Signalized	EBL	210	30	75	20	27	С				
250	Concession St / Division St	Signalized	EBT	209	30	75	12	17	В				
250	Concession St / Division St	Signalized	EBR	33	30	75	3	6	Α				
250	Concession St / Division St	Signalized	WBL	11	100	205	44	53	D				
250	Concession St / Division St	Signalized	WBT	402	100	205	48	58	E				
250	Concession St / Division St	Signalized	WBR	32	100	205	42	51	D				



Node	Location	Control	Mvmt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critica	l Mvmt	Inters	ection
1000				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
260	Adelaide St / Division St	TWSC	NBL	0	0	70	0	0	Α	26.0	D	2.3	A
260	Adelaide St / Division St	TWSC	NBT	599	0	70	2	3	Α				
260	Adelaide St / Division St	TWSC	NBR	0	0	70	0	0	Α				
260	Adelaide St / Division St	TWSC	SBL	0	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	SBT	434	0	30	0	1	Α				
260	Adelaide St / Division St	TWSC	SBR	59	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	EBL	3	0	5	16	26	D				
260	Adelaide St / Division St	TWSC	EBT	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	EBR	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBL	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBT	12	0	5	6	16	С				
260	Adelaide St / Division St	TWSC	WBR	0	0	5	0	0	Α				
270	Stanley St / Division St	TWSC	NBL	0	0	0	0	0	Α	14.0	В	1.6	Α
270	Stanley St / Division St	TWSC	NBT	592	0	0	0	0	Α				
270	Stanley St / Division St	TWSC	SBT	367	0	30	1	3	Α				
270	Stanley St / Division St	TWSC	SBR	68	0	30	1	1	Α				
270	Stanley St / Division St	TWSC	EBL	8	5	5	5	14	В				
270	Stanley St / Division St	TWSC	EBR	57	5	5	2	9	Α				
280	Pine St / Division St	Signalized	NBL	37	20	75	9	16	В	39.0	D	9.2	Α
280	Pine St / Division St	Signalized	NBT	521	20	75	4	6	Α				
280	Pine St / Division St	Signalized	NBR	14	20	75	4	5	Α				
280	Pine St / Division St	Signalized	SBL	32	30	70	10	17	В				
280	Pine St / Division St	Signalized	SBT	389	30	70	4	8	A				
280	Pine St / Division St	Signalized	SBR	7	30	70	2	6	A				
280	Pine St / Division St	Signalized	EBL	7	5	15	29	37	D				
280	Pine St / Division St	Signalized	EBT	25	5	15	23	28	c				
280	Pine St / Division St	Signalized	EBR	12	5	15	4	9	A				
280	Pine St / Division St	Signalized	WBL	5	10	30	30	39	D				
280	Pine St / Division St	Signalized	WBT	44	10	30	20	26	c				
280	Pine St / Division St	Signalized	WBR	64	10	30	5	11	B	110		1.2	
290	Quebec St / Division St	TWSC	NBT	570	0	70	0	1	A	14.0	В	1.2	A
290	Quebec St / Division St	TWSC	NBR	0	0	70	0	0	A				
290	Quebec St / Division St	TWSC	SBL	0	0	50	0	0	A				
290	Quebec St / Division St	TWSC	SBT	405	0	50	0	1	A				
290	Quebec St / Division St	TWSC	WBL	13	0	5	6	14	В				
290	Quebec St / Division St	TWSC	WBR	0	0	5	0	0	Α		-		
300	York St / Division St	Signalized	NBL	0	35	35	0	0	Α	34.0	С	7.4	A
300	York St / Division St	Signalized	NBT	521	35	35	2	4	Α				
300	York St / Division St	Signalized	NBR	12	35	35	2	3	Α				
300	York St / Division St	Signalized	SBL	15	10	50	12	16	В				
300	York St / Division St	Signalized	SBT	408	10	50	3	5	Α				
300	York St / Division St	Signalized	SBR	0	10	50	0	0	Α				
300	York St / Division St	Signalized	EBL	0	5	15	0	0	Α				
300	York St / Division St	Signalized	EBT	51	5	15	24	29	С				
300	York St / Division St	Signalized	EBR	6	5	15	16	20	В				
300	York St / Division St	Signalized	WBL	14	10	25	27	34	С				
300	York St / Division St	Signalized	WBT	41	10	25	23	30	С				
300	York St / Division St	Signalized	WBR	50	10	25	6	12	В				
310	Main St / Division St	TWSC	NBT	533	20	55	3	6	Α	11.0	В	3.4	Α
310	Main St / Division St	TWSC	NBR	0	20	55	0	0	Α				
310	Main St / Division St	TWSC	SBL	0	35	40	0	0	Α				
310	Main St / Division St	TWSC	SBT	429	35	40	0	0	Α				
	Main St / Division St	TWSC	WBL	9	0	5	4	11	В				
310	Main St / Division St	TWSC	WBR	0	0	5	0	0	Α				
	Hamilton St / Division St	TWSC	NBL	12	0	20	2	4	A	10.0	Α	1.2	A
320	Hamilton St / Division St	TWSC	NBT	527	0	20	1	2	A				
320	Hamilton St / Division St	TWSC	SBT	435	0	0	0	0	A				
320	Hamilton St / Division St	TWSC	SBR	2	0	0	0	0	A				
320	Hamilton St / Division St	TWSC	EBL	4	0	5	3	10	A				
		1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			0	2	5	TO	A	1			



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Noue	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
330	Raglan St / Division St	TWSC	NBT	528	0	0	0	0	Α	12.0	В	0.3	Α
330	Raglan St / Division St	TWSC	NBR	2	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	SBL	0	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	SBT	436	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	WBL	15	5	5	3	12	В				
330	Raglan St / Division St	TWSC	WBR	12	5	5	3	11	В				
340	Elm St / Division St	TWSC	NBL	58	0	20	1	3	Α	8.0	Α	0.8	Α
340	Elm St / Division St	TWSC	NBT	527	0	20	0	1	Α				
340	Elm St / Division St	TWSC	SBT	413	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBR	38	0	0	0	1	Α				
340	Elm St / Division St	TWSC	EBL	3	0	5	1	8	Α				
340	Elm St / Division St	TWSC	EBR	4	0	5	0	7	Α				
350	Ellice St / Division St	TWSC	NBT	572	0	25	0	0	Α	8.0	Α	0.5	Α
350	Ellice St / Division St	TWSC	NBR	2	0	25	0	0	Α				
350	Ellice St / Division St	TWSC	SBL	6	0	0	2	4	Α				
350	Ellice St / Division St	TWSC	SBT	412	0	0	0	1	Α				
350	Ellice St / Division St	TWSC	WBL	0	0	5	0	0	Α				
350	Ellice St / Division St	TWSC	WBR	13	0	5	1	8	Α				
360	Colborne St / Division St	TWSC	NBL	2	0	20	0	3	Α	14.0	В	1.0	Α
360	Colborne St / Division St	TWSC	NBT	559	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	NBR	0	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	SBL	3	0	40	2	8	Α				
360	Colborne St / Division St	TWSC	SBT	405	0	40	1	2	Α				
360	Colborne St / Division St	TWSC	SBR	2	0	40	0	1	Α				
360	Colborne St / Division St	TWSC	EBL	2	0	5	6	14	В				
360	Colborne St / Division St	TWSC	EBT	5	0	5	3	13	В				
360	Colborne St / Division St	TWSC	EBR	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBL	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBT	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBR	13	0	5	1	8	Α				
370	Queen St / Division St	Signalized	NBT	182	10	50	6	8	Α	28.0	С	17.0	В
370	Queen St / Division St	Signalized	NBR	100	10	50	1	9	Α				
370	Queen St / Division St	Signalized	SBL	95	50	80	17	26	С				
370	Queen St / Division St	Signalized	SBT	313	50	80	13	19	В				
370	Queen St / Division St	Signalized	WBL	437	55	100	16	28	С				
370	Queen St / Division St	Signalized	WBR	380	55	100	1	7	Α				

2036 No Mitigation - Approved Growth, 35% Auto M.S. - AM Peak

Measures of Effectiveness Details



ID	Intersection Name	Control Type	Number of Vehicles	50th %'ile Queue (m)	95th %'ile Queue (m)	Avg. Vehicle Delay (sec)	Avg. Stop Delay (sec)	LO S
10	Princess St / Concession St	Signalized	2,667	40.2	62.2	26.6	21.3	С
20	Princess St / Regent St	TWSC	1,052	0.2	55.1	3.1	0.2	-
30	Princess St / Drayton Av	TWSC	1,005	0.0	58.5	1.8	0.1	-
40	Princess St / Macdonnell Av	Signalized	942	49.4	106.5	15.9	10.2	В
50	Princess St / Smith St	TWSC	782	28.2	35.6	0.9	0.3	-
60	Princess St / Victoria St	Signalized	1,012	12.7	59.2	7.9	4.1	Α
70	Princess St / Nelson St	TWSC	930	1.4	16.3	2.0	0.4	-
80	Princess St / Albert St	Signalized	959	25.1	62.8	13.0	9.1	В
90	Princess St / Frontenac St	TWSC	856	0.0	27.1	0.9	0.0	-
100	Princess St / Alfred St	Signalized	1,205	44.8	69.9	23.6	16.6	С
110	Princess St / Chatham St	TWSC	845	0.0	30.5	1.5	0.0	-
120	Princess St / University Av	Signalized	824	15.2	53.1	5.6	2.8	Α
130	Princess St / Division St	Signalized	1,015	17.7	54.0	16.7	11.7	В
140	Concession St / Drayton Av	TWSC	939	0.2	120.6	7.2	3.9	-
150	Concession St / Leroy Grant Dr (S)	TWSC	913	45.0	74.9	6.9	2.9	-
155	Concession St / Leroy Grant Drive (N)	TWSC	775	0.3	0.6	0.6	0.2	-
160	Concession St / Macdonnell St	Signalized	1,568	49.4	63.3	9.6	6.2	Α
170	Concession St / Connaught St	TWSC	1,303	0.0	52.2	1.3	0.6	-
180	Concession St / Victoria St	Signalized	1,391	33.8	74.5	11.8	7.5	В
190	Concession St / Nelson St	TWSC	1,240	0.1	56.3	1.9	0.2	-
200	Concession St / Kingscourt Av	TWSC	1,231	0.2	43.1	2.7	1.2	-
210	Concession St / Fergus St	TWSC	1,261	0.2	53.8	4.4	2.3	-
220	Concession St / Grey St	TWSC	1,290	19.0	57.6	9.9	6.7	-
230	Concession St / Alfred St	Signalized	1,382	43.3	62.8	13.0	8.3	В
240	Concession St / Lansdowne St	TWSC	1,010	0.0	12.8	1.1	0.0	-
250	Concession St / Division St	Signalized	1,673	39.8	93.2	20.4	14.8	С
260	Adelaide St / Division St	TWSC	658	0.0	25.8	0.2	0.1	-
270	Stanley St / Division St	TWSC	679	0.3	11.3	1.8	0.7	-
280	Pine St / Division St	Signalized	751	17.4	49.9	8.3	5.1	Α
290	Quebec St / Division St	TWSC	649	0.0	31.7	0.9	0.0	-
300	York St / Division St	Signalized	739	12.0	32.7	7.4	4.8	Α
310	Main St / Division St	TWSC	605	23.3	26.6	0.8	0.3	-
320	Hamilton St / Division St	TWSC	592	0.0	0.1	0.1	0.0	-
330	Raglan St / Division St	TWSC	590	0.0	9.9	0.8	0.0	-
340	Elm St / Division St	TWSC	571	0.0	0.1	0.1	0.0	-
350	Ellice St / Division St	TWSC	576	0.0	0.1	0.2	0.0	-
360	Colborne St / Division St	TWSC	576	0.1	16.2	1.1	0.7	-
370	Queen St / Division St	Signalized	837	28.7	48.5	14.8	8.7	В
	Total		37,893	548	1,710	247	152	



Node 10	Location	Control	Mvmt.	(LOS				
10				(AII)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
	Princess St / Concession St	Signalized	NBL	149	25	40	41	48	D	48.0	D	26.6	С
10	Princess St / Concession St	Signalized	NBT	100	25	40	35	42	D				
10	Princess St / Concession St	Signalized	NBR	32	25 65	40	0	2 37	A D				
10 10	Princess St / Concession St Princess St / Concession St	Signalized Signalized	SBL SBT	505 495	65	95 95	29 29	37	D				
10	Princess St / Concession St	Signalized	SBR	30	65	95	14	18	B				
10	Princess St / Concession St	Signalized	EBT	398	30	50	28	33	c				
10	Princess St / Concession St	Signalized	EBR	224	30	50	0	2	A				
10	Princess St / Concession St	Signalized	WBT	244	20	35	26	31	c				
10	Princess St / Concession St	Signalized	WBR	402	20	35	0	0	A				
10	Princess St / Concession St	Signalized	WBL	88	20	35	2	4	Α				
20	Princess St / Regent St	TWSC	NBL	0	5	10	0	0	Α	12.0	В	3.1	Α
20	Princess St / Regent St	TWSC	NBR	33	5	10	4	12	В				
20	Princess St / Regent St	TWSC	EBT	669	0	80	0	4	Α				
20	Princess St / Regent St	TWSC	EBR	52	0	80	1	2	Α				
20	Princess St / Regent St	TWSC	WBL	7	0	0	3	6	Α				
20	Princess St / Regent St	TWSC	WBT	291	0	0	0	0	Α				
30	Princess St / Drayton Av	TWSC	SBL	0	0	0	0	0	Α	3.0	Α	1.8	Α
30	Princess St / Drayton Av	TWSC	SBR	0	0	0	0	0	A				
30	Princess St / Drayton Av	TWSC	EBL	137	0	75	1	3	A				
30 30	Princess St / Drayton Av Princess St / Drayton Av	TWSC	EBT WBT	567 299	0	75 20	0	1	A				
30	Princess St / Drayton Av	TWSC	WBR	233	0	20	0	0	A				
40	Princess St / Macdonnell Av	Signalized	NBL	43	5	25	12	18	B	27.0	с	15.9	В
40	Princess St / Macdonnell Av	Signalized	NBT	17	5	25	12	17	В	27.0		13.5	
40	Princess St / Macdonnell Av	Signalized	NBR	26	5	25	6	12	B				
40	Princess St / Macdonnell Av	Signalized	SBL	10	40	40	14	18	В				
40	Princess St / Macdonnell Av	Signalized	SBT	16	40	40	7	10	Α				
40	Princess St / Macdonnell Av	Signalized	SBR	27	40	40	3	11	В				
40	Princess St / Macdonnell Av	Signalized	EBL	33	70	150	14	21	с				
40	Princess St / Macdonnell Av	Signalized	EBT	499	70	150	11	17	В				
40	Princess St / Macdonnell Av	Signalized	EBR	27	70	150	8	13	В				
40	Princess St / Macdonnell Av	Signalized	WBL	7	20	50	18	27	С				
40	Princess St / Macdonnell Av	Signalized	WBT	227	20	50	9	14	В				
40	Princess St / Macdonnell Av	Signalized	WBR	10	20	50	6	10	Α				
50	Princess St / Smith St	TWSC	SBL	2	40	40	0	9	Α	14.0	В	0.9	Α
50	Princess St / Smith St	TWSC	SBR	15	40	40	2	14	В				
50	Princess St / Smith St	TWSC	EBL	4	40	40	0	1	Α				
50	Princess St / Smith St	TWSC	EBT	531	40	40	0	0	Α				
50	Princess St / Smith St	TWSC	WBT	230	0	25	1	2	A				
50	Princess St / Smith St	TWSC	WBR	0	0	25	0	0	A				
60	Princess St / Victoria St	Signalized	NBL	27	10	35	16	25	c	26.0	с	7.9	A
60	Princess St / Victoria St	Signalized	NBT	29	10	35	19 6	26	C B				
60 60	Princess St / Victoria St Princess St / Victoria St	Signalized	NBR SBL	44	10 5	35 20	18	12 25	C				
60	Princess St / Victoria St	Signalized	SBL	61	5	20	18	25	B				
60	Princess St / Victoria St	Signalized Signalized	SBR	2	5	20	0	0	A				
	Princess St / Victoria St	Signalized	EBL	10	10	80	10	16	B				
	Princess St / Victoria St	Signalized	EBT	515	10	80	10	4	A				
	Princess St / Victoria St	Signalized	EBR	8	10	80	1	3	A				
	Princess St / Victoria St	Signalized	WBL	22	20	40	10	16	В				
60	Princess St / Victoria St	Signalized	WBT	202	20	40	4	7	A				
	Princess St / Victoria St	Signalized	WBR	85	20	40	3	7	Α				
	Princess St / Nelson St	TWSC	NBL	9	40	45	4	17	с	21.0	с	2.0	Α
	Princess St / Nelson St	TWSC	NBT	12	40	45	8	20	С				
70	Princess St / Nelson St	TWSC	NBR	11	40	45	6	16	С				
70	Princess St / Nelson St	TWSC	SBL	8	0	5	7	21	С				
70	Princess St / Nelson St	TWSC	SBT	0	0	5	0	0	Α				
70	Princess St / Nelson St	TWSC	SBR	9	0	5	2	16	С				
70	Princess St / Nelson St	TWSC	EBL	31	0	5	0	2	Α				
70	Princess St / Nelson St	TWSC	EBT	534	0	5	0	1	Α				
	Princess St / Nelson St	TWSC	EBR	7	0	5	0	1	Α				
70 70	Princess St / Nelson St	TWSC	WBL	14	0	35	5	8	Α				
	Princess St / Nelson St	TWSC	WBT	295	0	35	0	1	Α	1		1	



Node	Location	Control	Mvmt.	Volume		ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Noue	Location	control	iviviiite.	(All)	50th	95th	Delay (s)	(s)	203	Delay	LOS	Delay	LOS
80	Princess St / Albert St	Signalized	NBL	13	5	15	13	18	В	31.0	С	13.0	В
80	Princess St / Albert St	Signalized	NBT	17	5	15	12	16	В				
80	Princess St / Albert St	Signalized	NBR	27	5	15	3	8	Α				
80	Princess St / Albert St	Signalized	SBL	11	5	20	14	24	С				
80	Princess St / Albert St	Signalized	SBT	31	5	20	12	15	В				
80	Princess St / Albert St	Signalized	SBR	35	5	20	3	10	Α				
80	Princess St / Albert St	Signalized	EBL	2	35	90	17	21	С				
80	Princess St / Albert St	Signalized	EBT	535	35	90	11	15	В				
80	Princess St / Albert St	Signalized	EBR	15	35	90	12	15	В				
80	Princess St / Albert St	Signalized	WBL	8	15	30	25	31	С				
80	Princess St / Albert St	Signalized	WBT	264	15	30	5	8	Α				
80	Princess St / Albert St	Signalized	WBR	1	15	30	0	0	Α				
90	Princess St / Frontenac St	TWSC	NBL	2	0	5	2	9	Α	9.0	Α	0.9	Α
90	Princess St / Frontenac St	TWSC	NBT	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	NBR	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBL	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBT	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBR	12	0	5	0	7	Α				
90	Princess St / Frontenac St	TWSC	EBL	29	0	40	0	3	Α				
90	Princess St / Frontenac St	TWSC	EBT	541	0	40	0	1	Α				
90	Princess St / Frontenac St	TWSC	EBR	8	0	40	0	1	Α				
90	Princess St / Frontenac St	TWSC	WBL	4	0	0	0	1	Α				
90	Princess St / Frontenac St	TWSC	WBT	259	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBR	1	0	0	0	0	Α				
100	Princess St / Alfred St	Signalized	NBL	27	20	40	16	22	С	40.0	D	23.6	С
100	Princess St / Alfred St	Signalized	NBT	109	20	40	12	18	В				
100	Princess St / Alfred St	Signalized	NBR	75	20	40	5	11	В				
100	Princess St / Alfred St	Signalized	SBL	32	25	60	16	25	С				
100	Princess St / Alfred St	Signalized	SBT	139	25	60	12	19	В				
100	Princess St / Alfred St	Signalized	SBR	63	25	60	6	12	В				
100	Princess St / Alfred St	Signalized	EBL	12	70	95	32	40	D				
100	Princess St / Alfred St	Signalized	EBT	506	70	95	21	29	С				
100	Princess St / Alfred St	Signalized	EBR	11	70	95	17	26	С				
100	Princess St / Alfred St	Signalized	WBL	9	30	50	22	29	С				
100	Princess St / Alfred St	Signalized	WBT	194	30	50	20	26	с				
100	Princess St / Alfred St	Signalized	WBR	28	30	50	2	6	Α				
110	Princess St / Chatham St	TWSC	SBL	0	0	0	0	0	Α	12.0	В	1.5	Α
110	Princess St / Chatham St	TWSC	SBR	1	0	0	1	12	В				
110	Princess St / Chatham St	TWSC	EBL	15	0	25	0	2	Α				
110	Princess St / Chatham St	TWSC	EBT	595	0	25	0	2	Α				
110	Princess St / Chatham St	TWSC	WBT	230	0	45	0	0	Α				
110	Princess St / Chatham St	TWSC	WBR	4	0	45	0	0	Α				
120	Princess St / University Av	Signalized	NBL	38	5	10	17	23	С	25.0	С	5.6	Α
120	Princess St / University Av	Signalized	NBR	23	5	10	4	9	Α				
120	Princess St / University Av	Signalized	EBT	497	20	70	2	5	Α				
120	Princess St / University Av	Signalized	EBR	61	20	70	1	4	Α				
120	Princess St / University Av	Signalized	WBL	8	5	20	17	25	с				
	Princess St / University Av	Signalized	WBT	197	5	20	2	3	A				
130	Princess St / Division St	Signalized	NBL	23	5	20	14	25	с	28.0	с	16.7	В
	Princess St / Division St	Signalized	NBT	52	5	20	11	17	В				
130	Princess St / Division St	Signalized	NBR	1	5	20	0	0	A				
	Princess St / Division St	Signalized	SBL	142	5	65	5	7	Α				
130	Princess St / Division St	Signalized	SBT	98	5	65	3	4	A				
	Princess St / Division St	Signalized	SBR	182	5	65	0	0	A				
130	Princess St / Division St	Signalized	EBL	128	30	50	20	28	c				
130	Princess St / Division St	Signalized	EBT	363	30	50	20	28	c				
	Princess St / Division St	Signalized			30	50	7	14	В				



Node	Location	Control	Mymt.	Volume	Queu		Stop	Delay	LOS	Critical		Inters	
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
140	Concession St / Drayton Av	TWSC	NBR	36	5	10	27	38	E	38.0	E	7.2	Α
140	Concession St / Drayton Av	TWSC	EBT	903	0	125	3	6	Α				
140	Concession St / Drayton Av	TWSC	EBR	0	0	125	0	0	Α				
150	Concession St / Leroy Grant Dr (S)	TWSC	SBL	1	0	0	8	19	С	19.0	С	6.9	Α
150	Concession St / Leroy Grant Dr (S)	TWSC	EBL	41	45	75	1	4	Α				
150	Concession St / Leroy Grant Dr (S)	TWSC	EBT	871	45	75	3	7	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	NBL	31	5	10	3	10	Α	11.0	В	0.6	Α
155	Concession St / Leroy Grant Drive (N)	TWSC	NBT	12	5	10	2	11	В				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBT	1	0	0	0	9	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBR	76	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBT	629	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBR	26	0	0	0	1	Α				
160	Concession St / Macdonnell St	Signalized	NBL	69	5	25	22	27	С	28.0	С	9.6	Α
160	Concession St / Macdonnell St	Signalized	NBT	0	5	25	0	0	Α				
160	Concession St / Macdonnell St	Signalized	NBR	4	5	25	15	25	с				
160	Concession St / Macdonnell St	Signalized	SBR	45	0	5	1	3	Α				
160	Concession St / Macdonnell St	Signalized	EBL	36	75	75	14	22	С				
160	Concession St / Macdonnell St	Signalized	EBT	714	75	75	6	10	Α				
160	Concession St / Macdonnell St	Signalized	EBR	124	75	75	4	8	Α				
160	Concession St / Macdonnell St	Signalized	WBL	28	20	55	21	28	с				
160	Concession St / Macdonnell St	Signalized	WBT	548	20	55	4	6	Α				
160	Concession St / Macdonnell St	Signalized	WBR	0	20	55	0	0	Α				
170	Concession St / Connaught St	TWSC	SBL	8	0	5	7	15	В	15.0	В	1.3	Α
170	Concession St / Connaught St	TWSC	SBR	8	0	5	2	9	A				
170	Concession St / Connaught St	TWSC	EBL	17	0	95	4	7	A				
170	Concession St / Connaught St	TWSC	EBT	698	0	95	1	2	A				
170	Concession St / Connaught St	TWSC	WBT	568	0	0	0	0	A				
170	Concession St / Connaught St	TWSC	WBR	4	0	0	0	0	A				
180	Concession St / Victoria St	Signalized	NBL	42	10	25	24	30	c	34.0	С	11.8	В
180	Concession St / Victoria St	Signalized	NBL	14	10	25	24	30	c	34.0	Ľ	11.0	в
180	Concession St / Victoria St	-	NBR	21	10	25	9	15	В				
180		Signalized				15	29	34	C				
	Concession St / Victoria St	Signalized	SBL	7	5	-	-		c				
180	Concession St / Victoria St	Signalized	SBT	30	5	15	24	29	-				
180	Concession St / Victoria St	Signalized	SBR	45	5	15	2	9	A				
180	Concession St / Victoria St	Signalized	EBL	20	35	75	9	14	В				
180	Concession St / Victoria St	Signalized	EBT	664	35	75	6	9	Α				
180	Concession St / Victoria St	Signalized	EBR	8	35	75	7	11	В				
180	Concession St / Victoria St	Signalized	WBL	48	40	90	16	24	С				
180	Concession St / Victoria St	Signalized	WBT	488	40	90	6	11	В				
180	Concession St / Victoria St	Signalized	WBR	4	40	90	0	1	Α				
190	Concession St / Nelson St	TWSC	NBL	6	0	5	14	22	С	22.0	С	1.9	Α
190	Concession St / Nelson St	TWSC	NBT	0	0	5	0	0	Α				
190	Concession St / Nelson St	TWSC	NBR	5	0	5	1	8	Α				
190	Concession St / Nelson St	TWSC	SBL	0	5	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBT	0	5	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBR	25	5	5	0	6	Α				
190	Concession St / Nelson St	TWSC	EBL	39	0	75	2	4	Α				
190	Concession St / Nelson St	TWSC	EBT	649	0	75	0	2	Α				
190	Concession St / Nelson St	TWSC	EBR	0	0	75	0	0	Α				
190	Concession St / Nelson St	TWSC	WBL	10	0	35	2	5	Α				
190	Concession St / Nelson St	TWSC	WBT	506	0	35	0	1	Α				
190	Concession St / Nelson St	TWSC	WBR	0	0	35	0	0	Α				



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Interse	ection
Noue	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
200	Concession St / Kingscourt Av	TWSC	SBL	43	5	15	19	29	D	29.0	D	2.7	Α
200	Concession St / Kingscourt Av	TWSC	SBR	4	5	15	6	20	С				
200	Concession St / Kingscourt Av	TWSC	EBL	24	0	80	2	5	Α				
200	Concession St / Kingscourt Av	TWSC	EBT	630	0	80	1	3	Α				
200	Concession St / Kingscourt Av	TWSC	WBT	510	0	0	0	0	Α				
200	Concession St / Kingscourt Av	TWSC	WBR	20	0	0	0	0	Α				
210	Concession St / Fergus St	TWSC	SBL	43	5	20	37	49	E	49.0	E	4.4	Α
210	Concession St / Fergus St	TWSC	SBR	1	5	20	1	10	Α				
210	Concession St / Fergus St	TWSC	EBL	21	0	100	3	7	Α				
210	Concession St / Fergus St	TWSC	EBT	649	0	100	2	5	Α				
210	Concession St / Fergus St	TWSC	WBT	527	0	0	0	0	Α				
210	Concession St / Fergus St	TWSC	WBR	20	0	0	0	0	Α				
220	Concession St / Grey St	TWSC	SBL	29	5	30	100	115	F	115.0	F	9.9	Α
220	Concession St / Grey St	TWSC	SBR	14	5	30	60	70	F				
220	Concession St / Grey St	TWSC	EBL	21	35	105	10	17	С				
220	Concession St / Grey St	TWSC	EBT	674	35	105	7	12	В				
220	Concession St / Grey St	TWSC	WBT	531	0	0	0	0	Α				
220	Concession St / Grey St	TWSC	WBR	21	0	0	0	0	Α				
230	Concession St / Alfred St	Signalized	NBL	114	20	35	17	25	С	26.0	С	13.0	В
230	Concession St / Alfred St	Signalized	NBT	10	20	35	19	26	С				
230	Concession St / Alfred St	Signalized	NBR	52	20	35	11	18	В				
230	Concession St / Alfred St	Signalized	SBL	2	5	20	14	22	С				
230	Concession St / Alfred St	Signalized	SBT	32	5	20	13	17	В				
230	Concession St / Alfred St	Signalized	SBR	34	5	20	4	9	Α				
230	Concession St / Alfred St	Signalized	EBL	34	55	60	14	20	В				
230	Concession St / Alfred St	Signalized	EBT	504	55	60	8	12	В				
230	Concession St / Alfred St	Signalized	EBR	163	55	60	1	3	Α				
230	Concession St / Alfred St	Signalized	WBL	33	40	85	10	17	В				
230	Concession St / Alfred St	Signalized	WBT	404	40	85	8	13	В				
230	Concession St / Alfred St	Signalized	WBR	0	40	85	0	0	Α				
240	Concession St / Lansdowne St	TWSC	NBL	0	0	0	0	0	Α	7.0	Α	1.1	Α
240	Concession St / Lansdowne St	TWSC	NBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	EBT	558	0	15	0	1	Α				
240	Concession St / Lansdowne St	TWSC	EBR	0	0	15	0	0	Α				
240	Concession St / Lansdowne St	TWSC	WBL	12	0	10	4	7	Α				
240	Concession St / Lansdowne St	TWSC	WBT	440	0	10	0	1	Α				
250	Concession St / Division St	Signalized	NBL	15	25	50	22	31	С	35.0	С	20.4	С
250	Concession St / Division St	Signalized	NBT	214	25	50	15	20	В				
250	Concession St / Division St	Signalized	NBR	10	25	50	10	16	В				
250	Concession St / Division St	Signalized	SBL	31	50	105	18	26	С				
250	Concession St / Division St	Signalized	SBT	367	50	105	16	22	С				
250	Concession St / Division St	Signalized	SBR	202	50	105	2	6	Α				
250	Concession St / Division St	Signalized	EBL	193	35	110	13	19	В				
250	Concession St / Division St	Signalized	EBT	359	35	110	12	17	В				
250	Concession St / Division St	Signalized	EBR	13	35	110	6	8	Α				
250	Concession St / Division St	Signalized	WBL	19	40	70	27	35	С				
250	Concession St / Division St	Signalized	WBT	233	40	70	28	35	С				
250	Concession St / Division St	Signalized	WBR	17	40	70	21	28	С				



Node	Location	Control	Mymt.	Volume	Que	ue (m)	Stop	Delay	LOS	Critica	l Mvmt	Inters	ection
			-	(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
260	Adelaide St / Division St	TWSC	NBL	19	0	20	2	3	Α	8.0	Α	0.2	A
260	Adelaide St / Division St	TWSC	NBT	232	0	20	0	0	Α				
260	Adelaide St / Division St	TWSC	NBR	0	0	20	0	0	Α				
260	Adelaide St / Division St	TWSC	SBL	14	0	30	0	1	Α				
260	Adelaide St / Division St	TWSC	SBT	375	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	SBR	9	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	EBL	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	EBT	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	EBR	2	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBL	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBT	2	0	5	0	8	Α				
260	Adelaide St / Division St	TWSC	WBR	5	0	5	0	8	Α				
270	Stanley St / Division St	TWSC	NBL	16	0	0	1	3	Α	10.0	Α	1.8	Α
270	Stanley St / Division St	TWSC	NBT	245	0	0	0	0	Α				
270	Stanley St / Division St	TWSC	SBT	373	0	20	1	2	Α				
270	Stanley St / Division St	TWSC	SBR	1	0	20	0	0	Α				
270	Stanley St / Division St	TWSC	EBL	8	5	5	3	10	Α				
270	Stanley St / Division St	TWSC	EBR	36	5	5	2	10	Α				
280	Pine St / Division St	Signalized	NBL	9	10	30	10	17	В	29.0	С	8.3	Α
280	Pine St / Division St	Signalized	NBT	203	10	30	3	5	Α				
280	Pine St / Division St	Signalized	NBR	4	10	30	3	4	Α				
280	Pine St / Division St	Signalized	SBL	33	25	70	4	8	Α				
280	Pine St / Division St	Signalized	SBT	378	25	70	4	7	Α				
280	Pine St / Division St	Signalized	SBR	0	25	70	0	0	Α				
280	Pine St / Division St	Signalized	EBL	0	5	15	0	0	Α				
280	Pine St / Division St	Signalized	EBT	31	5	15	24	29	С				
280	Pine St / Division St	Signalized	EBR	13	5	15	5	11	В				
280	Pine St / Division St	Signalized	WBL	18	5	20	20	26	С				
280	Pine St / Division St	Signalized	WBT	5	5	20	17	23	С				
280	Pine St / Division St	Signalized	WBR	57	5	20	4	9	Α				
290	Quebec St / Division St	TWSC	NBT	218	0	0	0	0	Α	9.0	Α	0.9	A
290	Quebec St / Division St	TWSC	NBR	3	0	0	0	0	Α				
290	Quebec St / Division St	TWSC	SBL	4	0	50	0	3	Α				
290	Quebec St / Division St	TWSC	SBT	406	0	50	0	1	Α				
290	Quebec St / Division St	TWSC	WBL	17	0	5	1	9	Α				
290	Quebec St / Division St	TWSC	WBR	1	0	5	0	6	Α				
300	York St / Division St	Signalized	NBL	0	20	35	0	0	Α	30.0	С	7.4	Α
300	York St / Division St	Signalized	NBT	191	20	35	3	5	Α				
300	York St / Division St	Signalized	NBR	10	20	35	2	4	Α				
300	York St / Division St	Signalized	SBL	38	10	35	5	8	Α				
300	York St / Division St	Signalized	SBT	387	10	35	2	4	Α				
300	York St / Division St	Signalized	SBR	0	10	35	0	0	Α				
300	York St / Division St	Signalized	EBL	0	5	20	0	0	Α				
300	York St / Division St	Signalized	EBT	47	5	20	23	27	С				
300	York St / Division St	Signalized	EBR	7	5	20	13	19	В				
300	York St / Division St	Signalized	WBL	9	5	20	22	27	С				
300	York St / Division St	Signalized	WBT	23	5	20	22	30	С				
300	York St / Division St	Signalized	WBR	27	5	20	4	11	В				
310	Main St / Division St	TWSC	NBT	197	0	10	1	2	Α	8.0	Α	0.8	Α
310	Main St / Division St	TWSC	NBR	0	0	10	0	0	Α				
310	Main St / Division St	TWSC	SBL	15	35	35	0	2	Α				
310	Main St / Division St	TWSC	SBT	388	35	35	0	0	Α				
310	Main St / Division St	TWSC	WBL	0	0	5	0	0	Α				
310	Main St / Division St	TWSC	WBR	5	0	5	0	8	Α				
320	Hamilton St / Division St	TWSC	NBL	0	0	0	0	0	Α	8.0	Α	0.1	Α
320	Hamilton St / Division St	TWSC	NBT	192	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	SBT	383	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	SBR	6	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	EBL	6	0	5	1	8	Α				
320	Hamilton St / Division St	TWSC	EBR	5	0	5	1	7	Α	1		1	



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critica	Mvmt	Inters	ection
Node	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
330	Raglan St / Division St	TWSC	NBT	186	0	0	0	0	Α	11.0	В	0.8	Α
330	Raglan St / Division St	TWSC	NBR	9	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	SBL	17	0	15	0	2	Α				
330	Raglan St / Division St	TWSC	SBT	371	0	15	0	1	Α				
330	Raglan St / Division St	TWSC	WBL	2	0	5	3	11	В				
330	Raglan St / Division St	TWSC	WBR	5	0	5	0	7	Α				
340	Elm St / Division St	TWSC	NBL	2	0	0	0	1	Α	7.0	Α	0.1	Α
340	Elm St / Division St	TWSC	NBT	189	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBT	371	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBR	2	0	0	0	0	Α				
340	Elm St / Division St	TWSC	EBL	6	0	5	1	7	Α				
340	Elm St / Division St	TWSC	EBR	1	0	5	0	6	Α				
350	Ellice St / Division St	TWSC	NBT	183	0	0	0	0	Α	9.0	Α	0.2	Α
350	Ellice St / Division St	TWSC	NBR	8	0	0	0	0	Α				
350	Ellice St / Division St	TWSC	SBL	8	0	0	0	1	Α				
350	Ellice St / Division St	TWSC	SBT	366	0	0	0	0	Α				
350	Ellice St / Division St	TWSC	WBL	4	0	5	1	9	Α				
350	Ellice St / Division St	TWSC	WBR	7	0	5	0	7	Α				
360	Colborne St / Division St	TWSC	NBL	0	0	20	0	0	Α	10.0	Α	1.1	Α
360	Colborne St / Division St	TWSC	NBT	178	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	NBR	0	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	SBL	11	0	15	1	2	Α				
360	Colborne St / Division St	TWSC	SBT	359	0	15	1	1	Α				
360	Colborne St / Division St	TWSC	SBR	0	0	15	0	0	Α				
360	Colborne St / Division St	TWSC	EBL	10	5	10	2	9	Α				
360	Colborne St / Division St	TWSC	EBT	3	5	10	1	9	Α				
360	Colborne St / Division St	TWSC	EBR	3	5	10	1	10	Α				
360	Colborne St / Division St	TWSC	WBL	4	0	5	1	10	Α				
360	Colborne St / Division St	TWSC	WBT	4	0	5	0	9	Α				
360	Colborne St / Division St	TWSC	WBR	4	0	5	0	7	Α				
370	Queen St / Division St	Signalized	NBT	57	10	25	7	9	Α	21.0	С	14.8	В
370	Queen St / Division St	Signalized	NBR	123	10	25	1	10	Α				
370	Queen St / Division St	Signalized	SBL	115	45	75	13	21	С				
370	Queen St / Division St	Signalized	SBT	249	45	75	14	20	В				
370	Queen St / Division St	Signalized	WBL	174	20	30	10	16	В				
370	Queen St / Division St	Signalized	WBR	119	20	30	0	4	Α				

2036 No Mitigation - Approved Growth, 35% Auto M.S. - PM Peak

Measures of Effectiveness Details



ID	Intersection Name	Control Type	Number of Vehicles	50th %'ile Queue (m)	95th %'ile Queue (m)	Avg. Vehicle Delay (sec)	Avg. Stop Delay (sec)	LO S
10	Princess St / Concession St	Signalized	3,351	53.9	94.3	32.0	26.2	С
20	Princess St / Regent St	TWSC	1,432	0.1	45.7	2.4	0.2	-
30	Princess St / Drayton Av	TWSC	1,359	3.4	42.6	2.6	0.6	-
40	Princess St / Macdonnell Av	Signalized	1,358	76.7	160.8	19.2	13.7	В
50	Princess St / Smith St	TWSC	1,105	35.6	70.7	5.2	2.8	-
60	Princess St / Victoria St	Signalized	1,373	28.8	74.8	10.7	5.8	В
70	Princess St / Nelson St	TWSC	1,308	10.6	115.5	5.5	2.5	-
80	Princess St / Albert St	Signalized	1,216	31.3	67.3	16.2	10.7	В
90	Princess St / Frontenac St	TWSC	1,068	2.3	39.4	2.6	0.7	-
100	Princess St / Alfred St	Signalized	1,431	56.9	87.1	25.9	18.6	С
110	Princess St / Chatham St	TWSC	1,174	12.5	87.9	5.4	2.6	-
120	Princess St / University Av	Signalized	1,111	25.2	51.3	7.5	4.3	Α
130	Princess St / Division St	Signalized	1,469	29.3	57.0	13.5	9.1	В
140	Concession St / Drayton Av	TWSC	1,170	196.9	316.4	56.8	37.7	-
150	Concession St / Leroy Grant Dr (S)	TWSC	1,195	73.7	73.9	37.0	22.4	-
155	Concession St / Leroy Grant Drive (N)	TWSC	1,191	2.9	7.4	3.9	1.6	-
160	Concession St / Macdonnell St	Signalized	2,109	72.8	76.9	17.7	12.7	В
170	Concession St / Connaught St	TWSC	1,761	53.8	103.9	8.1	5.0	-
180	Concession St / Victoria St	Signalized	1,882	92.4	103.1	18.5	12.9	В
190	Concession St / Nelson St	TWSC	1,690	14.3	77.1	6.5	4.3	-
200	Concession St / Kingscourt Av	TWSC	1,621	0.0	94.2	6.7	3.6	-
210	Concession St / Fergus St	TWSC	1,616	0.0	99.3	6.4	3.8	-
220	Concession St / Grey St	TWSC	1,629	15.2	82.3	8.1	5.5	-
230	Concession St / Alfred St	Signalized	1,811	59.9	92.8	19.8	12.8	В
240	Concession St / Lansdowne St	TWSC	1,127	0.0	32.9	1.6	0.6	-
250	Concession St / Division St	Signalized	2,173	80.7	155.4	32.0	24.7	С
260	Adelaide St / Division St	TWSC	1,106	0.0	67.6	2.7	1.2	-
270	Stanley St / Division St	TWSC	1,091	0.3	12.2	2.3	0.6	-
280	Pine St / Division St	Signalized	1,163	22.2	66.0	9.8	6.2	Α
290	Quebec St / Division St	TWSC	997	0.0	58.0	1.2	0.1	-
300	York St / Division St	Signalized	1,110	21.7	37.1	6.6	4.3	Α
310	Main St / Division St	TWSC	964	26.6	48.5	3.3	1.7	-
320	Hamilton St / Division St	TWSC	976	0.0	13.8	1.2	0.0	-
330	Raglan St / Division St	TWSC	993	0.2	0.2	0.4	0.1	-
340	Elm St / Division St	TWSC	1,048	0.0	25.2	0.9	0.1	-
350	Ellice St / Division St	TWSC	1,007	0.0	25.7	0.6	0.0	-
360	Colborne St / Division St	TWSC	996	0.0	28.0	1.5	0.5	-
370	Queen St / Division St	Signalized	1,514	43.4	83.1	17.5	9.7	в
	Total		52,695	1,144	2,775	420	270	



Node	Location	Control	Mymt.	Volume		ue (m)	Stop	Delay	LOS		Mvmt	-	section
				(AII)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
10	Princess St / Concession St	Signalized	NBL	305	45	105	34	41	D	50.0	D	32.0	С
10	Princess St / Concession St	Signalized	NBT	294	45	105	33	40	D				
10	Princess St / Concession St	Signalized	NBR	0	45	105	0	0	A				
10	Princess St / Concession St	Signalized	SBL	621 486	85 85	145	41 39	50 48	D				
10 10	Princess St / Concession St	Signalized	SBT	486	85	145	39	48	A				
-	Princess St / Concession St	Signalized	SBR	329	30	145 50	33	40	D				
10 10	Princess St / Concession St	Signalized	EBT	279	30		33 0	2	A				
-	Princess St / Concession St	Signalized	WBT	-	30 40	50 60	32	38	D				
10 10	Princess St / Concession St Princess St / Concession St	Signalized		388 627	40		0	- 38 - 0					
10	Princess St / Concession St	Signalized	WBR WBL	22	40	60 60	6	10	A				
20	Princess St / Concession St Princess St / Regent St	Signalized TWSC	NBL	0	40 5	10	0	0	A A	12.0	В	2.4	Α
20	Princess St / Regent St	TWSC	NBR	33	5	10	3	12	B	12.0	D	2.4	A
20	Princess St / Regent St	TWSC	EBT	683	0	65	0	3	A				
20	Princess St / Regent St	TWSC	EBR	72	0	65	0	1	A				
20	Princess St / Regent St	TWSC	WBL	34	0	25	6	8	A				
20	Princess St / Regent St	TWSC	WBT	610	0	25	0	1	A				
30	Princess St / Drayton Av	TWSC	SBL	4	45	50	22	44	E	44.0	E	2.6	Α
30	Princess St / Drayton Av	TWSC	SBR	100	45	50	6	19	c				
30	Princess St / Drayton Av	TWSC	EBL	31	0	55	4	6	Α				
30	Princess St / Drayton Av	TWSC	EBT	681	0	55	0	1	Α				
30	Princess St / Drayton Av	TWSC	WBT	543	0	25	0	1	Α				
30	Princess St / Drayton Av	TWSC	WBR	0	0	25	0	0	Α				
40	Princess St / Macdonnell Av	Signalized	NBL	25	10	25	13	19	В	32.0	С	19.2	В
40	Princess St / Macdonnell Av	Signalized	NBT	86	10	25	12	17	В				
40	Princess St / Macdonnell Av	Signalized	NBR	9	10	25	7	14	В				
40	Princess St / Macdonnell Av	Signalized	SBL	0	10	40	0	0	Α				
40	Princess St / Macdonnell Av	Signalized	SBT	38	10	40	14	21	С				
40	Princess St / Macdonnell Av	Signalized	SBR	32	10	40	4	12	В				
40	Princess St / Macdonnell Av	Signalized	EBL	30	115	275	24	31	С				
40	Princess St / Macdonnell Av	Signalized	EBT	606	115	275	16	23	С				
40	Princess St / Macdonnell Av	Signalized	EBR	38	115	275	15	22	С				
40	Princess St / Macdonnell Av	Signalized	WBL	10	50	55	24	32	С				
40	Princess St / Macdonnell Av	Signalized	WBT	484	50	55	11	14	В				
40	Princess St / Macdonnell Av	Signalized	WBR	0	50	55	0	0	Α				
50	Princess St / Smith St	TWSC	SBL	3	40	40	5	14	В	27.0	D	5.2	Α
50	Princess St / Smith St	TWSC	SBR	10	40	40	15	27	D				
50	Princess St / Smith St	TWSC	EBL	14	40	60	2	4	Α				
50	Princess St / Smith St	TWSC	EBT	595	40	60	0	1	Α				
50	Princess St / Smith St	TWSC	WBT	483	30	85	6	10	Α				
50	Princess St / Smith St	TWSC	WBR	0	30	85	0	0	Α				
60	Princess St / Victoria St	Signalized	NBL	16	20	45	19	28	С	30.0	С	10.7	В
60	Princess St / Victoria St	Signalized	NBT	41	20	45	17	23	С				
60	Princess St / Victoria St	Signalized	NBR	100	20	45	9	17	В				
60	Princess St / Victoria St	Signalized	SBL	12	5	20	22	30	С				
60	Princess St / Victoria St	Signalized	SBT	46	5	20	17	23	С				
60	Princess St / Victoria St	Signalized	SBR	15	5	20	0	3	Α				
60	Princess St / Victoria St	Signalized	EBL	9	15	80	12	18	В				
60	Princess St / Victoria St	Signalized	EBT	562	15	80	1	5	Α				
60	Princess St / Victoria St	Signalized	EBR	33	15	80	1	5	Α				
60	Princess St / Victoria St	Signalized	WBL	14	50	85	19	25	С				
60	Princess St / Victoria St	Signalized	WBT	462	50	85	8	13	В				
60	Princess St / Victoria St	Signalized	WBR	63	50	85	6	11	В				
70	Princess St / Nelson St	TWSC	NBL	15	0	40	18	29	D	29.0	D	5.5	Α
70	Princess St / Nelson St	TWSC	NBT	3	0	40	15	29	D				
70	Princess St / Nelson St	TWSC	NBR	0	0	40	0	0	Α				
70	Princess St / Nelson St	TWSC	SBL	0	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	SBT	0	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	SBR	0	0	0	0	0	Α				
70	Princess St / Nelson St	TWSC	EBL	188	20	105	4	9	Α				
70	Princess St / Nelson St	TWSC	EBT	499	20	105	2	6	Α				
70	Princess St / Nelson St	TWSC	EBR	6	20	105	1	4	Α				
70	Princess St / Nelson St	TWSC	WBL	39	0	130	4	8	Α				
70	Princess St / Nelson St	TWSC	WBT	544	0	130	2	3	Α				
70	Princess St / Nelson St	TWSC	WBR	14	0	130	1	3	Α				



Node	Location	Control	Mvmt.	Volume	Quer	ue (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Noue	Location	control	iviviiite.	(All)	50th	95th	Delay (s)	(s)	203	Delay	LOS	Delay	LOS
80	Princess St / Albert St	Signalized	NBL	47	10	20	13	19	В	32.0	С	16.2	В
80	Princess St / Albert St	Signalized	NBT	12	10	20	11	16	В				
80	Princess St / Albert St	Signalized	NBR	42	10	20	3	8	Α				
80	Princess St / Albert St	Signalized	SBL	0	5	15	0	0	Α				
80	Princess St / Albert St	Signalized	SBT	26	5	15	16	20	В				
80	Princess St / Albert St	Signalized	SBR	34	5	15	1	6	Α				
80	Princess St / Albert St	Signalized	EBL	49	40	80	23	32	С				
80	Princess St / Albert St	Signalized	EBT	452	40	80	12	18	В				
80	Princess St / Albert St	Signalized	EBR	10	40	80	10	15	В				
80	Princess St / Albert St	Signalized	WBL	8	30	70	16	21	С				
80	Princess St / Albert St	Signalized	WBT	521	30	70	9	14	В				
80	Princess St / Albert St	Signalized	WBR	15	30	70	13	19	В				
90	Princess St / Frontenac St	TWSC	NBL	4	0	5	7	13	В	13.0	В	2.6	Α
90	Princess St / Frontenac St	TWSC	NBT	8	0	5	4	13	В				
90	Princess St / Frontenac St	TWSC	NBR	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBL	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBT	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBR	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	EBL	56	5	85	4	8	Α				
90	Princess St / Frontenac St	TWSC	EBT	438	5	85	1	5	Α				
90	Princess St / Frontenac St	TWSC	EBR	0	5	85	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBL	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBT	544	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBR	18	0	0	0	0	Α				
100	Princess St / Alfred St	Signalized	NBL	48	25	55	14	23	С	51.0	D	25.9	С
100	Princess St / Alfred St	Signalized	NBT	120	25	55	16	23	С				
100	Princess St / Alfred St	Signalized	NBR	113	25	55	8	14	В				
100	Princess St / Alfred St	Signalized	SBL	70	15	30	17	25	С				
100	Princess St / Alfred St	Signalized	SBT	51	15	30	16	25	С				
100	Princess St / Alfred St	Signalized	SBR	11	15	30	8	15	В				
100	Princess St / Alfred St	Signalized	EBL	18	60	120	41	51	D				
100	Princess St / Alfred St	Signalized	EBT	419	60	120	20	29	С				
100	Princess St / Alfred St	Signalized	EBR	15	60	120	20	28	С				
100	Princess St / Alfred St	Signalized	WBL	37	80	90	12	18	В				
100	Princess St / Alfred St	Signalized	WBT	498	80	90	22	28	С				
100	Princess St / Alfred St	Signalized	WBR	31	80	90	7	11	В				
110	Princess St / Chatham St	TWSC	SBL	0	0	5	0	0	Α	19.0	С	5.4	Α
110	Princess St / Chatham St	TWSC	SBR	2	0	5	3	19	С				
110	Princess St / Chatham St	TWSC	EBL	111	15	110	4	10	Α				
110	Princess St / Chatham St	TWSC	EBT	488	15	110	3	7	Α				
110	Princess St / Chatham St	TWSC	WBT	564	10	65	2	3	Α				
110	Princess St / Chatham St	TWSC	WBR	9	10	65	2	3	Α				
120	Princess St / University Av	Signalized	NBL	71	10	20	14	20	В	20.0	В	7.5	Α
120	Princess St / University Av	Signalized	NBR	25	10	20	2	8	Α				
120	Princess St / University Av	Signalized	EBT	434	45	70	5	9	Α				
120	Princess St / University Av	Signalized	EBR	49	45	70	5	9	Α				
120	Princess St / University Av	Signalized	WBL	30	10	40	9	13	в				
	Princess St / University Av	Signalized	WBT	502	10	40	2	4	Α				
130	Princess St / Division St	Signalized	NBL	86	20	40	14	24	с	26.0	с	13.5	В
130	Princess St / Division St	Signalized	NBT	156	20	40	13	19	В				
130	Princess St / Division St	Signalized	NBR	10	20	40	7	11	В				
130	Princess St / Division St	Signalized	SBL	204	35	70	7	11	В				
130	Princess St / Division St	Signalized	SBT	105	35	70	4	5	A				
	Princess St / Division St	Signalized	SBR	445	35	70	0	1	A				
130	Princess St / Division St	Signalized	EBL	130	25	45	17	25	c				
130	Princess St / Division St	Signalized	EBT	301	25	45	19	26	c				
					25		7	14	В				



Node	Location	Control	Mymt.	Volume		ıe (m)	Stop	Delay	LOS	Critica		Inters	
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
140	Concession St / Drayton Av	TWSC	NBR	21	30	120	832	858	F	858.0	F	56.8	F
140	Concession St / Drayton Av	TWSC	EBT	1,110	200	320	23	42	E				
140	Concession St / Drayton Av	TWSC	EBR	39	200	320	28	48	E				
150	Concession St / Leroy Grant Dr (S)	TWSC	SBL	20	0	10	19	32	D	49.0	E	37.0	E
150	Concession St / Leroy Grant Dr (S)	TWSC	EBL	177	75	75	36	49	E				
150	Concession St / Leroy Grant Dr (S)	TWSC	EBT	998	75	75	20	35	D				
155	Concession St / Leroy Grant Drive (N)	TWSC	NBL	85	20	50	10	24	С	25.0	С	3.9	Α
155	Concession St / Leroy Grant Drive (N)	TWSC	NBT	89	20	50	10	25	С				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBT	20	0	5	9	18	С				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBR	8	0	5	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBT	950	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBR	39	0	0	0	1	Α				
160	Concession St / Macdonnell St	Signalized	NBL	97	20	40	23	29	С	84.0	F	17.7	В
160	Concession St / Macdonnell St	Signalized	NBT	25	20	40	21	30	С				
160	Concession St / Macdonnell St	Signalized	NBR	34	20	40	17	24	С				
160	Concession St / Macdonnell St	Signalized	SBR	67	5	10	6	10	Α				
160	Concession St / Macdonnell St	Signalized	EBL	58	75	80	51	61	E				
160	Concession St / Macdonnell St	Signalized	EBT	865	75	80	9	14	В				
160	Concession St / Macdonnell St	Signalized	EBR	94	75	80	8	12	В				
160	Concession St / Macdonnell St	Signalized	WBL	48	85	85	71	84	F				
160	Concession St / Macdonnell St	Signalized	WBT	821	85	85	10	14	В				
160	Concession St / Macdonnell St	Signalized	WBR	0	85	85	0	0	Α				
170	Concession St / Connaught St	TWSC	SBL	0	0	5	0	0	Α	27.0	D	8.1	Α
170	Concession St / Connaught St	TWSC	SBR	16	0	5	16	27	D				
170	Concession St / Connaught St	TWSC	EBL	0	25	95	0	0	Α				
170	Concession St / Connaught St	TWSC	EBT	893	25	95	2	5	Α				
170	Concession St / Connaught St	TWSC	WBT	852	85	115	8	11	В				
170	Concession St / Connaught St	TWSC	WBR	0	85	115	0	0	Α				
180	Concession St / Victoria St	Signalized	NBL	41	10	115	68	82	F	82.0	F	18.5	В
180	Concession St / Victoria St	Signalized	NBT	48	10	115	50	61	E		-		
180	Concession St / Victoria St	Signalized	NBR	19	10	115	42	51	D				
180	Concession St / Victoria St	Signalized	SBL	0	0	10	0	0	A				
180	Concession St / Victoria St	Signalized	SBT	22	0	10	19	24	c				
180	Concession St / Victoria St	Signalized	SBR	35	0	10	12	21	c				
180	Concession St / Victoria St	Signalized	EBL	30	115	115	12	26	c				
180	Concession St / Victoria St	Signalized	EBT	801	115	115	8	13	В				
180	Concession St / Victoria St	Signalized	EBR	67	115	115	9	15	В				
180	Concession St / Victoria St	Signalized	WBL	25	85	95	22	30	c				
180	Concession St / Victoria St	Signalized	WBT	781	85	95	12	17	В				
180	Concession St / Victoria St	Signalized	WBR	13	85	95	0	1	A				
190	Concession St / Nelson St	TWSC	NBL	7	0	5	64	77	F	77.0	F	6.5	Α
190		TWSC	NBL	0	0	5	0	0	г А	77.0	F	0.5	A
190	Concession St / Nelson St		NBR	43	0	5	9	16	C				
	Concession St / Nelson St	TWSC		43	0		9	0	-				
190	Concession St / Nelson St	TWSC	SBL			5	-		A				
190	Concession St / Nelson St	TWSC	SBT	0	0	5	0	0	A				
190	Concession St / Nelson St	TWSC	SBR	12	0	5	0	6	A				
190	Concession St / Nelson St	TWSC	EBL	0	0	65	0	0	A				
190	Concession St / Nelson St	TWSC	EBT	775	0	65	1	1	A				
190	Concession St / Nelson St	TWSC	EBR	50	0	65	0	1	A				
190	Concession St / Nelson St	TWSC	WBL	7	30	95	8	12	В				
190	Concession St / Nelson St	TWSC	WBT	796	30	95	7	11	В				
190	Concession St / Nelson St	TWSC	WBR	0	30	95	0	0	Α				



Node	Location	Control	Mymt.	Volume	Queu	e (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Noue	Location	control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
200	Concession St / Kingscourt Av	TWSC	SBL	0	0	15	0	0	Α	27.0	D	6.7	Α
200	Concession St / Kingscourt Av	TWSC	SBR	17	0	15	16	27	D				
200	Concession St / Kingscourt Av	TWSC	EBL	2	0	95	2	10	Α				
200	Concession St / Kingscourt Av	TWSC	EBT	815	0	95	2	5	Α				
200	Concession St / Kingscourt Av	TWSC	WBT	787	0	95	5	8	Α				
200	Concession St / Kingscourt Av	TWSC	WBR	0	0	95	0	0	Α				
210	Concession St / Fergus St	TWSC	SBL	12	0	5	49	59	F	59.0	F	6.4	Α
210	Concession St / Fergus St	TWSC	SBR	0	0	5	0	0	Α				
210	Concession St / Fergus St	TWSC	EBL	0	0	100	0	0	Α				
210	Concession St / Fergus St	TWSC	EBT	814	0	100	4	7	Α				
210	Concession St / Fergus St	TWSC	WBT	786	0	100	3	5	Α				
210	Concession St / Fergus St	TWSC	WBR	4	0	100	0	0	Α				
220	Concession St / Grey St	TWSC	SBL	6	0	5	91	101	F	101.0	F	8.1	Α
220	Concession St / Grey St	TWSC	SBR	10	0	5	14	22	с				
220	Concession St / Grey St	TWSC	EBL	0	30	105	0	0	Α				
220	Concession St / Grey St	TWSC	EBT	826	30	105	9	14	В				
220	Concession St / Grey St	TWSC	WBT	783	0	60	1	1	Α				
220	Concession St / Grey St	TWSC	WBR	4	0	60	0	0	Α				
230	Concession St / Alfred St	Signalized	NBL	182	35	95	21	32	С	32.0	С	19.8	В
230	Concession St / Alfred St	Signalized	NBT	30	35	95	22	30	с				
230	Concession St / Alfred St	Signalized	NBR	32	35	95	16	26	с				
230	Concession St / Alfred St	Signalized	SBL	1	5	15	0	0	Α				
230	Concession St / Alfred St	Signalized	SBT	35	5	15	18	23	С				
230	Concession St / Alfred St	Signalized	SBR	24	5	15	6	12	В				
230	Concession St / Alfred St	Signalized	EBL	27	55	60	21	27	С				
230	Concession St / Alfred St	Signalized	EBT	468	55	60	12	16	В				
230	Concession St / Alfred St	Signalized	EBR	342	55	60	2	5	Α				
230	Concession St / Alfred St	Signalized	WBL	88	80	140	14	24	с				
230	Concession St / Alfred St	Signalized	WBT	582	80	140	16	26	С				
230	Concession St / Alfred St	Signalized	WBR	0	80	140	0	0	Α				
240	Concession St / Lansdowne St	TWSC	NBL	0	0	0	0	0	Α	4.0	Α	1.6	Α
240	Concession St / Lansdowne St	TWSC	NBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	EBT	453	0	0	0	1	Α				
240	Concession St / Lansdowne St	TWSC	EBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	WBL	29	0	55	1	4	Α				
240	Concession St / Lansdowne St	TWSC	WBT	645	0	55	1	2	Α				
250	Concession St / Division St	Signalized	NBL	40	85	110	21	30	С	69.0	E	32.0	С
250	Concession St / Division St	Signalized	NBT	550	85	110	19	26	C				
250	Concession St / Division St	Signalized	NBR	10	85	110	17	23	С				
250	Concession St / Division St	Signalized	SBL	27	70	210	31	41	D				
250	Concession St / Division St	Signalized	SBT	452	70	210	19	25	с				
250	Concession St / Division St	Signalized	SBR	207	70	210	5	10	A				
250	Concession St / Division St	Signalized	EBL	198	30	75	18	24	c				
250	Concession St / Division St	Signalized	EBT	199	30	75	13	17	В				
250	Concession St / Division St	Signalized	EBR	37	30	75	3	6	A				
250	Concession St / Division St	Signalized	WBL	11	140	210	55	67	E				
250	Concession St / Division St	Signalized	WBT	410	140	210	57	69	E				
250	Concession St / Division St	Signalized	WBR	32	140	210	49	60	E				



Node	Location	Control	Mymt.	Volume	Que	ue (m)	Stop	Delay	LOS	Critica	Mvmt	Inters	section
Noue	Location	Control	iviviiite.	(All)	50th	95th	Delay (s)	(s)	105	Delay	LOS	Delay	LOS
260	Adelaide St / Division St	TWSC	NBL	0	0	100	0	0	Α	19.0	С	2.7	A
260	Adelaide St / Division St	TWSC	NBT	598	0	100	2	4	Α				
260	Adelaide St / Division St	TWSC	NBR	0	0	100	0	0	Α				
260	Adelaide St / Division St	TWSC	SBL	0	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	SBT	432	0	30	0	1	Α				
260	Adelaide St / Division St	TWSC	SBR	66	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	EBL	0	0	0	0	0	Α				
260	Adelaide St / Division St	TWSC	EBT	0	0	0	0	0	Α				
260	Adelaide St / Division St	TWSC	EBR	0	0	0	0	0	Α				
260	Adelaide St / Division St	TWSC	WBL	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBT	10	0	5	9	19	С				
260	Adelaide St / Division St	TWSC	WBR	0	0	5	0	0	Α				
270	Stanley St / Division St	TWSC	NBL	0	0	0	0	0	Α	16.0	С	2.3	A
270	Stanley St / Division St	TWSC	NBT	595	0	0	0	1	Α				
270	Stanley St / Division St	TWSC	SBT	365	0	30	1	3	Α				
270	Stanley St / Division St	TWSC	SBR	67	0	30	1	2	Α				
270	Stanley St / Division St	TWSC	EBL	4	5	5	8	16	С				
270	Stanley St / Division St	TWSC	EBR	60	5	5	3	10	Α				
280	Pine St / Division St	Signalized	NBL	38	20	75	9	15	В	35.0	С	9.8	Α
280	Pine St / Division St	Signalized	NBT	522	20	75	4	7	Α				
280	Pine St / Division St	Signalized	NBR	14	20	75	5	8	Α				
280	Pine St / Division St	Signalized	SBL	30	30	70	12	19	В				
280	Pine St / Division St	Signalized	SBT	395	30	70	5	8	Α				
280	Pine St / Division St	Signalized	SBR	6	30	70	4	6	Α				
280	Pine St / Division St	Signalized	EBL	7	5	15	29	35	С				
280	Pine St / Division St	Signalized	EBT	28	5	15	24	29	С				
280	Pine St / Division St	Signalized	EBR	10	5	15	5	10	Α				
280	Pine St / Division St	Signalized	WBL	4	10	25	24	32	С				
280	Pine St / Division St	Signalized	WBT	44	10	25	22	29	С				
280	Pine St / Division St	Signalized	WBR	65	10	25	6	12	В				
290	Quebec St / Division St	TWSC	NBT	574	0	65	0	1	Α	12.0	В	1.2	Α
290	Quebec St / Division St	TWSC	NBR	0	0	65	0	0	Α				
290	Quebec St / Division St	TWSC	SBL	0	0	50	0	0	Α				
290	Quebec St / Division St	TWSC	SBT	409	0	50	0	1	Α				
290	Quebec St / Division St	TWSC	WBL	14	0	5	4	12	В				
290	Quebec St / Division St	TWSC	WBR	0	0	5	0	0	Α				
300	York St / Division St	Signalized	NBL	0	35	35	0	0	Α	32.0	С	6.6	Α
300	York St / Division St	Signalized	NBT	519	35	35	2	4	Α				
300	York St / Division St	Signalized	NBR	12	35	35	0	2	Α				
300	York St / Division St	Signalized	SBL	12	10	45	8	12	В				
300	York St / Division St	Signalized	SBT	409	10	45	2	3	Α				
300	York St / Division St	Signalized	SBR	0	10	45	0	0	Α				
300	York St / Division St	Signalized	EBL	0	5	20	0	0	Α				
300	York St / Division St	Signalized	EBT	50	5	20	27	32	С				
300	York St / Division St	Signalized	EBR	6	5	20	25	29	С				
300	York St / Division St	Signalized	WBL	14	10	25	19	25	С				
300	York St / Division St	Signalized	WBT	32	10	25	22	29	С				
300	York St / Division St	Signalized	WBR	56	10	25	6	14	В				
310	Main St / Division St	TWSC	NBT	529	20	60	3	6	Α	8.0	Α	3.3	Α
310	Main St / Division St	TWSC	NBR	0	20	60	0	0	Α				
	Main St / Division St	TWSC	SBL	0	35	35	0	0	Α				
310	Main St / Division St	TWSC	SBT	429	35	35	0	0	Α				
	Main St / Division St	TWSC	WBL	6	0	5	1	8	Α				
310	Main St / Division St	TWSC	WBR	0	0	5	0	0	Α				
320	Hamilton St / Division St	TWSC	NBL	12	0	25	1	4	Α	14.0	В	1.2	A
320	Hamilton St / Division St	TWSC	NBT	524	0	25	0	2	A				
	Hamilton St / Division St	TWSC	SBT	436	0	0	0	0	A				
320	Hamilton St / Division St	TWSC	SBR	0	0	0	0	0	A				
320	Hamilton St / Division St	TWSC	EBL	4	0	5	6	14	В				
		10030	LDL	-		-	0		5				



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Noue	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
330	Raglan St / Division St	TWSC	NBT	525	0	0	0	0	Α	12.0	В	0.4	Α
330	Raglan St / Division St	TWSC	NBR	0	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	SBL	0	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	SBT	435	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	WBL	21	5	5	3	12	В				
330	Raglan St / Division St	TWSC	WBR	12	5	5	2	10	Α				
340	Elm St / Division St	TWSC	NBL	62	0	45	2	4	Α	10.0	Α	0.9	Α
340	Elm St / Division St	TWSC	NBT	524	0	45	0	1	Α				
340	Elm St / Division St	TWSC	SBT	415	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBR	41	0	0	0	2	Α				
340	Elm St / Division St	TWSC	EBL	2	0	5	3	10	Α				
340	Elm St / Division St	TWSC	EBR	4	0	5	1	8	Α				
350	Ellice St / Division St	TWSC	NBT	571	0	45	0	0	Α	10.0	Α	0.6	Α
350	Ellice St / Division St	TWSC	NBR	2	0	45	0	0	Α				
350	Ellice St / Division St	TWSC	SBL	6	0	0	1	4	Α				
350	Ellice St / Division St	TWSC	SBT	414	0	0	0	1	Α				
350	Ellice St / Division St	TWSC	WBL	0	0	5	0	0	Α				
350	Ellice St / Division St	TWSC	WBR	14	0	5	2	10	Α				
360	Colborne St / Division St	TWSC	NBL	4	0	20	0	1	Α	11.0	В	1.5	Α
360	Colborne St / Division St	TWSC	NBT	558	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	NBR	0	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	SBL	4	0	40	5	9	Α				
360	Colborne St / Division St	TWSC	SBT	406	0	40	1	3	Α				
360	Colborne St / Division St	TWSC	SBR	4	0	40	0	1	Α				
360	Colborne St / Division St	TWSC	EBL	2	0	5	2	9	Α				
360	Colborne St / Division St	TWSC	EBT	4	0	5	3	11	В				
360	Colborne St / Division St	TWSC	EBR	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBL	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBT	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBR	14	0	5	2	10	Α				
370	Queen St / Division St	Signalized	NBT	184	15	25	6	8	Α	28.0	С	17.5	В
370	Queen St / Division St	Signalized	NBR	102	15	25	1	9	Α				
370	Queen St / Division St	Signalized	SBL	96	50	80	17	26	С				
370	Queen St / Division St	Signalized	SBT	315	50	80	14	20	В				
370	Queen St / Division St	Signalized	WBL	440	50	105	16	28	С				
370	Queen St / Division St	Signalized	WBR	377	50	105	1	8	Α				

2036 No Mitigation - Ultimate Growth, 22% Auto M.S. - AM Peak

Measures of Effectiveness Details



ID	Intersection Name	Control Type	Number of Vehicles	50th %'ile Queue (m)	95th %'ile Queue (m)	Avg. Vehicle Delay (sec)	Avg. Stop Delay (sec)	LO S
10	Princess St / Concession St	Signalized	2,869	46.1	72.9	27.8	22.2	С
20	Princess St / Regent St	TWSC	1,297	6.4	62.4	4.4	0.8	-
30	Princess St / Drayton Av	TWSC	1,260	12.6	47.4	2.5	0.7	-
40	Princess St / Macdonnell Av	Signalized	1,200	68.6	112.4	15.9	10.0	В
50	Princess St / Smith St	TWSC	1,012	25.5	45.4	2.6	1.1	-
60	Princess St / Victoria St	Signalized	1,247	23.8	70.2	8.7	4.7	Α
70	Princess St / Nelson St	TWSC	1,170	5.7	74.1	3.8	1.2	-
80	Princess St / Albert St	Signalized	1,139	38.1	83.0	15.1	9.7	В
90	Princess St / Frontenac St	TWSC	1,034	0.0	35.8	1.7	0.0	-
100	Princess St / Alfred St	Signalized	1,356	43.7	74.1	23.5	16.4	С
110	Princess St / Chatham St	TWSC	953	0.1	44.0	2.1	0.1	-
120	Princess St / University Av	Signalized	882	15.7	54.4	6.0	2.8	Α
130	Princess St / Division St	Signalized	1,096	19.4	49.2	15.7	10.7	В
140	Concession St / Drayton Av	TWSC	944	0.0	119.0	7.3	3.2	-
150	Concession St / Leroy Grant Dr (S)	TWSC	915	54.6	74.5	7.9	3.9	-
155	Concession St / Leroy Grant Drive (N)	TWSC	705	0.3	0.9	0.7	0.1	-
160	Concession St / Macdonnell St	Signalized	1,550	50.1	76.9	13.8	9.5	В
170	Concession St / Connaught St	TWSC	1,273	0.0	89.7	3.5	2.0	-
180	Concession St / Victoria St	Signalized	1,355	37.7	84.6	11.9	7.7	В
190	Concession St / Nelson St	TWSC	1,229	0.1	64.7	1.8	1.1	-
200	Concession St / Kingscourt Av	TWSC	1,204	0.2	47.9	2.7	1.1	-
210	Concession St / Fergus St	TWSC	1,213	0.2	55.3	4.9	2.9	-
220	Concession St / Grey St	TWSC	1,246	13.8	61.1	10.5	7.2	-
230	Concession St / Alfred St	Signalized	1,330	43.6	64.1	11.9	7.2	В
240	Concession St / Lansdowne St	TWSC	1,010	0.0	0.0	0.5	0.0	-
250	Concession St / Division St	Signalized	1,769	40.7	103.2	22.6	16.3	С
260	Adelaide St / Division St	TWSC	757	0.0	22.1	0.7	0.0	-
270	Stanley St / Division St	TWSC	702	0.4	19.4	2.0	0.8	-
280	Pine St / Division St	Signalized	785	12.9	47.0	8.6	4.8	Α
290	Quebec St / Division St	TWSC	677	0.0	32.8	0.9	0.0	-
300	York St / Division St	Signalized	761	15.2	42.2	7.4	4.9	Α
310	Main St / Division St	TWSC	646	23.6	28.6	0.8	0.0	-
320	Hamilton St / Division St	TWSC	629	0.0	0.1	0.1	0.0	-
330	Raglan St / Division St	TWSC	627	0.2	0.2	0.4	0.1	-
340	Elm St / Division St	TWSC	614	0.0	0.1	0.2	0.0	-
350	Ellice St / Division St	TWSC	595	0.0	0.1	0.2	0.1	-
360	Colborne St / Division St	TWSC	601	0.2	19.1	1.2	0.1	-
370	Queen St / Division St	Signalized	879	28.9	50.4	15.4	9.4	В
	Total		40,531	629	1,929	268	163	



Node	Location	Control	Mymt.	Volume		ue (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
			-	(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
10	Princess St / Concession St	Signalized	NBL	163	35	50	37	45	D	47.0	D	27.8	C
10	Princess St / Concession St	Signalized	NBT	198	35	50	40	47	D				
10	Princess St / Concession St	Signalized	NBR	42	35	50	2	4	Α				
10	Princess St / Concession St	Signalized	SBL	526	75	105	30	38	D				
10	Princess St / Concession St	Signalized	SBT	570	75	105	30	38	D				
10	Princess St / Concession St	Signalized	SBR	32	75	105	19	24	С				
10	Princess St / Concession St	Signalized	EBT	402	30	65	25	31	С				
10	Princess St / Concession St	Signalized	EBR	277	30	65	0	2	Α				
10	Princess St / Concession St	Signalized	WBT	241	20	40	25	30	С				
10	Princess St / Concession St	Signalized	WBR	334	20	40	0	0	Α				
10	Princess St / Concession St	Signalized	WBL	84	20	40	1	4	Α				
20	Princess St / Regent St	TWSC	NBL	0	5	10	0	0	Α	16.0	С	4.4	A
20	Princess St / Regent St	TWSC	NBR	29	5	10	7	16	С				
20	Princess St / Regent St	TWSC	EBT	765	10	85	1	6	Α				
20	Princess St / Regent St	TWSC	EBR	50	10	85	1	3	Α				
20	Princess St / Regent St	TWSC	WBL	8	0	25	4	8	Α				
20	Princess St / Regent St	TWSC	WBT	445	0	25	0	1	A				
30	Princess St / Drayton Av	TWSC	SBL	0	0	45	0	0	A	14.0	В	2.5	A
30	Princess St / Drayton Av	TWSC	SBR	5	0	45	1	14	B				
30 30	Princess St / Drayton Av Princess St / Drayton Av	TWSC	EBL	117 677	20 20	75 75	2	5 3	A				
30	Princess St / Drayton Av	TWSC	WBT	450	20	0	0	1	A				
30	Princess St / Drayton Av	TWSC	WBR	11	0	0	0	1	A				
40	Princess St / Macdonnell Av	Signalized	NBL	44	10	40	12	19	 B	23.0	с	15.9	В
40	Princess St / Macdonnell Av	Signalized	NBT	26	10	40	11	17	В	23.0	č	13.5	
40	Princess St / Macdonnell Av	Signalized	NBR	17	10	40	7	12	В				
40	Princess St / Macdonnell Av	Signalized	SBL	7	40	40	15	22	c				
40	Princess St / Macdonnell Av	Signalized	SBT	14	40	40	9	13	В				
40	Princess St / Macdonnell Av	Signalized	SBR	56	40	40	2	9	A				
40	Princess St / Macdonnell Av		EBL	29	40 90	165	15	23	C				
40	Princess St / Macdonnell Av	Signalized Signalized	EBL	606	90	165	15	18	B				
40	Princess St / Macdonnell Av	-	EBR	30	90	165	8	10	B				
40	Princess St / Macdonnell Av	Signalized Signalized	WBL	0	50	50	0	0	A				
40	Princess St / Macdonnell Av	Signalized	WBL	366	50	50	9	13	B				
40	Princess St / Macdonnell Av	Signalized	WBR	5	50	50	7	9	A				
40 50	Princess St / Smith St	TWSC	SBL	2	40	40	0	0	A	17.0	с	2.6	Α
50	Princess St / Smith St	TWSC	SBL	14	40	40	5	17	C	17.0	L	2.0	A
50	Princess St / Smith St	TWSC	EBL	7	40	40	1	4	A				
50	Princess St / Smith St	TWSC	EBL	623	40	40	0	4	A				
50	Princess St / Smith St	TWSC	WBT	353	40	55	3	5	A				
50	Princess St / Smith St	TWSC	WBR	13	0	55	1	2	A				
50 60	Princess St / Smith St Princess St / Victoria St		NBL	35	10	35	19	2	C	26.0	с	8.7	A
60		Signalized			10	35		20	c	20.0	L	8.7	A
60	Princess St / Victoria St Princess St / Victoria St	Signalized	NBT NBR	25 45	10	35	17 8	15	B				
60	Princess St / Victoria St	Signalized	SBL	13	5	20	8 16	23	C				
60		Signalized	SBL		5	20		23	B				
60	Princess St / Victoria St	Signalized	SBR	52 0	5	20	15 0	0					
	Princess St / Victoria St	Signalized	-	-				•	A				
	Princess St / Victoria St	Signalized	EBL	2	20	85	0	3	A				
60	Princess St / Victoria St Princess St / Victoria St	Signalized	EBT	612 12	20 20	85	2	6	A				
60		Signalized	EBR			85	3	7	A				
60	Princess St / Victoria St	Signalized	WBL	34	35	65	10	14	B				
60 60	Princess St / Victoria St Princess St / Victoria St	Signalized Signalized	WBT	331	35	65	5 2	8 5	A				
70			WBR	86 1	35 0	65	0	0	A	10.0	с	20	•
70	Princess St / Nelson St Princess St / Nelson St	TWSC	NBL	7		45	6		A C	18.0	L	3.8	A
70	Princess St / Nelson St Princess St / Nelson St	TWSC	NBT	7	0	45	6 3	18					
		TWSC	NBR		0	45		14	B				
70	Princess St / Nelson St	TWSC	SBL	8	0	5	5	16	C				
70	Princess St / Nelson St	TWSC	SBT	0	0	5	0	0	A				
70	Princess St / Nelson St	TWSC	SBR	12	0	5	2	16	c				
70	Princess St / Nelson St	TWSC	EBL	77	10	90	2	7	A				
70	Princess St / Nelson St	TWSC	EBT	586	10	90	1	4	A				
70	Princess St / Nelson St	TWSC	EBR	9	10	90	2	5	A				
70	Princess St / Nelson St	TWSC	WBL	15	0	55	5	9	Α				
70	Princess St / Nelson St	TWSC	WBT	448		55	1	2	Α				



Node	Location	Control	Mvmt.	Volume	-	ıe (m)	Stop	Delay	LOS	Critical			ection
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
80	Princess St / Albert St	Signalized	NBL	15	5	15	17	23	С	37.0	D	15.1	В
80	Princess St / Albert St	Signalized	NBT	4	5	15	13	19	В				
80	Princess St / Albert St	Signalized	NBR	36	5	15	2	5	Α				
80	Princess St / Albert St	Signalized	SBL	4	5	15	4	14	В				
80	Princess St / Albert St	Signalized	SBT	30	5	15	8	11	В				
80	Princess St / Albert St	Signalized	SBR	53	5	15	2	6	Α				
80	Princess St / Albert St	Signalized	EBL	1	55	115	29	37	D				
80	Princess St / Albert St	Signalized	EBT	572	55	115	13	19	В				
80	Princess St / Albert St	Signalized	EBR	20	55	115	13	18	В				
80	Princess St / Albert St	Signalized	WBL	7	25	60	23	32	С				
80	Princess St / Albert St	Signalized	WBT	396	25	60	6	11	В				
80	Princess St / Albert St	Signalized	WBR	1	25	60	0	0	Α				
90	Princess St / Frontenac St	TWSC	NBL	1	0	5	0	6	Α	9.0	Α	1.7	Α
90	Princess St / Frontenac St	TWSC	NBT	1	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	NBR	1	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBL	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBT	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBR	3	0	5	2	9	Α				
90	Princess St / Frontenac St	TWSC	EBL	43	0	60	1	3	Α				
90	Princess St / Frontenac St	TWSC	EBT	568	0	60	0	2	Α				
90	Princess St / Frontenac St	TWSC	EBR	5	0	60	0	3	Α				
90	Princess St / Frontenac St	TWSC	WBL	12	0	0	0	3	Α				
90	Princess St / Frontenac St	TWSC	WBT	398	0	0	0	1	Α				
90	Princess St / Frontenac St	TWSC	WBR	2	0	0	0	0	Α				
100	Princess St / Alfred St	Signalized	NBL	68	25	45	17	25	С	28.0	С	23.5	С
100	Princess St / Alfred St	Signalized	NBT	89	25	45	15	22	С				
100	Princess St / Alfred St	Signalized	NBR	84	25	45	9	16	В				
100	Princess St / Alfred St	Signalized	SBL	26	25	50	17	27	С				
100	Princess St / Alfred St	Signalized	SBT	133	25	50	13	19	В				
100	Princess St / Alfred St	Signalized	SBR	98	25	50	6	12	В				
100	Princess St / Alfred St	Signalized	EBL	11	65	105	18	25	С				
100	Princess St / Alfred St	Signalized	EBT	534	65	105	20	28	С				
100	Princess St / Alfred St	Signalized	EBR	16	65	105	15	21	С				
100	Princess St / Alfred St	Signalized	WBL	12	35	60	21	27	с				
100	Princess St / Alfred St	Signalized	WBT	266	35	60	18	24	с				
100	Princess St / Alfred St	Signalized	WBR	19	35	60	3	8	Α				
110	Princess St / Chatham St	TWSC	SBL	0	5	5	0	0	Α	14.0	В	2.1	Α
110	Princess St / Chatham St	TWSC	SBR	24	5	5	1	14	В				
110	Princess St / Chatham St	TWSC	EBL	45	0	45	1	4	Α				
110	Princess St / Chatham St	TWSC	EBT	595	0	45	0	2	Α				
110	Princess St / Chatham St	TWSC	WBT	275	0	45	0	1	Α				
110	Princess St / Chatham St	TWSC	WBR	14	0	45	0	0	Α				
120	Princess St / University Av	Signalized	NBL	25	0	15	17	22	с	26.0	с	6.0	Α
120	Princess St / University Av	Signalized	NBR	26	0	15	2	7	Α		-		
120	Princess St / University Av	Signalized	EBT	500	20	70	2	5	A				
120	Princess St / University Av	Signalized	EBR	58	20	70	1	4	A				
120	Princess St / University Av	Signalized	WBL	8	10	30	18	26	C				
	Princess St / University Av	Signalized	WBT	265	10	30	3	6	A				
	Princess St / Division St	Signalized	NBL	55	5	20	13	22	c	27.0	с	15.7	В
	Princess St / Division St	Signalized	NBT	51	5	20	11	16	В		-		-
	Princess St / Division St	Signalized	NBR	1	5	20	0	0	A				
	Princess St / Division St	Signalized	SBL	143	5	55	3	5	A				
	Princess St / Division St	Signalized	SBT	143	5	55	3	4	A				
	Princess St / Division St	Signalized	SBR	219	5	55	0	4	A				
	Princess St / Division St	Signalized	EBL	132	35	50	19	27	C				
130	Princess St / Division St	Signalized	EBL	367	35	50	19	27	c				
TOO	THILESS SUT DIVISION SU	Signalized	LDI	307	35	30	19	21	L				



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
toue	Location	control		(AII)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
140	Concession St / Drayton Av	TWSC	NBR	8	0	5	31	42	E	42.0	E	7.3	Α
140	Concession St / Drayton Av	TWSC	EBT	936	0	120	3	7	Α				
140	Concession St / Drayton Av	TWSC	EBR	0	0	120	0	0	Α				
150	Concession St / Leroy Grant Dr (S)	TWSC	SBL	7	0	5	10	21	С	21.0	С	7.9	Α
150	Concession St / Leroy Grant Dr (S)	TWSC	EBL	39	55	75	1	4	Α				
150	Concession St / Leroy Grant Dr (S)	TWSC	EBT	869	55	75	4	8	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	NBL	28	5	5	2	9	Α	11.0	В	0.7	Α
155	Concession St / Leroy Grant Drive (N)	TWSC	NBT	11	5	5	2	10	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBT	7	0	5	1	11	В				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBR	76	0	5	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBT	557	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBR	26	0	0	0	1	Α				
160	Concession St / Macdonnell St	Signalized	NBL	64	10	25	20	26	С	48.0	D	13.8	В
160	Concession St / Macdonnell St	Signalized	NBT	0	10	25	0	0	A				
160	Concession St / Macdonnell St	Signalized	NBR	17	10	25	13	18	В				
160	Concession St / Macdonnell St	Signalized	SBR	41	0	5	1	3	A				
160	Concession St / Macdonnell St	Signalized	EBL	37	75	80	13	19	В				
160	Concession St / Macdonnell St	Signalized	EBT	701	75	80	7	11	В				
160	Concession St / Macdonnell St	Signalized	EBR	141	75	80	5	9	A				
160	Concession St / Macdonnell St	Signalized	WBL	71	20	85	39	48	D				
160	Concession St / Macdonnell St	Signalized	WBT	477	20	85	9	13	В				
160	Concession St / Macdonnell St	Signalized	WBR	1	20	85	0	0	A				
170	Concession St / Macdonnen St Concession St / Connaught St	TWSC	SBL	9	0	5	10	20	c	20.0	с	3.5	А
170		TWSC	SBR	6	0	5	8	18	c	20.0	Ľ	5.5	A
170	Concession St / Connaught St	TWSC	EBL	20	0	95	3	6	A				
170	Concession St / Connaught St	TWSC	EBL	696	0	95	1	2	A				
	Concession St / Connaught St				0		3						
170	Concession St / Connaught St	TWSC	WBT	542	-	85	-	5	A				
170	Concession St / Connaught St	TWSC	WBR	0	0	85	0	0	A		-		_
180	Concession St / Victoria St	Signalized	NBL	6	5	15	26	33	С	33.0	С	11.9	В
180	Concession St / Victoria St	Signalized	NBT	19	5	15	22	28	С				
180	Concession St / Victoria St	Signalized	NBR	38	5	15	5	11	В				
180	Concession St / Victoria St	Signalized	SBL	3	5	10	13	20	В				
180	Concession St / Victoria St	Signalized	SBT	33	5	10	22	27	С				
180	Concession St / Victoria St	Signalized	SBR	40	5	10	2	10	Α				
180	Concession St / Victoria St	Signalized	EBL	19	35	95	10	15	В				
180	Concession St / Victoria St	Signalized	EBT	662	35	95	7	10	Α				
180	Concession St / Victoria St	Signalized	EBR	9	35	95	6	11	В				
180	Concession St / Victoria St	Signalized	WBL	25	50	90	17	25	С				
180	Concession St / Victoria St	Signalized	WBT	501	50	90	7	12	В				
180	Concession St / Victoria St	Signalized	WBR	0	50	90	0	0	Α				
190	Concession St / Nelson St	TWSC	NBL	7	0	5	18	26	D	26.0	D	1.8	Α
190	Concession St / Nelson St	TWSC	NBT	0	0	5	0	0	Α				
190	Concession St / Nelson St	TWSC	NBR	3	0	5	2	10	Α				
190	Concession St / Nelson St	TWSC	SBL	0	5	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBT	0	5	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBR	25	5	5	0	6	Α				
190	Concession St / Nelson St	TWSC	EBL	38	0	85	2	5	Α				
190	Concession St / Nelson St	TWSC	EBT	664	0	85	1	1	Α				
190	Concession St / Nelson St	TWSC	EBR	0	0	85	0	0	Α				
190	Concession St / Nelson St	TWSC	WBL	0	0	40	0	0	Α				
190	Concession St / Nelson St	TWSC	WBT	492	0	40	1	2	Α				
190	Concession St / Nelson St	TWSC	WBR	0	0	40	0	0	A				



Node	Location	Control	Mymt.	Volume	Queu	e (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
200	Concession St / Kingscourt Av	TWSC	SBL	44	5	20	14	24	С	24.0	С	2.7	Α
200	Concession St / Kingscourt Av	TWSC	SBR	3	5	20	4	20	С				
200	Concession St / Kingscourt Av	TWSC	EBL	41	0	85	3	7	Α				
200	Concession St / Kingscourt Av	TWSC	EBT	626	0	85	1	3	Α				
200	Concession St / Kingscourt Av	TWSC	WBT	486	0	0	0	0	Α				
200	Concession St / Kingscourt Av	TWSC	WBR	4	0	0	0	0	Α				
210	Concession St / Fergus St	TWSC	SBL	44	5	15	33	43	E	43.0	E	4.9	Α
210	Concession St / Fergus St	TWSC	SBR	3	5	15	0	8	Α				
210	Concession St / Fergus St	TWSC	EBL	30	0	100	5	8	Α				
210	Concession St / Fergus St	TWSC	EBT	634	0	100	3	6	Α				
210	Concession St / Fergus St	TWSC	WBT	489	0	0	0	0	Α				
210	Concession St / Fergus St	TWSC	WBR	13	0	0	0	0	Α				
220	Concession St / Grey St	TWSC	SBL	43	5	45	90	104	F	141.0	F	10.5	В
220	Concession St / Grey St	TWSC	SBR	3	5	45	118	141	F				
220	Concession St / Grey St	TWSC	EBL	20	25	105	7	13	В				
220	Concession St / Grey St	TWSC	EBT	661	25	105	7	12	В				
220	Concession St / Grey St	TWSC	WBT	497	0	5	0	0	Α				
220	Concession St / Grey St	TWSC	WBR	22	0	5	0	0	Α				
230	Concession St / Alfred St	Signalized	NBL	44	5	25	16	22	С	22.0	С	11.9	В
230	Concession St / Alfred St	Signalized	NBT	10	5	25	16	20	В				
230	Concession St / Alfred St	Signalized	NBR	36	5	25	4	10	Α				
230	Concession St / Alfred St	Signalized	SBL	2	5	20	1	7	Α				
230	Concession St / Alfred St	Signalized	SBT	33	5	20	14	19	В				
230	Concession St / Alfred St	Signalized	SBR	39	5	20	5	10	Α				
230	Concession St / Alfred St	Signalized	EBL	34	55	60	12	18	В				
230	Concession St / Alfred St	Signalized	EBT	495	55	60	7	12	В				
230	Concession St / Alfred St	Signalized	EBR	174	55	60	1	3	Α				
230	Concession St / Alfred St	Signalized	WBL	28	40	85	13	20	В				
230	Concession St / Alfred St	Signalized	WBT	435	40	85	8	13	В				
230	Concession St / Alfred St	Signalized	WBR	0	40	85	0	0	Α				
240	Concession St / Lansdowne St	TWSC	NBL	0	0	0	0	0	Α	1.0	Α	0.5	Α
240	Concession St / Lansdowne St	TWSC	NBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	EBT	538	0	0	0	1	Α				
240	Concession St / Lansdowne St	TWSC	EBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	WBL	3	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	WBT	469	0	0	0	0	Α				
250	Concession St / Division St	Signalized	NBL	17	30	70	19	26	С	49.0	D	22.6	С
250	Concession St / Division St	Signalized	NBT	235	30	70	16	22	С				
250	Concession St / Division St	Signalized	NBR	40	30	70	11	17	В				
250	Concession St / Division St	Signalized	SBL	32	50	120	20	29	С				
250	Concession St / Division St	Signalized	SBT	394	50	120	17	23	С				
250	Concession St / Division St	Signalized	SBR	226	50	120	2	6	Α				
250	Concession St / Division St	Signalized	EBL	179	30	100	14	20	В				
250	Concession St / Division St	Signalized	EBT	335	30	100	11	16	В				
250	Concession St / Division St	Signalized	EBR	19	30	100	3	5	Α				
250	Concession St / Division St	Signalized	WBL	47	50	105	37	49	D				
250	Concession St / Division St	Signalized	WBT	230	50	105	35	45	D				
250	Concession St / Division St	Signalized	WBR	15	50	105	31	41	D				



Node	Location	Control	Mymt.	Volume	Quer	ıe (m)	Stop	Delay	LOS	Critical		Inters	ection
			-	(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
260	Adelaide St / Division St	TWSC	NBL	0	0	10	0	0	Α	12.0	В	0.7	A
260	Adelaide St / Division St	TWSC	NBT	278	0	10	0	0	Α				
260	Adelaide St / Division St	TWSC	NBR	3	0	10	0	0	Α				
260	Adelaide St / Division St	TWSC	SBL	11	0	30	0	1	Α				
260	Adelaide St / Division St	TWSC	SBT	393	0	30	0	1	Α				
260	Adelaide St / Division St	TWSC	SBR	58	0	30	0	0	Α				
260	Adelaide St / Division St	TWSC	EBL	5	0	5	5	12	В				
260	Adelaide St / Division St	TWSC	EBT	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	EBR	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBL	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBT	0	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBR	9	0	5	0	7	Α				
270	Stanley St / Division St	TWSC	NBL	12	0	5	1	3	Α	10.0	Α	2.0	Α
270	Stanley St / Division St	TWSC	NBT	236	0	5	0	0	Α				
270	Stanley St / Division St	TWSC	SBT	393	0	30	1	2	Α				
270	Stanley St / Division St	TWSC	SBR	0	0	30	0	0	Α				
270	Stanley St / Division St	TWSC	EBL	45	5	10	2	10	Α				
270	Stanley St / Division St	TWSC	EBR	16	5	10	2	9	Α				
280	Pine St / Division St	Signalized	NBL	7	5	20	10	15	В	30.0	С	8.6	Α
280	Pine St / Division St	Signalized	NBT	201	5	20	2	4	Α				
280	Pine St / Division St	Signalized	NBR	7	5	20	0	1	Α				
280	Pine St / Division St	Signalized	SBL	34	20	70	4	6	Α				
280	Pine St / Division St	Signalized	SBT	382	20	70	4	8	Α				
280	Pine St / Division St	Signalized	SBR	0	20	70	0	0	Α				
280	Pine St / Division St	Signalized	EBL	2	5	20	0	0	Α				
280	Pine St / Division St	Signalized	EBT	27	5	20	19	24	С				
280	Pine St / Division St	Signalized	EBR	45	5	20	6	11	В				
280	Pine St / Division St	Signalized	WBL	19	5	25	22	28	С				
280	Pine St / Division St	Signalized	WBT	15	5	25	22	30	С				
280	Pine St / Division St	Signalized	WBR	46	5	25	3	9	Α				
290	Quebec St / Division St	TWSC	NBT	214	0	0	0	0	Α	9.0	Α	0.9	Α
290	Quebec St / Division St	TWSC	NBR	3	0	0	0	0	Α				
290	Quebec St / Division St	TWSC	SBL	3	0	50	0	0	Α				
290	Quebec St / Division St	TWSC	SBT	439	0	50	0	1	Α				
290	Quebec St / Division St	TWSC	WBL	16	0	5	2	9	Α				
290	Quebec St / Division St	TWSC	WBR	2	0	5	0	0	Α				
300	York St / Division St	Signalized	NBL	0	20	35	0	0	Α	34.0	С	7.4	Α
300	York St / Division St	Signalized	NBT	195	20	35	3	5	Α				
300	York St / Division St	Signalized	NBR	15	20	35	0	2	Α				
300	York St / Division St	Signalized	SBL	53	15	50	5	8	Α				
300	York St / Division St	Signalized	SBT	410	15	50	3	5	Α				
300	York St / Division St	Signalized	SBR	0	15	50	0	0	Α				
300	York St / Division St	Signalized	EBL	0	5	15	0	0	Α				
300	York St / Division St	Signalized	EBT	28	5	15	25	30	С				
300	York St / Division St	Signalized	EBR	3	5	15	28	34	С				
300	York St / Division St	Signalized	WBL	23	5	20	21	27	С				
300	York St / Division St	Signalized	WBT	12	5	20	21	28	С				
300	York St / Division St	Signalized	WBR	22	5	20	6	13	В				
310	Main St / Division St	TWSC	NBT	203	0	5	0	2	Α	8.0	Α	0.8	Α
310	Main St / Division St	TWSC	NBR	0	0	5	0	0	Α				
310	Main St / Division St	TWSC	SBL	17	35	40	0	1	Α				
310	Main St / Division St	TWSC	SBT	418	35	40	0	0	Α				
310	Main St / Division St	TWSC	WBL	2	0	5	0	8	Α				
310	Main St / Division St	TWSC	WBR	6	0	5	1	8	Α				
320	Hamilton St / Division St	TWSC	NBL	2	0	0	0	0	Α	7.0	Α	0.1	Α
320	Hamilton St / Division St	TWSC	NBT	192	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	SBT	397	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	SBR	25	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	EBL	11	0	5	1	7	Α				
320	Hamilton St / Division St	TWSC	EBR	2	0	5	0	6	Α				



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Noue	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
330	Raglan St / Division St	TWSC	NBT	190	0	0	0	0	Α	10.0	Α	0.4	Α
330	Raglan St / Division St	TWSC	NBR	15	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	SBL	9	0	0	0	1	Α				
330	Raglan St / Division St	TWSC	SBT	387	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	WBL	22	5	5	2	10	Α				
330	Raglan St / Division St	TWSC	WBR	4	5	5	0	7	Α				
340	Elm St / Division St	TWSC	NBL	1	0	0	0	1	Α	8.0	Α	0.2	Α
340	Elm St / Division St	TWSC	NBT	192	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBT	391	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBR	18	0	0	0	1	Α				
340	Elm St / Division St	TWSC	EBL	12	0	5	1	8	Α				
340	Elm St / Division St	TWSC	EBR	0	0	5	0	0	Α				
350	Ellice St / Division St	TWSC	NBT	190	0	0	0	0	Α	13.0	В	0.2	Α
350	Ellice St / Division St	TWSC	NBR	2	0	0	0	0	Α				
350	Ellice St / Division St	TWSC	SBL	12	0	0	0	1	Α				
350	Ellice St / Division St	TWSC	SBT	379	0	0	0	0	Α				
350	Ellice St / Division St	TWSC	WBL	8	0	5	4	13	В				
350	Ellice St / Division St	TWSC	WBR	4	0	5	0	7	Α				
360	Colborne St / Division St	TWSC	NBL	0	0	20	0	0	Α	12.0	В	1.2	Α
360	Colborne St / Division St	TWSC	NBT	181	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	NBR	1	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	SBL	7	0	20	1	3	Α				
360	Colborne St / Division St	TWSC	SBT	372	0	20	0	1	Α				
360	Colborne St / Division St	TWSC	SBR	5	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	EBL	9	5	5	1	9	Α				
360	Colborne St / Division St	TWSC	EBT	9	5	5	2	10	Α				
360	Colborne St / Division St	TWSC	EBR	7	5	5	1	9	Α				
360	Colborne St / Division St	TWSC	WBL	7	0	5	4	12	В				
360	Colborne St / Division St	TWSC	WBT	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBR	3	0	5	0	7	Α				
370	Queen St / Division St	Signalized	NBT	66	10	25	7	10	Α	23.0	С	15.4	В
370	Queen St / Division St	Signalized	NBR	116	10	25	1	9	Α				
370	Queen St / Division St	Signalized	SBL	120	45	75	15	23	С				
370	Queen St / Division St	Signalized	SBT	265	45	75	14	20	В				
370	Queen St / Division St	Signalized	WBL	196	20	35	11	17	В				
370	Queen St / Division St	Signalized	WBR	116	20	35	0	4	Α				

2036 No Mitigation - Ultimate Growth, 22% Auto M.S. - PM Peak

Measures of Effectiveness Details



ID	Intersection Name	Control Type	Number of Vehicles	50th %'ile Queue (m)	95th %'ile Queue (m)	Avg. Vehicle Delay (sec)	Avg. Stop Delay (sec)	LO S
10	Princess St / Concession St	Signalized	3,641	157.4	218.3	55.8	45.5	Е
20	Princess St / Regent St	TWSC	1,245	0.1	28.5	1.9	0.5	-
30	Princess St / Drayton Av	TWSC	1,188	4.4	26.6	2.4	0.3	-
40	Princess St / Macdonnell Av	Signalized	1,226	64.2	125.2	18.8	12.6	В
50	Princess St / Smith St	TWSC	977	27.9	54.7	3.2	1.4	-
60	Princess St / Victoria St	Signalized	1,398	27.1	81.9	11.7	6.7	в
70	Princess St / Nelson St	TWSC	1,272	10.7	69.2	3.9	1.4	-
80	Princess St / Albert St	Signalized	1,284	32.1	66.8	14.2	9.3	В
90	Princess St / Frontenac St	TWSC	1,062	3.0	50.9	2.1	0.7	-
100	Princess St / Alfred St	Signalized	1,426	52.1	80.5	24.4	17.3	С
110	Princess St / Chatham St	TWSC	1,141	12.9	70.3	3.2	0.7	-
120	Princess St / University Av	Signalized	1,007	23.7	56.7	8.4	4.5	Α
130	Princess St / Division St	Signalized	1,324	22.8	57.2	15.9	10.8	в
140	Concession St / Drayton Av	TWSC	1,232	318.8	318.9	58.0	28.2	-
150	Concession St / Leroy Grant Dr (S)	TWSC	1,209	73.7	73.9	33.2	18.1	-
155	Concession St / Leroy Grant Drive (N)	TWSC	1,555	4.8	5.3	5.2	3.1	-
160	Concession St / Macdonnell St	Signalized	2,511	73.7	82.6	16.8	11.6	В
170	Concession St / Connaught St	TWSC	1,991	77.6	105.0	8.4	4.8	-
180	Concession St / Victoria St	Signalized	2,189	93.1	97.5	17.0	10.6	В
190	Concession St / Nelson St	TWSC	1,950	50.8	91.9	9.8	6.0	-
200	Concession St / Kingscourt Av	TWSC	1,852	52.7	94.3	9.4	5.6	-
210	Concession St / Fergus St	TWSC	1,848	56.0	99.5	10.8	6.1	-
220	Concession St / Grey St	TWSC	1,855	50.7	79.4	9.3	6.1	-
230	Concession St / Alfred St	Signalized	1,990	79.9	117.7	28.0	19.8	С
240	Concession St / Lansdowne St	TWSC	1,289	0.0	75.0	3.8	1.3	-
250	Concession St / Division St	Signalized	2,390	104.4	162.4	41.9	32.8	D
260	Adelaide St / Division St	TWSC	1,271	60.8	91.4	24.6	19.1	-
270	Stanley St / Division St	TWSC	1,139	45.6	55.1	13.1	8.0	-
280	Pine St / Division St	Signalized	1,242	49.7	70.3	21.4	15.1	С
290	Quebec St / Division St	TWSC	1,054	40.9	82.2	7.9	4.9	-
300	York St / Division St	Signalized	1,164	26.8	44.1	9.8	7.1	Α
310	Main St / Division St	TWSC	1,032	46.8	51.8	11.1	7.4	-
320	Hamilton St / Division St	TWSC	1,066	66.1	66.2	18.0	11.9	-
330	Raglan St / Division St	TWSC	1,078	23.9	35.9	6.2	4.6	-
340	Elm St / Division St	TWSC	1,192	15.8	50.2	7.2	4.7	-
350	Ellice St / Division St	TWSC	1,134	9.8	36.0	3.9	2.1	-
360	Colborne St / Division St	TWSC	1,174	13.0	179.0	6.9	4.3	-
370	Queen St / Division St	Signalized	1,490	42.8	133.4	23.6	13.2	С
	Total		56,088	1,917	3,286	571	368	



Node	Location	Control	Mvmt.	Volume		ıe (m)	Stop	Delay	LOS	Critical		-	ection
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
10	Princess St / Concession St	Signalized	NBL	221	30	60	32	40	D	117.0	F	55.8	E
10	Princess St / Concession St	Signalized	NBT	200	30	60	34	41	D				
10	Princess St / Concession St	Signalized	NBR	12	30	60	29	38	D				
10	Princess St / Concession St	Signalized	SBL	706	390	430	88	106	F				
10	Princess St / Concession St	Signalized	SBT	470	390	430	76	92	F				
10	Princess St / Concession St	Signalized	SBR	0	390	430	0	0	Α				
10	Princess St / Concession St	Signalized	EBT	351	50	250	93	117	F				
10	Princess St / Concession St	Signalized	EBR	283	50	250	10	16	В				
10	Princess St / Concession St	Signalized	WBT	521	50	75	31	38	D				
10	Princess St / Concession St	Signalized	WBR	843	50	75	0	0	Α				
10	Princess St / Concession St	Signalized	WBL	34	50	75	60	70	E				
20	Princess St / Regent St	TWSC	NBL	0	5	5	0	0	Α	10.0	Α	1.9	Α
20	Princess St / Regent St	TWSC	NBR	33	5	5	2	10	Α				
20	Princess St / Regent St	TWSC	EBT	665	0	35	0	2	Α				
20	Princess St / Regent St	TWSC	EBR	75	0	35	0	1	Α				
20	Princess St / Regent St	TWSC	WBL	34	0	20	4	7	A				
20	Princess St / Regent St	TWSC	WBT	438	0	20	1	1	A				
30	Princess St / Drayton Av	TWSC	SBL	8	45	50	9	24	C	24.0	с	2.4	A
30	Princess St / Drayton Av	TWSC	SBR	108 20	45 0	50 10	2	14 2	B			_	
30 30	Princess St / Drayton Av Princess St / Drayton Av	TWSC	EBL	676	0	10	1	1	A				
30	Princess St / Drayton Av	TWSC	WBT	365	0	50	0	1	A				
30	Princess St / Drayton Av	TWSC	WBR	11	0	50	0	1	A				
40	Princess St / Macdonnell Av	Signalized	NBL	11	10	35	13	21	c	26.0	с	18.8	В
40	Princess St / Macdonnell Av	Signalized	NBT	90	10	35	12	17	В	20.0		10.0	
40	Princess St / Macdonnell Av	Signalized	NBR	22	10	35	7	12	В				
40	Princess St / Macdonnell Av	Signalized	SBL	5	40	40	17	26	c				
40	Princess St / Macdonnell Av	Signalized	SBT	59	40	40	14	20	В				
40	Princess St / Macdonnell Av	Signalized	SBR	35	40	40	4	8	A				
40	Princess St / Macdonnell Av	Signalized	EBL	32	85	190	18	25	c				
40	Princess St / Macdonnell Av	Signalized	EBT	606	85	190	14	21	c				
40	Princess St / Macdonnell Av	Signalized	EBR	29	85	190	11	17	В				
40	Princess St / Macdonnell Av	Signalized	WBL	0	50	55	0	0	A				
40	Princess St / Macdonnell Av	Signalized	WBT	329	50	55	11	16	В				
40	Princess St / Macdonnell Av	Signalized	WBR	7	50	55	8	13	В				
50	Princess St / Smith St	TWSC	SBL	1	40	40	1	13	B	17.0	с	3.2	Α
50	Princess St / Smith St	TWSC	SBR	5	40	40	6	17	c	17.0		5.2	~
50	Princess St / Smith St	TWSC	EBL	40	40	60	1	2	A				
50	Princess St / Smith St	TWSC	EBT	594	40	60	0	1	A				
50	Princess St / Smith St	TWSC	WBT	334	5	45	4	7	A				
50	Princess St / Smith St	TWSC	WBR	3	5	45	0	0	A				
60	Princess St / Victoria St	Signalized	NBL	7	20	45	20	28	c	31.0	с	11.7	В
60	Princess St / Victoria St	Signalized	NBT	93	20	45	17	23	c	51.0	Ľ	11.7	
60	Princess St / Victoria St	Signalized	NBR	56	20	45	10	17	В				
60	Princess St / Victoria St	Signalized	SBL	75	20	35	22	31	c				
60	Princess St / Victoria St	Signalized	SBT	49	20	35	20	29	c				
60	Princess St / Victoria St	Signalized	SBR	49	20	35	0	0	A				
	Princess St / Victoria St	Signalized	EBL	23	15	90	11	16	B			-	
60	Princess St / Victoria St	Signalized	EBL	554	15	90	1	5	A				
60	Princess St / Victoria St	Signalized	EBR	21	15	90	1	5	A				
60	Princess St / Victoria St	Signalized	WBL	16	45	95	15	20	B				
60	Princess St / Victoria St	Signalized	WBT	339	45	95	7	11	В				
60	Princess St / Victoria St	Signalized	WBR	164	45	95	6	12	В				
70	Princess St / Nelson St	TWSC	NBL	164	45 5	45	8	20	C	20.0	с	3.9	A
70	Princess St / Nelson St	TWSC	NBT	2	5	45	8 1	12	В	20.0	Ľ	3.5	
70	Princess St / Nelson St	TWSC	NBR	6	5	45	1	12	B				
				0	0	45	0	0	A				
70	Princess St / Nelson St	TWSC	SBL										
70	Princess St / Nelson St	TWSC	SBT	5	0	5	9	19	c				
70	Princess St / Nelson St	TWSC	SBR	0	0	5	0	0	A				
70	Princess St / Nelson St	TWSC	EBL	82	0	70	4	9	A				
70	Princess St / Nelson St	TWSC	EBT	609	0	70	1	3	A				
70	Princess St / Nelson St	TWSC	EBR	9	0	70	1	3	A				
70	Princess St / Nelson St	TWSC	WBL	27	25	70	6	10	Α				
70	Princess St / Nelson St	TWSC	WBT	511	25	70	1	3	Α				



Node	Location	Control	Mvmt.	Volume		ue (m)	Stop	Delay	LOS	Critical		Inters	
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
80	Princess St / Albert St	Signalized	NBL	57	10	35	14	20	В	33.0	с	14.2	В
80	Princess St / Albert St	Signalized	NBT	11	10	35	12	18	В				
80	Princess St / Albert St	Signalized	NBR	49	10	35	5	10	Α				
80	Princess St / Albert St	Signalized	SBL	3	5	30	15	27	С				
80	Princess St / Albert St	Signalized	SBT	30	5	30	14	18	В				
80	Princess St / Albert St	Signalized	SBR	101	5	30	2	7	Α				
80	Princess St / Albert St	Signalized	EBL	32	50	95	23	33	С				
80	Princess St / Albert St	Signalized	EBT	578	50	95	11	16	В				
80	Princess St / Albert St	Signalized	EBR	13	50	95	6	13	В				
80	Princess St / Albert St	Signalized	WBL	8	20	45	18	23	С				
80	Princess St / Albert St	Signalized	WBT	391	20	45	7	11	В				
80	Princess St / Albert St	Signalized	WBR	11	20	45	9	15	В				
90	Princess St / Frontenac St	TWSC	NBL	1	0	20	0	0	Α	19.0	с	2.1	Α
90	Princess St / Frontenac St	TWSC	NBT	12	0	20	9	19	С				
90	Princess St / Frontenac St	TWSC	NBR	2	0	20	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBL	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBT	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBR	1	0	0	0	8	Α				
90	Princess St / Frontenac St	TWSC	EBL	84	5	85	1	4	Α				
90	Princess St / Frontenac St	TWSC	EBT	547	5	85	1	3	Α				
90	Princess St / Frontenac St	TWSC	EBR	1	5	85	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBL	5	0	0	1	3	Α				
90	Princess St / Frontenac St	TWSC	WBT	407	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBR	2	0	0	0	0	Α				
100	Princess St / Alfred St	Signalized	NBL	58	30	55	13	20	В	36.0	D	24.4	С
100	Princess St / Alfred St	Signalized	NBT	132	30	55	12	19	В				
100	Princess St / Alfred St	Signalized	NBR	118	30	55	9	14	В				
100	Princess St / Alfred St	Signalized	SBL	73	15	30	17	25	С				
100	Princess St / Alfred St	Signalized	SBT	44	15	30	15	24	С				
100	Princess St / Alfred St	Signalized	SBR	23	15	30	8	14	В				
100	Princess St / Alfred St	Signalized	EBL	40	75	100	26	36	D				
100	Princess St / Alfred St	Signalized	EBT	495	75	100	20	28	С				
100	Princess St / Alfred St	Signalized	EBR	28	75	100	16	24	С				
100	Princess St / Alfred St	Signalized	WBL	59	50	90	13	20	В				
100	Princess St / Alfred St	Signalized	WBT	333	50	90	20	26	С				
100	Princess St / Alfred St	Signalized	WBR	23	50	90	15	22	С				
110	Princess St / Chatham St	TWSC	SBL	1	0	5	0	0	Α	19.0	С	3.2	Α
110	Princess St / Chatham St	TWSC	SBR	12	0	5	3	19	С				
110	Princess St / Chatham St	TWSC	EBL	119	15	75	1	5	Α				
110	Princess St / Chatham St	TWSC	EBT	567	15	75	1	4	Α				
110	Princess St / Chatham St	TWSC	WBT	399	10	65	0	1	Α				
110	Princess St / Chatham St	TWSC	WBR	43	10	65	1	3	Α				
120	Princess St / University Av	Signalized	NBL	95	10	25	18	24	С	24.0	С	8.4	Α
120	Princess St / University Av	Signalized	NBR	5	10	25	5	10	Α				
120	Princess St / University Av	Signalized	EBT	501	35	70	3	7	Α				
120	Princess St / University Av	Signalized	EBR	49	35	70	2	5	Α				
120	Princess St / University Av	Signalized	WBL	21	10	45	10	15	В				
120	Princess St / University Av	Signalized	WBT	336	10	45	3	6	Α				
130	Princess St / Division St	Signalized	NBL	74	25	45	14	23	С	27.0	С	15.9	В
130	Princess St / Division St	Signalized	NBT	185	25	45	13	19	В				
130	Princess St / Division St	Signalized	NBR	11	25	45	6	11	В				
130	Princess St / Division St	Signalized	SBL	145	15	70	9	14	В				
130	Princess St / Division St	Signalized	SBT	117	15	70	4	6	Α				
130	Princess St / Division St	Signalized	SBR	283	15	70	0	1	Α				
130	Princess St / Division St	Signalized	EBL	85	30	50	19	27	С				
130	Princess St / Division St	Signalized	EBT	366	30	50	19	26	С				
	Princess St / Division St	Signalized	EBR	58	30	50	7	15	В				



Node	Location	Control	Mymt.	Volume	Queu	e (m)	Stop	Delay	LOS	Critical	Mvmt	Interse	ection
Noue	Location	control	www.	(All)	50th	95th	Delay (s)	(s)	105	Delay	LOS	Delay	LOS
140	Concession St / Drayton Av	TWSC	NBR	5	35	60	1040	1061	F	1061.0	F	58.0	F
140	Concession St / Drayton Av	TWSC	EBT	1,176	320	320	24	54	F				
140	Concession St / Drayton Av	TWSC	EBR	51	320	320	27	51	F				
150	Concession St / Leroy Grant Dr (S)	TWSC	SBL	21	0	10	15	28	D	48.0	E	33.2	D
150	Concession St / Leroy Grant Dr (S)	TWSC	EBL	162	75	75	32	48	E				
150	Concession St / Leroy Grant Dr (S)	TWSC	EBT	1,026	75	75	16	31	D				
155	Concession St / Leroy Grant Drive (N)	TWSC	NBL	78	45	50	26	44	E	49.0	E	5.2	Α
155	Concession St / Leroy Grant Drive (N)	TWSC	NBT	84	45	50	30	49	E				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBT	21	5	5	15	26	D				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBR	5	5	5	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBT	1,326	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBR	41	0	0	0	1	Α				
160	Concession St / Macdonnell St	Signalized	NBL	249	45	80	27	36	D	60.0	E	16.8	В
160	Concession St / Macdonnell St	Signalized	NBT	24	45	80	29	36	D				
160	Concession St / Macdonnell St	Signalized	NBR	29	45	80	24	32	С				
160	Concession St / Macdonnell St	Signalized	SBR	71	5	20	10	15	В				
160	Concession St / Macdonnell St	Signalized	EBL	55	75	80	49	60	E				
160	Concession St / Macdonnell St	Signalized	EBT	885	75	80	8	13	В				
160	Concession St / Macdonnell St	Signalized	EBR	116	75	80	7	12	В				
160	Concession St / Macdonnell St	Signalized	WBL	29	85	90	42	52	D				
160	Concession St / Macdonnell St	Signalized	WBT	1,053	85	90	8	12	В				
160	Concession St / Macdonnell St	Signalized	WBR	0	85	90	0	0	Α				
170	Concession St / Connaught St	TWSC	SBL	0	0	5	0	0	Α	33.0	D	8.4	Α
170	Concession St / Connaught St	TWSC	SBR	15	0	5	21	33	D				
170	Concession St / Connaught St	TWSC	EBL	0	35	95	0	0	Α				
170	Concession St / Connaught St	TWSC	EBT	909	35	95	2	5	Α				
170	Concession St / Connaught St	TWSC	WBT	1,067	115	115	7	11	В				
170	Concession St / Connaught St	TWSC	WBR	0	115	115	0	0	A				
180	Concession St / Victoria St	Signalized	NBL	29	20	45	34	46	D	46.0	D	17.0	В
180	Concession St / Victoria St	Signalized	NBT	49	20	45	26	34	c		_		-
180	Concession St / Victoria St	Signalized	NBR	75	20	45	18	27	c				
180	Concession St / Victoria St	Signalized	SBL	3	0	10	24	32	c				
180	Concession St / Victoria St	Signalized	SBT	22	0	10	24	29	c				
180	Concession St / Victoria St	Signalized	SBR	36	0	10	9	22	c				
180	Concession St / Victoria St	Signalized	EBL	21	115	115	30	39	D				
180	Concession St / Victoria St	Signalized	EBT	806	115	115	8	14	B				
180	Concession St / Victoria St	Signalized	EBR	92	115	115	7	13	B				
180	Concession St / Victoria St	Signalized	WBL	40	90	95	25	33	c				
180	Concession St / Victoria St	Signalized	WBT	1,000	90	95	10	16	В				
180	Concession St / Victoria St	Signalized	WBR	1,000	90	95	0	10	A				
190	Concession St / Nelson St	TWSC	NBL	7	0	5	202	221	F	221.0	F	9.8	Α
190	Concession St / Nelson St	TWSC	NBL	0	0	5	0	0	г А	221.0	F	5.0	A
190		TWSC	NBR	7	0	5	3	9	A				
190	Concession St / Nelson St	TWSC	SBL	0	0	5	0	0	A				
	Concession St / Nelson St				0	5	0	0					
190	Concession St / Nelson St	TWSC	SBT	0				-	A				
190	Concession St / Nelson St	TWSC	SBR	12	0	5	0	6	A				
190	Concession St / Nelson St	TWSC	EBL	0	0	85	0	0	A				
190	Concession St / Nelson St	TWSC	EBT	813	0	85	1	2	A				
190	Concession St / Nelson St	TWSC	EBR	69	0	85	1	3	A				
190	Concession St / Nelson St	TWSC	WBL	13	95	100	5	12	B				
190	Concession St / Nelson St	TWSC	WBT	1,029	95	100	9	15	В				
190	Concession St / Nelson St	TWSC	WBR	0	95	100	0	0	Α	1			



Node	Location	Control	Mymt.	Volume	Queu	e (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
14006			www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
200	Concession St / Kingscourt Av	TWSC	SBL	0	0	15	0	0	Α	46.0	E	9.4	Α
200	Concession St / Kingscourt Av	TWSC	SBR	16	0	15	31	46	E				
200	Concession St / Kingscourt Av	TWSC	EBL	2	0	95	33	41	E				
200	Concession St / Kingscourt Av	TWSC	EBT	807	0	95	2	4	Α				
200	Concession St / Kingscourt Av	TWSC	WBT	1,027	95	95	8	13	В				
200	Concession St / Kingscourt Av	TWSC	WBR	0	95	95	0	0	Α				
210	Concession St / Fergus St	TWSC	SBL	11	0	10	76	89	F	89.0	F	10.8	В
210	Concession St / Fergus St	TWSC	SBR	0	0	10	0	0	Α				
210	Concession St / Fergus St	TWSC	EBL	0	0	100	0	0	Α				
210	Concession St / Fergus St	TWSC	EBT	803	0	100	4	7	Α				
210	Concession St / Fergus St	TWSC	WBT	1,030	100	100	7	13	В				
210	Concession St / Fergus St	TWSC	WBR	4	100	100	0	2	Α				
220	Concession St / Grey St	TWSC	SBL	0	0	5	0	0	Α	25.0	С	9.3	Α
220	Concession St / Grey St	TWSC	SBR	15	0	5	14	25	С				
220	Concession St / Grey St	TWSC	EBL	0	65	105	0	0	Α				
220	Concession St / Grey St	TWSC	EBT	816	65	105	11	17	С				
220	Concession St / Grey St	TWSC	WBT	1,019	40	60	2	3	Α				
220	Concession St / Grey St	TWSC	WBR	5	40	60	1	4	Α				
230	Concession St / Alfred St	Signalized	NBL	266	95	215	60	79	E	84.0	F	28.0	С
230	Concession St / Alfred St	Signalized	NBT	34	95	215	65	84	F				
230	Concession St / Alfred St	Signalized	NBR	26	95	215	52	72	Е				
230	Concession St / Alfred St	Signalized	SBL	0	5	15	0	0	Α				
230	Concession St / Alfred St	Signalized	SBT	36	5	15	16	21	С				
230	Concession St / Alfred St	Signalized	SBR	21	5	15	8	13	В				
230	Concession St / Alfred St	Signalized	EBL	22	55	60	25	33	С				
230	Concession St / Alfred St	Signalized	EBT	482	55	60	12	16	В				
230	Concession St / Alfred St	Signalized	EBR	316	55	60	3	5	Α				
230	Concession St / Alfred St	Signalized	WBL	47	105	145	16	26	с				
230	Concession St / Alfred St	Signalized	WBT	740	105	145	15	24	С				
230	Concession St / Alfred St	Signalized	WBR	0	105	145	0	0	Α				
240	Concession St / Lansdowne St	TWSC	NBL	3	0	5	13	21	С	21.0	С	3.8	Α
240	Concession St / Lansdowne St	TWSC	NBR	17	0	5	2	15	В		-		
240	Concession St / Lansdowne St	TWSC	EBT	464	0	0	0	1	Α				
240	Concession St / Lansdowne St	TWSC	EBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	WBL	43	0	120	3	6	Α				
240	Concession St / Lansdowne St	TWSC	WBT	762	0	120	2	5	Α				
250	Concession St / Division St	Signalized	NBL	149	115	115	48	62	E	88.0	F	41.9	D
250	Concession St / Division St	Signalized	NBT	560	115	115	34	42	D				
250	Concession St / Division St	Signalized	NBR	13	115	115	31	39	D				
250	Concession St / Division St	Signalized	SBL	27	70	225	33	44	D				
250	Concession St / Division St	Signalized	SBT	465	70	225	18	25	c				
250	Concession St / Division St	Signalized	SBR	237	70	225	6	14	В				
250	Concession St / Division St	Signalized	EBL	225	40	90	22	30	c				
250	Concession St / Division St	Signalized	EBT	207	40	90	12	17	В				
250	Concession St / Division St	Signalized	EBR	35	40	90	4	6	A				
250	Concession St / Division St	Signalized	WBL	43	205	210	73	88	F				
250	Concession St / Division St	Signalized	WBL	396	205	210	73	85	F				
250	Concession St / Division St	Signanzed	WBR	390	205	210	71	85	F				



Node	Location	Control	Mvmt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
vode	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
260	Adelaide St / Division St	TWSC	NBL	0	110	110	0	0	Α	475.0	F	24.6	С
260	Adelaide St / Division St	TWSC	NBT	702	110	110	24	32	D				
260	Adelaide St / Division St	TWSC	NBR	0	110	110	0	0	Α				
260	Adelaide St / Division St	TWSC	SBL	0	0	70	0	0	Α				
260	Adelaide St / Division St	TWSC	SBT	427	0	70	0	2	Α				
260	Adelaide St / Division St	TWSC	SBR	115	0	70	0	1	Α				
260	Adelaide St / Division St	TWSC	EBL	16	5	60	458	475	F				
260	Adelaide St / Division St	TWSC	EBT	0	5	60	0	0	Α				
260	Adelaide St / Division St	TWSC	EBR	0	5	60	0	0	Α				
260	Adelaide St / Division St	TWSC	WBL	8	0	5	19	29	D				
260	Adelaide St / Division St	TWSC	WBT	3	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBR	0	0	5	0	0	Α				
270	Stanley St / Division St	TWSC	NBL	0	75	75	0	0	Α	40.0	E	13.1	В
270	Stanley St / Division St	TWSC	NBT	692	75	75	12	19	С				
270	Stanley St / Division St	TWSC	SBT	377	0	25	1	3	Α				
270	Stanley St / Division St	TWSC	SBR	56	0	25	1	2	Α				
270	Stanley St / Division St	TWSC	EBL	14	0	5	30	40	E				
270	Stanley St / Division St	TWSC	EBR	0	0	5	0	0	Α				
280	Pine St / Division St	Signalized	NBL	40	75	80	15	22	С	45.0	D	21.4	С
280	Pine St / Division St	Signalized	NBT	622	75	80	17	24	с				
280	Pine St / Division St	Signalized	NBR	0	75	80	0	0	Α				
280	Pine St / Division St	Signalized	SBL	28	25	70	19	25	С				
280	Pine St / Division St	Signalized	SBT	339	25	70	6	10	Α				
280	Pine St / Division St	Signalized	SBR	13	25	70	4	7	Α				
280	Pine St / Division St	Signalized	EBL	5	10	30	16	24	С				
280	Pine St / Division St	Signalized	EBT	43	10	30	25	31	с				
280	Pine St / Division St	Signalized	EBR	35	10	30	7	13	В				
280	Pine St / Division St	Signalized	WBL	6	15	45	34	43	D				
280	Pine St / Division St	Signalized	WBT	46	15	45	35	45	D				
280	Pine St / Division St	Signalized	WBR	65	15	45	27	37	D				
290	Quebec St / Division St	TWSC	NBT	664	65	85	7	11	В	20.0	С	7.9	Α
290	Quebec St / Division St	TWSC	NBR	0	65	85	0	0	Α				
290	Quebec St / Division St	TWSC	SBL	0	0	80	0	0	Α				
290	Quebec St / Division St	TWSC	SBT	376	0	80	1	2	Α				
290	Quebec St / Division St	TWSC	WBL	14	0	5	13	20	С				
290	Quebec St / Division St	TWSC	WBR	0	0	5	0	0	Α				
300	York St / Division St	Signalized	NBL	1	35	35	0	2	Α	31.0	С	9.8	Α
300	York St / Division St	Signalized	NBT	625	35	35	5	7	Α				
300	York St / Division St	Signalized	NBR	6	35	35	0	0	Α				
300	York St / Division St	Signalized	SBL	36	20	65	16	22	с				
300	York St / Division St	Signalized	SBT	358	20	65	5	7	Α				
300	York St / Division St	Signalized	SBR	0	20	65	0	0	Α				
300	York St / Division St	Signalized	EBL	0	5	15	0	0	Α				
300	York St / Division St	Signalized	EBT	33	5	15	25	29	с				
300	York St / Division St	Signalized	EBR	1	5	15	0	0	Α				
300	York St / Division St	Signalized	WBL	38	10	30	21	27	с				
300	York St / Division St	Signalized	WBT	26	10	30	23	31	С				
	York St / Division St	Signalized	WBR	40	10	30	13	23	С				
310	Main St / Division St	TWSC	NBT	628	55	60	12	18	C	31.0	D	11.1	В
310	Main St / Division St	TWSC	NBR	0	55	60	0	0	Α				
310	Main St / Division St	TWSC	SBL	0	35	40	0	0	Α				
	Main St / Division St	TWSC	SBT	394	35	40	0	0	Α				
310	Main St / Division St	TWSC	WBL	8	0	5	5	13	В				
310	Main St / Division St	TWSC	WBR	2	0	5	19	31	D				
320	Hamilton St / Division St	TWSC	NBL	14	110	110	12	20	C	30.0	D	18.0	С
320	Hamilton St / Division St	TWSC	NBT	627	110	110	20	30	D		-		-
320	Hamilton St / Division St	TWSC	SBT	378	0	0	0	0	A				
320	Hamilton St / Division St	TWSC	SBR	29	0	0	0	0	A				
320	Hamilton St / Division St	TWSC	EBL	0	0	5	0	0	Α				
	Hamilton St / Division St	TWSC	EBR	18	0	5	1	8	A				



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Interse	ection
Noue	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
330	Raglan St / Division St	TWSC	NBT	624	40	60	7	9	Α	26.0	D	6.2	Α
330	Raglan St / Division St	TWSC	NBR	14	40	60	7	12	В				
330	Raglan St / Division St	TWSC	SBL	5	0	0	2	7	Α				
330	Raglan St / Division St	TWSC	SBT	391	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	WBL	29	5	10	7	16	с				
330	Raglan St / Division St	TWSC	WBR	15	5	10	16	26	D				
340	Elm St / Division St	TWSC	NBL	124	25	60	6	10	Α	37.0	E	7.2	Α
340	Elm St / Division St	TWSC	NBT	625	25	60	7	10	Α				
340	Elm St / Division St	TWSC	SBT	370	0	35	0	1	Α				
340	Elm St / Division St	TWSC	SBR	49	0	35	1	2	Α				
340	Elm St / Division St	TWSC	EBL	13	5	10	26	37	E				
340	Elm St / Division St	TWSC	EBR	11	5	10	8	16	с				
350	Ellice St / Division St	TWSC	NBT	737	15	55	3	5	Α	22.0	С	3.9	Α
350	Ellice St / Division St	TWSC	NBR	5	15	55	4	5	Α				
350	Ellice St / Division St	TWSC	SBL	2	0	0	5	8	Α				
350	Ellice St / Division St	TWSC	SBT	377	0	0	0	1	Α				
350	Ellice St / Division St	TWSC	WBL	0	0	5	0	0	Α				
350	Ellice St / Division St	TWSC	WBR	13	0	5	12	22	с				
360	Colborne St / Division St	TWSC	NBL	44	20	260	5	9	Α	33.0	D	6.9	Α
360	Colborne St / Division St	TWSC	NBT	712	20	260	5	8	Α				
360	Colborne St / Division St	TWSC	NBR	0	20	260	0	0	Α				
360	Colborne St / Division St	TWSC	SBL	5	0	35	5	7	Α				
360	Colborne St / Division St	TWSC	SBT	372	0	35	2	3	Α				
360	Colborne St / Division St	TWSC	SBR	0	0	35	0	0	Α				
360	Colborne St / Division St	TWSC	EBL	11	5	10	23	33	D				
360	Colborne St / Division St	TWSC	EBT	2	5	10	12	22	С				
360	Colborne St / Division St	TWSC	EBR	14	5	10	5	14	В				
360	Colborne St / Division St	TWSC	WBL	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBT	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBR	14	0	5	7	16	С				
370	Queen St / Division St	Signalized	NBT	185	10	65	12	16	В	30.0	С	23.6	С
370	Queen St / Division St	Signalized	NBR	83	10	65	4	11	В				
370	Queen St / Division St	Signalized	SBL	107	50	80	17	25	С				
370	Queen St / Division St	Signalized	SBT	279	50	80	15	22	С				
370	Queen St / Division St	Signalized	WBL	265	50	180	12	20	В				
370	Queen St / Division St	Signalized	WBR	571	50	180	14	30	с				

2036 No Mitigation - Ultimate Growth, 35% Auto M.S. - AM Peak

Measures of Effectiveness Details



ID	Intersection Name	Control Type	Number of Vehicles	50th %'ile Queue (m)	95th %'ile Queue (m)	Avg. Vehicle Delay (sec)	Avg. Stop Delay (sec)	LO S
10	Princess St / Concession St	Signalized	2,976	46.6	73.8	28.3	22.7	С
20	Princess St / Regent St	TWSC	1,395	12.2	74.2	5.3	1.8	-
30	Princess St / Drayton Av	TWSC	1,349	18.1	64.2	3.2	0.8	-
40	Princess St / Macdonnell Av	Signalized	1,294	72.9	136.0	16.5	11.0	В
50	Princess St / Smith St	TWSC	1,091	30.5	60.2	3.6	1.6	-
60	Princess St / Victoria St	Signalized	1,345	29.4	104.5	11.1	6.5	В
70	Princess St / Nelson St	TWSC	1,266	6.3	92.0	4.8	1.5	-
80	Princess St / Albert St	Signalized	1,232	39.5	84.7	15.7	10.5	В
90	Princess St / Frontenac St	TWSC	1,117	0.0	56.2	2.9	0.1	-
100	Princess St / Alfred St	Signalized	1,461	50.0	101.0	24.0	16.6	С
110	Princess St / Chatham St	TWSC	1,026	0.2	46.0	2.2	0.1	-
120	Princess St / University Av	Signalized	930	22.3	58.9	6.1	2.9	Α
130	Princess St / Division St	Signalized	1,145	19.6	52.1	16.3	11.1	В
140	Concession St / Drayton Av	TWSC	961	0.0	158.1	9.0	4.9	-
150	Concession St / Leroy Grant Dr (S)	TWSC	937	69.4	74.4	8.9	4.8	-
155	Concession St / Leroy Grant Drive (N)	TWSC	715	0.3	0.9	0.8	0.2	-
160	Concession St / Macdonnell St	Signalized	1,582	53.6	76.5	15.6	10.9	В
170	Concession St / Connaught St	TWSC	1,298	0.0	102.3	4.9	3.3	-
180	Concession St / Victoria St	Signalized	1,390	35.6	81.8	12.9	8.4	В
190	Concession St / Nelson St	TWSC	1,272	0.1	86.2	3.9	2.3	-
200	Concession St / Kingscourt Av	TWSC	1,237	0.2	56.9	4.5	2.4	-
210	Concession St / Fergus St	TWSC	1,247	0.2	66.7	7.0	3.8	-
220	Concession St / Grey St	TWSC	1,280	27.8	59.5	12.1	7.7	-
230	Concession St / Alfred St	Signalized	1,378	43.4	69.0	12.1	7.6	В
240	Concession St / Lansdowne St	TWSC	1,048	0.0	8.2	0.6	0.0	-
250	Concession St / Division St	Signalized	1,830	46.5	107.1	23.4	16.9	С
260	Adelaide St / Division St	TWSC	772	0.0	21.9	0.2	0.0	-
270	Stanley St / Division St	TWSC	709	0.5	14.8	2.0	0.2	-
280	Pine St / Division St	Signalized	787	13.0	47.1	8.8	5.1	Α
290	Quebec St / Division St	TWSC	682	0.0	32.6	0.9	0.0	-
300	York St / Division St	Signalized	770	15.2	41.8	7.4	4.7	Α
310	Main St / Division St	TWSC	652	23.1	29.7	0.8	0.3	-
320	Hamilton St / Division St	TWSC	640	0.1	0.1	0.2	0.0	-
330	Raglan St / Division St	TWSC	645	0.2	0.2	0.4	0.0	-
340	Elm St / Division St	TWSC	628	0.0	0.1	0.2	0.1	-
350	Ellice St / Division St	TWSC	610	0.0	0.1	0.2	0.1	-
360	Colborne St / Division St	TWSC	628	0.3	22.2	1.4	0.7	-
370	Queen St / Division St	Signalized	906	31.0	52.5	15.8	9.6	В
	Total		42,231	708	2,215	294	181	



Node	Location	Control	Mymt.	Volume		ue (m)	Stop	Delay	LOS		l Mvmt		ection
			-	(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
10	Princess St / Concession St	Signalized	NBL	191	40	60	37	44	D	45.0	D	28.3	С
10	Princess St / Concession St	Signalized	NBT	242	40	60	37	45	D				
10	Princess St / Concession St	Signalized	NBR	50	40	60	3	5	Α			-	
10	Princess St / Concession St	Signalized	SBL	528	75	105	31	38	D				
10	Princess St / Concession St	Signalized	SBT	577	75	105	31	40	D				
10	Princess St / Concession St	Signalized	SBR	32	75	105	17	22	С				
10	Princess St / Concession St	Signalized	EBT	408	30	65	25	31	С				
10	Princess St / Concession St	Signalized	EBR	277	30	65	1	2	Α				
10	Princess St / Concession St	Signalized	WBT	245	20	40	24	30	С				
10	Princess St / Concession St	Signalized	WBR	341	20	40	0	0	Α				
10	Princess St / Concession St	Signalized	WBL	85	20	40	1	4	Α				
20	Princess St / Regent St	TWSC	NBL	1	5	10	0	0	Α	17.0	С	5.3	A
20	Princess St / Regent St	TWSC	NBR	34	5	10	8	17	С				
20	Princess St / Regent St	TWSC	EBT	788	20	95	2	7	Α				
20	Princess St / Regent St	TWSC	EBR	51	20	95	1	3	Α			-	
20	Princess St / Regent St	TWSC	WBL	9	0	45	8	11	В				
20	Princess St / Regent St	TWSC	WBT	512	0	45	1	2	A		_		-
30	Princess St / Drayton Av	TWSC	SBL	2	0	45	11	28	D	28.0	D	3.2	A
30	Princess St / Drayton Av	TWSC	SBR	6	0	45	3	16 7	c				
30 30	Princess St / Drayton Av Princess St / Drayton Av	TWSC	EBL	118 696	30 30	80 80	3	4	A				
30	Princess St / Drayton Av	TWSC	WBT	516	0	40	0	4	A				
30	Princess St / Drayton Av	TWSC	WBR	11	0	40	0	1	A				
40	Princess St / Drayton Av	Signalized	NBL	46	5	40	12	18	B	32.0	с	16.5	В
40	Princess St / Macdonnell Av	Signalized	NBT	25	5	40	13	18	В	52.0		10.5	
40	Princess St / Macdonnell Av	Signalized	NBR	22	5	40	7	13	В				-
40	Princess St / Macdonnell Av	Signalized	SBL	8	40	40	9	15	В				
40	Princess St / Macdonnell Av	Signalized	SBT	18	40	40	12	16	B				
40	Princess St / Macdonnell Av	Signalized	SBR	63	40	40	3	8	A				
	Princess St / Macdonnell Av	-		29	100		25		C				-
40 40		Signalized	EBL	633		210		32 19	B				
	Princess St / Macdonnell Av	Signalized			100 100	210	12 9						-
40	Princess St / Macdonnell Av	Signalized	EBR	32		210		15	B				
40	Princess St / Macdonnell Av	Signalized	WBL	0	50	55	0	0	A				
40	Princess St / Macdonnell Av	Signalized	WBT	413	50	55	10	13	B				
40	Princess St / Macdonnell Av	Signalized	WBR	5	50	55	10	14	B	10.0	-	26	
50	Princess St / Smith St	TWSC	SBL	2	40	40	3	17	c	19.0	С	3.6	A
50	Princess St / Smith St	TWSC	SBR	17	40	40	6	19	c				
50	Princess St / Smith St	TWSC	EBL	7	40	45	0	2	A				
50	Princess St / Smith St	TWSC	EBT	649	40	45	0	1	Α				
50	Princess St / Smith St	TWSC	WBT	402	15	85	4	7	A				
50	Princess St / Smith St	TWSC	WBR	14	15	85	2	3	Α				
60	Princess St / Victoria St	Signalized	NBL	38	15	40	22	31	С	31.0	С	11.1	В
60	Princess St / Victoria St	Signalized	NBT	29	15	40	16	23	С				
60	Princess St / Victoria St	Signalized	NBR	47	15	40	10	18	В				
60	Princess St / Victoria St	Signalized	SBL	16	5	20	19	26	С				
60	Princess St / Victoria St	Signalized	SBT	49	5	20	20	25	с				
60	Princess St / Victoria St	Signalized	SBR	0	5	20	0	0	Α				
60	Princess St / Victoria St	Signalized	EBL	5	30	135	9	17	В				
60	Princess St / Victoria St	Signalized	EBT	643	30	135	4	9	Α				
60	Princess St / Victoria St	Signalized	EBR	12	30	135	3	9	Α				
60	Princess St / Victoria St	Signalized	WBL	38	35	90	12	17	В				
60	Princess St / Victoria St	Signalized	WBT	380	35	90	6	9	Α				
60	Princess St / Victoria St	Signalized	WBR	88	35	90	3	7	Α				
70	Princess St / Nelson St	TWSC	NBL	4	35	45	13	25	С	27.0	D	4.8	Α
70	Princess St / Nelson St	TWSC	NBT	11	35	45	11	27	D				
70	Princess St / Nelson St	TWSC	NBR	11	35	45	5	16	С				
70	Princess St / Nelson St	TWSC	SBL	10	0	5	13	25	С				
70	Princess St / Nelson St	TWSC	SBT	0	0	5	0	0	Α				
70	Princess St / Nelson St	TWSC	SBR	11	0	5	3	17	С				
70	Princess St / Nelson St	TWSC	EBL	82	10	105	3	8	Α				
70	Princess St / Nelson St	TWSC	EBT	617	10	105	1	5	Α				
70	Princess St / Nelson St	TWSC	EBR	9	10	105	2	7	Α				
70	Princess St / Nelson St	TWSC	WBL	16	0	80	8	13	В				
70	Princess St / Nelson St	TWSC	WBT	492	0	80	1	2	A			-	-
	Princess St / Nelson St	TWSC	WBR	3	0	80	0	3	A				



	Location	Control	Mvmt.	Volume	-	ıe (m)	Stop	Delay	LOS	Critical		Inters	ection
Node				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
80	Princess St / Albert St	Signalized	NBL	20	5	15	16	23	С	32.0	С	15.7	В
80	Princess St / Albert St	Signalized	NBT	7	5	15	14	20	В				
80	Princess St / Albert St	Signalized	NBR	36	5	15	2	7	Α				
80	Princess St / Albert St	Signalized	SBL	10	5	35	9	19	В				
80	Princess St / Albert St	Signalized	SBT	31	5	35	7	9	Α				
80	Princess St / Albert St	Signalized	SBR	58	5	35	1	8	Α				
80	Princess St / Albert St	Signalized	EBL	2	55	120	23	32	С				
80	Princess St / Albert St	Signalized	EBT	609	55	120	14	20	В				
80	Princess St / Albert St	Signalized	EBR	21	55	120	16	22	С				
80	Princess St / Albert St	Signalized	WBL	5	30	55	18	26	С				
80	Princess St / Albert St	Signalized	WBT	432	30	55	7	11	В				
80	Princess St / Albert St	Signalized	WBR	1	30	55	0	0	Α				
90	Princess St / Frontenac St	TWSC	NBL	1	0	20	1	7	Α	25.0	С	2.9	Α
90	Princess St / Frontenac St	TWSC	NBT	1	0	20	15	25	С				
90	Princess St / Frontenac St	TWSC	NBR	2	0	20	3	10	Α				
90	Princess St / Frontenac St	TWSC	SBL	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBT	0	0	5	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBR	7	0	5	1	8	Α				
90	Princess St / Frontenac St	TWSC	EBL	44	0	95	1	4	Α				
90	Princess St / Frontenac St	TWSC	EBT	611	0	95	0	4	Α				
90	Princess St / Frontenac St	TWSC	EBR	5	0	95	0	3	Α				
90	Princess St / Frontenac St	TWSC	WBL	13	0	0	2	4	Α				
90	Princess St / Frontenac St	TWSC	WBT	431	0	0	0	1	Α				
90	Princess St / Frontenac St	TWSC	WBR	2	0	0	0	0	Α				
100	Princess St / Alfred St	Signalized	NBL	66	25	50	17	24	С	29.0	С	24.0	С
100	Princess St / Alfred St	Signalized	NBT	95	25	50	16	23	С				
100	Princess St / Alfred St	Signalized	NBR	86	25	50	8	16	В				
100	Princess St / Alfred St	Signalized	SBL	33	30	75	18	27	С				
100	Princess St / Alfred St	Signalized	SBT	143	30	75	14	21	с				
100	Princess St / Alfred St	Signalized	SBR	103	30	75	7	13	В				
100	Princess St / Alfred St	Signalized	EBL	14	75	140	22	29	С				
100	Princess St / Alfred St	Signalized	EBT	563	75	140	20	28	С				
100	Princess St / Alfred St	Signalized	EBR	27	75	140	13	20	в				
100	Princess St / Alfred St	Signalized	WBL	17	40	90	21	29	с				
100	Princess St / Alfred St	Signalized	WBT	295	40	90	18	25	C				
100	Princess St / Alfred St	Signalized	WBR	19	40	90	4	8	A				
110	Princess St / Chatham St	TWSC	SBL	0	5	5	0	0	A	15.0	В	2.2	Α
110	Princess St / Chatham St	TWSC	SBR	40	5	5	1	15	B	15.0	-		~
110	Princess St / Chatham St	TWSC	EBL	52	0	40	1	3	A				
110	Princess St / Chatham St	TWSC	EBT	630	0	40	0	2	A				
110	Princess St / Chatham St	TWSC	WBT	288	0	65	0	1	A				
110	Princess St / Chatham St	TWSC	WBR	16	0	65	0	0	A				
120	Princess St / University Av	Signalized	NBL	31	5	15	16	22	c	24.0	с	6.1	Α
120	Princess St / University Av	Signalized	NBR	30	5	15	2	8	A	24.0		0.1	
120	Princess St / University Av	Signalized	EBT	528	30	75	2	5	A				
120	Princess St / University Av	Signalized	EBR	528	30	75	1	4	A				
120	Princess St / University Av	Signalized	WBL	10	10	35	17	4 24	C				
	Princess St / University Av		WBT	272	10	35	3	6					
	Princess St / Division St	Signalized	NBL	58	5	25	11	21	A C	28.0	с	16.3	В
		Signalized Signalized			5	25		17	В	28.0	L	10.3	D
	Princess St / Division St	U	NBT	52			11						
	Princess St / Division St	Signalized	NBR	1	5	25	0	0	A				
	Princess St / Division St	Signalized	SBL	149	5	55	4	6	A				
	Princess St / Division St	Signalized	SBT	104	5	55	4	5	A				
	Princess St / Division St	Signalized	SBR	224	5	55	0	1	A				
130	Princess St / Division St	Signalized Signalized	EBL	138 377	35 35	55	19	27	C C				
130	Princess St / Division St					55	20	28	C				



Node	Location	Control	Mvmt.	Volume	Quer	ie (m)	Stop	Delay	LOS	Critica	Mvmt	Inters	ection
noue	Location		in one.	(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
140	Concession St / Drayton Av	TWSC	NBR	12	0	10	74	87	F	87.0	F	9.0	Α
140	Concession St / Drayton Av	TWSC	EBT	949	0	160	4	8	Α				
140	Concession St / Drayton Av	TWSC	EBR	0	0	160	0	0	Α				
150	Concession St / Leroy Grant Dr (S)	TWSC	SBL	8	0	5	7	17	С	17.0	С	8.9	Α
150	Concession St / Leroy Grant Dr (S)	TWSC	EBL	40	70	75	1	4	Α				
150	Concession St / Leroy Grant Dr (S)	TWSC	EBT	889	70	75	5	9	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	NBL	29	5	5	3	11	В	11.0	В	0.8	Α
155	Concession St / Leroy Grant Drive (N)	TWSC	NBT	11	5	5	1	11	В				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBT	8	0	5	2	11	В				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBR	77	0	5	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBT	564	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBR	26	0	0	0	1	Α				
160	Concession St / Macdonnell St	Signalized	NBL	72	10	25	22	28	С	60.0	E	15.6	В
160	Concession St / Macdonnell St	Signalized	NBT	0	10	25	0	0	Α				
160	Concession St / Macdonnell St	Signalized	NBR	19	10	25	10	15	В				
160	Concession St / Macdonnell St	Signalized	SBR	43	0	5	2	3	Α				
160	Concession St / Macdonnell St	Signalized	EBL	37	75	80	11	17	В				
160	Concession St / Macdonnell St	Signalized	EBT	715	75	80	7	11	В				
160	Concession St / Macdonnell St	Signalized	EBR	148	75	80	5	9	Α				
160	Concession St / Macdonnell St	Signalized	WBL	73	30	85	49	60	E				
160	Concession St / Macdonnell St	Signalized	WBT	474	30	85	12	17	В				
160	Concession St / Macdonnell St	Signalized	WBR	1	30	85	0	0	A				
170	Concession St / Connaught St	TWSC	SBL	9	0	5	10	18	c	26.0	D	4.9	Α
170	Concession St / Connaught St	TWSC	SBR	8	0	5	10	26	D	20.0		4.5	
170	Concession St / Connaught St	TWSC	EBL	20	0	95	4	7	A				
170	Concession St / Connaught St	TWSC	EBT	713	0	95	1	2	A				
170	Concession St / Connaught St	TWSC	WBT	548	0	115	6	8	A				
170	Concession St / Connaught St	TWSC	WBR	0	0	115	0	0	A				
180	Concession St / Victoria St	Signalized	NBL	5	5	20	34	41	D	41.0	D	12.9	В
180	Concession St / Victoria St		NBL	20	5	20	25	31	c	41.0	U	12.9	D
180	,	Signalized	NBR	46	5	20	4	9	A				
	Concession St / Victoria St	Signalized	SBL	40	5	10	4 19	27	C				
180	Concession St / Victoria St	Signalized							c				
180	Concession St / Victoria St	Signalized	SBT	35	5	10	21	25	-				
180	Concession St / Victoria St	Signalized	SBR	42	5	10	4	12	В				
180	Concession St / Victoria St	Signalized	EBL	20	35	90	9	14	В				
180	Concession St / Victoria St	Signalized	EBT	680	35	90	6	9	A				
180	Concession St / Victoria St	Signalized	EBR	9	35	90	6	12	В				
180	Concession St / Victoria St	Signalized	WBL	24	45	90	18	27	c				
180	Concession St / Victoria St	Signalized	WBT	506	45	90	10	16	В				
180	Concession St / Victoria St	Signalized	WBR	0	45	90	0	0	Α				
190	Concession St / Nelson St	TWSC	NBL	8	0	5	12	22	С	22.0	С	3.9	Α
190	Concession St / Nelson St	TWSC	NBT	0	0	5	0	0	Α				
190	Concession St / Nelson St	TWSC	NBR	9	0	5	7	13	В				
190	Concession St / Nelson St	TWSC	SBL	0	5	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBT	0	5	5	0	0	Α				
190	Concession St / Nelson St	TWSC	SBR	26	5	5	0	6	Α				
190	Concession St / Nelson St	TWSC	EBL	40	0	85	1	4	Α				
190	Concession St / Nelson St	TWSC	EBT	689	0	85	1	2	Α				
190	Concession St / Nelson St	TWSC	EBR	0	0	85	0	0	Α				
190	Concession St / Nelson St	TWSC	WBL	0	0	95	0	0	Α				
190	Concession St / Nelson St	TWSC	WBT	500	0	95	4	6	Α				
190	Concession St / Nelson St	TWSC	WBR	0	0	95	0	0	Α				



Node	Location	Control	Mymt.	Volume	Queu	e (m)	Stop	Delay	LOS	Critical	Mvmt	Interse	ection
Noue	Location	control	www.	(All)	50th	95th	Delay (s)	(s)	105	Delay	LOS	Delay	LOS
200	Concession St / Kingscourt Av	TWSC	SBL	44	5	25	26	39	E	39.0	E	4.5	Α
200	Concession St / Kingscourt Av	TWSC	SBR	5	5	25	16	32	D				
200	Concession St / Kingscourt Av	TWSC	EBL	40	0	75	3	6	Α				
200	Concession St / Kingscourt Av	TWSC	EBT	649	0	75	1	3	Α				
200	Concession St / Kingscourt Av	TWSC	WBT	492	0	35	2	3	Α				
200	Concession St / Kingscourt Av	TWSC	WBR	7	0	35	0	0	Α				
210	Concession St / Fergus St	TWSC	SBL	45	5	25	58	73	F	73.0	F	7.0	Α
210	Concession St / Fergus St	TWSC	SBR	3	5	25	12	21	С				
210	Concession St / Fergus St	TWSC	EBL	30	0	100	2	7	Α				
210	Concession St / Fergus St	TWSC	EBT	663	0	100	3	7	Α				
210	Concession St / Fergus St	TWSC	WBT	490	0	25	0	1	Α				
210	Concession St / Fergus St	TWSC	WBR	16	0	25	0	0	Α				
220	Concession St / Grey St	TWSC	SBL	43	5	45	95	111	F	111.0	F	12.1	В
220	Concession St / Grey St	TWSC	SBR	3	5	45	46	78	F				
220	Concession St / Grey St	TWSC	EBL	21	50	105	5	11	В				
220	Concession St / Grey St	TWSC	EBT	685	50	105	8	15	В				
220	Concession St / Grey St	TWSC	WBT	504	0	0	0	0	Α				
220	Concession St / Grey St	TWSC	WBR	24	0	0	0	0	Α				
230	Concession St / Alfred St	Signalized	NBL	46	5	25	17	23	С	23.0	С	12.1	В
230	Concession St / Alfred St	Signalized	NBT	11	5	25	11	17	В				
230	Concession St / Alfred St	Signalized	NBR	46	5	25	6	13	В				
230	Concession St / Alfred St	Signalized	SBL	2	5	20	0	7	Α				
230	Concession St / Alfred St	Signalized	SBT	35	5	20	13	19	В				
230	Concession St / Alfred St	Signalized	SBR	37	5	20	4	9	Α				
230	Concession St / Alfred St	Signalized	EBL	34	55	60	12	18	В				
230	Concession St / Alfred St	Signalized	EBT	522	55	60	8	12	В				
230	Concession St / Alfred St	Signalized	EBR	172	55	60	1	3	Α				
230	Concession St / Alfred St	Signalized	WBL	31	40	100	12	21	с				
230	Concession St / Alfred St	Signalized	WBT	441	40	100	8	13	В				
230	Concession St / Alfred St	Signalized	WBR	1	40	100	0	0	Α				
240	Concession St / Lansdowne St	TWSC	NBL	0	0	0	0	0	Α	5.0	Α	0.6	Α
240	Concession St / Lansdowne St	TWSC	NBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	EBT	572	0	15	0	1	Α				
240	Concession St / Lansdowne St	TWSC	EBR	0	0	15	0	0	Α				
240	Concession St / Lansdowne St	TWSC	WBL	4	0	0	1	5	Α				
240	Concession St / Lansdowne St	TWSC	WBT	472	0	0	0	0	Α				
250	Concession St / Division St	Signalized	NBL	13	35	80	17	26	С	48.0	D	23.4	С
250	Concession St / Division St	Signalized	NBT	247	35	80	16	22	с				
250	Concession St / Division St	Signalized	NBR	45	35	80	13	18	В				
250	Concession St / Division St	Signalized	SBL	32	60	120	21	29	с				
250	Concession St / Division St	Signalized	SBT	396	60	120	17	23	С				
250	Concession St / Division St	Signalized	SBR	232	60	120	2	6	Α				
250	Concession St / Division St	Signalized	EBL	202	35	105	16	23	с				
250	Concession St / Division St	Signalized	EBT	344	35	105	13	18	В				
250	Concession St / Division St	Signalized	EBR	20	35	105	7	10	Α				
250	Concession St / Division St	Signalized	WBL	46	50	110	37	48	D				
250	Concession St / Division St	Signalized	WBT	237	50	110	35	46	D				
250	Concession St / Division St	Signalized	WBR	16	50	110	30	39	D				



Node	Location	Control	Mvmt.	Volume		ie (m)	Stop	Delay	LOS		Mvmt	-	ection
				(All)	50th	95th	Delay (s)	(s)	-	Delay	LOS	Delay	LOS
260	Adelaide St / Division St	TWSC	NBL	0	0	10	0	0	A	10.0	Α	0.2	A
260	Adelaide St / Division St	TWSC	NBT	285	0	10	0	0	A				
260	Adelaide St / Division St	TWSC	NBR	2	0	10	0	0	A				
260 260	Adelaide St / Division St Adelaide St / Division St	TWSC	SBL SBT	13 397	0	30 30	0	1	A				
260	Adelaide St / Division St	TWSC	SBR	53	0	30	0	0	A				
260	Adelaide St / Division St	TWSC	EBL	11	0	5	2	10	A				
260	Adelaide St / Division St	TWSC	EBT	1	0	5	0	0	A	-			
260	Adelaide St / Division St	TWSC	EBR	1	0	5	0	0	A				
260	Adelaide St / Division St	TWSC	WBL	0	0	5	0	0	A				
260	Adelaide St / Division St	TWSC	WBT	1	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBR	8	0	5	0	7	Α				
270	Stanley St / Division St	TWSC	NBL	13	0	0	0	2	Α	10.0	Α	2.0	Α
270	Stanley St / Division St	TWSC	NBT	236	0	0	0	0	Α				
270	Stanley St / Division St	TWSC	SBT	395	0	25	0	2	Α				
270	Stanley St / Division St	TWSC	SBR	0	0	25	0	0	Α				
270	Stanley St / Division St	TWSC	EBL	49	5	10	2	10	Α				
270	Stanley St / Division St	TWSC	EBR	16	5	10	2	8	Α				
280	Pine St / Division St	Signalized	NBL	7	5	20	10	14	В	32.0	С	8.8	Α
280	Pine St / Division St	Signalized	NBT	204	5	20	2	4	Α				
280	Pine St / Division St	Signalized	NBR	7	5	20	0	2	Α				
280	Pine St / Division St	Signalized	SBL	34	20	70	4	7	Α				
280	Pine St / Division St	Signalized	SBT	385	20	70	4	8	Α				
280	Pine St / Division St	Signalized	SBR	0	20	70	0	0	Α				
280	Pine St / Division St	Signalized	EBL	2	5	20	0	0	Α				
280	Pine St / Division St	Signalized	EBT	29	5	20	24	28	С				
280	Pine St / Division St	Signalized	EBR	39	5	20	6	11	В				
280	Pine St / Division St	Signalized	WBL	19	5	25	22	29	С				
280	Pine St / Division St	Signalized	WBT	16	5	25	24	32	С				
280	Pine St / Division St	Signalized	WBR	45	5	25	3	9	Α				
290	Quebec St / Division St	TWSC	NBT	217	0	0	0	0	Α	9.0	Α	0.9	Α
290	Quebec St / Division St	TWSC	NBR	4	0	0	0	0	Α				
290	Quebec St / Division St	TWSC	SBL	3	0	50	0	0	Α				
290	Quebec St / Division St	TWSC	SBT	440	0	50	0	1	Α				
290	Quebec St / Division St	TWSC	WBL	16	0	5	1	9	Α				
290	Quebec St / Division St	TWSC	WBR	2	0	5	0	0	Α				
300	York St / Division St	Signalized	NBL	0	20	35	0	0	Α	30.0	С	7.4	Α
300	York St / Division St	Signalized	NBT	199	20	35	3	5	Α				
300	York St / Division St	Signalized	NBR	21	20	35	1	3	Α				
300	York St / Division St	Signalized	SBL	46	15	50	4	8	A				
300	York St / Division St	Signalized	SBT	408	15	50	3	5	A				
300	York St / Division St	Signalized	SBR	0	15	50	0	0	A				
300	York St / Division St	Signalized	EBL	0	5	15	0	0	A				
300	York St / Division St	Signalized	EBT	32	5	15	19	24	C B				
300 300	York St / Division St	Signalized Signalized	EBR WBL	2 29	5 5	15 20	10 21	17 28	C				
300	York St / Division St York St / Division St	Signalized	WBT	12	5	20	23	30	c				
	York St / Division St		WBR	21	5	20	4		В				
310	Main St / Division St	Signalized TWSC	NBT	213	0	10	1	11 2	A	10.0	Α	0.8	Α
310	Main St / Division St	TWSC	NBR	0	0	10	0	0	A	10.0	~	0.0	~
	Main St / Division St	TWSC	SBL	15	35	40	0	1	A				
310	Main St / Division St	TWSC	SBT	415	35	40	0	0	A				
	Main St / Division St	TWSC	WBL	2	0	5	2	10	A				
310	Main St / Division St	TWSC	WBR	7	0	5	1	8	A				
320	Hamilton St / Division St	TWSC	NBL	3	0	0	0	0	A	8.0	Α	0.2	Α
320	Hamilton St / Division St	TWSC	NBT	198	0	0	0	0	A	0.0			~
320	Hamilton St / Division St	TWSC	SBT	394	0	0	0	0	A				
320	Hamilton St / Division St	TWSC	SBR	27	0	0	0	0	A				
320	Hamilton St / Division St	TWSC	EBL	15	5	5	1	8	A				
	Hamilton St / Division St	TWSC	EBR	3	5	5	0	6	A				



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Noue	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
330	Raglan St / Division St	TWSC	NBT	195	0	0	0	0	Α	9.0	Α	0.4	Α
330	Raglan St / Division St	TWSC	NBR	25	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	SBL	12	0	0	0	2	Α				
330	Raglan St / Division St	TWSC	SBT	384	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	WBL	24	5	5	1	8	Α				
330	Raglan St / Division St	TWSC	WBR	5	5	5	1	9	Α				
340	Elm St / Division St	TWSC	NBL	1	0	0	0	0	Α	8.0	Α	0.2	Α
340	Elm St / Division St	TWSC	NBT	201	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBT	390	0	0	0	0	Α				
340	Elm St / Division St	TWSC	SBR	19	0	0	0	1	Α				
340	Elm St / Division St	TWSC	EBL	17	0	5	2	8	Α				
340	Elm St / Division St	TWSC	EBR	0	0	5	0	0	Α				
350	Ellice St / Division St	TWSC	NBT	201	0	0	0	0	Α	13.0	В	0.2	Α
350	Ellice St / Division St	TWSC	NBR	8	0	0	0	0	Α				
350	Ellice St / Division St	TWSC	SBL	9	0	0	0	1	Α				
350	Ellice St / Division St	TWSC	SBT	380	0	0	0	0	Α				
350	Ellice St / Division St	TWSC	WBL	8	0	5	4	13	В				
350	Ellice St / Division St	TWSC	WBR	4	0	5	0	7	Α				
360	Colborne St / Division St	TWSC	NBL	0	0	20	0	0	Α	11.0	В	1.4	Α
360	Colborne St / Division St	TWSC	NBT	185	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	NBR	2	0	20	0	0	Α				
360	Colborne St / Division St	TWSC	SBL	7	0	25	0	3	Α				
360	Colborne St / Division St	TWSC	SBT	375	0	25	1	1	Α				
360	Colborne St / Division St	TWSC	SBR	7	0	25	0	0	Α				
360	Colborne St / Division St	TWSC	EBL	22	5	10	1	9	Α				
360	Colborne St / Division St	TWSC	EBT	8	5	10	2	11	В				
360	Colborne St / Division St	TWSC	EBR	12	5	10	2	10	Α				
360	Colborne St / Division St	TWSC	WBL	7	0	5	2	11	В				
360	Colborne St / Division St	TWSC	WBT	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBR	3	0	5	0	7	Α				
370	Queen St / Division St	Signalized	NBT	71	10	25	8	11	В	24.0	С	15.8	В
370	Queen St / Division St	Signalized	NBR	121	10	25	1	10	Α				
370	Queen St / Division St	Signalized	SBL	119	50	80	16	24	С				
370	Queen St / Division St	Signalized	SBT	277	50	80	14	20	В				
370	Queen St / Division St	Signalized	WBL	201	20	35	11	17	В				
370	Queen St / Division St	Signalized	WBR	117	20	35	0	4	Α				

2036 No Mitigation - Ultimate Growth, 35% Auto M.S. - PM Peak

Measures of Effectiveness Details



ID	Intersection Name	Control Type	Number of Vehicles	50th %'ile Queue (m)	95th %'ile Queue (m)	Avg. Vehicle Delay (sec)	Avg. Stop Delay (sec)	LO S
10	Princess St / Concession St	Signalized	3,728	185.8	229.9	59.2	48.7	E
20	Princess St / Regent St	TWSC	1,346	0.1	50.9	2.6	1.0	-
30	Princess St / Drayton Av	TWSC	1,304	4.1	36.4	2.5	0.3	-
40	Princess St / Macdonnell Av	Signalized	1,319	90.2	174.8	20.9	14.4	С
50	Princess St / Smith St	TWSC	1,042	28.2	61.5	3.5	1.8	-
60	Princess St / Victoria St	Signalized	1,477	28.4	96.5	12.2	7.0	в
70	Princess St / Nelson St	TWSC	1,367	17.5	103.4	5.4	2.0	-
80	Princess St / Albert St	Signalized	1,394	40.4	88.0	16.6	10.8	В
90	Princess St / Frontenac St	TWSC	1,138	8.7	55.1	3.2	0.7	-
100	Princess St / Alfred St	Signalized	1,524	56.2	90.1	26.3	18.0	С
110	Princess St / Chatham St	TWSC	1,210	24.8	88.3	4.9	1.8	-
120	Princess St / University Av	Signalized	1,041	30.4	59.0	9.1	5.3	Α
130	Princess St / Division St	Signalized	1,370	20.6	58.2	16.2	10.8	В
140	Concession St / Drayton Av	TWSC	1,245	314.0	319.2	57.8	30.0	-
150	Concession St / Leroy Grant Dr (S)	TWSC	1,223	73.7	73.7	31.1	16.2	-
155	Concession St / Leroy Grant Drive (N)	TWSC	1,526	4.8	5.3	5.2	3.1	-
160	Concession St / Macdonnell St	Signalized	2,490	73.6	80.3	17.3	12.1	В
170	Concession St / Connaught St	TWSC	1,975	74.4	104.9	8.9	4.8	-
180	Concession St / Victoria St	Signalized	2,186	92.8	99.2	17.8	11.5	В
190	Concession St / Nelson St	TWSC	1,940	50.4	91.9	11.7	7.9	-
200	Concession St / Kingscourt Av	TWSC	1,854	52.0	94.3	12.0	7.2	-
210	Concession St / Fergus St	TWSC	1,854	55.3	99.4	13.4	8.5	-
220	Concession St / Grey St	TWSC	1,871	57.3	79.5	10.1	6.6	-
230	Concession St / Alfred St	Signalized	1,998	121.4	135.5	41.6	30.1	D
240	Concession St / Lansdowne St	TWSC	1,308	63.0	258.2	10.6	5.6	-
250	Concession St / Division St	Signalized	2,417	131.3	195.9	48.7	38.2	D
260	Adelaide St / Division St	TWSC	1,276	59.7	102.1	24.3	18.7	-
270	Stanley St / Division St	TWSC	1,144	44.9	70.3	15.9	10.8	-
280	Pine St / Division St	Signalized	1,232	49.6	70.4	23.9	16.9	С
290	Quebec St / Division St	TWSC	1,051	43.4	78.4	9.0	6.1	-
300	York St / Division St	Signalized	1,162	26.8	47.1	10.8	7.8	В
310	Main St / Division St	TWSC	1,044	46.6	49.7	12.8	8.5	-
320	Hamilton St / Division St	TWSC	1,070	65.6	68.6	23.5	15.0	-
330	Raglan St / Division St	TWSC	1,091	35.0	35.3	9.3	5.9	-
340	Elm St / Division St	TWSC	1,219	37.5	43.0	9.2	5.8	-
350	Ellice St / Division St	TWSC	1,148	32.8	39.5	5.2	3.8	-
360	Colborne St / Division St	TWSC	1,207	90.7	233.0	9.9	5.7	-
370	Queen St / Division St	Signalized	1,528	56.3	179.0	35.3	20.1	D
	Total		57,319	2,288	3,846	658	430	



Node	Location	Control	Mvmt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critica	Mvmt	Inters	ection
				(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
10	Princess St / Concession St	Signalized	NBL	212	35	45	31	39	D	137.0	F	59.2	E
10	Princess St / Concession St	Signalized	NBT	190	35	45	28	35	С				
10	Princess St / Concession St	Signalized	NBR	14	35	45	21	28	С				
10	Princess St / Concession St	Signalized	SBL	693	420	435	85	101	F				
10	Princess St / Concession St	Signalized	SBT	552	420	435	82	99	F				
10	Princess St / Concession St	Signalized	SBR	0	420	435	0	0	A				
10	Princess St / Concession St	Signalized	EBT	370	125	290	111	137	F				
10	Princess St / Concession St	Signalized	EBR	322	125	290	15	21	С				
10	Princess St / Concession St	Signalized	WBT	516	50	70	33	40	D				
10	Princess St / Concession St	Signalized	WBR	822	50	70	0	0	Α				
10	Princess St / Concession St	Signalized	WBL	37	50	70	64	74	E				
20	Princess St / Regent St	TWSC	NBL	0	5	10	0	0	Α	10.0	Α	2.6	Α
20	Princess St / Regent St	TWSC	NBR	33	5	10	3	10	Α				
20	Princess St / Regent St	TWSC	EBT	747	0	50	1	2	A				
20	Princess St / Regent St	TWSC	EBR	71	0	50	0	2	A				
20	Princess St / Regent St	TWSC	WBL	34	0	55	3	5	A				
20	Princess St / Regent St	TWSC	WBT	461	0 45	55	1 10	3 25	A C	25.0		25	•
30	Princess St / Drayton Av	TWSC	SBL SBR	9 109	45	50 50	3	16	c	25.0	с	2.5	Α
30 30	Princess St / Drayton Av Princess St / Drayton Av	TWSC	EBL	22	45	35	3	4	A				
30	Princess St / Drayton Av	TWSC	EBT	759	0	35	0	4	A				
30	Princess St / Drayton Av	TWSC	WBT	387	0	35	0	1	A				
30	Princess St / Drayton Av	TWSC	WBR	18	0	35	0	1	A				
40	Princess St / Macdonnell Av	Signalized	NBL	9	10	35	10	16	B	31.0	с	20.9	с
40	Princess St / Macdonnell Av	Signalized	NBT	96	10	35	12	17	В	01.0	-		
40	Princess St / Macdonnell Av	Signalized	NBR	18	10	35	9	13	B				
40	Princess St / Macdonnell Av	Signalized	SBL	3	40	40	2	11	В				
40	Princess St / Macdonnell Av	Signalized	SBT	54	40	40	13	20	B				
40	Princess St / Macdonnell Av	Signalized	SBR	51	40	40	5	10	A				
40	Princess St / Macdonnell Av	Signalized	EBL	44	130	275	24	31	c				
40	Princess St / Macdonnell Av	Signalized	EBT	658	130	275	17	25	c				
40	Princess St / Macdonnell Av	Signalized	EBR	35	130	275	16	24	c				
40	Princess St / Macdonnell Av	Signalized	WBL	0	50	55	0	0	A				
40	Princess St / Macdonnell Av	Signalized	WBT	345	50	55	11	15	В				
40	Princess St / Macdonnell Av	Signalized	WBR	6	50	55	9	12	В				
50	Princess St / Smith St	TWSC	SBL	1	40	40	1	11	B	19.0	с	3.5	Α
50	Princess St / Smith St	TWSC	SBR	6	40	40	8	19	c		-	0.0	
50	Princess St / Smith St	TWSC	EBL	43	40	65	1	2	A				
50	Princess St / Smith St	TWSC	EBT	640	40	65	0	1	A				
50	Princess St / Smith St	TWSC	WBT	346	5	55	5	8	A				
50	Princess St / Smith St	TWSC	WBR	6	5	55	4	6	A				
60	Princess St / Victoria St	Signalized	NBL	8	20	45	16	21	c	30.0	с	12.2	В
60	Princess St / Victoria St	Signalized	NBT	93	20	45	18	25	c	50.0	- C		
60	Princess St / Victoria St	Signalized	NBR	55	20	45	10	17	В				
60	Princess St / Victoria St	Signalized	SBL	81	15	30	22	30	c				
60	Princess St / Victoria St	Signalized	SBT	47	15	30	18	27	c				
60	Princess St / Victoria St	Signalized	SBR	1	15	30	3	8	A				
	Princess St / Victoria St	Signalized	EBL	20	15	115	11	17	В				
60	Princess St / Victoria St	Signalized	EBT	597	15	115	2	6	A				
60	Princess St / Victoria St	Signalized	EBR	30	15	115	1	5	A				
60	Princess St / Victoria St	Signalized	WBL	15	50	105	14	20	В				
60	Princess St / Victoria St	Signalized	WBT	358	50	105	7	12	В				
60	Princess St / Victoria St	Signalized	WBR	172	50	105	7	13	В				
70	Princess St / Nelson St	TWSC	NBL	19	5	45	16	27	D	27.0	D	5.4	Α
70	Princess St / Nelson St	TWSC	NBT	2	5	45	10	25	c	27.0	-	5.4	
70	Princess St / Nelson St	TWSC	NBR	6	5	45	3	16	c				
70	Princess St / Nelson St	TWSC	SBL	0	0	5	0	0	A				
70	Princess St / Nelson St	TWSC	SBT	6	0	5	9	20	c				
70	Princess St / Nelson St	TWSC	SBR	0	0	5	0	0	A				
70	Princess St / Nelson St	TWSC	EBL	74	0	105	5	11	B				
70	Princess St / Nelson St	TWSC	EBL	656	0	105	1	4	A				
70	Princess St / Nelson St	TWSC	EBR	11	0	105	0	3	A				
70	Princess St / Nelson St	TWSC	WBL	45	40	105	5	9	A				
10					40	105	2	5	A				
70	Princess St / Nelson St	TWSC	WBT	546									



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critica	Mvmt	Inters	ection
11006		control	www.	(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
80	Princess St / Albert St	Signalized	NBL	57	10	50	18	26	С	40.0	D	16.6	В
80	Princess St / Albert St	Signalized	NBT	11	10	50	17	24	С				
80	Princess St / Albert St	Signalized	NBR	51	10	50	6	11	В				
80	Princess St / Albert St	Signalized	SBL	4	10	25	12	23	С				
80	Princess St / Albert St	Signalized	SBT	32	10	25	13	18	В				
80	Princess St / Albert St	Signalized	SBR	118	10	25	2	8	Α				
80	Princess St / Albert St	Signalized	EBL	42	60	115	23	32	С				
80	Princess St / Albert St	Signalized	EBT	607	60	115	12	18	В				
80	Princess St / Albert St	Signalized	EBR	14	60	115	8	15	В				
80	Princess St / Albert St	Signalized	WBL	8	30	80	32	40	D				
80	Princess St / Albert St	Signalized	WBT	430	30	80	9	14	В				
80	Princess St / Albert St	Signalized	WBR	20	30	80	14	21	С				
90	Princess St / Frontenac St	TWSC	NBL	1	0	20	0	0	Α	15.0	В	3.2	A
90	Princess St / Frontenac St	TWSC	NBT	14	0	20	6	15	В				
90	Princess St / Frontenac St	TWSC	NBR	1	0	20	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBL	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBT	0	0	0	0	0	Α				
90	Princess St / Frontenac St	TWSC	SBR	1	0	0	0	7	Α				
90	Princess St / Frontenac St	TWSC	EBL	90	15	95	2	7	Α				
90	Princess St / Frontenac St	TWSC	EBT	566	15	95	1	4	Α				
90	Princess St / Frontenac St	TWSC	EBR	1	15	95	0	0	Α				
90	Princess St / Frontenac St	TWSC	WBL	9	0	0	1	4	Α				
90	Princess St / Frontenac St	TWSC	WBT	455	0	0	0	1	Α				
90	Princess St / Frontenac St	TWSC	WBR	0	0	0	0	0	Α		-		_
100	Princess St / Alfred St	Signalized	NBL	75	35	70	18	27	С	35.0	С	26.3	С
100	Princess St / Alfred St	Signalized	NBT	138	35	70	16	24	С				
100	Princess St / Alfred St	Signalized	NBR	127	35	70	11	19	B				
100	Princess St / Alfred St	Signalized	SBL	83	20	40	24	35	С				
100	Princess St / Alfred St	Signalized	SBT	45	20	40	20	29	C				
100	Princess St / Alfred St	Signalized	SBR	25	20	40	10	17	B				
100	Princess St / Alfred St	Signalized	EBL	45	75	115	27	35	c				
100	Princess St / Alfred St	Signalized	EBT	512	75	115	19	28	С				
100	Princess St / Alfred St	Signalized	EBR	28	75	115	14	22	c				
100	Princess St / Alfred St	Signalized	WBL	55	60	90	16	24	C				
100	Princess St / Alfred St	Signalized	WBT	361	60	90	19	26	c				
100	Princess St / Alfred St	Signalized	WBR	30	60	90	9	15	В				
110	Princess St / Chatham St	TWSC	SBL	0	0	5	0	0	A	20.0	С	4.9	A
110	Princess St / Chatham St	TWSC	SBR	12	0	5	4	20	c				
110	Princess St / Chatham St	TWSC	EBL	152	25	105	3	8	A				
110	Princess St / Chatham St	TWSC	EBT	570	25 25	105 65	2	2	A				
110	Princess St / Chatham St Princess St / Chatham St	TWSC	WBT	434					A				
110 120		TWSC	WBR NBL	42 96	25 10	65 25	2 17	4	A C	22.0	с	9.1	A
120	Princess St / University Av Princess St / University Av	Signalized Signalized	NBL	5	10	25	17	14	B	22.0	L	5.1	A
120	Princess St / University Av	Signalized	EBT	491	45	75	4	8	A				
120	Princess St / University Av	Signalized	EBR	61	45	75	3	6	A				
120	Princess St / University Av	Signalized	WBL	21	45 15	45	3 12	18	B				
120	Princess St / University Av	Signalized	WBT	367	15	45	4	7	A				
120	Princess St / Division St	Signalized	NBL	103	25	45 50	4	25	C	28.0	с	16.2	В
130	Princess St / Division St	Signalized	NBL	103	25	50	14	25	c	20.0	L	10.2	B
130	Princess St / Division St	Signalized	NBR	195	25	50	10	16	В				
130	Princess St / Division St	Signalized	SBL	145	10	70	6	11	В				
130	Princess St / Division St	Signalized	SBT	145	10	70	5	6	A				_
130	Princess St / Division St	Signalized	SBR	288	10	70	0	1	A				
130	Princess St / Division St	Signalized	EBL	83	30	50	21	28	C				_
130	Princess St / Division St	Signalized	EBT	368	30	50	18	26	c				
130	Princess St / Division St	Signalized	EBR	46	30	50	9	17	В				



Node	Location	Control	Mvmt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Interse	ection
Noue	Location	control	www.	(All)	50th	95th	Delay (s)	(s)		Delay	LOS	Delay	LOS
140	Concession St / Drayton Av	TWSC	NBR	5	65	125	1202	1217	F	1217.0	F	57.8	F
140	Concession St / Drayton Av	TWSC	EBT	1,187	315	320	25	53	F				
140	Concession St / Drayton Av	TWSC	EBR	53	315	320	31	55	F				
150	Concession St / Leroy Grant Dr (S)	TWSC	SBL	22	5	5	18	31	D	32.0	D	31.1	D
150	Concession St / Leroy Grant Dr (S)	TWSC	EBL	160	75	75	17	32	D				
150	Concession St / Leroy Grant Dr (S)	TWSC	EBT	1,041	75	75	16	31	D				
155	Concession St / Leroy Grant Drive (N)	TWSC	NBL	76	45	50	28	46	E	46.0	E	5.2	Α
155	Concession St / Leroy Grant Drive (N)	TWSC	NBT	84	45	50	27	45	E				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBT	21	5	5	18	28	D				
155	Concession St / Leroy Grant Drive (N)	TWSC	SBR	5	5	5	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBT	1,300	0	0	0	0	Α				
155	Concession St / Leroy Grant Drive (N)	TWSC	WBR	40	0	0	0	1	Α				
160	Concession St / Macdonnell St	Signalized	NBL	250	45	80	26	34	С	73.0	E	17.3	В
160	Concession St / Macdonnell St	Signalized	NBT	25	45	80	26	32	С				
160	Concession St / Macdonnell St	Signalized	NBR	27	45	80	27	35	С				
160	Concession St / Macdonnell St	Signalized	SBR	71	5	15	9	15	В				
160	Concession St / Macdonnell St	Signalized	EBL	58	75	80	47	58	E				
160	Concession St / Macdonnell St	Signalized	EBT	892	75	80	8	13	В				
160	Concession St / Macdonnell St	Signalized	EBR	111	75	80	7	11	В				
160	Concession St / Macdonnell St	Signalized	WBL	31	85	85	60	73	E				
160	Concession St / Macdonnell St	Signalized	WBT	1,025	85	85	9	13	В				
160	Concession St / Macdonnell St	Signalized	WBR	0	85	85	0	0	Α				
170	Concession St / Connaught St	TWSC	SBL	0	0	5	0	0	Α	28.0	D	8.9	Α
170	Concession St / Connaught St	TWSC	SBR	16	0	5	18	28	D				
170	Concession St / Connaught St	TWSC	EBL	0	35	95	0	0	Α				
170	Concession St / Connaught St	TWSC	EBT	913	35	95	2	5	Α				
170	Concession St / Connaught St	TWSC	WBT	1,046	110	115	7	12	В				
170	Concession St / Connaught St	TWSC	WBR	0	110	115	0	0	A				
180	Concession St / Victoria St	Signalized	NBL	34	20	70	35	47	D	47.0	D	17.8	В
180	Concession St / Victoria St	Signalized	NBT	49	20	70	34	42	D		_		
180	Concession St / Victoria St	Signalized	NBR	78	20	70	23	32	c				
180	Concession St / Victoria St	Signalized	SBL	3	0	10	28	36	D				
180	Concession St / Victoria St	Signalized	SBT	23	0	10	19	23	c				
180	Concession St / Victoria St	Signalized	SBR	36	0	10	6	17	В				
180	Concession St / Victoria St	Signalized	EBL	16	115	115	24	33	c				
180	Concession St / Victoria St	Signalized	EBT	806	115	115	8	14	В				
180	Concession St / Victoria St	Signalized	EBR	98	115	115	8	14	B				
180	Concession St / Victoria St	Signalized	WBL	52	90	95	26	34	C				
180	Concession St / Victoria St	Signalized	WBT	975	90	95	11	17	В				
180	Concession St / Victoria St	Signalized	WBR	16	90	95	0	1/	A				
190	Concession St / Nelson St	TWSC	NBL	8	0	5	358	376	 F	376.0	F	11.7	В
190	,	TWSC	NBL	0	0	5	0	0	A	570.0	F	11.7	D
190	Concession St / Nelson St			7	0	5	17	23	C				
	Concession St / Nelson St	TWSC	NBR	0	0		0	0	-				
190	Concession St / Nelson St	TWSC	SBL		-	5	-		A				
190	Concession St / Nelson St	TWSC	SBT	0	0	5	0	0	A				
190	Concession St / Nelson St	TWSC	SBR	12	0	5	0	6	A				
190	Concession St / Nelson St	TWSC	EBL	0	0	85	0	0	A				
190	Concession St / Nelson St	TWSC	EBT	813	0	85	1	2	A				
190	Concession St / Nelson St	TWSC	EBR	70	0	85	2	3	A				
190	Concession St / Nelson St	TWSC	WBL	13	95	100	10	19	c				
190	Concession St / Nelson St	TWSC	WBT	1,017	95	100	11	17	С				
190	Concession St / Nelson St	TWSC	WBR	0	95	100	0	0	Α				



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Intersection	
Noue	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
200	Concession St / Kingscourt Av	TWSC	SBL	0	0	15	0	0	Α	57.0	F	12.0	В
200	Concession St / Kingscourt Av	TWSC	SBR	16	0	15	41	57	F				
200	Concession St / Kingscourt Av	TWSC	EBL	2	0	95	20	33	D				
200	Concession St / Kingscourt Av	TWSC	EBT	821	0	95	3	5	Α				
200	Concession St / Kingscourt Av	TWSC	WBT	1,015	95	95	10	17	С				
200	Concession St / Kingscourt Av	TWSC	WBR	0	95	95	0	0	Α				
210	Concession St / Fergus St	TWSC	SBL	12	0	5	128	139	F	139.0	F	13.4	В
210	Concession St / Fergus St	TWSC	SBR	0	0	5	0	0	Α				
210	Concession St / Fergus St	TWSC	EBL	0	0	100	0	0	Α				
210	Concession St / Fergus St	TWSC	EBT	816	0	100	5	7	Α				
210	Concession St / Fergus St	TWSC	WBT	1,022	100	100	10	17	С				
210	Concession St / Fergus St	TWSC	WBR	4	100	100	0	2	Α				
220	Concession St / Grey St	TWSC	SBL	0	0	5	0	0	Α	26.0	D	10.1	В
220	Concession St / Grey St	TWSC	SBR	15	0	5	15	26	D				
220	Concession St / Grey St	TWSC	EBL	0	55	105	0	0	Α				
220	Concession St / Grey St	TWSC	EBT	830	55	105	11	16	С				
220	Concession St / Grey St	TWSC	WBT	1,021	60	60	3	5	Α				
220	Concession St / Grey St	TWSC	WBR	5	60	60	2	6	Α				
230	Concession St / Alfred St	Signalized	NBL	260	265	325	103	132	F	132.0	F	41.6	D
230	Concession St / Alfred St	Signalized	NBT	33	265	325	94	122	F				
230	Concession St / Alfred St	Signalized	NBR	27	265	325	80	104	F				
230	Concession St / Alfred St	Signalized	SBL	0	5	20	0	0	Α				
230	Concession St / Alfred St	Signalized	SBT	35	5	20	16	21	С				
230	Concession St / Alfred St	Signalized	SBR	22	5	20	17	24	С				
230	Concession St / Alfred St	Signalized	EBL	22	55	60	25	31	С				
230	Concession St / Alfred St	Signalized	EBT	478	55	60	13	18	В				
230	Concession St / Alfred St	Signalized	EBR	317	55	60	3	5	Α				
230	Concession St / Alfred St	Signalized	WBL	58	140	145	25	38	D				
230	Concession St / Alfred St	Signalized	WBT	746	140	145	24	37	D				
230	Concession St / Alfred St	Signalized	WBR	0	140	145	0	0	Α				
240	Concession St / Lansdowne St	TWSC	NBL	5	5	10	79	91	F	91.0	F	10.6	В
240	Concession St / Lansdowne St	TWSC	NBR	20	5	10	19	32	D				
240	Concession St / Lansdowne St	TWSC	EBT	460	0	0	0	1	Α				
240	Concession St / Lansdowne St	TWSC	EBR	0	0	0	0	0	Α				
240	Concession St / Lansdowne St	TWSC	WBL	56	100	410	8	14	В				
240	Concession St / Lansdowne St	TWSC	WBT	767	100	410	8	15	В				
250	Concession St / Division St	Signalized	NBL	144	115	115	61	76	E	103.0	F	48.7	D
250	Concession St / Division St	Signalized	NBT	546	115	115	37	46	D				
250	Concession St / Division St	Signalized	NBR	12	115	115	28	34	С				
250	Concession St / Division St	Signalized	SBL	28	160	315	38	51	D				
250	Concession St / Division St	Signalized	SBT	486	160	315	25	33	С				
250	Concession St / Division St	Signalized	SBR	284	160	315	16	27	С				
250	Concession St / Division St	Signalized	EBL	227	35	100	18	26	С				
250	Concession St / Division St	Signalized	EBT	202	35	100	12	18	В				
250	Concession St / Division St	Signalized	EBR	36	35	100	2	5	Α				
250	Concession St / Division St	Signalized	WBL	45	205	210	86	103	F				
250	Concession St / Division St	Signalized	WBT	375	205	210	86	103	F				
250	Concession St / Division St	Signalized	WBR	32	205	210	80	95	F				



Node	Location	Control	Mvmt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Intersection	
vode	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
260	Adelaide St / Division St	TWSC	NBL	0	110	110	0	0	Α	486.0	F	24.3	С
260	Adelaide St / Division St	TWSC	NBT	692	110	110	27	36	E				
260	Adelaide St / Division St	TWSC	NBR	0	110	110	0	0	Α				
260	Adelaide St / Division St	TWSC	SBL	0	0	95	0	0	Α				
260	Adelaide St / Division St	TWSC	SBT	438	0	95	1	2	Α				
260	Adelaide St / Division St	TWSC	SBR	125	0	95	0	1	Α				
260	Adelaide St / Division St	TWSC	EBL	10	5	60	469	486	F				
260	Adelaide St / Division St	TWSC	EBT	0	5	60	0	0	Α				
260	Adelaide St / Division St	TWSC	EBR	0	5	60	0	0	Α				
260	Adelaide St / Division St	TWSC	WBL	10	0	5	11	20	с				
260	Adelaide St / Division St	TWSC	WBT	1	0	5	0	0	Α				
260	Adelaide St / Division St	TWSC	WBR	0	0	5	0	0	Α				
270	Stanley St / Division St	TWSC	NBL	0	75	75	0	0	Α	80.0	F	15.9	С
270	Stanley St / Division St	TWSC	NBT	685	75	75	16	23	с				
270	Stanley St / Division St	TWSC	SBT	384	0	65	1	3	Α				
270	Stanley St / Division St	TWSC	SBR	61	0	65	1	2	Α				
270	Stanley St / Division St	TWSC	EBL	14	0	10	68	80	F				
270	Stanley St / Division St	TWSC	EBR	0	0	10	0	0	Α				
280	Pine St / Division St	Signalized	NBL	33	75	80	15	25	С	63.0	E	23.9	С
280	Pine St / Division St	Signalized	NBT	618	75	80	20	28	с				
280	Pine St / Division St	Signalized	NBR	0	75	80	0	0	Α				
280	Pine St / Division St	Signalized	SBL	25	25	70	14	20	В				
280	Pine St / Division St	Signalized	SBT	344	25	70	5	9	Α				
280	Pine St / Division St	Signalized	SBR	16	25	70	5	10	Α				
280	Pine St / Division St	Signalized	EBL	3	5	25	31	39	D				
280	Pine St / Division St	Signalized	EBT	42	5	25	20	24	С				
280	Pine St / Division St	Signalized	EBR	37	5	25	7	12	В				
280	Pine St / Division St	Signalized	WBL	5	20	50	52	63	E				
280	Pine St / Division St	Signalized	WBT	45	20	50	38	48	D				
280	Pine St / Division St	Signalized	WBR	64	20	50	42	55	D				
290	Quebec St / Division St	TWSC	NBT	651	70	85	9	13	В	17.0	С	9.0	Α
290	Quebec St / Division St	TWSC	NBR	0	70	85	0	0	Α				
290	Quebec St / Division St	TWSC	SBL	0	0	70	0	0	Α				
290	Quebec St / Division St	TWSC	SBT	386	0	70	1	2	Α				
290	Quebec St / Division St	TWSC	WBL	14	0	5	9	17	с				
290	Quebec St / Division St	TWSC	WBR	0	0	5	0	0	Α				
300	York St / Division St	Signalized	NBL	1	35	40	0	0	Α	31.0	С	10.8	В
300	York St / Division St	Signalized	NBT	619	35	40	6	8	Α				
300	York St / Division St	Signalized	NBR	6	35	40	2	3	Α				
300	York St / Division St	Signalized	SBL	38	20	65	19	26	с				
300	York St / Division St	Signalized	SBT	363	20	65	4	7	Α				
300	York St / Division St	Signalized	SBR	0	20	65	0	0	Α				
300	York St / Division St	Signalized	EBL	0	5	15	0	0	Α				
300	York St / Division St	Signalized	EBT	31	5	15	26	30	с				
300	York St / Division St	Signalized	EBR	1	5	15	0	0	Α				
300	York St / Division St	Signalized	WBL	45	10	30	24	31	с				
300	York St / Division St	Signalized	WBT	24	10	30	24	31	с				
300	York St / Division St	Signalized	WBR	34	10	30	19	29	с				
310	Main St / Division St	TWSC	NBT	624	55	60	14	21	С	47.0	E	12.8	В
310	Main St / Division St	TWSC	NBR	0	55	60	0	0	Α				
310	Main St / Division St	TWSC	SBL	0	35	35	0	0	Α				
310	Main St / Division St	TWSC	SBT	410	35	35	0	0	Α				
310	Main St / Division St	TWSC	WBL	8	0	5	11	19	с				
310	Main St / Division St	TWSC	WBR	2	0	5	36	47	E				
320	Hamilton St / Division St	TWSC	NBL	17	110	115	32	49	E	49.0	E	23.5	С
320	Hamilton St / Division St	TWSC	NBT	621	110	115	25	39	E				
320	Hamilton St / Division St	TWSC	SBT	382	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	SBR	34	0	0	0	0	Α				
320	Hamilton St / Division St	TWSC	EBL	0	0	5	0	0	Α				
320	Hamilton St / Division St	TWSC	EBR	16	0	5	1	8	Α				



Node	Location	Control	Mymt.	Volume	Queu	ie (m)	Stop	Delay	LOS	Critical	Mvmt	Inters	ection
Noue	Location	Control	www.	(All)	50th	95th	Delay (s)	(s)	103	Delay	LOS	Delay	LOS
330	Raglan St / Division St	TWSC	NBT	618	60	60	9	14	В	32.0	D	9.3	Α
330	Raglan St / Division St	TWSC	NBR	13	60	60	10	11	В				
330	Raglan St / Division St	TWSC	SBL	6	0	0	2	4	Α				
330	Raglan St / Division St	TWSC	SBT	393	0	0	0	0	Α				
330	Raglan St / Division St	TWSC	WBL	43	5	10	8	18	С				
330	Raglan St / Division St	TWSC	WBR	18	5	10	20	32	D				
340	Elm St / Division St	TWSC	NBL	142	60	60	7	10	Α	38.0	E	9.2	Α
340	Elm St / Division St	TWSC	NBT	618	60	60	9	14	В				
340	Elm St / Division St	TWSC	SBT	372	0	15	0	1	Α				
340	Elm St / Division St	TWSC	SBR	63	0	15	1	3	Α				
340	Elm St / Division St	TWSC	EBL	13	5	10	26	38	E				
340	Elm St / Division St	TWSC	EBR	11	5	10	6	13	В				
350	Ellice St / Division St	TWSC	NBT	747	50	55	5	7	Α	22.0	С	5.2	Α
350	Ellice St / Division St	TWSC	NBR	6	50	55	7	8	Α				
350	Ellice St / Division St	TWSC	SBL	2	0	10	4	10	Α				
350	Ellice St / Division St	TWSC	SBT	380	0	10	1	1	Α				
350	Ellice St / Division St	TWSC	WBL	0	0	5	0	0	Α				
350	Ellice St / Division St	TWSC	WBR	13	0	5	11	22	с				
360	Colborne St / Division St	TWSC	NBL	54	140	335	7	11	В	64.0	F	9.9	Α
360	Colborne St / Division St	TWSC	NBT	727	140	335	7	12	В				
360	Colborne St / Division St	TWSC	NBR	0	140	335	0	0	Α				
360	Colborne St / Division St	TWSC	SBL	6	0	50	2	6	Α				
360	Colborne St / Division St	TWSC	SBT	375	0	50	1	3	Α				
360	Colborne St / Division St	TWSC	SBR	0	0	50	0	0	Α				
360	Colborne St / Division St	TWSC	EBL	14	5	15	52	64	F				
360	Colborne St / Division St	TWSC	EBT	2	5	15	13	22	с				
360	Colborne St / Division St	TWSC	EBR	16	5	15	7	15	В				
360	Colborne St / Division St	TWSC	WBL	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBT	0	0	5	0	0	Α				
360	Colborne St / Division St	TWSC	WBR	13	0	5	12	23	с				
370	Queen St / Division St	Signalized	NBT	195	15	70	17	21	С	48.0	D	35.3	D
370	Queen St / Division St	Signalized	NBR	83	15	70	7	16	в				
370	Queen St / Division St	Signalized	SBL	108	45	80	21	31	с				
370	Queen St / Division St	Signalized	SBT	286	45	80	17	24	с				
370	Queen St / Division St	Signalized	WBL	273	75	260	23	38	D				
370	Queen St / Division St	Signalized	WBR	583	75	260	23	48	D				



CITY OF KINGSTON Williamsville Main Street Study



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1.0 Introduction

Dillon Consulting Limited (Dillon) was retained by the City of Kingston (City) to investigate cross-section alternatives that could be accommodated with the Princess Street right-of-way (ROW) between Bath Road and Division Street. This report documents the review of existing corridor amenities and constraints, the development of alternative corridor cross-sections, the identification of impacts associated with operational changes, and the evaluation of alternative solutions.

Dillon has short-listed two alternative cross-sections in this report. The preferred cross-section will be identified with input from City staff, the public, and Council.

1.1 Background

Dillon previously completed the *Williamsville Transportation Plan – Operational Needs Analysis* in 2020. The study was a general assessment of future traffic operations in the Williamsville neighbourhood. The requirement for analysis was triggered by a need to identify the transportation mode shares required to enable intensification.

Two development/intensification levels were considered: "Approved" and "Ultimate". The "Approved" scenario was the council-approved amount of development, whereas the "Ultimate" scenario included higher density for Williamsville.

The 2020 analysis also considered two mode share scenarios: "Base" and "Reduced" auto mode shares. The "Base" auto mode share was the same mode share used for the Transportation Master Plan (2015), whereas the "Reduced" auto mode share lower auto mode shares and higher active and transit mode shares, as per direction from council on December 1, 2015.

The Williamsville Transportation Plan – Operational Needs Analysis study concluded that Williamsville was able to accommodate the majority of growth largely by assuming the majority of trips to and from the new development in Williamsville would use walking, cycling, and/or transit (consistent with the "Reduced" auto mode share direction from council in 2015 and the existing auto mode share in Williamsville).

The 2020 study suggested improvements to walking, cycling, and transit facilities on Princess Street to support a low auto mode share and support the Williamsville growth. The previous study noted that Princess Street had a narrow right of way through Williamsville (generally 20 metres or less) which likely precluded Princess Street's ability to simultaneously be a transit priority corridor, a cycling spine route, a pedestrian-friendly corridor, and an arterial class roadway leading to the downtown core. Additional study was recommended to review the Princess Street cross-section.



1.2 Approach

The 2020 *Operational Needs Analysis* identified the need to specifically investigate the feasibility for Princess Street to support the increased pedestrian, transit and cycling volumes associated with intensification. The previous study used traffic modelling to assess if the existing road network could potentially support the additional traffic demand from the proposed development. This study focussed on assessing whether adequate space exists in the Princess Street's right-of-way to provide facilities that encourage walking, cycling and transit while discouraging use of private vehicles. Alternative means of accommodating modes that cannot be adequately accommodated on Princess Street were also explored.

Traffic analysis was performed to assess intersection operations and identify the need and benefit of congestion mitigation measures such as queue jump lanes, left turn lanes, and transit priority signals. Removal of two-way vehicular access was not considered given Princess Street is a primary arterial roadway that supports a major transit route. The mitigation measures helped inform the development and analysis of vehicular and transit cross-section design elements. More information on the traffic analysis performed as a component of the current study is provide in Section 0.

Several alternatives were developed to understand how the space between the property lines and the edge of vehicular travel lanes could be used to provide a visually appealing and accessible place for pedestrians and cyclists. The limited available right-of-way on Princess Street made successful implementation of infeasible for several desirable options. Compromises of ideal facility widths are required in nearly every alternative. More information on the cross-section alternatives can be found in Section 4.0.

2.0 Traffic Analysis

Traffic operations were assessed using the PTV Vissim microsimulation software, which is the industryleading microsimulation platform. Microsimulation was used to model vehicles, buses, pedestrians, and cyclists in a mixed environment. The analysis assumed a basic cross section; one lane in each direction along Princess Street throughout the study area. Consistent with existing conditions, transit was assumed to operate in mixed traffic.

The traffic analysis was completed using forecasted 2036 traffic volumes as per the previous work completed by Dillon in 2020. In 2020, the 2036 horizon was a +15-year horizon and was assumed to be a reasonable period for build out of the area. Note that actual timing for full build-out of the area is dependent on market conditions.

2.1 2036 Do-Nothing Scenario

2.1.1 Intersection Performance

Traffic operations for the 2036 Do-Nothing scenario were assessed to identify any capacity constraints or major delays resulting from future demand assuming no changes have been made to the existing lanes on Princess Street.

Table 1 summarizes the Level of Service (LOS) for intersections within the study area for the 2036 Do-Nothing scenario. Appendix A contains detailed traffic analysis results. For the Do-Nothing scenario, all intersections operate with an overall LOS D or better. Intersection LOS D represents a poor but acceptable average vehicular delay 36-55 seconds.

Table 1: Intersection Level of Service – 2036 Do Nothing

	Ū.		
Intersection	Intersection Control	LOS-AM	LOS-PM
Princess St./Concession St.	Signalized	D	D
Princess St./Regent St.	T W S C	А	В
Princess St./Drayton Ave.	T W S C	А	В
Princess St./MacDonnell Ave.	Signalized	В	В
Princess St./Smith St.	T W S C	А	А
Princess St./Victoria St.	Signalized	В	С
Princess St./Nelson St.	T W S C	А	В
Princess St./Albert St.	Signalized	В	В
Princess St./Frontenac St.	T W S C	А	А
Princess St./Alfred St.	Signalized	В	В
Princess St./Chatham St.	TWSC	А	В
Princess St./University Ave.	Signalized	А	В
Princess St./Division St.	Signalized	В	В



Delays are anticipated for traffic exiting from two-way stop controlled minor side streets onto Princess Street. High traffic volumes on Princess Street can inhibit side street traffic from finding gaps to enter the corridor. During the PM peak hour, the southbound approach on Drayton Avenue, Nelson Street, Frontenac Street, and Chatham Street experience LOS F (i.e., delay in excess of 80 seconds). Traffic volumes observed for these movements are minor; generally, less than 30 vehicles per hour. No mitigation is recommended as Princess Street is the primary transportation corridor and would be negatively impacted by changes that would prioritize minor side streets.

2.1.2 Corridor Performance

Due to the close spacing of intersections and interaction between traffic signals, it was important to consider the overall corridor performance by reviewing travel time impacts.

Table 2 summarizes the transit travel times for 2019 existing conditions and the 2036 Do Nothing scenario. The existing transit travel time was provided by Kingston Transit.

The following observations were noted:

- During the weekday AM peak hour, there is a small increase in travel times between 2019 existing conditions and 2036 Do Nothing conditions; and
- During the PM peak hour, eastbound travel time along Princess Street is expected to increase by approximately 1 minute and westbound travel time is anticipated to increase by approximately 2.5 minutes.

Table 2: Travel Times – 2019 and 2036 Do Nothing – Transit

Direction	Time Period	2019 Existing Travel Time	2036 Do Nothing Travel Time
Easthound	AM Peak	8 minutes	8.1 minutes
Eastbound —	PM Peak	8 minutes	9.0 minutes
Westbound	AM Peak	7 minutes	7.4 minutes
Westbourid	PM Peak	9 minutes	11.4 minutes

Of note, a key objective of the future Princess Street corridor is to provide express transit service with headways of 5 minutes or less. Based on these travel time results, reducing delays for the westbound direction during the PM peak hour is critical. Mitigation measures should be implemented to reduce the westbound travel times.

One potential method to improve transit travel times is to implement transit queue jump lanes. This is discussed in Section 2.3.



2036 Mitigated Scenario 2.2 The 2036 Mitigated Scenario was modelled to identify and assess operational improvements that could result from potential mitigation measures. The proposed mitigation measures include the following: Princess Street & Drayton Avenue: Implement traffic control signals; • Implement curbside queue jump lane for westbound buses; • Remove existing eastbound left turn lane to make space for the westbound curbside queue jump lane: and Implement transit signal priority. Princess Street & Albert Street: Implement curbside queue jump lane for westbound buses; Remove existing eastbound left turn lane to make space for the westbound curbside queue jump • lane: and Implement transit signal priority. Princess Street & Nelson Street Implement left turn lanes in both directions to compensate for the removal of left turn lanes at Albert Street. Westbound queue jump lanes have been proposed at two locations: Princess Street / Drayton Avenue and Princess Street / Albert Street. Queue jump lanes at these intersections will provide opportunities for express buses to "jump" ahead of queued vehicles in the adjacent lane. Given that express transit stops are present at both locations, mitigation at these locations will improve transit operations. For the queue jump lane, it should be noted that vehicles making a right turn at an intersection would be permitted to enter the curbside queue jump lane a short distance in advance of the intersection. Intersection Performance 2.2.1 Traffic operations for the 2036 Mitigated Scenario were assessed to demonstrate projected operations under the proposed design. Table 3 summarizes the intersection operations level of service for each intersection within the study area. Under the *Mitigated Scenario*, all intersections operate with LOS D or better. Compared to *Do Nothing* conditions, level of service is relatively unchanged during the AM peak hour. However, intersection performance has improved slightly during the PM peak hour at most intersections. Only one movement operates with LOS F (delays of more than 80 seconds/vehicle) during the PM peak hour: the southbound



left turn at the intersection of Princess Street and Nelson Street. The introduction of dedicated left turn lanes on Nelson Street to help mitigate the delay were not investigated due to right-of-way constraints.

Table 2. Intersection	Loval of Sarvica	- 2036 Recommended
	reaction per aire.	· 2030 Necommended

Intersection	Intersection Control	LOS-AM	LOS-PM
Princess St./Concession St.	Signalized	D	D
Princess St./Regent St.	Two Way Stop Controlled	Α	А
Princess St./Drayton Ave.	Signalized	Α	А
Princess St./MacDonnell Ave.	Signalized	В	В
Princess St./Smith St.	Two Way Stop Controlled	Α	А
Princess St./Victoria St.	Signalized	В	В
Princess St./Nelson St.	Two Way Stop Controlled	A	В
Princess St./Albert St.	Signalized	В	В
Princess St./Frontenac St.	Two Way Stop Controlled	Α	А
Princess St./Alfred St.	Signalized	В	В
Princess St./Chatham St.	Two Way Stop Controlled	Α	A
Princess St./University Ave.	Signalized	Α	В
Princess St./Division St.	Signalized	В	В

2.2.2 Corridor Performance



Table 4 summarizes the transit travel times for the Do-Nothing scenario and the 2036 Mitigated Scenario, which shows that:

- During the AM peak hour, transit travel times increased slightly (~0.5 minutes) in the mitigated scenario due to the introduction of the traffic signal at Drayton Avenue; and
- During the PM peak hour, travel time remained identical in the eastbound direction and improved by approximately 2.5 minutes in the westbound direction. This improvement can be attributed to the introduction of the westbound transit queue jump lanes at the Drayton Avenue and Albert Street intersections.

Kingston Transit has indicated the intent for future express transit routes to operate with 5-minute headways. Proposed mitigation measures are focused on improving transit travel time. The implementation of westbound queue jump lanes prioritizes transit and provides the opportunity for express buses to "jump" ahead of queued vehicles in the adjacent lane. The desired 5-minute headways can be achieved through consistent travel times along the Princess Street corridor throughout the peak hours.



Table 4. Travel Times - 2030 DO Nothing and 2030 Recommended - Transit				
Direction	Time Period	2036 Do-Nothing	2036 Recommended Design	
Direction	ion Time Period	Travel Time	Travel Time	
Eastbound	AM Peak	8.1 minutes	8.4 minutes	
	PM Peak	9.0 minutes	9.2 minutes	
Westbound	AM Peak	7.4 minutes	8.0 minutes	
vvestboullu	PM Peak	11.4 minutes	9.1 minutes	

Table 4: Travel Times - 2036 Do Nothing and 2036 Recommended - Transit

Figure 1 illustrates a conceptual transit queue jump lane at the Princess Street/Drayton Avenue intersection.

Figure 1: Conceptual Transit Queue Jump Lane



Table 5 summarizes the auto travel time impacts. Minimal changes to auto travel time are seen in the eastbound direction (~0.5 minutes). However, improvements are evident in the westbound direction during both peaks.

Of note, the auto travel time decreases by approximately 2.5 minutes during the PM peak hour. Again, this improvement can be attributed to the queue jump lanes which prevent buses from backing up traffic while picking up passengers at high volume express stops.



Auto travel times are shorter than transit travel times since buses service multiple stops along the corridor.

Table 5: Travel Time	- 2036 Do Nothing	and 2036 Recom	mended - Auto

Direction	Time Period	2036 Do Nothing Travel Time	2036 Recommended Design Travel Time
Fastbound	AM Peak	5.3 minutes	5.6 minutes
Eastbound	PM Peak	6.2 minutes	6.6 minutes
Westbound	AM Peak	4.6 minutes	4.5 minutes
vvestbound	PM Peak	8.8 minutes	6.0 minutes

2.3 Corridor Design Recommendations

The following geometric changes are recommended based on results of the traffic analysis:

Princess Street/Drayton Avenue:

- Implement curbside queue jump lane for westbound direction to provide opportunity for express buses to "jump" ahead of queued vehicles in the adjacent lane;
- Remove eastbound left turn lane to provide adequate space to accommodate introduction of westbound curbside queue jump lane;
- The implementation of a traffic control signal at Princess Street/Drayton Avenue will:
- Enable the implementation of a westbound queue jump lane;
- o Improve pedestrian connectivity across Princess Street;
- Provide a gap for eastbound left turning traffic at the end of each cycle to offset the impact of the removal of the eastbound left turn lane; and
- Implement transit signal priority (TSP) to reduce delays for buses.

Princess Street/Albert Street:

- Implement curbside queue jump lane for westbound direction to provide opportunity for express buses to "jump" ahead of queued vehicles in the adjacent lane;
- Remove eastbound left turn lane to accommodate introduction of westbound curbside queue jump lane; and
- Implement transit signal priority (TSP) to reduce delays for buses.

Princess Street & Nelson Street

• Implement left turn lanes in both directions to compensate for the removal of left turn lanes at Albert Street.

In addition to the above, right-in/right-out treatments were also considered to reduce the number of mid-block left turns, which should reduce the delays in the corridor for auto and transit vehicles. Select locations along the corridor were identified as potential future candidates for right-in/right-out



treatment. These movement restrictions could be introduced in the future as necessary. The impact of implementing right-in/right-out treatments were not assessed in the modelling exercise.

Princess Street/Smith Street: Recommended conversion of north leg to right-in/right-out. Under existing conditions, the eastbound left and southbound left traffic will encroach on the MacDonnell Street westbound left turn storage when waiting for a gap in traffic. With right-in/right-out treatment, vehicles can use the traffic control signal at the Princess Street/MacDonnell Street intersection. Of note, the right-in/right-out option does not impact pedestrian connectivity since it is a three-leg intersection and free flow along Princess Street.

Princess Street/Chatham Street: Recommended conversion of north leg (Chatham Street) to rightin/right-out. Chatham Street is located 70 metres east of the Alfred Street intersection. With RIRO treatment in place, vehicles can alternatively use the signalized intersection at Alfred Street. Of note, the RIRO option does not impact pedestrian connectivity since it is a 3-leg intersection and free flow along Princess Street.



3.0 Cross-Section Design

The following sections provide an overview of the existing, and potential future, spatial allocations of the Princess Street road right-of-way. This right-of-way is particularly constrained through much its length between Bath Road and Division Street. This makes accommodation of all required and desired design elements challenging.

3.1 Existing Cross Section Allocation

The existing cross-section was reviewed to understand how the space is currently allocated and to identify areas for improvement. Within the tight urban environment of Princess Street, the right-of-way (distance between property lines) must not only include roadway elements to accommodate cyclists and vehicles, but also the various uses beyond the curb. This includes elements such as the swing of shop doors, streetlights, signs, bus stops, and garbage cans. The location and minimum required widths of key ROW elements are illustrated in Figure 2.

Vehicular Lanes	Cycle Lanes	Pedestrian Clearway
(Required)	(Optional – Not Shown)	(Required)
 Located between the curbs. Minimum lane width of 3.3 m where lanes are used by trucks or buses due to width of these vehicles. Required to provide access for vehicles on arterial transportation corridors. 	 Dedicated space for travel by bicycle. Located beside vehicular lanes or behind the curb. Minimum clear width of 1.5 m for accessibility. Width to be adjusted based on anticipated user volumes and street context. 	 Most critical zone within the pedestrian realm. Minimum clear width of 1.8 m for accessibility. Width to be adjusted based on anticipated user volume and street context. Should be clearly delineated direct and continuous.

Figure 2: Elements of an Urban Road Right-of-Way.





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Edge Zone	Furnishing/Planting	Frontage Zone
(Required)	(Optional)	(Required)
 Space directly behind the curb that acts as a buffer between vehicles and other sidewalk/boulevard functions. May include signs, parking meters, and snow storage. Recommended minimum snow storage width for the City of Kington is 2.0 m. This width may be provided across the edge and furnishing zones. 	 Located between the pedestrian clearway and edge, this zone provides space for streetscaping, streetlights, and storage for bikes and scooters. Recommended minimum snow storage width for the City of Kingston is 2.0 m. This width may be provided across the edge and furnishing zones. 	 Space adjacent to elements of the private realm, including building entrances and stoops. Width of this zone must conside requirements of doors or gates that open towards the sidewalk, leg room required for users of benches and café seating, and ventilation grates.

Table 6 provides an overview of the median right-of-way (ROW) width within key blocks along Princess Street. Note that due to the historic nature of this roadway, there are several locations in each block where existing buildings encroach on the ROW. Table 6 also identifies the types and widths of transportation facilities that are currently provided there. The following list provides an overview of key takeaways from review of the existing Princess Steet design:

- a) The current sidewalk width is less than required to meet Accessibility for Ontarians with Disabilities Act (AODA) requirements for two-way travel within two blocks. Only in one block does the sidewalk width exceed the minimum significantly (3 metres);
- b) The cycling lanes are consistently 1.5 metres were provided but are discontinuous in some locations. Due to the lack of a buffer between the cycle lanes parked cars, cyclists are at risk of being 'doored' by vehicle doors opening unexpectedly into the bike lane;
- c) The parking lanes consume a significant portion of the available section width, at 4 metres on each of two sides;
- d) The through lanes are generally 3.5 metres, which is preferred by transit operators but can encourage increased vehicular travel speeds;
- e) There are relatively few street trees, and there is minimal setback from buildings in some cases; and
- f) Left turn lanes are provided at all signalized intersections.



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Princess Street	Average Mid-Block Right-	Average Widths of Existing Facilities			
Segments	of-Way Width	Sidewalk (m)	Cycle Lane (m)	Parking Lanes (m)	Through Lanes (m)
Concession St. to Regent St.	22	2.0	1.5	N/A	3.5
Regent St. to MacDonnell St.	18	3.0	1.5	N/A	3.5
MacDonnell St. to Frontenac St.	18	1.5	1.5	4.0	3.5
Frontenac St. to University Ave.	19.6	2.0	1.5	4.0	4.0
University Ave. to Division St.	19.5	1.5	1.5	4.0	3.5

Table 6: Existing Right-of-Way and Transportation Facility Widths^a

^a Note that the widths provided to not account for curb and gutter (0.5 m each side), the edge zone (0.3 m minimum) and frontage zones (0.5 m minimum). Widths are average and may be wider or narrower in certain sections.



3.1.1 Transit Stops

Table 7 summarizes the existing transit stops in the study area which service Route 4, Route 501 Express (eastbound), and Route 502 Express (westbound). The existing express bus routes operate every 15 minutes or less during weekday daytime hours, although the intent is to increase frequency to every 5 minutes by 2034.

For the purpose of considering the future design of Princess Street, Kinston Transit provided specific direction on the placement of two stops along the corridor:

- Princess Street / Albert Street: Stop placement has been finalized. The stop will be integrated into the façade of the buildings to be constructed on the southwest and northeast corners of the intersection; and
- Princess Street / Alfred Street: Westbound stop will be integrated into the north-east corner in similar fashion.

Direction	Eastbound Stops	Stop Type	Route(s)
	800 Princess Street	Midblock	4, 501 Express
	MacDonnell Street	Far Side	4
	Victoria Street	Near Side	4
Eastbound -	Albert Street	Near Side	4, 501 Express
	Alfred Street	Near Side	4
	University Avenue	Far Side	4
	University Street	Far Side	4
	Alfred Street	Far Side	4
Westbound	Albert Street	Near Side	4, 502 Express
	Legion Villa	Midblock	4
	Tower Street	Midblock	4, 502 Express

Table 7: Existing Transit Stops





3.2 Alternative Princess Street Cross-Sections

3.2.1 Long List of Alternatives

Cross-section alternatives were developed by identifying alternative priorities for Princess Street and combining various desirable elements to determine what could potentially fit within the limited ROW. All alternatives included AODA-compliant sidewalks, minimum frontage and edge zones, and one minimum width vehicular lane in each direction to accommodate transit and limit vehicular infiltration into the adjacent neighborhoods. Removal of on-street parking was also considered in all alternatives.

Table 8 summarizes the recommended widths for various elements of the cross-section such as: frontage, walkways, furnishing zone, cycle tracks, cycle lanes, curb and gutter, and bus lanes. and the factors and guidelines used to identify these minimums. The factors and guidelines used to identify the minimum component dimensions include:

- City of Kingston Technical Standards and Specifications;
- Transportation Association of Canada (TAC)'s Geometric Design Guide (2019);
- Ontario Traffic Manual Book 18: Cycling Facilities, and
- City of Hamilton's Street Furniture Guidelines.

Discussion with City staff identified the following desired elements based on the direction adopted by Council in December 2020 that are above and beyond the minimum requirements summarized in Table 8:

- a) Minimum 2.0-metre sidewalks, to enhance the pedestrian realm and exceed the requirements with Accessibility for Ontarians with Disabilities Act (AODA);
- b) Inclusion of street trees, to enhance the pedestrian realm. Note that providing street trees on Princess Street will require the use of soil cells, which necessitate a minimum 1.5 m wide furnishing zone;
- c) Provision of left turn lanes/transit queue jump lanes at key intersections to reduce travel delays for buses and general traffic. Reduced delay is important to support the use of Princess Street as a transit priority corridor; and
- d) Accommodations for cyclists, since the Princess Street corridor is identified as a part of the spine cycling network.



Table 8: Minimum Right-of-Way Component Dimensions

Right of Way Component	Minimum Dimensions	Factors/Guidelines
Frontage Zone	0.5 metres	Based on the Transportation Association of Canada Geometric Design Guidelines (TAC GDG) Chapter 6 Section 6.3.1.1.
Walkway Zone	1.8 metres – 2.0 metres	Based on AODA standards for Accessible Exterior Paths of Travel (2019) and TAC GDG Chapter 6 Table 6.3.1, a 1.8 m minimum width is recommended to provide space for two wheelchairs or pedestrians to pass each other, and for wheelchairs to be able to turn around. 2.0 metres is the recommended width for areas with a peak pedestrian flow rate greater than 400 pedestrians per 15 minutes.
Furnishing Zone	1.85 metres	The width ensures that the placement of furniture does not obstruct the walkway zone by providing space for access, use and maintenance of furniture elements. Values were based on TAC GDG Chapter 6 Section 6.3.1.3.
Transit Shelter	Landing Pad: 9m x 2.5m min Ramp Deployment: 1.5m x 2.5m min Clearway: 1.5m min width	Transit shelter width based on the City of Hamilton HSR Stop Accessibility Guidelines.
Cycle Track	2.0 metres (One way) 3.5 metres (Two way)	Based on OTM Book 18 Table 4.4.
Curb/Gutter	0.5 metres	Based on City of Kingston Technical Standards and Specifications. Reference to City of Kingston Technical Standards and Specifications. References OPSD 600.100



Right of Way Component	Minimum Dimensions	Factors/Guidelines
Cycle Lane	1.5 metres + 0.3m buffer	Based on OTM Book 18 Table 4.7. Note that an additional 0.3 m can be provided by having cyclists use the gutter.
Bus Lane	3.3 metres	3.5 m preferred. Minimum width indicated by City staff and supported by TAC GDG Table 4.2.3.
Through Lane/Turn Lane	3.3 metres	3.3m preferred. Minimum width indicated by City staff and supported by TAC GDG Table 4.2.3.



It is a significant challenge for Princess Street to simultaneously be a transit priority corridor, a cycling spine route, a pedestrian-friendly corridor, and an arterial class roadway due to the limited right-of-way. Therefore, compromises need to be made in a way that improves multi-modal mobility while recognizing the limited space to accommodate all modes of travel in a narrow corridor. To this end, provisions for transit priority and improved pedestrian realm were prioritized over maintaining on-street parking on Princess Street. There is parking available on side streets and within off-street parking areas to accommodate business needs.

The following sub-sections provide more detail on each of the six alternatives that were developed for use on Princess Street between Bath Road and Division Street. Table 9 summarizes the alternatives which were developed and their ability to provide desired elements, as identified through discussion with City staff.

3.2.2 Alternative **1**: Prioritize Pedestrian Realm

Alternative 1 prioritized widening of the pedestrian realm through removal of on-street parking, existing cycling lanes, and most left turn lanes. This alternative included implementation of transit priority lanes at Albert Street and Drayton Avenue as recommended in Section 2.3. Cyclists could be accommodated on shared lanes on Princess Street or could use alternative routes on adjacent streets. This alternative was the only one that provides the city with the space required for continuous >2.0m sidewalks and street trees on both sides of the roadway.

3.2.3 Alternative 2: Implement Cycle Tracks (Both Sides)

Alternative 2 contemplated implementation of unidirectional cycle tracks (each 2.0 m wide) on both sides of Princess Street. Cycle tracks are typically located beyond the curb and constructed at sidewalk height. They are considered the most appropriate facility type for the broadest range of cyclist experience levels.

Spatial requirements for the cycle tracks would negate to potential to provide left turn lanes or transit priority features within the corridor. This would lead to significant delays and compromise the City's ability to provide express transit service on the corridor. Reduction of the ideal sidewalk width would be required between Regent Street and Frontenac Street. Provision of AODA-compliant sidewalks would not be feasible at intersections between MacDonnell Street Frontenac Street. The feasibility of implementing street trees would be severely limited with this alternative.

3.2.4 Alternative 3: Implement Bi-Directional Cycle Track (One Side)

Alternative 3 contemplated implementation of bidirectional cycle tracks on one side of Princess Street. Bidirectional cycle tracks require less width to accommodate travel in two directions than separate unidirectional facilities. The primary challenge associated with bi-directional cycling facilities results from an increase in the number of vehicle – cyclist conflict points at intersections and the challenge of driver expectations.



This alternative would provide adequate additional width in the ROW to accommodate sidewalks with widths of at least 2.0 m throughout the corridor. This would, however, require removal of all on-street parking and left turn lanes. The limited space would also negate the potential to provide left turn lanes or transit priority features through much of the corridor without compromising sidewalk width.

3.2.5 Alternative 4: Implement Westbound Cycle Track Only

Alternative 4 contemplated implementation of a unidirectional cycle track on one side of Princess Street to further reduce spatial requirements. Cyclist traveling in the opposite direction could share lanes with vehicles on Princess Street or use alternative routes. Alternative 4 would provide adequate additional space in the ROW to accommodate sidewalks with widths of at least 2.0 m throughout the corridor, as well as accommodate left turn lanes at key intersections. The limited space would, however, negate the potential to provide the transit priority features recommended in Section 2.3.

3.2.6 Alternative 5: Implement On-Street Cycle Lanes

Alternative 5 is similar to the existing condition on Princess Street with the exception of removal of all on-street parking and the reallocation of space for wider pedestrian facilities and limited landscaping. Cycling lanes are assumed to be 1.5 m wide with no buffer between vehicular traffic and the cycling lane. This alternative included implementation of transit priority lanes at Albert Street and Drayton Avenue as recommended in Section 2.3. With Alternative 5, 2.0 m sidewalks can generally be provided on Princess Street with exception of the blocks between Regent Street and MacDonnell Street. Landscaping could feasibly be implemented west of Regent Street and east of Frontenac Street. Transit priority features and left turn lanes could be implemented for this alternative but would require further compromises to sidewalk width.

3.2.7 Alternative **6**: Prioritize Transit Operations

Alternative 6 contemplated inclusion of a continuous westbound transit lane to improve transit reliability in the most congested direction. Alternative 6 prioritized widening of the pedestrian realm and the addition of the transit lane through removal of on-street parking, existing cycling lanes, and all left turn lanes. Cyclists could be accommodated on shared lanes on Princess Street or could use alternative routes on adjacent streets. Landscaping could feasibly be implemented west of Regent Street and east of Frontenac Street. While transit travel times would be greatly enhanced in the westbound direction, the removal of all left turn lanes would result in significant backups in the general use lanes in both directions. This would have significant negative impacts on eastbound transit vehicles travelling these lanes.



 Table 9: Overview of High-Level Analysis of Cross-Section Alternatives

• Xs are used to identify segments where elements are expected to fit based with some minor compromises.

• Compromise solutions consider reducing the furnishing zone to 0.5 m before reducing sidewalk widths below 2 m.

	Alternative	Alternative 1: Wide Pedestrian Realm						Alternative 2: Cycle Tracks						Alternative 3: Bidirectional Cycle Track							Alternative 4: One-Way Cycle Track							Alternative 5: On-Road Cycling Lanes								Alternative 6: Continuous Bus Lane							
	Design elements Segments	Trees	Sidewalk < 1.5 m	Sidewalk 1.5 m-2.0 m	Sidewalk > 2.0m	Uni-directional cycle lanes	Bidirectional cycle facilities	Continuous 3rd Lane/Left turn lane	Trees	Sidewalk < 1.5 m	Sidewalk 1.5 m-2.0 m	Sidewalk > 2.0m	Uni-directional cycle lanes	Bidirectional cycle facilities	Continuous 3rd Lane/Left turn lane	Trees	Sidewalk < 1.5 m	Sidewalk 1.5 m-2.0 m	Sidewalk > 2.0m	_ <u> </u>	Bidirectional cycle facilities	Continuous 3rd Lane/Left turn lane	Trees	Sidewalk < 1.5 m	Sidewalk 1.5 m-2.0 m	Sidewalk > 2.0m	Uni-directional cycle lanes	Bidirectional cycle facilities	Continuous 3rd Lane/Left turn lane	Trees	Sidewalk < 1.5 m	Sidewalk 1.5 m-2.0 m	Sidewalk > 2.0m	Uni-directional cycle lanes	Bidirectional cycle facilities	Continuous 3rd Lane/Left turn lane	Trees	Sidewalk < 1.5 m	Sidewalk 1.5 m-2.0 m	Sidewalk > 2.0m	Uni-directional cycle lanes	Bidirectional cycle facilities	Continuous 3rd Lane/Left turn lane
	Concession St. to Regent St.	Х			Х				Х			Х		Х		Х			Х		Х		Х			Х	Х			Х			Х		Х		Х			Х			Х
×	Regent St. to MacDonnell St.	Х			Х						Х			Х					Х		Х					Х	Х					Х			Х					Х			Х
Mid-block	MacDonnell St. to Frontenac St.	x			Х						х			Х					X		х		Х			X	X						x		x					Х			Х
Mic	Frontenac St. to University Ave.	x			Х				Х			Х		Х		Х			Х		Х		Х			Х	Х			x			Х		Х		Х			Х			Х
	University Ave. to Division St.	X			х				х			х		Х		Х			Х		X		X			X	Х			х			Х		X		х			х			Х
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u	Regent St. to MacDonnell St.	X			Х			Х				Х		Х		Х			Х		X		Х			X	Х			Х			X		Х		Х			Х			
secti	MacDonnell St. to Frontenac St.				х			х		x				х					X		X		X			x	X						x		x					x			
Intersection	Frontenac St. to University Ave.	x			X			Х	Х			Х		Х		Х			X		X					X	X		Х	Х			X		X		Х			X			
	University Ave. to Division St.	Х			Х			Х	Х			Х		Х		Х			Х		Х					Х	Х		Х	Х			X		Х		Х			Х			
	Notes	Wider sidewalks and left turn /queue jump lanes can be provided throughout the entire study corridor. With exception of intersections between MacDonnell and Frontenac, street trees can also be accommodated on both sides of the corridor.						hout en et	Alternative cannot be used in combination with left turn lanes or queue jump lanes. Only three sections can accommodate the proposed design. Implementation in other sections would result in sub-standard sidewalk widths.					or ions d er	Alternative cannot be used in combination with left turn lanes or queue jump lanes. 2 m minimum sidewalk widths can be maintained throughout. the ability to accommodate street trees/furniture between Regent and Frontenac may be compromised.							Wider sidewalks can be accommodated throughout, with left turn or queue jump lanes feasible in three sections if the furnishing zone is reduced.						Alternative cannot be used in combination with left turn lanes or queue jump lanes without compromising the sidewalk.						t	Wider sidewalks and a continuous transit lane can be provided throughout. Street trees can also generally be accommodated. Left turn lanes will need to be removed.								
			(CARR	Y FOR\	NARD				SCREEN OUT					SCREEN OUT								SCREEN OUT						CARRY FORWARD						1	SCREEN OUT							



3.2.8 Short List of Alternatives

Alternatives 1 and 5 were recommended to be carried forward for further analysis based on their ability to provide for the majority of the desired elements.

- Figure 3 illustrates the short list of cross section alternatives, which include:
- Alternative 1: "Two Through Lanes & Wide Pedestrian Realm"; and,
- Alternative 5: "Two Through Lanes & On-Road Cycle Lanes".

Plan view conceptual design drawings for both alternatives have been included in Appendix A.

Both of these alternatives support the priorities of the corridor with dedicated facilities for transit, improved pedestrian realm, and promoting cycling. While Alternative 1 does not provide dedicated cycling facilities, traffic is anticipated to move quite slowly through the corridor making it suitable for more confident riders. Unfortunately, due to the ROW constraints of Princess Street, it was not possible to provide improvements to all modes simultaneously. The key trade off between Alternative 1 and Alternative 5 is the support for either the wide pedestrian realm or on-road cycling lanes.

Both alternatives are expected to have transit queue jump lanes at critical intersections. As noted earlier, transit queue jump lanes are important to reduce delays and maintain transit priority in the Princess Street corridor, particularly with buses running as frequently as every 5 minutes in the future. Both alternatives will be carried forward for further analysis and consultation with the public.





Figure 3: Renderings for Short List of Alternatives

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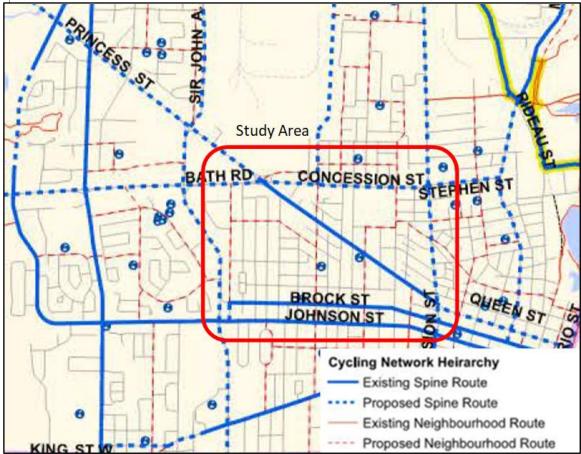


3.3 ¢ycle Network Impacts

As part of the 2012 Main Street Study, it was recommended that the surrounding local streets in the Williamsville area be improved with neighbourhood bikeway options to promote cycling. The existing and proposed cycling routes in the Active Transportation Master Plan (ATMP) were reviewed to understand cycling connectivity.

Figure 4 illustrates the Existing and Proposed Cycling Routes from the *Walk 'n' Roll Kingston Final Report* (ATMP). This shows that Princess Street, Brock Street and Johnson Street are existing Spine Routes with onroad cycling lanes, and Division Street, Concession Street, and Sir John A. Macdonald Boulevard are proposed Spine Routes. There are also proposed Neighbourhood Routes running north-south through the Williamsville area.





Source: Walk 'n' Roll Final Report, Map 2B, Cycling Network Hierarchy

In general, there are cycling facilities in the surrounding areas of Williamsville. The removal of cycling facilities from Princess Street eliminates a direct connection for through trips on Princess Street; however, alternative routes and options exist. If dedicated cycling facilities are removed from Princess Street, then the following should be considered:



- Promoting the use of Brock and Johnson Streets as part of the spine cycling network. Connections could be provided along Palace Road or Sir John A. Macdonald Boulevard up to Bath Road;
- Developing Concession Street as part of the spine cycling network alternative to connect into future bike facilities along Princess Street, west of Bath Road, and connect into existing and proposed bike facilities along Division Street;
- Developing neighbourhood bike routes these routes would be formalized with wayfinding and could potentially include traffic calming and other measures to promote cycling along these areas.
- Confident cyclists can also continue to bike along Princess Street.

Figure 5 illustrates the neighbourhood bike routes which were considered to provide access to and from Princess Street if dedicated facilities are removed from the Main Street. For locations crossing Princess Street without a traffic control signal, a pedestrian/cycling crossover could be considered if the crossover is required for system connectivity. In general, it is recommended that additional neighbourhood bike routes are considered to provide connections throughout Williamsville and to existing and proposed bike routes to the south. These neighbourhood bike routes will be carried forward and brought to the public for consultation.



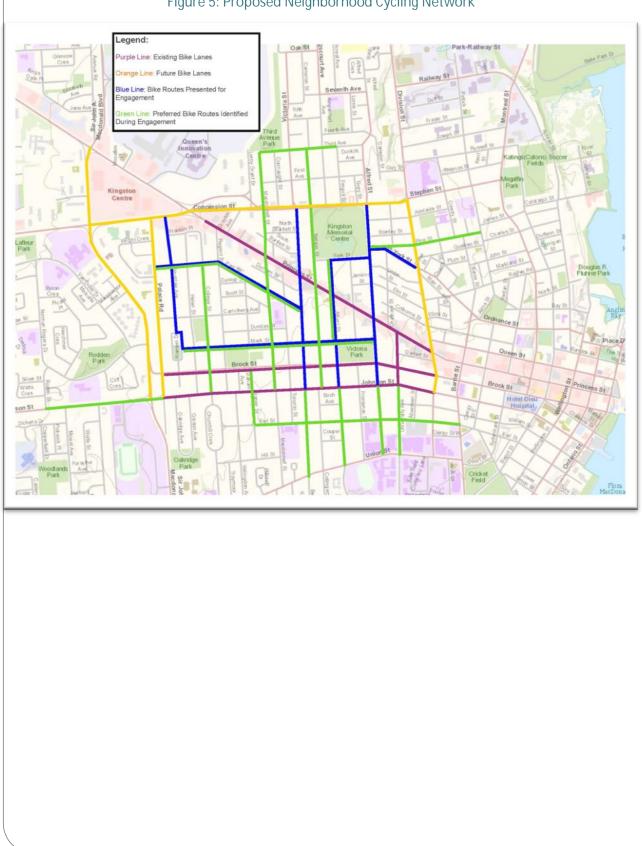


Figure 5: Proposed Neighborhood Cycling Network



4.0 Recommendations

Detailed traffic microsimulation and cross-section investigations have resulted in recommendations for the design of Princess Street and the need for a neighborhood bikeway network. The following geometric changes are recommended to support vehicular movement, prioritize transit, and reduce the proportion of the right-of-way allocated to vehicular traffic regardless of what alternative is carried forward:

- Removal of all existing on-street parking between Bath Road and Division Street,
- Add traffic signals and a westbound right turn / transit priority lane at Drayton Avenue,
- Widen the eastbound lane to 5 m on approach to the eastbound express stop at Tower Street to allow vehicles to slip past buses which are servicing the stop,
- Add traffic signals and east/westbound left turn lanes at Nelson Street,
- Remove existing left turn lanes at Albert Street and add a westbound right turn / transit priority lane, and
- Narrow vehicular lanes to 3.3 m.

Additional analysis is recommended prior to identifying a preferred cross-section for Princess Street. The following additional tasks are recommended:

- Undertake consultation with agencies, advocacy groups and the public to understand priorities and concerns;
- Conduct parking occupancy and requirement studies to identify locations where on -street parking can be removed and where accessible parking needs to be maintained;
- Explore the feasibility and potential design alternative for implementation of an expanded neighborhood bikeway network within Williamsville;
- Implement traffic calming throughout Williamsville, and particularly on local roadways adjacent to Princess Street, to minimize vehicular detouring and speeding and encourage cycling;
- Consider the use of 'green streets' concepts to improve walkability, improve cycling desirability, provide additional tree canopy, and reduce vehicular traffic; and
- Complete topographical surveys and advance the conceptual designs proposed through this study to confirm feasibility of implementation.

Completion of this study is an early step towards improving multi-modal mobility within the Williamsville Area.



Appendix A

Traffic Analysis Results



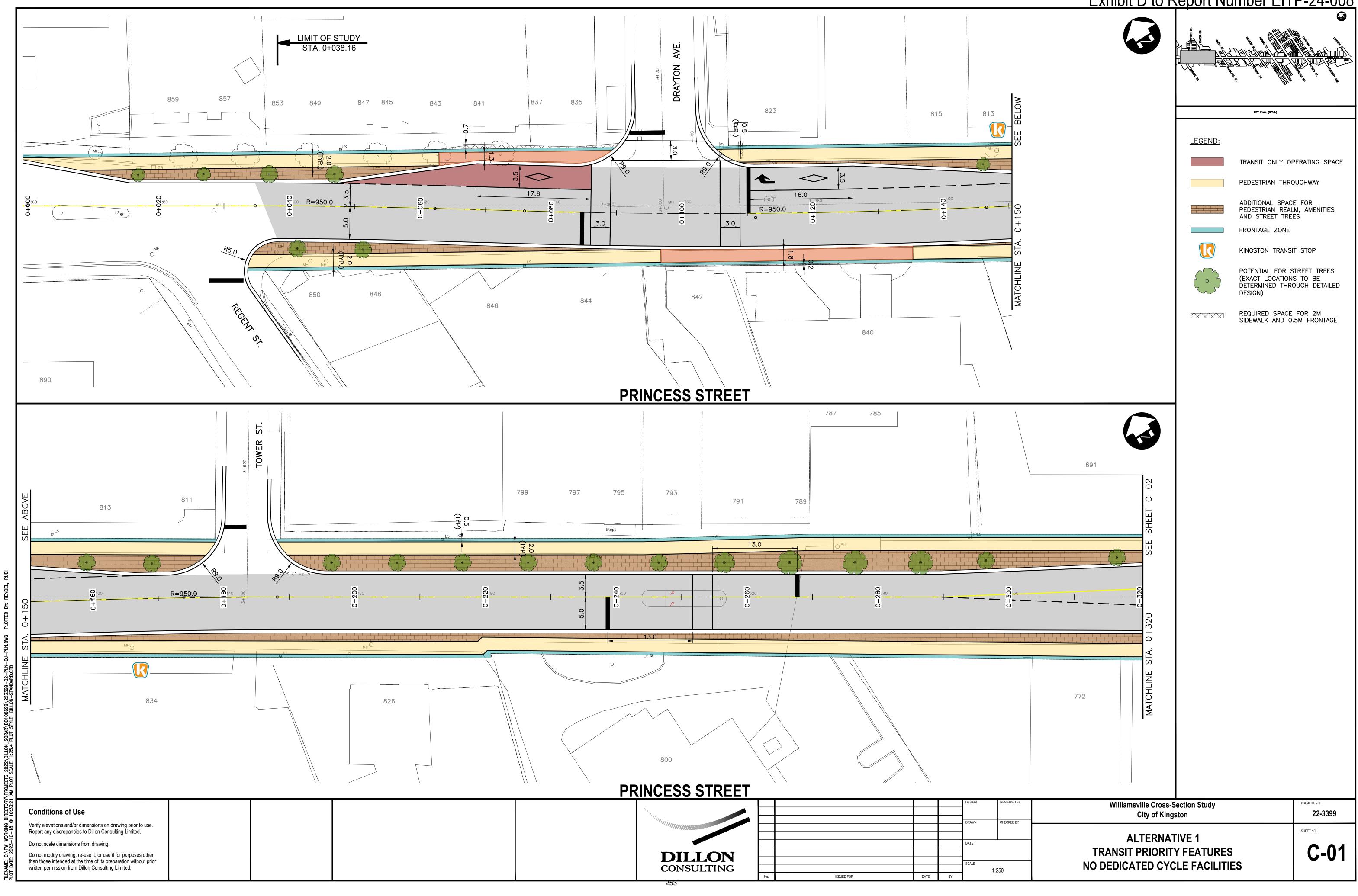


Appendix B

Plan View Conceptual Design Drawing

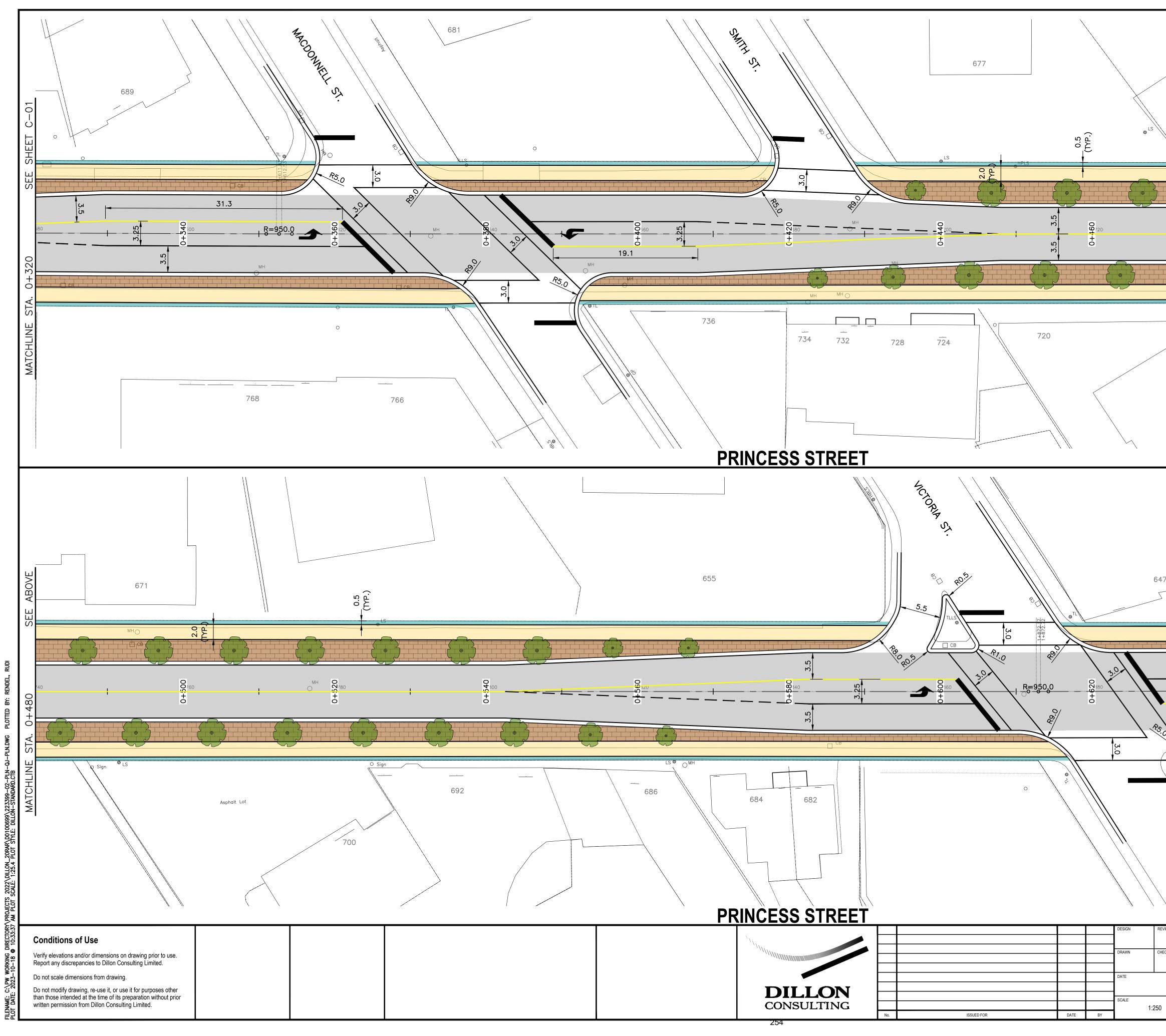






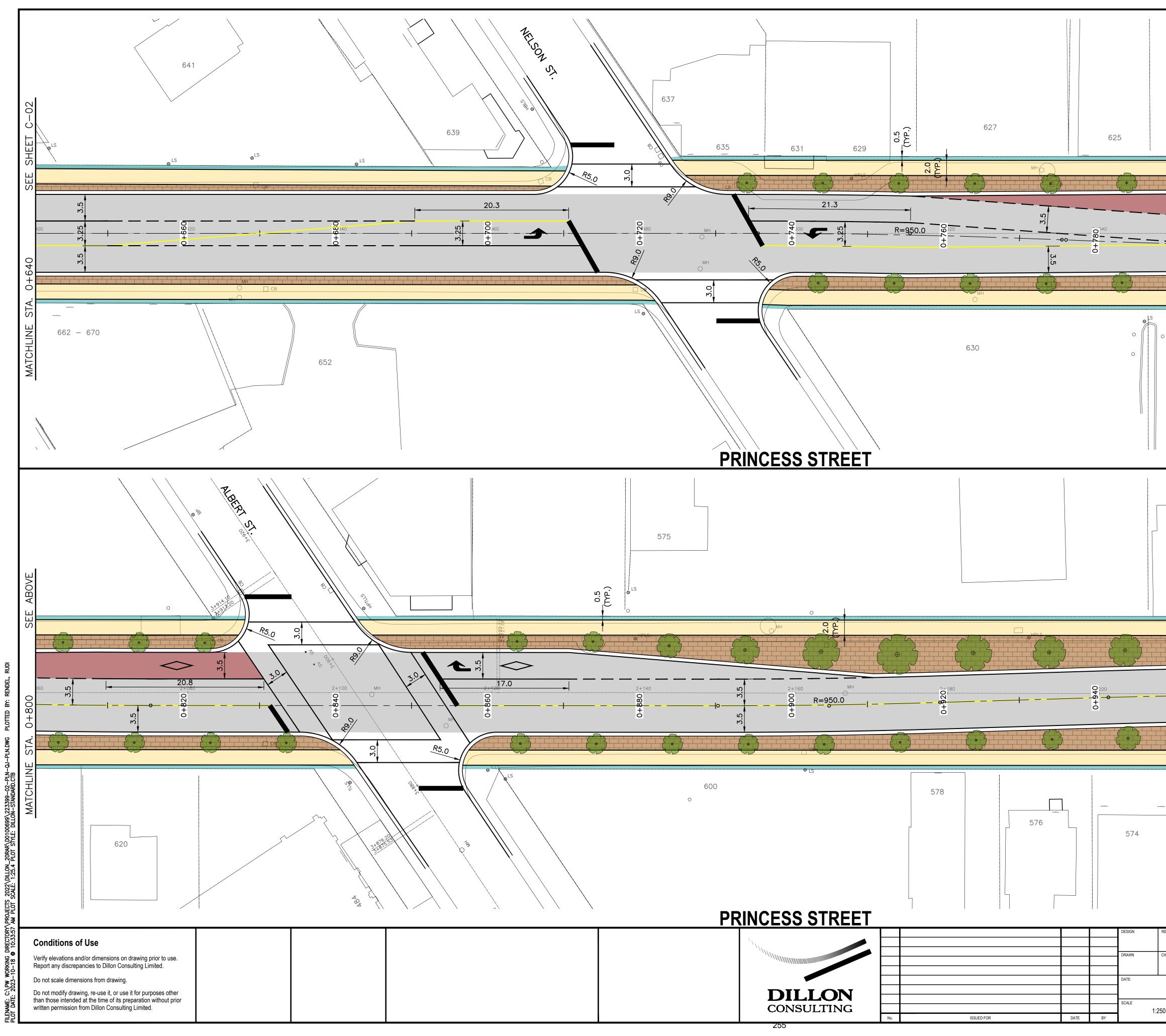
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Exhibit D to Report Number EITP-24-008



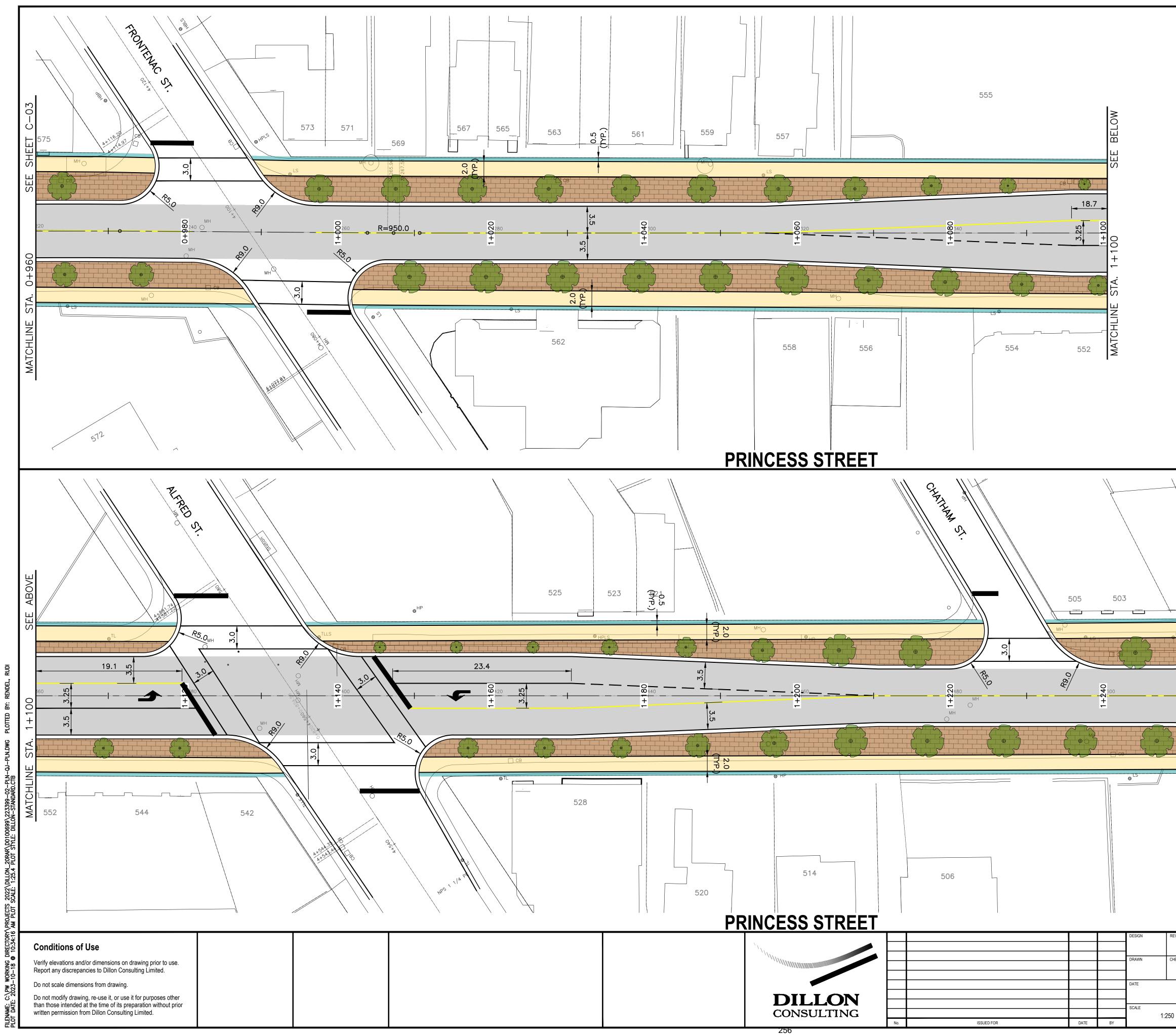
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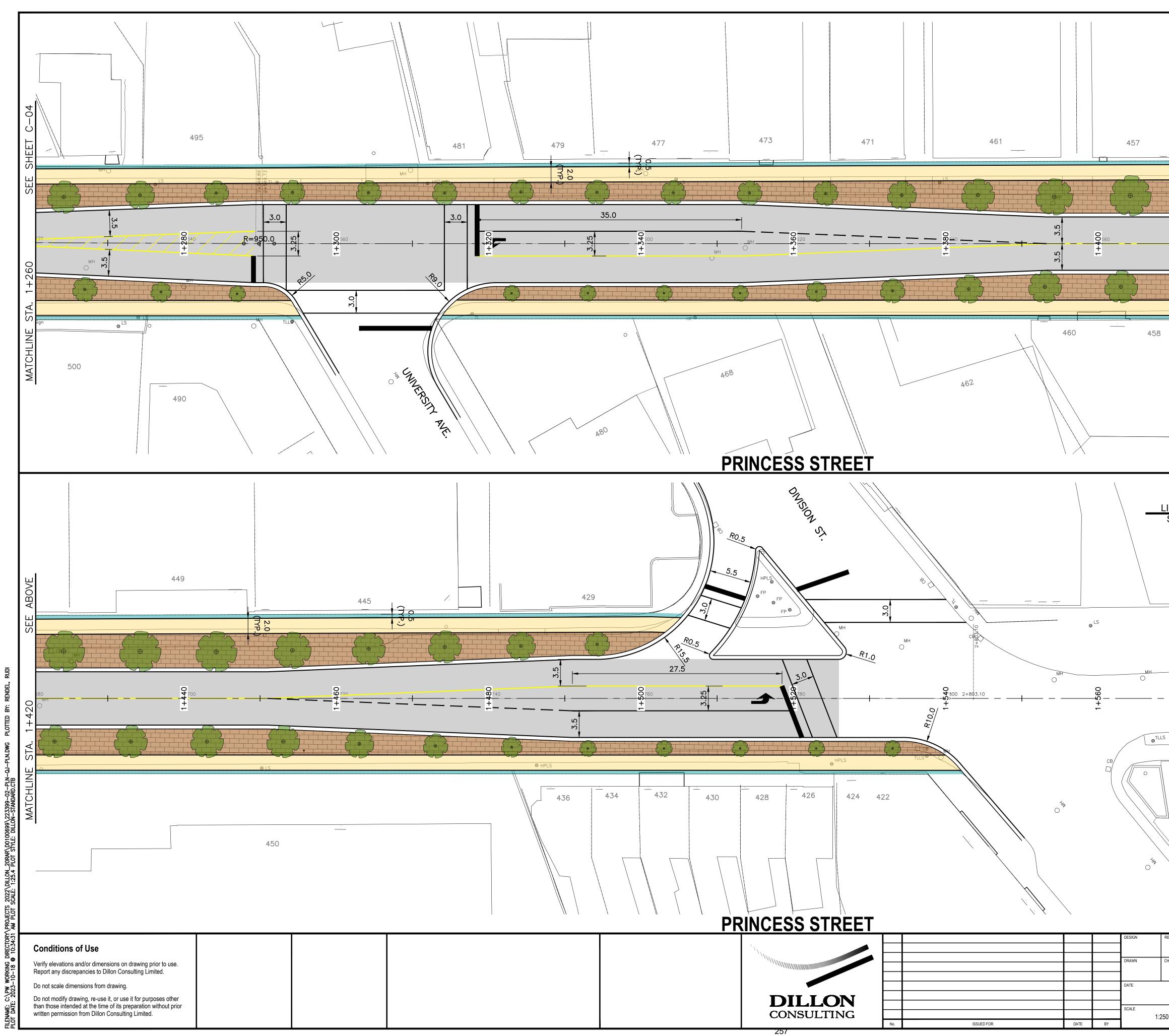
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	City	Cross-Section Study of Kingston	PROJECT NO. 22-3399
)	TRANSIT PRI	RNATIVE 1 ORITY FEATURES O CYCLE FACILITIES	C-03



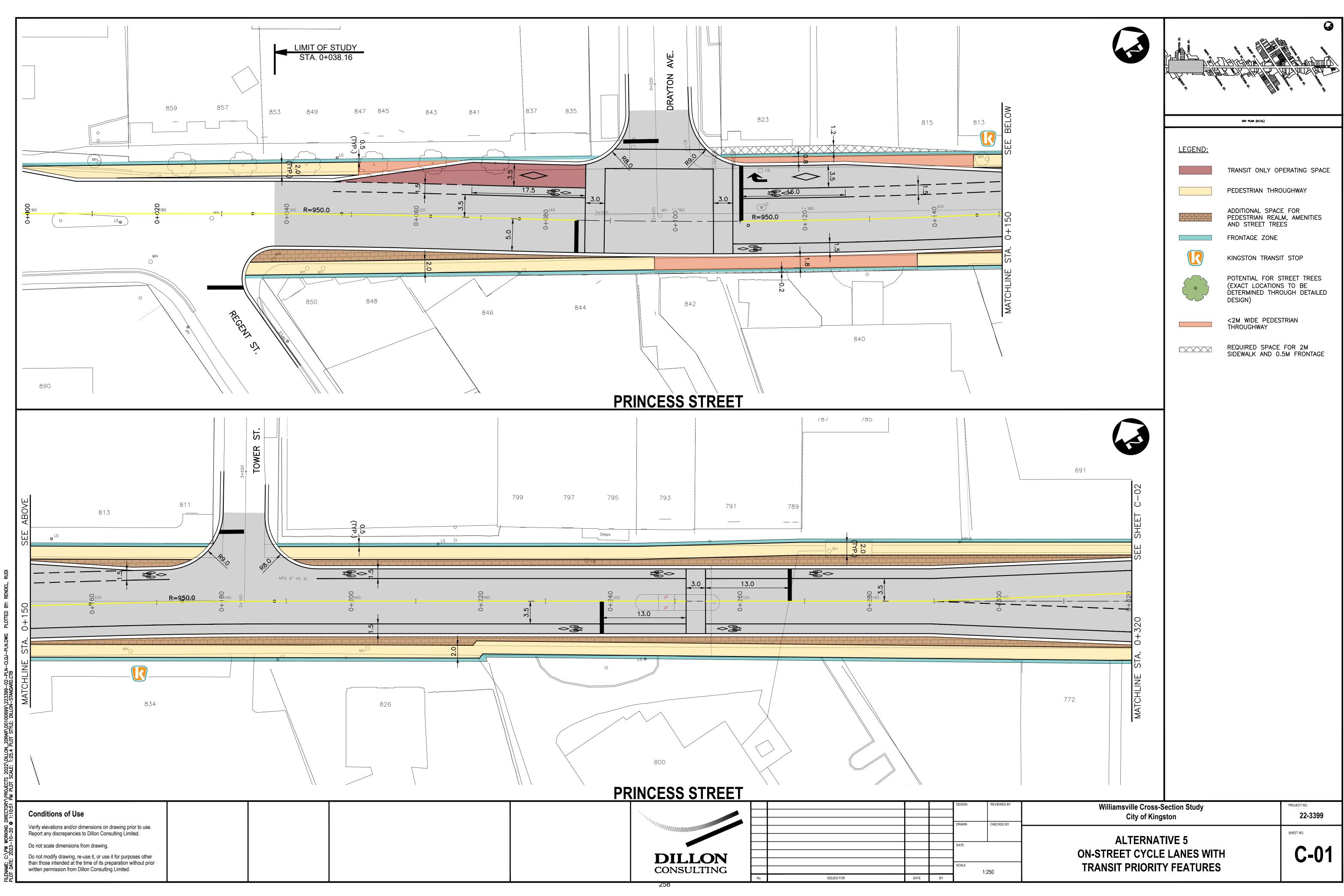
5 599\2233

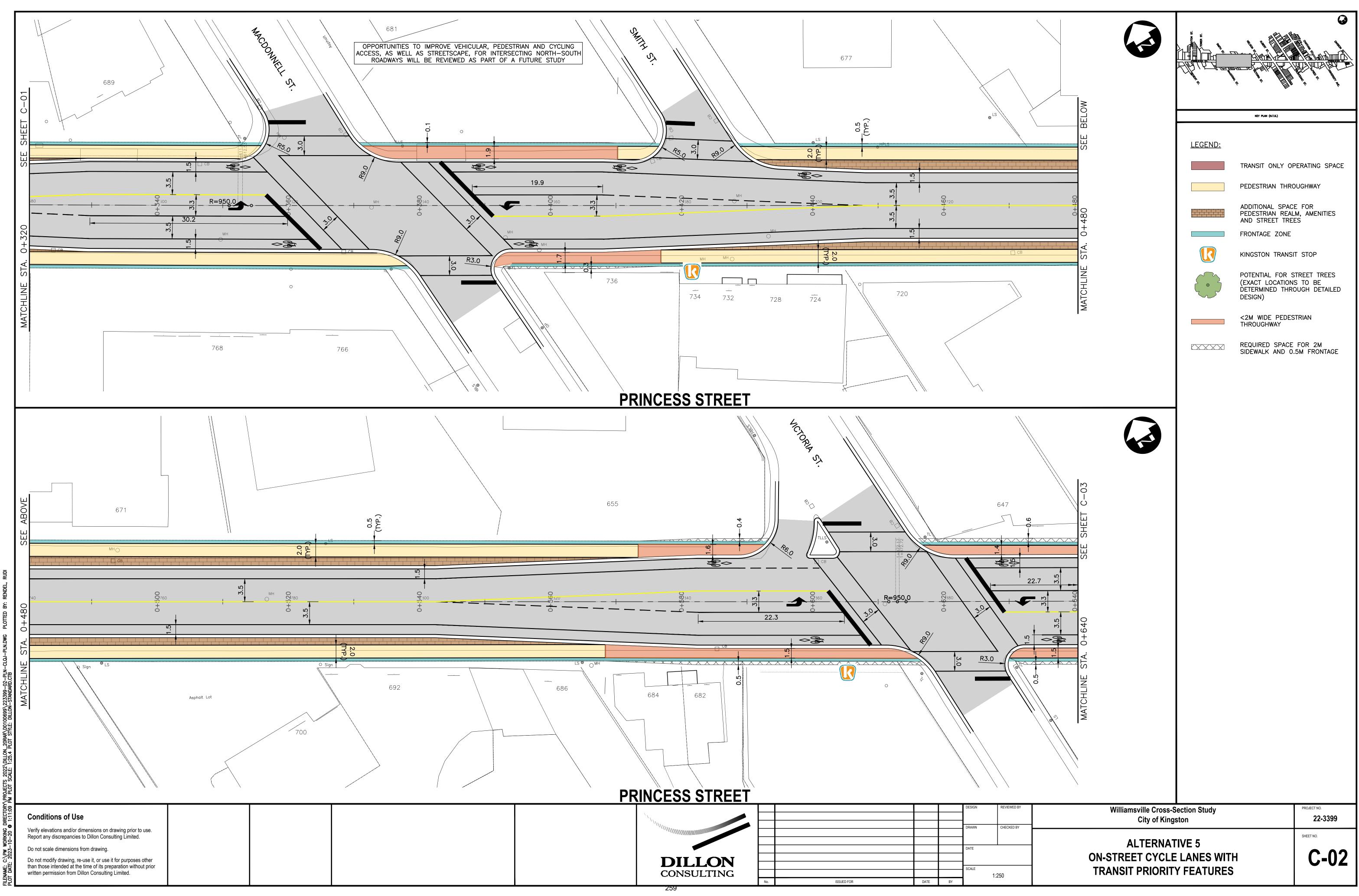
		Co Harrison Andrew Harrison Andrew Ha
	key plan (n.t.s.)	
	LEGEND:	
		PERATING SPACE
	PEDESTRIAN THE	ROUGHWAY
	ADDITIONAL SPA PEDESTRIAN REA AND STREET TR	LM, AMENITIES
	FRONTAGE ZONE	
	KINGSTON TRAN	SIT STOP
	POTENTIAL FOR (EXACT LOCATIO DETERMINED THI DESIGN)	
	REQUIRED SPAC SIDEWALK AND	E FOR 2M D.5M FRONTAGE
501	Williamsville Cross-Section Study	PROJECT NO.
HECKED BY	City of Kingston	22-3399 SHEET NO.
	ALTERNATIVE 1 TRANSIT PRIORITY FEATURES NO DEDICATED CYCLE FACILITIES	C-04
		1

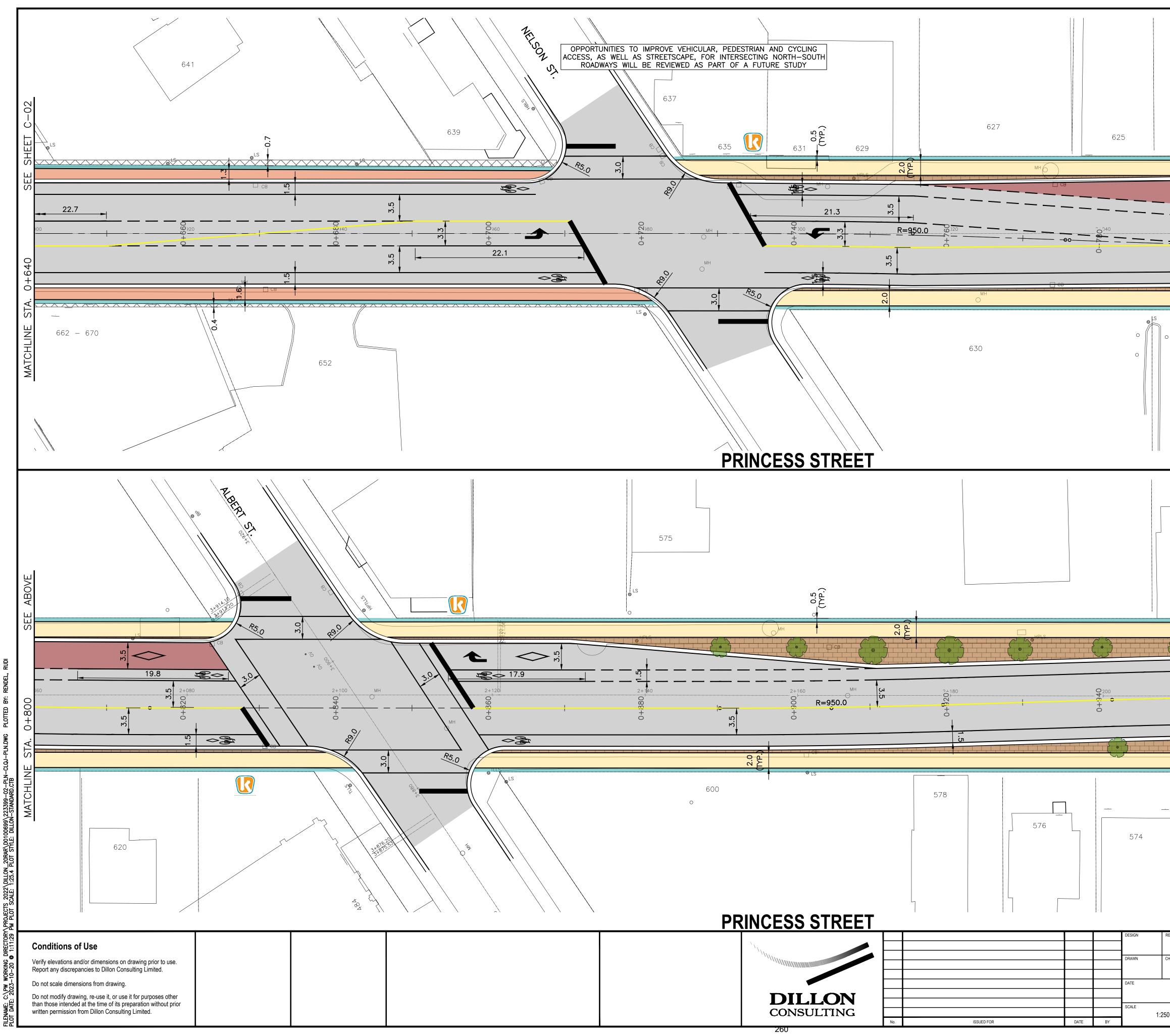


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WATCHLINE STA. 1+420 MATCHLINE STA. 1+420 MATCHLINE STA. 1+420 SEE BELOW	LEGEND: DETERMINED THROUGH AND STREET TREES FRONTAGE ZONE VINGSTON TRANSIT DOTENTIAL FOR S (EXACT LOCATIONS) DETERMINED THROUGH AND STREET TREES FRONTAGE ZONE VINGSTON TRANSIT	OUGHWAY E FOR M, AMENITIES ES T STOP TREET TREES S TO BE
MIT OF STUDY STA. 1+580.00	REQUIRED SPACE SIDEWALK AND O.	FOR 2M 5M FRONTAGE
Williamsville Cross-S City of King		PROJECT NO. 22-3399
HECKED BY		SHEET NO.
ALTERNAT TRANSIT PRIORIT NO DEDICATED CYC	Y FEATURES	C-05

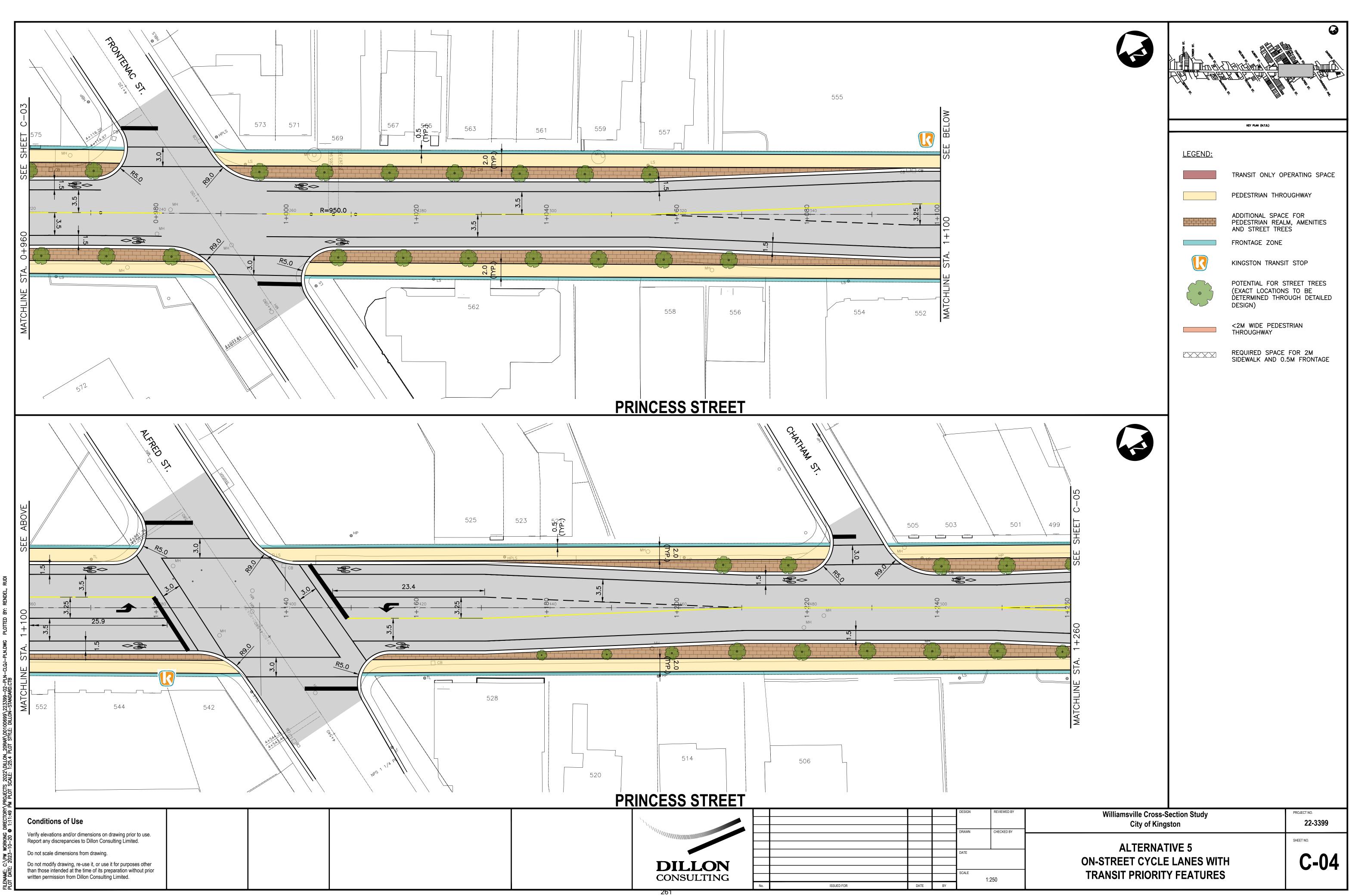




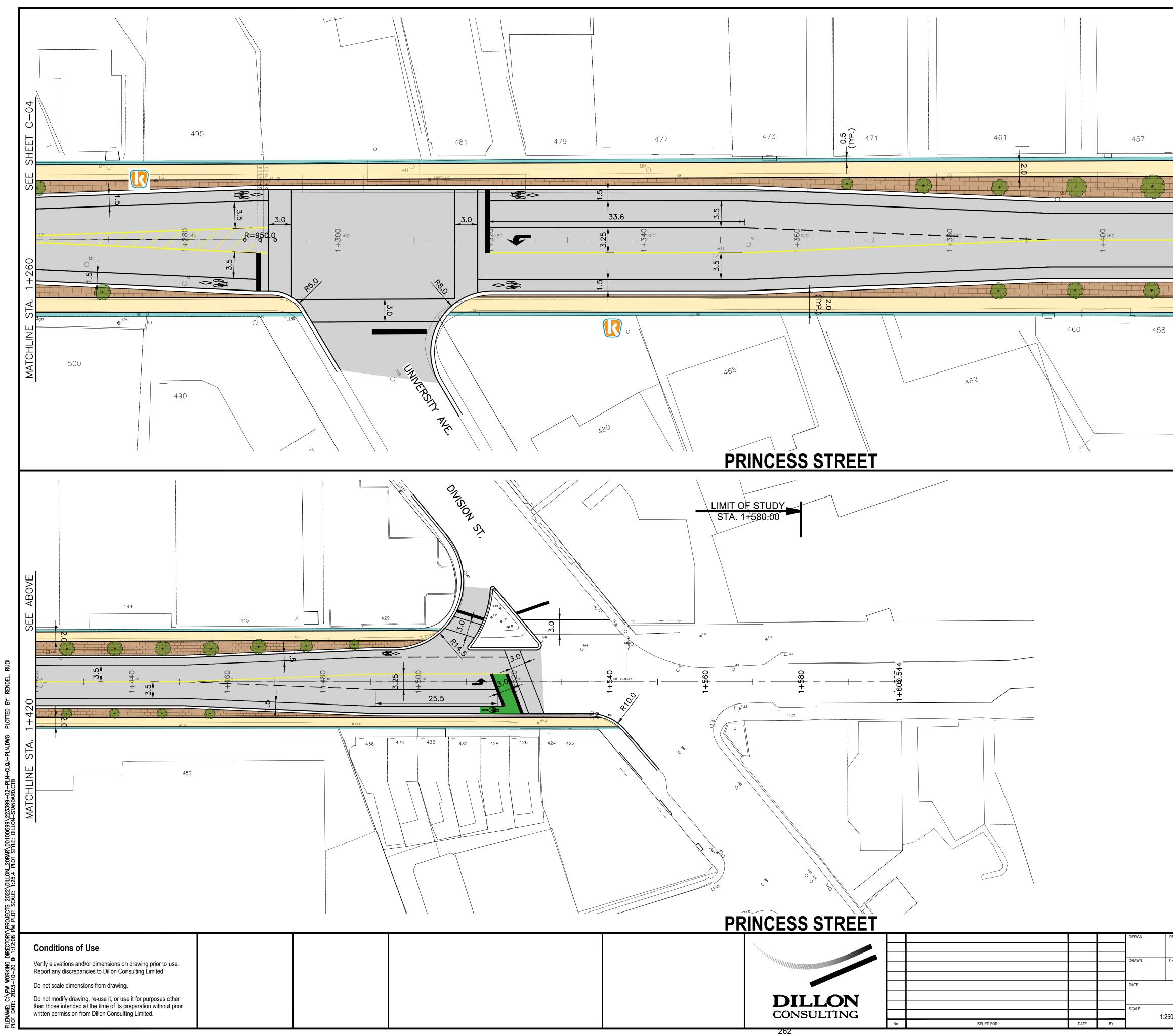


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617 0	BELOW		Sector of the se	KEY PLAN (N.T.S.)	CO A MANA ANA ANA ANA ANA ANA ANA ANA ANA A
				TRANSIT ONLY OF PEDESTRIAN THRO ADDITIONAL SPAC PEDESTRIAN REAL AND STREET TREI FRONTAGE ZONE KINGSTON TRANSI POTENTIAL FOR S (EXACT LOCATION DETERMINED THRO DESIGN) <2M WIDE PEDES THROUGHWAY REQUIRED SPACE SIDEWALK AND O	DUGHWAY E FOR M, AMENITIES ES T STOP STREET TREES S TO BE DUGH DETAILED
	MATCHLINE STA. 0+960 SEE SHEET C-04				
HECKED BY	V	Villiamsville Cross-S City of King ALTERNA	ston		PROJECT NO. 22-3399 SHEET NO.
)		TREET CYCLE	E LANES WITH		C-03



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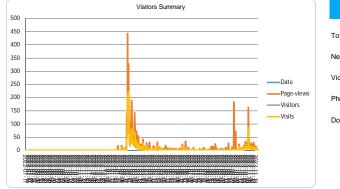
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	MATCHLINE STA. 1420 SEE BELOW	PE AL PE AL	AVAILABLE OF CONTRACT OF CONTRACT OF CONTRACT ON LY OPERATING SPACE CONTRACT ON LY OPERATING CONTRACT ON
REVIEWED BY	Williamsville Cross-S		PROJECT NO.
HECKED BY	City of Kings ALTERNAT ON-STREET CYCLE TRANSIT PRIORITY	IVE 5	22-3399 SHEET NO. С-05

Project Report:

Williamsville Transportation Study

18 August 2017 November to



Project Highlights	
otal Visits	2.4 k
ew Registrations	3
deo views	0
noto Views	0
ocument Downloads	128

Admin Notes

ENGAGED PARTICIPANTS		89	
Engaged Actions Performed	Registere d	Unverifie d	Anonymou s
Contributed on Forums	0	0	0
Participated in Surveys	38	0	0
Contributed to Newsfeeds	0	0	0
Participated in Quick Polls	0	0	0
Posted on Guestbooks	0	0	0
Contributed to Stories	0	0	0
Asked Questions	21	0	0
Placed Pins on Places	49	0	0
Contributed to Ideas	0	0	0

INFORMED PARTICIPANTS	463
Informed Actions Performed	Participants
Viewed a video	0
Viewed a photo	0
Downloaded a document	66
Visited the Key Dates page	18
Visited an FAQ list Page	223
Visited Instagram Page	0
Visited Multiple Project Pages	361
Contributed to a tool (engaged	89

AWARE PARTICIPANTS	1,556
Aware Actions Performed	Participants

Visited at least one Page 1,556

				EN	GAGEMENT TOOL	S SUMMARY			
Forum Topics	0	Guestbook	0	Places	1	News Feeds	3	Ideas	0
Qandas	1	Quick Polls	0	Stories	0	Survey Tools	1		

				Contr	ibutors		
Tool Type	Engagement Tool Name	Tool Status	Visitors	Registered	Unverified	Anonymous	
News Feeds	Background & project goals	Published	242	0	0	0	
Maps	Archived - Map Feedback	Archived	355	49	0	0	
Qanda	Archived - Ask a question	Archived	74	21	0	0	
SurveyTools	Williamsville open house survey	Archived	74	38	0	0	
News Feeds	Notice of public open house	Published	9	0	0	0	
News Feeds	Oct. 26 open house display boards	Published	99	0	0	0	

			II	FORMATIC	UMMARY					
DOCUMEN TS	3	PHOTOS	0	VIDEOS	0	FAQS	1	KEY DATES	\$	1
Widget Type			Engagem	ent Tool Na	ame			Visitors	Downlo	oads/Views
Document	Renders, plans	and cross-se	ections		51		89			
Document	Williamsville Ma	ain Street Stu	dy		15		26			
Document	Household Trav	el Survey Re	eport					13		13
FAQ	faqs				223		288			
Key Dates	Key Date				18		19			

SurveyTool	l:	wiiia msvil		18 August 2017		to	22 November 2	023											
Tod Status Ar Visitors	rchived 74	Date of contrib	Do you find Princess Street inviting from a edestrian avaretience?	Are you comfortable biking on Princess Street?	Do you find transit reliable and accessible on Princess Street?	Rank the features in terms of what is most important to include in a reconstructed Princess Street.	Will the removal of on street parking and narrowing of the	Survey Response Provide any other feedback you may have about Princess Street.	Do you understand how Advisory Bike Lanes	Do you like the concep of Advisory Bike Lanes	t Is this facility sppropriate for the road	Do you understand h Neighbourhood	ow Do you like the cont of Neighbourhoo	ept Is this facility d appropriate for the roads	Usertype	Age e	Sign Up form Details I would like to be stered in the draw to	i Do you want to be adi to the City of Kingsti	sded Respon
Contributors	38	0a 21 23 No	edestrian experience?	Street? Yes	on Princess Street? Yes	Cycling lanes, Street trees and benches, Transit priority lanes, Wider aideoalite.	Nes	Please don't remote bits lower. We need safe room for cyclists to share the shreat. They're better for cars and bites- papeling as amenore who drives and cycles. The city's building none buildings downown with Neer parking spaces analized, no we need to mise cycling a safe and attractive cyclos for pages. And it's in keeping with the climate chang mengancy the clipical and.	work? Yes	Yes	where it has been	Bikewara work?	Bikewaya? Yes	where it has been	User	wir	one of the following:	mailing list and recel	5489372
Registered	38	IC 9407 IN Dot 21 23 No I7:1524		Yes	No	Cycling lanes, Transit priorly/areas, Street trees and benches, Wider sidewalks	Ves	emergencythe citydeclaned.	Yes	Yes	Yes	Yes	Yes	Yes	User			Yes	5489351
	P																		
Unwritied	0	4av 01 23 No 12 20 03 Im		No	Yes	Cycling lanes, Sirvet trees and benches, Transit priority lanes, Wider sidewalks	Yes	I have no interest in billing on Princess Street, or any street. Myprimary mode of transportationalong any street is, and	Yes	No	No	Yes	Yes	Yes	User	23		No	5401986
Aronymous	0	4ox 02:23 Yes (2:35:14 m		No	Yes		No	Than no interest in billing on Poincess Street, or any street. My primary mode of transportationalong any street is, and will remain, chaining mycar. Any design changes which would first matter in any way is uterly trickculaux, expectably in a Orly with auch track water through observative models. The matter data water that is submer of your other surveys, because you assess no curve curve models with impliebut. Biophase and canse thereing match is surveyspecify is a hydrox accounger, these metric curves.	Yes	No	No	Yes	No	No	Liner	8		No	5494517
Admin	0	4av 02 23 No 12 47 23 m		No		Cycling lanes, Wider sidewalks, Street trees and benches, Transil prioritylanes	Yes		Yes	No	No	Yes	Yes	No	User	40		No	5400464
SUBMISSIONS ;	38	4ar 02 23 No 1247 39		No	Yes	Wider sidewalks, Smeet trees and benches, Transit priority/smee, Cycling Ianes	No	Bioples and bases weaking in and out along the shoulder don't mix. Due to the valenzability and slower speeds of cyclisis, their infrastructure should be SEPARATE (good, bit sepanate). I cycle to work whenever I can (I am a cyclist) but I hate being crawmed into gutter lanes with test traffic beside me.	Yes	No	No	Yes	Ves	Yes	User	45	No	Yes	5499473
		4or (0:23 No 10:52:14 m		No	No	Transit priority/strees, Street trees and benches, Weier sidewalks, Cycling Lanes	No		No	No	No	No	No	No	User	20		Yes	5489465
	P	en (2223 No		No	Yes	Wider sidewalks, Street trees and benches, Transit prioritylanes, Cycling lares	Yes		Yes	Yes	No	Yes	Yes	Yes	User	z		No	5498586
	P	HE456		Yes	No	Cycling lanes, Street trees and benches, Transit priority taxes, Wider sidewalks	Yas	commenter serving, the had not serve the splaces. I thick that denoting splats to Johnson/Dack to a bit presentation, the denoting benchmark to be assessed on the splace many many many marks to be impressed where way, including problems the balance counts in contributions than transmissions implications, teams are sufficiently while, and the assessed to be appresentable to the same are not needed on Processes are well if the balance are well and the denoting the assessment to be appresentable to the denoting the assessment to be appresentable to the denoting the assessment to be appresentable to the denoting the assessment to be appresented to the denoting the appresentable to the denoting the denoting the appresentable to the denoting the de	Yes	Yes	Yes	Yes	Ves	Yes	User	e		Yes	5498527
	P	4ax 02:23 No HL11:34 Im						protein an operation of the second se											
Denographics Graphs	P	40x 02:23 Yes H112:14 H5		No	Yes	Cycling lanes, Transit priorbylanes, Wider sidewalke, Street trees and benches	Yes		Yes	Yes	Yez	Yes	Yes	Yes	User			No	5498573
	n Q P	4ar02:23 No H116:21 Im		No	No	Wider sidewalks, Street trees and benches, Transit priority/saves, Cycling lanes	No	This servesturities resided is assumed to the lates of Discuss Q. In a resident who have sets this way the	No	No	No	Yes	Yes	Yes	User			No	5498623
	n Q P	4ar 02:23 No Hi:19:21 Im		No	No	Cycling lanes, Transit priorly/anes, Street trees and benches, Wider sidewalks	Yes	This reconstruction project is way importent for the future of Princess 22. As a resident who frequents this area, the design of the space is houtile bounds argoment in its curv. While samples doubters this are helpful, such as petident constraints, and wheely protected bile loss are as a top in the right direction, as reconstraints in an endering opportunity to prioritize the papels who have around Princess 29, which throughes do pass through. I follow that the dy bet which to increase the and along an along them are being of models and along and along and along and along along the tables and which to increase the and due to all along along along along along and along a	Yes	Yan	Yes	Yes	Yes	Yes	User	22		Yes	5498616
	N 0	4ox 02:23 No Hi 27:40 Im		No	No	Street trees and banches, Wider sidewalks, Cycling lanes, Transit priority/strees	No		No	No	No	No	No	No	User			No	5408220
		4ax 02:23 No H 28:43		No	Yes	Cycling lanes, Transit priority/area, Street trees and benches, Wider sidewalls.	Yes	Not feedbackbut a question - if aideealite need to be >2m, what will happen to bite lanes all over the ohy? Question will aideealik clearing (of arow) be prioritized in this area?	Yes	No	Yes	Yes	Yes	Yes	User	4	Yes	Yes	5498651
				No	Yes	Cycling lanes, Transit priority/ares, Street trees and banches, Wider sidewalls.	Yes		No	Yes.	Yes	No	Yes	Yes	User	72		Yes	5498748
		4ax 02:23 No HI50:06 Im				Cycling lanes, Wider sidewalks, Sinest trees and benches, Transit priority lanes		Removing bits tarves would be a generational missile. What is exciting about this proposal is that it recognizes that streets should be a "pixor" but but then it contradicts itself by suggesting there be no way to get to that pixoe by bicyclic	·						line	*		Ver	
		4ox 02:23 No 6504:30 m		nu -			-	sense ju bie ne walte ja porazie na tentiski frant i kartiga dan bie ja porazi te hi ne porazie. In men instatular i a judi dan bie na candida in tetri i kartiga dan bie ja porazi te hi ne porazie te hi ne porazie. In dan cinducta te speci cellare i situate su diferent en en eners sense i dan bie porazienem i en eta dana dan sense i dan dan dan dan dan dan sense i su diferent en eners sense i dan bie porazienem i enersitationem eta dana dan sense i dan		~				100	Can	-			
	n Q P	4ar0223 No 154749 m		No	No	Street trees and benches, Wilder sidewalks, Cycling lanes, Transit priority tares	No			Yes	Yes	No			User			No	54890227
	n Q P	4av 02 23 Yes 16 12 42 15		Yes		Cycling lanes, Wider sidewalks, Transil prioritylanes, Street trees and benches	No	I am a cyclist who ridee with a Garmin rader unit that warns me of approaching cars. Even with this modern technology puting cyclists closer to moving cars is not making cycling safer or more initing in my opinion.	Yes	No	No	Yes	Yes	Yes	Liner	ы		Yes	5499121
	n Q P	4av 02:23 No 46:18:01		No	No	Wider sidewalks, Street trees and banches, Cycling lanes, Transit priority/area	No		Yes	No	No	Yes	No	No	User	28		No	5489162
	N 0	4or 02:23 Yes 10:46:22		No	Yes	Street trees and benches, Cycling Ianes, Wider sidewalks, Transit priority/area	Yas	Lower princess at its much more inviting that upper princess, especially the sectionabove Frontenac. More treas and green pace will distributing horizone that section a prant deal. More treas along lower princess wald also be a big improvement. It is bitaring horizon the summer, and more shade and less concrete will help cost things off. Keeping bile laws is Williamentile confact is a must be me.				No			User	61	Yes	Yes	5499290
		4ax 02:23 No 17:08:58		No	No	Wider sidewalks, Street trees and benches, Transit prioritylanes, Cycling lanes.	Yes	There is a whole host of reasons to eliminate the bicgle lanes on Princess Street - gian the clarme of traffic on Princess Street, available active to removing the strength of the street of the str	Yes	No	No	Yes	Yes	Yes	User	20		Yes	5489229
		in 40x0223 No 17.19.12		No	Yes	Cycling lanes, Street trees and benches, Wider sidewalks, Transit prioritylanes	No	cark liveracrarity with hazards) in block lanes. Wider sidewalks and sheet features like trees and benchesbrichty Need declarad bile lanes for salety.	No			Yes	Ves	Yes	User			Yes	5489406
				Yes		Cycling lanes, Wider sidewalks, Sinvet trees and benches, Transis priority tares	Yes	Needs protected bite lanes	No	No	No	Yes	Yes	Yes	User	26		Yes	5200167
		4ox 02:23 No 0:56:21 m						I am to contratale blog on Princes 32. – it belt unable. But I do bles on Princes 52. all the time, because it is the only reasonable efficient and attratable waytor the toget downtawn. I find the transing that "confident optima" may continue to use Princes 25. in the absence of a ble batter way problematic – I am not a confident optima; and I field may adapt is part attratable.											
		4or0323 No 9218:17 m		No	Yes	Cycling lanes, Wider sidewalks, Transh priorbylanes, Street breas and benches	No	continue to use Princess St. In the absence of a bile lane way problematic — I am not a confident cyclint, and I feel my safety in put at riskby a lack of infrastructure.		Yes	Yes	Yes	No	Yes	User	20		No	5500667
	n Q P	4ar 03.23 No ht.58246 im		No	Yes	Street trees and benches, Wider sidewalks, Transit priority/saves, Cycling Ianes	Yes		No			Yes	Yes	Yes	User	61		Yes	5502113
	n Q P	4ar03.23 No H15.23 m		Yes	Yes	Cycling lanes, Wider sidewalks, Street trees and benches, Transit priority/area	Yes	You should simply make pricess one way for care. This is an example of why day shall and councel not listening to that own official plan when developers come in to build something is destroying the city. Someone at city that should take the blane for such a tack of forward thinking.	Yes	Yes	Yes	Yes	Yes	Yes	Liser	20		Yes	5002754
		4or 04 23 Yes 12:10:31		No		Transit priority/anes, Cycling Ianes, Wider sidewales, Street trees and banches	No	mean or process wance pairo phricess it is the Williamedia area to the city mode a missis incommiting the matient building to be built to close to the idensiti. Now that has been close, the idensitie should be mode as wide as possible to the additor of burches and guidents on the idensitie dutant the purpose of the wide in idensitiand imposing patients to staffic. Parenting burlenses A-homes on the idensitie and installing states to the idensities and also imposed addition that it. Will be the part of building and when the process of the wide in the idensities of the part of the patients mattice. When the part of building and the resting states and the resting states that the part of building and the resting states that the resting states that the part of building and the resting states that the resting states that the building state that the part of building and the resting states that the resting states that the states and the part of the states that the building states that the part of building and the resting states that the resting states that the states and the part of the states that the building states that the part of building states that the states and the part of the states that the part of building states that the states and the st	Yes	No	No	Yes	No	No	Liser	8		Yes	5255187
		4ax 05.23 No 19.35.02		No	No	Wider sidewalks, Cycling lanes, Street trees and benches, Transit priority lanes	Yes	The second secon	Yes	No	Yes	Yes	Yes	Yes	Liser	25		Yes	5207680
		40x 06 23 No 1952 40		No	No	Cycling lanes, Wider sidewalks, Street trees and banches, Transit priority/anes	Yes	descrit. The orchism with remoting the cucle lances from on increase is that there are no viable alternatives which non Billing tense meeting be improved and rate the City. We say was are commissive active transportation but not having a disclosed, closed of bills late non-Private Street is a hyper size for Waystorn. The way buildings are apprecised to be close to the road with no set backing reality on complex provide a community personal to be in the remoting of a net work in the function of the results of the road with the results of the road with no set backing a community personal to be all the remoting of the result of the results of the results of the results of the road with the results of the	No	No	No	Yes	Yes	No	User			No	5508365
				No	No	Cycling lanes, Transit priorly/area, Wider sidewales, Street trees and benches	Yes	wennaan sogen ver meen wit on the sciences and tren have enough noom tor people to provele and welkcably on sidewelke.	Yes	Yes	No	Yes	Vec	Yes	User	29		No	5019078
		4ox 07 23 Yes 0.4025 m					Yes	Nexts now nixed-residentialbusiness to attract people. Male new builds have netail space at stress-level. People will compressive where there are allogs, palice attract and safet of them are more people around. This torth new, tackast Europeon calles, junc duits, trap mixeling section shy and dragences.		No		No			User				5219692
		4ar 08:23 No 2200:34 m		No		Wider sidewalks, Street trees and benches, Cycling laves, Transit priority fares	-11	voorgengemen werden trans anders, paroon enz, ande samer if there are more people amound, this ten't new, look at European oblex, juat do it, into meking king aton ug/yand dangenous.	~	~		red .			Liser			No	50/9682
	1	4or 10.23 Yes 11.15.12 en		No	Yes	Wider sidewalks, Street trees and benches, Cycling lanes, Transit priority tanes	Yes	Verse this is beyond the scope of the proposed project, but if we want to be innovative and follow literal Todarian's		Yes	Yes	Yes	Yes	Yes	User	22		No	5226620
	n Q P	4ar 10.23 No 11:30:55 m		No	Yes	Wider sidewalks, Street trees and benches, Transit priority/street, Cycling lanes	Yas	None The is tapped the scape of the properties provide project. Is of a new to be increasing and fully tapped to the scape of the properties of the scape of the provide provide provide the scape of th	Yes	Yas	Yes	Yes	Yes	Yes	User	20		Yes	5529/75
	1	4or1123 No 01528		No		Cycling lanes	Yes	I thick that Kingston hav not really instrand what is happening in more sustainable progressise clies around the work particularly in the sense of active and public transportation. Build it and they will come Male it lease converter to drive, and proprieval location attenuations. But the altermative need to be there and validate for people. It we say building and designing in a way that expects car traffic, or even more car traffic, here we, indeed, will get (more) car traffic.	Yes	No	No	Yes	Yes		User	9		Yes	5531738
		4ar 13.23 No 10.06.52 m		No	Yes	Wider sidewalks, Street trees and benches, Transit priority/saves, Cycling larves	Yes	If were both filling stations could samehow be worked into future plans that would be great.	Yes	No	No	Yes	Yes	Yes	User	32		Yes	5537708
		in 4ar1423 No 120246		Yez	Yes	Cycling lanes, Wider sidewalks, Sinvet trees and banches, Transit prioritytanes	Yes	Transit priority tanks not mediad and not appropriate for narrow/ROW. These could be one at Princess and Concession where here is room. These is planty of room for option 5 with the added notice of alternating each block with street furthers and energies I will follow with a detailed little or these points.	Yes	Yes	Yez	Yes	Yes	Yes	User	64		Yes	5539534
				Yes	Yes	Cycling lanes, Transit priorly/ares, Wider sidewales, Street trees and benches	Yes	The whole corridor should be made to prioritize us and bite traffic our car traffic.	Yes	No	Yes	Yes	Yes	Ves	User	39	Yes	Yes	5542039
	0 P	4ar1423 No 1250:47 m																	

Nor1623 115650 pm	io No	No	Transit priority/saves, Wider sidewalks, Savest trees and benches, Cycling larves	No	The readvants of the areas need to be assumed that they are sails in the event of two. Buildongs are too big, too close, and too croaded. The papels of the areas should have assumed areas in writing and policy that there explores or an interact on the same couple to the truth risk the readward what and they there must be a truth risk the readward what and they there must be a truth risk the readward what a ding therma "Yes areas or anything". The time of the 22 Min and the fore coupled or the truth risk the readward what a ding therma the truth or same and couples. The time of the 22 Min and the truth risk the readward what is due to the truth of the truth or the truth or the time to the time the hand due to the read due to the truth of the time the truth of the time truth of the time the due to the time.	Yan		Yes	Yes		Liner		Yes	5555462
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te be entende dis ser antibio parte te de 10 antibio p Contra distante di distante distante distante distante distante d	In the dates to the functions IEEE Context IEEE Context I		Od filefabile hashes to term	či peri	No deces to loss	SUBJECT To an and the set of the				
A JE, 120 m Reported at Oantype - dated	rphanna master update en projecta from a pero hane precided input en 7 padentian G2 (der pero en) experiment?) bibling an Prin	Q3(Do you find transl andustable miliable and assemble tores Street?) Princes Street?)	di indude in a reservativated e an Prinsee Erent, Water Gri (Rash sideradha Erent,) Er	of shat in the balance is some of what is need important is instead in a manufactual Princes. Instead is not inset and kentures. Princess.	is most important to in a mannetroited — Od (Nank the bactures in terms of what is most important to includ Breek) Cpairing Leves (Breek) Tamait priority Leves	el des names ju 3m mules dade in a manufacidad Prinnes per mere condecidade long Giffrendet any other Institude yes may have about GP (De yes understate an Prinnes Deve?) Prinnes Deve?) Advisory Bite Lenes we	OB (is this facility appropriate Q H) (for you of how QH (for you like the second) for the marks where it has Neighbourds wh?) al Addrewy Nile Laure?) keen propriet?) and?)	understand how of Blemaps O'll (De yes The the concept of Neighbourhood Blemaps?)	QQ (in this facility appropriate for the reach when it has been proposal?)	Response ID
203-0-31 (h-10 Perioper 203-0-31 (h-10 Perioper 203-0-31 (h-10 Perioper 203-0-31 (h-20 Perioper)		2	2 4 1 4	3		2 Produced increases backness from the second secon				1 640077 1 640077
				4 3		by promp make the simplicity of the simplicity o		1		2 544077 2 649666
						analysis, was studies standard, standard op stands and anong the standard stands web. Care to its two indensities yet and strange standard standards indensities with a standard standard strange standards. It was a standard standard indensities with strange standards and strange standards and standards strange standards.				2 UNIMA 1 LANCTS 2 LANCOS 1 LANCOS 1 LANCOS
22111-02-16/07-06/094 22111-02-06/07-06/094 22311-02-16/07-06/094						4 communities distribution is a sum for space, is in the second distribution is a sum of the second distribution is a sum of the distribution is a sum of the second distribution is a sum of the distribution is a sum of the second distribution is a sum of the distribution is a sum of the distribution is a sum of the distribution of the distribution is a sum of the distribution is a sum of the distribution is a sum of the distribution is a sum of the distribution of the distribution is a sum of the distribution is a sum of the distribution distribution is a sum of the distribution is a sum of the distribution is a distribution of the distribution is a sum of the distribution of the distribution of the distribution is a sum of the distribution of the distribution of the distribution of the distribution of the distribution of the distribution of the distribution of the distribution of the distribution of the distribution of the distribution of the distribution of the distribution of the distribution of the distribution of the distribution of the distr				1 ANNO 1 ANNO 1
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Tool Status	Archived	Date of			Marker Details	1				Sign Up form Details
Visitors	346	contributi on	Latitude	Longitude	Address	Category	Your Comment	Add Image test(deleted)	I would like to be entered in the Usertype draw to win one of the following:	Do you want to be added to the City of Wingston mailing list and receive updates on projects you have provided input on?
Contributors	49	Feb 14 23 04:05:03 pm 61	4.2348316116 1264	76.4964938163 7573	505 Princess Street, Kingston, Ontario K7L 105, Canada http://patiewolvenf.chvofikiosstron.ca/williamsou 350 Nelson Street, Kingston, Ontario K7K	Comment on bike routes	There needs to continue to be a bike route on princess street. Removing it is a poor idea and does not support active transportation. Removal of parking and widening sidew alks is a great idea	/Hestorighalmissing.png	Usar	Yes
Registered	49	Feb 14 23 04:07:00 pm 95	4.2411639045 9055	76.5021374242 4677	1R8, Canada	Comment on bike routes	concession street is horrible to bike on, it is to narrow in spots to safely walk on the sidewalk with kids. If you add a bike lare here it needs to have a physical barrier in order to be safe enough and Idon't think there is the space to do that.	/Hes/original/Hesing.png	User	Yes
Unverified	0	Feb 14 23 04:08:40 pm 64	4.2374457937 479	76.5073300453 9553		Comment on bike routes	arrazing alternate bite route for people who don't need to go on princess st as part of their destination. The issue with removing the bite lane on princess at is it becomes much harder for people to use active transportation to run errands in the newly removated commends pace on princes as to	/Hes/original/Hesing.png	Usar	Yes
Anonymous	0	Feb 14 23 04:10:12 pm 55	4.2325104253 954	76.5064925685 8512		Comment on bike routes	These one way bills lanes are acceptable and fire for an adult commuter who is conflortable with traffic, they could be improved and made safer for children by adding year round physical barriers	/files/orginal/inssing.png	User	Yes
Admin	0	Feb 14 23 04:11:42 pm 35	4.2388594973 546	76.5064930915 8327	http://iselikumkuot.ch/ofikioneton.ca/williamsu 772 Princess Street, Kingston, Ontario K7L 163, Canada	Additional Comments	There is an existing bike lane on princess at here, why is that not indicated in the base map. This lane has made it possible for me to use the street to actively move with my young children. I can't do that past division at with them downtown and removing this law will limit our access up there too.	/Nes/original/missing.png	User	Yes
SUBMISSIONS	205	Fab 14 23 07:00:38 pm 25	4.2378750274 8736	76.5040365964 054	http://setisushkard.ch/of/kionston.ca/williamsu 692 Princess Street, Kingston, Ontario K7L 1E7, Canada	Comment on bike routes	Intervery the same we time car access to phene too. The interesting the functionary states are taked at this location and yet there would be no safe way to get to them. The choice would be between risking amongst car traffic or risking on the sakewak. Choiceuty the rendering is just an example but does raise the monit important quadratic. The project discription table able cyclosite as if they are only parality throug Williamsvite on their way down then the third they find seams their to be rendering to all the same in their behavior.	https://s3.cs-central-1 amazonaw s.com/ehoproduction- canadade/109e198/adc0043942/d1930586559502abac/tc19iori ginal1876419239/4724371dc114817486234407731154_Blk #_Backggr1976741239	User	Yes
		Fab 14 23 07:03:42 pm 36	4.2361160883 658	76.5037094809 6777	http://instinumkand.clivofikieneton.ca/williamesu 15 Park Street, Kingston, Ontario K7L 1J6, Canada	Comment on bike routes	These neighbourhood bile routes are a great blea and should be implemented but they are not a substitute for protected bits times along Princess. There are many high-density buildings along Princess and many more to come. Recipit need to b able to bits analy to any address along Princess.	o //Tesloriginal/missing.png	User	Yes
		Feb 15 23 09:47:54 am	4.2352374873 8016	- 76.5007853507 9957		Comment on bike routes	Please create bike lanes that are fully separated from road w ays with a barrier. How to bike with my children in the bike trailer or no our cargo bike. How ever, the cars in these areas drive very fast and do no respect symbols on the pavement. It prevents me from billing with my kids. Rease invest in barriers to keep cyclists, including children, sale. It will also encourage much once active transportation in Kingston.	/Nes/orgnalmissing.png	User	No
		Feb 15 23 09:49:04 am	4.2313631043 926	- 76.5038752555 8473		Comment on bike routes	Please see my previous comment about barriers for bike lanes. Please put barriers for bike lanes on all new and existing lanes where possible.	/Nes/originalmissing.png	User	Ne
Demographics Grap	pta Below	Feb 15 23 10:09:06 am 76	4.2315168545 602	76.5011072158 8136		Additional Comments	Johnson will now see 6 story buildings. They need to be setback so it is pleasant for pedistrians and street. As well, cit needs to regularly sweep up broken glass on bike banes.		User	Yes
		Feb 15 23 11:58:08 am	4.2385812437 652	76.5056830644 6077	http://iselisunivarl.citvof.kionstron.ca/williamsv 442 Macdonnell Street, Kingston, Ontario K7 162, Canada	Additional Comments	There's no need for dedicated turn lanes at Princess and MacDonnell, despite what modeling says. This is a local road and shouldn't be nelled on for through vehicle traffic N-S. Focus vehicle traffic onto the collectors, Victoria and Alfred, which provides access to all the local roads in the	/files/original/missing.png	Uaer	ю
				76.4966440200 8058	http://ieadisunkanf.chvofikieveton.ca/williameu 432 Brock Street, Kingston, Ontario K7L 114 Canada	Comment on bike routes	neithbrushnote N. S. G. Plenoss. There are also no hus motes that use MarDonell on the rationals for deviated time. With the biss of Unicate to body with big bis lanse on Process, the need for this protected, not botten half the year - bis lanses on brock / phrases (and Ubin) is more important than ever. Whether than means one way protected in the biss on both Brock + Johnson, or converting a lans on one of them and mating a bidirectional cycle track, or making them both two-w as stretet again	y //lies/original/missing.png	User	No
			4 2396765709	76.5032529830 9328	http://iselisunkund.cltvd/kieseton.ca/williamsu 639 Victoria Street, Kingston, Ontario K7K 453, Canada	Comment on bike routes	providen instead transmission from both romanisms, what could possibly justify this route to be consistent a registrour to be Victoria is a colored with high traffic values. What could possibly justify this route to be consistent a 'neighbourhood' route''' Cyclets avoid this route for the reason. Bither this needs to have fully protected infrastructure for cyclists (making to a spine route by your definition), or you move this 'turbitehoutened' mater' number of there. There will have route and united routened and the transmission of the	/Res/original/missing.png	User	No
				76.4975291490 555	http://ieedisurskand.ch/ofikioostion.ca/williamou 369 Alfred Street, Kingston, Ontario K7K 4H6, Canada	Comment on bike routes	the "neinbhowhow frank" in MacProved. Alter Chalese with anonoscian activity of traffic raises. Afted is a colocut with high traffic values. This deem frankes serves as a "neighbourhood route" - aside from potentially between York and Pite - both of which do make serve as neighbourhood routes. Ojcists avoid Afted because vehicles speed along it, and its always going to have higher traffic volumes.	/Nes/original/missing.png	User	No
				76.4939296245 5751	294 Division Street, Kingston, Ontario K7K 327, Canada	Comment on bike routes	Uses this is fully expandent to the matter of the second s	/ Nestorgnammsing.png	User	No
				76.4946591854 0956	http://iselinumkenf.chvd/kienet.ton.ca/williameu 120 Pine Street, Kingston, Ontario K7K 1W8, Canada	Comment on bike routes	Add a neighbourhood route on Pine too, connecting over to Patrick St which lots of people already use as an unofficial neighbourhood route.	/Nestorgnalmssing.png	User	No
			4.2371130890	76.5128231048 5841	221 Mestidale Avenue, Keaston, Ontario K7	Comment on bike routes	Rather than on Westdale - move this neighbourhood routs to College Street and extend it all the way to Union - way better from a broader network perspective.	/Hestorgnalmssing.png	User	No
			4.2317628540	76.5099048614 5021	http://iselisurskanf.chvd/kinostrin.ca/williamsu 263 College Street, Kingston, Ontario K7L 4M1, Canada	Comment on bike routes	ODliege SI - which connects to both Brock + JOhnson - makes a lot more sense than a neighbourhood route on Westdale. your plan also show s a future route on Palace (and SJA) why would you put three routes right beside each other? This college route would be better and should also exited all the way to Union SI (which - speaking of Union - it should	/Nes/original/missing.png	User	No
		Feb 15 23 12:30:59 pm 94	4.2296679815 4446	76.5005493164 0626	http://iselinumkanf.chunfikiereton.ca/willieretu 412 Earl Street, Kingston, Ontario K7L 2J8, Canada	Comment on bike routes	become a nontenets his lace other than the survival view exercises it is now with validities, constants, const	/Testorgnativesing.png	Usar	No
					http://detinvolved.citvof/kingston.ca/williamsv sze Macdonner Street, Kingston, Ciriano K/ 4C9, Canada	Comment on bike routes	emmake the Victorial neighbourhood router (its not) and also one on MacLionnel at the way from Union to Letroy Grant Drive.	/Nes/original/missing.png	User	No
				76.5015149116 5163	http://inetiounbuedi.city.of/kienetron_calwilliameu 630 Princess Street, Kingston, Ontario K7L 1E3, Canada	Comment on bike routes	Process: This research hole schools to all of the law F-W reveals ann cyclicit. This is appropriate of trace cyclicits of of theories street for safety reasons. We need a protected bike route, Johnson and Brock street cycling paths are a good start, how ever inadequate when you get close to dow now in Barriers between cyclicits and cars are absolutely necessary for safety. Education is required for the bile confiders to be accepted in the general population. If highest is promised a findedia confider to reyclicit, then if common signage and the provider of the provide	/Resonghalmissing.png	User	Va
				76.5145397186 2794	http://detinvolved.citvof/kinoston.ca/williamsv 59 Bath Road, Kingston, Ontario K7L 4V1, Canada	Comment on bike routes	alternate routes for cricits. I believe we need to leave origited IP Princises street. This is not directly reliable to the project - but your engineering learn needs to hear this: This we want the critical strength of the project - but your engineering learn needs to hear this: So great IF the critical street is the strength of the street reliable and the street street and the considered considered. I heard the Canadam this is moving to the we stip and of the street - use this indevelopment apportunity to first set bud development and its moving to the development and or down and the constants. If it not also we show the street of down and the constants is if it not also we have the development apportunity to first set the development apportunity.	//Res/original/missing.png	Usar	×
				76.5022122859 955	http://inelinvolved.cityof/kinoston.ca/williamsv 306 Nelson Street, Kingston, Ontario K7K 4M8, Canada	Comment on bike routes	developer to add ourline routes throwth the development as part of community hereifits. If it's not calls within the Netson, from Third Ave to York should also be a neighbourhood route (another link to Leroy Grant MLP)	/iles/orignalimissing.png	Usar	το.
					http://aetinyolved.citvofkingston.ca/williamsv	Comment on bike routes	extend york st neighbourhood route to Nelson (and connect nelson to Third Ave / Leroy Grant MUP	/lies/orignalimissing.png	User	ñ
				76.5033978223 8008		e Comment on bike routes	Make Third Ave a neighbourhood route connecting N-S routes on MacDonnel, Nelson, and Leroy Grant MLP.	/Nes/original/missing.png	User	10
					http://detinvolved.citvof/kinoston.ca/williamsv 221 Raglan Road, Kingston, Ontario K7K 1PE Canada	il 3, Comment on bike routes	There also needs to be at lease one neighbourhood route connecting all the way east to the inner harbourlw atterfront trail. This could be via York-Ordinance, Ragian (through a new path at Ridsaucreat?), and/or Pre-James-Catanagai. There is an arbitrary "project boundary" - we need to think beyond that because some of there neighbourhood routes dont		User	Ki da
			4 2444410676	76.5082579851 1507		a Comment on bike routes	reale sense when who this howned the boundary. It needs to be a full river how no network - not inits come discoveneed - not this project - but hey - city of Kingstoni - figure out some kind of land agreement through the very very southern edge or Novellis lands to connect leavy grant NUP-7 Third Avenue to the Kingston Centre through the Queens Innovation parkover		Uaar	10
		· · · ·			http://setinyoked.chvof.kingston.ca/williamsv	a Additional Comments	and it in any role incursion is a post-sum and concession minis essentially and wey. In all psinol in a me anothered huldron consection to the narion behavior between which a hune improvement. In addition to the other transit priority measures I would hope to see full transit priority in all the Traffic lights on the confider (and everywhere else for that mater).	//les/original/missing.png	User Yes	Yes
				983 76.5005385875 702	http://petinyolved.cityofkingstop.ca/williamsv	a Additional Comments	I would hope to see more then just the two queue jumps in this section (and it would be nice to see these introduced elsewhere in the city as well).		User Yes	Yas
		pm		102	http://selicyolved.cityofkingston.ca/williamsv	a				

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0154/6 #-1.00000% FS07329407 Comment on blas routes Interformatical of the policy in interview and a policy. Interview and a policy. User User Yes n 8/9 6/9 Interview and a policy. Interview and a policy. Interview and a policy. Interview and a policy. Yes	
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http://petimolyed.ch/vf/kinston.ca/willemov/ aarger. No more right on red paase	
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····		76.5088400454 2606	164 Hark Street, Kingston, Untano K/L 4K/, Canada http://perisynheed.cityofMenestro.ca/williamswi http://perisynheed.cityofMenestro.ca/williamswi	Comment on bike routes	Park Street would be an incredible alternate route if the city deems cyclists are not wanted on princess street. It would be aw isome to see the city establish priority at intersections for cyclists, allowing them to yield rather than stop. This term is coined as the Idaho stop in many states.	// lles/original/missing.png	User		Yes
Feb 17 23 04:01:15 pm	44.2444458104 85374	76.5048730373 3826	1R7, Canada	Comment on bike routes	It is ould be levely to see the city improve the flow and protection of cyclets from the bile path into the residential area.	/files/original/missing.png	User		Yes
Feb 17 23 04:05:39 pm	44.2360511041 95	76.4995045121 7593	http://bedinyolved.clivd/kinaston.ca/williamsvi 575 Princess Street, Kingston, Ontario K7L 109, Canada	Comment on bike routes	If the city demonstrates it can install proper cycling infrastructure and markata it throughout the winter Registon will be taking a gaint based for ward as a city. The active transcration master plan seems works away when the city cannot install the awa' to fooliards until md summer, does not taket cars that block the bike lane and makes no effort to keep cycling as a visible option for winter commuting.	/files/original/missing.png	User		Yes
Feb 17 23 04:10:28 pm	44 2224620824	76.4930227026 3435	346 Brock Street, Kingston, Ontario K7L 1T1, Canada	Comment on bike routes	Low or Brock's signably one of the baset friendly runker, for a cyclicit to Kongton. The separated blea lane and division is a we scores gestruct but have a hard me considered provide a cyclicity route while it remains a darget for or whiches. This is incredibly obvious when trying to enjoy Atomics's patio. Lostieve the businesses on low or Brock would be astorished by the transplits and also new customers stat bits raffer outdoir create.	//iles/original/missing.png	User		Yes
Feb 17 23 04:15:14 pm	44.2362534557 D813	76.4937261957 6754	http://setiworked.chvcd/kinas.ton.c.al/williamsv/ 269 Division Street, Kingston, Ontario K7K 325, Canada	Comment on bike routes	Ragian through Ordinance currently offer a low speed somewhat cyclist friendly way to commute to the east end of Kingston via the causee ay. They should be considered when implementing new cycling infrastructure. As an experienced cyclist, i chose to cut through ordinance and past the memorial centre over to Westdale Ave every day rather than dealing with Princess, Rock and Johnson in the current state.	// lies/original/missing.png	User		Yes
		76.4952731388 6212		Comment on bike routes	I thad \$1 for every car have had to ride around parked in this bias lane locular attracts to repart ail of Kingston's chartows, § Recover, bit the chy is locking for increme, allow cyclists to subtre photon cars parked in the bias have for a cash reward. New York Cly has considered implementing this and it would be great to see it in Kingston. It would reduce the needs to spend money on physical barriers, demonstrate to cyclists the city cares about active transportation and envolved income for the chy.	//lies/original/missing.png	User		Yes
Feb 17 23 04:24:43 pm	44.2337721018 8126	76.5070228069 0895	http://oetinvolved.citvol/kinoston.ca/williamsv/ 174 Napier Street, Kingston, Ontario K7L 1P7, Canada	Comment on bike routes	nonvole mixture to the cave. The napire to brock cycle path is an aw esome option, but only in the daylight. There are no street lights to help cyclists at night, as well as allow basistenial players to continue using the hoop adjacent to the path but sharing the same paved surface. Some light here would go a long way'	// lies/original/missing.png	User		Yes
		76.4978671073 9137	httr://ineliworked.chivd/kionstron.ca/williamsvi 453 Alfred Sizeet, Kingston, Ontario K7K 1X1, Canada	Additional Comments	It would be nice to have a crosswalk here. There seem to be a lot of pedestrians crossing Alfred St to and from the M Centre park, and it can be officult to get across.	// lies/original/missing.png	User		No
Feb 17 23 04:56:00 pm	44.2363905282 6982	76.5043687820 4347	httr:/faotiswohved.cliv/dikionstron.ca/williamsvi 251 Toronto Street, Kingston, Ontario K7L 1,J7, Canada	Additional Comments	There should definitely be at least a crosswalk at this intersection, and really, a crossing guard or "school street" closure at school start and end times. This is a busy corner and the irregular angle of the streets makes it very difficult to cross safely.	// lies/original/missing.png	User		No
	44 2352144352	76.5030276775 3602	httr:/honisunked.chuolkinoston.cakeillamovi 476 Victoria Street, Kingston, Ontario K7L 327, Canada	Comment on bike routes	Victoria St is very narrow, the pavement is extremely rough, and there are usually cars partied along it (further narrowing the road). This is far from ideal for a "neighbourhood bile route".	// lles/original/missing.png	User		No
		76.5089821815 4909	httr:/fastissuhvolf.cliv/dikinestron.ca/williamsvi 303 Concession Street, Kingston, Ontario K/TK 2C1, Canada	Comment on bike routes	While it will be fantastic to have a safe bicycle lane along Concession St as well, this should not be a substitute for a safe bicycle lane along Princess St	// lles/original/missing.png	User		No
		76.5042883157 7302	http://inestourplued.nltvofilinostron_na/williamsvi 227 Toronto Street, Kingston, Ontario K7L 1J5, Canada	Additional Comments	There definitely needs to be traffic calming measures around this school. Other dow now n schools have crossing guards, street closures, etc. This one has nothing.	// lles/original/missing.png	User		No
Feb 17 23 06:24:49 pm	44.2401986484 89084	76.5095229151 4842	httr://neetiworkeed.chtvd/kinostron.ca/williamsv/ 321 Regent Street, Kingston, Ontario K7L 1G5, Canada	Comment on bike routes	I would suggest giving cyclisis the more direct routes so that few er leris need to be traveled by bite. Give the obscure routes to the vehicle traffic. Transt and bites may sut princess street well.	// lies/original/missing.png	User		No
		76.5020374057 7128	httr://ixelisuroluedir.divorfikinostron.ca/williamsu/ 245 Nelson Street, Kingston, Ontario K7K 4M6, Canada	Additional Comments	Nelson street could benefit from some speed control. People use this street as a speedway from Concession to Princess in order to avoid Alfred street's speed bumps.	// lles/original/missing.png	User		No
		76.5018796920 7765	httr:/heelisen/kedi.cli/vd/kinostron_ca/williamsv/ 635 Princess Street, Kingston, Ontario K7L 1EZ, Canada	Additional Comments	Need a traffic light and a cross walk at Nelson/Pincess St. Very poor visibility, coupled with cars sitting in the middle Nelson St and edging forward due to the angle of the road, plus people jay walking. When there is a traffic going up Pincess St it is very diagnosus on a bile or a car to the mild road Nelson.	// lies/original/missing.png	User		76
	44 2226770687	76.5129840373 993	Té Alamain Drive, Kingston, Ontario K7L 4R5, Canada	Comment on bike routes	I think lagree with what Proddy said.	// lles/original/missing.png	User		No
Feb 18 23 01:50:38 am	44.2336846898 7387	76.5079522132 8737		Rest Areas	Ive never used a rest area myself, not sure what that entails, perhaps a bench? But this is a beautiful park, with well-maintained flow or beds, and so it would serve as an excellent break spot for those who may need it, it seems to me?	// lies/original/missing.png	User		No
		76.5111064910 8888		Additional Comments		// lles/original/missing.png	User		No
Feb 18 23 02:03:33 am	44.2335885995 7508	76.5115571022 0338	httr://inextexnolvert.citurd/kinextexn.ca/williamev/ 82 Helen Street, Kingston, Ontario K7L 4P1, Canada	Comment on bike routes	Task wor for consistence notifies lowst and movine on this real howards a more attraction healthe website hold Konston. People often park on the road here, (at least lithink?). If we were to have ble lanes, this would have to be addressed. That said, please put ble lanes on Mack, that would be awesome! It's also a generally quieter street, which makes it ideal as well it would seen(?)	// lies/original/missing.png	User		No
	44.2310863529	76.5086174011 2306		Comment on bike routes	Although this is a bit separate, what are the policies for some-channy in wisner) Howe billing in the write's in of everyone's thing, but is possible (and pertaps even desirable) see: https://w www.youbde.com/wath?w-ubw.260/26U. New states much of this channels framstation, and would encourage Registrict by plenets (and everyone) to bolk alt (if they don't altawal) know of 1) but the creater can seem as bit Report when databy with course relations or arguments, which meth interferences have to channels and the Report when databy with course relations or arguments.		User		No
Feb 18 23 02:13:53 am	44.2395382149 5331	76.5084993839 264		Additional Comments	which mithel affactiouse/hairs bits conclusions. Remarklies, Lidon/know of a heater resource on the matter at this time can we knock this place down? (joking)	// lies/original/missing.png	User		No
Feb 18 23 02:14:29 am	44.2401300688 5502	- 76.5095025300 9798		Comment on bike routes	I very much agree with JDaigneau here.	// lies/original/missing.png	User		No
Feb 18 23 02:19:42 am	44.2392345992 77715	76.5072226524 3532		Comment on bike routes	Bike protection barriers would be a great idea, seems more permanent, and can better build a bike culture for younger (or	/files/original/missing.png	User		No
		76.5039557218 5518	http://padisuohend.chive/filines.tron.ca/avillamsovi Don Cherry's Sports Grill, 686 Princess Street, Kingston, Ontario K7L 1E7, Canada	Comment on bike routes	After have who may not place take so that without them them being have the bile racks (panking) could be more like five seen in Europe where it is much more efficient for space. This is also partly fixed by the design of bikes themselves, which resources like VAL at Bikes (Youtube) have spoken about. See my other comment about that channel re: winter biking for more context on its relevance.		User		No
		76.5024590492 2485	http://peelswoheed.chtvd/kienstron_calve/likense 662 Princess Street, Kingston, Ontario K7L 1E5, Canada	Comment on bike routes	Re: vincepape's comment - I would caution combing active transport paths (like bikes, skaleboards, rollarblading) with walking paths. The speed differences are significant. I can't remember how they do it in Amsterdam, but I'm gonna go out on a limb and say they probably have a good solution for this.		User		No
		76.5008014440 5366	http://aedinvolved.cit/vd/kinas.ton.ca/w illiamsvi osu Albert Street, Ringston, Untano K/R 4M4, Canada	Additional Comments	Second booking at that renderno vinceases shared that cath seems a title cicke to the next wince cars do so it a time instructive viscours provide the second seco	/lies/original/missing.org	User		No
		76.4956355094 9098	333 University Avenue, Kingston, Ontario K7L 3R4, Canada	Additional Comments		// lies/original/missing.png	User		No
Feb 18 23 02:48:18 am	44.2314745733 0646	- 76.5010482072 8303	http://lootinvolved.clivol/kinoston.ca/williamsvi 562 Johnson Street, Kingston, Ontario K7L 2A 1, Canada	Additional Comments	The bootent accorate bandle of having seeks but at vour day and take vour, the stee field have been been been accorate the foregr Samuel has a point on broken digase. The best yet al walds as of a clamping in privationally, to be y standing themselves), that (cort of)samuely) shares (quastions, and makes (fund finds are ho break glass; searciary) through your contrainity on a cord gay for throwing your beer bottle at the ground, your just an email (granted, this is what the glass comes from right?). This is coming from a student themselves. That we yield don't have to pay for it to be avept op	/files/original/missing.png	User		No
Feb 18 23 08:24:09 am	44.2366595679 D065	76.5009355545 0441		Comment on bike routes	Increased/on-vacantional As someone who lives further dowintowin, I would like the be able to bike up Princess Street to participate in the future shops, restaurant, cafes, etc. that this sort of upgrade could produce. Bike take seems essential, even if on a singular side.		User	Yes	Yes
	44.2295488214	76.5059137344 3604	http://delinyobyed.cityof/kingston.ca/williamey/ 571 Earl Street, Kingston, Ontario K7L 2K5, Canada http://inetiewobyed.cityof/kingston.ca/williamey/	Comment on bike routes	I agree with the other comment about turning Earl into a traffic calmed route that can prioritize bikes and pedestrians. As someone who runs down Earl Street regularly, I see a lot of street level activity from bikers, wakers, runners and few cars. This runs all the way downtown and is a major w aking route for university students too.	/files/original/missing.png	User	Yes	Yes
			ntrunelisvolved citrofilingston calwilliamsvi						

Feb 18 23 08:30:21 am 44.2313016041 601 4572	60	ele Johnson Street, Kingston, Untano K/L					
am 601 4572	5062141418 12		Comment on bike routes	If you must remove bike lanes on Princess, then Johnson and Brock need an upgrade to the bike lanes to make them accessible full year with protection from cars and measures to preventing parking in the lanes.	/Nesloriginal/missing.png	User Yes	Yes
Feb 18 23 09:06:49 am 44.2366980020 76.5158 7145	5158915519 15	thru/baelswohend rithvofkionstono nakw illiamsvill i ir John a. Macdonald Boulevard, Kingston, Intario K7L 4T3, Canada ttp://betinvolved.citvofkinsston.ca/w illiamsvill i ir John a. Macdonald Boulevard, Kingston,	Comment on bike routes	I really think that the bile lanes on the Blvd need to be off road, for safety. There seems to be enough land for this.	/Nes/original/missing.png	User	Yes
Fab 18 23 09:09:57 am 44.2369439798 8714 76.5165 0714	5165567398	Intario K7M 6W4. Canada	Additional Comments	I would really like to see the entire median of the Bird given over to wildflowers (and land on the sides of the read, too). Biodiversity considers are so important to maintaining wildfle. Montreal has identified medians as the sites for some significant considers in their west end (Cote-Vertu area).	/lies/original/missing.png	User	Yes
Feb 18 23 09:16:55 am 44.2336347229 76:5095 8812	5095293521	tanada	Comment on bike routes	Tagree that Mack is an ideal street for bile lanes. I use Mack on bile to get to and from the Memorial Market.	/fles/original/missing.png	User	Yes
Fab 18 23 09:20:13 am 44.2337692492 76.5057 6727	5057742595 27	tto:/logitivolved.citvof kinoston.ca/williamsvil 18 Mack Street, Kingston, Ontario K7L 1F7, anada tro/logitivolved.citvof kinoston.ca/williamsvil 6 Alamein Drive, Kingston.cn/arai/k XFL 155,	Comment on bike routes	Please focus on bicycle routes on residential throughtanes, like Mack Street, instead of creating corticity promoting unminituited cycles makes on very kusy and reals. Bit biok, Manno, and Princess. In machice cyclical additionst cycling on basy reads: It's noisy, stahly, and dangerous. Ask yoursalt: w odd YOU feel safe cycling aborg Princess, or Brock, or Jahnson with your young children't it an answer to in by, it's not a good noise, for anybody. Visit Mack Street damp wan want mactions. This shade, hild it va aliane our livels: "Whereas the traite and traites and it takes much alian than a want mactions. This shade, hild it va aliane our livels: "Whereas the traite and traites and it takes much alian than and the trait."	/lles/original/missing.png	User No	Yes
Fab 18 23 09:27:03 am 44.2336846898 76.5127 4206	5127587318 06	anada	Comment on bike routes		/fles/original/missing.png	User No	Yes
Feb 19 23 02-23:34 am 44.2408863913 4757 5731	5112477261 51	H1, Canada	Additional Comments	Could the city please explain why princess needs to be an arterial route rather than directing traffic to concession and Johnson?	/Res/original/missing.png	User	Yes
Fab 19.23 09:00:20 am 92794 76.5142 5434	5142500400 94	anada	Comment on bike routes	Include bile routes here to connect neighbourhoods with a dedicated crossing on SJMBLVD1urther it connect neighbourhoods to main antenial bile route	/lies/original/missing.png	User	Yes
Fab 19 23 09:02:56 am 44.2405143863 2222 76.5192 4824	5192764997 M	Intario K7M 2X6. Canada	Comment on bike routes	Bike route need to continue through to John Counter to connect to other main anterial bike route. There are no other viable routes to get to this area of town from williams/like on bike.	/lies/original/missing.png	User	Yes
Fab 19 23 09:13:07 am 44.2369824138 3393 76.5014 73	5014022588	E2, Canada	Additional Comments	This whole section is very narrow and Ido have concern with persistent issues of delivery drivers blocking traffic to make drops. This is already a concern on brock phraces, and low er princess. Reducing to two narrow lanes may create considerable from sites. Perhaps the suggestion from another commenter about civilians ability to take pictures and submit to city for fine it will reduce offenders.	/lies/original/missing.png	User	Yes
Fab 19 23 09:15:42 am 44.2353066704 4048 8065	5053021907 55	C9 Canada	Comment on bike routes	A very good suggestion from Freddy in other comment. I just wanted to second it. Again creating neighbourhood routes connecting neighbourhoods.	/fles/original/missing.png	User	Yes
Feb 19 23 09:29:22 am 7959 2047	5103125572 17	anada	Comment on bike routes	I would like to see directional arrows on the bike lanes clearly identifying one way traffic that are on one way traffic streats. All bo often some active transportation users are traveling in the bike lanes against the flow of traffic opposed to traveling on the correct route creating issues for both motor vehicle users and other active transportation users.	/fles/original/missing.png	User	Yes
Fab 19 23 09:32:27 am 44.2311017280 68964 086	4 5139389038	T2. Canada	Comment on bike routes	If the SJAM bike lane went south to king but jumped in to palace at this section (where the old section of palace road extends) with a crossing at palace and Norman rogers there would be no need for a bike lane in the section of SJM where there are no off street stops to speak of in that section.	//les/original/missing.png	User	Yes
Feb 19 23 09:41:20 am 44.2412753276 79:95 379	5055274963	7K 2B6, Canada	Comment on bike routes	Prior to bike lanes being simply painted in this area. we need to invest in fixing the roads. It will use Portsmouth avenue as an example Of a road not suitable to cycle even with lanes as the conditions in the bike lanes are treacherous to ride in the king to princess st section	/Res/original/missing.png	User	Yes
Feb 19 23 09:42:41 am 8192 689	K 4999431371	7K 1R8. Canada	Comment on bike routes	I second what vincepape has noted	/ Nes/original/missing.png	User	Ves
Feb 19 23 01:28:01 pm 44.2370054741 8995 1037	5020084381 87	F5 Canada	Comment on bike routes	Keeping the bills bare on Phoress St. is abouldarly will there are no destinations on Concession or Johnson/Brock, but many along the Phincess St. Control. I bills this roote with my toddlar in low daily, and removing the bills lane would be an enormous sately hazard for us. The other notes are way out of the way of any of our destinations, and are not leasible when you are physically pow ering your transportation.	/lies/original/missing.png	User	No
Feb 19 23 01:29:29 pm 88246 7512 76.4992 7912	4992618560 12	R8, Canada	Comment on bike routes	This stretch of Concession in no way would be a replacement for the Princess St. bile lanes. It is way out of the way of downtown, and would add significant distance and time to a cyclistis trip. This stretch also has a much more significant hill than the equivalent stretch of Princess, which would be discouraging to many cyclists.	/Neslonginalimissing.png	User	No
Fab 21 23 08:54:04 am 5293 581	5192496776	Intario K7M 1B9, Canada	Comment on bike routes	I am opposed to the idea that this is a viable alternative to Princess St. BUT if it is being considered, there needs to be a safe way (it, protected bite path) for cycletis to turn onto and off of St.John A. at Bath Rd. This is a busy intersection that is currently extremely dangerous for cycletis, especially those making left hand turns.		User	No
Feb 21 23 08:55:59 am 79994 5437	h	ingston, Ontario K7L 1H2, Canada thy/inetinvnived cityofikionston colwilliamsvill 9 Jurham Street, Kingston, Ontario K7L 1J3,	Comment on bike routes	Why does this bile path not extend to Princess SI? There must be some recognition that cyclists billing beyond downtown might be going to one of the many locations on Princess SI: further w est. And making cyclists come up Sir.John A where it is externed "difficultifungeroot of a cyclists to make a lefthand turn onto Princess SI	/Nes/original/missing.png	User	No
Feb 21 23 03:45:57 pm 44.2384121388 1786 76:5073 0409	5073621273 19	anada	Comment on bike routes	Adding a bike path from Durham to Repert would create a parallel route with less diversion for those going to destinations on Princess. All the area is parking bits that could easily if a path belween them. This bus stop is notoriously dangerous for cyclists. Cyclists lose their bake lane and than have to deal with broken	/Nesloriginalimissing.png	User Yes	Ves
Feb 22 23 02:10:37 pm 9497 6975	4975596473 75	Canada	Comment on bike routes	pavement, jay-w aiking podestrians, and bases that are driving very fast to catch the green tight. These bike lanes should be fully protected and go behind the box stop to avoid collisions in the podestrians. They should also put in more street lights as the park can be very drivit at right and its hard to see cyclists. Think albort and thek streets are anot considerate or this mouths, the they can be immemented on their new. Periodin base	/lles/original/missing.png	User	No
Fab 22 23 02:14:52 pm 5756 9026	5002614261 26	anada ttr:/ineticunived.citvofkinnstron.ca/williamsvil 44 Netson Street, Kingston, Ontario K7K	Comment on bike routes	to be managed (as cyclists have to deal with cars parked in the bike lanes all the time) and many cars just roll through	/llesioriginal/missing.png	User	No
Feb 22 23 02:16:43 pm 3236 8732	11	ttr:/inetinvolved.citvofikingston.ca/williamsvil 53 Concession Street, Kingston, Ontario	Comment on bike routes	Cars fly through this right turn lane all the time and I think it should be removed completely if the city wants to build blie lanes on concession.	/lles/criginalmissing.png	User	No
Fab 22 23 02:21:00 pm 1534 - 76.5015 4624	5019154546 M	7K 1R8, Canada http://ineticurulworl.city.of/kinestron_ca/williamsvill 72 Division Street, Kingston, Ontario K7L	Rest Areas	After the dry removes this unneeded digit turn tane, they could repurpose this space for a beautified rest stop. The memorial centre depended up lacks trees and is an unattractive field for most of the year, despite its grant size and potential. Any of its corners and be grant rest stops or blar repair stations with some beautification and security in place. Despite being recently rew writed, this intersection still does not feel safe for cyclists. Cars that are going north of division	/llesioriginal/missing.png	User	No
Feb 22 23 02 26 46 pm 7804 8566 1 76,4930 8566	4930516486 96	B8, Canada ttp://setinvolved.citvofkingston.ca/williamsvil ts:Juvision street, Kingston, Untano K/L	Comment on bike routes		/lles/original/missing.png	User	No
Fab 22 23 02-28:52 pm 44.2327739347 8959 6828	4926975967 28	M7, Canada Itro /Inetiounived citvo/Monston ca/williamsvill 79 Princess Street, Kingston, Ontario K7L	Comment on bike routes	This area is hornble for (what lassume) delivery drivers parking in bile lanes while they pick up food orders in the restaurants. The city needs to start ticketing these cars if they want any of their bile lanes to be respected.	/llesioriginal/missing.png	User	No
Feb 23 23 10:51:53 am 998 0327	5000128746 27	C9, Canada ttp://oetinvolved.citvofkineston.ca/williamsvill 06 Pine Street, Kingston, Ontario K7K 4A4,	Comment on bike routes	Can Kingston start building dedicated bike lanes? It's so unsafe right now, especially as car drivers seem more distracted angry since covid.	/lles/original/missing.png	User Yes	
Fab 23 23 10:55:10 am 44.2392691884 84386 76.4941 0658	4941227436 58	lanada httv:/inetinuniverl.citv:r/ikionstron.ca/williamsvill 16 Princess Street, Kingston, Ontario K7L	Additional Comments	Peace eliminate all "begging buttors" on traffic lights. It's especially a pain in the winter when snow removal isn't great, but why should have to push a button to get the walk signal? Princess Street, south and east of the Kingston Centre, is evidently a STREET (not a RCAD), primarily functioning for people		User Yes	
Feb 23 23 12:10:38 pm 44.2403350063 76.5095 5021	5099048614 21	H1. Canada	Additional Comments	to access stores, residences, restaurants and other points of interest by POOT, CYCLE, PUBLIC TRANNET and other means of active transportation, where the use of personal autombiles should be discouraged frowing traffic calming measures, and other options for park and walk provided. Removing the already inadequate cycle infrastructure on this section of Princess is an assault on processive och design, climate chanae, and building a levable of the The proceed building in the store of the section of		User	No
Fab 24 23 09:59:41 am 44.2325403698 91346 1807	5088207459 07	anada	Comment on bike routes	If Phices Street does not allow for a bidleg rough han Block and Johnson need to have beliet bide larges. They are in territie condition and on not encough harmers to create a sale route for bidners and chalters. My difficult fibres need you usuate on beside larges and with the bumps it's difficult to ride and keep up. They need to have better barriers.	/ Nes/original/missing.png	User	No

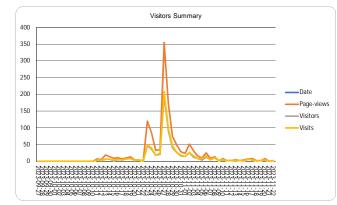
Note Note <th< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></th<>									
Image: Section of the section of th	Feb 24 23 10:01:39 am	44.2339124232 5544	76.5016865730 2858	86 Nesson Street, Kingston, Untano K./L. 3W8, Canada http://nesisyolverl.cityof/kingston.ca/williamsv/		doesn't make much sense.	/lies/original/missing.png	User	No
No. N	Feb 24 23 10:04:56 am	44.2385889303 5401	76.5054631233 2155	4V9, Canada	Additional Comments	Widening the sidewalks along Princess Street is an absolute most. With the expansion of grow th in this corridor w e w ant to make this a walkable area - with the Chy's sustainability plans as well there should be encouragement for a safe pedestrain pathway along Princess Street. There is so much opportunity for a vibrant walkable, livable area along Princess Street.	/lies/original/missing.png	User	No
No No No Manual Management Manual Manua Manual Manual Manual Manua Manual Manual Manual Manual	Feb 24 23 10:28:22 am	44.2377434008 1101	76.5037250518 799	1E7, Canada	Comment on bike routes		/lies/original/missing.png	User Yes	Yes
No. 10	Feb 24 23 03:03:20 pm	44.2412714845 6683	76.4981836080 5513	1R8, Canada	Comment on bike routes	create potentially deadly interractions between cars and cyclists, not to montion pedestrians at the corners, they also increase the velocity of traffic around corners as at Alfred and concession. Sig lanes are widely recognized as being particularly deadly for vulnerable road users and if they not going to be removed	/Ties/original/missing.png	User	Yes
vi vi <th< td=""><td>Feb 24 23 03:10:55 pm</td><td>44.2415674035 4408</td><td>76.4949595928 1923</td><td>4A9, Canada</td><td>Comment on bike routes</td><td>concession with slip lanes at the interaction create potentially deadly interractions between cars and cyclets, not to mention pedestrians at a bury corner. The city should consider adopting updated best practices and removing slip lanes. Slip lanes are widely recognized as being particularly deadly or vulnerable road users and if they not going to be removed</td><td>/lies/original/missing.png</td><td>User</td><td>Yes</td></th<>	Feb 24 23 03:10:55 pm	44.2415674035 4408	76.4949595928 1923	4A9, Canada	Comment on bike routes	concession with slip lanes at the interaction create potentially deadly interractions between cars and cyclets, not to mention pedestrians at a bury corner. The city should consider adopting updated best practices and removing slip lanes. Slip lanes are widely recognized as being particularly deadly or vulnerable road users and if they not going to be removed	/lies/original/missing.png	User	Yes
Note Note Note Note Note Note Note Note Note Note	Feb 24 23 03:11:27 pm	44.2411715635 3706	- 76.5021479129 7914	1R8, Canada	Comment on bike routes	create potentially deadly interractions between cars and cyclists, not to mention pedestrians at the corners, they also increase the velocity of traffic around corners as at Alfred and concession.	/Ties/original/missing.png	User	Yes
No. 2013 No. 2014 No. 2014 <th< td=""><td>Feb 24 23 03:12:04 pm</td><td>44.2409870934 9783</td><td>76.5107524394 9892</td><td>1G7, Canada</td><td>Comment on bike routes</td><td>Great to see the addition of more bibliones in Kingston's centre how ever Concession with it's slip banes of "w hip-anrunds" create potentially deapy interractions between cars and cyclists, not to mention podestrians at the corners, they also increase the velocity of traffic around corners as at All'red and concession. Slip banes are widely recognized as being particularly deadly for vulnerable road users and if they not going to be removed the location of the hiver load boots that necrossitized.</td><td>/lies/original/missing.png</td><td>User</td><td>Yea</td></th<>	Feb 24 23 03:12:04 pm	44.2409870934 9783	76.5107524394 9892	1G7, Canada	Comment on bike routes	Great to see the addition of more bibliones in Kingston's centre how ever Concession with it's slip banes of "w hip-anrunds" create potentially deapy interractions between cars and cyclists, not to mention podestrians at the corners, they also increase the velocity of traffic around corners as at All'red and concession. Slip banes are widely recognized as being particularly deadly for vulnerable road users and if they not going to be removed the location of the hiver load boots that necrossitized.	/lies/original/missing.png	User	Yea
Normal Sector Normal Sector <td>Feb 24 23 03:13:09 pm</td> <td>44.2409179170 84</td> <td>76.5118038654 3275</td> <td>Canada</td> <td>Comment on bike routes</td> <td>Slip lanes create dangerous interractions between cars and vulnerable road users and should be removed the city is committed to safe bike lanes.</td> <td>/lies/original/missing.png</td> <td>User</td> <td>Yea</td>	Feb 24 23 03:13:09 pm	44.2409179170 84	76.5118038654 3275	Canada	Comment on bike routes	Slip lanes create dangerous interractions between cars and vulnerable road users and should be removed the city is committed to safe bike lanes.	/lies/original/missing.png	User	Yea
No. 1000 No. 1000 <th< td=""><td>Feb 24 23 03:15:08 pm</td><td>44.2399417523 50255</td><td>76.5186810493 4694</td><td>Ontario K7L 479, Canada</td><td>Comment on bike routes</td><td>Slp lanes are deadly for vulnerable road users and if the city is committed to making these safe and well-used cycling corridors they should remove slp lanes to prevent foreseeable accidents</td><td>/lies/original/missing.png</td><td>User</td><td>Yes</td></th<>	Feb 24 23 03:15:08 pm	44.2399417523 50255	76.5186810493 4694	Ontario K7L 479, Canada	Comment on bike routes	Slp lanes are deadly for vulnerable road users and if the city is committed to making these safe and well-used cycling corridors they should remove slp lanes to prevent foreseeable accidents	/lies/original/missing.png	User	Yes
No. 1000 No. 1000 <th< td=""><td></td><td></td><td>76.4931678771 9728</td><td>1C3, Canada</td><td>Comment on bike routes</td><td></td><td>/files/original/missing.png</td><td>User</td><td>Yes</td></th<>			76.4931678771 9728	1C3, Canada	Comment on bike routes		/files/original/missing.png	User	Yes
No No No No Ander	Feb 24 23 03:19:58 pm	44.2405989359 0131	76.4979690313 3394	Canada	Additional Comments	Aftred needs a crossing at the memorial centre - people expect that because there's a gate it will lead them to a safe crossing it does not. The sip tame at concession means that ratific to dangerously fast at exactly the spot where kdts pool. The sip tame means that Concession and Aftred is not safer and option to cross - no where does a pedistrian have right of way.	/files/original/missing.png	User	Yes
No. 10			76.4942139387 1309	4A4, Canada	Additional Comments	These cross walk buttons are unresponsive as to discourage compliance. Rease replace with timed lights.	/files/original/missing.png	User	Yes
Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note Note			76.4946699142 4562	Ontario K7K 4A8, Canada	Additional Comments	This is not a route - this is the Circle K parking lot.	/files/original/missing.png	User	Yes
No. 1000 No. 1000 <th< td=""><td></td><td></td><td>76.5144968032 837</td><td>Ontario K7M 1A8, Canada</td><td></td><td>Sir John A Nacdonald Boulevard is functionally a divided highway. Racing a biketane unless there is an overhaul of the entirecorridor appears to be destined, no, planned for failure.</td><td>/files/original/missing.png</td><td>User</td><td>Yes</td></th<>			76.5144968032 837	Ontario K7M 1A8, Canada		Sir John A Nacdonald Boulevard is functionally a divided highway. Racing a biketane unless there is an overhaul of the entirecorridor appears to be destined, no, planned for failure.	/files/original/missing.png	User	Yes
Note in the interpretation in the			76.5146040916 443	Ontario K7M 1A8, Canada			/files/original/missing.png	User	Yes
Note for the second			76.5147382020 9505	Ontario K7M 1A8, Canada	Comment on bike routes	removing slip lanes if they proceed with bike lanes to avoid foreseeable accidents.	/lies/original/missing.png	User	Yes
No. 10 No. 10			76.5022695736 8433	1E5, Canada		residents of these apartments will have bikes and will be driving them to and from their homes therefore, accommodation for bicycles must be made along this route. I suggest making the sidew alks a little less wide in order to provide for a bicycle lane.	/Nes/original/missing.png	User	Yes
No. 1000 No. 2000 Sector 1000 Sector 10000 Sector 10000 </td <td></td> <td></td> <td>76.5023303031 9215</td> <td>4MB, Canada http://neticwolwerl.city.of/kinoston.ca/williamsvi 575a Princess Street, Kingston, Ontario K7L</td> <td></td> <td>order to see while turning left. The amount of traffic is non stop making it extremely difficult to drive or bike to continue on northbound on Nelson or to turn left. Very dangerous.</td> <td>/Nes/original/missing.png</td> <td>User</td> <td>Yes</td>			76.5023303031 9215	4MB, Canada http://neticwolwerl.city.of/kinoston.ca/williamsvi 575a Princess Street, Kingston, Ontario K7L		order to see while turning left. The amount of traffic is non stop making it extremely difficult to drive or bike to continue on northbound on Nelson or to turn left. Very dangerous.	/Nes/original/missing.png	User	Yes
1 mode			76.4994120597 8395	109, Canada	Comment on bike routes	shopping, to access the down town resources. The in the Williamsville neighbourhood and these bias banes are valiation my transportation (Optists need to be considered in any transportation development plan. Opting should be prioritized as a healthy, car rice alternative method of transportation. Kingston langs far behind shore Charlor municipalities in this negard (Re Oftware, Thronos London, Calebh) Vourire right that Princess carent do everything it aims to do. Given the number of destinations and the volume of	/Nes/original/missing.png	User	Yes
Note	pm		76.4969229698 1813	105, Canada	Additional Comments	pedestrian traffic, Phincess does not make for a good anterial to dow now m. The street design should focus on pedestrians and transit, and through traffic to dow notwork in should be discouraged away from Princess and onto streets with less foot traffic, like Concession/Division/Queen, or John AlJohnson.		User	No
No.200			76.4978349208 832	Canada http://neticwolword.city/of/kinostron_ca/williams/v/ 296 Netson Street, Kingston, Ontario K7K	Additional Comments	even if there are pedestrians trying to cross.	/Nes/original/missing.png	User	No
1 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3			76.5026897192 0015	4MB, Canada http://betiswolwed.city/of/kingston_ca/williamsvi 424 Princess Street, Kingston, Ontario KTL	Comment on bike routes	passage betw een Nelson and Victoria. It is probably not something that is fixable now but would seem key to an alternative.	/Nes/original/missing.png	User	No
No. 10. 201			76.4931464195 2516	1C2, Canada http://aetinvolved.city.of/kinoston.ca/williamsv/ 912 Princess Street, Kingston, Ontario K7L	Comment on bike routes	too much car traffic to be comfortable and it's not clear much can be done to fix this. South of Princess is better, but painted lines seem to be paired with no enforcement. I walk this stretch virtually everyday and I see cars parked there all the time. Income auditor is the traffic.	/lles/original/missing.png	User	No
A 14 30 10 10 10 10 10 10 10 10 10 10 10 10 10	· · · ·		1224	http://wellowolved.city/ofkingston.ca/williamsvi 905 Princess Street, Kingston, Ontario K7L		turned into a narrow one-way street Motor traftic can use allernative routes; why should cyclists have to?		User	No
A A B A A B <th< td=""><td></td><td></td><td>76.5110313892 3646</td><td>1H1, Canada http://detinvolved.citvof/kinoston.ca/williamsv/ 562 Mincess Street, Kingston, Untano K/L</td><td>Comment on bike routes</td><td>carefully what to do about this intersection. The a pretty experienced cyclicit who is more confortable than most riding with traffic and Iffind this intersection terrifying. Heading NW, the current blee lane on Princess just ends at pretty much the w orst possible time.</td><td>/Nes/original/missing.png</td><td>User</td><td>No</td></th<>			76.5110313892 3646	1H1, Canada http://detinvolved.citvof/kinoston.ca/williamsv/ 562 Mincess Street, Kingston, Untano K/L	Comment on bike routes	carefully what to do about this intersection. The a pretty experienced cyclicit who is more confortable than most riding with traffic and Iffind this intersection terrifying. Heading NW, the current blee lane on Princess just ends at pretty much the w orst possible time.	/Nes/original/missing.png	User	No
Number of the state of the				http://actiouolward.city/of kineston.ca/williamovi		city needs to build the infrastructure. When the infrastructure is convenient, more citizens will access it. The same goes for public transportation?		User	Yes
March 2000 March 2000 <td></td> <td></td> <td></td> <td>http://detinvolved.citvofkindston.ca/williamsvi Sir John a. Macdonald Boulevard. Kindston.</td> <td></td> <td>Leve the commente resourcing the histogram is consider. No is MTL and the constrain his large as as from traffic</td> <td></td> <td>User</td> <td>Yes</td>				http://detinvolved.citvofkindston.ca/williamsvi Sir John a. Macdonald Boulevard. Kindston.		Leve the commente resourcing the histogram is consider. No is MTL and the constrain his large as as from traffic		User	Yes
The second secon			76.5168356895 4469	Ontario K7M 6W4, Canada		especially if there's nomino allow for it. The traffic on the road is too busy to be billing next to it or even have the title plastic cores would not do much for allow. Personally this stratch of \$7. John A has enough alternative bile routes that i think other sections of \$7 John A and Bath Rd. would benefit from development first.		User	Yes
Mur (132) 2423922278 Canda Curd da Prozosta be las en organization participation and registration participation and registration participation and registration participation and registration and registratin and registration and registratio			76.5187454223 633	Ontario K7L 1H2, Canada		receised on risk, and could potentiary nep criticers connect to the Kern and better.		User	Yes
	Mar 03 23 11:30:57 am	44.2392923768 6674	76.5313768391 2064	Canada		Out of all the possible bits lare projects, an east-west development would really help potential commuters (cyclists and drivers alike) feel safer on the road. There seems to be enough north south options, especially if choosing to commute through quieter streets, but east-w est is really tacking, especially on Bah Road.	/Nes/original/missing.png	User	Yes

	44.2403003353 9144	76.5237879753 113		Comment on bike routes	Would love to see Bath road be a top priority for people who want to commute to work going east-w est. As mentioned, there are encough north-south options, but Bath Road is a real barrier to having more active transportation.	/files/original/missing.png	User		Yes
Mar 03 23 03:12:20 pm	44.2336424101 61735	76.4932322502 1364	Ontario K7L 1C3, Canada	Additional Comments	Get rid of the slip lane here while we are in the thick of road reconstruction. They are known to be unsafe and are not needed. If the justification is for truck turning, there's no reason the city can't change the permitted truck routes. We do no need nor do we want to area and heavy trucks from accessing we obcund princess at here. There are elerity of wide arterials	/lies/original/missing.png	User		No
Mar 03 23 03:13:32 pm	44.2377203407 4421	76.5032154321 6707	http://ketinyolved.cityofkinositon.ca/williamsvill 577 Victoria Street, Kingston, Ontario K7L 0E7, Canada	Additional Comments	eiminate the slip lane here. They are known to be unsafe.	/files/original/missing.png	User		No
Mar 03 23 03:14:39 pm	44.2412292103 05725	- 76.5115302801 1323	http://ketisuolued.cit/vd/kinestrin_caluelliamsvil 920 Princess Street, Kingston, Ontario K7L 1H1, Canada	Additional Comments	This whole area is a safety nightnaire for pedestrians and cyclists. It may be beyond saving - removing the slip lanes would be a good start.	/files/original/missing.png	User		No
Mar 03 23 03:25:23 pm	44.2438809006 0461	76.5163046121 5974	http://ketinyolved.cityof/kinoston.ca/williamsvil Mocalim Place, Kingston, Ontario K7L 1HB, Canada	Additional Comments	My will be works at the offices here, and she would like to be able to bike to work but the last 1000m (everything north of Bah Road) is a deah trap. What route would be suggested to get here, or to the drug store or other businesses? There needs to be safe cycling through and TO be kingston centered elevelopment. The Dity should be negotiating safe road infractantimum as the site redwolvelopment, we novel assets, we novel needs to be safe a norther to be here the	/files/original/missing.png	User		No
	44.2413752485 33494	76.4981567859 6498	517 Alfred Street, Kingston, Ontario K7K 1R8, Canada	Additional Comments	infrastruction as the site redevelopments, we onwid each share a few narking spots to accompose a nonected base that remove sip lane in line with city's stated vision zero objectives.	/files/original/missing.png	User		No
Mar 03 23 03:28:02 pm	44.2412023084 8738	76.5022712945 9381	http://ioetinvolved.clive/lines.ton.ca/williamsvil 350 Nelson Street, Kingston, Ontario K7K 1R8, Canada	Additional Comments	remove sip lane	/files/original/missing.png	User		No
	44.2413291312 37556	76.5035104751 5869	185 Concession Street, Kingston, Ontario K7K 2B4, Canada	Additional Comments	remove sip lanes.	/files/original/missing.png	User		No
Mar 03 23 03:34:08 pm	44.2393076209 1239	76.4944472908 9738	http://inelsenobart.clinorf.idenestron.ca/williamsvil 139 Pine Street, Kingston, Ontario K7K 4A3, Canada	Comment on bike routes	Lagree with the traffic light comments. As a cyclist it is very hard to push the cross walk button, and it takes a prohibitively long time for the light to change.	/files/original/missing.png	User		Ves
		76.5006566047 6686	484 Albert Street, Kingston, Ontario K7L 3W3, Canada	Comment on bike routes	add active transportation signs along the area ie Memorial center 1k, lake Sk, bath 20k	/files/original/missing.png	User	Yes	Ves
Mar 04 23 09:42:13 am	44.2376493137 656	76.5031714442 0114		Comment on bike routes	add blie racks at major bus stops like the one by Princess St United church	/Nes/original/missing.png	User	Yes	Ves
Mar 04 23 09:45:35 am	44.2399697466 8341	76.5090433360 456	htm://inetsuched.cit/vdfkinestron_calvelliamsvil 846 Princess Street, Kingston, Ontario K7L 1G3, Canada	Comment on bike routes	add active transportation signs to dff erent locations from bath concession and princess intersection.	/files/original/missing.png	User	Yes	Ves
Mar 04 23 09:47:44 am	44.2381800030 3178	76.5045350790 024	http://indexen.html.citerof.kingston, Ontario K7L 671 Princess Street, Kingston, Ontario K7L 1E6, Canada	Comment on bike routes	the bike routes need to be snow plow ed as well as the streets along this whole area.	/files/original/missing.png	User	Yes	Ves
Mar 04 23 09:50:05 am	44.2384836241 49254	- 76.5053826570 511	http://petissenheed.cit/vofikioeston.ca/williamsvill 726 Princess Street, Kingston, Ontario K7L 1G2, Canada	Comment on bike routes	downtown princess st has many more bike racks then Williamsville. There needs to be more bike racks as more people move into the high rises and there is more commercial development.	/files/original/missing.png	User	Yes	Ves
Mar 04 23 09:54:09 am	44.2403432300 925	76.5095014574 7629		Rest Areas	there should be a rest area at both ends of this corridor, with signs and distance to other destinations is kingston center, cat center, mem center, lake, parks etc.	/files/original/missing.png	Uter	Yes	Yea
Mar 04 23 09:56:23 am	44.2388818432 59676	76.5061422588 4057	http://bethsubled.cit/cfileseton_calvelliaesuil 689 Princess Street, Kingston, Ontario K7L 1E9, Canada	Additional Comments	the sidew alks need better winter maintenance. It is very dangerous waiking this area most winters.	/files/original/missing.png	User	Yes	Yua
Mar 04 23 09:58:47 am	44.2392907106 4132	76.5070402622 223		Additional Comments	the area needs more garbage/recycle bins especially at bus stops like across from Giant Tiger. If the area kolks nice them more people may walk the area.	/lies/original/missing.png	User	Yes	Yes
Mar 04 23 10:03:41 am	44.2337139217 8138	76.4936721318 3724	http://pedisorshard.cit/wolfiderstion_ca/williamovil 438 Princess Street, Kingston, Ontario K7L 102, Canada http://pedisorshard.cit/wolfiderstion_ca/williamovil http://pedisorshard.cit/wolfiderstion_ca/williamovil	Rest Areas	Tknow it outside the area of study but a sign here indication what is in Williamsville area would be beneficial for people to decide to visit Williamsville. In restaurants, Farmers Market, Giant Tger, etc.	/lies/original/missing.png	User	Yes	Yes
Mar 04 23 10:06:15 am	44.2389564917 054	76.5065424439 672	772 Princess Street, Kingston, Ontario K7L 1G3, Canada http://setinvolveri.nlvvofkingston, ca/williamsvil 859 Princess Street, Kingston, Ontario K7L	Additional Comments	This area had old gas light futures that no longer work. Why not fix them up. The more pleasant the area the more people will walk in and to it.	/files/original/missing.png	User	Yes	Yes
Mar 04 23 10:09:08 am	44.2402570973 9675	76.5095626116 4539	1G5, Canada	Additional Comments	Out side the area but there is not sidew alk on the left hand side of princess st by Canadian tire parking lot. This discourages people from walking in the area from Williams ville.	/lies/original/missing.png	User	Yes	Yes
Mar 04 23 10:13:39 am	44.2359509324 2226	76.4990386969 1119	http://bedisorshoed.cl/shortkingston_calvellamsoil 491 Fronteness Street, Kingston, Ontario K7L 108, Canada http://bedisorshoed.cl/softkingston_calvellamsoil http://bedisorshoed.cl/softkingston_contario K7L	Rest Areas	More benches are needed. At these locations. All/red, Frontenac, The bakery, Legion villa, Tim Hortons area, Giant Tiger, Westgate Sq. etc.	/files/original/missing.png	User	Yes	Yes
Mar 04 23 10:16:10 am	44.2361391672 68824	76.4997339248 6574	5/8 Hincess Street, Kingston, Untario K/L 109, Canada http://setiovolved.city/ofkingston_ca/williamsvil 578 Princess Street, Kingston, Ontario K/L	Additional Comments	why not add art to the area so it is attractive for people to visit by active transportation? The planters in front of the new high rises could be painted. Add some color to the area.	/Nes/original/missing.png	User	Yes	Yes
Mar 04 23 10:18:45 am	44.2363013201 13164	76.5000171660 7223	578 Princess Street, Kingston, Ontario K7L 1E1, Canada http://setiovolverl.ol/vorkingston.ca/williamsvil 844 Princess Street, Kingston, Ontario K7L	Additional Comments	This area, with the new high rises, is becoming a real wind tunnel especially during the winter and thus discourages people from using active transportation. Not sure what can be done about this ??	/Nes/original/missing.png	User	Yes	Yes
Mar 04 23 10:22:52 am	44.2402057700 2617	- 76.5093137025 1783	944 Hincess Street, Kingston, Untario K/L 1G7, Canada http://setievolved.nbvofkierston.ca/williamsvil 231 Concession Street, Kingston, Ontario	Comment on bike routes	add rest stops and bike route maps at each end and along the corridor.	/Nes/original/missing.png	User	Yes	Yes
	44.2412462511 59104	76.5059094428 034	K7K 2B6, Canada http://definyolved.citvofkinoston.ca/williamsvil	Comment on bike routes	From MacDonnel this light does not change for bless. You have to get off your ble and push the button or you wait a long long time. This is not Active transportation friendly and those not occur on Princess St Intersections.	/lies/original/missing.png	User	Yes	Yes
	44.2373221688 0826	76.5024161338 8063	164, Canada http://actiowolverd.cit/cofiliereston.ca/williamesvil	Comment on bike routes	terrible to add a blcycle route along this busy corridor too much w eaving for all kinds of vehicles poor road construction cyclists are not safe	/files/original/missing.png	User		ю
Mar 05 23 09:01:46 am	44.2412945432 4189	- 76.5036284923 5536	192 Concession Street, Kingston, Ontario K7K 4S5, Canada http://oetinvolved.citvof/kingston.ca/williams/vil 175 Bath Road, Kingston, Ontario K7L 4T9.	Comment on bike routes	This light only changes for north south traffic if there is enough weight of a car stopped. As a cyclist using Victoria to go South, if there are no cars walling to cross with you, you are forced to run the red as the light will NEVER turn for a blie. Going North, you can at least jump on the sidewalk and press the pedestrian crossing button for the light to change.	/lies/original/missing.png	User		Yes
Mar 05 23 09:05:06 am	44.2403337574 571	76.5189599990 8449	175 Bath Road, Kingston, Ontario K7L 419, Canada http://batinwolvorl.city.of/kingston, calw illiamsvil 873 Johnson Street, Kingston, Ontario K7L	Comment on bike routes	Bike Route needs to continue NORTH to JCB and Princess St. Now the only viable safe way to get to princess St. is weaving around the Kingston Centre parking lot on a bike	/files/original/missing.png	User		Yes
	44.2310133211 19825	76.5134561061 8593	287, Canada	Comment on bike routes	Very dangerous for a cyclist heading East on Johnson to merge two lanes to the left, to make LEFT turn onto Palace Road - especially with kids in tww. This has to be resolved for Palace Road to be a main antery.	/Nes/original/missing.png	User		Yes
Mar 05 23 09:10:54 am	44.2356410542 4056	- 76.5030169486 9997	490 Victoria Street, Kingston, Ontario K7L 328, Canada http://netinvolved.citvofikingston.ca/williamsvil	Comment on bike routes	Very congested with parked cars and rough pavement - needs no parking along whole road to be safe for cycling.	/Nes/original/missing.png	User		Yes

			419 Earl Street, Kingston, Ontario K7L 3X8, Canada					
Mar 05 23 4 10:32:58 7 am	4.2296564499 '988	76.5019440650 9401	Canada http://iselievolvenf.citivofikionston_calwilliamsvill 345 Union Street, Kingston, Ontario K7L 466,	Comment on bike routes	Bika route here, please!	/Nes/original/missing.png	User	Yes
Mar 05 23 10:33:34 am	14.2253511560 1276	76.5068149566 6505	Canada	Comment on bike routes	Bether bike routes here!	//iles/original/missing.png	User	Yes
Mar 05 23 08:10:16 pm 3	14.2328067865 1262	76.4987415075 3023		Additional Comments	As others have metioned, crossing Brock and Jahnson street are particularly difficult to cross for all people on foco or bite. In my opinion, a cross walk with a push button for lights must be installed at all roads crossing Brock and Jahnson street to increase deadtains aiding. Carl traveling down both these roads are moning fast, and generally do not slow as people cross.	//lies/original/missing.png	User	Yes
Mar 05 23 11:03:11 pm 8	14.2338884007 18416	76.5140354633 3314		Comment on bike routes	act was update tractic camponent modules about more reading within the another band to the company of the second to the lagree with the other comments that reaccomend connecting Mack SI Bile path. West safely accross Palace and to the crossing of SI which A at Norman Rogers. These paths need to connect seamlessly to reduce barriers to active transportation.	/lies/original/missing.png	User	Yes
Mar 05 23 11:24:11 pm 1	4.2315591358 521	76.4978402853 0122		Comment on bike routes	Bite routes on Johnson and Brock need to be elevated or separated from traffic with cement barriers and properly maintained year-round for us to feel it is safe and dependable enough to use	/lies/original/missing.png	User	Yes
Mar 05 23 11:28:21 pm 1	4.2360273228 7	76.4992994070 0532		Comment on bike routes	We need bile lanes on Pincess. Active transportation infrastructure only works if it gets us to our destinations	/files/original/missing.png	User	Yes
Mar 05 23 11:33:17 pm 6	4.2350453116 i4486	76.5053021907 8065		Comment on bike routes	lagree that MacDonnel is a better attemative to Victoria. Hoving it run from Larcy Grant to Union would help connect 2 schools as well as effectively connect the Ternis Oub to a neighbourhood route	/Nes/original/missing.png	User	Yes
Mar 06 23 12:10:57 pm 7	4.2398495154 497	76.5088748931 8849		Comment on bike routes	Can we make Princess St. one-way up here?	/Nes/original/missing.png	User	Yes
Mar 06 23 12:14:42 pm 9	14.2394733336 1693	76.5073460340 5	httr://izerlisunband.cl/kurd/kinnstrin.ca/williamsvil 193 Princess Street, Kingston, Ontario K7L 1E9, Canada httr://izerlisunband.cl/kurd/kinnstrin.ca/williamsvil	Comment on bike routes	We have a huge opportunity hare to be bold and make a big change in our community. Let's prioritize public transit, cycling, and walking. Please make it inconvenient for cars. How about transitivities area only? Special spots on the side for delivenies if that increasing? How about protected bike inarcs? How about a one-wait system? This part of Howsis SL is slow going for drivers anyway. Let's make it even worss for cars to keep themoif of L I want to live in a city where hiskontransitiviti about is the aceier choice.		User	Yes
Mar 06 23 06:40:17 pm 2	14.2374551493 1611	76.5030491352 0814	1E5, Canada	Additional Comments	The sidew alk here is extremely narrow and close to the road around the corner of Victoria and Princess. Rease increase width and install protective barriers for people walking / using active transportation (e.g. bollards)	//iles/original/missing.png	User	Yes
		76.4944821596 1458	http://izerlounbland.cit/kundikingston, Ontario K7L 122, Canada http://izerlounbland.cit/konstron_calveillamsvill	Comment on bike routes	1. Permanet, deviated bike lanes with year-round barriers along the entrety of the Johnson and Brock street bike lanes are essential. I cannot lefl you how many cars I have seen drift to the right into bike lanes when the summer bike lane barriers have beam blank own in for the summer. The only wey to make these blanks and is to the might not blank lanes and is to make them permanent. 2. Clearing snow from the blanks and sidewalks is a must, and should be completed within the same time-frame and to the same time-frame so years and so the same time-frame so years and years and years are barrier to the same time-frame so years are supported by the same time-frame so years are same time-frame and to the same time-frame so years are same time-frame and to the same time-frame so years are same time-frame and to the same time-frame so years are same time-frame and years are same time-frame so years are same time-frame so years are same time-frame and years are same time-frame so years are same time-frame so the same time-frame so years are same time-frame and years are same time-frame so years are same same time-frame so years are same time-frame so years are same same time-frame so years are same same same time-frame same same same same same same same s	/Nes/original/missing.png	User	Yes
Mar 06 23 06:48:07 pm 9	14.2312401038 16674	76.4930230379 1048	1Y8, Canada	Comment on bike routes	Pease extend the bike lane East along Johnson.	//iles/original/missing.png	User	Yes
		76.4971160888 672	httr://izerfoxnbard.cit/work/kingston, Ontario K7L 1258 Princess Street, Kingston, Ontario K7L 105, Canada http://izerfoxnbard.cit/work/kingston, Ontario K7L 1811 Frontenac Street, Kingston, Ontario K7L	Comment on bike routes	poor surgers are the next common ways people rave aong and section or princess rave no reason why dwing would not be popular if we designed safe infrastructure for people choosing to bike.	ston_transport.JPG?1678147414	User	Ya
Mar 06 23 07:08:51 pm 2	14.2327237798 1552	76.4987200498 5811	3T1. Canada	Additional Comments	Consomethics like this design solven below with "center line bardening" be available considered at all intersections similar to Brock and Prontenac? Many car people driving cars like to make fast, wide turns. Adding in centre-line infrastructure w ould help solw cars down and make road crossings safer for people walking.	https://s3.ca-central-1.amazonaw.s.com/ehq-production-	User	Yes
Mar 06 23 4 07:09:54 0 pm 0	14.2409525053 1108	76.5110528469 0858	1H1. Canada	Additional Comments	Rease extend sidew alks and bikes lanes, along both sides of princess north w est of here	/files/original/missing.png	User	Yes
		76.5041657212 7142	Canada	Comment on bike routes	Incol and Johnson Bile Rotate do not signal a tail and institti gapace for bicyclatis or podertinerses encept for those most alleb bodied and most confiders. These states could support protected bias laces and munimum grist states with addition of threes or parking spaces to separate the cycling path from the road - additionally turning brock or phreson into a bidinotophratic ar roade will increase to use by cyclatis. The most likely shadnen to increase cycling adurg these tootes another host protectional and the cycling path from the road - additionally turning brock or phreson into a pathole host protection. The road likely shadnen to the roade - additionally turning brock or phreson into a pathole host protection. The road likely in the phreson barry brock pathole in the road - addition and the road or additional turning the road of the phreson barry barr	/Nes/original/missing.png	User	Yes
am		76.5057206121 1278	K7K 4W5, Canada	Comment on bike routes	Antiogen his basic, neuconner as seeme to open more appropriate greater series to contractional units of our minimum appropriate greater series to contractional units of our minimum appropriate greater series and the series of	/Nes/original/missing.png	User	Yes
		76.5086842788 8783	9 Urayton Avenue, Kingston, Untano K/L 166, Canada http://definvolved.citvof/kingston.ca/williamsvii http://definvolved.citvof/kingston.ca/williamsvii	Additional Comments	Sale bills at LdSyon Area man Assert aconstancement mod effective lists of mis any setting. Area importantly, a sale panel should be used by when there is an accoss and any setting of the setting of the setting of the setting of the setting of the should be used by any setting of the setting of the skip options be focused at they intersections when the "skip" is lawy to save the most time (Division St and Princess). Law and Princess). Used the counter and Princess Cardiners are Princess of the setting of the set of the set of the setting of the setting of the set of the set of the set of the setting of the set of the set of the set of the set of the setting of the set of the s		User	Yes
		76.5031693395 5766	0E7, Canada	Comment on bike routes	Protected intersections are critical here[pictured here in ottaw a, but not included in AAA intersection along John Counter) and along all bike routes. Most collisions with cyclists and pedestrians in Kingston are at intersections.	inal/1678201814/fd09521ef8661fab8aff17f1482d20a6_Scre ershot_2023-03-07_at_10.08.46_AM.png?1678201814	User	Yes
		76.5006137421 3692	Canada	Additional Comments	20m road w tith (pictured here). Transit sitips may not not appropriate for this area as they are more effective for saving time at major instructions (Phoness and Bahn or, Honess and Jahn or, Honess hau Faute Dourted) - and express hau roadre may be better considered for transforming johnson or brock into dedicated express lanes (removing one lane of private vehicle traffic)	nal/1678202056/615d6be638d9bt4973d893161b5d7760_Scr eenshot_2023-03-07_at_10.07.37_AMpng?1678202056	User	Yes
		76.4930103471 852	3Y9. Canada	Comment on bike routes	This part of the Division, as well as all Brock and Johnsons are the most dangerous intersections for pedestrians and cyclists based on data provided by the City of Kingston from 2005-2017. (screenshot attached of cyclists and pedestrians injured or killed) Maximum protection and prioritization for pedestrians and cyclists at this intersection will save lives.	https://s3.ca-central-1.amazonaws.com/ehq-production- canada/14e432/6931d58a0ed75894681da72e43259313b/orig inal/1672022582/368337b/0222582rf 480073cedf 234_Scr eenshot_2023-03-07_at_10.20.10_AM.png?1678202586	User	Yes
Mar 07 23 03:52:20 pm 2	14.2414094626 1203	76.4980029518 1751	Canada	Comment on bike routes	This stretch of Concession/Bath is something Id call "Slip-Lane Hell", and these dangerous slip-lanes can be retrofitted with protected intersection crossings for cyclets and pedestriand, like in the Ottaw a Protected Intersection design guidance	/Nes/original/missing.png	User	Yes
· · · ·		76.5058916748 4358	K7K 4W8, Canada	Comment on bike routes	Macdonnel is an important school destination of two elementaries, and a much more apporpiate alternative to Victoria as a neighbourhood route.	/Nes/original/missing.png	User	Yes
pin		76.4941595829 8562	450 Princess Street, Kingston, Ontario K7L 1C2, Canada http://oetinvolved.citvol/kingston.ca/w illiamsvil 337 Queen Street, Kingston, Ontario K7K	Additional Comments	Constrained ROW means need for spatially efficient modes is more bike, pad, bus, and NOT more private automobiles	/Nes/original/missing.png	User	Yes
		76.4931410551 0713	3Y9, Canada	Comment on bike routes	Queen at Division needs either refuges for pedestrians, or significant shortening of the crossing distance via bub outs.	/Nes/original/missing.png	User	Yes
Mar 07 23 4 03:59:45 8 pm 8	14.2382714172 18345	- 76.5007210528 1116	559 Albert Street, Kingston, Ontario K7K 4M5, Canada http://inetiouoluod.cituofikinoston.ca/williamsvill.	Comment on bike routes	Routes by the Memorial Centre should continue into and through the site for cyclists and pedestrians	/Nes/original/missing.png	User	Yes

Project Report: Williamsville Bikeways





Project Highlights	
Total Visits	727
New Registrations	11
Video views	0
Photo Views	0
Document Downloads	0

November

ENGAGED PARTICIPANTS		169	
Engaged Actions Performed	Registere d	Unverifie d	Anonymou s
Contributed on Forums	0	0	0
Participated in Surveys	169	0	0
Contributed to Newsfeeds	0	0	0
Participated in Quick Polls	0	0	0
osted on Guestbooks	0	0	0
Contributed to Stories	0	0	0
sked Questions	0	0	0
Placed Pins on Places	0	0	0
Contributed to Ideas	0	0	0

INFORMED PARTICIPANTS	240
Informed Actions Performed	Participants
Viewed a video	0
Viewed a photo	0
Downloaded a document	0
Visited the Key Dates page	2
Visited an FAQ list Page	0
Visited Instagram Page	0
Visited Multiple Project Pages	77
Contributed to a tool (engaged	1169

AWARE PARTICIPANTS	568
Aware Actions Performed	Participants

Visited at least one Page 568

	ENGAGEMENT TOOLS SUMMARY											
Forum Topics	0	Guestbook	0	Places	0	News Feeds	2	Ideas	0			
Qandas	0	Quick Polls	0	Stories	0	Survey Tools	1					

	eeds Bike route maps and cross-section						Cont	ributors	
Tool Type	Engagement	ool Name		Тоо	Status	Visitors	Registered	Unverified	Anonymous
News Feeds	Bike route maps and cross-	ections		Publi	shed	12	2 0	0	C
News Feeds	Notice of public open house			Publi	shed	2	2 0	0 0	C
SurveyTools	Williamsville bikeway surve			Archi	ved	385	5 169	0	C
DOOLUMENT		IN	IFORMATI	ON W	IDGET S	UMMARY			
DOCUMENT S	0 PHOTOS	0	VIDEOS	0	FAQS	0	KEY DATE	S	1
Widget									
Туре		Engageme	ent Tool Na	ame			Visitors	Downlo	oads/Views
Key Dates	Key Date						2		4

SurveyTool:	IUSVI	18 August 2017		to	22 November 2023									
Tool Status J Visitors	Archived Date of Contribution	f III Please select the active modes of travel you use in	Please select the active modes of travel you use it Williamsuife Blocce deate all that people (Athen	n What is your primary purpose	The green streets Get involved webpage showed three different green street in order of your preference.(deleted)	Survey Response concepts. Please rank them	What barriers currently reduce your use of active	What measures would assist in reducing the	Provide any additional comments.	licamana	1P Ann	Sign Up form Details I would like to be entered in the draw to win one of the	Do you want to be added to the City of Kinesten moline	P Response
		Williamsville. Please check all that apply.	(olease specify)	Trips to adjacent neighbourhoods or areas			travel options in Williamsville? Check all that apply.	barriers you identified? Please check all that apply. Speed limit reduction, Traffic calming measures, On-road cycling lans, Traffic diversion measures (discourseing vehicle through traffic)		User Code	teleted) ^{ADE}	following:	Est and receive updates on	5430963
	12:14:49 am		Very narely I run, but just for esercise not for transport.				Uncomfortable sharing the nead with vehicle traffic, Uncomfortable marging intersections, Rode is not acenic enough, Parked cars impeding access			User			No	5431102
Unvertiled	am	Walk, Bile, Skeleboard		Commute to work or school			enzigh, Parked cars impeding access Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars	(discouraging vehicle through traffic) Speed limit reduction, Traffic calming measures, Separated cycling laine or bite facilities, Traffic diversion measures (discouration vehicle through hatfic)	Speed of fails and dataseted dating is ny main concern. Walking ar billing has become none and more dargenous in the ciry of fongatos. I would not be comfortable billing with young children anymore. It assems only possible to bile subly on Sandays.	User	44		Yes	5431193
Апопуттоца	am	Wulk, Bike		Commute to work or school			Impeding access Uncorriortable sharing the road with vehicle traffic, Uncorriortable navigating intersections, Lack of direct connection to destination; Speed of traffic; Traffic volume, Volume of large vehicle traffic, Parkad cars impeding access	Bikeway way finding signaga, Bikeway pawament makinga, Speed Inth aduction, Traffic calaring masaurus, On-road cycling lains, shared multisus pathway, Saparated cycling lains or bike facilisis . Traffic dvension masares	Torong an end cars and should not be treated as such. Most of the existing bicycle "tares" feel like bicycle gutters, that are havely soon down (i.e., Union 32) and are unprotected, assulting in impatient or inconsiderate dhwm blocking and tares, or driving through them, reducing the accessability of cycling to only the most experision of rises. Separated most-sue parties are a rest tale boards or credule seconds block of level with outpart are celled in View outpart outpat each on roads. It is and a certain tale boards or credule seconds block block with outpart are celled.	User	22		Yes	5431517
Admin	am	Walk, Biles		Commute to work or achool			Volume of large venice training, inareas cars impeding access Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating interactions, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars.	(discouraging vehicle through traffic) Speed limit reduction, Traffic calming measures, On-read cycling lame, Sepanated cycling lame or bike facilities, "Traffic diversion measures (discouraging vehicle through traffic)	Explore true can periodiced the in tradition stars. Name of a search periodic stars of the search periodi stars of the search periodic stars of the search perio	User	42	Yes	Yes	5434798
SUBMISSIONS	169 Oct 17 23 05:55:41	Walk, Inline or roller skales		Lebure			Uncomfortable sharing the road with vehicle traffic, Speed of traffic, Traffic volume	Speed limit reduction, Traffic calming measures, On-road cycling lane	evening, the light just stays nod when a cyclai stops there - which is an accessibility and safety issue for cyclais. Some City's think this should extend turther up Princess Street especially the bridge near the ambassador. This areas is really bad for bitems becoming aggressive toward other bitems and drivers of vehicles.	User	28		Yes	5438782
	0et 20 23 08:01:00	Walk, Bike	bus	Trips to adjacent neighbourhoods or areas					Need bike lanes on Phroase Street in Williamsville	User				5448957
	0et 23 23 11:29:44 am			Trips to adjacent neighbourhoods or areas			Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Lack of direct connection to destination, Parked cars impeding access	On-road cycling lane, ahared multiuse pathway, Traffic diversion measures (discouraging vehicle through traffic)	The intersection of Albert and York is difficult to cross when there is an event happening at the Memorial Center. Very heavy car traffic and no crosswalk make it hazardous and time-consuming.	User	22		No	5457162
		Walk, Bike		Tripa within Williamsville			Uncomfortable sharing the road with vehicle traffic, Speed of traffic, Parked cars impeding access	Speed limit reduction, On-read cycling lane, Separated cycling lane or bite facilities, "Traffic diversion measures (discouraging vehicle through traffic)	The road is also in temble shape - many many large potholes, bumps, grooves, cars in bike lares	User	48	Yes	Yes	5457497
Demographics Graphs	Below Oct 23 23 01/23/05 pm	Walk, Bike		Trips to adjacent neighbourhoods or areas			Uncomfortable sharing the noad with vehicle traffic, Uncomfortable navigating intersections, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	shared multiuse pathway, Separated cycling lane or bios facilities		User	33		No	5457530
	pm	Walk, Bike		Trips to adjacent neighbourhoods or areas				Traffic calming massures, On-road cycling lane, Separated cycling lane or bike facilities		User	47	Yes	Yes	5457669
	Oct 23 23 02:30:23 pm	Walk, Bike		Trips to adjacent neighbourhoods or areas			Uncomfortable sharing the road with vehicle traffic, Route is not acenic enough, Traffic volume, Parked cars impeding access	shared multiuse pathway, Separated cycling lane or bios facilities		User			No	5457734
	Oct 23 23 03:33:20 pm		Scooler on the sidewalks	Leisune			uncomortable sharing the road with vehicle traffic, Uncomortable navigating intersections, Unaure of which roades to take, Lack of direct connection to destination, Spees of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	Bikeway way finding signage, Speed Imit reduction, Separated cycling lane or bike facilities , Traffic diversion measures (discoursping vehicle through traffic)	Les traffic calorige researces as an option for endocing banken in question 65 buil an acaptical of this option. Current haftic calorige in folgoption desarch allowing as you the acable association behavior. They assem to be extended down. (1994) Rogithon aux males a committent is investing in acable associations invalued of just painting the read (parts of part or use partical bits larses as a lone for themselves) or adding some signage.	User	36		Yes	5458547
		Walk, Bike		Trips to adjacent neighbourhoods or areas			Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Route is not scenic enough, Parked cars impeding access	Bikeway pavement markings, On-road cycling lane, Separated cycling lane or bike facilities		User	35		No	5459145
	Oct 23 23 05:02:34 pm	Wulk, Bike		Trips to adjacent neighbourhoods or areas			Uncomfortable sharing the road with vehicle traffic	On-road cycling lane, Separated cycling lane or bike facilities	Declasted bike paths are the answer. Having cyclied in Monteal, Toronto and Europe declasted bike lanealpaths provide the most authory for cyclists. Simply painting lines on the side of the road does not provide enough protection.	User	54	Yes	Yes	5459380
	Oct 23 23 08:19:02 pm			Tripa within Williamsville				Separated cycling lane or bike facilities		User	55		Yes	5460274
	Oct 23 23 08:23:08 pm	Walk		Tripa within Williamaville			Uncomfortable sharing the road with vehicle traffic, Lack of direct connection to destination, Route is not scenic enough, Speed of traffic, Traffic volume, Parked cars impeding access	Bikeway pavement markinga, Traffic calming masaures, Cn- road cycling laine, shared matikase pathway, Separated cycling laine or bike facilities , Traffic diversion measures (discouraging vehicle through traffic)	We need sidewalks on every sitest, itselfic lights at Victoria and Union, and Italific califying around Winson Ownshill PS and Rideau PS.	User	37		Yes	5460297
	Oct 23 23 08:46:39 pm	Walk, Biles		Commute to work or achool				Bikeway pavement markings, Speed limit reduction, Traffic cakining measures, Traffic diversion measures (discoursiging vehicle through traffic)	bland to work every day and have had assertial temble interactions with drivers screaming, seeming at me for last blang in	User	55		Yes	5460448
	Oct 23 23 09:05:13 pm	Walk, Biles		Commute to work or school			Unconfortable sharing the road with vehicle traffic, Unconfortable navigating intersections, Parked cars impeding access Unconfortable sharing the road with vehicle traffic,	Bikeway pavement markings, On-road cycling lane, Separated cycling lane or bite facilities, Traffic diversion measures (discoursiging vehicle through traffic) Bikeway way finding signage, Bikeway pavement markings,	I black to each every day and have had several temble interactions with divers screaming, severing at ms tor just bling in the black are on the read. The plack are on the read. The place the severing screen scree	User	28		No	5460556
	Oct 23 23 09:30:18 pm	Wulk, Bike		Commute to work or school			Unconfortable sharing the road with whicle traffic, Unconfortable navigating intersections, Unsure of which roades to take, Not encough rest assas, Roade is not acenic encough, Speed of hatting, Traffic volume, Volume of large whicle traffic. Parked cars irreeding access	Speed limit reduction, Traffic calming measures, On-road cycling lane, shared multuse pathway, Separated cycling lane or biok soldises, Traffic diversion measures. (discoursaine vehicle through traffic)		User	40		Yes	5460590
	Oct 23 23 09:31:03 pm	Walk, Bike		Tripa within Williamsville				Bikeway way finding signage, Separated cycling lane or bike facilities, Taffic diversion measures (discouraging vehicle through traffic)	If the Princess 2 bike larves are removed, at least replace them with proper bike larves on side streets. Research shows that	User	45		Yes	5460697
		Walk, Bike		Commute to work or school			Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Traffic volume, Parked cars impeding access		If the Princess ID bits long are encoded, at least region terms with proper bits long on olds shreads. Research above that sharmone are helpful, but addaidy make cycling more degradous, topic lives abording combines/addaid2016422- 2004ary densions regional benerics degradous cyclinda bits entrypes with encoderated and an approximate the second and a second a second and a second a second and a second a second and a second a second and a second a s	User	28	Yes	No	5461216
	Oct 24 23 05:55:16 am	Mobility device		Trips within Williamsville			Uncomfortable navigating intersections, Speed of traffic, Parked cars impeding access		Better sidewalks curb cuts.	User	55		Yes	5461990
	Oct 24 23 10:26:25 am	Walk, Bike		Commute to work or school					Bits larves (deally separated) should be non-negotiable on major roads. You can't expect people to choose active invargonistics methods if they have to take long, circuitous roades to get where they need to go in a way that leets reascendby subs.	User	23		No	5462505
	Oct 24 23 11:33:35	Walk, Bile		Commute to work or school			Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Unsure of which routes to take, Traffic volume, Parked cars impeding access		The proposed ideas of eleminating blea larves in Williamsville in favour of suggesting cyclatis use Concession Street instead is inteplid and bad. A further settlands for the new residential buildings that have been going up in Williamsville over the past several years could have laft more round for addres transportation. Concession Street was just infinished last year and there is no evidence that	User	33		No	5462933
		Walk, Bila		Trips within Williamsville			Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	Speed limit reduction, Traffic calming measures, On-road cycling lane, Separated cycling lane or bite facilities , Traffic diversion measures (discoursging vehicle through traffic)	Too much traffic, traffic driven too faat, too many tractor trailera/construction webides and driving too faat. We need less unwei parking and take tareas on side atwets. Its very difficult to cycle or use an electric mobility device anywhere in Williammolie.	User	55		No	5463138
		Walk, Biles, Skateboard		Trips to adjacent neighbourhoods or areas			Uncomfortable sharing the road with vehicle traffic, Volume of large vehicle traffic, Parked cars impeding access	Bikeway pavement markings, Traffic calming measures, On- read cycling lane, shared multisus pathway, Separated cycling lane or bike facilities	The Pricess Barel consists (Privansa street hom Bark Moad and Concession Read to Division Shreet) is an essential base many bark both for many others I area on the madd Bark texture, the garth's Bark and pricity, or any other later texture of the many bark is a texture of the street price of the price	User	30		Yes	5463305
		Walk, Bike		Trips to adjacent neighbourhoods or areas			Uncomfortable sharing the road with vehicle traffic, Unsure of which routes to take, Lack of direct connection to destination, Route is not acenic enough, Parked cars impeding access	Speed limit reduction, Traffic calming measures, On-road cycling lane, Sepanated cycling lane or bike facilities , Traffic diversion measures (discouraging vehicle through traffic)		User	48		No	5463714
		Walk, Bite		Trips to adjacent neighbourhoods or areas			Lack of direct connection to destination	Speed limit reduction, Traffic calming measures, On-road cycling lane, Separated cycling lane or bike facilities , Traffic diversion measures (discoursping vehicle through traffic)	There is no efficient way to travel safely by bite from, for example, the Kingston Centre to Reptpolis Note Dame high include. Least to premote active cycling for the young people in my life but don't trust they will be ask on the reads (they don't field with, without).	User			No	5463948
	Oct 24 23 07:17:04 pm	Wulk, Bike		Trips to adjacent neighbourhoods or areas			Uncomfortable sharing the road with vehicle traffic, Lack of direct connection to destination, Speed of traffic, Parked cars impeding access	Traffic diversion measures (discoursiging vehicle through traffic)	-Properly separated cycle tracks ahoudd be installed on the major streets (Princess, Brock, and all the ones that from the edges of the neighborhood). -The waidential streets need much better traffic calming.	User	39	Yes	Yes	5465164
	Oct 24 23 10:24:19 pm	Wulk, Bike		Lehum				Separated cycling lane or bike facilities	Ive never been one for busy streets. Even when I was young I would walk and bite the back streets i.e. Mack Street, Park Street. It people are hunying, or commuting and ward the shortest route, it would be ideal to have a separate bite path up Process Street, but I don't thrick there are plans for a bite path on Princess 7?	User	Ð		No	5465913
	Oct 25 23 12:50:12 pm	Walk, Bike, Inline or roller skates		Lebure					I really enjoy walking my dog, tolehilading and cycling Mrzugh Williamwille as I would consider il sceric bul perhaps the fador to encounge more cycling. The bite lanes could have better barriers.	User	27	Yes	Yes	5467635
		Walk, Biles		Trips within Williamsville			Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Roate is not acenic enough, Speed of traffic, Traffic volume			User			Yes	5468826
	Oct 25 23 08:50:50 pm	Walk, Bile		Lebure			Uncomfortable sharing the road with vehicle traffic, Lack of direct connection to destination, Parked cars impeding access		The reality of increased urban population densit its, causes increased institutionarily volumes. of all types, on all streets, for	User	37		No	5469147
	Oct 26 23 05:59:35 am	Wulk, Bike	Car	Trips within Williamsville			Uncomfortable sharing the nead with vehicle traffic, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	Bikeway pavement markinga, Speed Imit neduction, ahaved multiuse pathway, Traffic diversion measures (discouraging vehicle through traffic)	The reality of increased urban population densit its, assume increased traffic density volumes of all types, on all stress, for all types of modes of dynamportations. In Williamshila and on all other community testims. These are only to many places delayer publics, and future autonomus whicles, and even donae can do their future delayers which, causing possible have mad incorresponding on the stress or some stress area. And and their data delayers which, causing possible along Princess S1, and side streets are creating new dangers for pedentitions and cyclists due to lack of sale podestrian	User	73		Yes	5462970

Oct 26 23 11:53:11 pm						Many of us would like to be able to safely bike secured team. It is a generational mittake to remove bike lones right at this provider moment when e-bikes are transforming the world of local mobility and right as hundreds of new homes are being added to Princess Street.	User	36		Yes	5472857
Oct 27 23 11:45:27 am	Walk, Bike		Commute to work or school			Please contrue to enhance opportunities for active transportation in Williamwille. There are so many examples of excellent cyclinginalizing infrastructure in other parts of the world, yet candidivery vehicles are consistently parked in bits larses in Williamwille and throughout Kingston.	User	43		No	5473777
Oct 27 23 03:43:49 pm	Walk, Bike		Trips to adjacent reighbourhoods or areas	Route is not scenic enough, Speed of traffic, Traffic volume, Parked cars impeding access	Speed limit reduction, On-road cycling lane, Separated cycling lane or bike facilities , Traffic diversion measures (discouraging vehicle through traffic)		User			No	5474927
Oct 27 23 03:44:39 pm	Walk		Trips within Williamsville			Aren't the above selections biase! Boy, have you ever made up your mind.	User	67	Yes	No	5474939
Oct 27 23 03:45:53 pm			Lebure	Route is not scenic enough, Parked cars impeding access	Bikeway pavement markings, On-road cycling lane, Separated cycling lane or bike facilities	This neighborhood has tramendous potential to be a model bike friendly area for the rest of the City.	User	60		Yes	5474952
Oct 27 23 03:46:46			Trips to adjacent reighbourhoods or areas	Uncomfortable sharing the road with vehicle traffic, Route is not scenic enough, Speed of traffic, Traffic volume	Bikeway povernent markings, Separated cycling lane or bike facilities		User	73		Yes	5474970
0et 27 23 03:47:05	Die		Leisure		Separated cycling lane or bite facilities , Traffic diversion measures (discoursping vehicle through traffic)		User		No	No	5474973
Oct 27 23 03:48:45 pm	Walk, Bike		Lehum	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating interactions, Luck of direct connection to destination; Noote is not accenic enough, Speec of traffic, Traffic volume, Volume of large vehicle traffic, Parked new interaction annexes	Speed limit reduction, Traffic calming measures, Separated cycling lane or bile facilities , Traffic diversion measures (discouraging vehicle through traffic)		User	80		Yes	5475006
Oct 27 23 03:50:37 pm			Lebure	Uncomfortable sharing the road with vehicle traffic, Speed of traffic, Traffic volume, Parked cars impeding access	Bikensy way finding signage, Speed limit reduction, On-coad cycling lane, shared multiuse pathway, Separated cycling lane or bike facilities		User			No	5475024
Oct 27 23 03:51:09 pm			Commute to work or school	Traffic volume	Bikeway povernent markings, shared multiuse pathway, Separated cycling lane or bike facilities	The never-anding construction in the area makes waiking, biking and even driving a chore	User	61		No	5475029
Oct 27 23 03 51 58 pm			Commute to work or school	Traffic volume, Parked cars impeding access	Bikeway pavement markings, On-road cycling lane, shared multiuse pathway, Traffic diversion measures (discouraging vehicle through traffic)		User			No	5475037
Oct 27 23 03 52 52		waiking with strollers (young children)	Commute to work or school	Uncomfortable sharing the road with vehicle traffic, Not enough reat areas, Roate is not scenic enough, Speed of traffic, Parked cars impeding access	Traffic calming measures, shared multure pathway, Separated cycling lane or bite facilities , Traffic diversion measures (discoursping vehicle through traffic)	Please could of the most nexest subse transposition existince when working on this project. Whe trans shared with vehicle institle (charmone-lumprotected bink terms) generately DECREAGE analyting to koyclaims. This would be appending moring on a project that is not appendix by nexest statismic transposition measure. The bink lenses needs to be apprecised to the total completing to be affective. These should also be an emphasis on bits terms connecting residents to the Memorial Centrin and Working Privil statismics are marging raise transpositions.	User	33		Yes	5475050
pm Oct 27 23 03:53:41 pm	Wafe, Biles		Commute to work or school	Lack of direct connection to destination, Speed of traffic, Traffic volume	Bikeway pavement markings, Traffic culming measures, On- road cycling lane, Sepanated cycling lane or bike facilities , Traffic diversion measures (discouraging vehicle through naffic)	ни на на на на нари вила на прилами извеляюти.	User			Yes	5475057
pm Oct 27 23 03:54:05 pm			Leisure	Uncomfortable navigating intersections, Route is not scenic enough, Parked cars impeding access	On-road cycling lane, Separated cycling lane or bite facilities , Traffic diversion measures (discouraging vehicle through traffic)	Princess street and concession street road surface are extremely neglected and hazardous to none automotive road users.	User	27		No	5475063
Oct 27 23 03:55:31 pm		car	Trips to adjacent neighbourhoods or areas			cyclists obwying traffic taxes would be a mice change	User	63		No	5475080
Oct 27 23 03:56:59 pm	Walk, Bike	Sector	Commute to work or school	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Speed of traffic, Traffic volume, Parked cars impeding access			User	30		Yes	5475099
Oct 27 23 03:57:21 pm			Commute to work or school	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	Separated cycling lane or bike facilities , Traffic diversion measures (discoursging vehicle through traffic)	We should be making it more difficult to drive and easier to bite or walk. Drivers can be dangerous, and so meny cars discourages folio that eart to commute by bicycle.	User	53		No	5475103
Oct 27 23 03:59:01 pm			Commute to work or school	Uncomfortable sharing the road with vehicle traffic; Lack of direct connection to destination; Speed of traffic	Speed limit reduction, Separated cycling lane or bloe facilities , Traffic diversion measures (discouraging vehicle through traffic)	The outline proposals you have presented lack an assume as of what other communities are doing, lack ambition and are disappointing. Further, the use of bump outs for traffic calming force cyclists into car traffic - this increases design for cyclists.	User			No	5475127
Oct 27 23 03:59:19 pm			Trips within Williamsville			I cannot answer quastion 4.1 Iride my bicycle Wrough Williamsville side-streets and on Périceas Street all the time so I cannot any that any banter reduces my use. Centainly, cycle-supportive measures would make I a batter experience.	User	50		No	5475130
Oct 27 23 04:05:31 pm			Trips to adjacent neighbourhoods or areas	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	Traffic calming measures, On-road cycling lane, Separated cycling lane or bite facilities, Traffic diversion measures (decouraging vehicle through traffic)	Separated bile lares are needed. No more painted bile lares. Turning radi need to be shortened at disponal intersections. Pedestinn and biocycle traffic schoold be given priority signals. Truck traffic should be diverted to other needs. Parking shouldn't be allowed on Princess 32.	User	22		No	5475201
Oct 27 23 04:05:07 pm		Drive	Tripa within Williamaville	Uncomfortable sharing the road with vehicle traffic		Ticket the bike riders who disobey every traffic law we have. Intensitingly encouph, a stop sign means you stop, look both ways then proceed - it does not mean cycle like caray & curse any driver who has the right of way and impedies your likegal activity	User			No	5475210
Oct 27 23 04:08:53 pm	Walk, Bike		Trips to adjacent neighbourhoods or areas	Uncernfortable sharing the read with vehicle totific, Uncernfortable navigating intersections, Lack of direct connection to destination. Not enough reat areas, Rocke is no scenic enough, Speed of traffic, Traffic volume, Volume of Isema which totific. Pathet case immediate screams	Bikeway povement markings, Speed limit reduction, Traffic cahining measures, Sepanded cycling lane or bite flacities , Traffic diversion measures (discoursiging vehicle through naffic)		User	27		No	5475236
Oct 27 23 04:10:05 pm			Trips to adjacent neighbourhoods or areas	Unconfortable sharing the road with vehicle traffic, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	shared multiuse pathway, Separated cycling lane or bike facilities	Separate larses from traffic is the only way for safe travel, whether it be for blos, waiking, etc	User	40		No	5475251
Oct 27 23 04:10:25 pm			Trips to adjacent neighbourhoods or areas	Uncomfortable sharing the road with vehicle traffic, Speed of traffic, Parked cars impeding access	Traffic calming measures, shared multiuse pathway, Separated cycling lane or bite facilities. Traffic diversion measures (decouraging vehicle through traffic)	The same regard has here has the first and data and same has a set of the refers having and the set of the same regard in the s	User			No	5475259
Oct 27 23 04:12:58 pm			Tripa within Williamaville	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Unsure of which nodes to take, lead of traffic, Volume of large vehicle traffic Parked cars, impeding access	Traffic calming measures, Separated cycling lane or bike facilities	Plasse conder addrog apprached bia lacilities on his street. Tread to biai througy Willementia all the time and it is externely identify. Bia insta screening are lobold processing mits bia bia biai withis is arriying. One time, loss cycling with a fined in Willementifie and she had just learned how to bias. Dhe loss has hime biaig stowly and one motionate public over and strated beamaing her analysis within a strate in the strate of the strate bias. The strate of the loss on the strate and at 1. Bia hows in over and strated beamaing her analysis within a strate of the strate bias. The strate of the strate o	User	23		Yes	5475284
Oct 27 23 04:14:37 pm			Lehum	Uncomfortable sharing the road with vehicle traffic, Lack of direct connection to destination, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	On-road cycling lane, shared multiuse pathway, Separated cycling lane or bite facilities		User	34		Yes	5475297
pm Oct 27 23 04:16:32 pm			Leisure	Speed of traffic, Traffic volume, Parked cars impeding access	Bikeway pavement markings, Traffic calming measures		User	62		Yes	5475310
pm Oct 27 23 04:16:41 pm			Tripa within Williamaville	Route is not scenic enough	shared multiuse pathway	PLEASE PLEASE PLEASE, formulate the policy after your duckion are informed with actual usage data. If not that biding laws to nonlinear spool, around with the bidea on them. Policy is dicided without any spoper user study to saw whether they are needed or not. Incodecially, no bidow publice and one to use if the actual bide public that have been put uning bacquer dollars are actually being used or not. If most making this up. In taking to CQs explore, it was to that no follow- andular as done to use if the bide cating aroundary bide or the dollar bide public to CQs explore, it was to that no follow- and the most of the one if the bide cating an actuality bide cating and of the verse worth the continents. Go backes use as a	User			Yes	5475312
pm Oct 27 23 04/20:57 pm			Trips to adjacent neighbourhoods or areas	Uncomfortable sharing the road with vehicle traffic	shared multiuse pathway	A CONTRACT OF	User	60		Yes	5475342
pm Oct 27 23 04:27:12 pm			Commute to work or school	Traffic volume	On-road cycling lane		User	37		No	5475397
pm Oct 27 23 04:31:07 pm			Leisum	Route is not scenic enough	On-road cycling lane		User	75	Yes	No	5475435
pm Oct 27 23 04:33:43 pm			Commute to work or school	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Lack of direct connection to destination, Roate is not scenic enough, Traffic volume, Parked cars impeding access	Separated cycling lane or bike facilities , Traffic diversion measures (discoursging vehicle through traffic)		User	27		Yes	5475464
pm Oct 27 23 04:41:03 pm	Walk, Bike		Leisure	Lack of direct connection to destination, Route is not scenic enough, Speed of traffic, Traffic volume, Parked cars impeding access	Bikeway pavement markings, Speed limit reduction, Traffic calming measures, shared multiuse pathway, Separated cycling lane or bike facilities, Traffic diversion measures (disconrations which through traffic)		User	35		No	5475505
pm Oct 27 23 04:41:18 pm	Walk, Bite		Tripa within Williamaville	Uncomfortable sharing the noad with vehicle staffic, Uncomfortable navigating interactions, Lack of direct connection to destination, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parted cars impeding access	Bikeway way finding signage, Bikeway pavement markings, Speed imit eduction, Traffic calming measures, On-road cycling lanes, ahand multiums pathway, Separated cycling lane or bios facilities. Traffic diversion measures (discremention wahich through health)	Traffic speed is the biggest problem for me. Fiels unsafe to ble around, or have children biking.	User	34		Yes	5475507
pm Oct 27 23 04:44:07 pm	Walk, Sike		Commute to work or school	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating interactions, Route is not scenic enough, Speed of traffic, Traffic volume, Volume of large vehicle traffic	On-road cycling lane, shared multiuse pathway	Brock SI is scary to bits on: A Biks path on Earl street between college and Ontario would be nice. If improved care of pavement. It is very nough on Earl Street at points between Vidonis SI and Collingerood SI.	User	39		No	5475533
pm Oct 27 23 04:44:24 pm			Trips to adjacent reighbourhoods or areas	Not enough rest areas, Route is not scenic enough	Speed limit reduction		User			No	5473535
pm Oct 27 23 04:45:17			Tripa within Williamaville	Uncomfortable sharing the road with vehicle traffic, Not enough next areas, Roule is not acenic enough, Volume of large vehicle traffic	Bikeway way finding signage, Bikeway pavement markings, Speed init eduction, Traffic calming measures, Co-road cycling lave, shared multiums pathway, Separated cycling laves or blos facilities , Traffic diversion measures		User	24		No	5473546
pm					(decouniging vehicle through traffic)						

Oct 27 23 04:47:14 pm	Wulk, Sike		Labum	Uncomonable havigling intersections	Separated cycling lane or bike facilities		User	38		Yes	5475551
0ct 27 23 04:55:39 pm			Leisure	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating interactions, Lack of direct connection to destination, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	Speed limit reduction, Traffic calming measures, shared multiuse pathway, Separated cycling lane or bike facilities		User	39		No	5475514
Oct 27 23 04:59:15 pm		Car	Trips to adjacent neighbourhoods or areas	Uncomfortable sharing the road with vehicle traffic, Lack of direct connection to destination		Kingston needs separated bite lares/111 Please look to Montreal and collingwood as inspiration!	User	40		No	5475642
Oct 27 23 05-21:55 pm	Die		Tripa within Williamaville	Uncomfortable sharing the road with vehicle traffic, Speed of traffic, Traffic volume, Parked cars impeding access	Bikeway way finding signage, Separated cycling tarse or bike facilities, Traffic diversion measures (discoursging vehicle through traffic)		User	72		Yes	5475783
pm Oct 27 23 05:43:31 pm			Commute to work or school	Parked cars impeding access	Separated cycling lane or bike facilities	I appreciate the lanes on BrockLicheson—think that these could be similar opportunities along other comitors	User	41		Yes	5475895
pm Oct 27 23 05:51:35 pm			Commute to work or school	Uncertfortable sharing the nead with vahicle traffic, Uncertfortable navigating intersections, Rode is not acenic enough, Speed of traffic, Traffic volume, Parked cars impeding access	Bikeway pavement markings, Speed limit reduction, Traffic calming measures, On-road cycling lane, shared multius pathway, Traffic diversion measures (discoursging vehicle through tartific)		User	45		Yes	5475946
pm Oct 27 23 05:53:59 pm			Tripa within Williamaville	Uncontrotable sharing the road with vehicle traffic, Lack of direct connection to destination, Speed of traffic, Parked cars impeding access	Speed limit reduction, Traffic calming measures, Separated cycling lane or bike facilities	Partial bicycle gotters are not enough but throwing the baby out with the bath water inch the answer. Ask yourselfwoold you and a child on the note in the cycle lares 7 if not, if not askie enough, bit handd be askie for amyone who wate a tackied gate associated to ack (Negloton points laste on being a Schweim Weilbight gefreshowing) by the table tark to low. We need separated bits lares with proper enreadions between the anterias of the city instant of bits lares that dog of part way through as die (bitmang) earned on just desagrees last starting who provides the formas at Bab/Consonsis). For	User	38		No	5475959
pm Oct 27 23 05:05:35 pm			Commute to work or school	Unconfortable navigating intersections, Speed of traffic, Volume of large vehicle traffic, Parked cars impeding access			User	61	Yes	Yes	5476022
0ct 27 23 05:11:34 pm			Trips to adjacent neighbourhoods or areas	Uncorrectable sharing the road with vehicle traffic, Traffic volume	Bikeway pavement markings, On-road cycling lane, shared multiuse pathway, Separated cycling lane or bike facilities		User	28		Yes	5476054
pm Oct 27 23 07:45:02 pm			Trips to adjacent neighbourhoods or areas	Uncomfortable navigating Intersections		Coastions 4 and 5 are only assigned answers that promote "active transportation" actuations. This survey is a complete (PRAUC) Putting a bite land on Princess eliminated parking on the other side of the streat, and bites at thereid down the advantable. Building and nod combuctions are the main lamiters to asile travel, and are NOT MENTONED! One bites tare is encouply, it ther index slowed taffic mains to quastion 27	User	65	No	No	5476456
pm Oct 27 23 07:50:00 pm			Commute to work or school	Unconfortable sharing the road with vehicle traffic, Unconfortable navigating intersections, Speed of traffic, Traffic volume, Volume of large vehicle traffic	Bikeway pavement markings, On-road cycling lane, shared multiuse pathway, Separated cycling lane or bike facilities		User	35		No	5476471
	Walk, Mobility device		Trips to adjacent neighbourhoods or areas	Uncomfortable sharing the road with vehicle traffic, Not enough rest areas, Route is not scenic enough, Traffic volume		None	User	75		No	5476494
pm Oct 27 23 08:12:05	Walk, Bike, Skateboard		Commute to work or school	Volume of large vehicle traffic, Parked cars impeding access	Bilewwy pavement markings, On-road cycling lane, shared maticuse pathway, Separated cycling lane or bios facilities , Traffic diversion measures (discoursiging vehicle through		User	29		No	5470544
pm Oct 27 23 08/25:13 pm		Car	Tripa within Williamaville		mancy Bikeway pavement markings, Separated cycling lane or bike facilities		User	65		Yes	5476597
pm Oct 27 23 08:34:58 pm	Walk, Bike		Trips to adjacent neighbourhoods or areas		Bikeway pavement markings, Speed limit reduction, Traffic cabing massures, On-road cycling lane, shared mallicae pathway, Separated cycling lane or bike facilities, Traffic diversion measures (discounging vehicle through traffic)		User	57		Yes	5476627
pm Oct 27 23 05:48:44 pm			Tripa within Williamaville	Parked cars impeding access	diversion misaures (discoursging vehicle through traffic) Bikeway povement markings, Speed Init reduction, Traffic calming masures, On-road cycling lane, shared multitae pathway, Separated cycling lane or bios facilities, Traffic	quarties 4 is not open encody. The issue in williamobile in hat the phonoses at bake lane gave priority to care and parking and masks hale as ging all around the prices. The bake lane means to sity and to properly separated from halfs. The dot lane observation where and parking care and marking shares to beam on model parking. In which do anything such as merces at graving marks the lane merceses to care, which the accion of process at one way with a defaulted transit taxe. Dot interessor the lane lane. The mark bake the dots of process at the lane and rown of which is more one tooch.	User	23		Yes	5476563
pm Oct 27 23 08:53:57 pm			Trips to adjacent neighbourhoods or areas		diversion measures (discoursiging vehicle through traffic) Bikeway povement markings	Contremove the bike lareas. I honeafy bike that churk of privates at, all the time and rever drive it in m car even though I.	User	73		No	5476579
0ct 27 23 09:15:45 pm	Wulk, Siles		Commute to work or school	Unconfortable sharing the road with vehicle traffic, Unconfortable navigating intersections, Lack of direct connection to destination, Parked case suppeding access	Traffic calming measures, On-road cycling lane, shared multices pathway, Separated cycling lane or bits facilities	Sharrows are dargetous and provide a table sense of accurity, and therefore people let their guards down despite being in mixed traffic. Please do not use sharrown? Ether invest in before tike infrastructure or don't put anything down.	User			Yes	5476753
01:13:45 pm Oct 27:23 02:16:31 pm			Commute to work or school	Connection to destination, vianed cars impecing access Unconfortable sharing the road with vehicle traffic, Lack of direct connection to destination, Speed of traffic, Volume of large vehicle traffic, Parked cars impeding access		The current blak-bare-parking-lane configuration on Phronast Shreet is very desperson due to the risk of dooring. This is not to mention the fact that whickes often park for enough from the curb that cyclaits have to merge into whicular staffic to get	User	30		No	5476756
0ct 27 23 09:17:37 pm			Trips within Williamsville	arge verice traffic, varies cars impeding access Unconfortable sharing the road with vehicle traffic, Not enough rest areas, Speed of traffic, Traffic volume, Volume o large vehicle traffic			User	35		Yes	5476762
Oct 27 23 09:26:32 pm		car	Trips to adjacent neighbourhoods or areas	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Speed of traffic, Traffic volume, Volume, Volume of laros vehicle traffic. Parked cars		bike lanse should not be major antenial roads e.g., instead if Princess at use Earl or other panalel roads	User	72		No	5476784
092832 pm Oct 27 23 09:31:20 pm			Trips within Williamsville	impeoing access	On-road cycling lane, shared multiuse pathway, Separated cycling lane or bike facilities , Traffic diversion measures (discouraging vehicle through traffic)		User	53		No	5476795
Oct 27 23 09:32:29 pm			Trips to adjacent neighbourhoods or areas		(discouraging vehicle through static) Traffic diversion measures (discouraging vehicle through traffic)		User	27		No	5476797
			Leisun	Uncomfortable sharing the road with vehicle traffic, Lack of direct connection to destination, Route is not acenic enough, Speed of traffic			User	32		Yes	5476821
Oct 27 23 09:40:40 pm Oct 27 23			Commute to work or school			Shared multi use pathways feel like they are the safest options. Takio thick it's important for interaections with lights to be accessible to bibles (in the interaction of mucdonal and concession is temble for bibles). The wait to coasi there is very long and the bibles of our verifi	User	39		Yes	5476840
Oct 27 23 09:49:39 pm Oct 27 23			Trips within Williamsville			and the bulknes do not world Need to ensure that accessibility features (for rollation) are sufficient and in good condition.	User	76		Yes	5476857
	Walk, Mobility device		Trips to adjacent neighbourhoods or areas	Lack of direct connection to destination, Not enough rest areas, Parked cars impeding access			User	23		Yes	5476858
Oct 27 23 09:56:48 pm Oct 27 23			Lebure	Uncomfortable sharing the road with vehicle traffic, Uncomfortable savigating interaections, Unsure of which nodes to take, Speed of traffic, Traffic volume, Parked cars impeding access			User			Yes	5478244
Oct 27 23 10:37:10 pm Oct 27 23 10:57:02 pm			Commute to work or school		cycing ans, shared multice parvery, separated cycing larve or bio facilities Separated cycing larve or bite facilities	The bills paths on Book and Johnson we unknow. I cannot stand delay on Russ atmats, were with the sequence bills tend. Cann we traveling any software its sequence front and fix septements. Much billion can Marks fact strate shock have been been the Book and Alarman paths backills among superior theorem. The second second second second second second second downtown with its very dargenous. Nardy anybody seems to be using these bills lines. What is waske of money building dame.	User	39		Yes	5476295
		Bus	Trips to adjacent neighbourhoods or areas		On-road cycling lane, shared multiuse pathway	devention with its very dangenous. Hendy anybody asems to be using these biak lanes. What a weste of money building (lens	User	67		Yes	5477113
Oct 27 23 11:50:28 pm Oct 28 23			Leisure	large vehicle traffic Uncomfortable sharing the road with vehicle traffic, Speed of traffic, Volume of large vehicle traffic		whiches. A designated safe bike path would help Bike lamas are good. Bump och are not. We have them on patices read and they have muck things worse forms what I ve sare. Vehicles now down multip on the wong safe of the multiple and Sectious Rey don't howe have to rowgigate. They are also not materiated by the vehicy will and a now remain all tendition services law by by or no.	User	52		No	5477450
Oct 28 23 05:14:09 am Oct 28 23			Trips to adjacent neighbourhoods or areas	traffic, Volume of large vehicle traffic Uncomfortable sharing the road with vehicle traffic, Unsure of which routes to take, Lack of direct connection to destination		maintained by the city very well and ancer removal is terrible for anyone loving by one. Bileneways often just end. And suddenly you're spit into a single lane of traffic es Division 58 North of Queen. The city's disportedness and orghneset bileneways and lack of separated bike lanes make it easier just not to risk.	User				5477499
Oct 28 23 07:14:19 am Oct 28 23			areas Commute to work or school	which routes to take, Lack of direct connection to destination Uncomfortable sharing the road with whicks traffic, Uncomfortable navigating interactions, Speed of traffic, Traffic volume, Parked cars impeding access			User	50		Yes	5477527
Oct 28 23 07:44:42 am Oct 28 23			Commute to work or school	Unconstation (Integrang Internetions, open of Intern- Traffic volume, Parked cars impeding access Unconstration sharing the road with whicle traffic, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	lares or bios facilities , Traffic diversion measures (discouraging vehicle through traffic) Biaway way finding signage, Bikeway pavement markings, Speed limit induction, Traffic calering measures, Co-road	The margin state that Protocol 2 is the same state grant, and tables that with a strength strength of the strength stre	User	40		Yes	5477568
Oct 28 23 08:09:39 am			Trips to adjacent neighbourhoods or areas	trans, trails tooms, tooms of arge vendes same, Parket can impeding access Uncomfortable sharing the read with whicle traffic, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cass impeding access	cycing sine, deparated cycling lane or bite facilities, Traffic diversion measures (discoursping vehicle through traffic) Discoursy way finding signage, Dikeway pavement markings,	anything less than emergency disconstances) land a part of plans, you might say well saws the movel, i can be de- parking enforcement to even admit if there is a policy on parking in bike lenes at all, fin not confident any changes made to	User			No	5477587
Oct 28 23 08:19:02 am			commute to work or school	raine, raine voume, voume or range vances mane, raixoo cans incomparing access Uncomparing access direct connection to destination, Volume of large vehicle traffic, Parked cans impeding access			User	22		Yes	5477591
Oct 28 23 08:20:55 am			Commute to work or school Trips to adjacent neighbourhoods or areas			a	User	57		Yes	5477520
Oct 28 23 08:36:33 am			87883	Uncomfortable sharing the road with vehicle traffic, Route is not scenic enough. Speed of traffic, Traffic volume	lane or bios facilities			-			

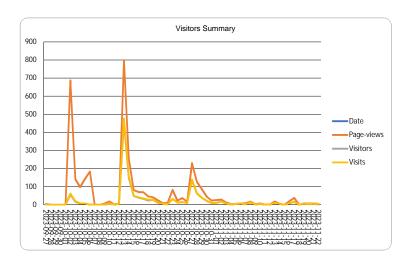
						I travel to many big and small cities for business. I give Kingston a C- for their current active transportation. Your bike routes				
Oct 28 23 09:03:11 am	Valk, Dike		Commute to work or school	Unconfortable sharing the road with vehicle traffic, Speed of Inific, Traffic volume, Parked cars impeding access	Blaway vay finding signaps, Blaway pavement makings, Traffic calming massures, On-road cycling lane, shared multiuse pathway, Separated cycling lane or bike facilities	I show to new ybg and small cities for business. I give Kingston a C-tor their current active transportation. Your bits nodaes dan's waky connect to one another in terms of the vectora methodundtoxis in Kingston. A decidand bits a line, separated by balands a a mark in fragment. When Intered lines rybles with the quest when by J high is the decidancies, to be when the plasma d biology many cities in Public America and oversame. The Kingston downs (and capacitally states are the mark discovered) in the over exceedence in different downs are more constraints of the synthesis. In balange Kingston downs plasma with the vere exceedence in the different downs are more constraints of the synthess. In balange Kingston downs are stated as the set of the set of the different down are more constraints of the synthess. In balange Kingston downs are stated as the set of the synthess down are more than a set of the set of the set of the set of the synthess down are more than the set of the synthess down are more the set of t	User	57	Yes	5477674
Oct 28 23 09:05:05 am	Nak		Lebum			Volume of halfic closalically increasing, increased speeding through residential wave, increased 24 he packing on natriciaed parking waves with no enforcement of pointed hysike hocks and her by the maidtests public transpotation (bus #12) atili on reduced hours which has forced many former transit users like myself back to driving	User	52	No	5477682
Oct 28 23 09-43-29 am	Vale, Bike		Leisum			1 hear the city prefers Concession on a billewary, No way, in that adult 1% is a tentible tread for active transportation. Too nervoe, is too high speed, and no understanding on a scale ballew Adher. Ready urunde: Way too much chartering to care in this toom. We need separated balle invest. And free buess, or \$1/hip would make a big difference to reducing car traffic.	User	Yes		5477771
Oct 28 23 10:33:14 am	Vale, Bite		Trips to adjacent neighbourhoods or areas	Uncertifictable sharing the road with vehicle traffic, Uncertifictable navigating intersections, Parked cars impeding access			User	25	Yes	5477923
Oct 28 23 10:49:08 am	Valk		Trips to adjacent neighbourhoods or areas	Unsure of which routes to take, Lack of direct connection to destination, Not enough rest areas, Route is not scenic enough	On-road cycling lane		User	46	No	5477965
an Oct 28 23 10:57:52 an		eus	Trips to adjacent neighbourhoods or areas	Unconfortable sharing the road with vehicle traffic, Route is not scinic enough, Volume of large vehicle traffic, Parked cars impeding access	On-road cycling lane	The current idea of sharing bicycle larves with boses is lucifoxus. The main streets in Williamsville, the adjacent neighborhoods, and onwards board divertions are in the pocenat, roughast condition live ever seen in a city of this aira. The current practice of so-called "patchwork" is insidequate, realificient, and far costler than biring the pavement correctly.	User	5	Yes	5477990
Oct 28 23 12:22:53 pm	Ska		Trips to adjacent neighbourhoods or areas	Unconfortable navigating intersections, Lack of direct connection to destination, Speed of traffic, Parkod cars impeding access	Speed limit reduction, shared multiuse pathway, Separated cycling lane or toke facilities , Traffic diversion measures (discouraging vehicle through traffic)	Pedestina, cycle and travait should always have priority over regular vehicle traffic. It's surprising that our traffic planness haven't adhered to that.	User	63	Yes	5478233
Oct 28 23 12:38:54 pm	Valk, Biha		Commute to work or school	Unconfortable sharing the road with vehicle traffic, Lack of direct connection to destination, Speed of traffic, Traffic volume, Parked cars impeding access	shared multiuse pathway, Separated cycling lane or bike facilities	H. I low on Collegeneed Street between Union and King but work at Kingston Secondary School on Kingseick Street. I commate to work by our principally for the reason that billing is not safe and to walk from my house takes over an hour in each direction (individue carrying and supplies this is also impractical). I loose that many of his students who how near to me	User		Yes	5478279
Oct 28 23 02:32:05 pm			Commute to work or school	Unconfortable navigating Intersections, Lack of direct connection to destination, Parked cars impeding access			User	35	No	5478553
Oct 28 23 03:03:08 pm	Valk, Dike		Trips to adjacent neighbourhoods or areas	Unconfortable navigating Intersections, Volume of large vehicle traffic	Separated cycling lane or bike facilities		User	65	Yes	5478530
Oct 28 23 03:33:51 pm	Valk, Dike		Commute to work or school	Unconfortable sharing the road with vehicle traffic, Speed of inaffic, Traffic volume, Volume of large vehicle traffic, Packed cars impeding access	Bikeway way finding signage, Bikeway pavement markings, Separated cycling lane or bike facilities	Should encourage use of bite or welk instead of traffic	User	50	No	5478692
Oct 28 23 04:48:04 pm	lke		Trips to adjacent neighbourhoods or areas	Unsure of which routes to take, Lack of direct connection to destination	On-road cycling lane	some oppose cooperation oppose to oppose to an a constant and or measurements, then reasony, "researcy, and the oppose is a significantly for cyclicits. Sound of Concession has improved, as have other rooter. These are all problems to overcome, protectingly discussion 2. In comparing with another has the exception of the standard discussion of	User	57	Yes	5478819
Oct 28 23 04:53:42 pm	Valk, Bike		Trips to adjacent neighbourhoods or areas		Separated cycling lane or bike facilities	If Kingston is to come anywhere near being a leader in the fight against climate breakdown, the city needs to be discouraging car care. Make biling and waiking and access to public transport the primary goals. Check out Cublesac in Phoenix Astrona https://www.theguardian.com/cities/2023/doc111/cublesac-car-free-neighborhood-tempe-artorna	User	67	No	5478829
Oct 28 23 04:55:45 pm	Valk, Dike		Leisun	Unconfortable sharing the road with vehicle traffic, Unconfortable navigating intersections, Speed of traffic, Parked cars impeding access			User	64	No	5478536
Oct 28 23 05:37:16 pm			Commute to work or achool	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Lack of direct connection to destination, Speed of traffic, Volume of large vehicle traffic, Parked cars impeding access	Separated cycling lane or bike facilities	Parted lanes are just dargenous. In a fascinating new analysis published in the Journal of Transport and Health, https://www.acimoudinet.com/sindexide/aba/pbi/222144/0222001005/bgodisau/hor researchman affree/y lowinesity loosed tara privated bits have and shareness dominatinated harmful effects" —	User	41	Yes	5478893
Oct 28 23 05:13:59 pm	Vale, Bike		Leisum	Unconfortable sharing the road with vehicle traffic, Parked cars impeding access	On-road cycling lane, shared multiuse pathway		User	22	Yes	5478257
Oct 28 23 07:47:55 pm	Nak		Leisum	Route is not scenic enough	Traffic diversion measures (discouraging vehicle through traffic)		User	43	Yes	5479153
Oct 28 23 08:03:10 pm	Vale, Bike		Trips to adjacent neighbourhoods or areas	Unconfortable sharing the road with vehicle traffic, Speed of traffic, Traffic volume	Speed limit reduction, Traffic calming measures, Separated cycling lane or blie facilities , Traffic diversion measures (discouraging vehicle through traffic)	While inspect the planned neighbourhood bile rockes and i thick the proposed ocea sectors are grantally good, i contrau- tion belief at it inspectively and the planned of the planned of the planned ocea sectors are grantally good. I contrau- consideration (and consultation!) on the priorities for Phrocess Street, instead of simply taking it as a given that cycling is the one mode that down? Wr. There is a missed opportunity here is escension the particular planned as a rock for matter vehicle tarting, and is consider downing motive prioritizes of the more an a a rock for matter vehicle tarting, and is considered working motive vehicle tartities to due rockes and a prioritize principues as a non-line.	User		Yes	5479177
Oct 28 23 08/23:56 pm	Valk, Dike		Trips to adjacent neighbourhoods or areas	Unconfortable sharing the road with vehicle traffic, Lack of direct connection to destination, Speed of traffic, Traffic volume, Parked cars impeding access	shared multiuse pathway, Separated cycling lane or bike facilities , Traffic diversion measures (discouraging vehicle through traffic)	index vehicle tarbit, and to created dwetting moto vehicle tarbit to other routes while prioritizing Processa as a noule for one way valid in one learn instantiat alreval discoranging through tarbits, superate bia learne on main atteles and costan a safer activation are annual Richaus Public School to promote active transponiation to activat. Use half of Mack attest to create a multi-case path-convecting older park to Victoria park.	User	37	Yes	5479221
Oct 29 23 07:58:27 am	Valk, Biha		Tripa within Williamaville	Unconfortable sharing the road with vehicle traffic, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access			User	36	Yes	5479801
Oct 29 23 09:27:54 am	Valk, Biha		Trips to adjacent neighbourhoods or areas	Uncomfortable sharing the road with vehicle traffic, Lack of direct connection to destination, Parked cars impeding access	Bikeway way finding signage, Speed Imit reduction, Traffic cahing masures, On-coad cycling lane, Separated cycling lane or bike tacities, Traffic diversion masures (discouraging vehicle through traffic)	I would like to see Princess Street permanently closed to traffic. This measure in other clies (Montreal) has seen an increase in commercial activity rather than a declines. Also, it assess to me (impulse to wrisked (b) that Brock and Johnson streets do not have posted speced limits. I would like to see greater use of only fair cammers and photo radie to reduce speeds; any times collected could go towards improving segregated bicycle lanes on more streets.	User		Yes	5479213
Oct 29 23 09:32:02 am	Nak		Trips to adjacent neighbourhoods or areas	Unconfortable sharing the road with vehicle traffic, Unconfortable navigating intersections, Speed of traffic, Traffic volume, Parked cars impeding access	Bikeway way finding signage, Speed limit reduction, Traffic calming masures, On-coad cycling lane, shared multiuse pathway, Separated cycling lane or bike facilities		User	43	No	5479926
Oct 29 23 09-48:39 am	Valk, Dike		Trips to adjacent neighbourhoods or areas	Lack of direct connection to destination	Bikeway way finding algnage, On-road cycling lane	I ddn't know there were any bikeways in Williamssilled	User	60	Yes	5479955
Oct 29 23 02:00:49 pm	Vale, Biles		Leisum	Traffic volume, Volume of large vehicle traffic, Parked cara impeding access	Bikeway pavement markinga, On-road cycling lane, Traffic diversion measures (discoursiging vehicle through traffic)		User	60	Yes	5480423
Oct 29 23 04:47:50 pm			Trips to adjacent neighbourhoods or areas	Uncomfortable sharing the road with vehicle traffic	Bikeway pavement markings, On-road cycling lane, shared multiuse patway, Separated cycling lane or bike facilities	Keep the bite lane on Princess, it is one of the main soules in the area	User	п	No	5480780
Oct 29 23 05:49:35 pm	Ske		Trips to adjacent neighbourhoods or areas	Uncomfortable navigating intersections, Lack of direct connection to destination	Bikeway pavement markings	The area list bad for cycling - In just problematic when you want to make a left ham - whether traveling east or weat. There is not have yrinific, and have in a have a knowly bar. If can get access on the or draffs to be positioned to ham, it may back more new you fill needs to all the ball have availing that have to make the kinn can see you be any to separate by to he spir - I am accident wattery to have barged on the set of a sightmene gating through the odd in efficiency accided by Canadian Tan. I tensmins approximate the foreign and in a constraint the foreign and the canadity the accident by Canadian Tan. I tensmins approximate the foreign end in a constraint the interaction of the accided by Canadian Tan. I tensmins approximate the foreign end in a constraint the accident and the accident by Canadian Tan. I tensmins approximate the law accident tensmines the accident by Canadian Tan. I tensmins approximate the foreign end in tensmines the accident tensmines the accident by Canadian Tan accident tensmines the spirate on the accident by Canadian Tan tensmines the present tensmines the accident by tensmines the tensmines tensmines the accident by tensmines the tensmines tensmines the accident by tensmines tensmines the accident by tensmines tensmines the accident by tensmines tensmines tensmines the accident by tensmines tensmines tensmines tensmines tensmines tensmines the accident behaviore to tensmines t	User	62	Yes	5480875
0et 29 23 05:33:34 pm			Trips to adjacent neighbourhoods or areas	Uncomfortable sharing the road with vehicle traffic, Lack of direct connection to destination, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	Speed limit reduction, On-road cycling lane, Separated cycling lane or bike facilities		User	64	No	5480958
Oct 29 23 05:44:22 pm			Tripa within Williamsville	Uncomfortable sharing the road with vehicle traffic, Lack of direct connection to destination, Parked cars impeding access	Bikeway pavement markings, On-road cycling lane	The bicycle lanes on Princess 26 between Division and the did traffic circle are the most important in the city and are assertial to my cycling typs. The most dangerous cycling on a buxy road like Princess Sheet with one lane of traffic each direction is when the lane is not whick encouch the binh a bicycle and a whick. As a social trou do not want to be holdon us a whole lane of traffic that will	User		Yes	5480980
Oct 29 23 07:05:53 pm			Lebure	Uncorrelatable sharing the road with vehicle traffic, Uncorrelatable navigating interactions, Unaure of which roades to bake, Not encough next ansas, Acualis in not scenic encugh, Speed of traffic, Traffic volume, Volume of large vehicle traffic. Parked care investion access	Bikeway way finding aignaga, Bikeway pavement markinga, On-road cycling lane, shared multuse pathway, Separated cycling lane or bike facilities , Traffic diversion measures (discouraging vehicle through traffic)	The more approval group on a stary factor and immost a start with one and or marks and or started in a when hall and in nor which resouch the backs and and which are a contain wood or event to be holdmost and which hall and with the back Grout work! Separate cycling larve or shared multitude pathway would be the ideal options for the primery route for walkers and cycline.	User	27	No	5481015
Oct 29 23 09:01:04 pm			Commute to work or school	Uncomfortable sharing the road with vehicle traffic, Traffic volume, Parked cars impeding access	Speed limit reduction, Traffic calming measures, Separated cycling lane or bike facilities		User	42	No	5481241
pm Oct 30 23 08:10:45 am			Commute to work or school	Unconfortable sharing the road with vehicle traffic, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Pasked cars impeding access	Speed limit reduction, Traffic calming measures, shared multuse pathway, Separated cycling lane or bite facilities , Traffic diversion measures (discouraging vehicle through traffic)	I would love to asse more multi-use pathways (like the KAP trail path connecting Railway 2k to Harvey 2k) in the Williamwolla matylitochnod. As well, having aspendid cycling loves throughout Williamwolla will encourage more packle to be on blass. This is one of the more studies and ablassing having and the matrix of animity the Process B forecase of the robum and queue of studie. Them were a sub, approach blas love I nouted down my love B can be and blass million and provide the studies and the studies of the studies of the studies and blass matrix—is not an explore and the trained blass love the studies of the studies and blass matrix—is not an explore and the trained blass love the studies and the studies and the studies and the studies of the studies of the studies and the studies and the studies and the studies and	User	21	No	5481795
Oct 30 23 09:29:21 am			Commute to work or school	Uncomfortable navigating intersections, Unsure of which routes to take, Lack of direct connection to destination, Traffic volume, Volume of large vehicle traffic	Bikeway way finding signage, Bikeway pavement markings, shared multuse pathway, Separated cycing lane or bike facilities	Most challenging traveling easit to west up concession street. There is no good alternative besides bibling on the street basit, which isn't dissigned to accommodels cycliate. Bibling through the Marcaniz Center tacks is sometimes used, but crossing back onto Concession is difficult especially if entering on Nelson/Concession or anywhere up Concession.	User	37	Yes	5481973
Oct 30 23 09:43:02 am			Trips to adjacent neighbourhoods or areas			The road conditions are dangenous with ainking road cover around drains in the bike lanes. Brook and Johnson are particularly dangenous for biking due to the speed of traffic, heavy fructs brashing close by and many vehicles regularly block the bike lanes.	User		No	5482027
Oct 30 23 11:33:17 am			Trips to adjacent neighbourhoods or areas		Bikeway pavement markings, shared multiuse pathway		User	39	No	5482617
an Oct 30 23 12:48:42 pm			Commute to work or school	Unconfortable sharing the road with vehicle traffic, Speed of inaffic, Traffic volume, Volume of large vehicle traffic, Pasked cars impeding access.	Traffic calming measures, Separated cycling lane or bike facilities , Traffic diversion measures (discouraging vehicle through traffic)	Commuting - The existing bike larves always have cars parked in them or delivery vehicles atopped in them. The bike larves are there but them is a lack of enforcement, but that larl just in Willemenkik. Process 3: throad not be the throagh route. Supporting Willemenki Businesses. "These is no place to lack bits whet log right for our of the local businesse. Transiting our traffic doesn't step in Willemenkie, it is pediestrians, people on bikes & accounter that step and go in local businesses.	User	53	Yes	5483127
μm Oct 30 23 03:24:34 mm	Valk, Biles, Skateboard		Leisure	Uncomfortable sharing the road with vehicle traffic, Unsure of which routes to take, Parked cars impeding access	Bikeway way finding signage, Speed limit reduction, Traffic calming measures, shared multiuse pathway, Separated cycling lane or bike facilities.		User		No	5484102
	Valk, Bike, Skateboard		Commute to work or school	Unconfortable sharing the road with vehicle traffic, Unconfortable navigating interascions, Unsure of which notes to take, Lack of direct connection to destination, Roat is not acenic enough, Speed of traffic, Traffic volume, Volume	Bikeway way finding signage, Bikeway pavement markings, Speed limit eduction, Traffic calming measures, shared midrices pathway, Separated cycling lane or bite facilities , Traffic diversion measures (discouraging vehicle through	Korgiston has an analog opportunity to transform the downtown if the weak-shifty and the shifty are improved. If hope to see the city of Korgiston construct the first protocidal lains in its downtown, with a physical separating pediatrines and cyclicit is tom cars. Without some torm of concretis barriers, the table takes of Korgiston will contribute to be filled with privated cars. Cyclic thom Without A set of CPS (largest are well and what see and the cars can period in the bits has	User	24	Yes	5485283
pm				of large vehicle traffic, Parked cars impeding access	(raftc)	with parked cars. I cycle from Wesidale Ave to CFB Kingston every day and have seen the same cars parked in the bloe lane				

Oct 31 23 V 08:50:11 am	luk, Bite	Tripa to ad areas	djacent religibourhoods or	Uncomfortable sharing the road with vehicle traffic, Lack of direct connection to distination, Route is not scenic enough, Speed of traffic, Traffic volume, Parked cars impeding access	Separated cycling lane or bike facilities , Traffic diversion measures (discoursging whicle through traffic)	Cycling lanes are not be subclicited when building developments are provided exemptions to state backs from the sidewalks. Planning Department of Kligston and Cancel auchicities of the huma development of the Williamwile strengthen when huma unintensiting and provide building technics wave approved any private stream (Williamwile stephen tecniving a lot of faedback from the community of what kind of development was dealived. This community input was table bypassed and now when have a benefit any wall of terpoint considerativement buildings which did not repeat the balance by using	User	64		Yes	5487028
Oct 31 23 v 10:33:53 am	vali, Silas	car Tripa within	ar Willamavile	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Speed of traffic, Traffic volume, Volume of large vehicle traffic	Speed limit reduction, Traffic calming measures, Traffic diversion measures (discouraging vehicle through traffic)	The traffic along Brock is temble especially near Churchill park. It is even worse along Johnson now that it has become a speakery with improved parevenent. IFLEASE consider addition step lights for anle predestion crossing main Churchill Park on Bhock, and energy Regimer advances.	User	63		No	5487352
Oct 31 23 y 0422:17 pm	aik	drive car Trips to ad	djacent neighbourhoods or	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access		no amout of signs or road parining will help mails block (or walking for halt matter) safer in Kingston e-bloss are so that and quint they are hazarboard; loweline e-bloshboards bloss I observe have matter regard nor understanding of values and no amount of signs or paint will help halfs' Caleming' in a face, when Helm was 'calmed' the road mount just diversite to College, no theuks and block blocks and or the was 'calmed' the road mount just diversite to College, no theuks	User	74		Yes	5488802
Oct 31 23 V 05:49:38 pm	tale, Biles	Commute 1	to work or achool	Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	Speed limit reduction, On-road cycling lane, shared multiuse pathway, Separated cycling lane or bike facilities	When exploring develop less focus on parking access and more on active transportation should be prioritized. North-south connectors would be beneficial.	User	42		No	5489309
Oct 31 23 V 07:15:23 pm	lufe, Bilas	Commute 1	to work or achool	Uncomortable sharing the road with vehicle tranic	On-road cycling lane, shared multiuse pathway, Separated cycling lane or bike facilities		User			Yes	548(3)97
Nov 01 23 8 11:47:31 am	ha .	Trips to ad areas	djacent mighbourhoods or	execution in destruction Based in not execute Amount.	Blazevay vary finding signage, Blazevay pavement markings, Speed limit reduction, Traffic coloring measures, On-road cycling line, shared multicus pathway, Separated cycling liane or bios facilities , Traffic diversion measures (discouraging which strough traffic)	Note this lines on bary stady, and bits lears that don't just randomly we would be great. Sometime even if there is a this lane, it just stops (like the care on Johnson and Bock, where it gets is Division street it just stops and then you've formed out into hardly. Bud don't like bitting on Bock of Johnson even though there are bits lines because the tartic's as o tast i undestand that obvicualy care need somewhere to drive. I) part thirk kines and can don't necessarily need to use the same notes. I usually use Bork Monk that ges earlieses the care why lines but whet will don't go not how. Bitting in the same bar of the same notes. But we have the same more than the same notes. I usually use that the same notes. Bitting in the same notes that the same notes that the same notes the same notes that the same notes the same notes that the same notes the same notes the same notes that the same notes that the same notes that the same notes that the same notes the same notes that the same notes the same notes the same notes the same notes that the same notes the	User	27		No	5491201
Nov 01 23 V 01:18:04 pm	luk, Bite	Trips to ad areas	djacent relighbourhoods or	Uncomfortable sharing the nead with vehicle staffic, Uncomfortable navigating intersections, Speed of staffic, Traffic volume, Volume of large vehicle staffic, Parked cars impeding access	Speed limit reduction, Traffic calming measures, Separated cycling lane or blie facilities , Traffic diversion measures (discouraging vehicle through traffic)	Auto speed and volume have increased over the last discusts, particularly on feeder rooms like Tirck and Johnson Thews, making at significantly more discussion to biol. Creasing bound can also be able discust linevolves (per your line) and in a value. In junctions with lights. My belief is that although changes to the road system will help, educating subs drivers is vitai. In the Natherlands and Diermain, must also drivers also bile, so no education is required. Auto drivers are, consequently, sensitive to be needed of biases and walkars.	User	58		Yes	5491581
Nov 01 23 y 03/25:58 pm	lufe, Dite	Tripa within	in Williamstelle	Uncomfortable navigating intersections, Speed of traffic, Parked cars impeding access	Bikeway pavement markinga, On-road cycling lane, shared multuse pathway, Separated cycling lane or bike facilities		User	23		No	5492052
Nov 01 23 y 04:54:18 pm	lufe, Dilas	Tripa within	in Williamstile	Uncomfortable sharing the road with vehicle traffic, Unsure of which routes to take, Lack of direct connection to destination	Bikeway way finding signaga, Bikeway pavement markings, On-road cycling lane, Separated cycling lane or bike facilities		User			Yes	5492519
Nov 01 23 V 0525:05 pm	lulk, Bike	Commute t	to work or school	Uncombrable sharing the road with vehicle traffic, Speed of traffic, Parked cars impeding access	shared multiuse pathway, Separated cycling lane or bike facilities		User	23		Yes	5493080
Nov 01 23 10:14:44 pm		Crip Walking Trips to ad	djacent neighbouthoods or	Uncomfortable navigating intersections	shared multiuse pathway	I normally travel on foot at a reascnable pace but also in a way that reflects my rich African American heritage - the moves of my people and brotherhood, dang	User	19		Yes	5403951
Nov 02 23 12:18:05 am		Driving my car Commute t	to work or school			Reducing a impeding the flow of whick intrific in traver of biles is an advance concept, separately in a place like Orstano where biles are uncasible for a significant portion of the year but to move and co. Biles mead separately closule that do not impede or interact the flow of automobile traffic in any way, which requires the infrastructure to be designed from the get go to be topolo-centric. Cycling works in scene European class due to the late that they ware never designed forces in a flow wave built blocks the invertion of the constantion requires. Retrafficing blocks infrastructures in the sur-center cosibly and does were built blocks the invertion of the constantion requires. Retrafficing blocks infrastructures in the sur-center cosibly and does	User	63		No	5404478
Nov 02 23 V 05:03:14 pm	luk, Bila	Jog Commute t	to work or school	Uncomfortable navigating intersections, Speed of traffic,	Bikeway pavement markings, Speed limit reduction, Traffic calming measures, Traffic diversion measures (discouraging vehicle through traffic)	Mack Street is a vital contider for welking and cycling including for young children. This street provides access to Rideau public school and multiple doynam. Active transportation needs to be protificed and vehicle movement should be restricted. Traffic calming in needed. Street and sidewalks are currently in very poor condition. Cans drive far too fast and rid through stop signs.	User	45		Yes	5409108
Nov 02 23 y 05:54:54 pm	lufe, Dite	Commute 1	to work or achool	Uncomfortable sharing the road with vehicle traffic, Speed of traffic	Bikeway pavement markings, Speed limit reduction, Traffic calming masures, On-coad cycling lane, Traffic diversion measures (discourseing vehicle through traffic)	P manual region	User	35		Yes	5402314
Nov 02 23 y 07:57:17 pm	lufe, Dilas	Trips to ad areas	djacent mighbourhoods or	Parked cars impeding access	Bikeway pavement markings, On-road cycling lane, Separated cycling lane or bike facilities , Traffic diversion measures (dacouraging whicle through traffic)	Please consider these thege when planning active transportation in Williamville and across the city: 1. I get that here is not room for everything on Princess Street. However, it is the most direct roots in downtown or Kingston central transmosy parts of the city. Cyclists and pedestines are already choosing a mode of transportation that is intermetly allower than vehicles. They alroad not be further discoranged by being mode to take even longer by being forced onto indirect interve with more than, etc. They alroad and the probability principles of the events longer by being forced onto indirect interve with more than, etc. They alroad already be profited.	User		Yes	Yes	5409581
Nov 03 23 V 10:16:56 am	lalk, Bike, Skateboard	Commute 1	to work or school	Cited in the starting the read wer version same, many	Traffic calming measures, Separated cycling tare or bike facilities , Traffic diversion measures (discoursigng vehicle through traffic)		User	15		Yes	5501180
Nov 03 23 V 12:52:07 pm	lulk, Bike, Inline or roller skates	Tripa within	in Willamavile	Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating intersections, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access	Speed limit reduction, Traffic calming measures, Separated cycling lane or blice facilities , Traffic diversion measures (discouraging vehicle through traffic)	Protected bike larses are the only way many toks can feel safe, especially those not already getting around by bike. Paint doesn't work.	User	38		No	5501837
Nov 04 23 V 02:50:17 pm	fulk, Bike	Walking with stroller Trips to ad	djacent neighbourhoods or	Uncomfortable sharing the road with vehicle traffic, Unsure of which routes to take, Speed of traffic, Traffic volume	Bikeway way finding aignage, ahared multiuse pathway, Separated cycling lane or bike facilities	Mack Stewarts is a great path-route for active transport that connects both Williamwills and Cakin Park towards develows, however it has and it the destination of active in the control where Process Shreat I future areas, "The billing laws on Johnson and brock are convenient from a connection parapective but the lack of approxision from traffic makes them feed urante expecting given the speed of traffic along Johnson. Destinations on Process Shreat feed paralicably assived for billing given that process tested braing on any of not have a speer specialistic base to active control and a control of the speer special given in the speed to the special of the special special parallel active special base of the special special parallel active special base of the special spec	User	34		Yes	5505258
Nov 04 23 V 11:25:49 pm	luk, Bike	Tripa within	in Williamsville	Speed of traffic, Traffic volume, Volume of large vehicle traffic Parked cars impeding access	Speed limit reduction, Traffic calming measures, On-road cycling lane	Build befor waikable neighborhoods don't build giant building that take 5 years to build and don't make areas waikable I'm nervous oxiding on streets without good assambles optimized as the street of the street optimized as the str	User	31		No	5506035
Nov 10 23 g 05:27:13 pm	ina -	Tripa to ad areas	djacent neighbourhoods or	Uncomfortable sharing the road with vehicle traffic; Unsure of which routes to take	Bikeway pavement markings, Separated cycling lane or bike facilities		User	41		No	5530149
Nov 13 23 y 05:59:37 pm	lufe, Dite	Tripa to ad areas	djacent neighbourhoods or	large vehicle traffic, Parked cars impeding access	cycling lane or bike facilities , Traffic diversion measures (discouraging vehicle through traffic)	There is no way access to see where a data where the other states to be present to a beaute a case a case of a through or to Williamsville area without having to mix into the busy readways.	User	32		Yes	5537686
Nov 15 23 V 10:04:05 pm	halk, Dike	e-bite Trips to ad areas	djacent neighbourhoods or	connection to destination, Speed of traffic, Traffic volume, Parked cars impeding access	Bikeway way finding signaga, Bikeway pawement markings, Speed limit eduction, Traffic calming measures, Separated cycling lare of bio facilities, Traffic diversion measures (discouraging vehicle through traffic)	and cycling infrastructure was there.	User	84		Yes	5549702
Nov 17 23 V 03:56:28 pm	laik, Mobility device, Biles	Tripa within	in Williamzville	Unconfortable rawigating intersections, Lack of direct connection to destination, Speed of traffic, Traffic volume,	Bikeway way finding signaga, Bikeway pavement markinga, Speed limit neducitor, Traffic calming measures, Ch-road cycling lime, shared multicas pathway, Separated cycling lime or bike facilities, Traffic diversion measures (discoursaino vehicle through traffic)	Speed thinks and conseponding valitic lakeing and indication devices are obtained to making neighborhood instan and exclusify for an loy people of all aga and shells. It speed that we we all XMm to like, undiring we may any similar the people notative of cars. It speeds are higher, then aspending in an ended. I particularly support the athere that here on Macdormal and Almid and Third, and Id add them to Earl as well. The neighborhood routes must actually reflect the simulated of mission coll biological control on the size of the size of the set biological control on the size, which is a different facility here.	User	27		Yes	5558767

Survey Responses Graph

Project Report:

Frontenac Green Street Concepts



Project HighlightsTotal Visits1.45 kNew Registrations14Video views0Photo Views0	
Total Visits	1.45 k
New Registrations	14
Video views	0
Photo Views	0
Document Downloads	0

to

November

18 August 2017

Admin Notes

AWARE PARTICIPANTS	1,209
Aware Actions Performed	Participants

Visited at least one Page 1,209

ENGAGED PARTICIPANTS		213	
Engaged Actions Performed	Registere d	Unverifie d	Anonymou s
Contributed on Forums	0	0	0
Participated in Surveys	213	0	0
Contributed to Newsfeeds	0	0	0
Participated in Quick Polls	0	0	0
Posted on Guestbooks	0	0	0
Contributed to Stories	0	0	0
Asked Questions	0	0	0
Placed Pins on Places	0	0	0
Contributed to Ideas	0	0	0

INFORMED PARTICIPANTS	418
Informed Actions Performed	Participants
Viewed a video	0
Viewed a photo	0
Downloaded a document	0
Visited the Key Dates page	10
Visited an FAQ list Page	0
Visited Instagram Page	0
Visited Multiple Project Pages	218
Contributed to a tool (engaged)	213

o official de la dade	0	0	0						_		
ENGAGEMENT TOOLS SUMMARY											
Forum Topics	0	Guestbook	0	Places	0	News Feeds	2	Ideas	0		
Qandas	0	Quick Polls	0	Stories	0	Survey Tools	1				

				Contributors				
Tool Type	Engagement Tool Name	Tool Status	Visitors	Registered	Unverified	Anonymous		
News Feeds	Notice of public open house	Published	2	0	0	0		
SurveyTools	Frontenac green street survey	Archived	514	213	0	0		
News Feeds	Green street concepts	Published	820	0	0	0		
		ON WIDGET SU						
		ON WIDGET S	JIVIIVIART					

DOCUMENT S	0	PHOTOS	0	VIDEOS	0	FAQS	0	KEY DATES	1
Widget Type			Engagem	Visitors	Downl	oads/Views			
Key Dates	Key Date			10		10			

Surve		18 August 2017		to	22 November 2023							
Tool Sta Visito	ana Archived an 514	Date of pathod Please select the active modes of travel you use	n Please select the active modes of travel you use Williamsville. Please check all that apply. (Other	in Are you familiar with the general concept of oreen	The green streets Get involved webpage showed three different green street concepts. Please rank the	What barriers currently reduce your use of active travel options in Williamsville? Please check all th	Survey Response What barriers currently reduce your use of active at travel potions in Williamsville? Please check all that	What conditions or compromises would be acceptable for the development of a genen street? Please Disease not the acceptable for the development of a genen street? Please and the options by what you prefer.	Provide any additional comments.	Signature States to be Usertype the draw to win	n Up form Datalis entered in Do you want to be a one of the the City of Kingston	added to a mailing Respons
		Williamsville. Please check all that apply. Mibility device Mibility device	bienes macitól		in order of your preference. Genen Ille, Green mid-level, Green haavy	anole Lack of direct connection to destination, Speed of traffic		Bases cask the options has about one	y	User	No	5397249
	end 213			Yes	Gmen Sin, Green mid-level, Green haavy	Speed of suffic, Traffic volume, Parked cars impeding access	not a determent, but nowhere else to add a comment - I don't think bench assing would be used much on a recidential trateer - people use benches in places like parks more other	Curb burry cat, The planting Wele sciencels, Reduced parking, Speed humps, Namowel lanes, Convension to one wit street		Uter	No	5297400
		m kor.02.22 Walk, Bike 803.58		Yes	Green haavy, Green mid-level, Green lae	Unconfortable sharing the read with vehicle staffic, Unconfortable naisgaing intersections, Lack of deect connection to destination, Speed of traffic, Traffic volume, Parked care impading access		Cut bump cat. The planing Wide sidewake, Speed humps, Reduced parking, Nerowed lanes, Convension to one wit Intered	y	Uter	Ves	5297663
Anonym	-	kutum (cr.02.22 Walk, Bike 427:37	Joging	Yes	Gmen hausy, Gmen mid-level, Gmen Ide	Unconfortable sharing the road with vehicle traffic, Unconfortable navigating intersections, Speed of traffic,		Webs scielauskin, Speed humps, Narrowed Ianes, Curb bump out, Convention to one way street, The planning, Reduced cardina		Uter	Yes	\$297721
Admi	-	12/23/ (cr.03.23 Wak 129.04			Green heavy, Green mid-level, Green lae	Unconfortable sharing the read with vehicle staffic, Unconfortable sharing the read with vehicle staffic, Unconfortable maigtaing intersections. Roate is not scan exount, Search of staffic. Traffic scheme Unlame, the start	Rumpy, cracked and and poorly maintained sidewalks and made make pushing a stroller unconfortable for parent and kide. Smee sloces towards road on sidewalks at divewarks cause			User	Yes	5399452
9194655		a			Green mid-level, Green heavy, Green Ste	vehicle suffic, Pasked cars impeding access Unconfortable sharing the rand with vehicle staffic, Unconfortable naisgaring intersections, Lack of direct connection to destination, Route is not scenic enough, Speed of staffic, Tasfic volume	Since slopes towards road on sidewalks at driveways cause		Reger anient from princess down has for too much maffic that is obse moving at a fast pace. We are very interested in growing coorders to return this tarset to a quieter neighborhood place where residents can enjoy all this street and Withamouble has a dwt. That you	Uter	Yes	5401573
		Kr 54 22 Wak, Bike Alocs Kr 54 22 Wak, Bike, Inline or roller skotes wak, Bike, Inline or roller skotes	acost		Gmen haavy, Gmen mid-level, Gmen lite	Speed of staffic, Traffic volume Unconforable sharing the read with vehicle staffic, Lack o direct connection to destination, Parked cars impeding access	4	parang Reducation Time planting, Clurk bump nut. Natrowed lance, Conversion to one way street, Spanchampa, With Inducational		lber		5402529
					Gmen hausy, Green mid-level, Gmen Ite	access Unconformable sharing the road with vehicle staffic, Lack o direct connection to destination, Roase in not scenic enous Speed of staffic, Traffic volume, Volume of large vehicle traffic, Parked Cass Impeding access		sidewalka Curk trung pat, Tare planting, Welle sidewalke, Reduced parking Namused lanes, Conversion to one way strater, Speed		User		(10000)
		Kr 05 52 Walk, Bike 20827 m			Genen haury, Green mid-level, Gasen Ba	Speed of staffic, Tatific values, Values of large vehicle staffic, Parked cars impeding access Unconfortable sharing the road with vehicle staffic, Speed staffic, Tatific values, Volume of large vehicle staffic, Park rear impedies acress				User		and a
		(x 05 22 Walk, Bike (x 22 6) m							Vey and all proposed compromises mentioned in question is an eleminic () proceeding the where all PT. Law Franteeco menters any cyclotic pose elialy and would appreciate anything that will prioritize pediestilence and cyclem and limit currantic to local residemt only. Related costings would be excellent. Even better would be to include mixed intersections. Close Forenact to through	uur	NG	9000
Demograp	9	11012 m 41012			Green heavy, Green middevel, Green Ba	Unconformable sharing the rand with vehicle stuffic, Unconformable savigning intersections, Lack of direct connection to destination, Speed of stuffic, Tables vulnume, Volume of large vehicle stuffic, Parked cars impeding accor- Unconformable sharing the rand with vehicle stuffic,		Reduction for sking. Speechumps, Namoverbares, Curb bump oat, Wide skiewalla, The glanding, Convention to one ex street		User	No	5410567
		kr 106 22 22825 m			Gmen heavy, Gmen mid-level, Gmen Ba	Unconformable sharing the read with whicle staffic, Unconformable savigating intersections, Route is not scene encough, Speed of staffic, Tables volume, Volume of large whicle staffic, Parked cars impeding access Unconformable sharing the read with whicle staffic,		Tara panta, Wak sidewaka, Peducad pantaja Andread pantaja Panta Pantaja Pantaja Pantaja Pantaja Pantaja Pantaja Mara pantaja Waka sidewaka, The planting Cuch bump car, Speet hump, Reduced pantaja Namead Iones, Convention to one wa		User	No	5412137
		kr 10.23 Wak, Bike 93659 m					During Queen's terms, there are hundheds of analerts making their way north and south access Princess Sz. The sidewalks do notatious a mother with a sender to pass two large people walking. Someone ends up on the road. Scooters and some bikes (children) use the sidewalks.		parkete at the corner of Princess and Frontenac. More trees are needed for environmental reasons.	User	Yes	5419003
	-	kr 10.23 Wak 0.12x0 m		Yes	Gasen heavy, Green mid-level, Green Ibe	Lack of direct connection to destination, violame of large whicle staffic, Pasked cars impeding access		Mide interests, The planing Namwed lanes, Reducat parking Curb bump out, Speed humps, Convention to one was asset		User	No	5419040
	C Q P	ko 12.22 Walk, Bike 2x0:13 m		Yes	Gmen hazvy, Green mid-level, Green Ite	Unconfortable sharing the road with vehicle staffic. Not enough rest areas, Route is not scenic enough, Speed of staffic, Traffic values I broadfortable states		Taus planting, Wide sidewalks, Reduced parking, Nanowed laves, Curb bump aut, Canvension to one way street, Speed Nanpe	This is a great ideal Making Kingston a walkable city is so deeply important. One way streems with heavy tump outs seems the most reasonable. Perhaps the bump outs could have interscuts cas to	Uter	No	5429869
		ka 13.22 Wak 245.41 m		Yes	Gasen haavy, Gasen mid-level, Gasen Ito	Uncontortable nating the radiu with whice static, Uncontortable natiograph intersections, Roate is not scene enough, Speed of staffic, Traffic volume, Parked cars impeding access		Conversion to one way street, Reduced parking, Wide sidewake, Cush bump cat, Theoplanding Speech hampon, Nentow Jaces	Concerns of a context material	User	Yes	5429895
	C a p	kr 13 23 Walk, Bike 2 46/14 m		No	Gmen hazvy, Green mid-level, Gmen Ba	Unconforable sharing the road with vehicle staffic, Route not scenic enough, Parked cars impeding access	•	Reduced parking, Namowed lanes, Speed humps, Wide tidewalks, The planting, Curb hump nat, Convention to one we attent	 Having a canopy along the tood would improve the field. Plus inducing car space and promoting walking space would improve commerce. Let people have pation. 	User	No	5423838
	c a p	kr 1322 Wak, Bike 0.4826 m		Yes, but I am unsure what the City of Kingston means by green streets	Green mid-level, Green heavy, Green Re	Unconforable navigating intersections. Traffic volume		Wide sidewaker, Tree planning, Namwerd lanner, Reduced perking, Curb hump our, Speed humps, Convension to one wa unset	 Any carb bump-case should not compromise sails bite inner and sale use of roads for both cars and bites. A separated, railed bite lare would be preferable to a naised pedecrites crucking. 	User	Yes	5429908
	0 0 9	kt 1323 Wak, Skanboard 0.4855 m		Yes	Genen Sta, Green mid-level, Green heavy	Volume of large vehicle staffic		Namowed tanker, Curb bump-nut, Convension to one way street, Reduced parking, Wide scienteiler, Speet hamps		User	No	5429912
	0	tct til 223 248558 m		Yes	Gasen hazvy, Green mid-level, Gasen Iba	Unconfortable sharing the road with vehicle staffic, Unconfortable neighting intersections, Lack of direct connection to destination, Roade is not scenic enough, Speed of staffic, Traffic volume		Wele sidewake, Tine planning Reduced parking Narrowed lanes, Carb bump out	Walking a long time for lights to change when walking. Having to get to button to change lights when on bile.	User	Yes	5429913
		kr 1322 Walk, Bike 25144		Yes	Gmen hazvy, Green mid-level, Green Ba	Unconfortable sharing the read with vehicle staffic, Unconfortable navigating intersections, Not enough test areas, Speed of taffic, Parked cars impeding access		The planning Wide sidewalks, Reduced parking, Curb bump out, Speedhumps, Nerswed lanes, Convension to one we attend		Uter	Yes	5429822
		ter 13.23 35208		Yes	Gasen hasuy, Gasen mid-level, Gasen ila			Curb bump out, Reduced patking Nanowed larver, Speed humps, Wide sidewalks, The planning	The beek aborcang to Knew Li Chicashea king years. They have the balan benefit of a finance presentation to cross without having to stag down, and by along many withings except where it is reduct, where potentians are crossing and at interestication if Please shared in an G RAEED CROCEMICS! The researchment is these monomics the time the doth balance of a series on strets-relation many rest.	User No	Ves	5429823
	6	kr 13 22 Walk, Bika min		Yes	Green mid-level, Green Ites, Green heavy	Parked cars impeding access		Tine planning, Club hump cot, Reduced parking, Narrowed Inner, Wide sidewake, Conversion to one way street, Speec humps		User	No	5429827
		lcr 13 23 25 6:10 m		Yes	Green Bla, Green mid-level, Green heavy	Lack of direct connection to destination, Route is not scenerough		Were scienceds, Namoured Isreet, Tree planning, Reduced parking, Cuth bump out, Speed humpe, Convention to one we attract	x	User	No	5429822
		n (cr 13 23 Waik 25736 m		Yes	Gmen haury, Green mid-level, Gmen Re		Treeplanting is avecome!	Tree planning. Speed humps, Convention to one way smart, Nanceed Ianes, Curb bump out, Reduced pasking, Wide schedulation		User	No	5429837
		n ker 13.23 K0221 m		Yes	Gmen havy, Gmen mid-level, Gmen lite	Not enough rest areas, Route is not scenic enough, Traffi volume		Thee planning. Speed humps, Clark bump out, Wide sidewaker, Conversion to one way smeet, Namowed lanes, Reduced parking		Uter	Yes	5429859
		n kt 13.23 Walk, Mibilly device, Bile m		Yes	Green hazuy, Green mid-level, Green Ite	Unconfortable sharing the read with vehicle staffic, Unsur which routes to take, Not enough rest areas, Route is not scenic enough, Parked cars impeding access	a d	Wide sidewaks, The planting, Curb bump car, Conversion to one way attest, Reduced parking, Nanceed laves, Speet hamps		User	Yes	5429804
		n kcr1323 Kd829 m		Yes, but I am unsure what the City of Kingston means by green streets	Gmen havy, Gmen mid-level, Gmen lite			Were sidewake, Namowed larver, Tree planting, Conversion to one way street. Speed humps, Curb bump out, Reduced particip	There is no context with these surveys and when is Williamsville? My survey is all about a place I have never heard of. There is no mention of electric charging institute for care, or eard-store bile lanes.	Uter	Yes	5429885
		n (cr 12 23 (1 0 0 0 m		Yes, but I am unsure what the City of Kingston means by green streets	Genen mid-level, Green Ike, Green heavy	Unconforable sharing the road with vehicle staffic, Speed staffic, Toaffic volume	a	Reduced parking, Narrowed lanes, Wide sidewalks, Speed humps, The planning, Curb hump out, Convention to one wa Interest	y	User	Yes	5423988
	-	m kr 13.22 41208 Maik, Biles, Inite or roller skans 41208		100	Gmen hazvy, Gmen mid-level, Gmen Ite	Unconfortable sharing the read with vehicle staffic, Unconfortable naligning intersections, Lack of direct connection to destination, Speed of traffic, Taffic volume, Volume of large vehicle staffic, Parked care, in peeding account		Raduced parking, Curb bump out, Wide sidewalks, Convention to one way street, Speed humpe, Nanseed lanes, Tine parking	Why not make it polystrian and local traffic only?	User	No	5429995
	i S	n kr 1323 #1224 m		Yes	Gasen mid-level, Gasen heavy, Gasen be	Volume of large vehicle traffic, Parked cars impeding accord Uncomfortable sharing the road with vehicle traffic, Uncomfortable navigating immediation, Parked cars impeding access.	66.6	Reduced parking: Carb burnp out, Wide sidewaler, Tree planting, Nanowel laves, Convention to one way street, Speed hadppt		User	Yes	5429997
	-	kr 122 Kr 122 Kildi m			Gmen heavy	Unconfortable sharing the rand with vehicle staffs; Unconfortable navigating intersections, Roues is not scen encoge, Tatlic valume, Valume of large which staffs;		Raduced parking, Narrowed lanex, Cust bump cut, Convention to one way streat, Theo planting, Webs Edewalks	Well maintained scad thee of grower	User	Yes	5430011
		kr 1323 Wak 42249			Gmen heavy, Gmen mid-level, Gmen lite	Parked cars impeding access	ic Hor-needs more shade trees, especially for the future of climate change.		This is a wonderlul project. Please do it as Green Heavy or Green Middel Planting more trees, which is norpant of Green Las, is the mast important misgation of present and tabase climate change we will cope with. Kingston needs to work baseds more carrowy unperty. That would	User	No	5430020
					Gmen heavy, Green mid-level, Gmen Ba		The noune lacks the trend density now recognized to have psychological and environmental benefits. Green heavy mendees this well.	The planting Cut bump out, Speedhumps	Inseards more caropy urgenty. Thank your	User		5430235
	4 2 2	kar 13.22 m kar 13.22 kar 13.22 Maik, Bika, Skamboard 452.20 m				Incomfortable sharing the rand with vehicle staffic, Unconfortable studying intersections, Not encogh seat areas, Speed of staffic, Traffic volume, Volume of large vehicle staffic, Parked cars impeding access		Speed humps, Conversion to one way stream Reduced parking Nannowell larver, Cuth hump car, Wide sidewalks, Tine parking		User	No	5430239
					Gmen midieut, Gaten haavy, Gmen Ba	aneas, Speed of traffic, Traffic volume, Volume of large vehicle staffic, Pasked cars impeding access Route is not scenic enough, Traffic volume		planting Cub bump as, Wide sidewake, The planting, Reduced parking, Nanowed lanes, Speed humps, Convention to one set		User	Yes	5430054
		ker 13 22 Waik m ker 13 22 Waik Bike			Gmen haury, Gmen mid-level, Gmen las	Unconformable sharing the road with vehicle suffic. Speed mattic, Traffic volume, Volume of large vehicle staffic, Park cars impading access	d Notike lanes	istner Transplanting, Curb hump out, Wide sidexake, Speed humps, Nennevet laves, Reduced parking, Convention to one wo		User	No.	5430054
		kr 1322 Wak, Bite exb07 m kr 1322 Wak, Bite			Genen hang, Genen mid-level, Ganen Ita	cars impeding access Lack of direct connection to destination, Speed of traffic, Tatlic volume			Please do this on Altern Street between Pricoses and Block as well. Our street has turned into a non-track with many whicks running the four way top, There almost teen this even if new with waiking access to park. People seem to be in a runk to a_ delayer whicks, people moving between toma dense building and Deam/1 Dr carling down to Block tron Process IT separate tests will access any structure as the delay cardius to Block to the test the mostly three	User	Yes	5430074
		kr 13 22 e 47:05 m kr 13 22 weite Billion			Genen haung, Green mid-level, Caren Ita			kärneska Gaset bungs, Tite planting, Club bung-sat, Henrowel Janes, Convenzion to one way street, Wele sidewelke, Referen	is a list of bike and orderstrian traffic and worry about our kids ortfing hit by someone going to fast and not being able to	liw		and and
		kr 1322 4 47.244 m kr 13.02				Unconfortable sharing the read-with vehicle staffs, Unconfortable starligating intersections, Volume of large vehicle staffs, Pasked cars impeding access					766	SEDENÉ
		kt 1323 43226 m			Green heavy, Green middevel, Green Ba	Speed of traffic		The pipering National Inner, Curb hump and Readcard parking Web sidewakk, Chruestian to one way street. Speed		User	Yes	5430085
		kr 1323 Wak 45426 m			Gmen midlenst, Ghenn Ba, Gmen hanny	Unconfortable navigating immensions, Speed of traffic, Totific volume		The planting Nationard Inner, Curd Europ au, Wide schwaller, Read-out parking, Speed humps, Convention to ove wit about		Uter	Yes	5433010
		kr 13 23 Wak 457-32 m			Genen Sten, Green mid-level, Green heavy	Speed of staffic, Tailfic volume, Volume of large vehicle traffic, Parked cars impeding access Unconfortable sharing the rand with vehicle staffic. Uncur	ad	Spandhampa	Consideration of indexisting stress need to star for the reality of more delivery tucks in all representations	User	Ves	5430098
		kr 13.23 Wak, Bite 50250 m	CAR		Gmen heavy, Green mid-level, Green Ba	Unconfortable sharing the read with vehicle staffic, Uncur which notates to take, Speed of staffic, Taffic volume, Park cars impeding access		Reducad parking	Consideration of tradecipting assess need to plant for the mailing of more delivery mucks is all anighbourhood assess despite of an depicyling up at all finese of the day Origoing saved paveneers to above whiches also don't held gears for spaces to dide case.	User	Yes	5430108
		Kt 1323 Mibility device 508233 m			Gmen lin, Green mid-level, Green heavy		Lack of mattic policing	Tanplaning	Police traffic including bicycline riding wrong way on street and also using sidewalks.	User Yes	No	5430113
	0 0 9	kr 13 23 Wak, äke 6 11 05 m		Yes, but I am unsure what the City of Kingston means by green streets	Gasen mid-level, Gasen heavy, Gasen be	Unconfortable sharing the road with vehicle staffic, Unconfortable navigating intersections, Speed of staffic		The planting Wide sidewarks, Conversion to one way street, Nertoend lance, Curb bump out, Realized parking, Speec halips		User	Yes	5430125
	C B	ko 12.22 Walk, Bilke 6:11:21 m		Yes	Gasen haavy, Gasen mid-level, Gasen Ito	Lack of direct connection to destination		The planting Wole tolevalue, Reduced parting, Nanowed lance, Curb bump out, Speed humps, Convention to one water		User	No	5430126
	C a p	kr 1322 Wak, Bike 621:04 m		Yes, but I am unsure what the City of Kingston means by green streets	Gmen heavy, Green mid-level, Green Ba	Uncomfortable sharing the road with vehicle staffic, Lack o direct connection to destination, Speed of staffic	4	Convenion to one way street, Cut bump out, Wide sidewake, Reduced parking, The planning, Nanceed larees, Speed Nance	Mare pedestraintcycling only stream please. Also more illuses and more illus stores.	User	Yes	5430145

						Date sneethume. That a bur ofer musk and also opin.						
Oct 13.23 W 052128 pm	ak		Yes	Gmen mid-level, Gmen Ita, Green heavy	Not enough next areas, Route is not scenic enough	These speed bumps. That a low rider track and when going over a speed bump sheek it is comped my aligns and intocked the dain plag our causing an oil loss and then a blown moor NO SPEED BLAPSITI	Reduced parking, The planning, Wide sidewalks, Curb bump cut, Nancoved lanes, Convension to one way street, Speed humps	Please cases using speed bumps	User		Yes	5430146
Oct 13 23 0522 43 pm	ak		Yes	Gmen Sta, Green mid-level, Green hazvy	Speed of staffic, Volume of large vehicle staffic		Conversion to one way street, Speed humps, Wilde sidewalks, Curb bump out, Nanowed lanes, Tree planting, Reduced parking	If the objicoked after their trees by shaping them when stimming them instead of just hacking them, more trees would be hitle / newer a good data to semice-parking	User		Yes	5430151
Oct 13.23 Bi 0555:19 pm			Yes	Genen Ste, Green mid-level, Green heavy	Taffic volume	Condition of roads	Conversion to one way street, Reduced parking, Wide sidewalks, Tree planting, Nanowed lanes, Curb bump cut, Speed humps	The bump ours seem like a method of traffic calming but it won't help cyclims without dedicated bike lanes.	User		Yes	5430236
pn Oct 13.23 Oktober pn			164	Gimen heavy, Gimen mid-level, Gimen Re	Lack of direct connection to destination		Curb bump out, Conversion to one way street, Title planting, Wilds sidewalks, Speed humps		Uter	Yes	No	5430344
pm Oct 13 23 064839 pm		Car	Yes, but I am unsure what the City of Kingston means by green streets			None	Tree planting	This survey is ridiculaus. These "oursp cust" only look rice for a short firse of the year. The sets of the time they are a located for drivers. I can't believe anyone would be so about a st to ware Reduced Parking when finding parking is such a polaries in this city. Chest the City of Kingston have so much money to spare they are looking for cracy ways to spend P ² formless peoplare and subging of the stress and op come to you thin an orderess.	User		No	5430374
Der 13 23 Oct 13 23 Dis5426 pm		CAR		Green Bits, Green mid-level, Green heavy	Traffic volume, Volume of large vehicle traffic		The planting. Speed humps, Wide sidewalks.	Loomane popular as starping on the strems and picc cores up with this increase. When the increased provide in this information is all instance having any particular guests and to be a way any non-with this pires tape and additional is distributed to the tawn. There are already aspects and tape any particular and additional and any participant approximation and additional and any participant approximation and any participant approximation and additional additionadditional additional additional add	User		Yes	5430393
		Čar	Yes		Speed of ratific, Traffic volume, Volume of large vehicle ratific, Parked cars impeding access	I strongy oppose "tump outs" because they are just as hazardour to moving staffs as but stops being used for main output. Deep staffs as but stops being used for	Reduced parking		User			
Oct 13.23 W 08:57:53 pm				Geen havy, Green mid-level, Green Ite		cause of an accident. You should be using BUMP No on City right of way property nor using valuable smeet forcage for	n mocen yaway Corversion to one way street, Speed humpe, Title planting, Wole sidewake, Curb hump out, Narrowed lanes, Reduced parking	For too many vehicles and uppaked in the street because there is non-oungl-declared car parking for the household. This is water use you have no add action to strately digital parking house or about coming without hours addecase parking for cars at the nonning house. It just indices a mest and creates dargenous sharkows for reverse unlikes and people	- Cum			
Oct 13.23 W 07:12:10 pm		Car			Unsure of which routes to take, Traffic volume				User		No	5430444
Oct 13.23 W 0722247 pm			No	Geen heavy, Green mid-level, Green Re	Unconformable sharing the read with vehicle traffic, Unconformable manigating immersions, Not enough next areas, Route is not scenic enough, Parked cars impeding access		Thee planting, Nanowed lanes, Curb bump out, Speed humpe, Wide sidewaks, Reduced parking, Convention to one way attent		Uter		Yes	5430460
Oct 13.23 B 072946 pm			Yes	Gmen haavy, Green mid-level, Green Ba	Route is not scenic enough, Speed of traffic, Traffic volume, Volume of large vehicle traffic		The planning, Wile sidewalks, Curb bump out, Nanowed lanes, Reduced parking, Speed humps, Convention to one way answer		Uter		Yes	5430471
Oct 13.23 07:30:42 pm	ak, dite		Yes, but I am unsure what the City of Kingston means by green streets	Gmen heavy, Gmen mid-level, Gmen Re	Uncomfortable sharing the road with vehicle staffic, Not encody net areas, Route is not scenic encody, Speed of taffic, Taffic volume, Volume of large vehicle staffic, Parked cars impeding access		Conversion to one way street, Wide sidewalks, Tine planning. Speed humps, Namowed lanes, Reduced particip	which have to share the lane with cars. This can be very unconfinedial for cyclists, as well as being despense, as cars usually nys og an aunual fakes, raiser and toking in inside fak. I you an going to have cuts bump-outs, twould not have them at instructions. (But in general I find the bump outs to be a bad idee for bke safety.)	User		Yes	5430481
Oct 13.23 07.4057 pm	ak .		Yes	Ginen heavy, Green mid-level, Ginen Be	Uncomfortable sharing the road with vehicle traffic, Not enough test areas, Speed of traffic, Traffic volume		The planting, Reduced parking, Convension to one way street, Narnowed lances, Wide sidewalks, Cuth bump out, Speed humps	TREES/ That's what we need. As many as possible.	Uter		Yes	5430490
Oct 13.23 075719 pm			Yes	Genen hauvy, Green mid-level, Green lite	Unconfortable sharing the road with vehicle traffic, Unconfortable malipating immercians, Route is not ecenic enough, Speed of traffic, Traffic volume, Volume of large vehicle staffic		Cush bump out, Conversion to one way street, Tree planting, Wide sidewalks, Nantoend lanes, Speed humps, Reduced parking		User		No	5430522
pm Oct 13.23 07:57:56 pm	ak.		Yes	Gmen heavy, Green mid-level, Green Re			Curb bump aut, Conversion to one way street, Speed humps, Nanoeed lanes, Reduced parking, Wide sidewalks, Tree parking	Vies the concept of green stress but the thing like the most is the combo speed bump and pedestrian crussing. Combine these well marked crossing bumps and we and up having a camer and active hierdy weight bottoot.	Uter		Yes	5430525
pm Oct 13.23 08:10:28 pm			164	Gmen hauy, Green mid-level, Gmen Be	Unconfortable sharing the road with vehicle traffic, Speed of traffic		Reduced parking, Cuth bump cut, Namowed lanes, Thee planning, Speed humps, Wide sidewalks, Convention to one way street	This would be lovely to see. Gener to see Kingston purpling green initiaties forwards, follow to see less speeding on Brock and Johnson to make these safer, or more the book large to Mack or earl	User		Yes	5430552
					Unconfortable sharing the rand with vehicle traffic, Unconfortable navigating immunctions, Lack of direct connection to destination, Speed of traffic, Volume of large vehicle raffic		Normand Survey, Conversion to one way street, Thee planning, Reduced parking, Cuth bump out, Speed humps, Wide addeeable		User		Yes	5430557
Oct 13 23 W 081211 pm				Gmen hany, Gmen mid-level, Gmen lae	connection to destination, Speed of traffic, Volume of large vehicle staffic Unconformable sharing the read with vehicle staffic. Speed of traffic, Traffic volume, Parked cars impeding access		sidewaks Narrowed laves, Curb bump out, Wide sidewaks, Conversion to one way street, Time planning, Speed humps, Reduced parking	in the best case, this should demonstrate what could become one option to be considered as a complete smeet design	User		Max	
Oct 13.23 0831:25 pm	33, 333										765	543246
Oct 13 23 08:46:57 pm		car	No	Genen heavy, Green mid-level, Green Be		I don't hequent the area, ao the above list doesn't really apply to me	The planting. Cuto bump out, Narrowed lanes, Speed humps, Wide sidewaks, Convension to one way street, Reduced parking		Uter		Yes	5430612
Oct 13.23 W OkSE16 pm			No	Genen mid-level, Green Ite, Green heavy	Lack of direct connection to destination, Speed of traffic		Wide kidewake, Speed humps, Narowed lanes, Tree planting, Curb hump out, Reduced parking, Convention to one way kitelet		Uter		No	5430825
Oct 1323 W 081211 pm	ak	Stralier for kids	Yes	Gimen heavy, Green mid-level, Green Re	Unconfortable sharing the road with vehicle staffic, Unconfortable navigating intersections, Speed of staffic, Traffic volume		Wide sidewaks, Nanzwed lanes, Convenion to one way street, Tree planting, Curb bump out, Speed humps, Reduced particip	I don't prioritise induced particing because I nowly want to see the other things happen, not that i want to maintain loss of particing. Hiere or they are of the staffic on Concession scores me. Everyone gave so fast and there is no safe way to cross to get to the Memorial Cerma.	Uter		Yes	5430867
Oct 13.23 W 084214 pm		Bus, car	Yes	Green heavy, Green mid-level, Green Re	Lack of direct connection to destination, Not enough rest areas, Route is not scenic enough		Thee planting, Wide sidewalks, Conversion to one way attreet, Clath bump out, Speed humps, Reduced pasking, Narrowed lanes		Uter		Yes	5430217
Oct 13.23 W 101422 pm			Yes, but I am unsure what the City of Kingston means by green streets	Gmen heavy, Green mid-level, Green lite	Uncomfortable sharing the road with vehicle traffic. Unuse of which roates to take, Roate is not science enough, Parked cars impeding access		Thee planting, Wide sidewalks, Reduced parking, Conversion to one way street		User		Yes	5430775
pm Oct 13 23 10 4603 pm		Run	Yes, but I am unsure what the City of Kingston means by green streets	Gmen heury, Green mid-level, Gmen Re	Uncomfortable navigating intersections		The planting, Wide sidewalks, Curb bump cur, Speed humps, Conversion to one way street, Nancoved lanes, Reduced parking		Uter		Yes	5430830
pm Oct 13 23 1055240			164	Green mid-level, Green heavy, Green Be		nat well cleared of anowice/sharh in wintertime	Tise planting, Reduced parking, Wide sidewalks	the options were not sending different it likely increases pedestrian safety but what is green about a trailed pedestrian cossing?	User		Yes	5430829
pm Oct 14.23 W 121109 am			Yes	Ginen hauy, Grann mid-level, Gasen Ba	Unconformable sharing the road with vehicle traffic, Traffic volume, Parked cars impeding access		Reduced parking, Wide sidewalks, Narrowed lanes, Tree planning, Curb bump out, Speed humps, Convention to one way scheel		User	Yes		5430960
		The odd time I might run.		Ginen haavy, Ginen mid-level, Ginen las	Unconfortable charing the road with vehicle traffic, Unconfortable charing the road with vehicle traffic, Unconfortable navigating intersections, Route is not scenic enough, Parked cars impeding access			It my opinion, even the "union Heavy" specificated to Senar, we class to more creative in ways to make the tatent many given, more espipable, more scenic, and ultimately more attractive for active transport.	ller		10	6411000
					Decombatude nangang intersections, wear in na some encogh, Pawal cars inpeding access Uccombatable sharing the rand with vehicle soffic, Uncombatable nanigating intersections, Lack of direct connection to destination, Speed of traffic, Volume of large vehicle soffic	conshow), they just make things more dangerous, and less enjoyable.	nationersen, curboanyous, aperanerse, imeganing, interactionerse, Wide idexski, Nanceed lanes, Curb bump cut, Speedhumps, Reduced parking. The planning, Convention to one way toted	Bacase we have long built informations and communities that may on cars for their executed daysto-day, indiced parking has to be considered carefully - essentially lyocid passing we should be removing activity to be for or or backing their numbers with the main and execution them are undifferent materials and exemption to have short dark to be the their numbers with the main and execution. Them are undifferent materials and exemption to have short dark to be the short of the materials and the main to them are undifferent materials and exemption to have short dark to be the short of the materials and the short of the main of them are undifferent materials and exemption to have the dark to be the short of the short of t	Uter			0.708
Oct 14.23 W OK1858 am				Genen heavy, Green mid-level, Green Ite				be taken.	User		Yes	5431156
Oct 14 23 07:17:55 am			rea, but rain unbure what the CRy of Kingston means by green streets	Gmen Ibs, Gmen mid-level, Gmen hanvy	Unconformable sharing the road with vehicle traffic, Parked cars impeding access		Cuth bump out, The planting, Reduced parking, Convention to one way street, Wilde sidewake, Nantowed lanes, Speed humps		Uter		Yes	5421181
	ak, Bika, Skamboard		Yes	Gmen mid-level, Green Iba, Green havy	Uncontortable integrating the radii with vehicle static, Uncontortable navigative jintersections. Lock of deecr connection to destination, Speed of staffic, Ttaffic volume, Volume of large vehicle staffic, Parked cars impeding access			The Bith question is contraining.	Uter		Yes	5431192
Oct 14 23 08:02:30 am	ak, dite		Yes	Gmen mid-level, Gmen Naxvy, Gmen Re	Speed of traffic, Traffic volume, Volume of large vehicle traffic		Tree planting, Curb bump out, Speed humps, Wide sidewalks, Namoved lanes, Reduced parking, Convention to one way attest		User		Yes	5431206
Oct 14.23 W	alk, Mobility device, Silke, Inline or roller skares		Yes	Ginen haavy, Green mid-level, Green lite	Unconformable sharing the road with vehicle traffic, Unconformable snaighting intervencions, Unsue of which roads to take, Lack of disercis connections to distination, Not encode set areas, Speed of traffic, Traffic volume, Volume of large which traffic, Parket cask impediate access	Lack of active struet remancic imagnation. Active transport routes in Kingston need to have "end-to-end" connectivity to inake active transport sale, velable, and easy. There are many examples across Kingston where an excellent blae have about a how most sub-technic channes to a decembra	Reduced pashing, Narrowed lanes, Conversion to one way street, Wide sidewaks, Tine planting, Curb bump out, Speed humps	Jan excorage to see the dip oppose these these design protons for illiaments desirci. I would like to state my support for harder design factors including involution than "and protons to be that desirci care tartific, and desires the time Jably of the stress in icon religibuaricolis. Mer all, unseen are to propin, not just card My second comments that: The Johanness meetable like light Haskels bolter and populated likes) between Sir John A	User		Yes	5431209
Oct 14 23 08:35:02 am			164	Gmen heury, Gmen mid-level, Gmen lite	Unsure of which routes to take		The planting, Wide sidewalks, Nerrowed lanes, Curb bump out, Reduced parking, Conversion to one way street, Speed humps		Uter		Yes	5431235
am Oct 14.23 W 0902249 am			144	Gmen mid-level, Gmen heavy, Green las			Thee planting. Curb trump out, Wide sidewalks, Namound lanes, Reduced parking, Speed humps, Convension to one way insert		User		Yes	5431261
		Car		Gasen Ins, Grasen mid-laval, Grasen hasay	Unconfortable sharing the road with vehicle staffic, Unconfortable maigging intersections			I stopped filling out the survey because its format forces me to aniest options that save not accorption the stores in this same ane means consider, hearing burged for cubic at immediate aniest in the middle of the assess will create a rightmane for plans and firmucks and care trying to margem it will reduce already limited parting () dont water my tax dollars going to this	User		Yes	5431373
Oct 14.23 W 08:15:49 am				Green mid-level, Green heavy, Green he			The planting, Cuth bump cut, Reduced parking, Wide sidewalks, Nanowed lanes, Conversion to one way street, Speed humps	for the roads instead	User		Yes	5431326
Oct 14.23 085421 am		Car. I am disabled and as the minority voice, no one in the oby seems to understand that our voices should also				Heavy tree canopy block the sun - perpetual mold and		Genen streets could Re-resolved				
Oct 14 23 10:07:59 am		Be considered in any and all design concepts. Otherwise the city will inadvectently allenate me from living in my cen community.		Genen Iba, Green mid-level, Green heavy		Heavy the canopy block the sun - perpendial mold and mixture. Sun is needed. Provides people with much needed ultamin D through the skin - reduces anxiety and depression.	Curb bump out, Wide sidevaliks, Speedhumps, Conversion to one way street, Reduced parking Nernaeed larves, Tree parting		User		Yes	5431346
Oct 14.23 W 10:11:59 am				Geen mid-level, Green heavy, Green he	Unconformable sharing the read with vehicle staffic, Parked cars impeding access		Conversion to one way street, Tree planting, Wide sidewalks, Reduced parking, Speed humps, Nanceed lanes, Curb bump out		Uter		No	5431353
	aik, Mability device		Yes	Gmen haavy, Green mid-level, Green Iso	Unconformable sharing the read with vehicle staffic, Nor encode set areas, Volume of large vehicle staffic, Parked cars impeding access		Wide sidewaks, Tree planning, Conversion to one way street, Reduced parking, Speed humps, Nanceed lanee, Curb bump out		Uter		Yes	5431369
Oct 14 23 W 11:25:20 am	ak, dita		Yes	Gmen heavy, Green mid-level, Green Be	Unconfortable sharing the read with vehicle staffic, Unconfortable navigating intersections, Speed of staffic, Traffic volume, Volume of large vehicle staffic, Parked cars impeding access		Wide sidewake, Nanowed lanes, Reduced parking, Carb bump-out, Speed humps, Tree planting, Convension to one way Interest	while these green them are excellent (especially the green "heavy" design; the fact that as an widely used by posterina, and other active transportation methods have to "comprensial" which can static, making hot people which on't each live it the assist a housement who lives no foremance, lived live to use the discormer built, or class con the trans, but more to coady access the city. The areas people live include the designed for people. Note that one coads: a will also a and an aread case betweet and channels when the normality classifier. Unleast, but must be also are coals; case at any anadia case betweet combined to the normality classifier. Unleast, but must be also are coals; case at any anadia. Case betweet combined to the normality classifier. If you take any classifier and access.	User		Yes	5431501
Oct 14.23 W 11:28:27 am			Yes, but I am unsure what the City of Kingston means by green streets	Ginen haavy, Green mid-level, Green Ita	Unconfortable sharing the read with vehicle traffic, Unconfortable navigating intersections, Parked cars impeding access		Thes planting, Wide sidewalks, Cuth bump car, Reduced parking, Nanceed lanes, Speed humps, Convention to one way attent		User		No	5431502
001 14 23 W 01.0825		But.	Yes, but I am unsure what the City of Kingston means by green streets	Green heavy, Green mid-level, Green Ba	Not enough rest areas, Roue is not scenic enough, Traffic volume, Parked cars impeding access		Tree planting, Reduced parking, Conversion to one way street, Namoved lanes, Curb bump cut, Speed humps, Wide adreadils.	Aplanter and a bench do not a green space make.	User		Yes	5431711
pm Oct 14 23 0322:42 pm			Yes, but I am unsure what the City of Kingston means by green streets		Speed of suffic, Traffic volume, Parked cars impeding access		Reduced pasting, Wide sidewalks, Speed humps, Conversion to one way street	Reducing speed finits and permitted parking is not effective if there is no enforcement of those rules. Kingston needs to up as game dismatically in that regard. Who will naminary garden spaces and trees once planted?	Uter			5431801
00122.42 pm 0015423 pm		Daymak ebike moped		Geenheay		Terrible raad conditions for bikes. Eg mack st.		Contain ament ann eacluded. Eig the chy does not allow me to plant a new me in four due to cwethead wines. Unies at the conjust Forstance or bits unclear. Thomas for your terms	User		Yes	5432039
				Green Its, Green mid-level, Green heavy			The planting. Cutb bump out	Interest for your times	Uter		Ye*	5423941
Oct 14.23 0523:27 pm							Hele parting, cuit tump out Thee planning, Cuit tump out, Speed humps, Wide sidewake, Nenowed lanes, Reduced parking, Convention to one way toted					
Oct 14.23 W 07:1505 pm				Genen middievel, Ganen heavy, Genen Ba					User		No	5432236
Oct 14 23 W 02:15:45 pm				Genern heavy, Green mid-level, Green Ba	Traffic volume, Parked cars impeding access		Wide sidewaks, Tine planning, Reduced parking		Uter		Yes	5432239
Oct 14 23 08:52:08 pm	ak		Yes	Green heavy, Green mid-level, Green the	Unconfortable studyating intersections, Nor encode was asses, Rouse is nor science encode, Speed of traffic, Traffic volume, Volume of large vehicle staffic, Pasied cars impeding access	•	Wide sidewake, Carb-bump-out, Speedhumps, Tree planting, Convenzion to one way street, Namowed lanes, Reduced parking		Uter		Yes	5432483

Ocr 14 22 Wak Ok 15 14 pm		Yes	Green heavy, Green mid-level, Green lite		nathing, just prefer slower traffic, more trees and biodiversity	Speed humps, Conversion to one way street. Thee planting		User		Yes	5432538
Oct 15 22 Walk, Silke Ok 48:13 am		Yes	Green mid-level, Green heavy, Green Be			The planting, Wide sidewalks, Reduced parking, Nanowed lanes, Curb bump out, Speed humps, Convension to one way attent	Current there speed reduction markers along the side of the streets are dargerous for cyclists and drivers. No parking cobes to the markers causes while to travel into oncoming staffic. Dedicated cycling lanes have significantly improved safety along Brock and Johnson streets.	User		No	5432910
Oct 1522 Wak 075738 am		No	Green lite, Green mid-level, Green haavy	Route is not scenic enough, Speed of traffic		The planting, Wide sidewalks, Conversion to one way street, Cuth bump out, Nanoeed lanes, Reduced parking, Speed humps		Uter		Yes	5432830
Oct 15.22 Walk, Bike 08:56:24 am		Yes, but I am unsure what the City of Kingston means by green streets	Gasen hazuy, Gasen mid-level, Gasen lite	Speed of suffic		Reduced parking, Narowed lanes, Wide sidewaks, Curb bump-out, Tise planning, Speed humps, Convension to one way areast	All these improvements would be great. I think the single best feature in the concepts is the raised pedemicer crossings which we should trast implementing as widely as possible.	User	Yes	Yes	5432977
Oct 15 22 Walk, Biles Oktobeni am		Yes, but i am unsure what the City of Kingston means by green streets	Green hausy, Green mid-level, Green Ba	Uncomfortable sharing the road with vehicle traffic, Route is not scenic enough, Traffic volume, Parked cars impeding access		The planting, Convention to one way street, Wide sidewalks, Narrowed lance, Curb bump out, Reduced parking, Speed hanpa		User		No	5432999
an Oct 15 22 Wak Oddit 14 an		Yes, but I am unsure what the City of Kingston means by green streets	Green haavy, Green mid-level, Green like	Unconfortable sharing the road with vehicle traffic, Roote is not scenic enough, Speed of traffic, Traffic volume, Volume of large vehicle traffic		The planning, Wide sidewalks, Speed humps, Conversion to one way street, Reduced parking, Nanowed lanes, Curb hump out		User		Yes	5433021
an Oct 15 22 05 27 26 05 27 26			Gmen hausy, Green mid-level, Green lae	Unconformable sharing the read with vehicle staffic, Unconformable snaligating imenactions, Lack of disect connection to destination, Speed traffic, Traffic valume, Valume of large vehicle staffic, Parked cast impeding accesses		Reduced parking, Narrowed lanes, Speed humps, Wide sidewaks, Tree planting, Curb bump cut, Convention to one way asset	Please account for the potential additions of bike lanes/tailed bike paths	User		Yes	5433607
			Gimen hazuy, Green mid-level, Green Be	Volume of large vehicle traffic, Parked cars impeding access Unconformable sharing the rand-with vehicle staffic, Unconformable analyzing immerscitions, Loci of direct connection to destination, Not enough rest ameas, Speed of traffic, Tatific volume, Volume of large vehicle staffic, Parked cars invedentia access		Reduced parking, Narrowed lanes, Conversion to one way street, Speed humps, Tree planting, Wide sidewalks, Curb bump cut		User		No	5433759
Oct 15 22 02 2427 pre 07 16 29 Welk Bits			Gaeen heavy, Green mid-level, Green Ba	tallic, Tallic volume, Volume ol large vehicle traffic, Parked cars impedino access Unconfortable sharing the trad with vehicle traffic, Unconfortable subgrang imenactions, Unuare of which routes to take, Lack of direct connection to destination		Namowed lanes, Curb bump out, Speed humps, Wide sidewalks, Reduced parking. The planning, Convension to one way gased		User		10	611441
Oct 16 22 06/22/27 am										Yes	
Oct 19 22 Walk, Bike 07:16:19 am			Gmen hasuy, Green mid-level, Green Be	Unconfortable sharing the rand with vehicle staffic, Unconfortable savigating intersections, Panked cars impeding access.		Wide sidewaker, Tree planting, Curb bump out, Speed humps, Namoved lanes, Reduced parking, Convention to one way titleet		User		Tes	999673
Oct 19 23 Oktitiski am		Yes	Gmen hawy, Green mid-level, Green Be	Unconfortable sharing the read with vehicle traffic. Luck of direct connection to destination, Speed of traffic, Pashed cars impeding access			Jecual cycle noe in Willemanille I find take dag as with ny child. Cars on Pricess St. an not very aware of cyclics. These are often can copped in the bisenes, Connecting to not test or of Princes St. to the shopping centre, the VMCA on the cliniting give is difficult to do without role go in cline allo.	User		No	5434539
Oct 19220 1020806 am		Yes	Green haavy, Green mid-level, Green Ba	Unconfortable sharing the read with vehicle traffic, Unconfortable navigating intersections, Speed of traffic) have a small child, so biking with her on the streets is nerve- wracking.	The silaring Speed humps, Wide sidewalks, Curb hump out, Conversion to one way street, Narrowed lanes, Reduced parking		User		Yes	5434676
Oct 16 23 Walk 11 22 23 am		Yes	Green mid-level, Green Ba, Green hasvy	Unconfortable sharing the road with vehicle traffic. Speed of traffic, Traffic volume, Volume of large vehicle traffic		The planting, Speed humps, Wide sidewalks, Curb bump out, Conversion to one way street, Reduced pasking, Narrowed later		Uter		Yes	5434884
Oct 1922 Walk, Bike 121058 pm		Yes	Gareen heavy, Green mid-level, Gareen lite	Unconfortable sharing the road with vehicle traffic, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Pasked cars impeding access		Reduced parking. The planning, Speed humps, Wide addewalks, Convention to one way street, Curb hump-out, Narrowed lances	1 May support the convention of Prosenac Str to generatizet and would like to see this more when in the Williamshile neighbourhood to thorour more active transportation. I five on Albed Streek, which I know will always the basic because of the connection to Occcession Str. is a hanking option for less traffic on neighbouring streek would be most welcome.	User		Yes	5435297
Oct 17.22 Walk 04t 2259 am		Yes	Green lite, Green michievel, Green heavy	Uncomfortable sharing the road with vehicle traffic		The planning, Wide sidewalks, Speed humps, Conversion to one way street, Curb-bump out, Namwed lanes, Reduced parking	More green space is great, but please don't reduce parking spon.	User		Yes	5437409
	private vehicle (electric)	Yes	Gimen hazuy, Green mid-level, Green Ba		ny own mobility issues: until I developed waking difficulties, I waked through the Dismic Inequenty, auciding areas with high tatific volume	Speed humps, Reduced panking, Curb hump cut, Wide sidewalks, Tree planning, Narrowed latest, Convention to one way attest		User		Yes	5438692
Oct 17 22 Walk, Biles, Inline or roller skates 602659		Yes	Green heavy, Green mid-level, Green lae	Unconfortable sharing the road with vehicle staffic, Unconfortable neighting intersections, Route is not scenic enough, speed of staffic		Narrowed lanes, Curb bump out, Speed humps, Tree planting, Wide sidewalks, Reduced parking, Convension to one way gated		User		Yes	5438711
0020000 pm 00217222 0022234 pm			Green mid-level, Green heavy, Green Be	Unconfortable sharing the road with vehicle staffic, Unconfortable staring the road with vehicle staffic, Unconfortable staring intersections, Traffic volume			Low that you're uning widence based methods to increase use of public spaces! We low Smorg Towns and Nat Just Blael Incuding mole mic'rea budding with 3 bitm with and atore froms or changing zaming to allow coffee shopsings wull crease a wordf. I weals comunity.	User		Yes	5428043
			Green mid-level, Green haavy, Green ha	Unconfortable navigating intersections, Ttaffic values Unconfortable sharing the read with vehicle traffic, Unconfortable navigating intersections, Route is not scenic enough. Ttaffic values		hungs Cuth bung bat, Wide sidewalks, Thee planting, Nanowed lanes, Reduced parking, Conversion to one way street, Speed hungs		User		Yes	groun
Oct 17 22 Wak ok1002 pm								User			AJAN J
Oct 19.22 Oct 11.22 am			Gmen hasuy, Green mid-level, Green Be	Uncomfortable sharing the read with vehicle traffic, Uncomfortable maligning immensions, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access Uncomfortable sharing the read with vehicle traffic.		Reduced pasking, Wilde sidewake, Nanowed lanee, Tree planting, Curb bump out, Speed humps, Convention to one way areast		User		No	5640401
Oct 18 23 Walk, Bike 10.41:27 am			Gmen hawy, Green mid-level, Green Be	Unconfortable sharing the tradit with vehicle staffic, Unconfortable manipating intersections, Lack of direct connection to destination, Parked cars impeding access			hope fur this is done for more streets in the neighbourhood. There are so many pedestrians waking through the area to get to and from the University, so it is about that so much space is being given to cars.	Uter		Yes	5443839
Oct 19 23 Walk Bite 12 Michile pm		Yes, but I am unsure what the City of Kingston means by green streets	Gaven mid-level	Unconfortable sharing the road with vehicle traffic		The planting, Curb bump out	While Inits the mid-level jies is very stractive, i guestion whether the bump-outs wouldn't nake cycling a bit of a ingitament with instack indexing and the constant of languest in whether the stress degls. Litikes there is is constraining the mixing term?	User		Yes	5441387
Oct 19 23 Walk, Bike 02/06/01 pm	Children in stroller	Yes	Green haavy, Green mid-level, Green Ba	Uncontratate interng the rate with vehicle static, Uncontratile navigating intersections, Lack of deem connection to destination, Route is not scenic enough, Speed of staffic, Parked cars impeding access		Wide sidewake, Nanowed lanes, Reduced panking, Tree planting, Curb bump cut, Conversion to one way street, Speed Nanpa	demonstrates to care that this the grean street prioritizes acrive temporation. The internet close with Princess Street would benefit than a ANU approde or nate-prodectings couplings to help people couples coups between the Mandal Caretra and Uccaria Park. This if local readents were given the option to donate forboardbate to these added costs that there would be conflicture thread model.	Uter		Yes	54461190
Oct 2022 Walk 024056 pm		Yes	Geeen mid-level, Green heavy, Geeen lite	Uncomfortable sharing the road with vehicle traffic, Route is not scenic enough, Traffic volume		The planting, Convention to one way street, Wide sidewalks, Reduced parking, Speed humps, Nanceed lanes, Curb bump out		User		Yes	5450270
Oct 20 22 Walk, Bike det 9260 pm		Yes	Green midrievel, Green heavy, Green Ba	Unconfortable sharing the road with vehicle traffic, Traffic volume, Parked cars impeding access		The planting, Wide sidewalks, Curb bump our, Namoerd lanes, Reduced parking, Conversion to one way street, Speed humps		User		Yes	5453813
Ocr2222 Wak 922140 pm		Yes	Green Ibs, Green mid-level, Green havvy	Unconfortable sharing the road with vehicle staffic, Unconfortable multipating immerscience, Not encough test areas, Speed of table, Traffic volume, Volume of targe vehicle staffic, Panked cars impeding access	Long on seam incost at the scoring Green apartment complex the Speed of Vehicles just on Elimenoid Street is anociase and Traffic Neasures should have been put in place like a Digital Speed Sign telling Driver that they are		Track Receptories and Rest out Stations to help reduce liter along the stress was not part of the planning that I could see and we need more of them. 🛞	User		Yes	5456192
pn Oct 22 23 Walk, Bike 955:556 pn		Yes	Green mid-level, Green Ite, Green havvy	Uncomfortable sharing the road with vehicle traffic, Speed of traffic, Traffic volume		Tree planting, Speed humps, Wide sidewalks	Perspecial for bicycle lane on history arms is an encouraging, but traffic speech are too bast curserly and have are to table (agt institute) of Princess by adding speech using and more generary From Yate to Concession along the Memodal park weather to concession and adding immunes, which are and a table to the posteriories and cycles. Which is along which the east of a waiting to the park gene inquires discloyed the conces. Dog waiking would also benefit toon a seast colewaik to concession to the speech gene in the more concession.	User		Yes	5456262
pn Ocr2322 Wak, Bite 042857 am		Yes	Green haavy, Green mid-level, Green Ba	Unconformable sharing the mast with vehicle staffic, Rouse is not scenic enough, Speed of traffic, Traffic volume, Volume of large which maffic, Parked cars impeding access			to combine a continuous roale acount the sank provide. Using Princess Smeet Southeast of Princess & Division would be a great starting point. 1 way street, induced parking, with widened colonwalks, genergaper planting, and banches. This school be the Princess of the way from Dimals for the Princess & Concession/Bain Interaction. This school be net Princess of the way from Dimals for the Princess & Concession/Bain Interaction. This for your house vote	User		No	5456735
		Yes	Green heavy, Green mid-level, Green Ito	or ange venues mano, vrawes cars impeding access Unconductable sharing the read with vehicle staffic, Speed of traffic, Traffic volume, Parked cars impeding access		Conversion to one way street, Reduced parking, Speed humps, Tree planting, Wide sidewalks, Curb bump-out, Narrowed lanes		User	Yes	Yes	5457528
Oct 23 23 01 23 20 2 pm			Gmen haury, Gmen mid-level, Gmen Ite	Unconfortable sharing the read with vehicle staffic, Unconfortable sharing the read with vehicle staffic, Unconfortable marigating imensections, Lack of direct connection to destification, Volume of large vehicle staffic, Parked cars impeding access				User			
Oct 23 23 01 24 10 pm					Walking and cycling areas are too close to vehicle traffic.	Reduced parking, Convention to one way street, Namued lanes Wide sciences, Namues I barres, Reduced parking, Traes planting, Speed humps, Curb hump out, Convension to one way street	In not sure that speed humps or cub bump case, help or excourage cyclics as they are treated as care. If they was			~	
0cr 22 22 02/20:00 pm			Green heavy, Green mid-level, Green lae	Uncontortable sharing the read with vehicle staffic, Uncontortable navigating intersections, Unuse of which reades trades, Lack of discretionnections to distiliation, Roate is not scenic enough, Speed of traffic, Traffic valume, Volume of large vehicle traffic, Parked cars impeding access	Impossible to cycle with children. Also, very horno waik in areas which are abover of mature trees during the summer.		Silesbraic the fact in a decise serial "On-we make seen to lead to much facer speed, for example, Johnson and Back Sawes, as I don't this file region and the set of	User		Yes	5458416
Ocr2222 Wak, Bike 0k1042 pm			Green heavy, Green mid-level, Green lite	Unconforable sharing the road with vehicle staffic, Traffic volume		Namoued lanes, Curb hump-out, Convention to one way stream		User	Yes	Yes	5459425
Oct 23 22 Walk, Silke Ok 64555 pm		Yes	Green heavy, Green mid-level, Green Ba	Unconforable sharing the road with vehicle traffic, Speed of mellic, Traffic volume		Speed humps, Cuts bump out, Nanoeed Ianes		User		Yes	5460436
Oct 23 22 Walk, Silke 0425617 pm		Yes	Gmen hawy, Green mid-level, Green Be	Unconfortable sharing the read with vahicle staffs, Unconfortable navigating intervections, Not enough stat assas, Route is not comic enough, Speed of traffs, Parked (one impeding access Unconfortable sharing the markulm vahicle staffs		The planting, Cub hump out, Namowed lanes, Conversion to one way smeet, Reduced parking, Wide sidewake, Speed humps		User		Yes	5460663
Oct 22 22 Walk, Bike 0k5221 pm		Yes	Gmen hanry, Gmen mid-level, Gmen Ba	Unconfortable sharing the rand with which staffs, Unconfortable navigating intersections, Uncure of which routes to take, Lack of direct connection to destination, Speed of traffic, Traffic volume, Parked cars impeding access		Reduced parking, Carb bump out, Speed humps, Time planning, Wide sidewalks, Nanzued lanes, Convention to one way attent		User		Yes	5460823
Oct 23 23 1058223 pm		Yes	Gmen haug, Green mid-level, Gmen lite	Unconfortable sharing the read with vehicle traffic, Unconfortable navigating intersections, Lack of direct connection to destination, Parked cars impeding access	Lack of secure bike parking	Namowed lanes, Reduced parking, Conversion to one way street, Wide sidewalks, Tree planning, Curb bump out, Speed humps		User	Yes	No	5461178
pri Oct 34 23 01 58 10 pri		Yes	Green heavy, Green mid-level, Green Ba	Uncomfortable sharing the road with vehicle staffic, Uncure of which routes to take, Lack of direct connection to destination, Rouse is not scenic enough, Volame of large vehicle staffic, Pasked cars impeding access		The planting, Speed humps, Wide sidewalks, Raduced parking, Carb bump out, Conversion to one way street, Narrowed large	Please don't do seasonait/oblands. As a cyclist ifind them unsale and confusing and hard to adapt even year. When doing bumpoon please-ensues that you yat blie icons on the road is that cans understand that blans will be "tailing the law" and rarra' ranging between the tompount and the cube. It's so designment tog black and furth but cans expect & d cyclies.	User		No	5463756
pm Oct 25 23 0925 17 am	Run			Visconformale sharing the read with vehicle suffic. Unconformable sharing the read with vehicle suffic. Unconformable navigating immensions, Lack of direct connection to degradination, Speed of suffic, Traffic volume, Volume of large vehicle suffic, Parked cars impeding access		Speed humps, Conversion to one way street, Reduced parking, Wide sidewalks, The planning, Cuth bump our, Narrowed lanes		User		No	5466914
an Oct 35 22 Wak 004059 an		Yes	Gmen heavy, Gmen mid-level, Gmen Ba	Volume of large whicle traffic, Parked cars impeding access Uncomfortable sharing the road with vehicle staffic, Lack of direct connection to destination, Rouse is not scenic enough. Speed of traffic, Volume of large which a traffic		Tree planting. Cuts bump out	Tam a patishioner of the Sir Plancoix Casholic Church on Formerica Street. The new high-rise apartment building is almost on top of the church. It has been built a few inches away from the parameters of the church building Why would the City permit a building to be built in cites parameters/P New and the parameters?	User		Yes	5466997
004159 am Oct 25.22 1022749 am			Green haavy, Green mid-level, Green Bre	Speed of traffic, Volume of large vehicle traffic, Uncomfortable sharing the read with vehicle traffic, Uncomfortable snalgering imministences, Lack of direct connection to destination, Speed of traffic, Volume of large vehicle staffic, Parked cas impeding access		Conversion to one way street, Reduced parking, Cuth burnp out, Tree planning, Wide sidewakes, Nantowed lances, Speed Juanga		User		Yes	5467123
			Gasen haavy, Graen mid-level, Gasen Ite					line -			
Oct 35 22 07 22 23 pm				Unconfortable sharing the radiutily which staffic, Unconfortable snajping investoriar, Values of ange which staffic, Pasked can impeding access			Geen streets no only bour on ading messigneeusy, but also focus on improving sharbors for potentinas. This free most to be moving had only have any street potenting of update shareads, poting gree streets on streets with parkabalding when people would want to walk to, not just streets with home) here his can be non-come as they as a nonerly benerative to assess the shareau sound and it			784	
Oct 26 22 07 25 28 pm			Genen Ba, Green mid-level, Green heavy	Unconfortable sharing the read with vehicle staffic, Lack of destroamention to destination, Speed of traffic Unconfortable sharing the read with vehicle staffic,		The planing, Wide sidewalks, Conversion to one way street, Narrowed lanes, Speed humps, Reduced parking, Curb hump cur		User		Yes	5472187
Ocr3623 Wak alke akkt31 pm		Yes	Green heavy, Green mid-level, Green Re	Unconfortable sharing the read with vehicle suffic, Unconfortable snaligting immunctions, Route is not scenic encough, Speed of staffs, Traffic volume, Valenae of large vehicle suffic, Pasked cars, impeding access		Reduced parking, Narrowed lanes, Tree planting, Curb hump cut, Wide sidewake, Conversion to one way street, Speed humps	We need to make our streets less attractive to cars.	User		No	5472435
Oct 26 22 Ost 50 20 pm		Yes	Gmen hawy, Green mid-level, Green Be	Unconstantable sharing the read with vehicle traffic, Lack of direct connection to destination, Parked cars impeding access		Comunition to one way street, Carb bump-out, Thee planting, Speed humps, Narrowed lanes, Wide sidewake, Reduced parking	Namibigud / walking / active transportation paths mixed to level of Lidenakin as they coust internations to minipace with drivers the fact that they are shaling space with other forms of transportation. It also acts as a speed bump.	User		Yes	5472588
Oct 27.22 Walk, Bike 11:48:44 am		Yes	Gmen haury, Green mid-level, Green Ba	Unconfortable sharing the road with vehicle staffic, Speed of traffic, Traffic volume, Volume of large vehicle staffic, Parked cars impeding access		Wide sidewake, Curb hump-out, Titee planning, Reduced parking, Nancoved lanee, Conversion to one way street, Speed Nanpa		User		No	5473788
Oct 27 22 025705 pm		Yes	Gmen haury, Green mid-level, Green Be	Uncomfortable sharing the road with vehicle traffic, Lack of detect connection to destination, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access.		The planting, Conversion to one way street, Wide sidewalks, Narrowed lanes, Curb bump out, Reduced parking, Speed hamps		User		Yes	5475228
pn Oct 27 22 Wak 052210		Yes	Green mid-level, Green heavy, Green Be	Uncomfortable sharing the road with vehicle traffic, Route is not scenic enough		Namoued lanes, Conversion to one way street, Speed humps, Cuth bump out, Tine planning, Wide sidewake, Reduced parking	Ranking in no. 6 is hand to do, it's more of a yeaho. I am in favour of all of them but't depends on how they are combined and is context.	User		No	5475241
pa											

		Yes	Gmen heavy, Green mid-level, Gmen Re		Sidewalk uneven and painful to traverse in mobility device	Wide sidewalks, Tire planting, Curb bump out, Reduced pashing, Namowed lanes, Speed humps, Convension to one way asseet		User	Yes	\$475270
Oct 27 23 0254 64 pm	Internation Witness like but will not user for roughling			Parked cars impeding access		atteet Wele sidewaks, Tires planning, Curb bump our, Conversion to one way atteet, Nanosed lanes, Reduced parking, Speed hangs		Car	765	5475270
Oct 27 22 0258t0 pm	fam ranky in Williamsville, but will answer for possible expansion to other parts of the city.				Can't speak for Williamsville. Generally a clear sidewalk and pleasant waking atmosphere are what is important.			User	Yes	
0cr 27 22 055842 pm	Car		V Gasen haavy, Green lite, Green mid-level	Parked cars impeding access			Provide barner transit options if you want to limit which mattic	User	Yes	5475133
Oct 27 23 de2tt28 pm			V Green nid-Inset Green its, Green havry	Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access		Curb bump curt, Speed humps, Tree planting, Convention to one way street, Wilde sidewake, Reduced paking, Narrowed lates		User	Ves	5475349
0ct 27 23 0422 43 pm	Car. There is nothing in the neighbourhood that involves Issimply pass through	ma. Yes	Green mid-linuel, Green heavy, Green he			Conversion to one way street, Curb bump out, Narrowed lanes, Tree planting, Speed humps, Wide sidewalks		User	No	5475368
Oct 27 23 0425:14 pm		Yes, but I am unsure what the Cit of Kingston means by green stree	V _{Bh} Green haavy, Green mid-level, Green be	Unconfortable sharing the road with vehicle staffic		Wide sidewake, Tree planning, Reduced parking, Curb hump out, Narrowed lanee, Conversion to one way street, Speed humps		Uter	Yes	5475380
Oct 37 23 Bike 043616 pm		Yes	Gineen like, Gineen mid-level, Gineen heavy	Unconfortable sharing the road with vehicle traffic, Speed traffic	d	Wide kidewaks, Tree planning, Conversion to one way street, Curb bump out, Nantoend lanes, Reduced parking, Speed Namps	When you and to the day of the other data and description to the other family and the	User	No	5475386
Oct 27 23 Oct 26 25 pm D		Yes		Route is not scenic enough			Whower came up with the idea of Bump Outs, dot a great deservice to transportion planning. Bump Outs remove the mail, their odd angles make non-planning very official, great populated with Johns, graphing, greating these which become prime areas for zone constraint, make an enging quarks for larger which Global A nonceme panding. "Alway sense tacks as the bed camping very darker begins on got on Willing had to traverse drive aff the way can of princess, because II advised to our con contracts." A control reserves drive marks the campion of the sense of the sense that the sense of the sense o	User	Yes	5475478
Oct 27 23 Walk, Bike 042467 pm		Yes	Gineen heavy, Green mid-level, Green Ite	Lack of direct connection to destination, Route is not sceni enough, Speed of traffic, Traffic volume, Volume of large vehicle traffic	e	Wide sidewakes, Tree planning, Narrowed lanes, Reduced parking, Curb bump out, Speed humps, Convension to one way asset		User	No	5475529
Oct 27 23 Walk, Bike 04:019 pm		Yes, but I am unsure what the Cit of Kingston means by green stree	V gis Green heavy, Green mid-level, Green ba	Uncomformable sharing the road with vehicle staffic. Nor enough rest areas, Route is not scenic enough, Volume of large vehicle staffic		Raduced passing, Wide sidewalks, The planting, Speed humps, Convension to one way street, Nanceed lance, Curb banp out		User	No	5475542
- Oct 27 22 Walk 06/201 pm		Yes	Gmen las, Green mid-level, Green haavy	Not enough rest areas, Route is not scenic enough		Wide zidewaka		User	No	5475550
Oct 37 23 65 17 537 pm	CAR	Yes, but I am unsure what the Cit of Kingston means by green street	V Gisen hany	Lack of direct connection to destination		Tise planting		User	No	5475755
pn Oct 27 22 Bite Dr.		Yes	Green heavy, Green middevel, Green Be	Unconfortable sharing the read with vehicle staffic, Pankad cars impeding access		Namowed larves, Speed humps, Restuced parking, Wilde sidewaks, Tree planning, Curb bump cur, Convension to one way asseed		User	Yes	5475874
pm Oct 27 23 05 8124 pm		Yes	Gmen heavy	Unconforable sharing the read with vehicle traffic, Speed- maffic, Traffic volume, Volume of large vehicle maffic, Parke care impeding access	d d	Reduced parking, Wide sidewalks, Curb bump out, Thee planting, Namowed lanes, Conversion to one way street, Speed Namps		User	No	5475807
Oct 27 23 04:00-88 pr. Walk, Bike		Yes	Gisen haavy, Green Ille, Green mid-level	Unconfortable sharing the raad with vehicle suffic, Unconfortable salighting intersections, Speed of suffic, Volume of large which suffic		The planting Speed humps, Conversion to one way smeet, Cuth bump-out, Narrowed lanes, Reduced parking, Wide sidewalks		User Yes	Yes	5478236
dict2548 pm Oct 27 22 0422553 pm		Yes	Genera Ras, Genera mili-Servel, Genera heavy	Volume of large vehicle traffic Uncomfortable navigating intersections		The planting Wide sidewalks, Speedhumps, Conversion to one way street, Curb hump out, Nantuved lanes, Reduced particip	There are a number of multi-unit homes in the area. Dayline parking for residents as well as for commonly used the important store parks along the street or with name latest. Show remeal	User	Yes	5478548
		No	Gmen heavy, Green mid-level, Gmen lite	Unconfortable sharing the read with vehicle staffic, Unconfortable navigating intersections, Speed of staffic, Tatific volume, Volume of large whicle staffic, Parked cars innerden access.		Cust bump cut, The planting, Wide sidewalks, Nanceed lanes, Reduced parking, Speed humps, Convention to one way Issued		User .	Yes	5478/292
Oct 27 23 0255.64 pr Oct 27 23 white			Green to, Green mid-level, Green heavy	Intelligencess	Failure of police to enforce traffic rules, (excessive speeding, failure to anop at stop signs, annuing red lights and stop signs, etc.), which includes people on bicyclest Foreience Steel has too much traffic tobe made into a	ateet The planting Nantowellanes, Curb bump car, Reduced pasking, Conversion to one way street, Speed humps, Wide sällevalik		-		10000
Oct 27 23 0754234 pm		Ver hur i se une aler de Ce		Unconfortable sharing the road with vehicle staffic, Not			clear the sidewake of anow in the wither season. Another problem is that there are no trach bins for liter, so the streets are stream with trach. Again, THIS SURVEY IS AFRAUD!	User HD	No	5474622
Oct 27 23 086520 pm		of Kingston means by green stree	V galan havy, Green mid-level, Green Na	Unconfortable sharing the read with vehicle staffic, Not enough sen areas, Route is not scenic enough, Speed of tarffic, Traffic volume, Volume of large vehicle staffic		Wide sidewaker, Tree planting, Narrowed lanes, Convention to one way street, Speed humps, Curb bump out, Reduced parking		User	No	5474622
Oct 27 23 0850537 pm		Yes	Geen heavy, Green mid-level, Green ite	Unconfortable sharing the read with vehicle traffic, Speed- traffic		Narrowed lanee, Conversion to one way street, Wide sidewalks, Reduced parking, Tine planning. Speed humps		Uter	No	5476669
Oct 27 23 0800 18 pm		Yes, but I am unsure what the Cit of Kingston means by green stree	V disen hany, Green mid-level, Green las	Not enough next areas, Route is not scenic enough, Speed of traffic, Parked cars impeding access		The planing, Wide sidewalks, Narsowed lance, Reduced parking, Cuts bump our, Speed humps, Convension to one way attent	you wasts do more of this all over twen, including the suburbs. I think this website might help you with ideas https://dachogologides.gle.com/	Uur	Yes	5476698
Oct 27 23 Walk, Mibility device 0936-80 pm		Yes	Green heavy, Green mid-level, Green Ite	Unsure of which sources to take		Convention to one way street, Tree planting, Wide sidewalks, Narrowed lanes, Curb bump-out, Speed humps, Reduced patking		User	No	5470804
Oct 37 23 Walk, Mubility device 500804 pm		Yes	Ginen mid-leuel, Ginen heavy, Ginen he	Unconfortable navigating intersections, Not enough test amou		Wide sidewaks, Tree planting. Speed humps	When planting additional trees, please don't use calk trees because they shed acoms in the fail. These acoms are round and can cause fails when they are stepped on along a scienceak.	User	Yes	5474882
Oct 28 23 Walk Bid2117 am		Yes, but I am unsure what the Cit of Kingston means by green stree	V Generi lite, Green mid-level, Green heavy	Unconfortable sharing the road with vehicle staffic	Incorporate billing with sidewalk. In Europe that make it safer for billers.	Wide sidewaks		User	No	5477593
Oct 28 23 08 42 13 am	ar	Yes, but I am unsure what the Cit of Kingston means by green stree	V Gineen Stee, Green mid-level, Green heavy	Lack of direct connection to destination		The planting. Speed humps, Reduced parking, Wide sidewake, Conversion to one way areer, Cuth hump out, Narrowed Janue	The bump cost at intersections are a tendble ideal from the point of view of cycling on the steet, buckase they name the lane exactly view at cyclist needs space to regotate access to the lane, and prifer tuning view as an angle threat to cycling a differ curring themselves or proceeding straight through the intersection. Crowding every road user together at the joint a group of chick.	User	Yes	5477821
Oct 28 23 Waik 08 42 19 am		Yes	Gmen heavy, Green mid-level, Gmen Be	Lack of direct connection to destination, Route is not sceni enough, Speed of traffic, Traffic volume, Parked cars impeding access	⁶ poor snow removal on roads and sidewalks in winter months; intersections visually impassable for pedestrians	The planing Wide sidewalks, Reduced parking Speed humps, Cash bump out, Narrowed lanes, Convention to one way used	vehicular traffic that here ascounding speeding inclusion gravity on streams is violation of pome dry-leve restrictions, and increased demonstrations are not as way writinging by proteinstrains and cyclians. Furthermore, the chronic lack of oppore inserticidenait charring in writter months further impedes pedientica use. The difference between the measure of the Willianswelle amount of the clock for its or function insolution of clock in model. The measure the measure of the Willianswelle amount of the clock for its or function of the clock in the clock	Uter	No	5477762
Oct 28 22 Walk, Bike 08-6629 am		No.	Green heavy, Green mid-level, Green Ba	Unconfortable sharing the raad with vehicle staffic, Route i not scenic enough, Taffic volume		The planning, Wide sidewalks, Curb bump out, Namaeed lanes, Speed humps, Reduced parking, Convention to one way attent		User	Yes	5477777
Ocr.2822 Walk 1058.43 an		No	Ginen Iba, Green mid-level, Green heavy	Unsues of which sources to take, Lack of direct connection to destination, Not enough rest areas, Route is not science enough	•	The planning, Wide sidewalks, Curb bump out, Speed humps, Namowed lanes, Reduced parking, Convention to one way abased		User	No	5477977
001 28 22 12 21 21 pm		Yes	Ginen Illa, Ginen mid-lavel, Ginen heavy			saar Mite silanskin, Teeplening, Curlt hump ac, Narcaesl lines, Rickoell janlog, Speel hump, Convention to ore way and	(d) not see the value in many of these poposals, stars with, say calo bump out is see no value in these what's the point? planting in iso bat only if? In value/and if? is a cload other thipse, sound these suggests a work bein here is the point? planting a many data was a start was a set of the sound the iso and the set of the set of the what's the point? manued can set us and, like is will prove a generative during addre reader staff. Conc. so what's the mate's the point? a manued is and is in the set of the sound is the set of the	User Yes	No	5478228
pm Oct 28 23 12 48 47 pm		Yes	Green Re, Green mid-level, Green haavy			Conversion to one way street	coint' i ser to obt in those bolied thinders to white and so on wite indexatiz') can those, these and on-transmission Tapprocises the Child devises to cases the acide through the control of the control	User	Yes	5471017
pm Oct 28 23 0105:55 00 00 00 00 00 00 00 00 00 00 00 00 0		Yes	Green heavy, Green mid-level, Green Be		Kingston has a designed mattic system that is dejointed and miles heavily on vehicles iding	Wide sidewaks, Tree planning, Reduced parking, Nanowed lanes, Cuth bump out, Speed humps, Convension to one way Island		User	No	5478346
0cr 28 23 0cr 28 23 20		Yes, but i am unsure what the CR of Kinoson means by green stree	V Gasen haavy, Green mid-level, Gasen Ita	Unconfortable sharing the read with vehicle staffic, Unconfortable navigating intersections, Rose is not sceni enough, Speed of staffic, Traffic volume		Reduced parking, Cath bump-out, Time planting, Wide sidewalks, Namowed lanes, Speed humps, Convension to one way IRBet		User	Yes	5478557
		Yes	Gineen heavy, Green mid-level, Gineen Ba	erough, Speed of traffic, Traffic volume Route is not sceric erough		Cut bump out, The planting, Wide sidewalks, Reduced pasking, Nanowed lanes, Speed humps, Convension to one way asset		User	Yes	5479156
Ocr 28 22 pro Ocr 28 23 Waik Bike		Yes	Gmen hawy, Green mid-level, Green Re	Unconfortable sharing the road with vehicle staffic, Unconfortable navigging intersections, Speed of staffic, Traffic volume, Volume of large vehicle staffic			Tre supporties of all of the above spotons. In my view, packing throad-the summeriter content-sensitive. If there's a to of usage of on-enter parking on a particular block, the "foldor" caused by the parking does serve as a form of traffic calling. If the parking junct being used much (as is the case on my streed, by all means names the read-up and reduce the parking availability.	User	Yes	54731190
Oct 28 22 dit 1920 pro Oct 29 29 Walk Bila			Ganen midrived, Green heavy, Green Ba	Disconstrainer language lane vectors, upper or same, Traffic volume, Volume of large which ratific Linconformatie straining the rand with vehicle staffic, Lack of direct conversions to destination, Speed of staffic, Traffic volume, Parked cars impeding access		ather Conversion to one way street, Reduced parking, Cuth burnp.cut, The planning, Narrowed lanes, Wide sidewales, Speed humps		User	Yes	5473241
Oct 19 23 objecto pro Oct 20 23 Oct 20 2										
Ocr2922 Wak, Bka 075622 an			V ga Gasen haavy, Green mid-level, Gasen ite	Unconformable sharing the read with vehicle staffic, Roue i not scenic enough. Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked care impeding access		Wide sidewake, Tree planning. Speed humps, Cuth hump cut, Reduced parking. Narrowed lanes, Convension to one way attest		User	Yes	5479799
0cr3923 001425 am	l drive so Williamsville because taking a bike there is une	ale. Nex, but I am unsure what the Cit of Kingston means by green stree	V Gasen middeut, Green heavy, Gasen las	Unconfortable sharing the road with vehicle traffic, Lack of direct connection to destination, Route is not scienc enoug	p Places solicik my bike.		I note: It is to see additional pathe amount the city an opposed or districtly within the have (or heaves the firm result) stokes, where the heaves is also paint on the AKES shared Canadam. The other calculates, allowing the terminal of an early and write line distributions are then solves associated the waters. (Fibious to see a nice wide/sike and not travely income of all paint. A line gath world canadam the loop, allowing world the waters (Fibious to see a nice wide/sike and the travely income of all paint. A line gath world canadam to loop, allowing world the water and the set of the set of the paint command specie. Six John A world also become a to the most attractive it them are incorporated along the paint. This there are have have	User	Yes	5473837
Oct 29 23 09 22 09 am	Car	Yes	Geen mid-level				The map shoes residential housing if that is in fact connect. We need places to park	User	Yes	5479829
Oct 29 23 04/38/02 am		Yes, but I am unsure what the Cit of Kingston means by green stree	V ma Gineen heavy, Green mid-level, Gineen Ba	Unconfortable sharing the road with vehicle staffic, Unconfortable navigating intersections, Speed of staffic, Traffic volume, Parked cars impeding access		Web sidewalks, Tree planting, Nertowed lance, Speedhumps, Cuth bump out, Reduced parking, Convension to one way about		User	No	5479837
Oct 29 23 Walk, Bike 0054555 am		Yes	Ginen hazay, Ginen mid-level, Ginen Ite	Unconfortable sharing the read with vehicle traffic, Lack of direct connection to destination, Speed of traffic, Parked cars impeding access		Reduced parking, Namwed lanes, Speed humps, The planning, Wide sidewalks, Curb hump cut, Convension to one way asset	prame care present challenges for cycling (collisions, door openings, etc.) as well as forcing pedestions out on so the inserts to leve non so walk, especially when Queen's students are here. Parking restrictions and staffic tols should be implemented.	Liter .	Yes	5473068
Oct 29 23 Walk, Bike 1000-62 am		Yes, but I am unsure what the Cit of Kingston means by green stree	Y Green Ins, Green mid-lavel, Green heavy	Lack of direct connection to destination		Conversion to one way street. Tree planting, Curb bump out, Wide sidewalks	I'm not sure why benches would be required when Floorenac Park is right there, unless it's a different block you are controllering.	User	Yes	5479879
Ocr 29 23 10 22 04 am		Yes	Ginen haavy, Green mid-level, Ginen Ba	Route is not scenic enough, Speed of traffic, Traffic volume Parked cars impeding access	a,	The planting, Wide sidewalks, Curb bump out, Reduced parking Narrowed lanes, Convension to one way street, Speed Narrow		Uter Yes	No	5480041
Oct 28 22 125104 pm	idon't as I must drive to get there	Yes	Gineen haavy, Gineen mid-level, Gineen Ite	Lack of direct connection to destination, Parked care impeding access		Conversion to one way street, Wide sidewalks, Titee planting, Cuth bump out, Speed humps, Nanoved lanes, Reduced parking		Uter	Yes	5483205
Pen Oct 29 23 0f 26 12 pn		Yes	Gatern heavy, Green mid-level, Gatern las	Niz enough nest areas, Route is not scenic enough, Speed of traffic, Traffic volume, Parked cars impeding access		Reduced parking, Tree planning, Wide sidewalks, Speed humps, Curb bump-out, Conversion to one way street, Narrowed lanes		User	Yes	5480379
pm Oct 29 23 024134 pm		Yes	Ginen mid-level, Ginen heavy, Ginen Ba	Unconfortable sharing the road with vehicle traffic, Unconfortable navigating intersections, Traffic volume, Parked cars impeding access		The planting, Reduced parking, Curb hump-out, Wide sidewalks, Speed humps, Conversion to one way attent, Narrowed Jaces		User	No	5480518
pm Oct 29 23 0522 19 pm		Yes	Gasen hazay, Gasen mid-level, Gasen ita			Wide sidewaks, The planting, Namwed lance, Speed humps, Cuth bump out, Convension to one way street, Reduced parking		Uter	Yes	5483849
pri to pr		104	Genern haavy, Green mid-level, Green Ins	Unconforable sharing the road with vehicle traffic, Parkad cars impeding access		Nanceed larees, Curb bump-out, Speedhumps, Wide sidewalks, Conversion to one way street, Reduced parking, Tree planting		User	No	5480850
pn										

2 Walk, Bike		Yes, but I am unsure what the of Kingston means by green s	e City Green mid-level, Green heavy, Green Ite	Uncomfortable sharing the road with vehicle traffic, Uncure of which nourse to take, victures of large vehicle traffic, Parked cars impeding access		Conversion to one way street, Nanowed laces, Titre planting, Wilde sidewalks, Speed humps, Reduced parking, Curb bump out		Uter		No	54
like -		Yes, but I am unsure what the of Kingston means by green s	a City Green heavy, Green mid-level, Green lite	Unconfortable sharing the trad with vehicle staffic, Unconfortable saligaing interestions, Uncure of which trades to take, Lack of direct contencions to desidation, Traffic volume, Volume of large vehicle staffic		The planting, Convenion to one way street, Nanowed lanes, Cuth bump out, Reduced parking, Wide sidewalks, Speed humps	Any oppositely to iccrease the blockweaky of streams is a win, especially if plansing local native species. Would like to see less concerns in generation help capture tain surell and reduce pressure on city infrastructure during heavy participations.	Uter		Yes	s
Walk, ülke		Yes	Gasen mid-level, Gasen heavy, Gasen Ba	Parked cars impeding access	Construction	The planing Nanowerlanes, Curb bump out, Reduced parking, Wide sidewaks, Speed humps, Convension to one way asset		User		No	
3 Wak, Bike		Yes	Gasen heavy, Graen mid-level, Gasen Ba	Unconfortable sharing the read with vehicle staffic, Unconfortable natigating intersections, Rouse is not acceric encough, Speed of staffic, "Patiend cass: Impeding access vehicle staffic, Patiend cass impeding access		Speed humps, Nercoved lanes, Wide sidewalks, Curb hump-out, Reduced parking. Tree planting, Convention to one way asset	Raised pedestrian crossings should be at every intersection	User		No	
23 Bite		Yes	Gasen mid-level, Gasen heavy, Gasen Ite	Unconfortable sharing the read with vehicle staffic, Unconfortable narigging interestions, Lack of descr connection to destration, Speed of staffic, Traffic volume, Volume of large vehicle staffic		The planting, Speed humpe, Wide sidewalks, Reduced panking, Carls bump-out, Narrowed lance, Convention to one way attest		Uter		No	
3 Wak		Yes	Gasen heavy, Graen mid-level, Gasen Ba	Route is not specic enough, Volume of large vehicle staffic		The planing, Wide sidewaks, Curb bump out, Namoeed lanes, Convention to one way street, Reduced parking, Speed humps		User		No	
2 Wak like		Yes	Gasen heavy, Graen mid-level, Gasen Ba	Unconfortable sharing the road with vehicle staffic, Unconfortable navigating intersections, Roate is not scenic enough, Traffic volume, Parked cars impeding access	Very hot in the summer months due to lack of trees and plannings	The planting, Wide sidewaks, Reduced parking, Nanowed lanes, Cuth bump out, Speed humps, Convention to one way asset	I am very concerned about the possibility of bike lane removal on Princess Sz in Williamsville, as well as bike lane removal anywhere in Kingston. The bike lanes should be enhanced to increase safety for bikes.	User	Yes	Yes	
2 Wak	dive suto	No		Uncomfortable navigating intersections, Speed of traffic, Traffic volume, Volume of large vehicle traffic, Parked cars impeding access		Webs sidewalka	rigenen' tateset my suestanzi what exactly is "gener' about paving and concrete?" sounds like "gener" coal here you actually looked at the streets is Mingston? Using Ching yof. Extenses Division and Barris Stata an example, a high percentage of our streets and sidewaks are un- blable, un-officiale and un-valuable. How can you jushly spending money on humpoon (snowplaw weakeds) and babale, un-officiale and un-valuable. How can you jushly spending money on humpoon (snowplaw weaked) and comment, level and bab bases, where we are so to die die divisionity when theme subsched and unce all disease.	User		Yes	
2 Wak Bike		Yes	Gasen heavy, Graen mid-level, Gasen Ba	Unconfortable sharing the read with vehicle staffic, Roue is not scenic enough. Traffic volume		The planing, Cub tump out, Wide sidewake, Namaeed lanes, Convention to one way street, Reduced parking, Speed humps		User		Yes	
2 Wak, Bike		Yes	Gasen heavy, Graen mid-level, Gasen Ba	Unconfortable sharing the road with vehicle staffic	Mare shade needed in summer to help with heat	The planting, Wide sidewalks, Speed humps, Namoend lanes, Cuth bump out, Reduced parking, Convention to one way attest	I'm ready globy was to bolly prints. I sepacially support more two planting, as a loc our nature trees easen to be needing the and of the last and our as the last print of the cover near reads and to be used in the sepacially needed during hot summers for waters and cyclins.	User		Yes	
9 Walk, Bike		Yes, but I am unsure what the of Kingston means by green s	a City Green heavy, Green mid-level, Green Ite	Uncomfortable sharing the road with vehicle staffic, Uncure of which routes to take, Lack of direct connection to destination, Speed of staffic		Curb bump cut, The planting, Wide sidewalks, Raduced parking, Nancwed lanes, Speed humps, Convention to one way asset	These green streng provide an opportunity to respond and datapt to climate energiency challenges, with the aim of benefiting present and future generations. Important considerations include: the catopy consept to induce hear island effects for local relations and active investees; biolismic, prioritize of a wrise year of their trees and their context, and end underscope the state and indeptoduction and active investees; biolismic, prior compatible with the sheat and lighting conditions that combines the transitionity of the state and active of the active travelesembles.	Uter		Yes	
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1	idon't even know where it is.	Yes, but I am unsure what the of Kingston means by green s	City creen		As I said earlier I don't know where it is. I always lean beands green solutions but where would these homeowners and their guests, deliveries, etc park?			User		Yes	
13 Walk, Bike		Yes	Gasen mid-level, Gasen heavy, Gasen be	Uncomfortable sharing the road with vehicle staffic, Unsure of which routes to take, Lack of direct connection to destination				User		Yes	
1	Driving my car	Yes	Green Sa, Green mid-level, Green haavy		Distance too far nat to drive	Thee planning	Note of the compositive listed in the parvice question which incpode which restlet or parving in any way as ecception. In all for incorporating generative to parvice questions, but he writer conventent that compliance there are all incompliance that the intervention of the second s	Uter		No	
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9 Walk, Bike, Skawboard		Yes	Gasen mid-level, Gasen heavy, Gasen be	Unconfortable sharing the read with vehicle staffic, Traffic volume, Pasked cars impeding access		The planting, Wide sidewaks, Conversion to one way street, Curb bump out, Speed humps, Nanoved lanes, Reduced parking		User		Yes	
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3 Walk, Bike	Wak with stroller or wagon, bike with tailer	Yes	Gasen heavy, Graen mid-level, Gasen Ba	Unconfortable sharing the road with vehicle traffic, Speed o traffic, Parked cass impeding access		Reduced parking, Narrowed lanex, Wide sidewalks, Tree planning, Cuth bump out, Conversion to one way street, Speed humps		User		Yes	
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13 Walk, Bike		Yes	Gasen heavy, Graen mid-level, Gasen Ba	Uncomfortable sharing the road with vehicle staffic, Not enough rest areas, Route is not scenic enough, Volume of large vehicle staffic, Parked cars impeding access		Curb bump-cax, Wilde sidewalks, Tise planting, Speed humps, Reduced parking, Nanzowed lanes, Convention to one way asset		User		Yes	
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9 Walk, Bike		Yes	Green heavy, Green mid-level, Green Ite	Uncomfortable sharing the road with vehicle staffic, Speed o staffic, Volume of large vehicle staffic, Parked cars impeding access		Wide sidewake, Reduced parking, Speed humps, Conversion to one way street, Tee planting, Nanceed lanes, Curb bump out	Please take green streem seriously as a significant step towards addressing the climate crisis as well as improving safe transport is a dense district. Thank you.	Uter		No	
3 Walk, Bike		Yes	Green heavy, Green mid-level	Lack of direct connection to destination	Walking - Streets without shade are too hot on gube a few days in July and August. In the winter walking on sidewalks that are sloped to accommodate access to driveways is dangenous.	The planting, Reduced parking, Nancoeld lanes, Cuth bump cut, Conversion to one way street; Wide sidewalks, Speed humps	Additional comments will be submitted by email to Project Manager - hbrillians @cityofkingston.ca	Uter		Yes	
3 Walk, Mobility device, Bile		Yes	Gasen haavy, Gasen mid-level, Gasen its	Unconfortable sharing the rand with vehicle staffic, Unconfortable natigaring intersections, Lack of descr connection to destination, Speed of traffic, Traffic volume, Parked cars impeding access	Lack of sidewalk/bindane maintenance especially during indement weather, water pools is the cub depressions and some puddles hide very deep holes	Wide sidewalks, Nenceed lanes, Reduced parking, Tree planting, Cuth bump out, Speed humps, Convention to one way enser	If a monomer to provide new crossing, to make personnan crossings, i can worked the the command are not going to be re-constructed and present at this topic changes from cuts diversity cross. If the indensity are not make any other construction, then encode new taccound shared neighborhood yield streams with a maximum of 30mth speed, as people can use the smoothers statice available, with less risk if death in the event of a collision. Human bodies can only withstand is a much topic so bodies development means the incorporated less the diversity of others there withstand is a much topic so bodies development means the incorporated less the diversity of others there are also been as the smoothers.	Uter		Yes	

From: Sent: To: Cc:	November 1, 2023 7:48 AM Semple,Ian; Brilliams,Henk
Subject:	Bike Lanes in Williamsville
Follow Up Flag: Flag Status:	Follow up Flagged

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Ian Semple and Hank Brilliams,

I will keep this short: There are no circumstances under which it makes sense to tear out the Princess St bike lanes through Williamsville.

Please do the right thing for the physical and mental wellbeing of the people of Kingston, for the climate, for safety and ease of movement, and for the taxpayer.

Sincerely,

From:	
Sent:	November 17, 2023 12:47 PM
То:	Brilliams,Henk
Cc:	Semple,lan
Subject:	KCAT submission comments: Williamsville Transportation Study, Williamsville
	Bikeways and Frontenac Green Streets Concept
Attachments:	KCAT Williamsville submission.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Ian and Henk,

Thank you for the opportunity to participate in the public review of these important streetscape projects. Please find attached a submission from the Kingston Coalition for Active Transportation (KCAT) with comments on the three streetscape proposals for Williamsville.

It is exciting to see the changes happening along the Williamsville Main Street. Increased housing and density along this important transportation spine, connecting downtown with the Kingston Centre and beyond, will bring a renewed sense of vibrancy to Williamsville.

KCAT is very supportive of the transit improvements, increased walkability measures, removal of on-street parking, reduced travel lane widths and green elements. However, we are concerned that bike lanes are not included in the proposed plans for Williamsville Main Street. We recommend that the existing bike lanes be retained and improved. Local connecting routes throughout Williamsville (Williamsville Bikeways) would be beneficial as well, but not to the exclusion of dedicated bike lanes on Williamsville Main Street.

"Alternative 5 - On-Street Cycle Lanes" is our preferred option with changes to lane widths and other adjustments that would allow a protected, buffered bike lane.

We envision a vibrant Williamsville Main Street corridor that includes bike lanes. Bike lanes are good for business, the environment, sense of community, and healthy, active living. Bike lanes are proven economic drivers that bring more customers to businesses along streets with bike lanes.

The Household Travel Survey shows Williamsville has the highest bicycle mode share in all of Kingston at 10%. And with more than 60,000 people living within a 15 minute bike ride of Williamsville Main Street it would be a major missed opportunity to not find ways to leverage the benefits cycling offers in this part of the central Kingston to meet and exceed the City of Kingston mode share and Climate Change goals.

KCAT is very much in favour of "green streets" redesigned to mitigate the effects of climate change while providing environmental benefits, beautification and fostering safe connected spaces for healthy, active living.

We look forward to ongoing participation in these important projects.

Sincerely,



KCAT's response to the Williamsville Transportation Study, Williamsville Bikeways and Frontenac Green Streets Concept November 2023

Proposals for the <u>Williamsville Transportation Study</u>, <u>Williamsville Bikeways</u>, and <u>Frontenac Green</u> <u>Streets Concepts</u> are being reviewed now by the City of Kingston and decisions about them will be made soon. This submission states our position on these projects.

KCAT is very supportive of the transit improvements, increased walkability measures, removal of parking, reduced travel lane widths, and green elements.

We are concerned that bike lanes are not included in plans for Williamsville Main Street, and **we** recommend that the existing bike lanes be retained here, on Princess Street between Bath/ Concession and Division. Local connecting routes throughout Williamsville ('Williamsville Bikeways') would be beneficial as well but not to the exclusion of dedicated bike lanes on Williamsville's Main Street. The only acceptable plan for Princess Street is "Alternative 5 – On-Street Cycle Lanes" as presented at the Oct 26 Open House.

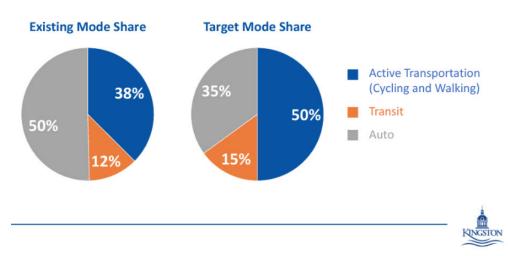
After reviewing all the poster boards presented at the October 26, 2023 Open House, the word "safety" was noticeable by its absence. One can assume that designs presented by the City will adhere to the required safety guidelines. However, phrases like "minimize impacts on traffic operations" and continued plans to install left turn lanes perpetuate planning and implementation of travel lane and intersection designs that prioritize convenience and space for cars over dedicated space and other safety measures for vulnerable road users putting them at increased risk of injury or death. The lack of regard for intersection improvements (e.g. advanced green for pedestrians and cyclists, bike boxes, islands at wide intersections e.g. Macdonnell, Alfred) and speed limit restrictions further confirms the car-centric bias to these designs. We encourage the use of designs as detailed in the Ontario Safety Council's *Protected Intersection Guide*.

City information (in plain text) is discussed below with KCAT's responses or rebuttals *in bold italics*.

The City's project goals are to:

• Reconfigure the right-of-way to improve the pedestrian experience with wider sidewalks and amenities. Walkability is important. However, wide pedestrian spaces without adjacent dedicated cycling infrastructure are known to be associated with sidewalk cycling - a danger to pedestrians and others. Furthermore, other micro mobility devices (e.g. skateboards, scooters, one-wheels, etc.) can use the cycling lanes and avoid the pedestrian areas.

- Prioritize transit travel times throughout the corridor. *This can be done without "Queue Jump Lanes." Buses already have the capability of changing traffic signal lights in their favour. REDUCING car traffic will improve congestion at peak times. Traffic signals can be phased to allow longer greens on E-W route (Transit routes) and short greens on N-S at peak times.*
- Minimize impacts on traffic operations associated with the proposed changes. *This is double-speak for "Keep car traffic as high as possible." This makes no sense.*
- Identify viable alternatives to support cyclists within the broader study area. *This is more double-speak for "Keep cycle lanes off Princess to make room for more cars."*



• Mode share targets:

The above pie charts were presented without much explanation. How can the Auto Mode Share decrease from 50% to 35% if:

- a project goal is to 'Minimize impacts of traffic operations' (see above),
- 'there will be at least one travel through-lane in each direction to maintain vehicular [...] movements through the area' with the current roadway being 'sufficient to carry future vehicular traffic',
- cycling along the Main Street will not be encouraged/supported, and
- there is no mention of intentionally and strategically reducing automobile use, particularly single occupied vehicles (SOV).

How can the Active Transportation (Cycling and Walking) Mode Share increase from 38% to 50% when cycling lanes are being removed and replaced with indirect, inefficient routes that do not allow convenient safe access to amenities and services on Princess?

• How this arterial roadway will look for drivers is very much uncertain. *On the contrary. You plan for cars, you get cars.*

The transportation sector has the <u>highest greenhouse gas emissions</u> in Kingston at 35.9%. It is becoming increasingly important to address the climate emergency seriously with every decision that is made. Viable active and sustainable transportation options including cycling need to be prioritized now with effective strategies to surpass Target Mode Shares above.

- Removal of on-street parking was approved to enhance active transportation on Princess Street including greening the corridor. *Walking and cycling are the two main modes of active transportation. Cycling (or wheeling) includes all other forms of micro mobility. Wheeling will be a MAJOR way of moving on Princess Street once 8,000 people live directly on Princess with very limited options to store cars at their residence. Cycling infrastructure will enhance safety for all users of the streetscape.*
- Active Transportation for Williamsville is being prioritized to minimize dependency on private vehicle travel. Under Option 1, AUTOMOBILES and transit are being prioritized for Williamsville Main Street. Walking is also being prioritized, however "walkable" distances are less than a 1.6 km walk (according to Kingston's <u>Household Travel Survey</u>). We assert that cycling is a priority mode of travel along Princess St. Cyclists prefer direct routes that feel safe. "Alternative" bike routes increase distances from the most direct route along Princess. Walking and "alternative" bike routes are not going to "minimize dependency on private vehicle travel". Transit may help to reduce private vehicle travel in combination with disincentives to use private vehicles.
- Implement enhanced streetscape and pedestrian features on Princess Street to encourage a vibrant corridor. *A vibrant corridor would include bike lanes. Bike lanes are good for business, the environment, sense of community, and healthy, active living. Streetscapes with safe cycling lanes have consistently proven, in cities across Canada, to be economic drivers bringing more customers to businesses along the streets with bike lanes. More than 60,000 residents live within a 15-minute bike ride of this section of Princess St. Bike lanes offer ways for more people to connect with the growing businesses and services fostering a diverse sustainable vibrant corridor.*
- Transit and Active Transportation modes are prioritized to meet the City of Kingston's Mode Share and Climate Change goals. As stated earlier, without including cycling as an Active Transportation priority, Transit mode is the de facto sole priority to meet modal and Climate Change goals. Why are we not also leveraging the opportunities cycling offers especially since the Household Travel Survey shows Williamsville (Area K) has the highest bicycle mode share in all of Kingston at 10% [Table 33. p.97]. How does removing cycling infrastructure from Princess St make any sense?
- Transit improvements aim to meet the City's climate goals set out in the Climate Leadership Plan (2021) by reducing private vehicle trips. *The goal to reduce private vehicle trips and GHGs will not happen by transit improvements alone. Safe, convenient, efficient, connected cycling infrastructure is essential. Disincentives for automobiles (e.g., expensive parking rates, high fines for not paying) will also help.*

• This section of Princess Street currently forms part of the City's spine cycling network. And with space constraints along the right-of-way, it is not possible to improve or maintain the bike facilities along this corridor after incorporating pedestrian and transit improvements.

KCAT and other groups worked with City staff and consultants on the Active Transportation Master Plan that included Princess Street as part of the City's spine cycling network. Strategic, informed decisions were made with input by all kinds of experts including experienced cycling commuters.

The right of way (ROW) along Princess Street in Williamsville is like that of many municipalities in Ontario. Roads with similar constraints in other cities have been transformed into 'Complete Streets' that welcome all road users including cyclists. See examples on KCAT's Williamsville page <u>KCAT's featured Williamsville news</u>.

We are aware of the width of each block of Princess between Bath/Concession and Division and appreciate the increased space with no parking and reduced lane widths. Compromises may need to be made to accommodate the needs of all road users for a Complete Street, including current and future residents and businesses, shoppers, and commuters. If needed, conventional bike lanes may also be narrowed to 1.2 metres in constrained areas (OTM Book 18: page 77).

Cycling, with all its benefits, should not be sacrificed for development outcomes that compromised public space by permitting new buildings to be built at the sidewalk without setbacks. See <u>https://kcat.ca/williamsville/</u> March 2020. It's too late to change what's been done but there are solutions, as presented in this submission.

• Existing bike lanes without a buffer along this corridor do not provide the level of comfort that most riders would expect when riding along a high-volume roadway.

Please see above point. Also, bike lane safety features include not only lane width but signage, well-maintained lines, stencils, pavement free of debris, and predictability. Dedicated space parallel to travel lanes are more easily seen and expected by motorists and cyclists than those that weave in and out (as is the case now). In limited space, planters can effectively separate motorists from cyclists and beautify the corridor at the same time with environmental benefits.

The City proposes these alternatives to Williamsville Main Street:

- 1. Promoting the use of Brock and Johnson Streets as part of the spine cycling network, and provide connections along Palace Road or Sir John A, up to Bath Road.
- 2. Developing Concession Street as part of the spine cycling network alternative to connect into future bike facilities along Princess Street, west of Bath Road, and connect into existing and proposed bike facilities along Division Street. *Concession's road surface and traffic conditions are currently poor and unsafe for cyclists.*
- 3. Developing neighbourhood bikeways these routes would be formalized with wayfinding and could potentially include traffic calming and other measures to promote

cycling along these areas. *People already cycle on quieter streets in neighbourhoods. The proposed measures would be beneficial, in addition to dedicated cycling facilities on Williamsville Main Street. Neighbourhood bike routes tend to have several stop signs which deter use by slowing commute times.*

4. Confident cyclists can also continue to bike along Princess Street as part of traffic. Confident cyclists are a minority as illustrated in the <u>Active Transportation Master</u> <u>Plan</u>.

'Alternatives' tend to be indirect, time-consuming, and less likely to be 'bikeable distances' (less than 4.6 km) according to the <u>Household Travel Survey</u>. They all deny cyclists and vendors the opportunity for cyclists to stop and shop along the way. It is unlikely that Kingston's cycling mode share would increase if the existing cycle lanes on Princess St. were to be replaced with neighbourhood bikeways.

A few notes on greenery, in addition to that mentioned above. Greenery is important.

- Trees do not need to be planted the length of the corridor; in fact, other plants may thrive better given lack of light from the 'canyon' effect of the tall buildings.
- There will be opportunities with new developments along this stretch to include a variety of species/sizes of greenery.
- Climate benefits from auto to bicycle mode switch are vastly greater than those from added greenery in the corridor.

FRONTENAC GREEN STREET CONCEPTS

KCAT is very much in favour of 'green streets' and we hope that Frontenac Street will be the first of many streets redesigned to mitigate effects of climate change challenges while providing environmental benefits, beautification and fostering safe, connected spaces for healthy, active living. Our recommendations are to:

- 1. Connect the length of Frontenac Street from the Memorial Centre to Union Street.
- 2. Use bollards to prevent cars from turning onto Princess from Frontenac and create a pedestrian crosswalk there.
- 3. Provide way-finding signs including distances to the Memorial Centre, Downtown, Victoria Park, and Breakwater Park.
- 4. Plan, design and implement intersections to facilitate walking and cycling and discourage automobile use except for local, within-block traffic.
- 5. Implement measures and concepts to facilitate walkability and cyclability.
- 6. Foster tree canopy coverage for shade and beauty.
- 7. Include a variety of native trees, shrubs, and ground covers with relevant soil and lighting conditions for sustainability, water preservation, and low maintenance.
- 8. Involve local residents in all aspects of planning.

From: Sent: To: Cc: Subject: Semple, lan <isemple@cityofkingston.ca> November 19, 2023 4:41 PM Brilliams, Henk

RE: Hosek input on Williamville bicycle lanes

Good afternoon

Thank you for sending in these comments. I have included them as part of the engagement being completed for this study.

Regards, Ian Semple



Ian Semple, MCIP, RPP, P.Eng. (he/him/his)

Director - Transportation & Transit

City of Kingston Located at 1181 John Counter Boulevard 216 Ontario Street Kingston, ON K7L 2Z3 O: 613-546-4291 x2306 M: 613-453-1585 E: isemple@cityofkingston.ca

The City of Kingston acknowledges that we are on the traditional homeland of the Anishinaabe, Haudenosaunee and the Huron-Wendat, and thanks these nations for their care and stewardship over this shared land.

From:

Sent: Sunday, October 29, 2023 12:39 PM

To: Semple, Ian <isemple@cityofkingston.ca>; Brilliams, Henk <hbrilliams@cityofkingston.ca>

Cc:

Subject: input on Williamville bicycle lanes

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Ian Semple, Director. isemple@cityofkingston.ca and Hank Brilliams, Manager. hbrilliams@cityofkingston.ca,

Good day.

I am quite dismayed that Kingston is considering removing bicycle lanes in Williamsville. No viable cities that I know of anywhere in the world are removing bicycle lanes at this time.

There is a (n expensive!) climate emergency and bicycle lanes help.

There are (expensive!) mental and physical health problems due to lack of active transportation and bicycle lanes help. There is not enough urban tax base and bicycle lanes help!

We are building for 100 years and bicycle lanes help!

From the plan: "Identify viable alternatives to support cyclists within the broader study area"

Such innocuous (insipid?) wording around the plan notwithstanding, this change in Princess Street would further prioritize cars (as would adding bus-prioritization turnouts).

This change in Princess Street would also maintain the danger level of this portion of the street.

To my mind, this change in Princess Street also primarily and wrong-headedly seeks to benefit the investors in the new apartment complexes on those blocks.

History: The developers asked for and got easements in order to build close to the street in order to have more footage to sell and rent. Now they want to have our tax dollars be used to add street furniture and trees to the street to beautify it at the expense of active transport. They think, perhaps rightly, that beautiful streets can benefit their bottom line. They are shortsighted in not seeing that bicycle lanes would be at least as advantageous (See: e.g., Richard Florida, *Creative Cities*). Consider that many people living in those buildings are young, formally educated, and living close to their work/study/recreational places; this is a primary bicycling (and other micromobility and ped) demographic that appreciates and uses efficient, direct bicycle lanes. The developers are disingenuous in seeking to pass off the cost of street alterations to the tax payers, when their building practices squeezed the sidewalks in the first place.

Now, I like trees, but that area of Princess Street will never be as compelling a place to hang out as the guiet streets and pleasant parks guite nearby.

In contrast, lack of bicycle lanes will lead to accidents and also to the **deaths** of bicyclists. Even if we don't care about human lives and safety, accidents are EXPENSIVE and a WASTE OF MONEY.

Lack of bicycle lanes will lead to some people driving rather than bicycling. **IT WILL EXCACERBATE THE CLIMATE EMERGENCY.**

Further, there is a plan to extend bicycle lanes all the way past the ViaRail station and perhaps to the Mall. Ripping out the bicycle lanes on upper Princess will impede this plan.

This Princess Street extension plan is an equity issue because there are many lower-income high density buildings further up Princess, with more being built. People who live there, many families with teenage, bicycle-age kids, must buy expensive cars or use the expensive and time-expensive bus systems. They should have safe bicycle lanes available so that they can get to most Kingston places within 15 minutes.

Kingston must be building for now and for 100 years. Ripping out bicycle lanes on upper Princess is wrong-headed and short-sighted.

I also point you to the KCAT letter; I am in agreement with their points.

Williamsville Main Street Transportation Study Kingston Coalition for Active Transportation kcat.ca



Thank you for your kind attention,

Semple, lan < isemple@cityofkingston.ca> From: November 19, 2023 3:12 PM Brilliams.Henk Subject: RE: Williamsville bike lanes

Follow Up Flag: Flag Status:

Follow up Flagged

Hi

Sent:

To:

Cc:

Thank you for submitting your comments. I will add this to the engagement we have received on the Williamsville project.

Regards, Ian Semple



Ian Semple, MCIP, RPP, P.Eng. (he/him/his)

Director - Transportation & Transit

City of Kingston Located at 1181 John Counter Boulevard 216 Ontario Street Kingston, ON K7L 2Z3 O: 613-546-4291 x2306 M: 613-453-1585 E: isemple@cityofkingston.ca

The City of Kingston acknowledges that we are on the traditional homeland of the Anishinaabe, Haudenosaunee and the Huron-Wendat, and thanks these nations for their care and stewardship over this shared land.

From: Sent: Thursday, November 2, 2023 1:57 PM To: Semple, Ian <isemple@cityofkingston.ca> Subject: Williamsville bike lanes

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

As a life long and year round commuter cyclist and parent of three, I would like to encourage you to rethink your decision around bike lanes downtown.

Cycling is essential for many of us who are low income commuters, and bike lanes provide a safe and encouraging means of promoting cycling for all ages. To remove them would make it far more dangerous and deters the activity specifically for younger families. They help transit drivers navigate the varied traffic better. Bike lanes also make automobile drivers more aware of their less protected neighbour's. In short bike lanes are essential for safer city transportation.

Thank you.

Yellow Bike Action

From:	November 20, 2023 4:18 PM
Sent:	Semple,Ian
To:	Brilliams,Henk
Cc:	RE: Williamsville letter from KFL&A Public Health
Subject:	2023-11-20 Williamsville to IS and HW.pdf; 2023-03-07 To COK TD and MM re
Attachments:	Williamsville.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

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Thank you lan and Henk,

From: Semple, lan <isemple@cityofkingston.ca> Sent: Monday, November 20, 2023 8:20 AM

To:

Cc: Brilliams,Henk <hbrilliams@cityofkingston.ca> Subject: RE: Williamsville letter from KFL&A Public Health

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Hi

That would be great. You can send to us and we will include in the engagement.

lan



Ian Semple, MCIP, RPP, P.Eng. (he/him/his)

Director – Transportation & Transit

City of Kingston Located at 1181 John Counter Boulevard 216 Ontario Street Kingston, ON K7L 2Z3 O: 613-546-4291 x2306 M: 613-453-1585 E: isemple@cityofkingston.ca The City of Kingston acknowledges that we are on the traditional homeland of the Anishinaabe, Haudenosaunee and the Huron-Wendat, and thanks these nations for their care and stewardship over this shared land.

From:

Sent: Monday, November 20, 2023 7:51 AM To: Semple,Ian <<u>isemple@cityofkingston.ca</u>>; Brilliams,Henk <<u>hbrilliams@cityofkingston.ca</u>> Subject: Williamsville letter from KFL&A Public Health

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good morning Ian and Henk

I'm sorry I didn't get a letter in on Friday; I hope to send it today.

Thanks for all your work.

My regular hours of work are Monday through Friday, 7 a.m. to 3 p.m.

KFL&A Public Health 221 Portsmouth Avenue Kingston, Ontario K7M 1V5 www.kflaph.ca

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March 7, 2023

To: Tarita Diczki **Project Manager** tdiczki@citvofkingston.ca

Marissa Mascaro Manager, Transportation Infrastructure mmascaro@cityofkingston.ca

Re: Williamsville Transportation Study

Dear Tarita and Marissa:

I am writing on behalf of KFL&A Public Health to express support for cycling as well as walking and public transit as priority modes of travel along Princess Street in Williamsville. In efforts to facilitate active and sustainable transportation (AST), we also support measures that disincentivize automobile travel. Modest shifts in travel mode from vehicle use to cycling, walking, or public transit use contribute to higher physical activity levels, yield large reductions in chronic disease, cut greenhouse gas emissions, and improve health equity (1). These improvements would contribute to overall health and well-being, while enabling the City to attain climate, sustainability, and transportation goals and targets.

We support reduced travel lane widths, measures to enhance efficiency of public transit, and no parking except in rare circumstances such as at the Heart Clinic where there are no parking options nearby.

Consider implementing a speed limit of 40 km/hr for Princess Street in Williamsville (and possibly downtown). Reduced speeds give people more time to react in preventing collisions and lowering the severity of collisions that do occur. Edmonton has implemented 40 km/hr on most residential and downtown streets including high pedestrian areas, and it demonstrates how the change results in little impact on driving times (2). Consider whether any left turn lanes are necessary, or if in relieving car congestion the lanes would pose increased safety risks for pedestrians, cyclists, or other drivers (3).

Dedicated, well-maintained cycling infrastructure along this 1.7 km 'vibrant main street' would enable people who live, work, or commute in this area or come from neighbourhoods that feed into Princess to the northwest or Bath to the west, to cycle safely, efficiently, and comfortably to or through Williamsville. To designate a neighbourhood street such as Mack Street for cycling instead of providing safe infrastructure on the direct route along Princess Street would mean that all but the smallest fraction of cyclists who are 'strong & dedicated' would need to

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'detour' south then east then north to access Princess Street further down. Brock and Johnson (with north south connections) and Concession streets, considered for inclusion in the spine cycling network, bypass multiple destinations in Williamsville and the 'gateway' to downtown. Brock and Johnson are even further away than Mack Street from Princess Street.

In 'Get Involved Kingston' information about this study, it was noted that walking and transit are prioritized because they are 'the two most popular modes of transportation through this corridor'. Cyclists may not make up a popular mode of transportation if they don't feel safe on Princess Street in Williamsville. Although there are currently bike lanes along this main street, there are significant barriers to cycling, including but not limited to extensive, ongoing construction with unpredictable bike routes, motorized vehicles including delivery and construction trucks blocking bike lanes, construction and other debris in bike lanes, bike lane road surface in a state of poor repair with faded line and stencil markings, and competition with motorized vehicles for space.

KFL&A Public Health has worked with the City of Kingston for many years to support expansion of safe, connected, efficient, and pleasant cycling routes and networks to increase cycling in Kingston. We supported bike lanes on Princess Street in Williamsville since the Williamsville Main Street Study Draft Report, September 2011 and we participated on the Williamsville Cycling Lanes Advisory Group in 2013. In March 2013, we participated on a City-led planning committee with the Share the Road Cycling Coalition to host the Kingston Bike Summit and Forum which featured international speakers about successes and strategies in attaining high level Bicycle Friendly Community status. In addition to acknowledging the work of the City in promoting cycling and achieving a Bronze Bicycle Friendly Community award in 2012, the KFL&A Public Health Medical Officer of Health spoke at the Summit about the need to make the healthy choice (cycling) the easy choice to increase the number of people cycling and cycling more often. The message then was the same as it is now: to increase cycling, it must be safe, easy, convenient, connected and enjoyable; this includes physical separation of transportation modes on high traffic streets and a lower emphasis on automobiles when planning and constructing transportation infrastructure.

The Williamsville Main Street Study Review of Cycling Lanes (July 22, 2013), passed by Council, included: "With the inclusion of dedicated and buffered cycling lanes on Princess Street, this new identity will be fundamentally linked with healthy, active and progressive lifestyle choices." The controversy over the loss of parking for bike lanes re-surfaced in the fall of 2013, and the KFL&A Public Health Medical Officer of Health at that time wrote a letter of support to the Mayor and Councillors for cycling lanes on Princess Street in Williamsville for health and safety reasons.

In 2016 Kingston received a second bronze Bicycle Friendly Community award. In 2021 it received a silver award with one of the highlights being: "Priority for cycling infrastructure when roads are rebuilt."

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	613-549-1232 1-800-267-7875 Fax: 613-549-7896	303	Sharbot Lake	613-279-2151	Fax: 613-279-3997

kflaph.ca



We encourage you to include cycling as a priority mode of transportation along with walking and using transit, on Princess Street in Williamsville.

References

- 1. The Lancet. The 2021 report of the Lancet Countdown of health and climate change: code red for a healthy future [Internet]. 2021. Available from: https://www.thelancet.com/action/showPdf?pii=S0140-6736%2821%2901787-6
- 2. <u>https://www.edmonton.ca/transportation/traffic_safety/residential-sp</u>eed-limits
- 3. Speck J. Walkable City Rules. 1st ed. Washington, D.C.: Island Press; 2018.

We would be pleased to discuss this with you anytime.

Sincerely,

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From:	Semple,Ian <isemple@cityofkingston.ca></isemple@cityofkingston.ca>
Sent:	November 19, 2023 4:40 PM
To:	Brilliams,Henk
Subject:	FW: Williamsville Transportation and Bikeways Open House
Follow Up Flag:	Follow up
Flag Status:	Flagged

For Williamsville file



Ian Semple, MCIP, RPP, P.Eng. (he/him/his)

Director – Transportation & Transit

City of Kingston Located at 1181 John Counter Boulevard 216 Ontario Street Kingston, ON K7L 2Z3 O: 613-546-4291 x2306 M: 613-453-1585 E: isemple@cityofkingston.ca

The City of Kingston acknowledges that we are on the traditional homeland of the Anishinaabe, Haudenosaunee and the Huron-Wendat, and thanks these nations for their care and stewardship over this shared land.

From: Diczki, Tarita <tdiczki@cityofkingston.ca> Sent: Friday, October 27, 2023 10:25 AM To: Semple, lan <isemple@cityofkingston.ca> Subject: RE: Williamsville Transportation and Bikeways Open House

Hi lan,

- The main theme I heard over and over again is that delivery vehicles, uber, taxi's, door dash • etc... park in the bike lanes or curb lane and block the use of bike lanes (creating unsafe manoeuvres). These also impede pedestrian sight lines, particularly at the intersections. Consider signage (like no stopping - like Toronto has), and/or implementing loading/delivery zones.
- I had a call with someone before the PIC in response to a CRM I received about the condition of the bike lanes on Princess being unsafe and in very poor condition. I invited her to the PIC but she couldn't make it so I offered to record her comments on the phone to put forth for consideration/record for the event. This is below:

Good afternoon,

Thank you for taking the time to speak with me today. If I may, I would like to summarize what we spoke about today so that I can communicate your feedback back to our team - for consideration/record, as part of the City's on-going Williamsville Mainstreet Study:

1. Transportation - The existing bike lanes on Princess Street are in very poor condition and unsafe (dangerous). The condition of the bike lanes causes damage to bikes and there is a lack of physical barrier between the rider and moving vehicles.

2. Transportation/Enforcement - Vehicles consistently use the bike lanes to park in, which makes the bike lanes even more challenging to use.

3. Transportation -The City should consider closing Princess Street during the summer months and only open to pedestrians and cyclists (all the way downtown) - studies have shown this is successful in other jurisdictions.

4. Planning - Disappointed that with all the construction, there is a severe lack of green space. Some developments have tried to implement raised flower beds and have planted trees; however; the majority of the tress have died and flower beds need to be maintained. Green spaces, and especially trees, provide shade, improve air quality and add an aesthetic quality to the neighbourhood. - which is desirable for residents.

5. Planning - Consider implementing parklettes (small parks) on certain blocks to provide more green space.

6. Planning - Generally provide more green spaces/parks for the Williamsville area. There is really only one park, the Memorial Centre Park, and the dog park, which at times is not appealing and needs better maintenance.

7. Planning - The developers may be trying to push the envelope with proposed variances; for example, the Foundary building (and one other), which is 'sunken in', is not an ideal or attractive store front to be considered for higher density neighbourhood development.

8. Planning - Future variance applications should always consider providing for trees in their development to increase City's overall tree canopy, and that of the Williamsville neighbourhood specifically.

9. By-Law/Enforcement - Some residents appreciate living in quiet neighbourhoods, and at times, persistent noise coming from sources not currently covered under the existing by-law is experienced by residents and can be bothersome. Can something be implemented that could seek to curtail these individual and persistent noise sources?

Hope I captured it all. If I have incorrectly described or missed something, please email me directly and I will be happy to correct before submitting.

Lastly, I invite you visit the City's Get Involved Page to provide your feedback on the Williamsville Bikeway Study: <u>Williamsville Bikeways | Get Involved Kingston by Communications & Public</u> <u>Engagement (cityofkingston.ca)</u>

Thank you again for your feedback, it is appreciated.

Kind Regards, Tarita Diczki Project Manager Transportation Services

Out of scope but passing on from one of the first people who arrived to the event last night, because I said I would: 1. The signals at the Fresh Co intersection do not, in her opinion, prioritize pedestrians. She says that she waits for quite some time at the intersection to cross. She asked if we can look into this. 2. She said that on the buses there are regular announcements about (oh jeez, can't remember at this time – but they are regular so you might know) but she would like to hear regular announcements about priority seating. She often sees young people taking up seats and older or disabled people are forced to stand or move to the back of the bus.

I thought the event went well and smoothly. I thought there was just the right amount of staff to public ratio. However, the biggest challenge I see is somehow we need to get across to the regulars that we are not "prioritizing" vehicles just because we are trying to optimize the efficiency of transit.

Thanks, Tarita

From: Semple,Ian <<u>isemple@cityofkingston.ca</u>> Sent: Friday, October 27, 2023 9:15 AM To: Diczki,Tarita <<u>tdiczki@cityofkingston.ca</u>>; Dickson,Mark <<u>mdickson@cityofkingston.ca</u>>; Kussin,Matt <<u>mkussin@cityofkingston.ca</u>>; Pinarski,Jen <<u>jpinarski@cityofkingston.ca</u>>; Knight,Nancie <<u>nknight@cityofkingston.ca</u>>; Bar,James <<u>jbar@cityofkingston.ca</u>> Subject: RE: Williamsville Transportation and Bikeways Open House

Good morning everyone,

Thank you for all the effort yesterday supporting the Open House for Williamsville. If you have any comments/questions that you heard that you think we need to capture or respond to please send along to me.

I would also appreciate your feedback on how the event went and if there are other steps that we could take to help the community understand the alternatives being considered.

lan

Ian Semple, MCIP, RPP, P.Eng. (he/him/his)



Director - Transportation & Transit

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-----Original Appointment-----From: Semple,Ian Sent: Friday, October 13, 2023 3:03 PM To: Semple,Ian; Pegah Tootoonchian; King, Maria; Rudi Rendel; Diczki,Tarita; Dickson,Mark; Kussin,Matt; Park,Tim; Pinarski,Jen Cc: Joyce,Brad; Shawn Doyle; Kristin Lillyman Subject: Williamsville Transportation and Bikeways Open House When: October 26, 2023 5:30 PM-9:00 PM (UTC-05:00) Eastern Time (US & Canada). Where: St. Luke's refer (236 Nelson Street, Kingston ON K7K 4M7)

Williamsville Transportation Study Open House - Final information to follow

News & Notices - City of Kingston

Microsoft Teams meeting

Join on your computer, mobile app or room device <u>Click here to join the meeting</u>

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Your input is valuable to the outcome of this study. Please provide any additional feedback below!

1. Overall, how satisfied were you with this event?

Mark only one oval.

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2. Do you have any additional feedback related to the design of Princess Street?

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3. Do you have any additional feedback related to Neighbourhood Bikeways in Williamsville?

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Your input is valuable to the outcome of this study. Please provide any additional feedback below!

1. Overall, how satisfied were you with this event?

Mark only one oval.



2. Do you have any additional feedback related to the design of Princess Street?

Thave seen bumpouts used in Thurdov Bay. They created traffic conjection + accidents. Frustration for city Snow plow activities too. Cycle lones improved on Princess St will not encourage meto use it anymore than I do. I prefer + feel safer USing alternate routes

3. Do you have any additional feedback related to Neighbourhood Bikeways in Williamsville?

restricting partia to better improve cycling lanes is a great idea.

Your input is valuable to the outcome of this study. Please provide any additional feedback below!

1. Overall, how satisfied were you with this event?

Mark only one oval.



2. Do you have any additional feedback related to the design of Princess Street?

How will you stop parking & stopping in the bike lane ??

3. Do you have any additional feedback related to Neighbourhood Bikeways in Williamsville?

- Stowar speed limit -- Parking for DayCases - Lots provided for school. - "Bike ways" to include scooters children on biles ?? - Walking more image common than biking Wide safe sidewalks.

Your input is valuable to the outcome of this study. Please provide any additional feedback below!

1. Overall, how satisfied were you with this event?

Mark only one oval.



2. Do you have any additional feedback related to the design of Princess Street?

Thank you for considering alternatives that promote cycling as well as pedestrians. Could you consider removing motor vehicle traffic from Princess Street? o. keep bike lanes + reduce motor vehicle traffic. Please do. Please

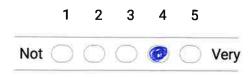
3. Do you have any additional feedback related to Neighbourhood Bikeways in Williamsville?

the important cycling corridor is Princess street. Neighbourhood bikeways are no substitute. Keep Princess street bike lanes.

Your input is valuable to the outcome of this study. Please provide any additional feedback below!

1. Overall, how satisfied were you with this event?

Mark only one oval.



2. Do you have any additional feedback related to the design of Princess Street?

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3. Do you have any additional feedback related to Neighbourhood Bikeways in Williamsville?

Model filter should be included in plans. removing through traffic would be a effective way of reducing an traffic on these reducin, auter

Your input is valuable to the outcome of this study. Please provide any additional feedback below!

1. Overall, how satisfied were you with this event?

Mark only one oval.



2. Do you have any additional feedback related to the design of Princess Street?

I am unclear of the reason for Sidewalk widening is patias? Strong support for keeping bike lowes - also a strong advocate for protecting these as Much as possible.

3. Do you have any additional feedback related to Neighbourhood Bikeways in Williamsville?

Would love to see more advisory bixe lanes - especially on Victoria St.

•	Princess Main Street Study (PIC #2) Your input is valuable to the outcome of this study. Please provide any additional feedback below!
1.	Overall, how satisfied were you with this event?
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2.	Do you have any additional feedback related to the design of Princess Street?
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Do you have any additional feedback related to Neighbourhood Bikeways in 3. ÷., Williamsville?

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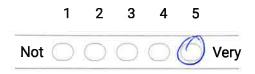
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Your input is valuable to the outcome of this study. Please provide any additional feedback below!

1. Overall, how satisfied were you with this event?

Mark only one oval.



2. Do you have any additional feedback related to the design of Princess Street?

Intersection are interest experient and pederline die. The site Suit environment should be prendice.

3. Do you have any additional feedback related to Neighbourhood Bikeways in Williamsville?

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Your input is valuable to the outcome of this study. Please provide any additional feedback below!

1. Overall, how satisfied were you with this event?

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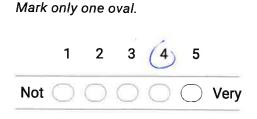
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Do you have any additional feedback related to Neighbourhood Bikeways in 3. Williamsville?

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Your input is valuable to the outcome of this study. Please provide any additional feedback below!

1. Overall, how satisfied were you with this event?



3

2. Do you have any additional feedback related to the design of Princess Street?

I TRY TO AUDIDIT- MAKE IT FOR CARS AND TRANSIT TO DIVISION - I LIKE PRINCESSASA CYCLIST FROM DIVISION TO ONTARIO AS IT IS ONE-WAY + TWO-LANES

3. Do you have any additional feedback related to Neighbourhood Bikeways in Williamsville?

IE BIKE LANES ELIMINATED ON PRINCESSI IMPROVE CY318ING LANES MARKING SIGNAGE ON DUTERNATE ROUTES.

CONSULTING

Memo

To:Henk BrilliamsFrom:Rudi Rendelcc:Ian Semple, Maria King, Pegah TootoonchianDate:January 15, 2023

Subject: Neighbourhood Bikeway Toolbox

Our File: 23-6663

1.0 Background

To enhance the cycling experience throughout Williamsville it is recommended that the local road network implements cycling supportive infrastructure. This includes converting local roads to either neighbourhood bikeways or other appropriate shared cycling facilities such as advisory bicycle lanes. When designing shared cycling facilities, a balance must be struck between permitting vehicle travel and improving cyclist safety throughout the corridor. While these corridors are shared between motor vehicles and cyclists, they are meant to prioritize through movements for cyclists while discouraging fast-moving vehicles on these corridors. Neighbourhood bikeways should only be implemented on roadways with low operating speeds (<40km/h) and low average daily traffic (<3,000 ADT). Bicycle use is typically prioritized through the use of traffic calming treatments that discourage or slow motorized traffic. Advisory bicycle lanes are typically implemented on streets with low motor vehicle traffic volumes (<4,000 ADT) and where it is relatively rare for two motor vehicles will meet each other at the same time. Advisory bicycle lanes are also appropriate to use in situations with on-street parking as designated on-street parking zones can be provided alongside bicycle lanes.

The following technical guides were used as primary resources:

- 1. Transportation Association of Canada Chapter 5 *Bicycle Integrated Design (2017)*
- 2. Development, Construction, and Operations of a New Traffic Calming Tool, City of Calgary *Transportation Association of Canada* (2017)
- 3. City of Kingston's Active Transportation Master Plan (ATMP) Walk n' Roll Kingston (2018)
- 4. British Columbia Active Transportation Design Guideline (2019)
- 5. Bicycle Boulevards Feasibility Study City of Hamilton (2021)
- 6. Ontario Traffic Manual (OTM) Book 18 Cycling Facilities (2021)

A list of typical and recommended design criteria for the Williamsville area were created using these technical guides.

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2.0 Typical Design Toolbox

Neighbourhood bikeways are designed to operate in mixed traffic conditions on roadways that encourage and prioritize bicycle travel.

These design elements can be summarized into four main categories¹²:

- 1. Traffic Reduction;
- 2. Intersection Treatments;
- 3. Speed Management/ Priority; and
- 4. Signs and Pavement Markings.

2.1 Traffic Reduction

Traffic reduction design measures are typically applied at intersections to restrict vehicle movements at intersections while allowing them for cyclists. These can include the following:

- Median islands/diverters: Restrict the through movement of motor vehicles at major crossings, while providing a refuge for cyclists to complete a two-stage crossing;
- Choker entrances: Allow only one direction of motor vehicle traffic either entering or exiting a side street, while allowing cyclists to pass through;
- Full diverters: Convert a four-way intersection into a "T" intersection by closing one of the legs to motor vehicles, while allowing cyclists to pass through.

Although traffic reduction measures may not be applicable in all cases, they do provide the greatest benefit for cyclists, pedestrians and residents as it reduces exposure to traffic noise and emissions (OTM Book 18, 2021). In the context of Williamsville, the preferred corridors provide necessary connections for two-way vehicle traffic and limiting a road to one-way circulation or preventing vehicles from entering a roadway in one direction are not recommended. If the local road network is changed substantially in the future to accommodate one-way roads, these measures may be applicable.

2.2 Major Intersection Treatments

Intersection treatments improve cyclists' ability to cross a major roadway with higher vehicle volumes and speeds. These intersection treatments should provide clear and safe navigation for people riding bikes. Examples of intersection treatments include:

Bike Boxes;

¹ Ontario Traffic Manual Book 18 (2021)

² National Association of City Transportation Officials

- Advanced Stop Bars;
- Bicycle actuated signals;
- Crossrides/Intersection Crossing Markings;
- Refuge Islands; and
- Curb Extensions.

Based on the corridors identified, the following major intersections should be analyzed in more detail and could benefit from one of the major intersection treatments listed above:

- MacDonnell Street & Princess Street;
- Albert Street & Princess Street;
- Nelson Street & Princess Street;
- MacDonnell Street & Concession Street; and,
- Victoria Street & Johnson Street;

The City of Kingston's Active Transportation Master Plan outlines the use of bike boxes and crossrides as potential intersection treatments at major intersections to improve a user's ability to cross a roadway or intersection.

For the relatively low volume and speed roads selected as preferred corridors in the Williamsville area, it is recommended that bike boxes and crossrides or intersection crossing markings are explored further as potential major intersection treatments. Sample images of the above intersection treatments are provided below in Figure 1 to Figure 2.



Figure 1: Bike Boxes (Portland, OR)

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Figure 2: Crossride (Chicago, IL)

2.3 Minor Street Intersection Treatments

In general, where a neighbourhood bikeway intersects with a minor road, fewer treatments are necessary due to lower speeds and vehicle volumes. It is desirable to provide a continuous bikeway without stop control for cyclists while also providing vehicle speed and volume control measures for motor vehicles.

These types of treatments range from simple stop signs on cross-streets to traffic circles to slow vehicle traffic while maintaining a continuous path for cyclists. For the preferred corridors, it is recommended that stop signs are removed in the direction of travel for the corridors when a preferred corridor intersects with another minor road. Where two preferred corridors intersect, it is worth considering a solution such as a traffic circle to prevent cyclists in both directions from coming to a complete stop. Implementation of a traffic circle would be appropriate at intersections with low volumes to ensure that large vehicle queues or frequent vehicle conflicts would not be present.

Sample minor street treatments are presented below in Figure 3 to Figure 4.

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Figure 3: Minor Street Stop Sign (Google Maps (2020)



Figure 4: Neighbourhood traffic circle (Baltimore, MD)

2.4 Speed Management

Speed management on neighbourhood bikeways presents the greatest way to improve safety for cyclists and thereby encourage the use of bicycles. Reducing posted speed limits is generally not effective at reducing operating speeds below 40km/h, requiring the use of physical speed management tools. Reduced vehicle operating speeds can improve the perception time of both motorists and cyclists and further improve safety for both users.

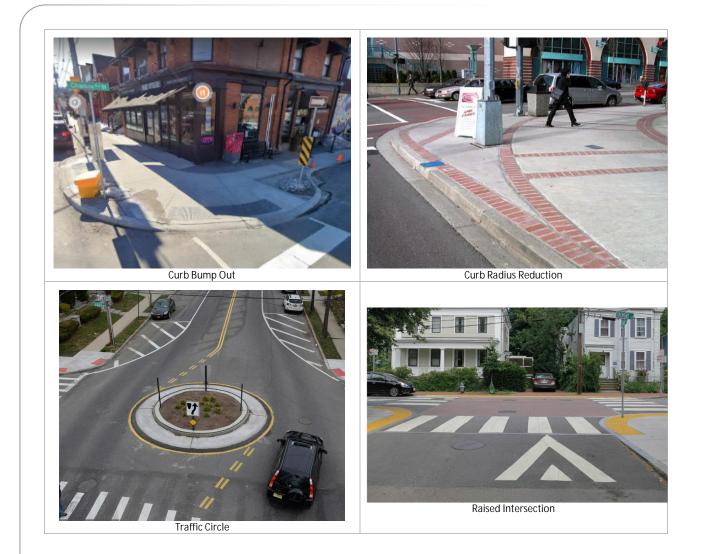
Some examples of speed management designs include:

- Speed tables;
- Speed humps;
- Raised crosswalks;
- Curb extensions;
- Chicanes;
- Narrowing of motor vehicle lanes; and
- Dynamic "watch your speed" signs;

DILLON CONSULTING LIMITED www.dillon.ca Page 7 of 15 325 Potential speed management solutions for the Williamsville area have been summarized below in Table 1.

Table 1: Speed Management Solutions





2.5 Signs and Pavement Markings

Providing appropriate signage and pavement markings encourages the use of neighbourhood bikeways and advisory bicycle lanes by communicating the intended travel path, and connections to the local cycling network, and promoting the visibility of cyclists to motorists.

In Ontario, the most common signs used to denote shared cycling facilities are signs Wc-19 OTM or Wc-24 OTM. The City of Kingston's ATMP outlines the use of the Green Bike Route Sign and the Share the Road sign. . In addition to signage, shared facility pavement markings are also encouraged to promote the visibility of cyclists and to clarify that the roadway is a shared-use lane. These pavement markings include "sharrow" (shared lane). In addition to these pavement markings and signage, bicycle lane markings should be used for advisory bike lanes with a buffer between bicycle lanes and parking lanes.

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At the time of writing, neither OTM Book 18, or TAC GDG have a standard advisory bicycle lane sign to inform drivers how to operate with these facilities. Both Gibbons, BC and Ottawa, ON have created custom signs to inform both cyclists and drivers. Relevant signage and pavement markings are shown below in Table 2.

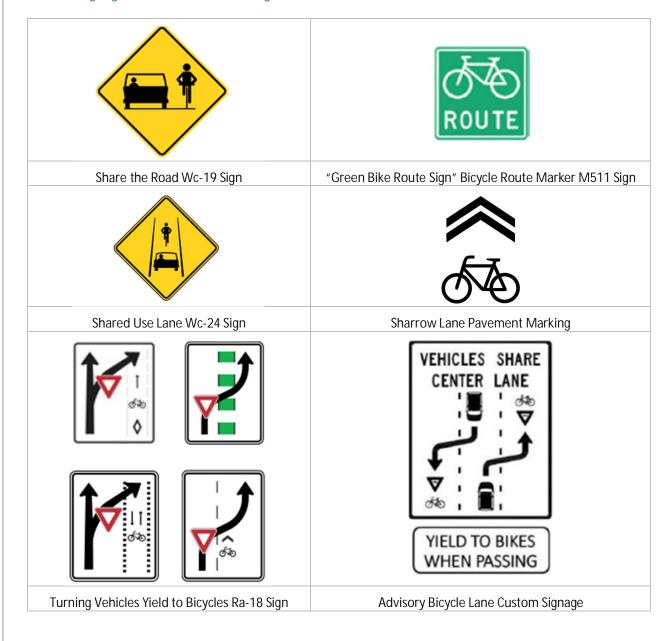


Table 2: Signage and Pavement Markings

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3.0 Implementation Considerations

Based on the selected corridors, a list of potential design measures have been identified for implementation. Table 3 defines the design element, any relevant measures of efficacy, and a high-level estimated cost per unit.





Table 3: Recommended Design Measures

Design Element	Description	Purpose	Efficacy ³	Implementation Considerations	Estimated Cost ⁴	Design Category
Painted Cycle Symbols	On-street pavement markings designating a portion of the road way as an exclusive or shared space for cyclists.	Improve route finding for cyclists, and raise awareness for vehicular traffic that the facility is designated for cyclists	Efficacy information unavailable/non- applicable.	 Pavement markings have a relatively low installation cost but require repainting. Messaging intended for drivers is directly within the driver's/cyclist's field of vision. Not visible when snow cover is present 	\$2,000/km – single side of the roadway	Signs and Pavement Markings
Cycle Facility Signs	Roadside signage designating a corridor as a roadway as an exclusive or shared space for cyclists.	Improve route finding for cyclists, and raise awareness for vehicular traffic that the facility is designated for cyclists	Efficacy information unavailable/non- applicable.	 Minimal ongoing maintenance requirements Messaging intended for drivers is located outside the roadway edge. Requires space outside of the roadway for sign installation Visible in all weather conditions 	\$2,000/km – single side of the roadway	Signs and Pavement Markings
Painted Bike Lane	On-street painted space for cyclists to travel. Typically located along the curb. May include a buffer. Cyclist travel way and optional buffer delineated by pavement markings.	Provide on-street horizontal separation between cyclists and vehicle travel lanes.	 Driver-cyclist collision rate decreased by 39%. (CMF = 0.61) (painted bike lanes through signalized intersection)⁵ 	 Improved safety is due to visual cues, not physical protection or separation Not visible during snowy conditions Ongoing maintenance required for repainting 	\$49/m	Signs and Pavement Markings

³ Note that a Crash Modification Factor (CMF) indicates that this design element has been proven to reduce the number of crashes to X% of the original values. Where available, the change in condition used to arrive at the stated efficacy level has been identified.

⁴ Costs estimates obtained from historical studies, may not reflect current prices.

⁵ "Crash Modification Clearinghouse", Federal Highway Administration (2021)

On-Road Messaging	Provide information that is typically messaged to drivers as signage but are instead painted on the roadway to provide a larger image directly in the driver's line of sight (e.g. "SLOW")	Improve compliance with reduced speed limit, notify drivers of a change of context in the transportation network (e.g. neighbourhood bikeway vs. collector street)	 Vehicle speed reduction in 85th percentile speed up to 14 km/h⁶ Driver-cyclist collision rate decreased by 30% (CMF = 0.7)⁵ 	Ongoing maintenance required for repainting	\$49/m2	Signs and Pavement Markings
Speed Humps	Raised area of a roadway that causes vertical deflections to travelling vehicles. Localized vertical deflection requires that drivers slow down to mitigate damage to their vehicles.	Reduce vehicle operating speeds on local and collector streets with posted speed limits <50 km/h	 Vehicle speed reduction in 85th percentile speed up to 13 km/h⁶ Driver-cyclist collision rate decreased by 45%. (CMF = 0.55)⁵ Traffic volume reduction up to 27%⁶ 	 Potential increase in delay to EMS, transit travel time Negative effects on snow plowing operations 	\$5,000 each	Speed Management
Curb Bump Outs	A horizontal intrusion of the curb into the roadway resulting in the narrowing of a localized section of the road. Typically implemented at intersections, but can be used mid-block.	Reduce vehicle speeds and volume, reduce pedestrian and cyclist crossing distances, increase the visibility of pedestrians, prevent parking close to intersections	 Vehicle speed reduction in 85th percentile speed up to 8 km/h⁶ Effectiveness improved when used in conjunction with other measures (e.g. speed humps) 	 Forces cyclists closer to vehicle traffic at the intersection Loss of on-street parking Impact on EMS, truck, and transit turning movements May require drainage adjustments Range in construction costs driven by surface type (interlocking brick, asphalt, concrete), landscaping, and if utility improvements are required (relocating/installing and connecting catch basins, signals) 	\$5,000 – 15,000 per corner	Speed Management
Curb Radius Reduction	Modification of an intersection corner to a smaller Can be	Slow down right-turning vehicle traffic, reduce crossing distances for	Particularly effective where vehicles are turning	Range in construction costs for physical reductions driven	\$10-000 - 20,000 per each corner (physical)	Major Intersection Treatment

⁶ Canadian Guide to Traffic Calming (Second Edition) *Transportation Association of Canada (2017)* DILLON CONSULTING LIMITED

	implemented with pavement markings and bollards, or by reconstructing the curb, sidewalk, and boulevard.	vulnerable road users, and improve the visibility of pedestrians.	to/from a bike boulevard to higher volume/speed streets	 by surface type (interlocking brick, asphalt, concrete), landscaping, and if utility improvements are required (relocating/installing and connecting catch basins, signals) Consider transit/EMS turning movements 	\$2,000 each (painted w/ Bollards)	Major Intersection Treatment
Mini Traffic Circle	A circular island located at the centre of an intersection, which requires vehicles to travel through the intersection in a counter clockwise direction, typically constructed with a raised centre and surrounded by a mountable apron.	Reduce travel speeds, volumes, and collisions points for vehicle traffic	 Vehicle speed reduction in 85th percentile speed up to 14 km/h⁶ Vehicle traffic volume reduction up to 20%⁶ Driver-cyclist collision rate decreased by 30%. (CMF = 0.7) 	 Minor delay to EMS, transit travel speed and snow clearing operations Range in construction costs for physical reductions driven by surface type (interlocking brick, asphalt, concrete), landscaping, and if utility improvements are required (relocating/installing and connecting catch basins) 	\$10-000 - 20,000 each	Minor Street Intersection Treatment
Raised Intersection	An intersection that may include crosswalks, constructed at a higher elevation than the adjacent approach roadways.	Reduce vehicle speeds, better define crosswalk areas, reduce frequency and severity of pedestrian/cyclist-vehicle conflicts	 Vehicle speed reduction in 85th percentile speed up to 10 km/h⁶ Improved driver to pedestrian yield rate from 18% to 54%⁶ Driver-cyclist collision rate increased by 9%. (CMF = 1.09) (slight increase in crash frequency)⁴ 	 Potential increase in delays to EMS, and maintenance (Transportation Association of Canada, Institute of Transportation Engineers, 2017) Cyclist speeds are reduced at raised intersections where cyclists are not required to stop. (Transportation Association of Canada, Institute of Transportation Engineers, 2017) Potential impact on local drainage (Transportation Association of Canada, Institute of Transportation Association of Canada, Institute of Transportation Association of Canada, Institute of Transportation Engineers, 2017) 	\$10,000 - \$50,000 each	Major Intersection Treatment/Minor Street Intersection Treatment

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Modular Pedestrian Traffic Diverter	150mm high pre-cast concrete blocks, 1m by 2.75m in size, which can be arranged to simulate various traffic calming measures such as curb and median extensions, mini-roundabouts or	Act as a low-cost temporary or permanent option for implementing traffic calming.	 Average speed and 85th percentile speed reduction up to 3 km/h⁷ Speeding compliance improvement of 11% Yielding compliance improvement of 47%⁷ 	 Ability to maintain existing drainage patterns Can be used for permanent or temporary applications Allows for planners/engineers to adjust the geometry after implementation 	\$1,000 per unit	Speed Management/Major Intersection Treatments
	chicanes.					

⁶ Canadian Guide to Traffic Calming (Second Edition) Transportation Association of Canada (2017)
 ⁷ Development, Construction and Operations of a New Traffic Calming Tool, City of Clagary, Transportation Association of Canada (2017)
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City of Kingston Report to Environment, Infrastructure & Transportation Policies Committee Report Number EITP-24-002

Chair and Members of the Environment, Infrastructure &		
ansportation Policies Committee		
ad Joyce, Commissioner, Infrastructure, Transportation &		
nergency Services		
ren Santucci, Director of Public Works & Solid Waste		
bruary 13, 2024		
Ilinator Gardens		

Council Strategic Plan Alignment:

Theme: 2. Lead Environmental Stewardship and Climate Action

Goal: 2.3 Maintain the City's natural heritage and environmental assets.

Executive Summary

The world's food supply depends on pollinators. Birds, bees, butterflies, beetles, and other beneficial insects and small mammals pollinate plants that:

- bring us countless fruits, vegetables, and nuts
- support half of the world's oils, fibers, and raw materials
- prevent soil erosion
- increase carbon sequestration

A pollinator garden supports and protects these important creatures by providing food and shelter. Pollinator gardens on public lands can become important educational sites for residents to learn how to plant a pollinator garden on private lands, while helping to increase pollinator habitats. These gardens can also be used to build seed stock for the municipality and community groups to allow for the development of more gardens throughout the city.

Between 2013 and today, 12 butterfly/pollinator/perennial gardens have been planted on public land throughout the city, nine of which have been planted and maintained by community groups.

Report to Environment, Infrastructure & Transportation Policies Committee

Report Number EITP-24-002

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These gardens have flourished under this community planting and maintenance system. The Public Works Department has two pollinator gardens which they planted and/or maintain. There are also an additional five naturalized areas which were planted with meadow grasses within specified areas in City parks.

Development and maintenance of the community planted and managed pollinator gardens has been successful and beneficial. Community groups have taken pride in the development of these gardens and use them to educate residents on how to plant pollinator gardens on their own properties. This planning and maintenance model benefits the City as a whole but needs to be formalized. The Community Gardens Policy is currently under review both as part of an scheduled review and as part of Council's strategic priority 4.2.1 that directs staff to review the City community garden policies, and coordinating by-laws, with a view of removing barriers to urban food production. This broader community garden review will consider the recommendations of this report as to how pollinator gardens can be developed and managed and will also consider aligning procedures for gardens on City properties that are already designated as natural lands or already have a pollinator garden planted on them.

The City of Kingston could also increase the number of pollinator gardens planted and maintained by City staff by strategically replacing some annual gardens with pollinator gardens.

Recommendation:

That the Environment, Infrastructure & Transportation Policy Committee recommend to Council:

That Council endorse the community perennial/wildflower/pollinator garden model, which is currently being practiced, and direct staff to incorporate it into the Community Gardens Policy as part of the scheduled review; and

That Council approve the creation of a simplified process for allowing community groups to convert designated naturalized areas within parks to pollinator gardens and to enhance existing pollinator gardens; and

That Council endorse Public Works continuing to assist community groups in the ongoing development and maintenance of pollinator gardens, and Public Works supporting efforts to educate residents on planting pollinator gardens; and

That Council approve the community groups maintaining community perennial/wildflower/pollinator gardens in using seed stock from the garden to expand pollinator gardens on other public or private lands; and

That Council authorize the Director, Public Works & Solid Waste to approve any documents or agreements required to implement the pollinator garden program described in Report Number EITP-24-002 and to create, administer, manage, operate, and amend, as required, any and all policies or procedures required to give effect to the pollinator garden program; and

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That the Mayor and Clerk be authorized to execute any documents or agreements approved by the Director, Public Works & Solid Waste in respect of the pollinator garden program, in a form satisfactory to the Director of Legal Services.

Report to Environment, Infrastructure & Transportation Policies Committee

Report Number EITP-24-002

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Authorizing Signatures:

ORIGINAL SIGNED BY COMMISSIONER

Brad Joyce, Commissioner, Infrastructure, Transportation & Emergency Services

ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER

Lanie Hurdle, Chief Administrative Officer

Consultation with the following Members of the Corporate Management Team:

Paige Agnew, Commissioner, Growth & Development Services	\checkmark
Jennifer Campbell, Commissioner, Community Services	\checkmark
Neil Carbone, Commissioner, Corporate Services	Not required
David Fell, President & CEO, Utilities Kingston	Not required
Peter Huigenbos, Commissioner, Major Projects & Strategic Initiatives	Not required
Desirée Kennedy, Chief Financial Officer & City Treasurer	Not required

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Options/Discussion:

Pollinators are creatures that move pollen from one plant to another, helping in the pollination process. They depend on flowering plants for their survival. In Canada, these species include bees, flies, moths, butterflies, wasps, some beetles, and many bird species. Many pollinators are now under threat due to loss of habitat, non-native plants, and pesticides. Without these species, we would lose most of our flowers, fruits, vegetables, and other essential plant life.

A pollinator garden is designed to contain plants to provide food and shelter to animals (bees, birds, butterflies, moths, wasps, bats, and small mammals) that pollinate plants to support the local ecosystem and food web. Pollinator gardens are often made up of native plants, but nonnative plant pollinator gardens can still support local wildlife. Ideal pollinator gardens include the following:

- o food sources such as pollen and nectar from native flowers
- o nesting and overwintering sites such as bare soil, hollow stems, and leaves
- o larval host plants such as milkweed

As a municipality, promoting the number of pollinator gardens within the city has a number of benefits including:

- 1. supporting and sustaining native pollinator biodiversity in Kingston
- 2. creating, enhancing, and protecting habitat in natural and urbanized areas using native plants, trees, and shrubs as much as possible
- 3. engaging and supporting the community in taking action to help sustain Kingston's native pollinators

Background

Over the past 15 years, several gardens have been implemented throughout the city. Although not all are pollinator gardens, they all have native species and were designed with a goal of being sustainable, having native species, and attracting bees, birds, butterflies, or other wildlife.

In 2009, Utilities Kingston planted a Water Conservation Garden on City property at 1211 John Counter Boulevard. This garden was designed with plants that are native, require little additional water, and features many pollinator species. Tours are run by Utilities Kingston throughout the year as a learning opportunity for residents.

In 2011, the Kingston Horticultural Society planted a Pollinator-Friendly Garden at the Memorial Centre under the City's Community Gardens Policy. This garden has been maintained and enhanced since this time, while being recognized in 2017 as a Pollinator Haven by the Ontario Horticultural Association.

In 2013, Council approved a Sustainable Turf Care Management Plan including the adoption of five turf naturalization areas within City parks. These areas were seeded with a blended meadow grass mixture. Since that time, these areas have been left to grow throughout the

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season with mowing occurring on a seasonal basis only. The naturalization areas have remained in the following parks since 2013:

- 1. Cloverdale Park
- 2. Edenwood Park
- 3. Lawrence Park
- 4. Meadowbrook Park
- 5. Snider Park

In 2019, a motion was made to explore wildflower verges along City of Kingston roadsides. In 2020, Council endorsed a pilot wildflower planting along Sir John A Macdonald Boulevard <u>Report Number 20-088</u>. The goal of this planting was to reduce mowing costs, support endangered pollinators such as bees and butterflies, gain community support for wildflower verges, and beautify the roadway. It incorporated three different planting methods to determine which method would have the best planting success. Since this planting, the area has had limited success on an ongoing basis.

In 2021, the Portsmouth District Community worked to develop a low maintenance, droughtresistant garden featuring pollinator and native Ontario plants and ground cover on Grange Street. This has been extended to a smaller garden at Portsmouth Olympic Harbour and one by the footbridge at the bottom of Mowat Avenue. Additional pollinator/butterfly/perennial gardens have been planted and maintained by community groups in other areas throughout the city.

In 2023, the City of Kingston seeded the berms at Creekford Road Soil Transfer Site. As this is the initial year of the seeding, Public Works will review the area in 2024 to determine how well it has established and if additional work is required.

In 2023, a Neighborhood Climate Action Champion in the Portsmouth District, developed and planted a pollinator garden on private property. This pollinator garden is now being used as a demonstration garden for the neighbourhood with seeds being collected to be used in the coming year for additional gardens.

Currently, Kingston has 12 perennial/wildflower/pollinator gardens on public lands throughout the city that have been planted and maintained by various groups. These gardens can be found at the following locations:

- 1. Memorial Centre Planted and maintained by the Kingston Horticultural Association
- 2. Rotary Park Planted and maintained by the Rotary Club of Kingston
- 3. Sir John A. Macdonald Boulevard Planted and maintained by the City of Kingston
- 4. Aberdeen Park Planted and maintained by community group/residents
- 5. Portsmouth Olympic Harbour Maintained by community group/residents
- 6. Grange Street Garden Maintained by community group/residents
- 7. Mowat Avenue Footbridge Bird House Garden Maintained by community group/residents
- 8. Water Conservation Garden 1211 John Counter Boulevard Planted and maintained by Utilities Kingston

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- 9. Rodden Park Planted and maintained by community group/residents
- 10. McBurney Park Planted and maintained by community group/residents
- 11. Creekford Road Soil Transfer Site Planted and maintained by the City of Kingston
- 12. Barriefield Rock Garden Barriefield Village Association

A map of existing demonstration gardens, wildflower and naturalization areas is attached to this report as Exhibit A.

Analysis

These community-maintained perennial/wildflower/pollinator gardens have been very successful and have allowed community organizations to play a role in encouraging and educating other residents on the importance of pollinator gardens. It fosters community engagement and builds a strong sense of community. There is also the opportunity for these pollinator gardens to provide the community groups with seed stock to assist with additional plantings or enhancements to gardens throughout the city.

Over the past few months, Master Gardeners of Ontario Inc. has expressed an interest in the development of additional pollinator gardens on City property. Master Gardeners is an independent non-profit charitable organization dedicated to helping home gardeners. Members are experienced gardeners who have studied horticulture extensively and continue to upgrade their skills through technical training. With this training and continuing education, Master Gardeners meets its goals by providing expert horticultural advice to the public. By working with Master Gardeners on the planting of additional pollinator gardens on City property, City staff could utilize the knowledge and experience in planting pollinator gardens which can then be used as an educational tool for residents. Other opportunities could exist for organizations such as Rotary Club, Kingston Horticultural Society/Gardening Kingston, and others with a strong horticultural background.

To facilitate additional community-led pollinator gardens, a portion of naturalized areas established in the parks in 2013 could be used if the gardens are designed using perennials which are native species (or suitable for climate) and considered pollinators. Planting in a park area will ensure that the gardens are accessible by residents and can be used to educate residents on how to plant pollinator gardens on their own property.

As a municipality, City staff can encourage the planting of pollinator gardens by residents by providing information and educational opportunities which are currently happening at most of these community-led perennial/wildflower/pollinator gardens. There are many opportunities for municipalities to work with community groups to help further develop or enhance educational opportunities, via the City's website, social media, and signage at these gardens. Staff will also look for opportunities to work with Neighbourhood Climate Action Champions who are looking to develop pollinator gardens on City or private property.

The City of Kingston has also looked at areas where Public Works currently has annuals planted in gardens. The Horticulture Division will look to replace two of the garden beds with a pollinator garden over the next three years. These City beds will be maintained by the City of Kingston.

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As noted earlier, the roadside verge pollinator garden piloted on Sir John A. Macdonald Boulevard has had limited success. Notwithstanding, Master Gardeners would like to assist in enhancing this wildflower strip. Studies have shown that the positive benefits of roadside pollinator plantings outweigh the losses associated with vehicular traffic. There are also positive benefits associated with limited mowing in these areas. Currently, this planting is fairly small; however, if the bed can be enhanced, there are opportunities for plantings in many other areas of the city.

The Public Works Department will work with the community groups to support their pollinator gardens and ensure that appropriate signage is in place to recognize the groups and explain the importance of the pollinator gardens.

The City of Kingston does plant several gardens each year with annuals and/perennials. While the City will continue to do so, it also recognizes the need to ensure that additional pollinator gardens are provided throughout the city. As such, staff will look at the option of converting some flower beds to demonstration pollinator gardens.

Public Engagement

Consultation occurred with three community organizations/groups who are currently caring for perennial/wildflower/pollinator gardens throughout the city, and one organization who is interested in developing future gardens. These were informal conversations to understand the challenges they encounter and benefits they have seen.

Community groups have all indicated the gardens have been an educational tool for residents to learn from and expressed a desire to expand pollinator gardens throughout the community. All groups commented on the fact that the gardens have brought the community or individuals together to develop and maintain the gardens. Lastly, all groups are excited about the creatures that utilize the garden and the positive benefit they have for the pollinators. The main challenge has been ongoing maintenance of the areas especially if the champions are no longer able to care for the area. Other groups expressed concern with florals being removed or destroyed during the season and having the resources or funding to replant the destroyed areas and having access to a water source.

Climate Risk Considerations

Developing and conserving wild pollinators is important to ensure Canada's wild ecosystems, urban gardens, and agricultural production remain resilient, especially under climate change.

Pollinator gardens improve climate resiliency by enhancing stormwater management with increased infiltration compared to other pervious surfaces. They also absorb heat and thus help to reduce the heat island effect.

Report to Environment, Infrastructure & Transportation Policies Committee

Report Number EITP-24-002

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Existing Policy/By-Law

Although there is currently no formal process for community planted and maintained pollinator gardens, most have a signed agreement with the City. Pollinator gardens could fall under the Community Gardens Policy, which is currently being revised and could be expanded to include policy and process specific to pollinator gardens. Additional wording in this policy could also allow for a fast-track process if gardens are being installed in one of the five City parks that has a designated naturalized area, or to enhance an existing pollinator garden maintained by the City. Public Works will work with Recreation & Leisure Services as well as Community Development and Wellbeing on the review of the Community Gardens Policy in2024. The scheduled updates to the Community Garden Policy are being expanded to incorporate work aligned to Council's strategic priority 4.2.1 that directs staff to review the City community garden policies, and coordinating by-laws, with a view of removing barriers to urban food production.

In the interim, staff are recommending that Master Gardeners move ahead with assisting with the redevelopment of the Pollinator Garden on Sir John A Macdonald Boulevard, and the reestablishment of a portion of the naturalized area at Meadowbrook Park. A legal agreement can be developed for the work being completed by Master Gardeners on City property.

Financial Considerations

This model of encouraging community planted and maintained pollinator gardens has no negative financial implications to the City. Minimal costs may be associated with assistance to the community groups, but it is expected that this cost can be managed through the existing budget of the Public Works Department. New gardens planted and maintained by the City to enhance the work done by community groups (such as transforming a current bed in Churchill Park into a pollinator garden) would be absorbed by the departmental budgets as well.

Contacts:

Karen Santucci, Director, Public Works & Solid Waste, 613-546-4291 extension 18566

Other City of Kingston Staff Consulted:

Neal Unsworth, Manager, Parks & Shorelines

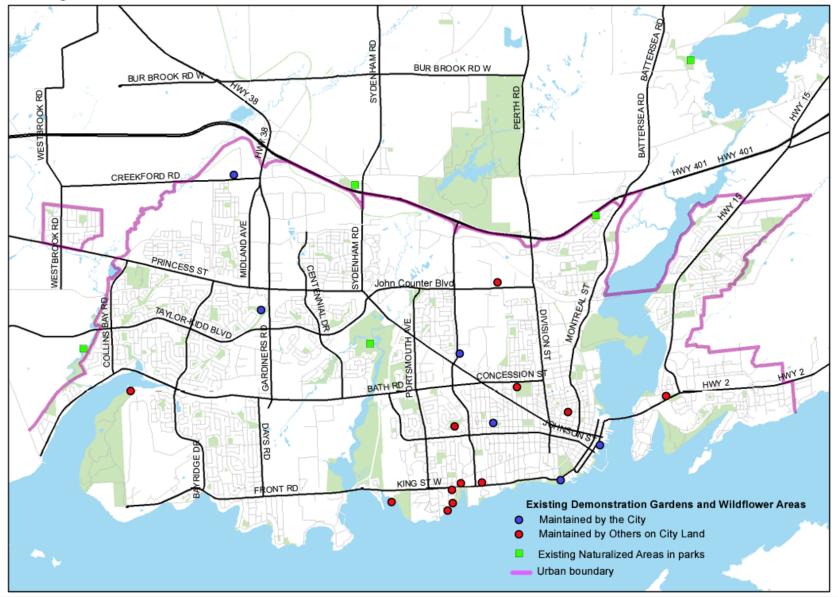
Jenna Morley, Director, Legal Services & City Solicitor

Tony Gargaro, Manager, Recreation Services

Julie Salter-Keane, Manager, Climate Leadership

Exhibits Attached:

Exhibit A - Map of Existing Demonstration Gardens, Wildflower and Naturalization Areas



Existing Demonstration Gardens, Wildflower and Naturalization Areas



City of Kingston Report to Environment, Infrastructure & Transportation Policies Committee Report Number EITP-24-006

То:	Chair and Members of the Environment, Infrastructure &
	Transportation Policies Committee
From:	Brad Joyce, Commissioner, Infrastructure, Transportation &
	Emergency Services
Resource Staff:	Ian Semple, Director, Transportation & Transit
Date of Meeting:	February 13, 2024
Subject:	Street Patio Program Update

Council Strategic Plan Alignment:

Theme: 5. Drive Inclusive Economic Growth

Goal: 5.8 Ensure the downtown remains vibrant.

Executive Summary:

Outdoor dining plays an integral role in animating the main streets of Kingston and supports restaurants with increased seating capacity and additional employment opportunities. Patios in the public realm generate foot traffic and contribute significantly to the pedestrian experience for both residents and visitors, aligning with the vision and priorities of downtown pedestrianization.

In March 2023, Council adopted the Street Patio Standards and Application Guide, which involved a comprehensive review and overhaul of the City's long-standing street patio program. The City worked alongside the Downtown Kingston Business Improvement Area (DKBIA), Tourism Kingston, and Kingston Accommodation Partners to develop the new standards, introducing four patio configuration options, formalizing the standards for temporary parking space conversion, simplifying options for public seating, and including detailed technical and design standards. The phasing-in plan allowed existing operators to comply by 2024.

Since the adoption of the Street Patio Standards and Application Guide in 2023, the City has conducted outreach to patio operators in anticipation of the new standards coming into effect in

February 13, 2024

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2024. Concerns raised by operators in the lead-up to implementation prompted a review and, as a result, several changes are proposed, aiming to clarify and amend the Street Patio Standards. These amendments are recommended to address concerns related to aisles, patio entrances, fencing, plant materials, and temporary structures. Feedback from a DKBIA review committee and educational site visits conducted by staff helped to inform these changes. Temporary relief from specific provisions within the Street Patio Standards is also recommended for existing non-compliant patios under active licence agreements. These proposed amendments are detailed in Exhibit A – Updated Street Patio Standards and Application Guide, and Exhibit B – Proposed Temporary Exemptions – Non-Compliant Patios, respectively.

As part of the 2023 patio season, a pilot program using modular platforms for pop-up patios in on-street parking spaces was initiated by the City, aiming to test accessibility, durability, and flexibility. Approximately 23 platform sections were procured and leased to the City on a one-year term to pilot their use within on-street parking spaces. Capital funds to pilot the use of platforms for pop-up patios for the 2023 season were provided using the remaining funds previously allocated to the patio standards review.

The use of modular platforms improved the accessibility and aesthetics of the pop-up patio program significantly and provided an additional option for restaurants looking to expand their outdoor dining space, particularly adjacent to sidewalk areas that may otherwise be constrained. Businesses and the DKBIA responded positively, and concerns were generally minimal compared to the previous practice of using ramps.

It is recommended that the City continue to offer the option of the installation of a modular patio platform for the 2024 patio season for interested patio operators. However, capital funds are not available for the City to cover the expenses related to leasing the platforms for an additional year. It is recommended that DKBIA coordinate directly with businesses and the platform vendor used in 2023 to determine interest, preferred locations, and manage the collection of funds, and for the City to review locations and coordinate the details of the installation with the vendor. Aligned with feedback received from patio operators seeking the option to design and construct customized platforms, operators will alternatively be permitted to submit an application to construct a reusable platform, including a drawing stamped and signed by a professionally licensed designer (i.e. Professional Engineer or Registered Architect), for review by the City.

Recommendation:

That the Environment, Infrastructure and Transportation Policies Committee recommends to Council on February 20, 2024:

That Council approve the updated Street Patio Program as outlined in Report Number EITP-24-006, and as per Exhibit A to Report Number EITP-24-006, "Street Patio Standards and Application Guide"; and

February 13, 2024

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That Council approve temporary exemptions to the approved Street Patio Standards, in the form attached as Exhibit B to Report Number EITP-24-006, "Temporary Exemptions – Non-Compliant Patios", for existing non-conforming street patios that were established prior to the City's COVID-19 temporary patio program and that are or were authorized by a valid licence agreement with the City.

Report to Environment, Infrastructure & Transportation Policies Committee

Report Number EITP-24-006

February 13, 2024

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Authorizing Signatures:

ORIGINAL SIGNED BY COMMISSIONER

Brad Joyce, Commissioner, Infrastructure, Transporation & Emergency Services

p.p. ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER

Lanie Hurdle, Chief Administrative Officer

Consultation with the following Members of the Corporate Management Team:

Paige Agnew, Commissioner, Growth & Development Services	\checkmark
Jennifer Campbell, Commissioner, Community Services	Not required
Neil Carbone, Commissioner, Corporate Services	Not required
David Fell, President & CEO, Utilities Kingston	Not required
Peter Huigenbos, Commissioner, Major Projects & Strategic Initiatives	Not required
Desirée Kennedy, Chief Financial Officer & City Treasurer	Not required

February 13, 2024

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Options/Discussion:

In March 2023, Council adopted the recommendations presented in <u>Report Number 23-080</u> – Patio Program Update: Standards, Application Process and Fee Review. This included the repeal of the Sidewalk By-law and the adoption of the <u>Street Patio Standards and Application</u> <u>Guide</u> (referred to as "the Standards") in its place, which sets out new standards for patios located within the public streetscape, including on the sidewalk and within parking laybys.

As part of Report Number 23-080, staff recommended piloting the use of modular platforms for pop-up patio locations within on-street parking spaces for the 2023 patio season to test the potential improvements around accessibility, durability, and flexibility of use, and indicated that a report would be presented back to Council to summarize the results. This report provides an overview of the pilot program and outlines recommendations going forward.

Since the Standards were adopted by Council in 2023, the City has been working with existing patio operators to identify steps that they will need to take to comply with the standards through future modifications to their existing patios. Through this process, the City has received several questions and concerns from patio operators regarding elements of the standards that were introduced or carried forward from the previous Sidewalk By-law.

To address these concerns, staff are bringing forward proposed changes to amend and clarify the Standards, where applicable. Staff are also recommending an approach of providing temporary relief from specific provisions of the Street Patio Standards for existing patio operators under existing licence agreements, where appropriate. This approach allows patio operators to maintain their existing, previously approved patio configuration, while ensuring that the patios are brought into compliance with the current Street Patio Standards at the next available opportunity, such as the reconstruction of their patio or a change in business ownership. The amendments to the Standards are outlined in this report and presented as a set of updated standards in Exhibit A – Updated Street Patio Standards and Application Guide. The recommended temporary exemptions for existing non-compliant patios that were established prior to the COVID-19 temporary patio program and that are or were licensed through a licence agreement with the City are presented in Exhibit B – Proposed Temporary Exemptions – Non-Compliant Patios.

Background

The City has a long-running program that permits businesses to operate seasonal patios within the public streetscape. Until recently, this program was limited to patios on the sidewalk and was regulated by way of City of Kingston By-Law Number 87-136, A By-Law to Authorize the Adoption of Regulations Established for the Purpose of Dealing with Applications for the Extended Use of Sidewalks (the "Sidewalk By-law"), which had not been substantially or comprehensively reviewed since the early 1990s.

February 13, 2024

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To provide additional options for businesses during the pandemic, several new temporary patio configurations were proposed in addition to the standard sidewalk configuration, including patios that utilized on-street parking spaces. Several provisions in the Sidewalk By-law were waived to facilitate rapid deployment of street patios. These additional options were adopted on a temporary basis and reviewed each year to adapt to business needs and incorporate lessons learned from the prior year. Leading into the 2022 patio season, Council adopted a set of more detailed interim guidelines for temporary patios, providing additional clarity for outdoor dining options within the public right-of-way.

At the end of the 2022 patio season, staff began a review of the program more broadly, which included the existing Sidewalk By-law that was in place and the interim guidelines that had been developed. The intent was to develop updated comprehensive standards for the street patio program as a whole and integrate the expanded on-street patio options introduced during the pandemic. This work was directed by the Council-adopted recommendations of the Downtown Community Focus Group, which was established to develop short and long-term improvement initiatives in the downtown area.

To inform the development of the new standards, in collaboration with the Downtown Kingston Business Improvement Area (DKBIA), Tourism Kingston (TK), and Kingston Accommodation Partners (KAP), the City conducted a survey with local businesses about the 2022 patio season. City staff conducted over 150 door-to-door visits with downtown businesses to encourage participation and answer questions related to street patios. Fifty-six businesses participated in the survey. Along with cafés, bars, and restaurants, responses were also received from adjacent businesses including clothing retailers, salons, jewellers, pet stores, furniture stores, and hotels.

This feedback formed the basis for the priorities and direction of the development of the Street Patio Standards, along with comments shared as part of ongoing meetings with the DKBIA and TK throughout its development. A best practice review of municipalities across Canada further informed the development of the Standards, along with retaining a team of external professional planners, engineers, and urban designers to support the development of new standards with consideration of the Kingston context. This work included a review of application processes, patio season dates, types of patio configurations, accessibility, legislative requirements, road and fire safety, design standards, operation and maintenance requirements, and patio fees.

The new standards, adopted by City Council in March 2023, represented an overhaul of the previous Sidewalk By-law that was in place and reflected the City's expectations for the patio program going forward. The updated standards included the following changes:

- Four patio configuration options that maximize the opportunities for patio operators to use the space adjacent to their business along a sidewalk or in a parking layby.
- Formalized standards that allow temporary parking space conversion to pop-up patios without reconstruction or permanent changes to the city's street or sidewalk areas.
- Simplified options for businesses seeking to add public seating along their frontage.

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- New winter patio options using temporary materials (tables/chairs), either event-based or ongoing, as well as extended patio seasons for sidewalk patios.
- Detailed technical standards for the patio structure and layout, including new requirements to ensure accessibility around the patios is maintained.
- Design standards on fencing, tables and chairs, menus and signage, host stands, plantings, lighting, and umbrellas that ensure the form, function, and accessibility around and within the patios are met.
- New minimum operating requirements for patios using on-street parking that ensure the space is utilized, recognizing the balance of uses in the curbside area (e.g. patios, pedestrians, and safe and efficient pick-up and drop-off areas for people and goods).
- Enhanced standards to ensure that patios are well maintained throughout the patio season.

The new patio standards were intended to be phased in over a two-season period, with existing patio operators, including those that operated under a temporary permit in 2022, permitted to operate in their currently approved configuration. Staff were to work with existing operators to transition to the new program standards, including entering into new patio licence agreements, for the 2024 patio season. New or modified patio applications were subject to the new standards as part of the 2023 season.

The review also considered the patio fee structure that was in place and proposed a simplified fee structure consisting of an application fee coupled with annual fees based on the patio footprint that scales with its size. Zone-based fees within the downtown area and separate parking displacement fees were removed, resulting in the harmonization of fees to one standard rate based on the footprint of the patio. The new fee structure was intended to introduce a more consistent approach in the way that fees are charged across the various patio configurations and create a lower barrier to entry for smaller patio footprints. The majority of new fees were proposed to take effect in 2024 and were developed to maintain the existing revenue, provided the same number of patios continue operation in 2024. The updated fee structure was endorsed by City Council as part of <u>Report Number 23-080</u> and adopted as part of <u>Report Number 24-005</u> – 2024 Annual Amendment to Fees and Charges – City of Kingston By-Law Number 2005-10 to take effect for the upcoming 2024 patio season.

2023 Patio Season

Fifty-five patios operated as part of the 2023 patio season. The following is a breakdown of the types of patios that operated:

- 28 sidewalk patios with active licence agreements with the City, including one new patio location and one reconstructed patio. Three of these patios were permitted to temporarily extend their patio space on the sidewalk.
- 14 sidewalk patios that were issued a seasonal permit but have not gone through a formal application process or have recently changed ownership.

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- 11 pop-up (on-street parking space) patios utilizing modular patio platforms that were granted temporary permits.
- 2 café-style patios comprised of tables and chairs on the sidewalk.

Approximately 23 platform sections were procured and leased to the City on a one-year term to pilot their use within on-street parking spaces. Capital funds to pilot the use of platforms for popup patios for the 2023 season were provided using the remaining funds previously allocated to the patio standards review. The City and DKBIA jointly communicated the opportunity to participate with patio operators, with 11 businesses responding by the deadline. These businesses were all able to be accommodated with the funds available, with platform sections being assigned on a request basis and in consultation with the DKBIA. The City provided approximately \$100,000 of in-kind funding by way of the lease of approximately 23 platform sections and the installation, repairs, removal, and traffic control required, excluding staff time. Patio operators were charged the established fee outlined in the Fees and Charges By-law as a cost recovery measure for the use of the parking space(s) and operation of the program. The platforms were installed over a three-night period in mid-May and removed in mid-September.

As a measure to balance the need for shared curb space, as outlined in the updated standards, businesses that were proposing to operate a patio within on-street parking spaces with elements taller than 1.2 metres positioned in front of an adjacent business, such as umbrellas, were required to obtain a letter of support from the adjacent business prior to approval by the City. Except for one particular instance, this approach largely mitigated business conflicts as it related to the use of on-street patio space when compared to previous years. It is recommended that this requirement be carried forward for future patio seasons.

Implementation of the Street Patio Standards

In anticipation of the updated Street Patio Standards & Application Guide coming into effect for existing patio operators in 2024, staff organized an information session for patio operators, with the attendance of approximately 15 operators. Staff took the approach of focusing on the provisions related to accessibility, legislation, and safety, and indicated that other provisions may be considered on a case-by-case basis recognizing that many patios had been in place for a considerable period of time before the adoption of the Standards. With this considered, staff indicated that patios would be reviewed and, on a case-by-case basis, may be exempted and/or afforded additional time to comply with certain provisions of the Standards.

At this meeting and in subsequent communications, the City received general and specific concerns from patio operators, both directly and through the DKBIA, about multiple provisions within the recently adopted standards, including the following:

- Minimum aisle widths
- Minimum patio entrance widths
- Provisions relating to structures

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- Fencing requirements
- Sidewalk accessibility
- Patio materials
- Fire safety
- Minimum operating requirements
- Advertising restrictions

While some concerns were regarding new requirements that were introduced, a number of the concerns shared also pertained to regulations that had been carried forward from the previous Sidewalk By-law or were required by other by-laws or provincial legislation and reinforced as part of the new standards for further clarity. In the latter case, these provisions had been in place for several years prior to the adoption of the Standards and each patio operator was already previously obliged to adhere to them.

While DKBIA staff were involved as a stakeholder throughout the development of the Standards, there was a strong sentiment expressed by patio operators that they did not have an opportunity to provide feedback on the newly adopted standards. There were varying sentiments and suggestions shared by the operators, including a desire for the Standards to be overhauled and applied consistently irrespective of previous approval, for specific exemptions with consideration for their previously approved patio, or to be fully exempted from the Standards altogether.

As a next step, individual educational site visits were proposed by the City for staff and patio operators to discuss the Standards as they applied to each patio on a site-specific basis. The visits were intended to discuss the provisions in more detail as they relate to each specific patio, answer questions, review existing approvals, and identify any preliminary issues that may require future rectification. This was intended to benefit both the patio operators and the City in understanding the scope of changes to the patio set-ups that may or may not be required to be in compliance with the Standards. A total of 16 patios were reviewed as part of this voluntary process. High-level feedback was provided to the operators regarding aspects of their patio that may require future rectification and/or further review.

In addition to the educational site visits that were organized, the DKBIA organized informational interviews with 16 interested patio operators and shared the compiled feedback back with the City. The DKBIA subsequently formed a review committee to liaise with City staff and provide feedback on the proposed recommended updates to the Standards and temporary exemptions for existing patio operators under licence agreements with the City. Staff met with the committee to present an initial draft copy of the proposed updates and exemptions. Feedback shared at the meeting was taken into consideration and additional iterations of the recommendations were drafted and shared with the DKBIA in December 2023. At its January 2024 meeting, the DKBIA Board of Management adopted a motion to approve the updated draft Street Patio Standards and Application Guide, with an acknowledgment that stakeholders had been appropriately consulted.

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Recommended Patio Standards Updates

Based on the feedback received, the educational site visits conducted, and informational interviews conducted by the DKBIA, several amendments to the Street Patio Standards & Application Guide are proposed. The proposed changes are highlighted below and presented as a set of updated standards in Exhibit A – Updated Street Patio Standards and Application Guide.

Aisles

The current patio standards carry over a stipulation from the former Sidewalk By-law that mandates a requirement for a minimum 1.1-metre aisle at all times from the patio entrance to the building entrance and all tables within the patio area. The Standards stipulate that no patio furnishings or materials are permitted to interfere with the minimum aisle width, and that no additional tables or chairs can be placed in the patio area after the patio layout has been approved. The intent of this requirement was largely related to maintaining safe passage between the entrance of the building and the entrance to the patio.

Several concerns have been raised by patio operators about the interpretation of this requirement and whether it applies to all tables within the patio area. As patios have typically been approved for layouts that are based on occupancy requirements under the Ontario *Building Code* (OBC) and Ontario *Fire Code* (OFC), it is recommended that the Standards be clarified that these codes regulate the patio area rather than a stipulated aisle width within the Standards. However, it is recommended to maintain the requirement of a 1.1-metre aisle width between the patio entrance and the building entrance, which is important for accessibility and in the event of an emergency. Staff are recommending clarifying the stipulation for the 1.1-metre aisle width, in that it only applies specifically to the area between the building entrance and the patio entrance.

The Standards also currently include a requirement for the arrangement of tables and chairs in the patio area such that tables are accessible to patrons seated in a mobility device. The current provision has been interpreted to mean that there is a new requirement that all tables must be fully accessible at all times, which was not the intent of the provision. Rather, staff intended to require that, at any time, tables and chairs within the patio area must be able to be arranged to be accessible for patrons utilizing mobility devices, with consideration for knee and toe clearance, forward approach, turning radius, and transfer option. This is proposed to be clarified in the Standards.

Temporary Structures

The Street Patio Standards currently do not allow any structure to be installed in the public rightof-way, including tents, domes, vestibules, and wooden frameworks under any circumstance. It is proposed that this provision be updated to provide an opportunity for review and/or permit issuance through the Building Services department as it relates to temporary structures. This

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includes roll-out canopies and awnings that attach to the building, which require review from Building Services, and are required to meet flame resistance under the OBC. Similarly, tents placed within the patio area, including those that are positioned within 3 metres of a building, require review by Building Services for OBC compliance, including consideration for flame resistance and placement. Other structures, such as those attached to platforms and/or the building, also require review by Building Services and may require a building permit.

Fencing Requirements

As part of the former Sidewalk By-law, the City has previously requested a supplemental railing to be installed, projecting out from the patio fence for all patio fencing adjacent to the sidewalk. This provision was carried forward in the new standards, requiring a supplemental contrasting, cane-detectable railing installed on fencing adjacent to a pedestrian clearway. Planters could be used in combination with fencing to define the patio area, provided that the planters have a cane-detectible railing as described above.

In reviewing this approach and the patio guidelines of other cities in further detail, as well as consulting with the MAAC Active Transportation project team, provisions that speak to cane detection tend to make a general reference to materials (i.e. fence and/or planters) needing to be cane-detectible but do not necessarily require supplemental cane-detectable railings for materials that otherwise may already be considered cane-detectable. Additionally, staff have found that, in some cases, the existing cane-detectible fencing can further reduce the available clear width.

As such, staff are recommending an amendment to the Standards that stipulates that fencing adjacent to the pedestrian path of travel must have a fixed and continuous cane-detectable lower railing. Planters can continue to be used in combination with fencing to define the patio area, provided that the planters have a solid base that is cane-detectable and continuous with the fence line. A supplemental railing/edge/guard would still be required if there is not an existing lower fence railing that meets this requirement, or if there are footplates that are protruding beyond the fence line.

Plant Materials

Many patio operators have existing plant materials that are incorporated or installed on fencing that is adjacent to the sidewalk. Staff recognizes the desire for plant materials and the aesthetic benefits they provide to the patios and downtown overall, while also recognizing the accessibility challenges they may present depending on their configuration and projection. Currently, the Street Patio Standards state that plant materials may be affixed to fencing if they do not interfere with the minimum pedestrian clearway (being 1.83 metres).

Additional clarity is being recommended as there are several instances currently where planter boxes are protruding significantly from the fence from patios adjacent to the sidewalk, whereby they may inadvertently encumber pedestrians with sight loss. According to the City's Facility

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Accessibility Design Standards, planter boxes or other objects above a cane-detectable area should protrude no more than 0.1 metres. It is understood that projections (such as planters) beyond this may not be detected by a person with sight loss using a white cane.

It is proposed that plant materials can be affixed to fencing, provided they do not protrude more than 100 millimetres horizontally from the cane-detectable railing and do not interfere with the minimum pedestrian clearway (1.83 metres). The required minimum clearway is measured from the furthest protruding point.

Additional Amendments

In addition to the above, several additional minor amendments were included in the updated Standards, including:

- Updating the Standards to move from default restrictions with no recourse to default restrictions with opportunity for review, permit, and/or approvals as it relates to menus and signage attached to buildings, as well as surface coverings.
- Removing the requirements prohibiting third-party advertising on furnishings or materials within the patio area.
- Removing the design requirements for patio furnishings. The DKBIA will provide feedback to operators as needed.
- Removing the requirement for umbrellas to be constructed of flame-resistant materials with the understanding that specific requirements regarding the use of patio heaters in proximity to flammable materials remain in the Standards and that no cooking is permitted on the street patio under any circumstances.
- Adding guidelines for the use of string lights.
- Removing the requirement that limits patio operation between the hours of 8:00 AM and 11 PM, and instead defer to City of Kingston By-Law Number 2004-52 – A By-Law To Regulate Noise.

Temporary Exemptions – Non-Compliant Patios

In addition to the proposed amendments to the Street Patio Standards & Application Guide, it is proposed that temporary relief from specific provisions for existing patio operators authorized under licence agreements with the City be provided, where appropriate. This approach allows patio operators to maintain their existing, previously approved patio configuration, while ensuring that the patios are brought into compliance with the current Standards at the next available opportunity, such as reconstruction of the patio or a change in ownership of the business. The proposed changes are outlined below and presented as a set of updated standards in Exhibit B – Temporary Exemptions – Non-Compliant Patios.

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Pedestrian Clearway Requirements

As part of the new standards, the City maintained the required clearway width requirements that had been stipulated in the previous Sidewalk By-law of 1.83 metres in the downtown area, as it represents an increased width beyond the minimum 1.5 metres set out in the Integrated Accessibility Standards, recognizing the volume of pedestrians utilizing the downtown area and considering overall pedestrian experience. The Standards also state that if the pedestrian clearway is required to deviate around the patio, the corners of the patio must be at an angle that is in line with the adjacent curb.

In conducting detailed site reviews at the existing sidewalk patios, several existing sidewalk patios are not in compliance with the 1.83 metres clearway requirement. Staff are recommending maintaining the 1.83 metres clearway requirement in the Standards as drafted. However, recognizing that many patio operators will require a full replacement and/or reconstruction of their patio fencing, layout, and/or platform to comply with this standard, it is proposed that a temporary exemption be provided to patio operators that meet a minimum 1.5-metre clearway, until such time that the patio is reconstructed or ownership changes.

Aisles & Patio Entrances

In addition to the 1.1-metre requirement for aisle widths, patio entrances are stipulated to be a minimum of 1.2-metres in width in the Standards. Staff are recommending maintaining this provision in the Standards, along with the aforementioned 1.1-metre aisle width requirement. However, it is noted that many existing patios do not meet the 1.2-metre width requirement, and in the case of a ramp to the patio being present, may also not meet the 1.1-metre minimum aisle width requirement as well.

Similar to the approach regarding clearway widths, staff are considering an exemption on a case-by-case basis that would allow a minimum 0.9-metre patio entrance width and a minimum 0.9-metre aisle width from the patio entrance to the building until such time that the patio is reconstructed or ownership changes. 0.9 metres, while not the preferred standard, aligns with the minimum ramp widths outlined in the Integrated Accessibility Standards and egress requirements stipulated under the OBC, and can be supported as an interim measure toward future compliance with the Standards.

Additional Exemptions

In addition to the above, additional temporary exemptions include the following:

- Patios with existing elements that anchor or affix to the sidewalk will be permitted to continue to do so provided reasonable efforts are taken to cap the holes when the fencing is removed.
- Patios with an existing screen will be granted express permission to continue their use.

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• Patios will be assumed to be exempted from existing buffer requirements based on prior approval unless new utility or fire safety-related concerns arise from future reviews.

Platform Program Recommendations

Since 2020, the City has funded and coordinated the annual placement and removal of equipment to convert the on-street parking spaces into spaces suitable for retail operations including the installation of safety barriers, planters, and ramps and the provision of pickup/delivery spaces to promote parking turnover in areas where the on-street parking had been reduced. Changes were introduced in 2023 to limit the impact on adjacent businesses to ensure that parking space patios that were requested were adequately utilized and did not impact parking to an unnecessary degree. The approach also limited the seasonal period that pop-up patios could be installed to a four-month period, which was based on feedback received from downtown businesses through consultation on the new policy that was being developed.

Based on the results of the implementation of the pop-up patio program in 2023, the use of modular platforms represented a significant improvement in the accessibility of the patios. The platforms deployed are at grade with the sidewalk and are effectively the only means through which accessibility can be fully achieved for this patio configuration. In many cases, the past practice of using ramps was constrained by the width of laybys such that it was not possible to meet the City's accessibility standards.

The use of platforms had the benefit of serving as lateral separation from the travel lane, and in some cases, reduced the need for construction-grade materials. It is important to note that despite the presence of safety equipment, patios and pedestrian bypasses positioned within the on-street layby are not without some risks that may differ from indoor dining or retail space. However, staff did not note any specific safety concerns with the platforms and were not aware of any vehicle incursions during the 2023 season.

Additionally, the platforms had the benefit of addressing concerns received about the design and aesthetic qualities of previous iterations of pop-up patios utilizing construction-grade materials as expressed by patio operators, the DKBIA, and the general public in previous years. The option of platforms also provides a viable opportunity for businesses to utilize existing space near their property for the patio season without requiring permanent alterations that eliminate on-street parking year-round.

Prior to 2023, there was an expected level of hesitancy from restaurant operators to invest in reusable temporary platforms without the promise of permanency of the program. With the popup patio program now recognized as a permanent program, staff anticipate that restaurants or cafés that may be adjacent to sidewalks that are constrained in width, or for those that are looking for additional outdoor dining space, may begin to invest in this option. Based on the benefits that platforms provide and the absence of ramps during the 2023 patio season, the City will continue to strongly recommend the use of at-grade platforms for patios and pedestrian by-passes for patios within on-street laybys.

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While the feedback on the modular patio platforms from patio operators was generally positive, they expressed a desire to have more control of the design and operation of the platforms. The City will continue to offer the option of the installation of a modular patio platform for the 2024 patio season for interested patio operators, however, funds are not available for the City to cover the expenses related to leasing the platforms for an additional year. It is recommended that DKBIA coordinate directly with the platform vendor utilized in 2023 and with businesses to determine interest, preferred locations, and manage the collection of funds, and for the City to review locations and coordinate the details of the installation with the current vendor that provided patio platforms in 2023, Streets Patios Inc. Alternatively, patio operators will be permitted to submit an application to construct a reusable platform, including a drawing stamped and signed by a professionally licensed designer (i.e. Professional Engineer or Registered Architect), for review by the City.

Next Steps and Timelines

Pending the adoption of the recommendations in this report, staff will move forward with the termination of all existing patio licences and permits to allow for new agreements and permits to be developed that reflect and reference the updated Street Patio Standards and Application Guide, as previously directed by Council. The City will work with existing patio operators to update their patio configuration and any additional information where required and will incorporate the temporary exemptions captured in Exhibit B into new licence agreements for patios with existing licence agreements. Sidewalk patios for which an agreement is not currently on file will be required to submit a new application for the 2025 patio season.

To better support patio operators in their payment of patio fees, an option for payment by installment will be reintroduced for 2024. Postdated cheques will be required to be submitted no later than April 30th, with the payment dates being May 1st, June 1st, and July 1st. This approach will be reassessed in 2025.

The following represents the timeline and next steps for the program for 2024:

- By February 23 Communication issued by the City to the existing sidewalk patio operators regarding the termination of their existing licence agreement and sharing an updated copy of the licence agreement reflecting the new standards and proposed temporary exemptions for their reference ahead of this year's patio season.
- By February 23 Communication issued by the City to existing sidewalk patio operators who previously received temporary permits, indicating that a permit will be reissued for 2024 under the current configuration. Operators will need to submit a new application for review ahead of 2025 that meets the updated Street Patio Standards & Application Guide and will enter into a licence agreement with the City.
- By February 23 Communication issued by the DKBIA and the City regarding the available options for platforms for pop-up patios and outlining the option to apply for the design and construction of a reusable platform by the operator.

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- April 1 Sidewalk patio season begins
- May 15 Pop-up patio season begins
- September 15 Pop-up patio season ends
- November 30 Sidewalk patio season ends
- Following November 30 Applications open for event-based winter patio options. Applications remain open year-round for café-style patios (i.e. tables and chairs, non-serving).

Indigenization, Inclusion, Diversity, Equity & Accessibility (IIDEA) Considerations

The updated Street Patio Standards include several updated accessibility provisions aligned with City standards that meet or exceed the Province's Integrated Accessibility Standards. Among other accessibility provisions, the Standards establish the minimum clear width requirements along the sidewalk in the area adjacent to the patio. The enhancement of accessibility through the use of platform areas will be introduced as a requirement going forward. While temporary exemptions are proposed for long-standing sidewalk patios under current licence agreements with the City, the intent is to encourage improved accessibility compliance at the soonest opportunity, either through a proposed patio reconstruction by the patio operator or through a change in ownership of the business.

Staff consulted the MAAC Active Transportation project team on the planned updates, including the temporary exemptions contemplated. While the project team expressed some reservations about providing temporary exemptions for existing patios, there was general agreement with each proposed approach with the understanding that the exemptions are temporary and are intended to lead to future compliance. The MAAC project team was also supportive of the proposed changes to the Standards. Additional feedback was provided regarding accessible tables, warning strips along the path of travel, colour contrasting, and planters that were incorporated into the recommendations and/or was noted by staff for future consideration.

As part of the City's current accessible parking program, any accessible parking spaces that are temporarily unavailable due to road closures or expanded patios will be relocated to a nearby accessible location.

Existing Policy/By-Law

Street Patio Standards and Application Guide

Financial Considerations

The City collects patio fees to cover the cost of administering and operating the program, lost parking revenues, and to recognize the use of municipal property by a private business to generate revenue. Revenue from the fees associated with the patio program for 2024 is estimated to be similar to previous years assuming a similar number of patios, including pop-up patios in parking areas, operate through the summer season.

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The new fees, the majority of which are proposed to take effect in 2024, were developed to maintain the existing revenue provided the same number of patios continue operation in 2024. The 2024 operating budget submission includes an updated estimate of patio revenue and costs based on the 2023 patio season.

Sufficient capital funds are not available for the City to deploy platforms for pop-up patios for the 2024 season. Any costs associated with the use of the modular platforms provided by the City/DKBIA require reimbursement for the costs associated with leasing, installing, maintaining, and removing the platforms.

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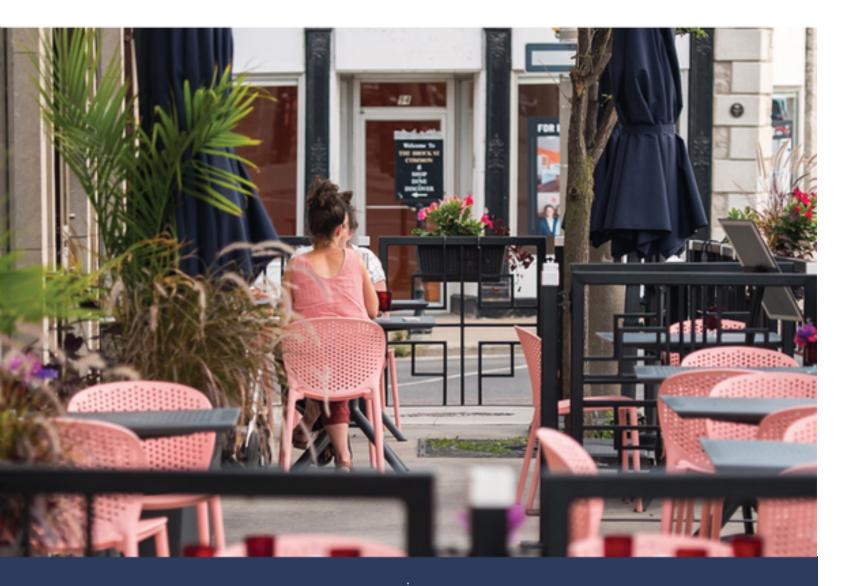
Exhibits Attached:

Exhibit A – Updated Street Patio Standards and Application Guide

Exhibit B – Temporary Exemptions – Non-Compliant Patios

Street Patio Standards and Application Guide

For patios and other seating arrangements located within the public realm.





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1. Introduction

1.1 Overview

The City of Kingston's Street Patio Program provides an opportunity for businesses to operate a serving or non-serving patio on municipal property, including on public sidewalks and within on-street parking spaces. Whether you operate a restaurant, café, or bar, or are just looking to add public seating near your business, the Street Patio Program offers several benefits, including:

- More options for outdoor dining
- Greater seating capacity and employment opportunities
- More vibrant and attractive streets
- Increased tourism and economic growth
- Greater foot traffic near businesses
- More active, pedestrian-friendly spaces

Together, these spaces play an important role in creating a unique and enjoyable experience for residents and visitors alike.

1.2 About This Guide

This guide is intended to clearly outline the processes, minimum standards, and operational requirements for patios in the public realm. It does not apply to patios located on private property, such as rooftop patios or those located behind an establishment.

This guide has been developed with input from local businesses and is intended to be the primary resource for those interested in operating a street patio. The guide includes information on the following:

- Different types of street patios
- Patio season dates
- Application process
- Technical and design standards
- Operational and maintenance requirements
- Applicable fees

The location of each business and the surrounding streetscape is unique. The City will work with applicants to communicate and inform of any changes that may be required; however, approval is not guaranteed. There are some instances where a street patio may not be feasible due to space or other site constraints. This guide is intended to be your starting point and will help determine whether a street patio may be feasible for your business. The City reserves the right to deny an application if it is determined that the patio does not meet the standards established in this guide.

1.3 Goals

The Street Patio Program has four main goals:

Accessibility

Ensure street patios can be enjoyed by all.

Safety

Ensure patrons and pedestrians feel safe in and around street patios.

Design

Ensure street patios are visually appealing and enhance the public realm.

Culture

Establish a vibrant patio culture that is welcoming to residents and visitors.



2. How to Join the Program

2.1 Application Steps

Looking to renew a street patio that was previously approved? If your layout, design, and materials haven't changed from the previous year, you may not need to complete a new application. Reach out to transportation@cityofkingston.ca to let us know you would like to renew your patio under the previously approved application.

Step 1: Review the Document

Review all of the contents in this document. including:

- Permitted street patio configurations and operating periods
- Technical standards
- Design standards
- Operation and maintenance requirements
- Program fees



Step 2: Complete the Application Form

Fill out the Street Patio Program Application Form and select the patio configuration(s) best suited to the location of your business, keeping in mind the flow of pedestrians and any existing streetscape elements in the vicinity of the proposed patio.



Step 3: Take Photos

Take photos of the area intended to be occupied by the patio and include adjacent properties for context. Ensure that the photos capture the entrances of buildings and any streetscape elements on the sidewalk.



Step 4: Prepare Your Plan

Prepare an overhead plan of the proposed patio configuration using Google Maps or other tools and clearly show:

- Entrances to the patio and surrounding buildings
- □ Adjacent property lines
- The dimensions of the patio area, including the location of any fencing (corners should be angled to minimize the impact on pedestrian flow where necessary)
- ☐ The clear path of travel for pedestrians (minimum 1.83 metres and no 90-degree turns)
- ☐ The location and spacing of all tables and chairs
- ☐ The location of other patio furnishings, such as host stands or planters
- ☐ The location of nearby streetscape elements (trees, planters, light standards, sign posts, utility poles, parking meters, fire hydrants, utility covers and hydro vaults, maintenance holes, catch basins, utility valves, bicycle parking racks, benches, gas/electric/ phone/internet equipment, and waste receptacles)
- ☐ The location of nearby commercial loading zones, accessible parking, and transit stops

Your plan must clearly show the total number of tables and chairs that you intend to include within your patio. Hand-drawn overhead plans will not be accepted.

If you are interested in operating a sidewalk patio during the shoulder season (October 1 to November 30), you must also include a second overhead plan for your shoulder

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season patio layout that clearly shows the location of any heating devices that will be used during the colder weather.

A patio agreement authorized by the City is only valid if the setup of your street patio is representative of the approved layout(s). Modifying the layout of a patio after it is approved requires an amendment to the approved plan and may be subject to additional fees.



Step 5: Draft **Your Design**

Collect photos of the design features for the proposed patio, including fencing, tables, chairs, umbrellas, host stands, lighting, planters, heaters, and other decorative elements. You may take photos of these design features or use pictures that are available online. It is recommended that the photos are included as part of a single document.

If your business is located in the Downtown Area and you would like assistance designing your street patio, you can reach out directly to the Downtown Kingston Business Improvement Area (BIA) for recommendations on patio furnishings and materials.



Step 6: Certify Your Platform (if applicable)

If you are proposing to construct a platform as part of your patio set-up, you must provide drawings that are designed, signed and stamped by a professionally licensed designer (i.e. Professional Engineer or Registered Architect) to demonstrate the platform is structurally sound and can accommodate the intended load.

Step 7: Obtain Letters of Support (if applicable)

If the location of the proposed street patio is within the Downtown Kingston BIA, share your completed patio plan including pictures of the proposed design features with the Downtown Kingston BIA association by email (member@downtownkingston.ca) to receive feedback. A letter of support from the Downtown Kingston BIA association is required as part of your completed application if the proposed street patio is within this area.

Patios located on the sidewalk that extend in front of an adjacent business must also receive a Letter of Support from the adjacent establishment prior to approval by the City.

Patios located within on-street parking spaces positioned in front of an adjacent business that have patio elements that are greater than 1.2 metres in height (such as umbrellas) must also receive a Letter of Support from the adjacent business prior to approval by the City.



Step 8: Submit Your Complete Application

Submit your completed application to transportation@cityofkingston.ca in advance of any applicable deadlines, including:

- Street Patio Program Application Form
- Photos of the proposed patio location and surrounding streetscape
- Overhead patio plan(s)
- □ Pictures of the patio furnishings and materials
- □ Stamped platform drawings (if applicable)
- Letters of Support from the Downtown Kingston BIA or adjacent businesses (if applicable)

Step 9: Licence Your Patio Ę (if applicable)

Liquor sales licencees and manufacturers that hold a by-the-glass endorsement who want to operate a street patio must notify the Alcohol and Gaming Commission of Ontario (AGCO) by making a submission on the iAGCO portal before selling or serving liquor on the street patio.

2.2 Review Process

Various City departments and partners may be involved in reviewing your application and providing feedback for any revisions required before approval. To determine approval, City staff will evaluate your application based on:

- Compliance with the standards outlined in this guide
- Suitability of the location and any impacts on existing services
- Accessibility of the patio and surrounding area
- Safety of the patio set-up, location, and materials
- Design quality and functionality of the patio layout

The applicable fees for operating the street patio will be determined based on the type and size of the patio. If the proposed patio is approved, you will need to pay the applicable fees and submit Proof of Insurance before receiving a permit and/or legal agreement needed to operate your street patio. Once the street patio is constructed during the patio season, it may be subject to inspections by Transportation Services staff to ensure compliance.

The City reserves the right to reject a street patio application if the proposal does not meet the minimum standards outlined in this guide or if there are specific issues with the proposed site that would preclude the installation of a street patio.

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3. Street Patio Configurations

3.1 Overview

The Street Patio Program offers four patio configurations depending on your needs and context of the street. Selecting the appropriate configuration for your location is key to ensuring your patio can meet the minimum standards, operate safely, and maintain an accessible, clear path of travel for pedestrians. When choosing your configuration, consider the space in front of and adjacent to your business, the surrounding streetscape elements, and the flow of pedestrians.

Street patios fit into two broad categories:

A. **Sidewalk patios** that are contained entirely on the sidewalk with no impact to on-street parking.

B. **Pop-up patios** that require the use of on-street parking, or a combined use of on-street parking and the sidewalk.

There are two potential configurations for each category (four in total), which are summarized in the following tables and described in detail in the following sections.

- 1. Café-Style Patio (sidewalk patio)
- 2. Frontage Patio (sidewalk patio)
- 3. Parking Space Patio (pop-up patio)
- 4. Patio with Pedestrian Bypass (pop-up patio)

Note: the following graphical depictions are conceptual renderings and not intended to be to scale. Additional materials (e.g., concrete barriers) may be required for pop-up patios to separate the patio area from adjacent lanes of travel or adjacent parking spaces, and will be determined by the City based on an assessment of the adjacent roadway. Please refer to <u>Section 5</u> and <u>Section 6</u> for the technical and design standards associated with each layout.



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Legend



Sidewalk Patio Overview

Patio Configuration	1. Café-Style Patio	2. Frontage Patio
Location	Against building or along curb	Against building
Minimum site requirements	> 3 metres of sidewalk width	> 4 metres of sidewalk width
Operating Period	January 1 to December 31 (year-round)	April 1 to September 30 (standard season) October 1 to November 30 (optional shoulder season extension)
Fees	Based on number of tables	Based on patio area
Standard Length	Business frontage	Business frontage
Permission Needed to Extend Beyond Frontage	\checkmark	\checkmark
Serving Patio	x	\checkmark
Ramp or Platform Required	x	X
Fencing Required	x	\checkmark
Nightly Furniture Removal Required	\checkmark	X

Pop-Up Patio Overview

Patio Configuration	3. Parking Space Patio	4. Patio with Pedestrian Bypass
Location	On-street parking	Against building and on-street parking
Minimum site requirements	On-street parking nearby	> 3 metres of sidewalk width and on-street parking nearby
Operating Period	May 15 to September 15 (pop-up season)	May 15 to September 15 (pop-up season)
Fees	Based on patio area	Based on patio area
Standard Length	Minimum of one parking space	Business frontage
Permission Needed to Extend Beyond Frontage	x	\checkmark
Serving Patio	\checkmark	\checkmark
Ramp or Platform R	\checkmark	\checkmark
Fencing Required	\checkmark	\checkmark
Nightly Furniture Rval Required	x	x

3.2 Sidewalk Patios

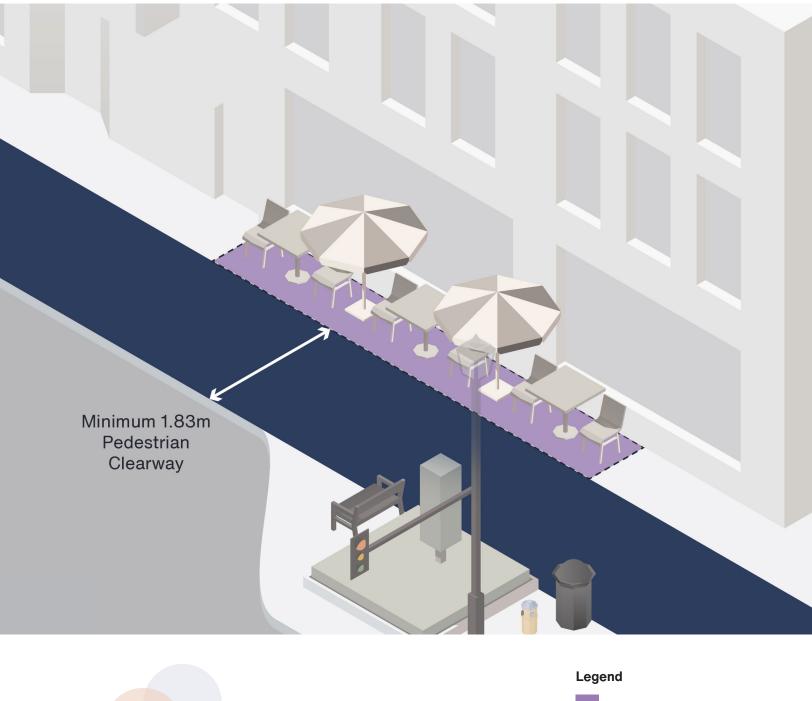
3.2.1 Café-Style Patio

A café-style patio is a simple, unenclosed patio set-up for non-serving uses consisting only of tables, chairs, and umbrellas. It is located on the sidewalk along the frontage of the building or the curb. You are responsible for maintaining the patio area and adjacent sidewalk.

- (\mathbf{O}) **Location**: On the sidewalk along the building frontage or curb.
- Suitable Application: Where the width of the sidewalk is sufficient to accommodate a small amount of seating.
- Potential Operators: Cafés and takeaway (? food establishments interested in operating a non-serving patio.
- **Operating Period:** Available for use year-round (see Section 4 for more information on winter operational requirements).

Size & Alignment: 2

- Limited to the width of the frontage of your business, unless permission to extend the patio area is received from the adjacent establishment.
- Must maintain a minimum 1.83-metre pedestrian clearway, including offsets from streetscape elements such as fire hydrants and waste receptacles.
- When located along the curb, a 0.5-metre buffer from the inside edge of the curb must be maintained.
- **Perimeter Treatment:** No fencing is required. However, patio furniture must remain within the approved area.
- Fees: Fees are calculated based on the \$ number of tables to be set up in the patio area.
- Additional Considerations: All tables, chairs, and umbrellas must be removed from the sidewalk at the end of each business day and may only be placed on the sidewalk at the start of your business hours.



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Patio

Pedestrian Clearway

3.2.2 Frontage Patio

Located on the sidewalk along the frontage of the building, a frontage patio is an enclosed patio suitable for serving. It consists of fencing, tables, chairs, umbrellas, host stands, plants, lights, and/or other patio furnishings. You are responsible for maintaining the patio area and adjacent sidewalk.

- Location: On the sidewalk along the (() building frontage.
- Suitable Application: Where the width of the sidewalk is sufficient to accommodate the enclosed patio area along the building frontage without conflicting with streetscape elements or the pedestrian clearway.
- Potential Operators: Restaurants, pubs, and bars interested in operating a street patio for up to eight months per year.

Operating Period:

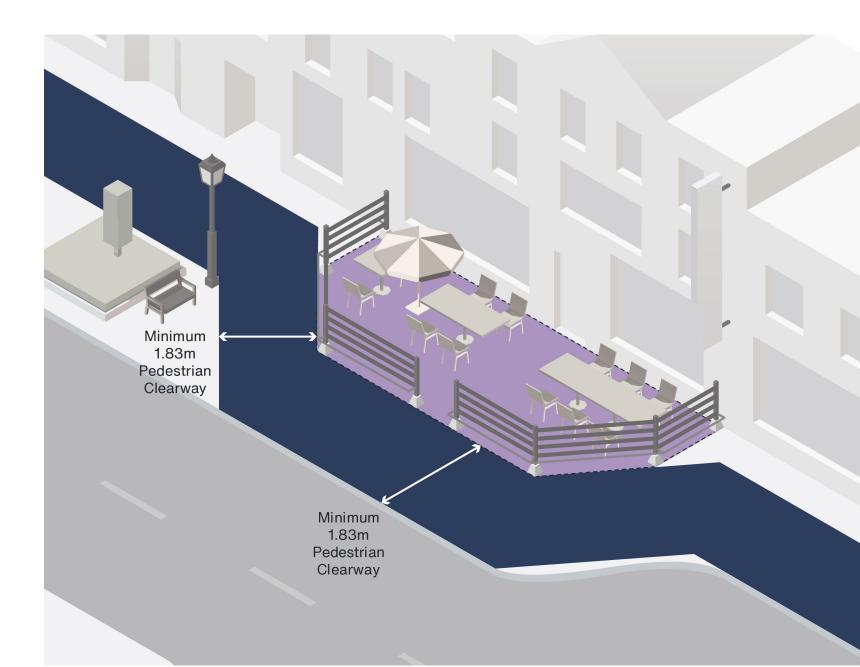
- Standard period of six months from April 1 to September 30.
- Optional shoulder season extension for two months from October 1 to November 30, subject to meeting additional requirements.

Size & Alignment:

- Limited to the width of the frontage of your business, unless permission to extend the patio area is received from the adjacent establishment.
- Must maintain a minimum 1.83-metre pedestrian clearway, including offsets from streetscape elements such as fire hydrants and waste receptacles.
- Patio perimeter must include angled patio corners where appropriate to limit the need for pedestrians to deviate from their path of travel.
- Must retain unobstructed access to the building and adjacent establishments.
- Align the patio entrance with the main entrance of your business where possible.
- Perimeter Treatment: Enclosed by a stable, secure fence that delineates the patio area from the streetscape.
- Fees: Fees are calculated based on the \$ total area of the patio.

Additional Considerations:

- A platform may be used to provide a level patio surface where a slope is present, subject to additional requirements and approvals.
- Patios near corners and intersections have additional requirements to ensure the increased activity will not interfere with pedestrian flow and safety.



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Legend



Patio Pedestrian Clearway

3.3 Pop-up Patios

3.3.1 Parking Space Patio

A parking space patio is a seasonable patio suitable for serving and is located in one or more on-street parking spaces. It consists of fencing, tables, chairs, umbrellas, host stands, plants, and/or other patio furnishings. A ramp or platform at-grade with the curb is required to provide access to the patio area. Additional materials may be provided by the City to separate the patio area from the adjacent lane of traffic based on a review of the site. You are responsible for maintaining the patio area and adjacent sidewalk.

Location: On-street parking within a parking layby or parking lane.

Suitable Application:

- Where the width of the sidewalk may be limited and on-street parking is available adjacent to the curb.
- Only permitted on roadways with a speed limit of 50 km/h or less and onstreet parking adjacent to the curb.
- Potential Operators: Restaurants, pubs, and bars interested in operating a pop-up patio during the summer.
- Operating Period: Four months from May 15 to September 15.

Size & Alignment:

- The patio must occupy a minimum of one parking space, measuring approximately 6 metres in length.
- The adjacent sidewalk space must be maintained, with a minimum 1.83-metre pedestrian clearway located between the on-street parking and surrounding buildings.
- The patio may be extended onto the sidewalk to create a larger patio area if the minimum 1.83-metre pedestrian clearway can be maintained.
- The patio area may be extended beyond the width of the frontage of your business without permission from

adjacent establishments if the patio is contained within the on-street parking. However, a Letter of Support from the adjacent establishment is required if you wish to set up umbrellas in front of their building.

- The occupied parking should be as close to your business as possible.
- Align the patio entrance with the main entrance of your business where possible.

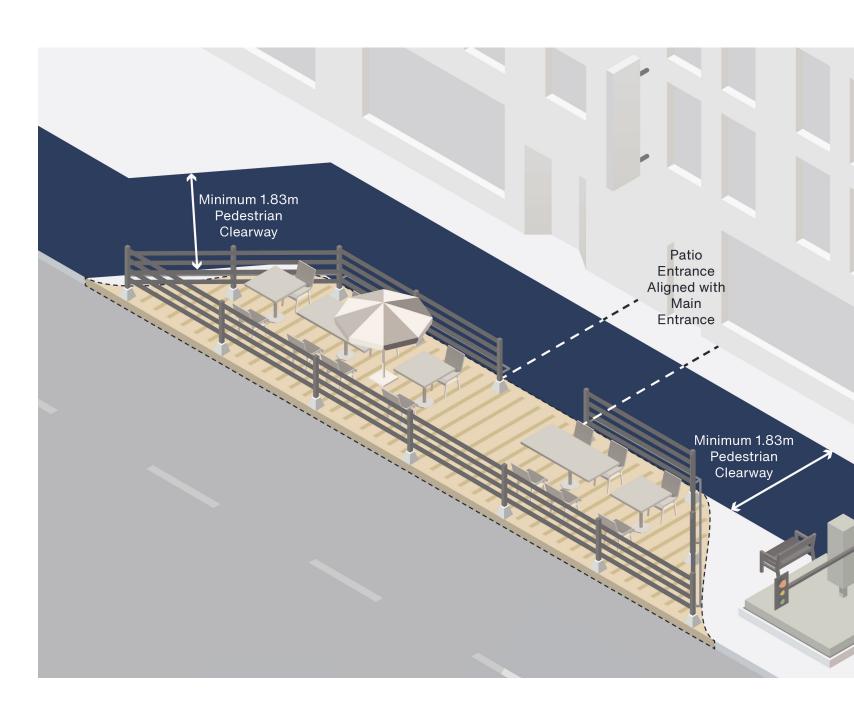
Perimeter Treatment:

- Enclosed by a stable, secure fence that delineates the patio area from the streetscape.
- If the patio area is not at-grade with the curb, fencing is required to separate the patio area from the adjacent sidewalk.
- Where the City provides additional materials (e.g., concrete barriers) to separate the patio area from the adjacent lane of traffic, additional fencing on the sides of the patio facing the street may be required.

Fees: Fees are calculated based on the total area of the patio.

Additional Considerations:

- The City strongly encourages applicants to construct the patio surface to the same height as the sidewalk via a platform, with minimal gaps between surfaces.
- If you are unable to provide a raised platform, you must provide a ramp to access the patio area.
- Your business must ensure a sufficient landing space is maintained at the top and bottom of the ramp.
- Patio set-ups that use a combination of the sidewalk and on-street parking may only operate for a period of four months from May 15 to September 15.



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Legend



Patio

Pedestrian Clearway

3.3.2 Patio with Pedestrian Bypass

A patio with a pedestrian bypass is a seasonal patio suitable for serving that is located on the sidewalk along the frontage of the building. It consists of fencing, tables, chairs, umbrellas, host stands, plants, and/or other patio furnishings, and requires an adjacent temporary pedestrian bypass that occupies on-street parking. A platform at-grade with the curb is required to provide access to the pedestrian bypass. Additional materials may be required to separate the pedestrian bypass from the adjacent lane of traffic. You are responsible for maintaining the patio area and pedestrian bypass.

- Location: On the sidewalk along the building frontage, with the pedestrian clearway diverted onto on-street parking to maintain adequate clearway width.
- Suitable Application:
 - Where the combined width of the sidewalk and adjacent on-street parking space is sufficient to accommodate a patio and a minimum 1.83-metre pedestrian clearway.
 - Sidewalk should be free of streetscape elements that would interfere with the patio.
 - Only permitted on streets where there is a speed limit of 50 km/h or less and on-street parking adjacent to the curb.
- Potential Operators: Restaurants, pubs, and bars interested in operating a pop-up patio during the summer.
- **Operating Period:** Four months from May 15 to September 15.

Size & Alignment:

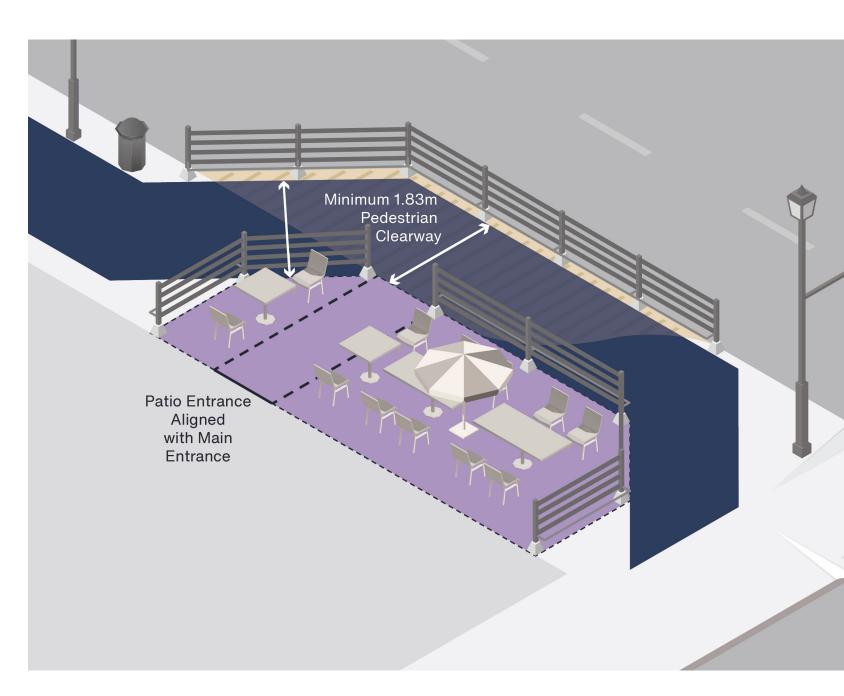
- Patio area (not including the pedestrian bypass) is limited to the width of the frontage of your business unless permission to extend the patio area is received from the adjacent establishment.
- Must retain unobstructed access to the building and adjacent establishments.
- Align the patio entrance with the main entrance of your business where possible.

Perimeter Treatment:

- Enclosed by a stable, secure fence that delineates the patio area from the streetscape.
- Patio perimeter must include angled patio corners where appropriate to limit the need for pedestrians to deviate from their path of travel.
- **Fees**: Fees are calculated based on the total area of the patio.

Additional Considerations:

 You are required to provide a platform at-grade with the curb to provide access to the pedestrian bypass.
 Detailed measurements and other product specifications are required as part of your application.



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Legend

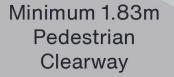


Patio Pedestrian Clearway

3.4 Public Seating

If you would like to add public seating in front of your business (limited to 1-2 benches or 1-4 small outdoor chairs) please reach out to the City at <u>transportation@cityofkingston.ca</u>. You will be required to provide the product specifications of any benches or chairs and where they are proposed to be positioned. A small one-time fee is required.

A minimum 1.83-metre pedestrian clearway must be maintained around the seating. Fencing, tables, umbrellas, and other patio furnishings are not permitted. You are responsible for maintaining the public seating area and adjacent sidewalk.



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Legend



Patio Pedestrian Clearway

4. Winter Patios 4.1 Café-Style Patios

Businesses may operate a café-style patio during the winter months. These are street patios with a simple tables-and-chairs setup (no fencing) that is removed from the street daily prior to the closure of the business, and no later than 10:00 pm. You are responsible for the removal of all snow and ice from the patio area for winter maintenance, including keeping the sidewalk clear of all snow and ice as soon as is practicable, and not later than 12 hours after the end of the precipitation that caused the snow and ice. A minimum 1.83-metre pedestrian clearway must be always maintained around the seating and must account for the presence of snowbanks that may further reduce the available clearway width.

Please indicate if you are interested in operating a café-style patio during the winter months when filling out the Street Patio Program Application Form to ensure your patio does not conflict with winter maintenance plans.

4.2 Winter Event Patios

Businesses may apply for an encroachment permit to temporarily set up a street patio for events during the winter months. The street patio must be installed and removed during the specified period. To receive an encroachment permit, you must fill out an Encroachment Application Form available on the City's website and submit the completed form to transportation@cityofkingston.ca. • Minimum 1.83m Pedestrian Clearway

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Legend



Patio

Pedestrian Clearway

5. Technical Standards

The following technical standards are in place to ensure:

- Street patios are accessible and can be enjoyed by all.
- Existing pedestrian and vehicle flows are respected and considered in the design of street patios.
- Patrons and pedestrians feel safe in and around street patios.
- Emergency services, municipal operations, and ongoing maintenance are not impeded by street patios.

5.1 Patio Access

5.1.1 Entrance

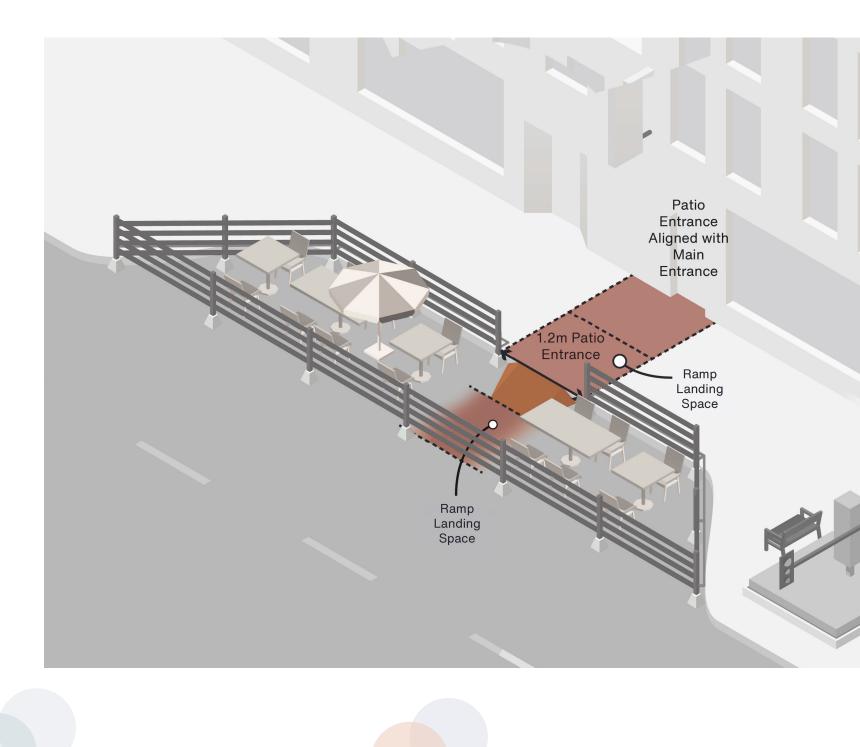
- Patios with fencing are required to have an open, unobstructed entrance from the sidewalk that is fully accessible.
- The patio entrance must have a minimum width of 1.2 metres.
- The patio entrance should align with the entrance of the applicable business whenever possible.
- No signs, menu stands, host stands, or any other objects can impede the entrance such that the clear width is less than 1.2 metres.
- The patio design and set-up must not interfere with any existing accessible entrance or accessibility features of the establishment's premises.

5.1.2 Aisles and Occupant Loads

- A minimum 1.1-metre aisle shall be provided at all times from the patio entrance to the building entrance.
- Approved occupant load limits of the patio area must be adhered to at all times. The combined occupancy of the Restaurant Unit and the exterior outdoor patio area cannot exceed the posted occupant load limit for the Restaurant Unit.

5.1.3 Ramps

- If the patio entrance is not at-grade with the sidewalk, either by being located in on-street parking or on an elevated platform on the sidewalk, a ramp must be present.
- Ramps must be provided by the patio operators.
- Ramps must be hard-surfaced and slipresistant.
- Ramps must be stable such that they do not shift or move when used.
- A sufficient landing space must be maintained at the top and bottom of the ramp.
- Ramps shall not be affixed to the sidewalk, road, or curb edge with screws, bolts, adhesives, or any other materials.



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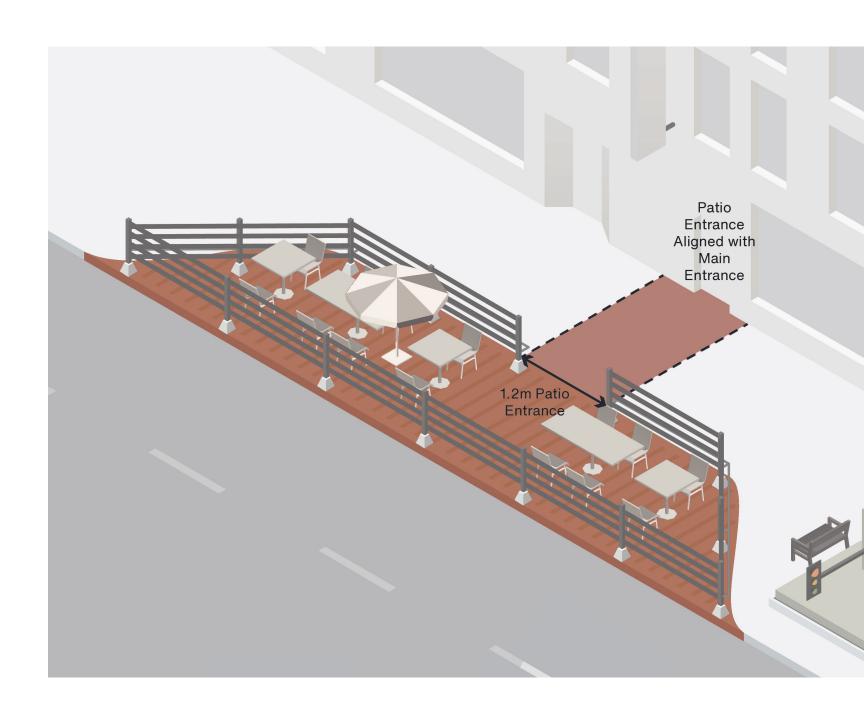
5.1.4 Platforms

The City strongly encourages applicants interested in a pop-up parking space patio to deploy a platform to bring the patio surface at grade with the sidewalk, with minimal gaps between surfaces. Platforms may also be used on the sidewalk to provide a level surface for the patio. If you are proposing to construct a platform as part of your patio setup, you must provide drawings stamped by a Professional Engineer.

Platforms must meet the following standards:

- Platforms must be firm, flat, stable, and have a non-slip, level surface.
- Composite, metal, or wood decking is preferred.
- Spaces between decking should be no more than 1 centimetre in width so as not to allow canes, walkers, wheels, or other mobility assistance devices from becoming lodged or stuck between them.
- All platforms must have entrances that are fully accessible.
- Platforms must have fencing along the perimeter where there is a change in elevation between the adjacent surface.
- Platforms must not damage the underlying surface or obstruct on-site drainage.

- Platforms should be sectional to facilitate easy removal for storage off-site during the off-season.
- Skirting should be applied to the exposed side of the platform to screen structural elements.
- Platform surfaces exceeding 600 millimetres (mm) above the adjacent surface of the sidewalk are subject to the applicable provisions under the Ontario Building Code, including the requirement for a Guard.
- Platforms shall not be affixed to the sidewalk, road, or curb edge with screws, bolts, adhesives, or any other materials.
- No roofs, roof supports, retractable roofing, poles, pergolas, arches, trellises, tents, or tent-like structures are permitted, whether constructed of rigid or pliable materials, unless express written approval is granted by the City and all necessary structural permits are obtained and valid.



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5.2 Pedestrian Clearway

5.2.1 Minimum Width

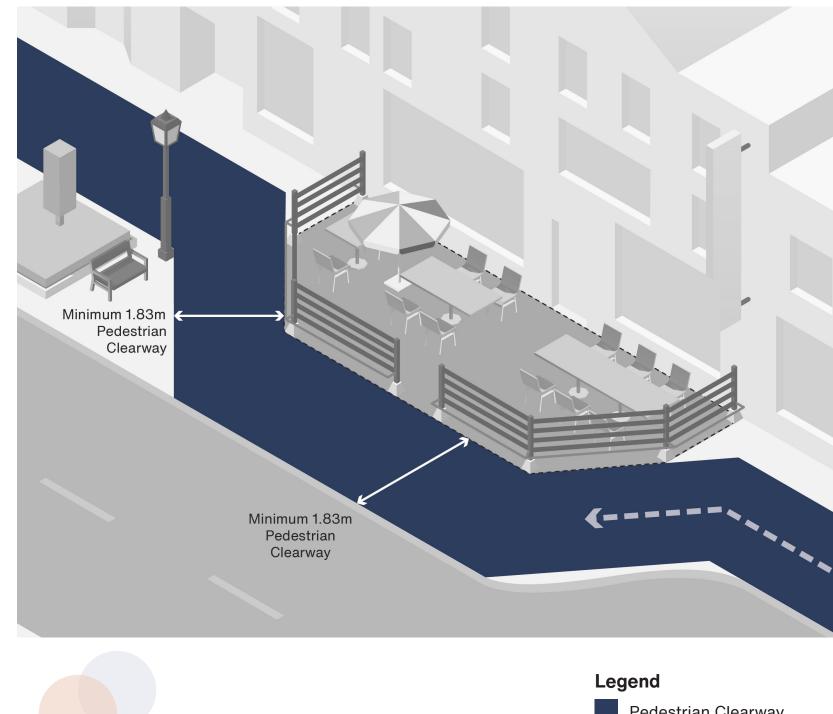
- An unobstructed pedestrian clearway of at least 1.83 metres must be maintained at all times.
- The pedestrian clearway is measured from the inside edge of the curb or any nearby streetscape elements to the perimeter of the patio area.
- The location of the pedestrian clearway relative to the patio will depend on the patio layout and any surrounding streetscape elements.
- The queuing of customers is not permitted in the pedestrian clearway.
- Electrical power cords or any other patio elements are not permitted to cross the pedestrian clearway.

5.2.2 Path of Travel

- If the pedestrian clearway is required to deviate around the patio, the corners of the patio must be at an angle that is in line with the adjacent curb.

5.2.3 Streetscape Elements

- Fixed streetscape elements that interfere with pedestrian flow, such as light posts, sign posts, street tree grates, parking meters, bike racks, fire hydrants, waste receptacles, benches, mailboxes, and utility boxes, are not permitted within the minimum 1.83-metre pedestrian clearway.



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Pedestrian Clearway

5.3 Road Safety

5.3.1 Location Criteria

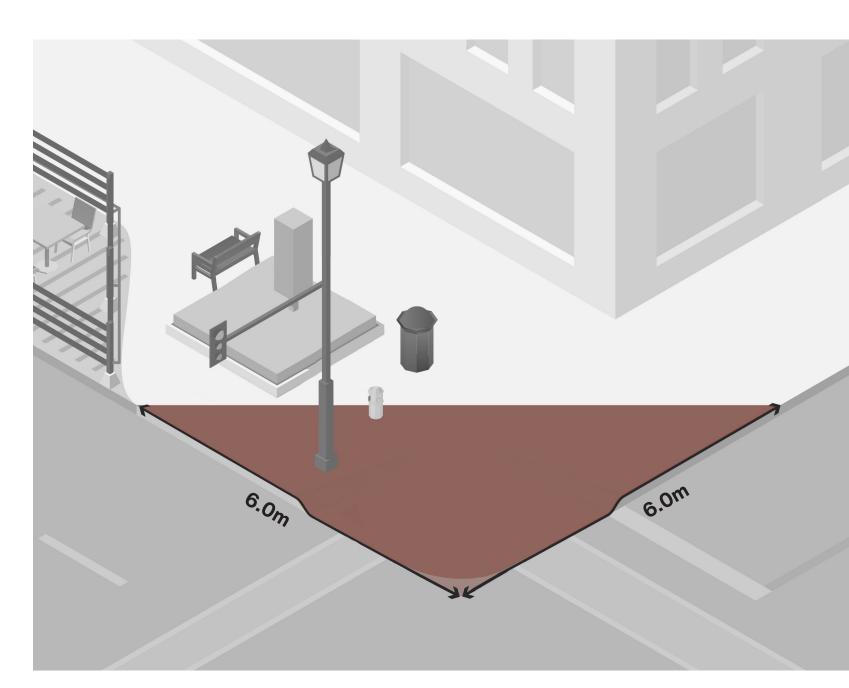
- Pop-up patios that occupy on-street parking are only permitted on roads where each of the following conditions are met:
 - A speed limit of 50 km/h or less
 - No more than 2 lanes of traffic (1 lane in each direction or 2 lanes in the same direction)
 - On-street parking in the form of parking laybys or parking lanes

5.3.2 Additional Materials for Pop-up Patios

- Additional materials (e.g., concrete barriers) required to separate the patio area from adjacent lanes of travel and any upstream or downstream parking spaces will be determined by the City based on an assessment of the roadway (if applicable).
- Applicants will be informed of the required materials (to be provided by the City) and the installation plan prior to approval.

5.3.3 Sightlines

- Patios proposed near intersections may be subject to further layout restrictions to maintain visibility and clear space at the intersections.
- A 6-metre by 6-metre sightline triangle must be maintained at intersections.
- Patios are not permitted within the sightline triangle.
- Patio furnishings, including umbrellas, fences, plants, and any other opaque materials, shall not obstruct vehicular or pedestrian sightlines, visibility, or movement.
- Where a pop-up patio in an on-street parking space is located in front of an adjacent business, umbrellas and any other patio furnishings that are more than 1.2 metres in height from the surface of the patio area are not permitted in front of the adjacent business without written permission.





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Legend

Sightline Triangle

5.4 Fire Safety

5.4.1 General

- Patios are subject to all applicable regulations, including the Ontario Fire Code and the Ontario Building Code.
- Tents and other coverings are required to meet flame-resistance certifications (CAN/ULC-S109, or NFPA 701) unless express written approval is granted by the City and all necessary permits are obtained and valid.

5.4.2 Emergency Access

- The City and all public utility agencies retain the right to access the patio area without notice in the case of an emergency.
- The City retains a right of access over, to, and upon a street patio for emergency vehicle access.
- Fire hydrants and other fire connections must be visible from the street and accessible at all times.
- Fire routes must not be obscured by a street patio.
- If a street patio is longer than 15 metres, a review may be conducted by the local fire department to determine whether any emergency access points are required.

5.4.3 Portable Heating Devices

- Must conform to the safety standards established by the Canadian Standards Association (CSA) and be certified by the Underwriters' Laboratories of Canada (ULC).
- Must meet the requirements of the Ontario Technical Standards and Safety Act, 2000.
- Shall not be placed in or above any parking spaces and are only permitted in patios located on a sidewalk.

- Shall not have any power cords or electrical wires that cross a municipal sidewalk or roadway.
- Must be used in compliance with all of the manufacturer's instructions for required clearances above, around, and underneath heaters.
- Must be designed for outdoor use only.
- Must be placed in a well-ventilated area.
- Must be free-standing, with a minimum height of 1.6 metres and a maximum height of 3 metres.
- Must have an anti-tilt feature that automatically shuts off the heater.
- Must be installed on a flat, solid, noncombustible surface (i.e., not on grass or uneven sidewalk).
- Must be properly secured to adequately protect against wind and other potential weather hazards.
- Must maintain a minimum 1-metre clearance from the base of the unit to any combustible material.
- Must be accompanied by a fire extinguisher that is located near the patio area (e.g., within the nearest building entrance).
- Must be turned off and allowed to cool sufficiently before moving.
- Shall not be placed underneath any combustible structure, including combustible umbrellas and awnings, with the exception of commercial grade and professionally installed electric heaters.
- Shall not be placed near any air intakes.
- Shall not obstruct any fire escapes/exits or hinder access to any fire department connections.

5.4.4 Propane Tanks

- Must be used in compliance with all the manufacturer requirements for transportation, operation, and storage.
- Must be out-of-sight and locked in an outdoor vented structure when not in use.
- Must be stored upright and protected against tampering, unauthorized movement, dropping or vehicle impact that could result in a leak or fire.
- Must be moved cautiously to avoid dropping or impact.
- Must be disconnected before storing any patio heaters indoors.
- Must be 9 kg (20 lb) or less.

5.4.5 Open-Flame Devices

 No open flames are permitted within the patio area, including cooking devices, open-air fires (e.g., bonfires, solid, gel or liquid fuel burning), and tabletop heating devices.

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5.5 Buffers

- Patios must allow sufficient space for City staff, contractors, and utility companies to service, access, repair, or maintain trees/plants, fire hydrants and connections, electricity elements, natural gas connections, waste receptacles, and other street assets.
- Patios must not interfere with pedestrian crossing areas, transit stops, vehicle access points, stormwater drainage, or other necessary roadway elements.
- For café-style patios located along the curb, a 0.5-metre buffer must be maintained between the patio area and the inside edge of the curb.
- Gas assets or meters require a buffer of 0.6 metres from the patio limits.
- Parking meters and maintenance holes require a buffer of 1 metre from the patio limits.
- Fire hydrants and other fire connections, utility vaults, and public waste receptacles require a buffer of 1.5 metres from the patio limits.
- Streetscape elements that require public access, such as parking meters, waste receptacles, and benches, are not permitted within the patio area.
- Street trees may be incorporated into the patio area.

In limited instances, the City may approve a street patio that is unable to meet the buffer requirements outlined above.



6. Design Standards

The following design standards are in place to ensure:

- Street patios are visually appealing and enhance the public realm.
- Patio furnishings and materials are functional and of high quality.
- Street patios add to the street activity and are not enclosed or separated.
- A vibrant patio culture is established.

6.1 General

- Patio furnishings and materials must be removable and not permanently fixed in place.
- Patio furnishings and materials shall not interfere with the visibility of adjacent businesses.
- All objects associated with the patio must be contained within the approved patio area and must not interfere with the adjacent pedestrian clearway or vehicle travel lane.
- Patios should integrate with the streetscape and be free of any enclosures, unless express written approval is granted by the City and all necessary permits are obtained and valid.

- The design of street patios, including fencing, tables, chairs, umbrellas, and plants, must promote high-quality design and requires written approval by the Downtown Kingston BIA if the business is located in this area.
- The City encourages creativity and the development of unique outdoor dining spaces within the established design standards.



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6.2 Fencing

- All serving patios require fencing that forms a fully enclosed perimeter that delineates the patio area, except for the patio entrance.
- Fencing must have a minimum height of 0.9 metres and a maximum height of 1.2 metres from the surface of the patio.
- Fencing must be free-standing through the use of weighted footplates or alternative supports and cannot be anchored or affixed in any way to municipal property or other infrastructure, including sidewalks.
- Fencing must be of sturdy construction and secured in such a fashion that it will support the weight of an individual should it become necessary to use the fence to brace oneself to prevent a fall.
- Self-supporting plates shall not create a trip hazard or project beyond the limits of the approved patio area.
- Fencing must be open and transparent to maintain visibility from the street and reduce the risk of high winds moving the patio structure.
- Fencing must be constructed of metal, wood, or composite materials.
- Metal and composite fencing must be dark or neutral in colour (preferably black).
- Fabric, canvas, rope, and other non-rigid materials are not permitted to be used as fencing.
- Fencing must have a solid continuous line that would allow pedestrians to follow along the edge of the patio area.
- Fencing adjacent to the pedestrian path of travel must have a fixed and continuous cane-detectable lower railing with a height between 75 mm and 150 mm above the sidewalk surface.

- Planters can be used in combination with fencing to define the patio area, provided that the planters have a solid base that is cane-detectable and continuous with the fence line.
- Planters can be used in combination with fencing to define the patio area, provided that the planters have cane-detectable railing as described previously.
- Fencing may be required where the City has provided additional perimeter materials for pop-up patios in on-street parking, such as concrete barriers.
- No advertisements are permitted to be affixed to the patio fence, including signs or banners.
- Fencing for licenced patios may be subject to additional requirements set by the AGCO.

6.3 Tables and Chairs

- A mix of two and four-seat tables should be provided in the patio area to offer a variety of seating options.
- All tables and chairs must be made of durable, weather-resistant materials that are easily cleaned.
- Tables and chairs must be made of matching sets and be consistent throughout the patio.
- Tables and chairs must be moveable and of a solid weight for stability.
- Tables and chairs must be able to be arranged to be accessible for patrons utilizing mobility devices, with consideration for knee and toe clearance, forward approach, turning radius, and transfer option

6.4 Menus and Signage

- Menu boards, sandwich board signs, and snap frame signs are permitted within the patio area, provided they meet the requirements of By-Law Number 2009-140, the Signs By-Law, as applicable.
- Menus and signage are not permitted within the pedestrian clearway adjacent to the patio area.
- Menus and signage boards may not extend above 1 metre from the surface of the patio area and cannot obstruct views.
- Menus and signage are not permitted to be affixed to buildings or fences unless express written approval is granted by the City and all necessary permits are obtained and valid.

6.5 Host Stands and Garbage Receptacles

- Host stands are permitted within the patio provided they are contained within the permitted area.
- Garbage receptacles are permitted within the patio provided they are located with host stands and are not a prominent feature within the space.

6.6 Plant Materials

- Plant materials must be healthy, living, and maintained throughout the patio season.
- Plant materials may be affixed to fencing provided they do not protrude more than 100 mm horizontally from the canedetectable railing and do not interfere with the minimum pedestrian clearway of 1.83 metres.
- The required minimum clearway is measured from the furthest protruding point, including the foliage of the plant materials as applicable.

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 Plant materials along the perimeter of the patio may extend to a maximum height of 1.5 metres above the surface of the patio provided they do not interfere with sightlines.

6.7 Lighting

- Lighting is permitted provided it is contained within the boundaries of the patio and does not infringe on the adjacent pedestrian clearway.
- The brightness of the lights should be sensitive to the uses surrounding the patio and should be directed onto the patio, away from neighbouring properties and the street.
- Lighting must not create glare that impedes the safety of motorists and other public realm users.
- Lights are not permitted to be attached to trees, utilities, or other street elements.
 - Lighting must comply with all applicable safety standards.
 - Lighting must use the main electrical panel or a metered power source that the patio operator is responsible for. Cityowned power receptacles cannot be used under any circumstances.
 - String lights must be high enough so that patrons can move freely beneath them. No part of the string lighting may hang less than 2.1 metres above the ground.

6.8 Umbrellas

- Umbrellas must have a minimum height of 2.1 metres above the surface of the patio.
- Umbrellas must be fully contained within the patio area and not protrude into the roadway or pedestrian clearway.
- In limited instances, the minor encroachment of an umbrella may be considered over a public sidewalk subject to City approval.
- Umbrellas are not permitted in front of an adjacent business unless written permission is received.

6.9 Surface Coverings

- Only the sidewalk, on-street parking, or constructed decking is permitted to be used as the surface of the patio area.
- The installation of outdoor carpeting, artificial turf, or other surface coverings is not permitted in the patio area unless express written approval is granted by the City.

6.10 Screens

- Screens are not permitted along the perimeter of the patio unless express written approval is granted by the City.

6.11 Temporary Structures

 Temporary structures, such as tents, domes, vestibules, and wooden frameworks, are not permitted on municipal sidewalks or within on-street parking spaces unless express written approval is granted by the City and all necessary structural permits are obtained and valid.



7. Operation and Maintenance Requirements

Patio operators must adhere to the following operation and maintenance requirements to maintain good standing. If you do not comply with the standards and requirements of this guide, you will first be given a warning detailing the issues and a timeline to fix the problem. The City may terminate a street patio agreement immediately upon written notice to the patio operator for breach of any provisions. The City may also deny the renewal of a street patio agreement for patio operators that fail to maintain good standing.

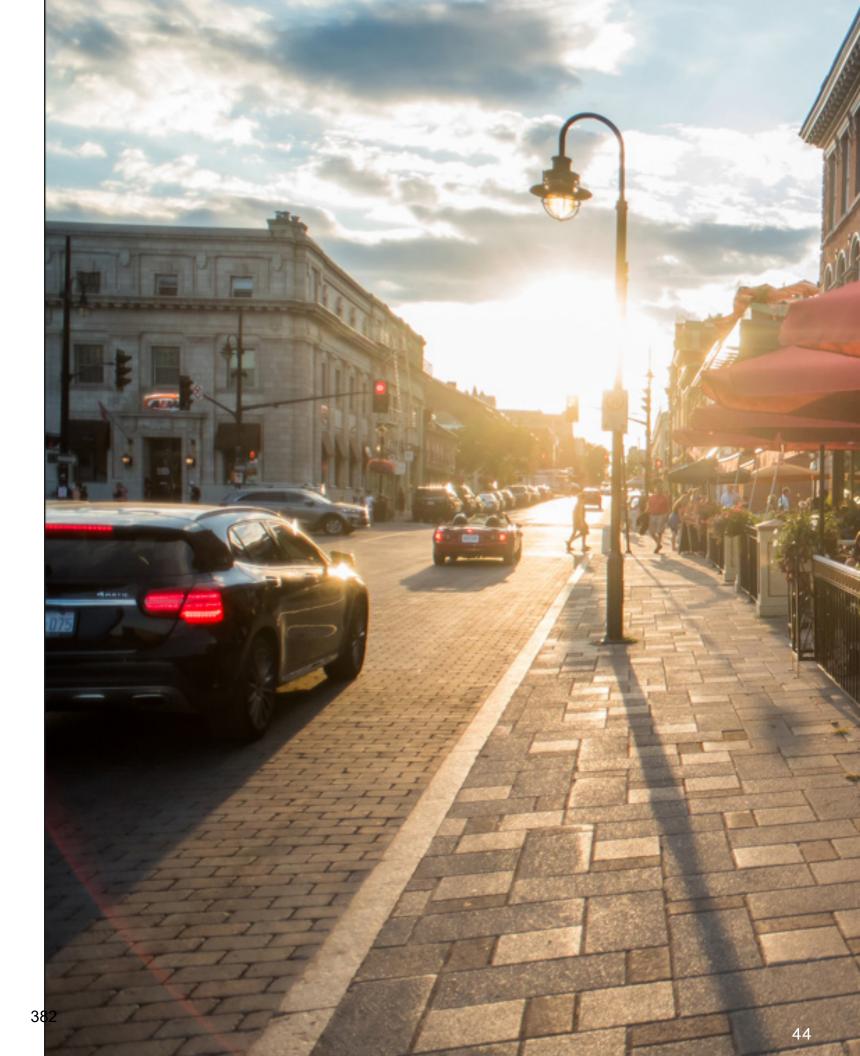
At any time, the City may request the removal of a patio for any reason, including safety, construction, or community needs.

7.1 Insurance

- Patio operators are required to obtain and maintain commercial general liability insurance in the minimum amount of \$5,000,000, including the City of Kingston as an additional insured.
- Insurance must be maintained for the entire duration of the patio operating period.
- Insurance may not be cancelled, lapsed, or materially changed without the insured giving a 30-day notice to the City.
- A signed and stamped Certificate of Insurance must be provided by the applicant after a street patio is approved or before a previously approved street patio is renewed in a subsequent year.

7.2 Liquor Sales Licencing

- Liquor sales licencees and manufacturers that hold a by-the-glass endorsement who want to operate a street patio will need approval from the City of Kingston prior to making a submission to the AGCO.
- Upon obtaining approval from the City of Kingston, licencees must notify the AGCO by making a submission on the iAGCO portal before selling or serving liquor on the street patio.
- The AGCO will require the following information:
 - The start date that liquor will be sold and served on the street patio.
 - How many months per year you have been approved to operate the street patio.
 - The months that you intend to operate the street patio.
 - The expiry date of your approval.
 - A description of the location and dimensions of the street patio.
 - Any conditions that have been imposed.
- Street patios with a liquor sales licence or by-the-glass endorsement may only operate for a maximum of eight months per calendar year.



7.3 Installation and Removal

- Frontage patio operators may commence construction of their patio on the Monday of the last full week of March.
- Patio operators must disassemble the street patio and remove all furnishings and materials from the right-of-way on the final day of the specified operating period (or earlier).
- Patio operators must return the street, sidewalk, and/or other municipal property to its original condition at the end of the operating period to the satisfaction of the City.

7.4 Daily Operation

- Patio operators must ensure the street patio continues to be used in adherence with the standards outlined in this document.
- Operators of parking space (pop-up) patios must have regular business hours that align with operating the street patio for a minimum of five days per week during the patio season.
- Operators of parking space (pop-up) patios that are found to be operating their patio less than five days per week (weather permitting) will receive a warning, and may subsequently be required to remove their patio.
- Patio operators must maintain the adjacent pedestrian clearway, including the removal of any garbage or debris (e.g., cigarette butts, spilled food, or liquids).
- Patio operators must assume the responsibility of refuse disposal and must not dispose of waste using public waste receptacles.
- Patio operators must secure or store the patio furniture when not in use outside the hours of business operation.

- Patio operators must obtain written approval prior to implementing any changes to the approved patio design and layout, including the addition of heaters or other patio furniture.
- Patio operators are not permitted to cook or prepare food in the patio area.
- Patio operators are solely responsible for any repairs to the patio during the operating period.
- Patio operators must ensure noise levels comply with the regulations outlined in By-Law Number 2004-52, the Noise Bylaw, as applicable.
- Patio operators must ensure the patio area and a 9-metre radius surrounding the patio remains free of smoking, vaping, or the use of cannabis, in accordance with the Smoke-Free Ontario Act.





8. Program Fees

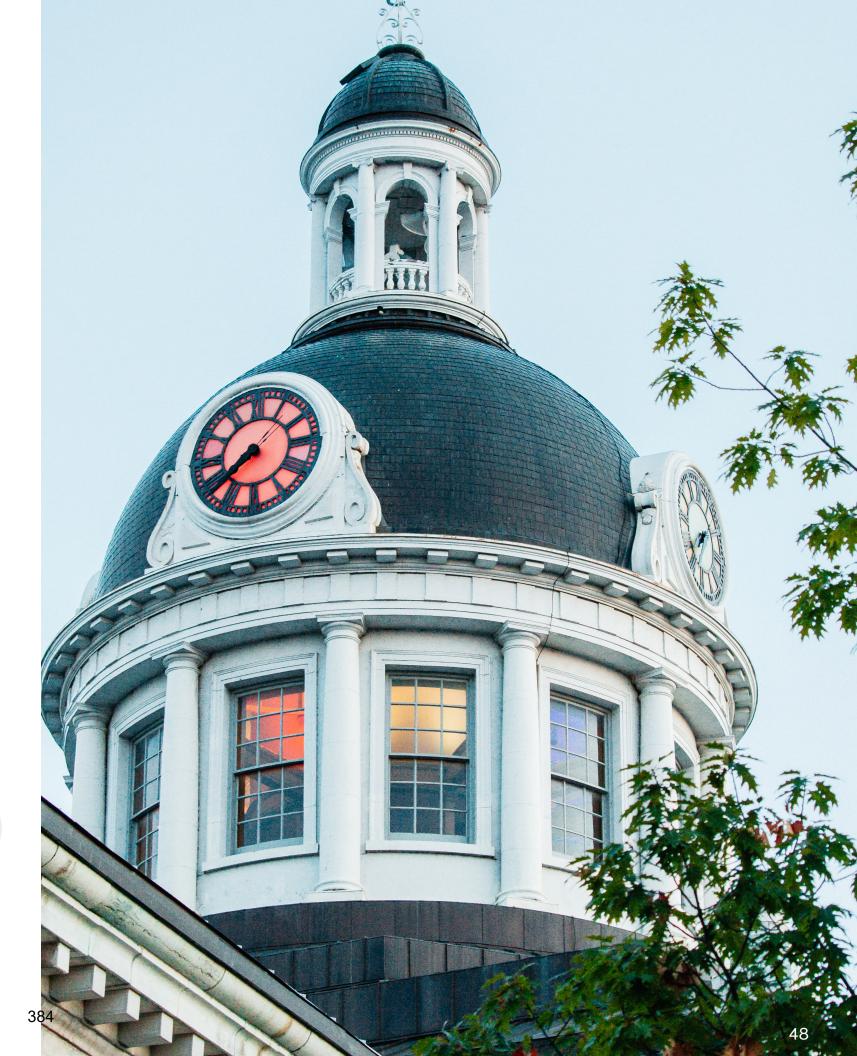
The fees required to apply and participate in the Street Patio Program are outlined in By-Law Number 2005-10, the Fees and Charges By-law, which is available on the City's website. The fees can be quickly found within the by-law by searching for "patio". The Street Patio Program fees outlined in the Fees and Charges By-law are subject to change in accordance with any amendments to the by-law.

9. Contacts

For general inquiries about the street patio program or any questions about the information included in this document, please contact <u>transportation@cityofkingston.ca</u>.

For assistance with the design of your street patio and selection of furnishings and other materials, please contact <u>member@</u> <u>downtownkingston.ca</u>.

Street Patio Standards and Application Guide developed by the City of Kingston and Arcadis IBI.







Temporary Exemptions – Non-Conforming Patios

The following temporary exemptions apply only to existing non-conforming street patios that: (1) were established prior to the City's COVID-19 temporary patio program; and (2) are or were authorized by a valid licence agreement with the City. For clarity, the temporary exemptions do not apply to any patio that was first established as part of the City's COVID-19 temporary patio program. The temporary exemptions have no force or effect until such time that they are incorporated into a valid licence agreement duly executed by the licensee and the City. The City expressly reserves the right to incorporate terms, conditions and covenants related to the application and cessation of the temporary exemptions in the licence agreement, including, without limitation, provisions requiring the licensee to comply with the City's current Street Patio Standards upon any major redevelopment, reconstruction or reconfiguration of the patio, or in the event of a change of ownership or management of the premises to which the patio relates.

Index	Proposed temporary exemption(s) for existing non-conforming patios that are licensed under an active licence agreement with the City.	Corresponding provision in the Street Patio Standards
1.	A reduced minimum patio entrance width of 0.9 metres and minimum aisle width of 0.9 metres from the patio entrance to the building entrance will be permitted until such time that the licensee (i.e. patio operator/owner) changes, or until the patio fencing and/or platform is proposed to be replaced, reconstructed or reconfigured by the licensee.	 5.1.1 – The patio entrance must have a minimum width of 1.2 metres. 5.1.2 – A minimum 1.1-metre aisle shall be provided at all times from the patio entrance to the building entrance.
2.	A reduced minimum unobstructed pedestrian clearway of 1.5 metres, maintained at all times, will be permitted until such time that the licensee (i.e. patio operator/owner) changes, or until the patio fencing and/or platform is proposed to be replaced, reconstructed or reconfigured by the licensee.	5.2.1 – An unobstructed pedestrian clearway of at least 1.83 metres must be maintained at all times.
3.	Patios with existing elements that anchor or affix to the sidewalk will be permitted to continue to do so provided reasonable efforts are taken to cap the holes when the fencing is removed, such as the use of flat-head socket caps that sit flush with the sidewalk, or any other method or material acceptable to the City. This exemption will be provided until such time that the licensee (i.e. patio operator/owner) changes, or until the patio fencing and/or platform is proposed to be replaced, reconstructed or reconfigured by the licensee, at which point the licensee may be required to reimburse the City for necessary repairs and/or replacement of sidewalk panels.	6.2 – Fencing must be free-standing through the use of weighted footplates or alternative supports and cannot be anchored or affixed in any way to municipal property or other infrastructure, including sidewalks.
4.	Patios with an existing screen(s) will be granted express written approval via the new licence agreement.	6.10 – Screens are not permitted along the perimeter of the patio unless express written approval is granted by the City.
5.	Patios will be assumed to be exempted from existing buffer requirements based on prior approvals. The City reserves the right to require modifications to the patio layout to maintain utility and fire access on an as-needed basis.	5.5 – Buffers



Utilities Kingston Report to Environment, Infrastructure & Transportation Policies Committee Report Number EITP-24-010

То:	Chair and Members of the Environment, Infrastructure &
	Transportation Policies Committee
From:	David Fell, President & CEO, Utilities Kingston
Resource Staff:	Heather Roberts, Director, Water & Wastewater, Utilities
	Kingston
Date of Meeting:	February 13, 2024
Subject:	Update on the Municipal Class Environmental Assessment for
	the Kingston Regional Biosolids & Biogas Facility

Council Strategic Plan Alignment:

Theme: 2. Lead Environmental Stewardship and Climate Action

Goal: 2.1 Reduce carbon footprint of City operations.

Goal: 2.2 Support climate action and sustainability for residents, businesses and partners.

Executive Summary:

A Master Plan for Enhanced Biosolids Management and Biogas Utilization (<u>Master Plan</u>) was completed in July 2020 identifying a recommendation and preferred solution to "develop an integrated biosolids and source separated organics processing facility at a greenfield development site. The opportunity site for consideration would be located within the property boundary of Knox Farm". Knox Farm is a vacant City-owned property located just north of Highway 401 with access from Perth Road. The option of incorporating organic waste processing to produce a biogas was considered beneficial due to the potential reductions in greenhouse gas emissions if biogas can be used as a replacement for petroleum natural gas or other fossil fuels.

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The Environment, Infrastructure, & Transportation Policies (EITP) committee endorsed proceeding with further assessing Knox Farm for this project on October 12, 2021, which was later approved by City of Kingston Council on November 2, 2021. Refer to <u>Report Number EITP-21-019</u> for additional project context and background. It is noted that Council's consent was not final approval to use Knox Farm; consent was limited to the purposes of completing the Municipal Class Environmental Assessment (Class EA).

Dillon Consulting Limited (Dillon) was later retained in July 2022 to review the environmental, technical, and financial feasibility of constructing the facility at Knox Farm through the completion of a Class EA. At a high-level, the scope of work for the Class EA project consists of the following steps:

- Step 1: Review the Master Plan and complete a suitability assessment of the Knox Farm property prior to formally initiating a Schedule C Class EA.
- Step 2: Proceed with public consultation and vendor engagement as it relates to the facility and considerations identified for the Knox Farm property.
- Step 3: Formally initiate the Class EA process to develop and evaluate alternative design concepts for the facility. Complete final Environmental Study Report (ESR).

Steps 1 and 2 were completed between August 2022 and June 2023, noting the following:

- The 2020 Master Plan was reviewed and the suitability of the Knox Farm property for the proposed facility was assessed. No major barriers were identified.
- Utilities Kingston provided an <u>information report to EITP</u> on February 14, 2023, to provide an update on Step 1 ahead of a public information session and to provide details on the next steps of the project. The report contains background information for the project, dating back to 2017.
- A public information session to inform the public of the results of the Knox Farm suitability assessment took place in March 2023. Refer to these <u>display boards</u> for more information.
- A request for information was issued by Dillon to solicit information from key vendors. Responses were received and reviewed.

Step 3 was initiated in September 2023 when the Class EA process was publicly announced by issuing the following <u>Notice of Commencement</u>.

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The purpose of this report is to provide the EITP Committee with an update on the project as UK is proceeding through the stages of Step 3 and is preparing to conduct another public information session at the end of March 2024.

Recommendation:

This report is for information only.

Report to Environment, Infrastructure & Transportation Policies Committee

Report Number EITP-24-010

February 13, 2024

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Authorizing Signatures:

 \checkmark

David Fell, President & CEO, Utilities Kingston

p.p. ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER

Lanie Hurdle, Chief Administrative Officer

Consultation with the following Members of the Corporate Management Team:

Paige Agnew, Commissioner, Growth & Development Services	\checkmark
Jennifer Campbell, Commissioner, Community Services	Not required
Neil Carbone, Commissioner, Corporate Services	Not required
Peter Huigenbos, Commissioner, Major Projects & Strategic Initiatives	Not required
Brad Joyce, Commissioner, Infrastructure, Transportation & Emergency Services	Not required
Desirée Kennedy, Chief Financial Officer & City Treasurer	Not required

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Options/Discussion:

The purpose of this report is to provide the EITP Committee with an update on the Kingston Regional Biosolids & Biogas Facility Municipal Class Environmental Assessment (Class EA) project prior to the second public information session at the end of March 2024. Information on the alternative design concepts will be shared with the public at the session. The release of project information often generates questions and public interest and so, staff are being proactive to relay project information to keep Council members and the public informed.

This report provides current project details, events and next steps. As noted in the executive summary, background information for the project, dating back to 2017 was provided to the EITP committee in February 2023 and can be reviewed <u>here</u>.

Project Work Plan and Current Status

Dillon's project work plan generally consists of the following steps:

- Step 1: Review the Master Plan and complete a suitability assessment of the Knox Farm property prior to formally initiating a Schedule C Class EA.
- Step 2: Proceed with public consultation and potential vendor engagement as it relates to the facility and considerations identified for the Knox Farm property.
- Step 3: Formally initiate the Class EA process to develop and evaluate alternative design concepts for the facility. Complete final Environmental Study Report (ESR).

Steps 1 and 2 are complete and Utilities Kingston (UK) is progressing through Step 3. The project is on track to be completed by June 2024.

Alternative Design Concepts

UK is progressing through Step 3 of the Class EA project which includes the development of two design concepts for the preferred solution and comparing them using a comprehensive set of evaluation criteria that addresses:

- **Technical Factors**, such as, construction, process and maintenance complexities, biogas production, expandability, servicing, wastewater treatment, residual volume and nutrient content, proven technology.
- **Financial Factors**, such as, capital, operating and maintenance costs, lifecycle costs and revenue.

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- **Cultural Environment**, such as, potential impacts to heritage and archaeological resources and indigenous communities and resources.
- **Socio-economic Environment**, such as, land-use, consistency and conformance with local, provincial, and federal policies and nuisance to community.
- **Physical Environment**, such as, potential impacts to groundwater, surface water, climate change (i.e., greenhouse gas emissions), noise, vibration, air quality and odour.
- **Natural Environment**, such as, potential impacts to vegetation/trees, terrestrial habitat and wildlife, fisheries/aquatic habitat and wildlife and species at risk (SAR).

Two alternative design concepts have been developed that consider the overall goals of the project, including the need to meet future servicing needs (i.e., sufficient solids capacity at wastewater treatment plants), enhance biogas generation and management of biosolids, with the aim to reduce greenhouse gas emissions.

Technical performance features have been derived from materials obtained through a vendor engagement process (Step 2) and have been used as the main distinguishing factors between the concepts. Key technical process features which may differ between alternatives were first identified to guide the development of alternative design concepts. These features include:

- 1. Type of feedstock preparation required.
- 2. Presence or absence of pre-conditioning steps, such as thermal hydrolysis prior to digestion.
- 3. Core digestion process type.
- 4. Biogas treatment and utilization.
- 5. Form of biosolids product (i.e., liquid, semi-solid, dry powder, pellets).

Based on the above features it was determined that features 2 and 5 were meaningful differentiating factors that could be evaluated and compared.

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Focusing on technical distinctions between features 2 (pre-conditioning) and 5 (final biosolids product), at a high level, the following two design concepts were selected:

- 1. Alternative Design Concept 1: Focus on maximizing resource recovery.
 - a. Concept 1 is based on prioritizing the generation of energy (i.e., biogas) and biosolids residuals with an emphasis on retaining nutrient value for beneficial reuse. This alternative will likely require additional utility use for processing, compared to simpler alternatives without pre-conditioning. Key features:
 - i. Pre-conditioning of feedstock to maximize biogas generation.
 - ii. Production of a liquid biosolids end-product, which minimizes wastewater treatment demands and provides maximum nutrient for beneficial reuse.

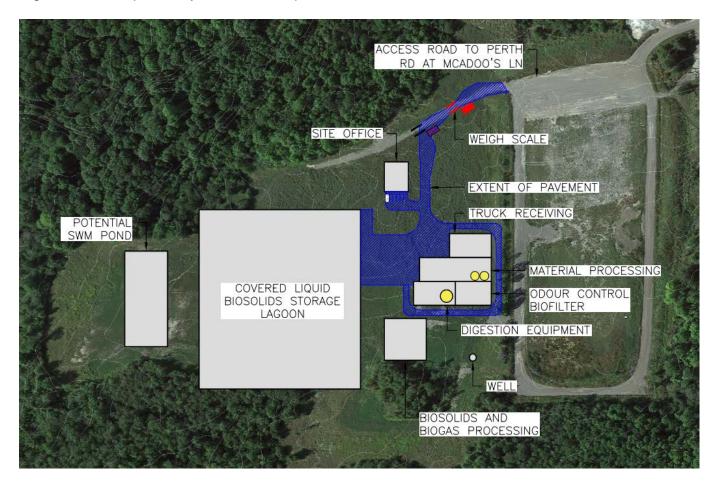


Figure 1: Conceptual Layout for Concept 1

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- 2. Alternative design Concept 2: Focus on minimizing utility demands and residuals volume.
 - a. Concept 2 is based on prioritizing simplicity of operation, reduced utility usage (i.e., no energy requirements to pre-condition) and the production of a lower volume biosolids product requiring less storage space and fewer trucks to transport to end-use. Key features:
 - i. No feedstock pre-conditioning, which minimizes energy requirements.
 - ii. Production of dewatered biosolids end-product, minimizes onsite storage and trucking. This alternative would generate centrate liquids (liquids created when residuals are centrifuged) that cannot be treated on-site and would have to be trucked to a WWTP for treatment. Some centrate may be reused onsite for blending with incoming feedstock.

Figure 2: Conceptual Layout for Concept 2



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At this stage in the project, based on site location, availability of supporting infrastructure (adjacent City-owned natural gas pipeline) and other preliminary analyses, both alternative design concepts include upgrading biogas to RNG and injection into the natural gas pipeline as the preferred beneficial reuse for the biogas produced.

Preliminary Evaluation Details

At the time of writing this report, the assessment and evaluation of these concepts using the criteria as listed above was still underway, and a preliminary preferred concept was not available, but will be selected before the public information session in March 2024. The information below is subject to change as work continues; however, the following provides a brief, preliminary snapshot of some evaluation criteria results separated by similarities and differences between the concepts.

Similarities between Concepts 1 and 2:

- Both have similar potential impacts to groundwater and surface water, in terms of the potential risk of spills from digestion tanks and/or biosolids storage that could result in contamination. These potential impacts can be mitigated through design and operational considerations.
- Both are anticipated to meet applicable noise limits to prevent impacts to neighbours.
- Both have minimal potential for negative impacts to archaeological and cultural heritage resources.
- Both concepts are consistent with provincial and local policies, and both would likely require land-use planning approvals.
- Both concepts include anaerobic digestion of wastewater biosolids and source separated organic (SSO) wastes which is a proven technology with a long design life and well-established vendors to supply.
- Both concepts include odour mitigation strategies that are expected to be effective in mitigating odour impacts to nearby properties.
- Both concepts require trucking of feedstock to the facility and trucking to remove and beneficially reuse residual materials.

Differences Between Concepts 1 and 2:

• Due primarily to storage of liquid biosolid feedstock, Concept 1 has a larger footprint and larger scope of civil works that will result in higher requirements for tree and vegetation removal and corresponding loss of terrestrial habitat.

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- Concept 1 is expected to be a more energy intensive operation due to the feedstock preconditioning requirement with corresponding impact on operating costs and emissions..
- Concept 1 is expected to yield a significantly higher biogas production resulting in a larger net reduction in greenhouse gas emissions downstream through substitution of RNG for petroleum natural gas or other fossil fuels.
- Concept 1 includes a concentrated liquid biosolids residual that is expected to retain a higher nutrient value and be a more favourable product for agricultural applications.
- Concept 2 is expected to have comparatively higher odour generation potential from the storage of biosolids in a solid form, compared to liquid biosolids in concept 1 that would be contained within a covered lagoon.

Criteria of Concern

No major barriers have been identified for Knox Farm as the potential location for either of the alternative design concepts. However, the following areas still require significant assessment and evaluation and have the potential to be barriers to the project moving forward:

- Physical Environment and potential to reduce and impact emission of greenhouse gases. An expected objective for the project is to produce a net reduction in GHG emissions that is commensurate with the investment required. This would primarily be achieved through the production and use of RNG in place of petroleum natural gas or other fossil fuels but also in changes to how existing wastewater treatment plants operate and the utility and transportation features of the considered design concepts.
- 2. Financial Factors and viability of a revenue positive business model. Understanding capital, operating, maintenance and lifecycle costs, as well as expected revenues from feedstock tipping fees and sale of biogas and residual biosolids.

The above is not meant to be exclusive. All criteria for the alternative concepts continue to be evaluated in order to support a future go or no-go recommendation to Council.

Dedicated Consultations

In late 2023 and early 2024, focused information sessions and discussions took place with the Ministry of the Environment, Conservation and Parks (MECP), Cataraqui Region Conservation Authority (CRCA), Alderville First Nations and the Ministry of Transportation. The purpose of these sessions was to provide an overview of the project, share preliminary technical results and details on the alternative design concepts, and facilitate discussion.

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Feedback will be considered and summarized in the consultation summary report which forms part of the final Environmental Study Report (ESR).

Public Information Session

A public information session will take place at the end of March 2024. The objective of the information session is to seek feedback on the evaluation results and the preliminary preferred alternative design concept.

A survey will be available to attendees and will also be available on UK's website and social media.

Feedback will be considered and summarized in the consultation summary report which forms part of the final ESR.

Next Steps and Class EA Completion

Next stages for Step 3 include further analysis and refinement of the alternative design concepts including refinement of GHG emission assessments, selection of the preliminary preferred option, hosting a public information session, review feedback and summarize into a report, refine preferred option, prepare final ESR and post for 30-day public review period.

The Class EA is expected to be completed by June 2024.

Business Case

Recognizing the need to assess the complexities of owning, managing, operating and maintaining a business of this nature (i.e., buying and processing organic waste feedstocks, selling renewable natural gas and residual biosolids), UK issued a Request for Proposal in November 2023 to retain a firm to undertake a detailed business case to review ownership, operating and financing strategies, procurement delivery options and complete a market sounding exercise, risk assessment and a robust financial analysis. The final deliverable is a business case report that will assist staff in providing further recommendations to UK and the City.

Award of this project is pending. The intent is that the Business Case will be completed by the end of Q3 2024.

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Go/No-Go Recommendation to Council

The Class EA and Business Case are expected to be completed by June 2024 and end of Q3 2024, respectively. It is anticipated that the results of these two studies will provide UK and City staff with the required information to provide a go or no-go recommendation to Council by the end of the year.

Existing Policy/By-Law

In accordance with provisions for conducting Municipal Class Environmental Assessments, a <u>Notice of Commencement</u> was announced in September 2023.

Financial Considerations

Sufficient capital funds have been approved and allocated to complete the Class EA and Business Case projects.

Contacts:

Heather Roberts, Director, Water and Wastewater Services, 613-546-1181 extension 2400

Other City of Kingston Staff Consulted:

Lauren Scanlan, Project Advisor – Risk & Research, Utilities Engineering, Utilities Kingston

Paul MacLatchy, Environment Director, Business, Real Estate & Environment

Exhibits Attached:

None

From:	Matt Rogalsky
To:	Sullivan,Iain
Subject:	EITP Committee / bike lanes in Williamsville
Date:	February 8, 2024 1:05:31 PM

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Iain Sullivan,

I will not be able to attend the public consultations on cycle lanes in Williamsville, however here are some comments for the Committee.

As a year-round cyclist, I would like to register my support for better cycling infrastructure as this area is redeveloped. The City must stop seeing automobiles as the vehicles which need accommodation: it should be the other way around. Automobile drivers are given so much consideration that it is no surprise there is slow uptake on cycling in Kingston. The committee needs to advocate for cyclists and make it safe for the average person to feel comfortable riding down Princess St.

Cycle lanes should not be removed, they should be improved and made more obvious.

Sincerely Dr Matt Rogalsky