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# LANSDOWNE 2.0 EVENT CENTRE (PHASE 1)

**Transportation Impact Assessment Report  
Step 4 – Strategy Report**

23/08/2024



# DOCUMENT CONTROL ISSUE SHEET

## Project & Document Details

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Document Title	Lansdowne 2.0 Phase 1 Event Centre Transportation Impact Assessment

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				Name	Signature
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0.2	23/08/2024	AA, AD, HM	CA, AD, KL	Hassan M.	





## Certification Form for Transportation Impact Assessment (TIA) Study

### TIA Reports

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines and 2023 amendments.

Please note that the Certification is only required for the submission of a TIA. The Screening can be undertaken by a non-certified individual for the purpose of identifying if a TIA is needed or not.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that they meet the four criteria listed below.

### CERTIFICATION



I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines; (Update effective July 2023)



I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;



I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and



I am either a licensed or registered<sup>1</sup> professional in good standing, whose field of expertise



is either transportation engineering



or transportation planning.

<sup>1</sup> License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

Dated at Houston this 23 day of August, 20 24.  
(City)

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Signature of individual certifier that they meet the above four criteria

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**Stamp**



# EXECUTIVE SUMMARY

The City of Ottawa is proceeding with a Site Plan Control application for a new multi-purpose event centre at Lansdowne Park. This Transportation Impact Assessment (TIA) has been prepared by Momentum Transport Consultancy in support of the Lansdowne 2.0 Event Centre (Phase 1) “the development”, located at 1015 Bank Street, Ottawa, K1S 3W7. The development is located within the Glebe neighbourhood of Ottawa, Ontario and is bounded by Bank Street to the west, Holmwood Avenue to the north, and Queen Elizabeth Driveway along the Rideau Canal to the east and south.

This Site Plan Application for the new event centre represents the first phase of development for the Lansdowne 2.0 project, which seeks to demolish the existing functionally obsolete north stadium stands and arena complex at Lansdowne Park and build a new world-class event centre. The Lansdowne 2.0 redevelopment plan features a new multi-purpose event centre, new north stadium stands, as well as additional residential housing, destination retail, and office space. The full buildout timeframe is slated to occur between 2032 and 2036.

This TIA document covers screening and scoping, which involve regulatory triggers, existing and planned conditions, horizon years, and exemptions. The forecasting section details updated travel demand for the development to reflect the revised Lansdowne 2.0 development concept made in September 2023. The TIA report outlines the design and accommodation for sustainable modes, circulation and access, parking, intersections, transportation demand management, and transit.

The overall Lansdowne 2.0 proposed plan includes the following phases of development:

**Phase 1** (Anticipated completion of 2028) consists of building a new 5,500 seat (up to 6,500 spectators) multipurpose event centre that will be home to the OHL’s Ottawa 67’s, the CEBL’s Ottawa BlackJacks, the PWHL Ottawa, and other indoor events such as shows and concerts.

*As this phase of Lansdowne 2.0 replaces the programming provided at the existing 9,800 seat TD Place Arena, it is not expected to generate additional transportation demands to Lansdowne.*

**Phase 2** (Anticipated completion between 2030 and 2031) consists of replacing the existing functionally obsolete north stadium stands and arena complex at TD Place Stadium with a new 11,200 seat (12,100 spectator) north stand structure. This new facility replaces the existing north stadium stands, which currently has a capacity of 14,028 spectators, and would result in a reduction of approximately 2,000 spectator capacity at

TD Place Stadium. This venue will continue to be the home of the CFL's Ottawa RedBlacks and the CPL's Ottawa Atlético.

*As this phase of Lansdowne 2.0 replaces existing programming currently provided at TD Place Stadium, it is not expected to generate additional transportation demands to Lansdowne.*

**Phase 3** (Anticipated completion between 2032 and 2036) represents the full build-out of Lansdowne 2.0 and consists of replacing the existing 41,000 ft<sup>2</sup> of commercial retail and box office annex to the Stadium on Exhibition Way with 49,635 ft<sup>2</sup> of new podium-level commercial retail space. This represents a net increase of 8,635 ft<sup>2</sup> of commercial retail space from what is currently provided today. In addition, this phase includes the construction of two new residential towers with a total of 770 new dwelling units. Additional underground parking space will be constructed by extending the existing facility to accommodate an additional 386 parking spaces to service the new residential units and additional retail space, resulting in a total of 1,766 underground parking spaces at Lansdowne.

The full build-out of Lansdowne 2.0 development is anticipated to generate between **130 and 180 net new auto trips** (two-way) during the Weekday AM, Weekday PM, and Weekend Saturday and Sunday peak periods.

Under Phase 1, which is the focus of this TIA submission, no additional trip generation demands are forecasted as the proposed multi-purpose event centre replaces the existing programming at the Arena at TD Place. It is anticipated that internal circulation and access within Lansdowne will be altered in an interim operating condition in 2028 during the construction of subsequent phases of Lansdowne 2.0.

Under the scenarios of Existing Conditions, the interim 2028 Future Conditions (i.e., the completion of the new event centre and construction of subsequent phases of Lansdowne 2.0), and the 2033 Future Conditions (Full Buildout of Lansdowne 2.0), all study area intersections are shown to operate acceptably with similar levels of services currently observed today.

In conclusion, the analysis found that Phase 1 of Lansdowne 2.0 will result in minimal impact on the area's overall traffic operations and can be accommodated within the proposed Lansdowne 2.0 concept. From a transportation standpoint, the proposed multi-purpose Event Centre can be accommodated by the future transportation network with the continued adoption of the existing comprehensive Transportation Demand Management strategy.

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- Appendix A - Turning Movement Count Data**
- Appendix B - Intersection Collision Data**
- Appendix C - MMLOS Analysis Data**
- Appendix D - TDM CheckList**
- Appendix E - Synchro Summary Sheets**



# 1. SCREENING

## 1.1 Summary of Development

Table 1.1: Summary of Development

Municipal Address	1015 Bank Street, Ottawa, K1S 3W7
Description of Location	TD Place at Lansdowne, situated at the southeast quadrant of the intersection of Bank Street and Holmwood Avenue.
Land Use Classification	Mixed-Use Sports & Entertainment District (High-rise residential, retail, office, outdoor stadium, indoor arena and event centre)
Development Size (m <sup>2</sup> ) [sq-ft] {unites}	<p><b>Phase 1:</b></p> <p><b>Indoor Multi-Purpose Event Centre:</b> 5,500 seats (6,500 spectators)</p> <p><b>Phase 2:</b></p> <p><b>New North Stadium Stands:</b> 11,200 seats (12,100 spectators)</p> <p><b>Phase 3:</b></p> <p><b>Office:</b> 2,323 m<sup>2</sup> [25,000 sq-ft] (net increase of 1324 m<sup>2</sup> or 14,240 sq-ft)</p> <p><b>Retail:</b> 4,611 m<sup>2</sup> [49,635 sq-ft] (net increase of 802 m<sup>2</sup> or 8,635 sq-ft)</p> <p><b>Residential:</b> 770 new dwelling units</p>
Number of Accesses and Locations	<p>Four existing site access locations:</p> <ol style="list-style-type: none"> <li>1. Bank Street / Exhibition Way</li> <li>2. Bank Street / Marché Way</li> <li>3. Queen Elizabeth Driveway / Princess Patricia Way</li> <li>4. Holmwood Parking Garage Ramp (Private, Residents Only Access)</li> </ol>
Phase of Development	<p>Phase 1 - Event Center (2028) <i>Existing Land Use</i></p> <p>Phase 2 - North Stadium Stands + Retail Podium (2029/2030) <i>Existing Land Use</i></p> <p>Phase 3 – Residential Towers (2031)</p>
Buildout Year	2032 to 2036

If available, please attach a sketch of the development or site plan to this form.

## 1.2 Trip Generation Trigger

Considering the Development's Land Use type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

Table 1.2: Trip Generation Trigger

Land Use Type	Minimum Development Size	Triggered
Single-family homes	40 units	✘
Townhomes or apartments	90 units	✓
Office	3,500 m <sup>2</sup>	✘
Industrial	5,000 m <sup>2</sup>	✘
Fast-food restaurant or coffee shop	100 m <sup>2</sup>	✘
Destination retail	1,000 m <sup>2</sup>	✓
Gas station or convenience market	75 m <sup>2</sup>	✘

\* If the development has a land use type other than what is presented in the table above, estimates of person-trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. **If the proposed development size is greater than the sizes identified above, the Trip Generation Trigger is satisfied.**

## 1.3 Location Triggers

Table 1.3: Trip Generation Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Spine Bicycle Networks?		✘
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone? *	✓	

\*DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6). See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA).

**If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.**

## 1.4 Safety Triggers

Table 1.4: Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 km/hr or greater?		✗
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?		✗
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?		✗
Is the proposed driveway within auxiliary lanes of an intersection?		✗
Does the proposed driveway make use of an existing median break that serves an existing site?		✗
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		✗
Does the development include a drive-thru facility?		✗

If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

## 1.5 Summary

Table 1.5: Summary

	Yes	No
Does the development satisfy the Trip Generation Trigger?	✓	
Does the development satisfy the Location Trigger?	✓	
Does the development satisfy the Safety Trigger?		✗

If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

## 2. SCOPING

### 2.1 Existing and Planned Conditions

#### PROPOSED DEVELOPMENT

The City of Ottawa is proceeding with a Site Plan Control application for a new multi-purpose event centre at Lansdowne Park.

Lansdowne Park is located within the Glebe neighbourhood of Ottawa, Ontario and is bounded by Bank Street to the west, Holmwood Avenue to the north, and Queen Elizabeth Driveway along the Rideau Canal to the east and south.

The new event centre replaces the existing TD Place Arena (previously known as the Ottawa Civic Centre) with a multi-purpose venue with a seated capacity of 5,500 seats (total spectator capacity of 6,500 including standing-only).

This Site Plan Application for the new event centre represents the first phase of development for the Lansdowne 2.0 project, which seeks to demolish the existing functionally obsolete north stadium stands and arena complex at Lansdowne Park and build a new world-class event centre.

The Lansdowne 2.0 redevelopment plan features a new multi-purpose event centre, new north stadium stands, as well as additional residential housing, destination retail, and office space.

Lansdowne Park currently consists of:

- TD Place Stadium: a 24,000-seat outdoor stadium that is home to the Canadian Football League's (CFL) Ottawa RedBlacks and Canadian Premier League's (CPL) Ottawa Atlético;
- TD Place Arena: a 9,800-seat indoor multipurpose venue and arena (formerly known as the Ottawa Civic Centre) home to the Ontario Hockey League's (OHL) Ottawa 67's, the Canadian Elite Basketball League's (CEBL) Ottawa BlackJacks, and the Professional Women's Hockey League's (PWHL) Ottawa team;
- 280 residential units within two condominium towers and townhomes;
- Approximately 360,000 ft<sup>2</sup> of destination-based commercial retail and office space; and
- An 18-acre urban park that includes the historic Aberdeen Pavilion exhibition hall and Horticulture Building.
- 1,380 space underground parking garage for public and residential use.

**Figure 2.1** illustrates the site location and Lansdowne 2.0 redevelopment footprint.



This Transportation Impact Assessment (TIA) is submitted in support of the Site Plan Application for Phase 1 of the Lansdowne 2.0 redevelopment plan.

The proposed improvements include the construction of a new 5,550 seat (6,500 attendee) multi-purpose event centre and associated public realm improvements at the Great Lawn south of the Aberdeen Pavilion. Other improvements include the provision of a dedicated layby for media and broadcast trucks south of the new event centre.

Spectator access to the new event centre will be provided at the North Main Entrance facing the Aberdeen Pavilion and Exhibition Way.

Additional gateway entrances are provided at the South Entrance (Patio) and East Entrance (Terrace) which will be used for evacuation egress, and when required for events with expanded capacity inclusive of additional floor seating and standing-only tickets (i.e. 6,500 attendees).

All event centre entrance locations connect to multi-use pathways within Lansdowne with connections to existing external pathways located on Queen Elizabeth Driveway and sidewalks on Bank Street and Holmwood Drive.

Similar to the current vehicle access and circulation arrangements at Lansdowne, vehicular access is restricted to Bank Street at Exhibition Way and Marche Way, as well as Queen Elizabeth Driveway at Princess Patricia Way.

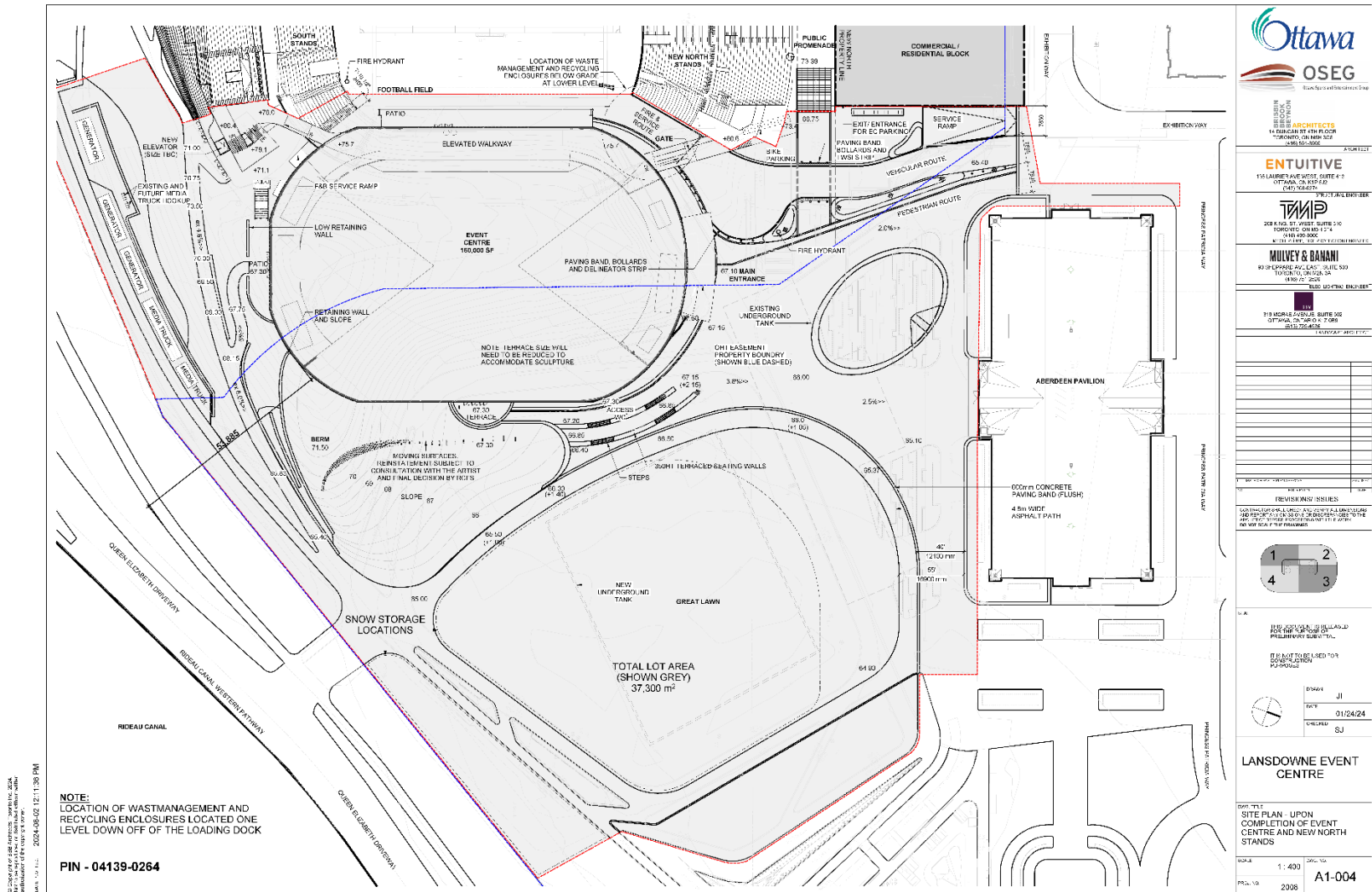
Limited special use access is also provided at Queen Elizabeth Driveway and the Great Lawn to facilitate emergency vehicle access and limited special use by shuttle buses when permitted.

Truck deliveries and the load-in / load-out of shows and concerts at the new event centre will be facilitated at the existing service ramp located on Exhibition Way. The new event centre will feature a 15.4m wide entrance at Exhibition Way to provide access to the new event centre and Great Lawn, including a limited use vehicle route to allow for AODA pick-up and drop-off by ParaTranspo for patrons with mobility needs.

Figure 2.2 illustrates the proposed Site Plan for the new event centre at Lansdowne.



Figure 2.2: Lansdowne 2.0 Event Centre Site Plan



The Lansdowne 2.0 redevelopment plan is anticipated to occur over three phases:

**Phase 1:**

*Phase 1* consists of building a new 5,500 seat (up to 6,500 spectators) multipurpose event centre that will be home to the OHL's Ottawa 67's, the CEBL's Ottawa BlackJacks, the PWHL Ottawa, and other indoor events such as shows and concerts.

Other improvements include landscaping and public realm improvements at the Great Lawn located south of the Aberdeen Pavilion to accommodate the new event centre and allow for additional programming opportunities at Lansdowne Park.

As this phase of Lansdowne 2.0 replaces the programming provided at the existing 9,800 seat TD Place Arena, it is not expected to generate additional transportation demands to Lansdowne.

Phase 1 is anticipated to be completed in 2028.

**Phase 2:**

*Phase 2* consists of replacing the existing functionally obsolete north stadium stands and arena complex at TD Place Stadium with a new 11,200 seat (12,100 spectator) north stand structure. This new facility replaces the existing north stadium stands, which currently has a capacity of 14,028 spectators, and would result in a reduction of approximately 2,000 spectator capacity at TD Place Stadium. This venue will continue to be the home of the CFL's Ottawa RedBlacks and the CPL's Ottawa Atlético.

This phase of Lansdowne 2.0 replaces existing programming currently provided at TD Place Stadium. As a result, it is not expected to generate additional transportation demands to Lansdowne.

Phase 2 is anticipated to be completed between 2030 and 2031.

**Phase 3:**

*Phase 3* consists of replacing the existing 41,000 ft<sup>2</sup> of commercial retail and box office annex to the Stadium on Exhibition Way with 49,635 ft<sup>2</sup> of new podium-level commercial retail space. This represents a net increase of 8,635 ft<sup>2</sup> of commercial retail space from what is currently provided today.

In addition, this phase includes the construction of two new residential towers with a total of 770 new dwelling units. Additional underground parking space will be constructed by extending the existing facility to accommodate an additional 386 parking spaces to service the new residential units and additional retail space, resulting in a total of 1,766 underground parking spaces at Lansdowne. Underground parking will continue be accessed at existing access ramps located on Exhibition Way, and Princess Patricia Way near Queen Elizabeth Driveway.

Phase is anticipated to be completed between 2032 and 2036.

Figure 2.3 illustrates a rendering of the Lansdowne 2.0 redevelopment concept.



Figure 2.3: Lansdowne 2.0 Redevelopment Concept



The site currently carries three different zoning designations. The western portion of the proposed site is zoned L2C S258-A S258-B and as outlined in the City of Ottawa's Zoning By-Law, the purpose of the L2 – Major Leisure Facility Zone is to:

- Accommodate major, urban City-wide sports, recreational and cultural facilities addressed under the Major Urban Facilities policies of the Official Plan.
- Permit a broad range and intensity of leisure, recreational, cultural and related uses; and
- Allow a moderate density and scale of development.

The eastern portion of the proposed site is zoned O1S S258-A and as outlined in the City of Ottawa's Zoning By-Law, the purpose of the O1- Parks and Open Space Zone is to:

- Permit parks, open space and related and compatible uses to locate in areas designated as General Urban Area, General Rural Area, Major Open Space, Mixed Use Centre, Village, Greenbelt Rural and Central Area as well as in Major Recreational Pathway areas and along River Corridors as identified in the Official Plan, and
- Ensure that the range of permitted uses and applicable regulations is in keeping with the low scale, low intensity open space nature of these lands.

Following the Lansdowne 2.0 Zoning By-Law Amendment (ZBA) application and subsequent changes made in November 2023, the parcel east of TD Place Stadium was zoned as L2C[2915]-h S258-A, S258-B, S487 to permit a broad range and intensity of leisure, recreational, cultural and related uses including sports arenas.

Figure 2.4 illustrates the existing site zoning at Lansdowne.





## EXISTING CONDITIONS

### 2.1.1 Roads and Traffic Control

The roadways and intersections under consideration in the study area are described below:

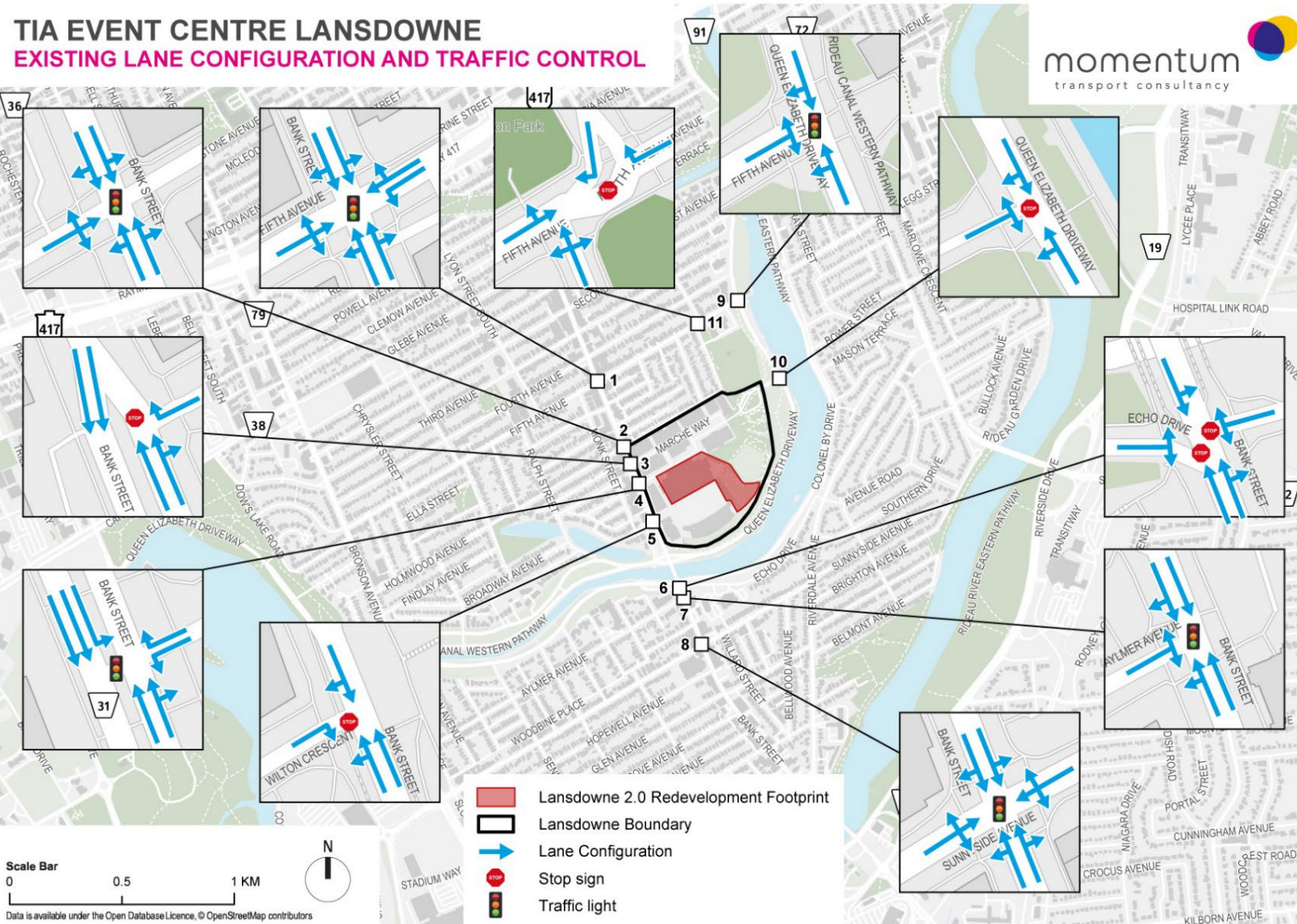
- **Bank Street:** Bank Street is a four-lane arterial roadway with a posted speed limit of 40 km/h. The street is under the jurisdiction of the City of Ottawa. Sidewalks are provided on both sides of Bank Street. The roadway is designated as a Local Cycling Route as per the City of Ottawa's Bike Plan and is also designated as a truck route. Bank Street currently provides two access connections to Lansdowne with a signalized, full access movement at Exhibition Way, and an unsignalized right-in/right-out only access at Marché Way. On-Street parking is permitted north of Holmwood Avenue. On-street parking on Bank Street across the frontage of the subject site is prohibited at all times. As part of the Bank Street Canal Bridge Rehabilitation Project, 1.5m cycle tracks have been implemented on both sides of the Bank Street Bridge between Exhibition Way and Aylmer Avenue in conjunction with a 3-lane cross-section (2 northbound lanes, 1 southbound lane). Other than the newly installed cycling lanes on the Bank Street Bridge, there is a northbound bike lane on Bank Street across the frontage of the site.
- **Queen Elizabeth Driveway:** Queen Elizabeth Driveway is a two-lane scenic parkway that runs along the Rideau Canal and has a posted speed limit of 40 km/h. The parkway is a federal roadway under the jurisdiction of the National Capital Commission (NCC). In the vicinity of Lansdowne, the parkway features multi-use pathways on both sides. Queen Elizabeth Driveway is designated as a Major Pathway as per the City of Ottawa Bike Plan. The parkway currently provides two access connections to Lansdowne with an unsignalized, full-movements intersection at Princess Patricia Way, as well as a restricted special-use access located on the south side at the Great Lawn. On-street parking on Queen Elizabeth Driveway is prohibited at all times.
- **Fifth Avenue:** Fifth Avenue is a two-lane collector roadway with a posted speed limit of 40 km/h east of Bank Street, and a posted speed limit of 30km/h west of the Bank Street. There are existing sidewalks along both sides of the roadway. The south side of Fifth Avenue features an on-street cycling lane. The roadway is designated as a Local Route per the City of Ottawa Bike Plan. On-street parking on Fifth Avenue in the vicinity of the subject site is permitted on the northside of the roadway.
- **Holmwood Avenue:** Holmwood Avenue is a two-lane local road with a default speed limit of 30 km/h. East of the intersection with Bank Street, Holmwood Avenue is a one-way street providing access in the eastbound direction. The road features a cycling lane on the northside. West of the Bank Street intersection, Holmwood Avenue is a two-way street. On-street parking on Holmwood Avenue in the vicinity of the subject site is permitted on the southside of the roadway. Holmwood Avenue also includes access to the underground parking garage at Lansdowne what is restricted for residential uses only, and occasionally provides limited exit from the site during major events at Lansdowne.
- **Exhibition Way:** Exhibition Way is a two-way private roadway that functions as the primary access point to Lansdowne and TD Place. The intersection with Bank Street is signalized with an auxiliary left turn lane in the southbound direction. There are existing sidewalks along both sides of the roadway. There are auxiliary left and right turn lanes in the west bound direction. Designated on-street parking spaces are provided with varying time limits.

- **Marché Way:** Marché Way is a two-way private roadway that functions as the secondary access point to Lansdowne and TD Place. The intersection with Bank Street is unsignalized and functions as a right-in/right-out only access connection. There are existing sidewalks along both sides of the roadway. Designated on-street parking spaces are provided with varying time limits.
- **Wilton Crescent:** Wilton Crescent is a two-lane local roadway with a posted speed limit of 30 km/h. Left turn movements from Wilton Crescent to Bank Street are prohibited at all times. The intersection with Bank Street is stop controlled along Wilton Crescent. There are existing sidewalks along both sides of the roadway. Across the frontage of the subject site, Wilton Crescent is designated as a local route as per the City of Ottawa Bike Plan. On-street parking is permitted on the northside of the roadway at specific times.
- **Echo Drive:** Echo Drive is a one-lane local roadway with a default speed limit of 40 km/h. Through and left turns off Echo Drive are prohibited. Echo Drive is a one-way road stop controlled along Echo Drive. The roadway has a sidewalk on the northside. Echo Drive is designated as a local route as per the City of Ottawa's ultimate Cycling Plan.
- **Aylmer Avenue:** Aylmer Avenue is a two-lane local roadway with a posted speed limit of 30 km/h. Sidewalks are provided along both sides of Aylmer Avenue. On-street parking is permitted on the northside of the roadway.
- **Sunnyside Avenue:** Sunnyside Avenue is a two-lane collector roadway with a posted speed limit of 30 km/h. The roadway west of the intersection with Bank Street is designated as local route as per the City of Ottawa Bike Plan. On-street parking is permitted on the southside of the roadway west of the intersection with Bank Street.
- **O'Connor Street:** O'Connor Street is a two-lane local roadway with a posted speed limit of 30 km/h. The roadway is designated as a local route as per the City of Ottawa Bike Plan. South of Fifth Avenue, O'Connor Street is a one-way local road with a dedicated bike lane on the northside, and on-street parking permitted on the southside of the roadway. North of Fifth Avenue, O'Connor Street is a two-way local road with on-street parking permitted on the eastside.

Figure 2.5 illustrates the existing lane configuration and traffic control



Figure 2.5: Existing Lane Configuration and Traffic Control



### **2.1.2 Walking and Cycling**

The study area is adequately connected to pedestrian facilities with sidewalks along all study area roadways.

All study area corridors are currently designated as Suggested Cycling routes as per the City of Ottawa Bike Plan. Queen Elizabeth Driveway, which is under the jurisdiction of the NCC, features off-street multi-use pathways.

There are currently dedicated bike lanes on Fifth Avenue (east of Bank Street), Aylmer Avenue, and Holmwood Avenue (east of the Bank Street) which forms a connection to the O'Connor Street bike lanes and cycle tracks.

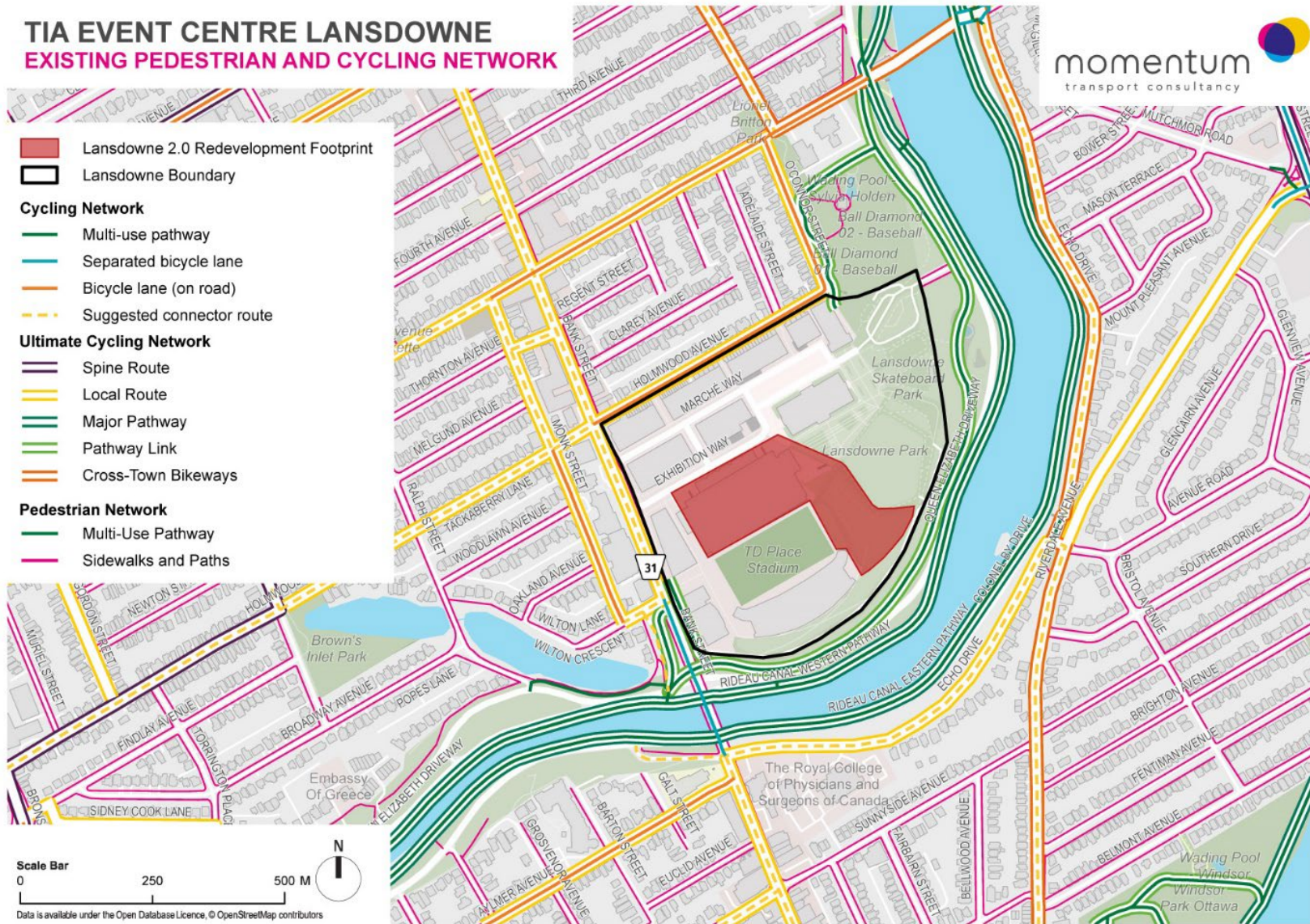
The Flora Footbridge connection, which was opened in June 2019, provides a cycling and walking connection on both sides of the Rideau Canal at Fifth Avenue / Clegg Street. 1.5m cycle tracks have been implemented on both sides of the Bank Street Bridge between Exhibition Way and Aylmer Avenue.

Under the Ultimate Cycling Network, all study area roadways are envisioned as Local Cycling Routes that form connections to nearby Spine Routes including O'Conner Street and Glebe Avenue, as well as multi-use pathways along Queen Elizabeth Driveway.

Figure 2.6 illustrates existing and planned pedestrian and cycling facilities within the vicinity of Lansdowne.



Figure 2.6: Existing Pedestrian and Cycling Network





### 2.1.3 Transit

OC Transpo transit service is currently provided at Lansdowne through OC Transpo bus routes 6 and 7.

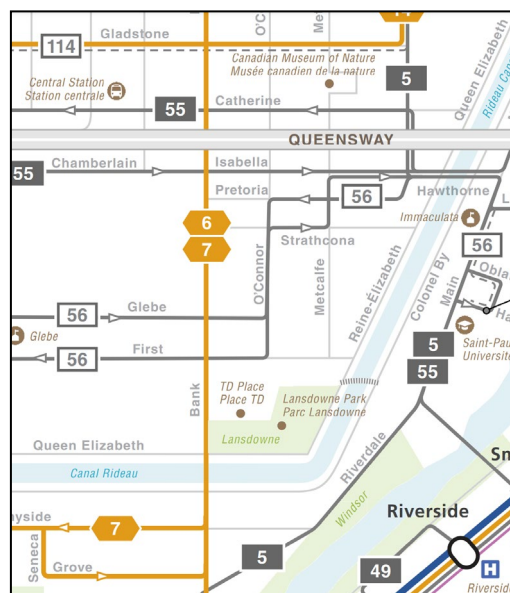
Route 6 is a Frequent Route that runs 7 days per week in all time periods between Greenboro and Rockcliffe. It runs with 15-minute headways or less during the weekday peak periods and 15-minute or less headways during the weekend peak periods.

Route 7 is a Frequent Route that runs 7 days per week in all time periods between Carleton University and St. Laurent. It runs with 15-minute headways or less during both peak periods during weekdays and 15-minutes or less headways during the weekend peak.

Bus stops are provided at the intersection of Bank Street and Exhibition Way.

Figure 2.7 illustrates transit routes in the vicinity of Lansdowne.

Figure 2.7: Study Area Transit Route and Stops

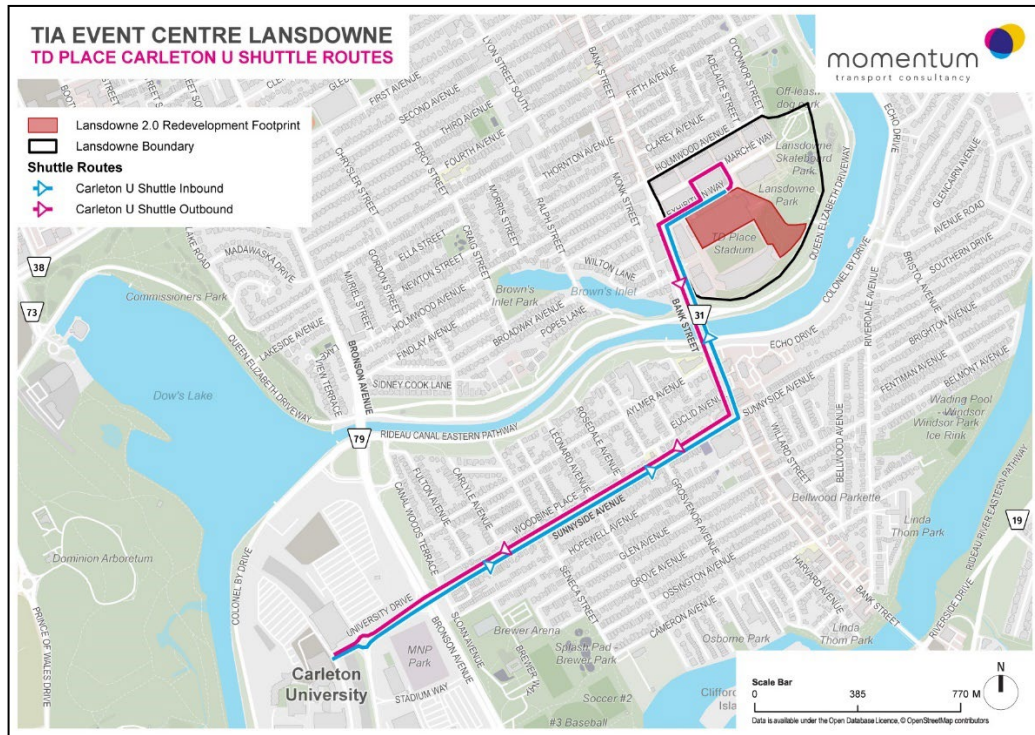


Enhanced transit services are provided to support special events at Lansdowne and TD Place. This includes the provision of free transit to ticketholders for all events held at Lansdowne through an innovative program that is the first of its kind for large venues. The cost of transit service is free of charge for event goers and is borne by the Ottawa Sports and Entertainment Group (OSEG) for any service enhancements provided for events with 5,000 or more attendees. Transit service for special events includes providing supplemental trips on OC Transpo routes 6 and 7 for minor events with attendance levels of 10,000 or less.

For Ottawa 67's and PHLW Ottawa games, park & shuttle service is provided to ticket holders from Carleton University. Ticket holders can park at Carleton University starting 90 minutes before the start of Ottawa 67's and PHLW Ottawa games with services provided until 60 minutes post-games. The cost of parking and shuttle service is free to ticket holders and is borne by OSEG. Shuttle bus service is provided from Carleton University's P18 Parkade with service provided to Lansdowne provided through Sunnyside Avenue and Bank Street.

Figure 2.8 illustrates the Carleton U shuttle route for Ottawa 67's and PHLW Ottawa games.

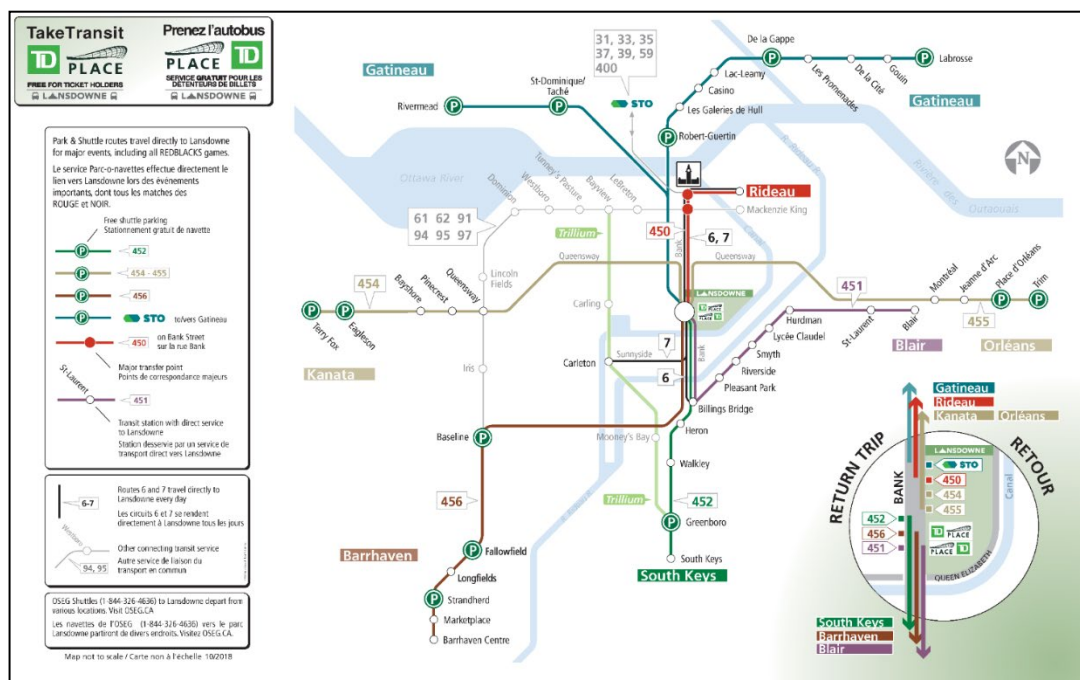
Figure 2.8: Carleton U Park & Shuttle Route (Ottawa 67's and PWHL Ottawa)



For major events, which include events with 10,000 or more attendees, dedicated Park & Shuttle services is provided with event day services provided from OC Transpo Park & Ride locations, as well as privately run shuttles operated by OSEG. Major event transit service typically starts two hours prior to the start of a ticketed event for ingress service, and two hours after the end of a ticketed event for egress service.

Figure 2.9 illustrates special event transit and shuttle services to TD Place.

Figure 2.9: Enhanced Transit and Shuttle Service to TD Place



#### **2.1.4 Traffic Management Measures**

Traffic management measures are deployed at Lansdowne to manage traffic flow for day-to-day operations as well as during special events. Under regular day-to-day operations, vehicle access to the site is permitted on both Bank Street and Queen Elizabeth Driveway. Internal vehicle circulation is permitted through the site on Exhibition Way, Marche Way, and Princess Patricia Way, with the exception of a portion of Princess Patricia Way near the Aberdeen Pavilion that is a pedestrian-only zone. Other internal circulation pathways including Frank Clare Lane and the Great Lawn which are restricted use-only for emergency vehicles, deliveries, and accessible transit service (i.e. ParaTranspo) when required.

For minor events, such as events at TD Place Arena, vehicle access is permitted on both Bank Street and Queen Elizabeth Driveway. Depending on programming activities at TD Place and Lansdowne Park, traffic management measures to reduce vehicular through traffic on Exhibition Way are deployed to re-route internal traffic circulation to Marche Way, where pedestrian activity is lower.

For major events, traffic management measures include the deployment of traffic control devices and police point duty along Bank Street and Queen Elizabeth Driveway to help manage traffic flow and accommodate safe pedestrian crossings. Vehicle access to the site is restricted during major events at the stadium, such as football games, to minimize pedestrian and vehicle conflicts. Vehicle access from Bank Street is restricted at both Exhibition Way and Marche Way. Vehicle access is only permitted at the Queen Elizabeth Driveway access for underground parking garage and pick-ups / drop-offs at the shuttle loop. Vehicle circulation through the site is restricted. While access to Lansdowne is restricted during major events, existing retail patrons and residents continue to access the underground parking facility at Lansdowne from Queen Elizabeth Driveway, which will remain an important arterial road in the city's transportation network. In addition, residents are able to access underground parking through a residents-only underground garage ramp on Holmwood Avenue. In addition, on-street parking on Bank Street is temporarily prohibited during large events in order to support special event enhanced transit and shuttle service operations to TD Place.

Lansdowne is designated as a pedestrian-priority zone and features many pedestrian-only pathways and connections. This includes pathway connections from Queen Elizabeth Driveway, a stairway gate entrance on Bank Street by TD Place Gate 1, and several laneways connecting to Holmwood Avenue at the northern side of the district.

Existing site access and internal circulation areas during normal operations, minor events, and major events are illustrated in Figure 2.10 through Figure 2.12.



Figure 2.10: Existing Internal Site Circulation

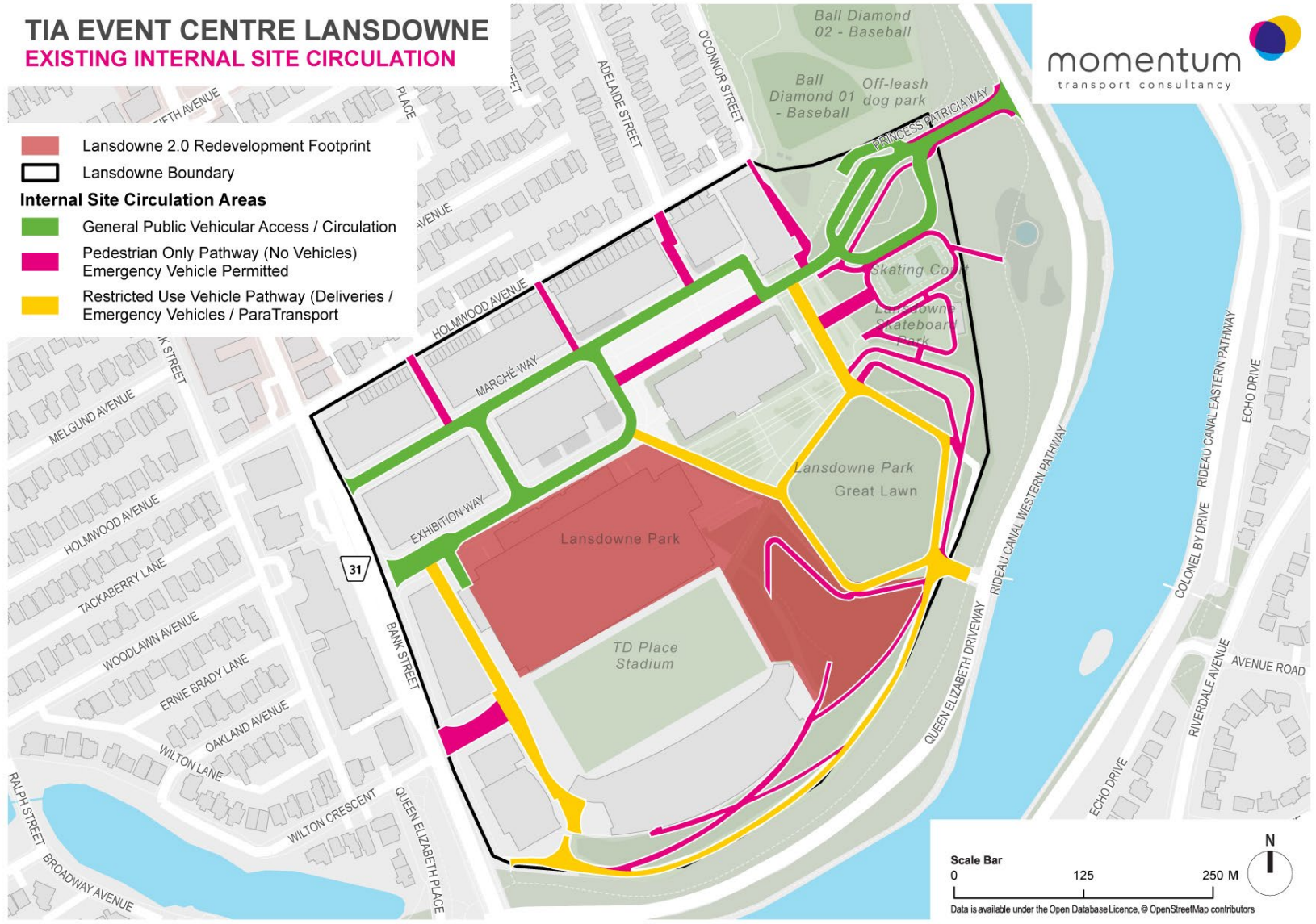


Figure 2.11: Existing Internal Site Circulation (Minor Events)

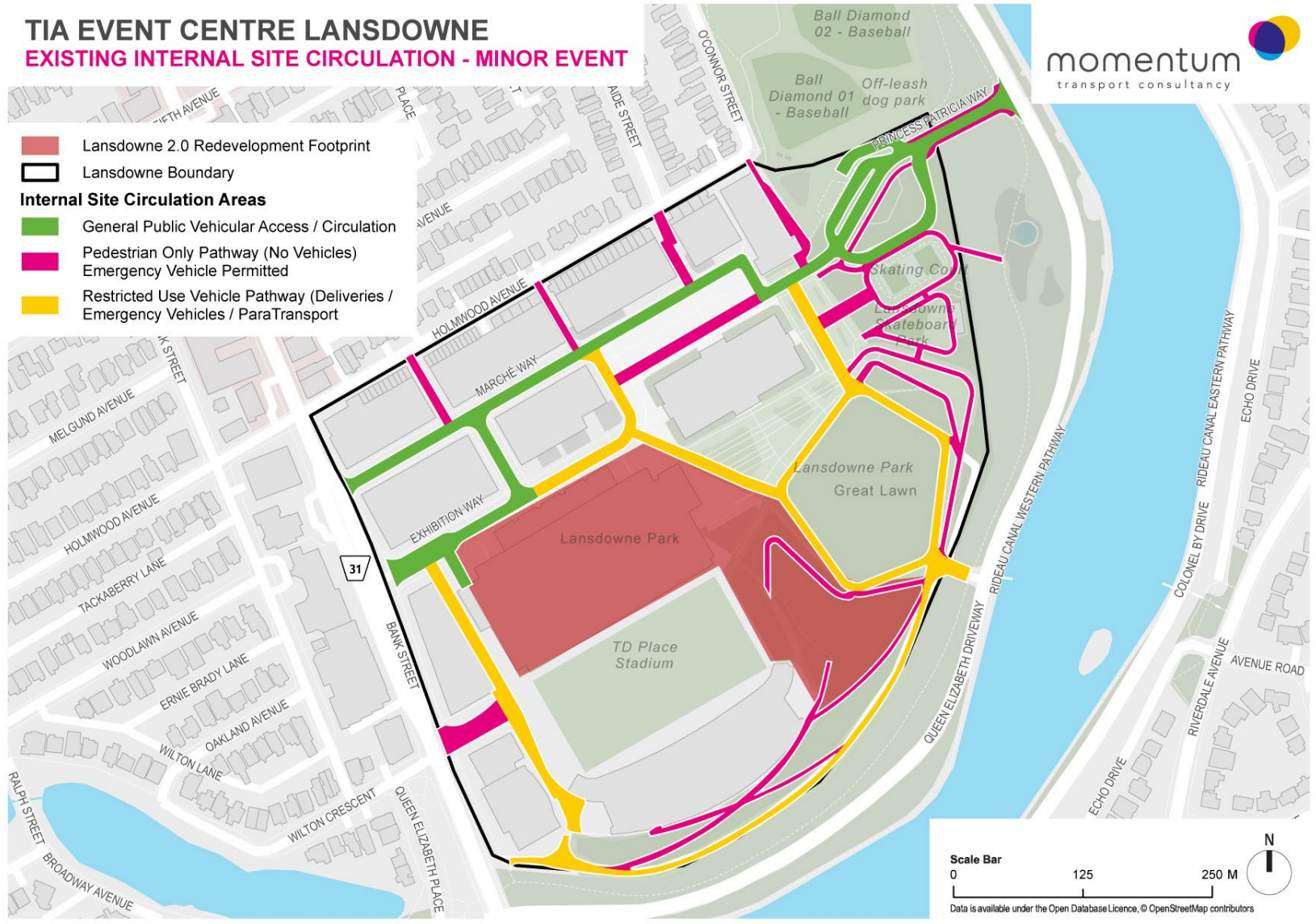
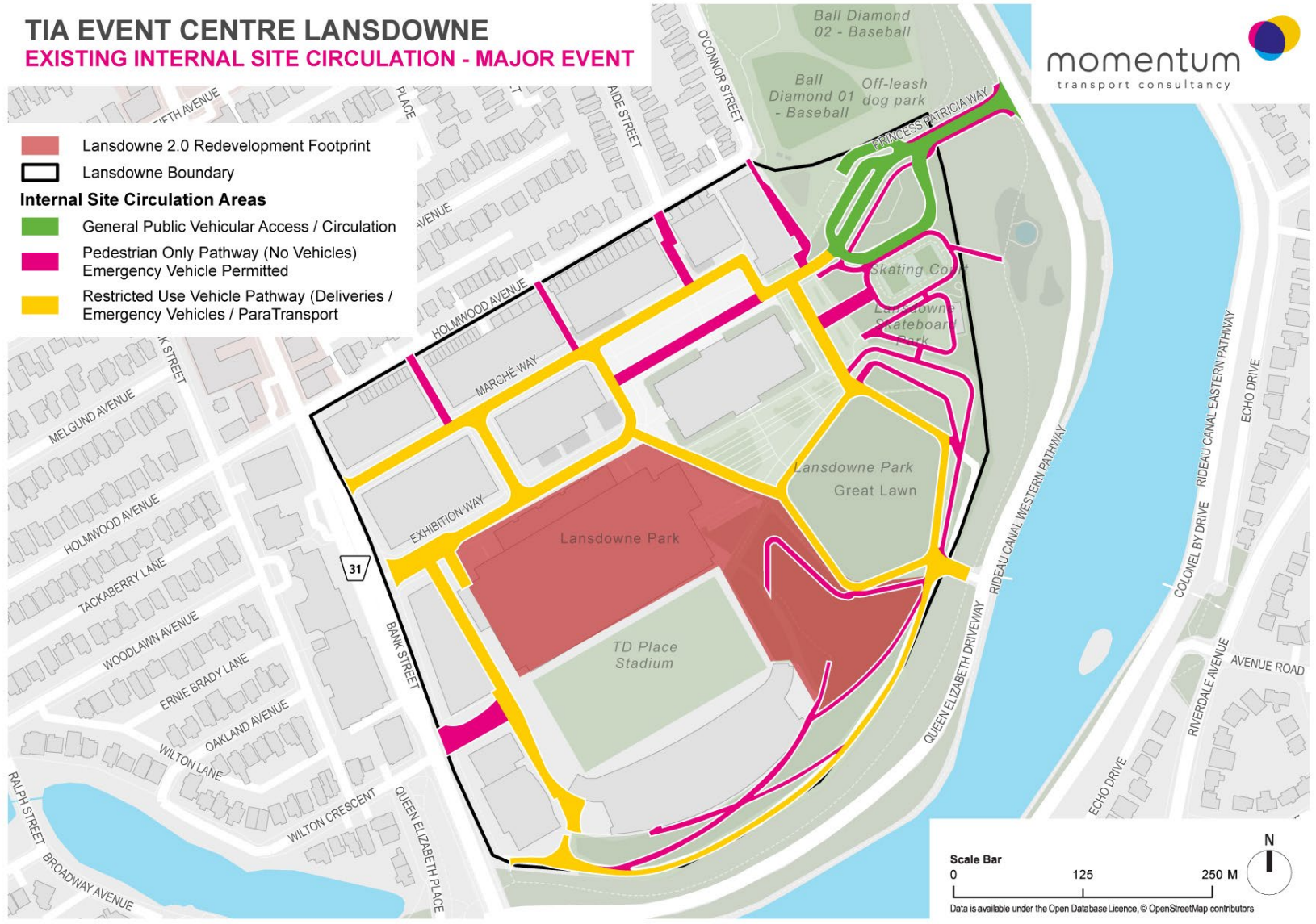




Figure 2.12: Existing Internal Site Circulation (Major Events)



### 2.1.5 Traffic Volumes

Recently collected intersection traffic data were obtained from the City of Ottawa. This included traffic data captured for regular weekdays (AM and PM peak periods), a weekday minor event at TD Place Arena, a weekday major event at TD Place Stadium, as well as the Saturday and Sunday weekend mid-day peaks with concurrent programming and events at TD Place and Lansdowne Park. Traffic data was obtained for the following periods:

#### **Typical Weekday Period (AM/PM Peak):**

- Tuesday, May 3<sup>rd</sup>, 2022 / Wednesday, May 11<sup>th</sup>, 2022 (Weekday AM and PM).

#### **Weekend Saturday Peak Period (Mid-Day Peak):**

- Saturday, May 7<sup>th</sup>, 2022 (Saturday Mid-Day), representative of multi-event activity at Lansdowne including an Atlético Ottawa soccer match at TD Place Stadium (6:00 pm kick-off) with an attendance of 3,555 spectators.

#### **Weekend Sunday Peak Period:**

- Sunday, June 9<sup>th</sup>, 2024 (Sunday Mid-Day), representative of multi-event activity at Lansdowne inclusive of the weekly Ottawa Farmer's Market, retail activity, and three back-to-back events at TD Place Arena for the Volleyball Nations League (VNL) featuring tournament games throughout the day (11:00 am, 2:30 pm, and 6:00 pm matches). Traffic captures on this day also reflects altered traffic patterns resulting from the planned closure of Queen Elizabeth Driveway between Somerset Street and Fifth Avenue as part of the National Capital Commission Weekend Bikedays programming on the driveway.

#### **Minor Arena Event:**

- Monday, May 9<sup>th</sup>, 2022 (Special Event Concert at the Arena at TD Place. Start time of 7:30 pm, End time of 10:30 pm.

#### **Major Stadium Event:**

- Friday, October 14<sup>th</sup>, 2022 (REDBLACKS Football Game at TD Place. Start time of 7:30pm, End time of approximately 10:30pm.

Intersection turning movement count summary data for the various time periods collected are illustrated in Figure 2.13 through Figure 2.27.

Turning movement count data is documented in **Appendix A**.



Figure 2.13: Existing Weekday AM and PM Traffic Volumes

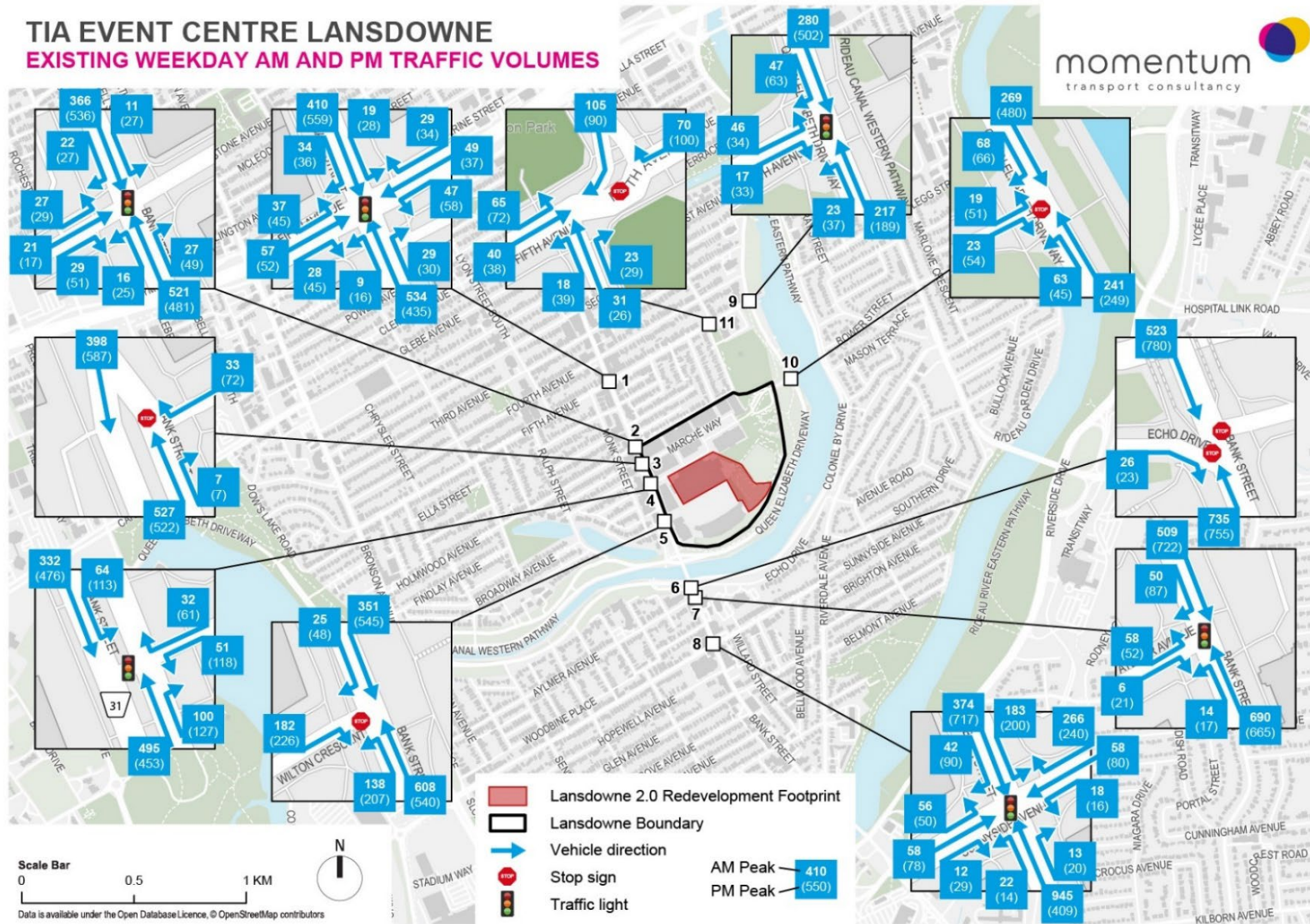




Figure 2.14: Existing Weekday AM and PM On-site Traffic Volumes

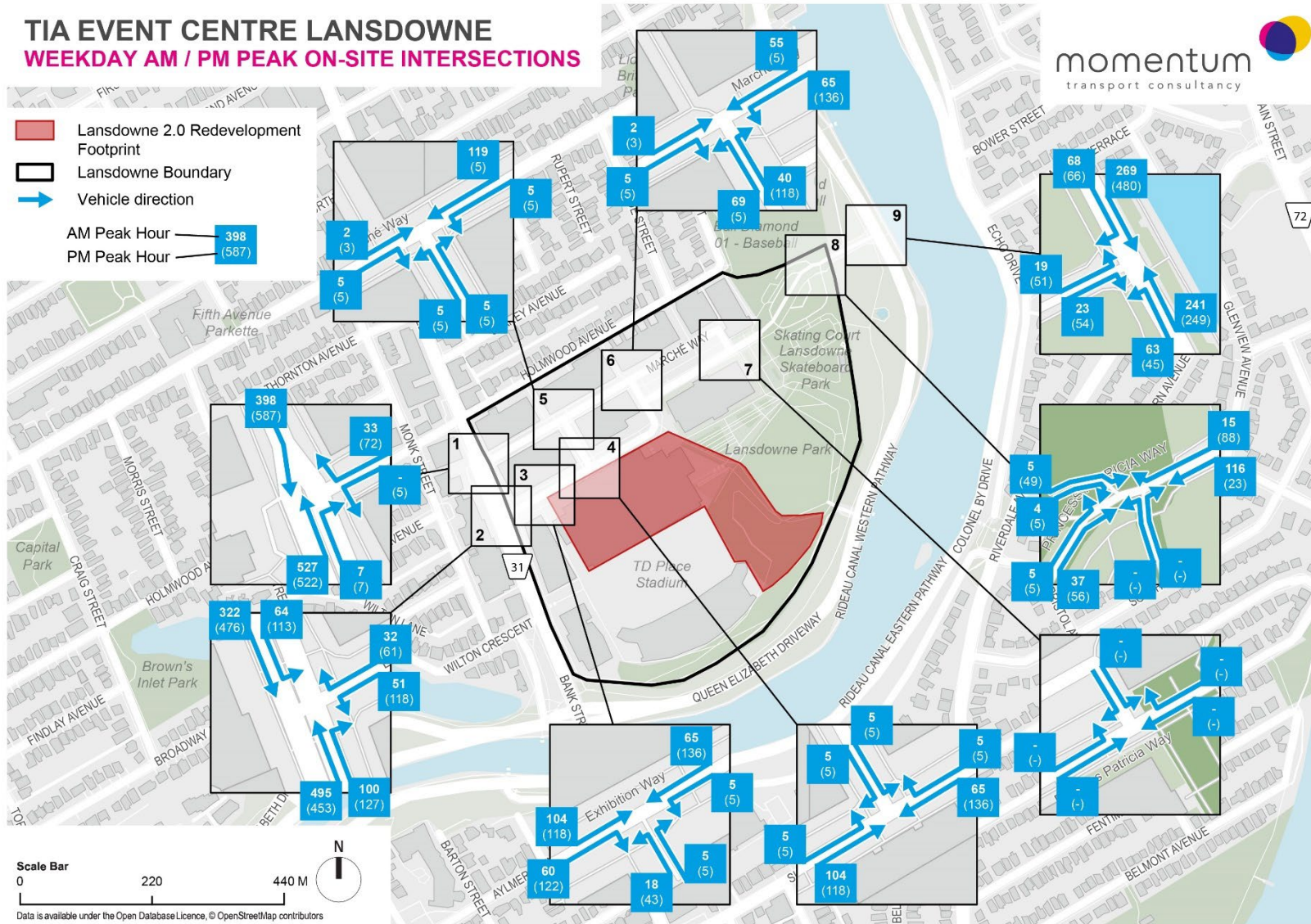




Figure 2.15: Existing Weekday/Weekend Pedestrian Volumes

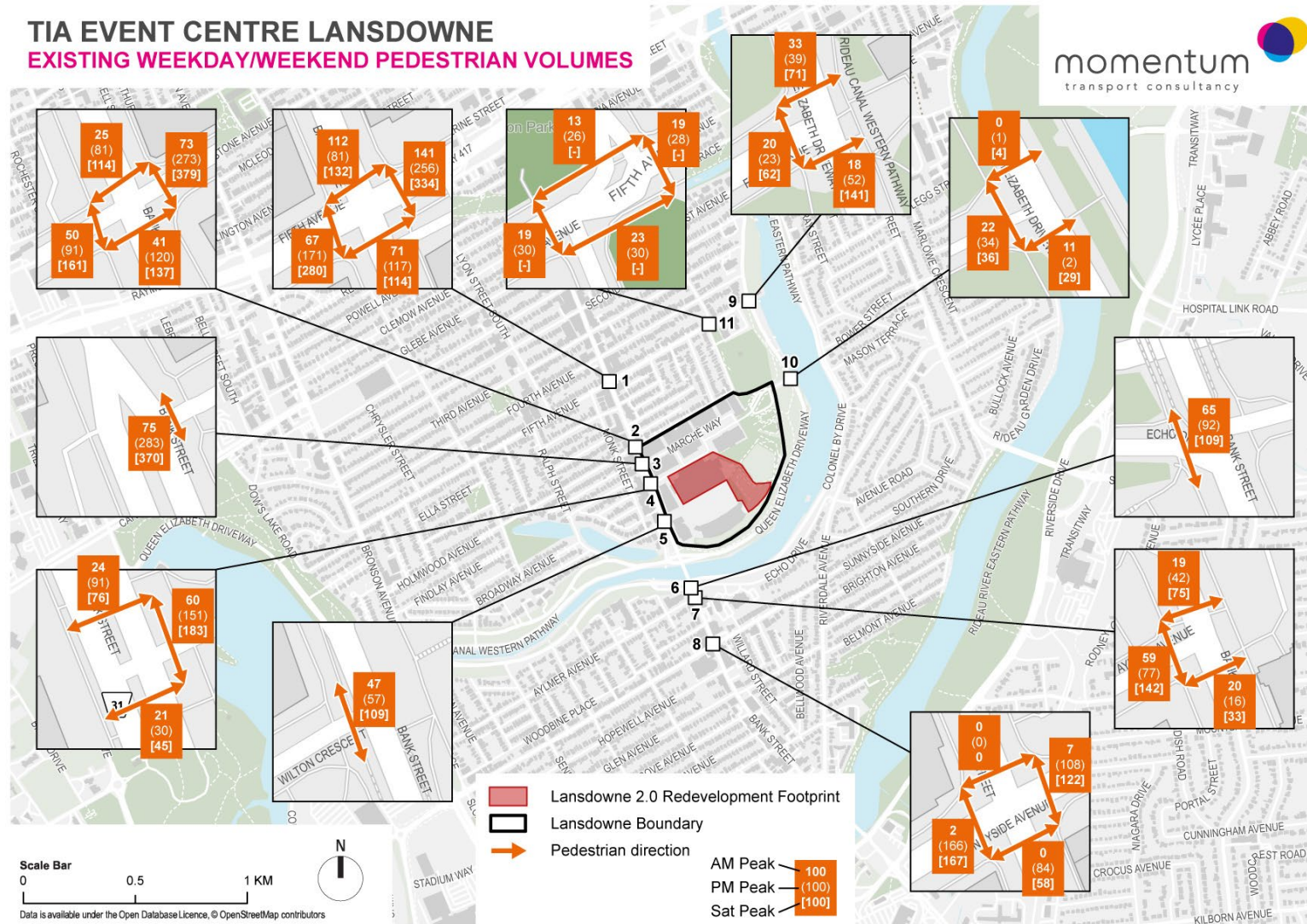




Figure 2.16: Existing Weekday/Weekend Bicycle Volumes

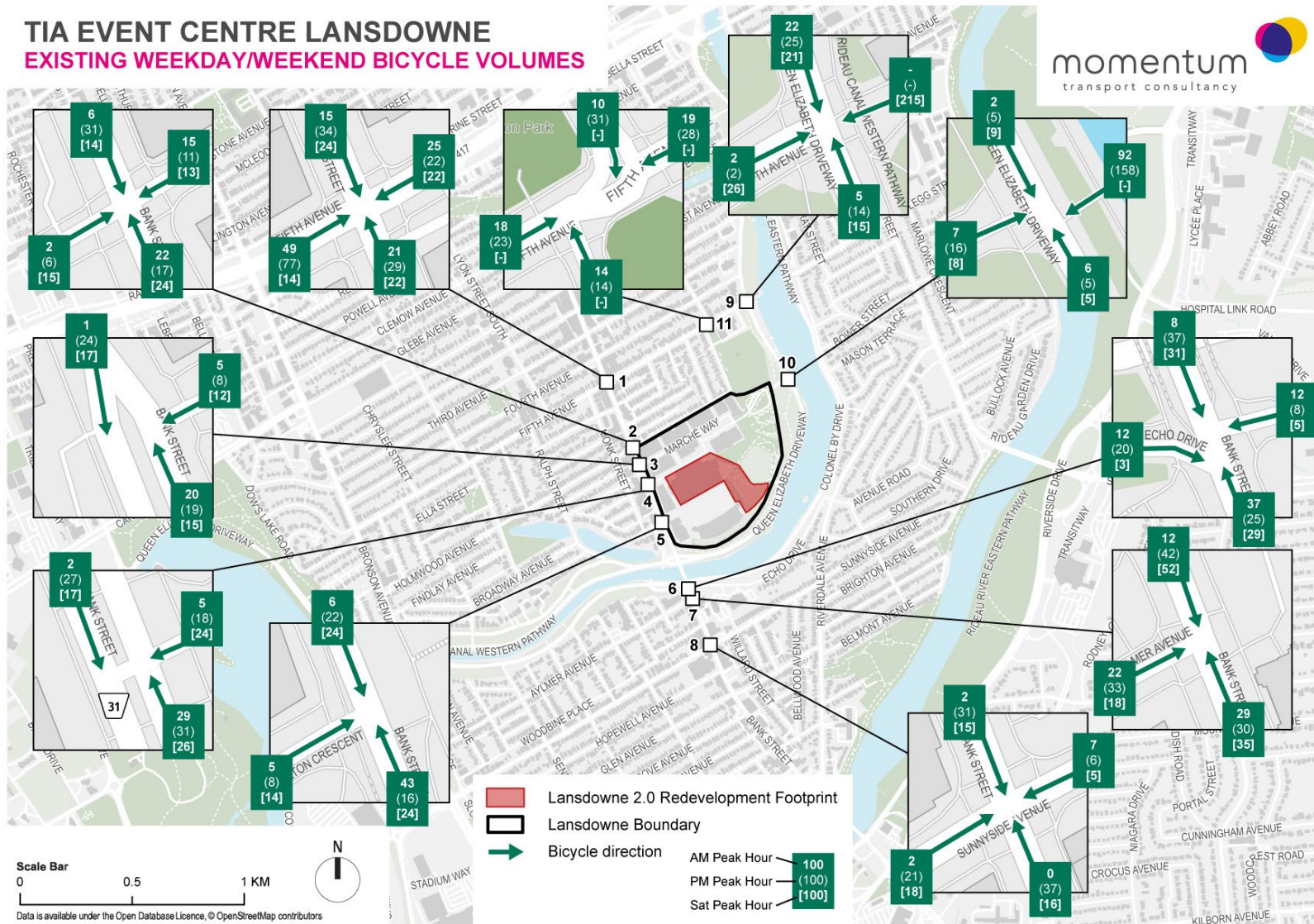




Figure 2.17: Existing Saturday PM Traffic Volumes

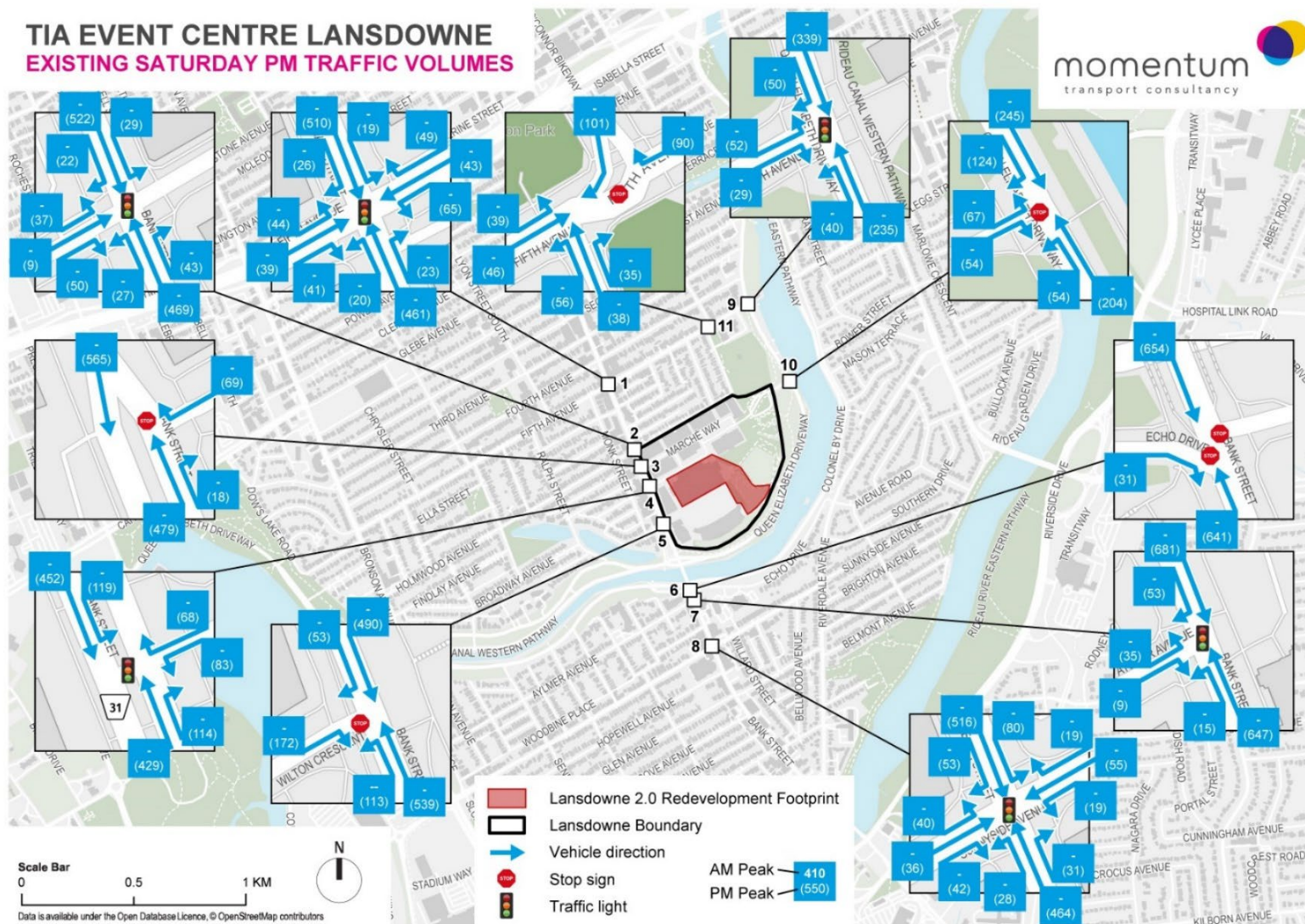






Figure 2.19: Existing Sunday PM Traffic Volumes

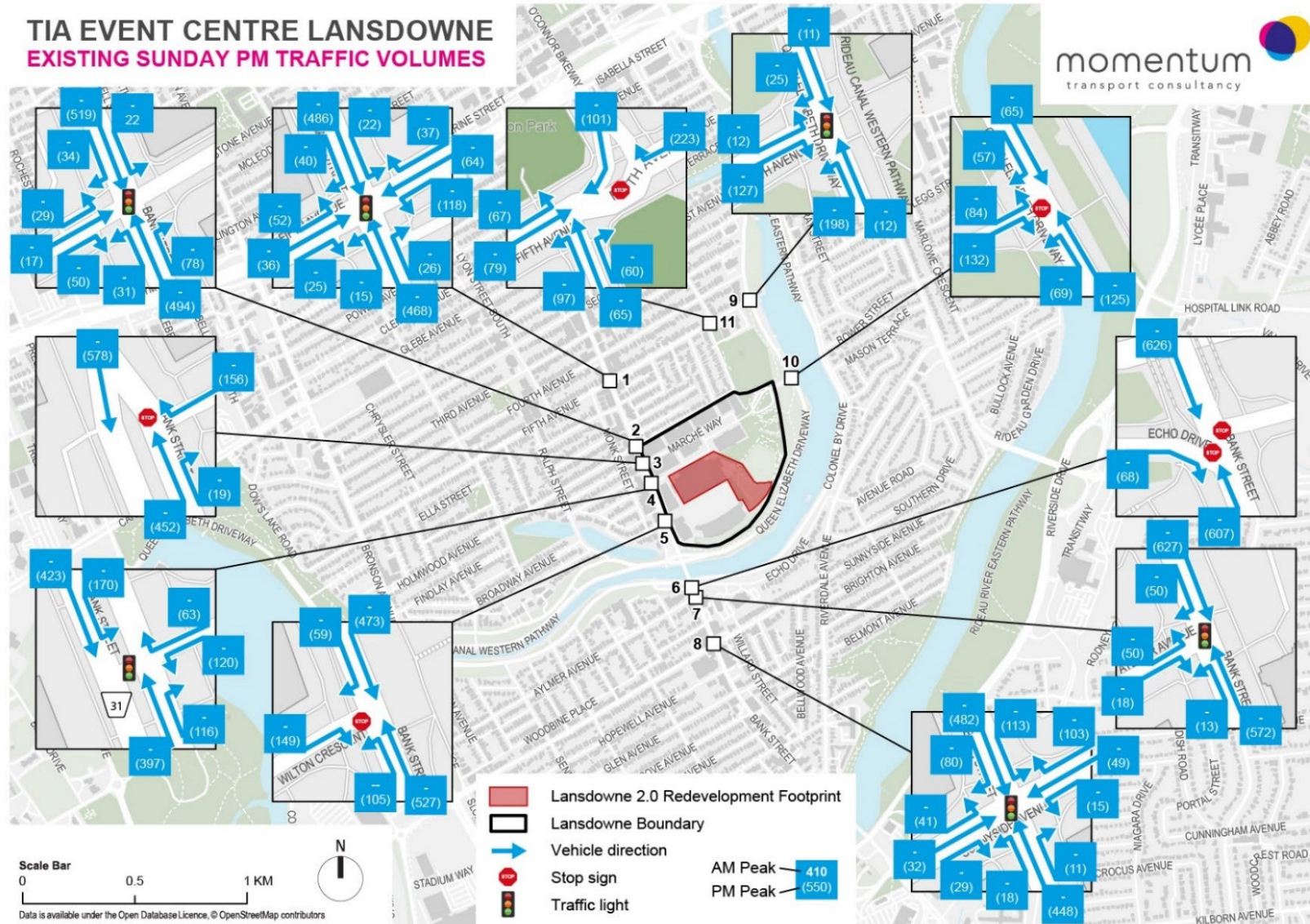




Figure 2.20: Existing Sunday PM On-site Traffic Volumes

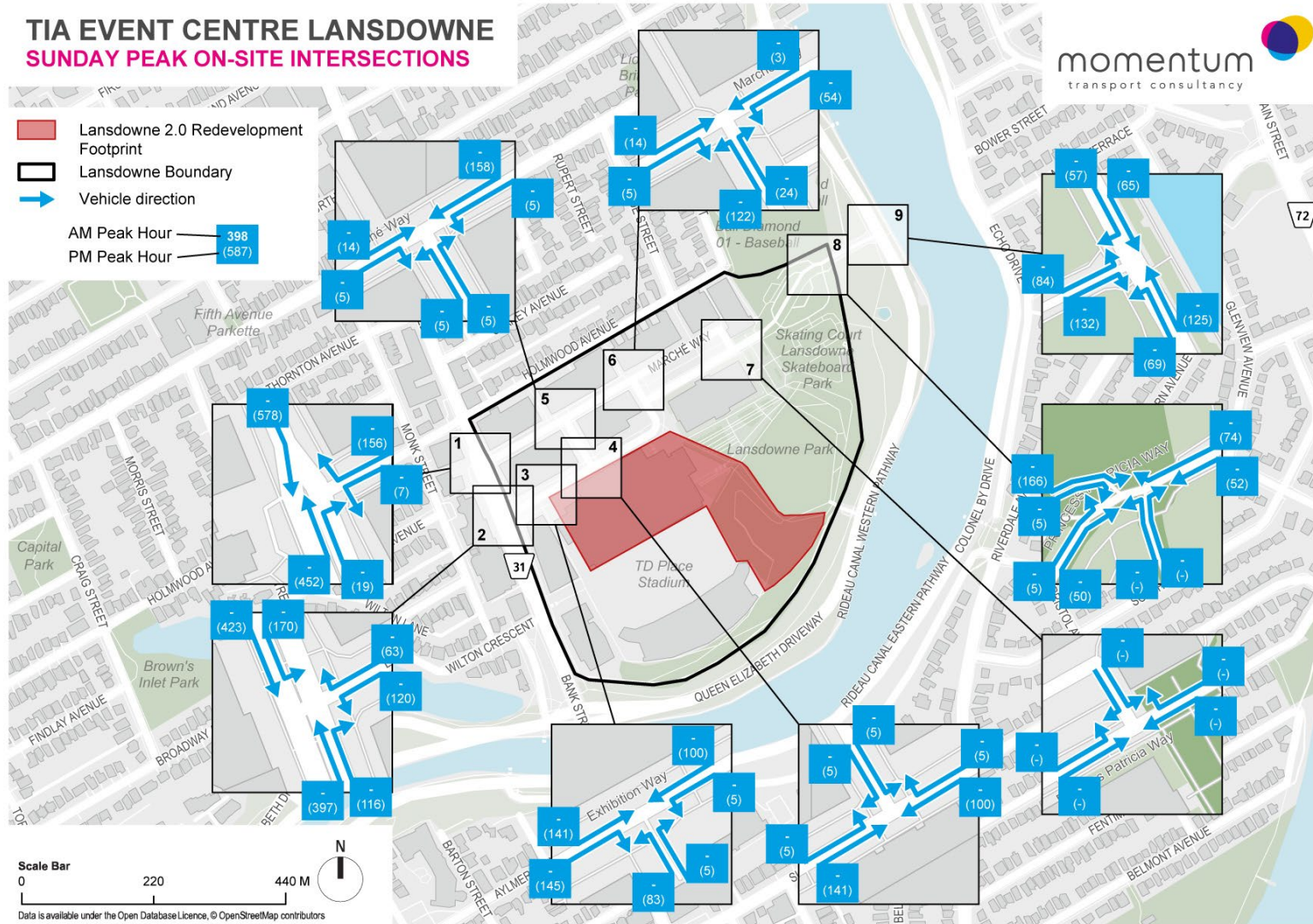




Figure 2.21: Existing Minor Event Traffic Volumes

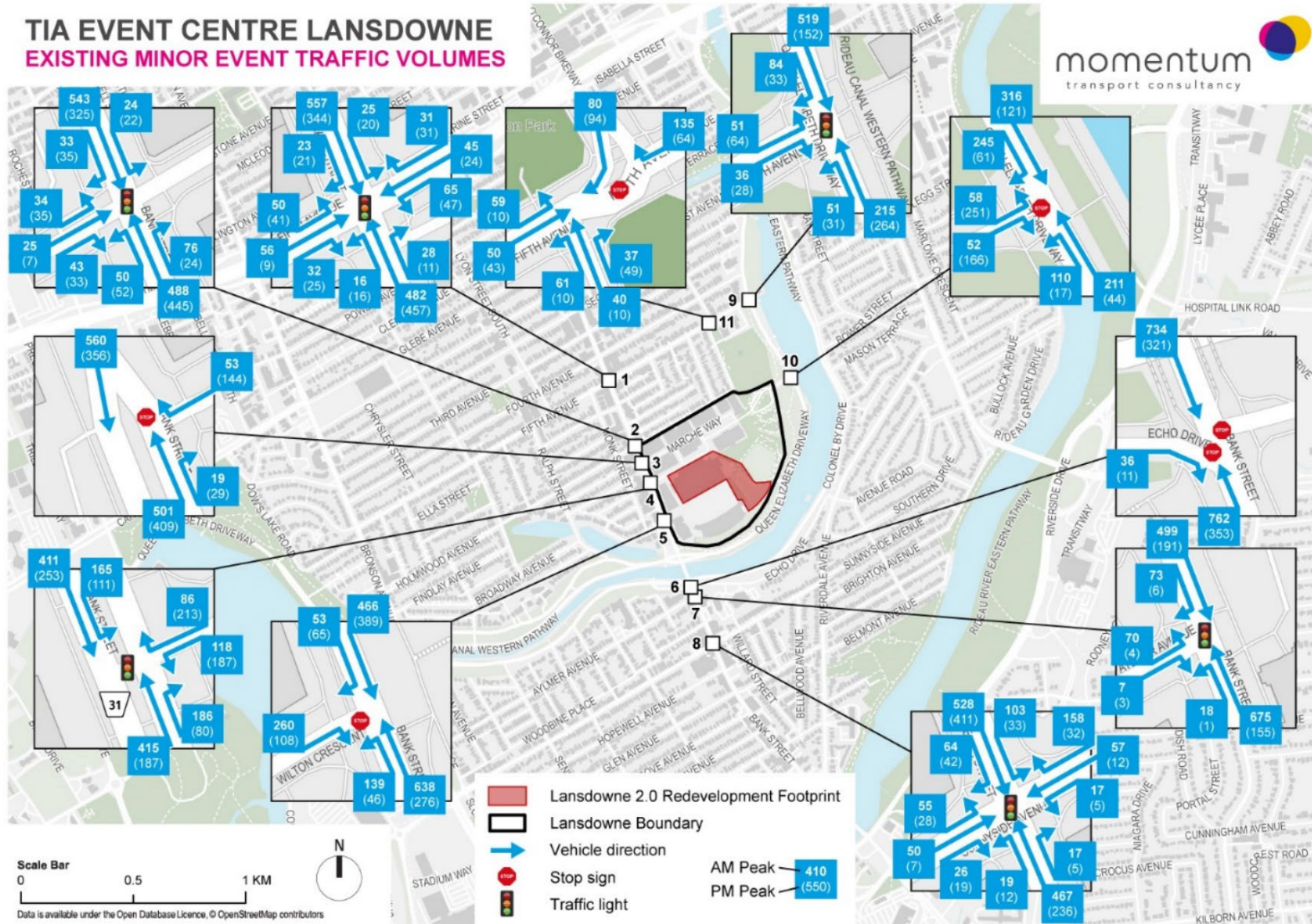




Figure 2.22: Existing Minor event Ingress/Egress On-site Traffic Volumes

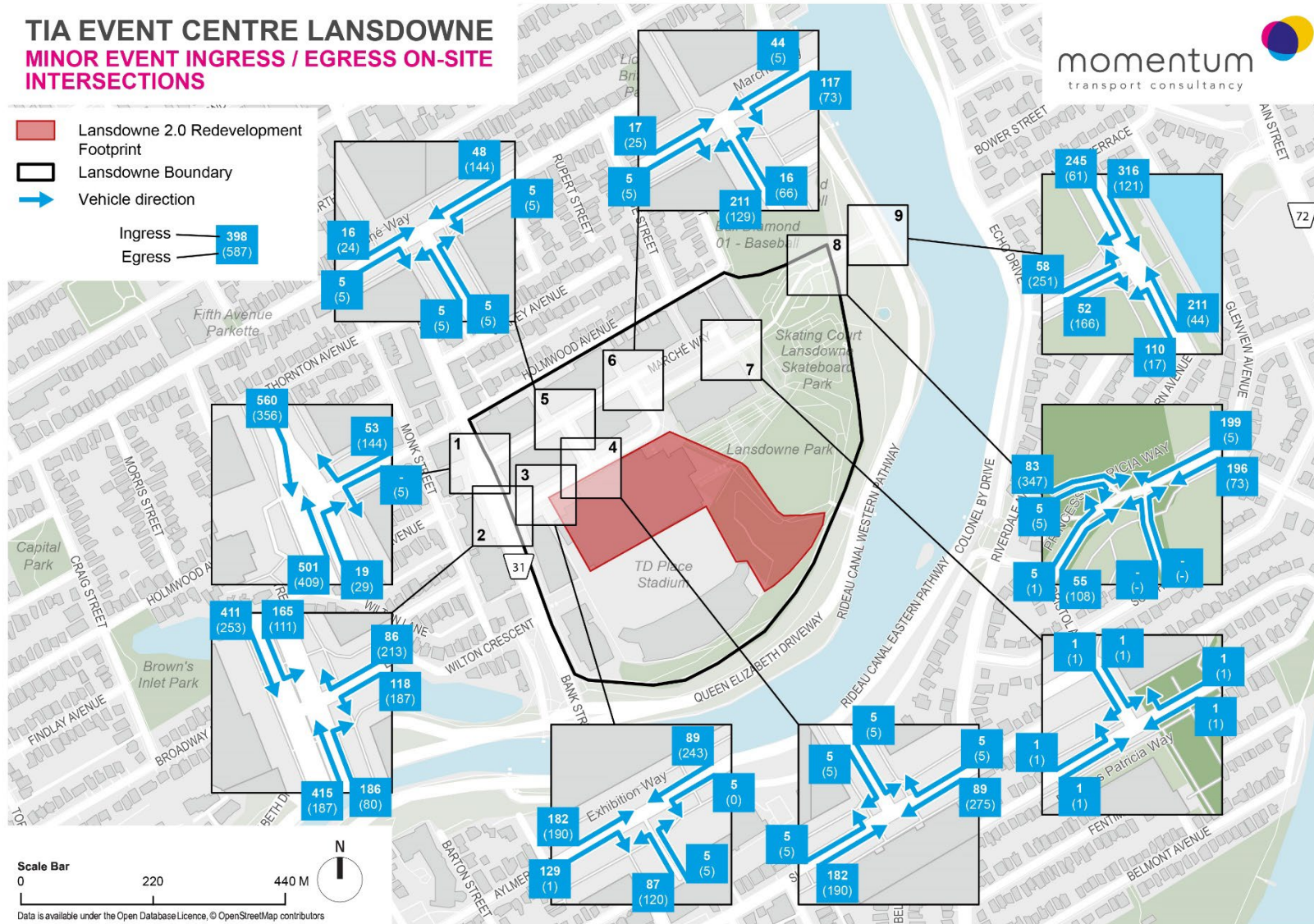




Figure 2.23: Existing Minor Event Pedestrian Volumes

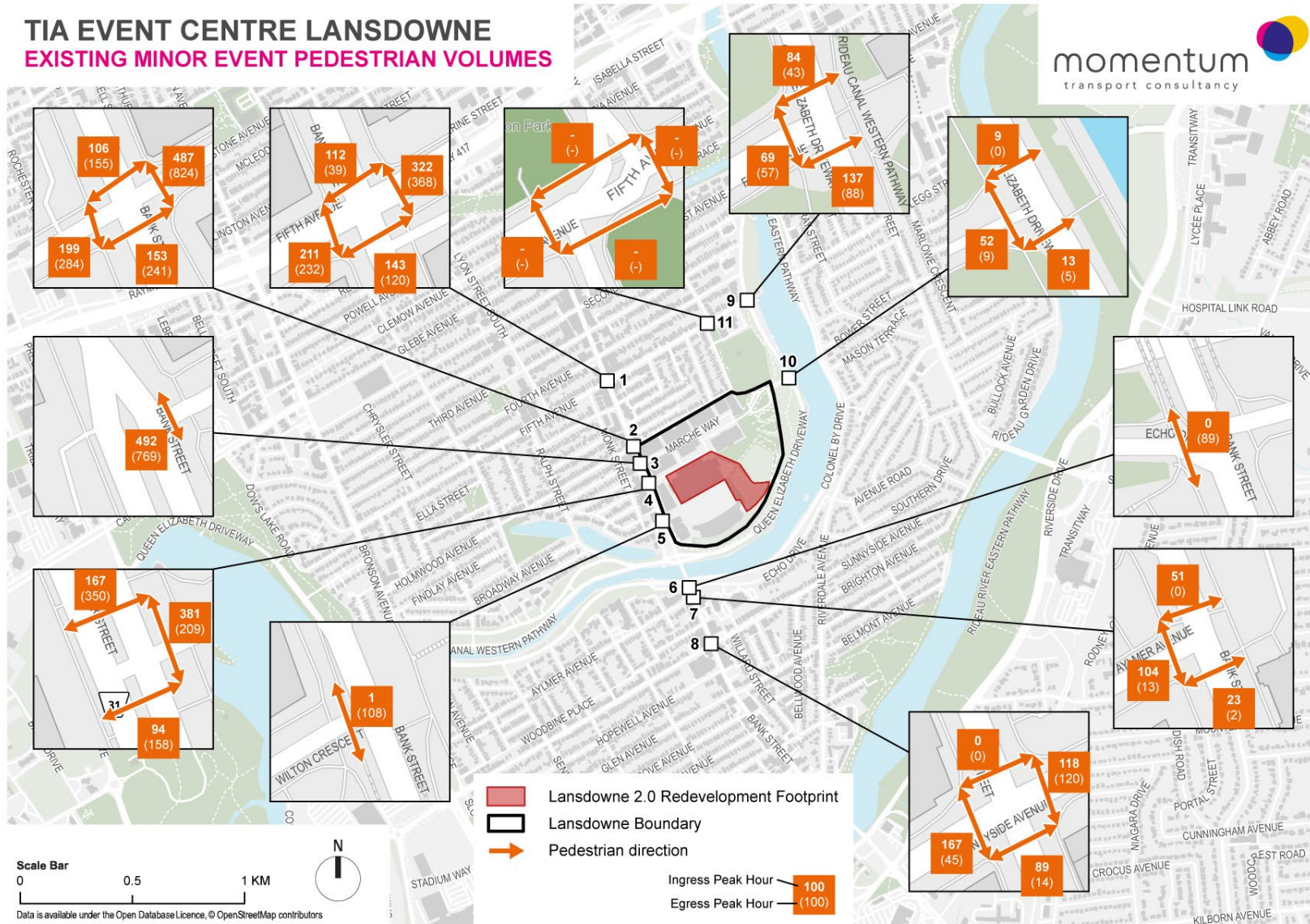




Figure 2.24: Existing Minor Event Bicycle Volumes

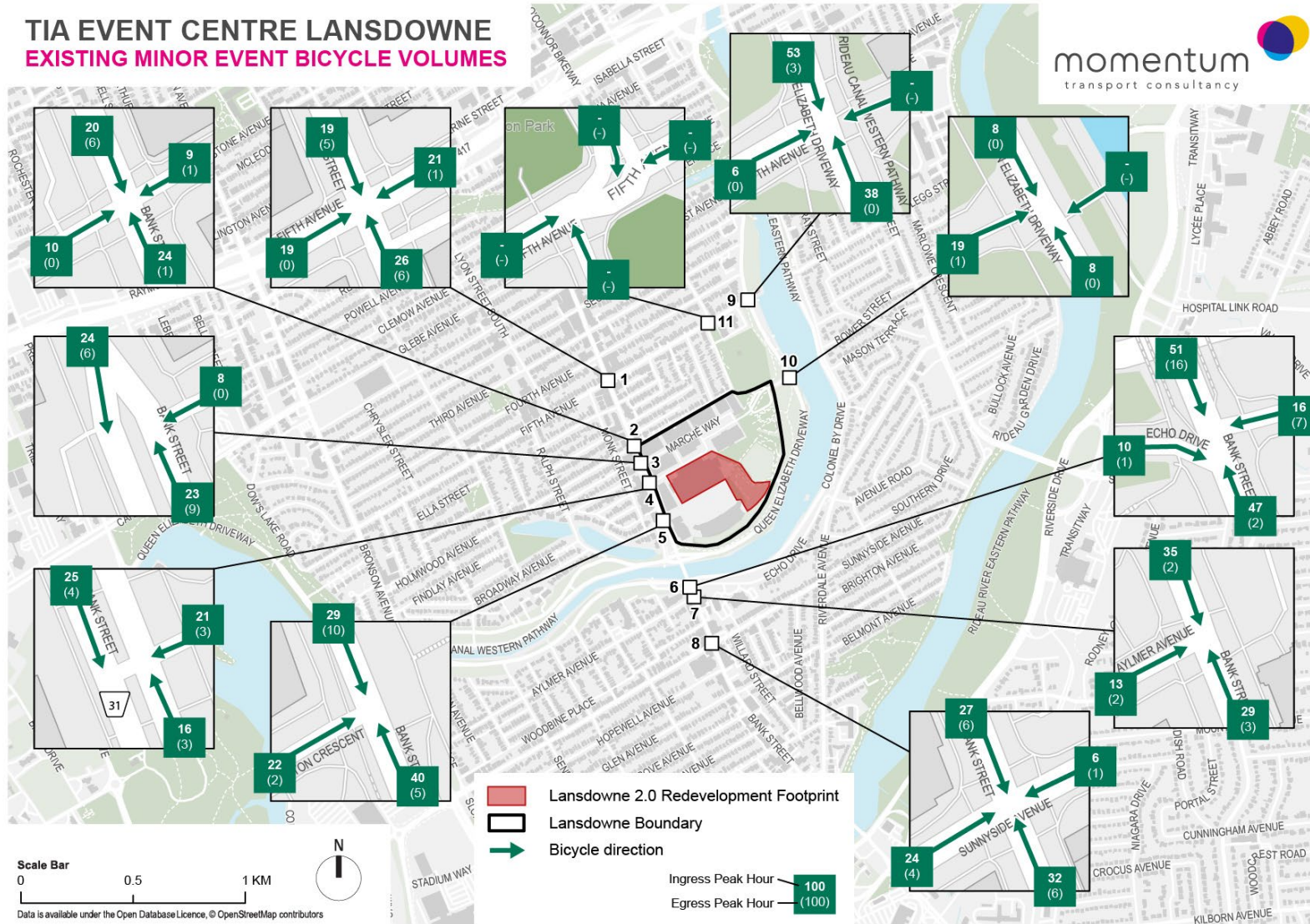




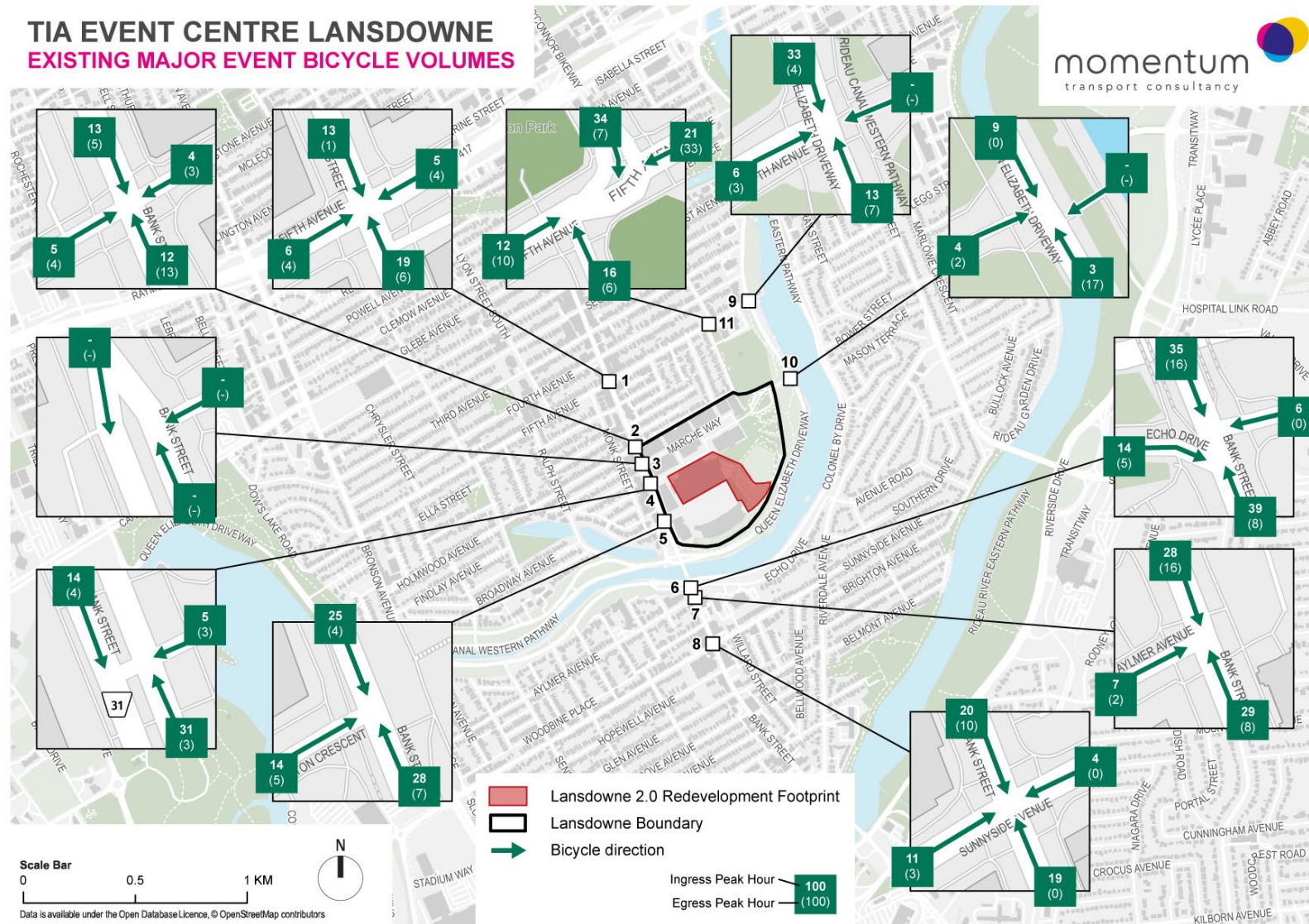








Figure 2.27: Existing Major Event Bicycle Volumes





## 2.1.6 Collision History

Collision data was provided by the City of Ottawa for the period January 2017 to December 2021 in the vicinity of Lansdowne and TD Place. The data was reviewed to determine if any intersections exhibited identifiable collision patterns.

Table 2.1 summarizes the collision class and impact types for study area intersections.

Table 2.1: Collision Summary

LOCATION	CLASS	IMPACT TYPE				
		Sideswipe	Angle / Turning	Rear End	Single Vehicle	Other
Bank Street at Exhibition Way	Property Damage	1		4	1	
	Non-Fatal Injury					
Bank St at Marche Way	Property Damage			1		
	Non-Fatal Injury				1	
Bank St at Fifth Ave	Property Damage	3	2	3	1	
	Non-Fatal Injury		3	1	2	
Bank St at Holmwood Ave	Property Damage	3	6	2		
	Non-Fatal Injury		1			
Bank St at Wilton Cres	Property Damage	2	3	3	1	
	Non-Fatal Injury	1	3	1		
Bank St at Echo Dr	Property Damage	1	2			1
	Non-Fatal Injury					
Bank St at Aylmer Ave	Property Damage	4	2	4		
	Non-Fatal Injury			1	1	
Bank St at Sunnyside Ave	Property Damage	7	5	1		
	Non-Fatal Injury		3	1	3	
Queen Elizabeth Dr at Fifth Ave	Property Damage			3		
	Non-Fatal Injury					
Queen Elizabeth Dr at Princess Patricia Way	Property Damage	1	2	1		
	Non-Fatal Injury		2			1
Fifth Avenue at O'Connor Street	Property Damage					2
	Non-Fatal Injury					
<b>TOTAL</b>	<b>Property Damage</b>	<b>22</b>	<b>22</b>	<b>22</b>	<b>3</b>	<b>3</b>
	<b>Non-Fatal Injury</b>	<b>1</b>	<b>12</b>	<b>4</b>	<b>7</b>	<b>1</b>

Based on the collision data summarized above, the majority of collisions are classified as Property Damage only (74%), suggesting that the majority of collisions occurred at low speeds. No intersection or signal timing modifications are recommended. Collision summary data can be found in **Appendix B**.

## PLANNED CONDITIONS

### 2.1.7 Road Network Modifications

Table 2.2 identifies the City of Ottawa's Transportation Master Plan (TMP) projects located in the vicinity of the subject site, as well as projects that are anticipated to influence modal share characteristics in the future.

Table 2.2: City of Ottawa Transportation Master Plan Projects

Project	Description	TMP Phase
Bank Street	Transit signal priority between Wellington Street and Highway 417. May also include parking lane conversion in the immediate vicinity of selected intersections  Transit signal priority between Highway 417 and Billings Bridge Station, including limited installation of queue jump lanes (in one direction only) at selected intersections	Affordable Network

The City of Ottawa is currently undertaking the *Bank Street Active Transportation and Transit Priority Feasibility Study* between Highway 417 to the Rideau Canal. The project, which is currently underway, seeks to identify options to improve transit service efficiency and reliability along the corridor, with improvements to the travel environment for walking and cycling. Recommendations to City of Ottawa Transportation Committee are expected to be provided in Spring 2025.

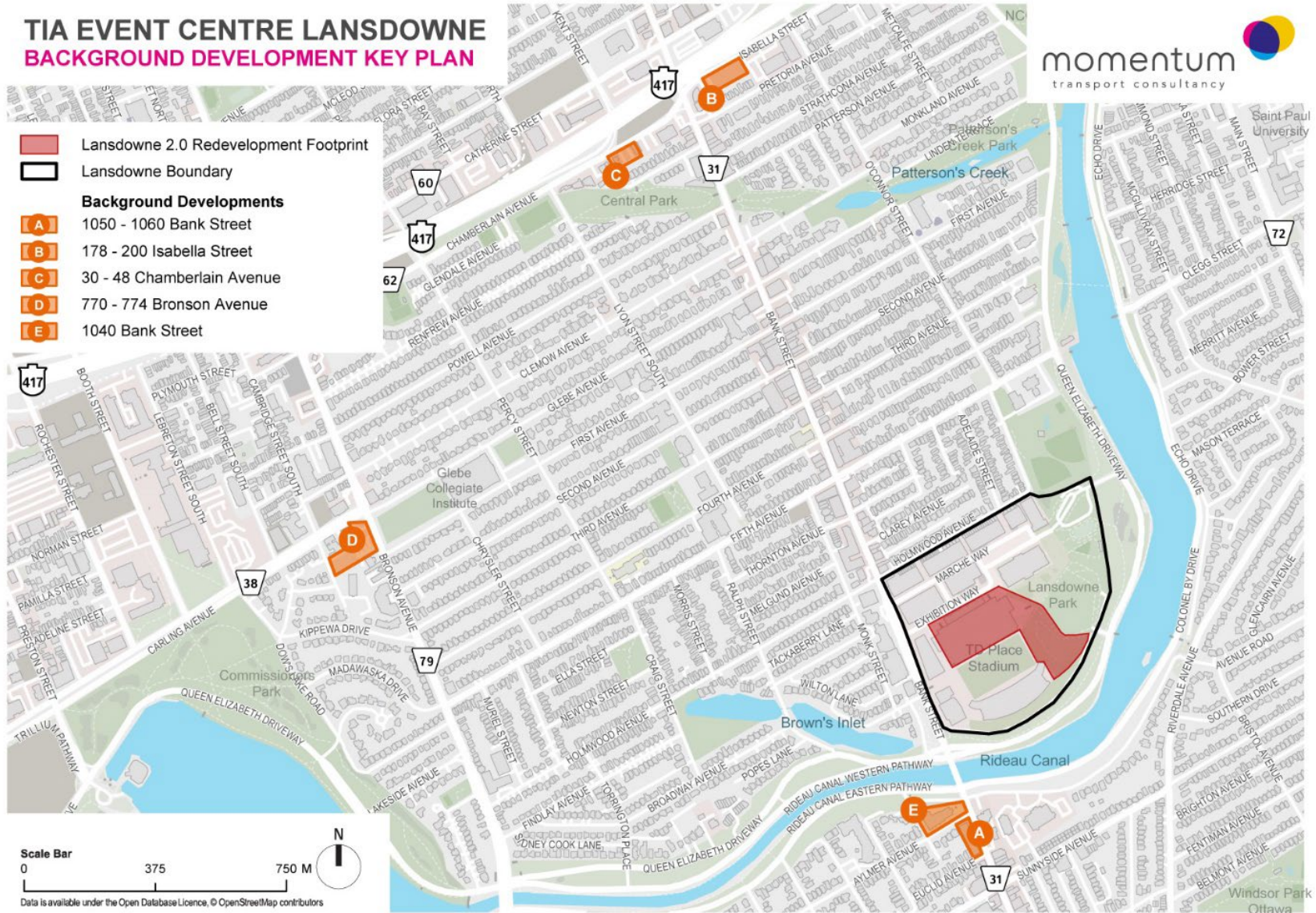
### 2.1.8 Future Background Developments

Several new developments are proposed in the vicinity of Lansdowne. The location of background developments are described in Table 2.3 and illustrated in Figure 2.28

Table 2.3: Background Developments

Plan Reference	Development	Location	Description
A	1050 – 1060 Bank Street	West side of Bank Street between Aylmer and Euclid Avenue in the south portion of Ottawa	6 storey residential apartment (44) units and 825m <sup>2</sup> retail space (Buildout – 2024)
B	178 – 200 Isabella Street	South of Highway 417 between Bank Street and O'Connor Street	16 storey mixed-use building with 251 dwellings units and approximately 355 m <sup>2</sup> of ground floor commercial space (Buildout – 2025)
C	30-48 Chamberlain Avenue	South of Chamberlain Avenue, west of Bank Street	150 apartment units and approximately 400 m <sup>2</sup> of ground floor retail space (Buildout – 2024)
D	770 – 774 Bronson Avenue	Southwest corner of Bronson Avenue and Carling Avenue intersection	257 apartment dwelling unit and 71 student housing dwelling units (Buildout-2025)
E	1040 Bank Street	Northwest corner of Bank Street and Aylmer Avenue intersection	Redevelopment of the Southminster United Church including a six-storey condominium building adjacent to the church

Figure 2.28: Background Developments Key Plan



## 2.2 Study Area and Time Periods

### STUDY AREA

**2.2.1** The following study area intersections are proposed for analysis:

1. Bank Street at Fifth Avenue
2. Bank Street at Holmwood Avenue
3. Bank Street at Exhibition Way
4. Bank Street at Wilton Crescent
5. Bank Street at Echo Drive
6. Bank Street at Aylmer Avenue
7. Bank Street at Sunnyside Avenue
8. Queen Elizabeth Driveway at Princess Patricia Way
9. Queen Elizabeth Driveway at Fifth Avenue
10. Bank Street at Marché Way
11. Fifth Avenue at O'Connor Street

### TIME PERIODS

**2.2.2** The proposed scope of the transportation assessment includes the following analysis time periods:

- Weekday AM Peak Hour of roadway
- Weekday PM Peak Hour of roadway
- Saturday Mid-Day Peak Hour of roadway
- Sunday Mid-Day Peak Hour of roadway
- Weekday Minor and Major Events: Ingress and Egress Peak Hour

### HORIZON YEARS

**2.2.3** The proposed scope of the transportation assessment includes the following horizon years:

- **2024** – Existing Conditions;
- **2028** – Representing the anticipated completion and interim operating conditions of the during the construction of subsequent phases of Lansdowne 2.0 (i.e. – new North Stadium Stands and podium retail / residential towers).  
  
**2033** – Representing the anticipated full build-out of Lansdowne 2.0, inclusive of the new Event Centre, North Stadium Stands, podium retail, and residential towers.



## 2.3 Exemptions Review

Table 2.4 summarizes the Exemptions Review table from the City of Ottawa's 2017 *Transportation Impact Assessment Guidelines*.

Table 2.4: Exemptions Review

Module	Element	Exemption Considerations	Exempted?
<b>Design Review Component</b>			
<b>4.1 Development Design</b>	4.1.2 Circulation and Access	Only required for site plans	No
	4.1.3 New Street Networks	Only required for plans of subdivision	Yes
<b>4.2 Parking</b>	4.2.1 Parking Supply	Only required for site plans	No
	4.2.2 Spillover Parking	Only required for site plans where parking supply is 15% below unconstrained demand	Yes
<b>Network Impact Component</b>			
<b>4.5 Transportation Demand Management</b>	All Elements	Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	No
<b>4.6 Neighbourhood Traffic Management</b>	4.6.1 Adjacent Neighbourhoods	Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	Yes
<b>4.8 Network Concept</b>		Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning	Yes
<b>4.9 Intersection Design</b>	All Elements	Not required if site generation trigger is not met	No

## 3. FORECASTING

### 3.1 Development Generated Travel Demand

#### EXISTING TRIP GENERATION

Lansdowne is currently an active site featuring a variety of land uses including the Stadium at TD Place, the Arena at TD Place, 280 residential townhome and condo units, an 18-acre urban park, and approximately 360,000 ft<sup>2</sup> of commercial retail and office space.

The current vehicular trip generation characteristics of the site are captured through Turning Movement Count (TMC) data. Existing peak hour traffic volumes under Weekday AM, Weekday PM, and Weekend Saturday and Sunday peak hour conditions are summarized in Section 2.1.5.

#### FUTURE TRIP GENERATION AND MODE SHARES

**Phase 1** of Lansdowne 2.0, which represents the construction of the new 5,500 seat multi-purpose Event Centre, is not expected to generate any additional transportation demands or new travel patterns as the activities and programming associated with this new facility are currently in place at the Arena at TD Place.

**Phase 2** of Lansdowne 2.0, which includes the demolition of the old north stadium stands and the construction of a new one is not expected to generate any new transportation demands or changes in travel patterns.

**Phase 3** of Lansdowne 2.0, which includes the construction of new podium level retail and additional high-rise residential units within two new towers are expected to generate additional transportation demands at Lansdowne.

As a result, development generated travel demands are forecasted for the ultimate build-out of Lansdowne 2.0 which is assumed to be achieved by the 2033-year horizon for this study.

The Institute of Transportation (ITE) Trip Generation Manual (11th Edition) was used to forecast the auto trip generation for the multifamily housing and shopping center land uses and the TRANS Trip Generation Manual was used to forecast the auto trip generation for the residential land use. Land use codes 222 – Multi-Unit High Rise Building, and 820 – Shopping Centre were thought to be the most representative of the proposed land uses.

Table 3.1 outlines the assumed land uses and the trip generation rates (ITE) for each land use.

Table 3.1: Lansdowne 2.0 Land Uses and Trip Generation Rates

Phase 1 – New Event Centre (2028)															
N/A	Indoor Arena / Multi-Purpose Event Centre	Person Trips	5,500 Seats	Existing Land Use at Lansdowne. No Additional New Trips Forecasted											
Phase 2 – New North Stadium Stands (2031)															
N/A	Football Stadium	Person Trips	25,000 Seats	Existing Land Use at Lansdowne. No Additional New Trips Forecasted											
Phase 3 – Full Buildout / Podium Retail + New Residential Units (2033)															
LUC	Land Use	Trip Type	Units / GFA (ksf)	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Weekend Peak Hour			Sunday Weekend Peak Hour		
				In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
222	Multi-unit Residential (High-Rise)	Person Trips	770 units	16%	84%	<b>0.76 / unit</b>	64%	36%	<b>0.58 / unit</b>	56%	44%	<b>0.74 / unit</b>	51%	49%	<b>0.85 / Unit</b>
820	Shopping Center	Vehicle Trips	8.6 ksf	55%	45%	<b>2.87 / ksf</b>	50%	50%	<b>4.09 / ksf</b>	52%	48%	<b>4.40 / ksf</b>	49%	51%	<b>2.35 / ksf</b>
710	General Office	Person Trips	14.2 ksf	87%	13%	<b>1.22 / ksf</b>	21%	79%	<b>1.28 / ksf</b>	48%	52%	<b>0.27 / ksf</b>	36%	64%	<b>0.17 / ksf</b>

**3.1.1 Trip Internalization**

Trip Internalization refers to trips that are shared between two or more uses within the same site. This behaviour is typical for mixed-use developments that feature a variety of land uses that complement each other. When trip internalization occurs, a portion of the generated trips for each individual land use are drawn from other land uses within the same district, as opposed to new trips that are generated externally.

For new land uses proposed for Lansdowne 2.0, trip Internalization factors were applied to account for new site trips that are expected to be generated from within the site, or external trips that visit more than one land use within the subject development. Since these trips are contained within the district, accounting for each trip separately on the roadway network would result in double-counting trips. As a result, land uses with internal capture trips between one another ultimately had their net new trips adjusted consistent with acceptable industry standards.

For Lansdowne 2.0, a portion of the additional commercial retail land-uses are assumed to feature trip internalization with other land-uses and activities within the site include existing and future residential, office, and the existing retail land-uses.

Table 3.2 outlines the trip internalization rates assumed for the additional retail land uses assumed as part of the Lansdowne 2.0 development.

Trip internalization rates were developed based on the methodologies outlined in TRANS Trip Generation Manual and NCHRP Report 684 (Enhancing Internal Trip Capture Estimation for Mixed-Use Developments).

*Table 3.2: Internal Capture Trips*

LUC	Land Use	Trip Conversion	Weekday AM Peak			Weekday PM Peak			Weekend Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
820	Shopping Plaza	Internal Capture	15%			30%			15%		

**Lansdowne 2.0 Additional Person Trips**

New transportation demands associated with Lansdowne 2.0 additional development is outlined in Table 3.3.

Forecasted person trips for the proposed multi-unit residential towers, additional commercial retail, and general office spaces were derived using the ITE Trip Generation Manual.

The trip internalization factors outlined above were applied to the shopping plaza land use to capture internal trips.



Table 3.3: Lansdowne 2.0 Person Trips Generated by Land Use

LU C	Land Use	Trip Conversion	Weekday AM Peak			Weekday PM Peak			Saturday Peak Hour			Sunday Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
222	Multi-Unit Residential (High-Rise)	<b>Person Trips</b>	<b>94</b>	<b>492</b>	<b>585</b>	<b>286</b>	<b>161</b>	<b>447</b>	<b>319</b>	<b>251</b>	<b>570</b>	<b>334</b>	<b>321</b>	<b>655</b>
820	Shopping Plaza	Auto Trips (Peak Hour)	14	11	25	18	18	35	20	18	38	19	19	38
		Auto Trip to Person Trip Factor	1.28 persons per vehicle											
		Initial Person Trips	17	14	32	32	23	45	25	23	49	24	25	49
		Internalization Factor	15%			30%			15%			15%		
		Internalization Trip Reduction	-3	-2	-5	-7	-7	-14	-4	-4	-7	-4	-4	-7
		<b>Person Trips</b>	<b>14</b>	<b>12</b>	<b>27</b>	<b>16</b>	<b>16</b>	<b>31</b>	<b>21</b>	<b>19</b>	<b>42</b>	<b>20</b>	<b>21</b>	<b>42</b>
710	General Office	<b>Person Trips</b>	<b>15</b>	<b>2</b>	<b>17</b>	<b>4</b>	<b>14</b>	<b>18</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>2</b>
<b>Lansdowne 2.0 New Person Trips (Peak Hour)</b>			<b>123</b>	<b>506</b>	<b>629</b>	<b>305</b>	<b>191</b>	<b>496</b>	<b>342</b>	<b>272</b>	<b>615</b>	<b>354</b>	<b>343</b>	<b>699</b>

It is estimated that the Lansdowne 2.0 development is projected to result in a net increase of 629 person trips in the AM Peak Hour, 496 person trips in the PM Peak Hour, 615 trips during the Saturday Weekend Peak Hour, and 699 trips during the Sunday Weekend Peak Hour.

To reflect local travel characteristics, forecasted person trips were assigned and distributed to various travel modes (i.e., auto, passenger, transit, cycling and walking). Modal share percentages were adopted from the TRANS Trip Generation Manual.

The TRANS Trip Generation Manual provides trip generation and modal share rates for 26 geographic regions within Ottawa-Gatineau. For Lansdowne, the modal shares for the *Ottawa Inner Area (050)* were adopted for the High-Rise Multifamily Housing and Commercial land-uses.

The Lansdowne 2.0 assumed modal shares are summarized below in Table 3.4.

Table 3.4: Assumed Mode Share by Land Use

Mode	222 - Multiuse Family			820 - Commercial Retail			710 - Office
	AM	PM	Average	AM	PM	Average	
Auto	26%	25%	26%	39%	22%	31%	45%
Passenger	7%	9%	8%	2%	4%	3%	7%
Transit	28%	21%	25%	16%	12%	14%	29%
Cycling	5%	6%	6%	3%	4%	4%	8%
Walking	34%	39%	37%	40%	58%	49%	11%

#### Residential Trips – Mode Shares

Section 4.2 (Table 8) of the *TRANS Trip Generation Manual (October 2020)* was utilized to determine the residential mode share for high rise multi-family housing for the Ottawa Inner Area district. The mode shares for the district, which is based on blended AM and PM peak period rates, include a 26% auto mode share, a 25% transit mode share, and a combined 43% modal share for walking and cycling.

#### Commercial Trips – Mode Shares

Section 6.3 (Table 13) of the *TRANS Trip Generation Summary Manual (October 2020)* was utilized to determine the commercial retail mode share for the Ottawa Inner Area district. The mode shares for the district, which is based on blended AM and PM peak period rates, include a 31% auto mode share, a 14% transit mode share, and a combined 53% modal share for walking and cycling.

Table 3.5 outlines the adjusted future trip generation estimate for Lansdowne 2.0 by travel mode.

Table 3.5: Lansdowne 2.0 Future Trip Generation by Travel Mode

LUC	Land Use	Modal Share %		Weekday AM Peak Hour			Weekday PM Peak Hour			Weekend Saturday Peak Hour			Weekend Sunday Peak Hour		
				In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
222	Multi – Unit (High-Rise)	Auto Driver	26%	24	125	149	73	41	114	81	64	145	85	82	167
		Passenger	8%	7	39	47	23	13	36	26	20	46	27	26	52
		Transit	25%	23	120	143	70	39	109	78	61	140	82	79	160
		Cycling	6%	5	27	32	16	9	25	18	14	31	18	18	36
		Walking	37%	34	179	214	104	59	163	116	92	208	122	117	239
820	Shopping Center	Auto Driver	31%	4	4	8	5	5	10	6	6	12	6	6	12
		Passenger	3%	0	0	1	0	0	1	1	1	1	1	1	1
		Transit	14%	2	2	4	2	2	4	3	3	6	3	3	6
		Cycling	4%	1	0	1	1	1	1	1	1	1	1	1	1
		Walking	49%	7	6	13	8	8	15	10	9	20	10	10	20
710	Office	Auto Driver	45%	7	1	8	2	6	8	1	1	2	0	1	1
		Passenger	7%	1	0	1	0	1	1	0	0	0	0	0	0
		Transit	29%	4	1	5	1	4	5	1	1	1	0	0	1
		Cycling	8%	1	0	1	0	1	1	0	0	0	0	0	0
		Walking	11%	2	0	2	0	2	2	0	0	0	0	0	0
Lansdowne 2.0 Additional Person Trips	<b>Auto Driver</b>		35	130	165	79	52	132	89	71	159	92	89	180	
	<b>Passenger</b>		9	40	49	24	14	38	26	21	47	27	26	54	
	<b>Transit</b>		29	123	152	73	46	119	82	65	146	85	82	167	
	<b>Cycling</b>		7	28	35	17	11	27	18	15	33	19	18	38	
	<b>Walking</b>		43	186	229	112	68	180	127	101	228	132	127	259	
	<b>Total Person Trips (Peak Hour)</b>		<b>123</b>	<b>506</b>	<b>629</b>	<b>305</b>	<b>191</b>	<b>496</b>	<b>342</b>	<b>272</b>	<b>614</b>	<b>354</b>	<b>343</b>	<b>698</b>	

The total additional number of trips generated by the Lansdowne 2.0 development are outlined above by mode, with a total of 505, 466, and 628 person trips forecasted for the Weekday AM, Weekday PM, and Weekend Saturday peak hours, respectively.

Out of the total trips forecasted, the additional auto trips forecasted as part of the Lansdowne 2.0 development are estimated to be 165, 132, and 159, and 189 vehicle trips in the Weekday AM, Weekday PM, Saturday, and Sunday peak hours

## TRIP DISTRIBUTION

Cardinal trip distribution to and from Lansdowne was developed based on the 2011 TRANS Origin-Destination Survey for the Ottawa Inner Area region.

Based on the origin-destination data, trip distributions were estimated based on directions to the north, east, south and west. The data indicates that up to 32% of trips surveyed within the Ottawa Inner Area started and ended within the same district, and upwards of 10% of trips have an origin/destination to the Ottawa Centre region north of the district towards downtown Ottawa. The remaining trips were found to be distributed to other regions throughout Ottawa-Gatineau.

Table 3.6 outlines the trip distribution assumptions to/from Lansdowne based on the 2011 TRANS Origin-Destination Survey.

*Table 3.6: Site Trip Directional Distribution*

Direction	Trip Distribution
North	35%
East	21%
South	32%
West	13%
Total	<b>100%</b>

As Lansdowne is bound by two north-south corridors, namely Bank Street to the west, and Queen Elizabeth Driveway to the east, site trip distribution assumptions were refined in the north-south direction, representing localized trip distribution on Bank Street and Queen Elizabeth Driveway.

Table 3.7 outlines the assumed directional trip distributions based on access to nearby regional corridors including the Queensway (Highway 417) to the north, Bronson Avenue to the west, and Riverside Drive and Heron Road to the south.

*Table 3.7: Refined Directional Trip Distribution Assumptions*

Direction	Study Area Trip Distribution
North	50%
South	50%



## TRIP ASSIGNMENT

Additional Lansdowne 2.0 site generated trips were assigned to the study area road network based on the assumed trip distribution assumptions. In addition, a review of existing traffic data was performed to estimate the traffic volume split between Bank Street, Holmwood Avenue, and Queen Elizabeth Driveway.

Currently, 65% of Lansdowne specific public traffic utilizes Bank Street for access to/from Lansdowne, with the remaining 35% utilizing QED.

Based on parking gate data provided by OSEG for the private residential Holmwood garage ramp, it is estimated that there are approximately 90 residential vehicles utilizing the Holmwood residential garage access per day.

It is assumed that the new residential tenants will also have access to the Holmwood garage ramp. As a result, a proportion of new residential based trips were assumed to utilize the private, restricted-use Holmwood garage ramp for access.

The following site access assumptions were adopted:

- **55%** of new site trips are assumed to access Lansdowne via Bank Street.
- **30%** of new site trips are assumed to access Lansdowne via Queen Elizabeth Driveway.
- **15%** of new site trips, specifically a proportion of additional residential trips, are assumed to access the underground private garage access via Holmwood Avenue.

Table 3.8 summarizes new Lansdowne 2.0 site generated vehicle trips and their respective assignment to Bank Street, Queen Elizabeth Driveway, and the private underground parking garage access ramp.

Table 3.8: Trip Assignment for Newly Generated Trips

Access	Weekday AM Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour		Sunday Peak Hour	
	In	Out	In	Out	In	Out	In	Out
Bank Street	19	72	44	29	49	39	50	49
Queen Elizabeth Driveway	11	39	24	16	27	21	27	27
Holmwood Access*	5	20	12	8	13	11	14	13
<b>Total New Vehicle Trips</b>	<b>35</b>	<b>130</b>	<b>79</b>	<b>52</b>	<b>89</b>	<b>71</b>	<b>92</b>	<b>89</b>
	<b>165</b>		<b>132</b>		<b>159</b>		<b>180</b>	

\* Holmwood Access: Lansdowne residents access to private, restricted-use garage access.

Figure 3.1 illustrates the assumed site trip assignment assumptions for Lansdowne 2.0 additional vehicle trips.

Lansdowne 2.0 additional site generated vehicle trips are illustrated in Figure 3.2 through Figure 3.4.

Figure 3.1: Lansdowne 2.0 Site Traffic Assignment Assumptions

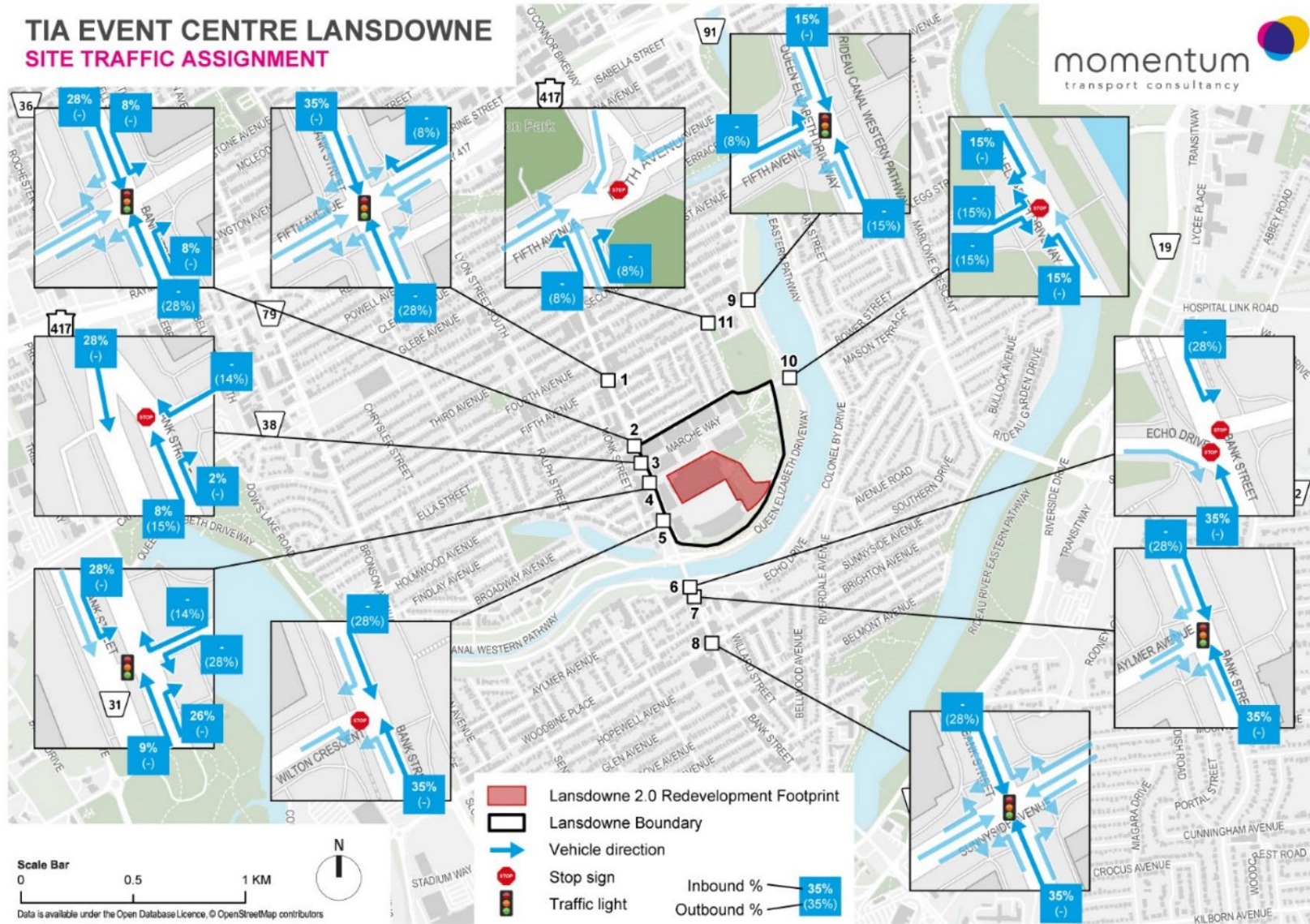
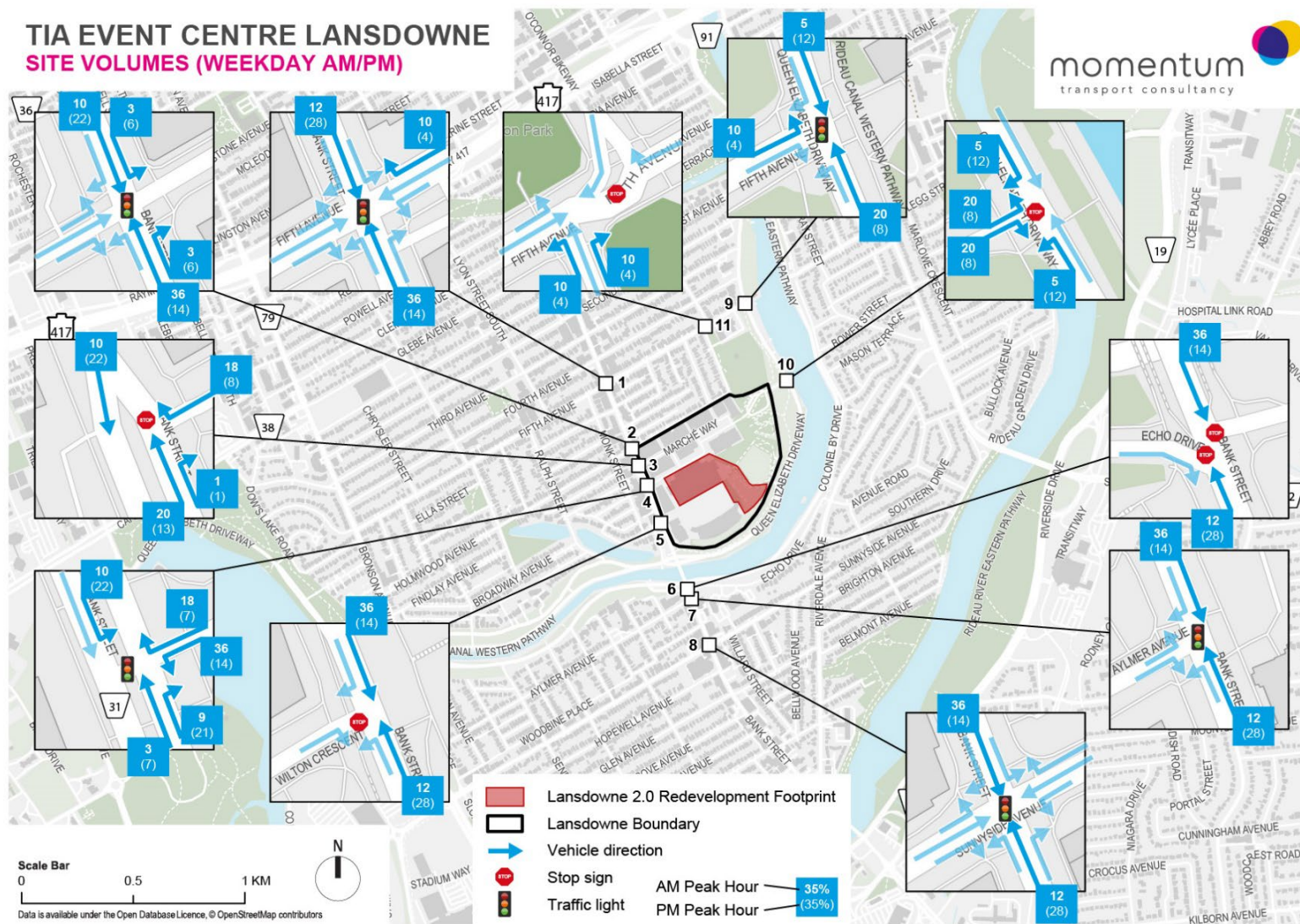




Figure 3.2: Lansdowne 2.0 Site Volumes (Weekday AM/PM Peak)











## 3.2 Background Network Travel Demand

### TRANSPORTATION NETWORK PLANS

The only road infrastructure project that is identified in the City of Ottawa Transportation Master Plan within the vicinity of Lansdowne is the proposed Transit Priority Corridor improvements on Bank Street.

In May 2022, City of Ottawa Transportation Committee directed staff to undertake an Active Transportation and Transit Operations Feasibility Study project of Bank Street between the Rideau Canal to Highway 417. The study is currently underway with recommendations to City Council expected to be provided in Spring 2025.

### BACKGROUND GROWTH

Based on data readily available for the City of Ottawa, the average annual growth rate for traffic volumes in the vicinity of Lansdowne ranges between -2% to +0.2%, indicating a general reduction or limited growth in vehicular traffic volume on Bank Street and the surrounding roadway network. As a result, a 0.5% annual background growth rate was applied to forecast future background growth in traffic volumes.

### OTHER DEVELOPMENTS

As outlined in Section 2.1.8, a number of nearby developments near Lansdowne are currently under construction or scheduled to be constructed within the horizons of the study. The traffic volumes from these developments were obtained from their respective traffic studies, where available, and added to the transportation network as part of background traffic growth.

## 3.3 Demand Rationalization

The current peak hour traffic volumes along Bank Street are in the range of 500 – 800 vehicles per hour per direction. Similar volumes are exhibited on Queen Elizabeth Driveway with peak hour volumes in the range of 300 – 600 vehicles per hour per direction.

The traffic volumes forecasted under the 2033 future build-out year are projected to be in the range of 600 – 900 vehicles per hour per direction for Bank Street, and 350 – 700 vehicles per hour per direction for Queen Elizabeth Driveway.

As the projected volumes fall within a similar range to existing conditions and are likely to be supported by the transportation network, no demand rationalization was undertaken.

## 2028 TOTAL FUTURE TRAFFIC VOLUMES

The 2028 Total Future horizon year represents the completion of Phase 1 of the Lansdowne 2.0 redevelopment program with the opening of the new multi-purpose Event Centre.

As the new multi-purpose Event Centre will not generate new additional transportation demands to Lansdowne, no new site generated trips have been added. A 0.5% annual growth rate was applied to existing traffic demands to account for background development growth.

It is anticipated that the new Event Centre will operate in an interim condition during construction of subsequent phases of Lansdowne 2.0: namely construction of the new North Stadium Stands (Phase 2), and the new podium retail and two residential towers (Phase 3).

During Phase 2 and Phase 3 construction of Lansdowne 2.0, site access is expected to be generally unaffected with access provided at both Bank Street and Queen Elizabeth Driveway. Site circulation within Lansdowne will need to be verified during Phase 2 and Phase 3 based on constructability requirements and the construction footprint within Lansdowne, these details are expected to be addressed as part of the permitting and approvals of the subsequent Phase 2 and Phase 3.

While construction phasing details for Phase 2 and Phase 3 are still under development and will be addressed as part of subsequent approval phases, it is anticipated that during construction of Phase 2 and Phase 3, the underground parking garage ramp at Bank Street will be temporarily closed for public use to accommodate construction of the expanded underground parking garage for Lansdowne. The time and duration of impacts is still unknown.

To assess traffic operations during the operation of the new Event Centre, the 2028 horizon year was assumed to include the temporary closure of the Bank Street underground garage ramp. It is anticipated that access to Lansdowne from both Bank Street and Queen Elizabeth Driveway will be unaffected, with the temporary closure of the Bank Street garage ramp, public access to the underground parking garage will occur at the Princess Patricia Way underground garage ramp near Queen Elizabeth Driveway.

It is assumed that most of the traffic (assumption of **70%**) currently accessing the underground parking facilities at the Exhibition Way underground garage ramp will continue to access Lansdowne on Bank Street and will travel through the site towards the Princess Patricia Way garage access.

The remaining portion of traffic (assumption of **30%**) currently accessing the underground parking facility at the Exhibition Way ramp near Bank Street are assumed to alter their travel patterns by shifting to Queen Elizabeth Driveway as the route to travel to Lansdowne. This includes **15%** diverting from Bank Street to Queen Elizabeth Driveway via Fifth Avenue, and **15%** choosing to travel on Queen Elizabeth Driveway further upstream as part of their journey to Lansdowne.

Figure 3.5 through Figure 3.12 summarize projected 2028 traffic volumes inclusive of background development growth and assumed internal circulation adjustments during the temporary closure of the Exhibition Way underground parking garage access during Phase 2 and Phase 3 construction.



Figure 3.5: 2028 Total Future Traffic Volumes (Weekday AM / PM)

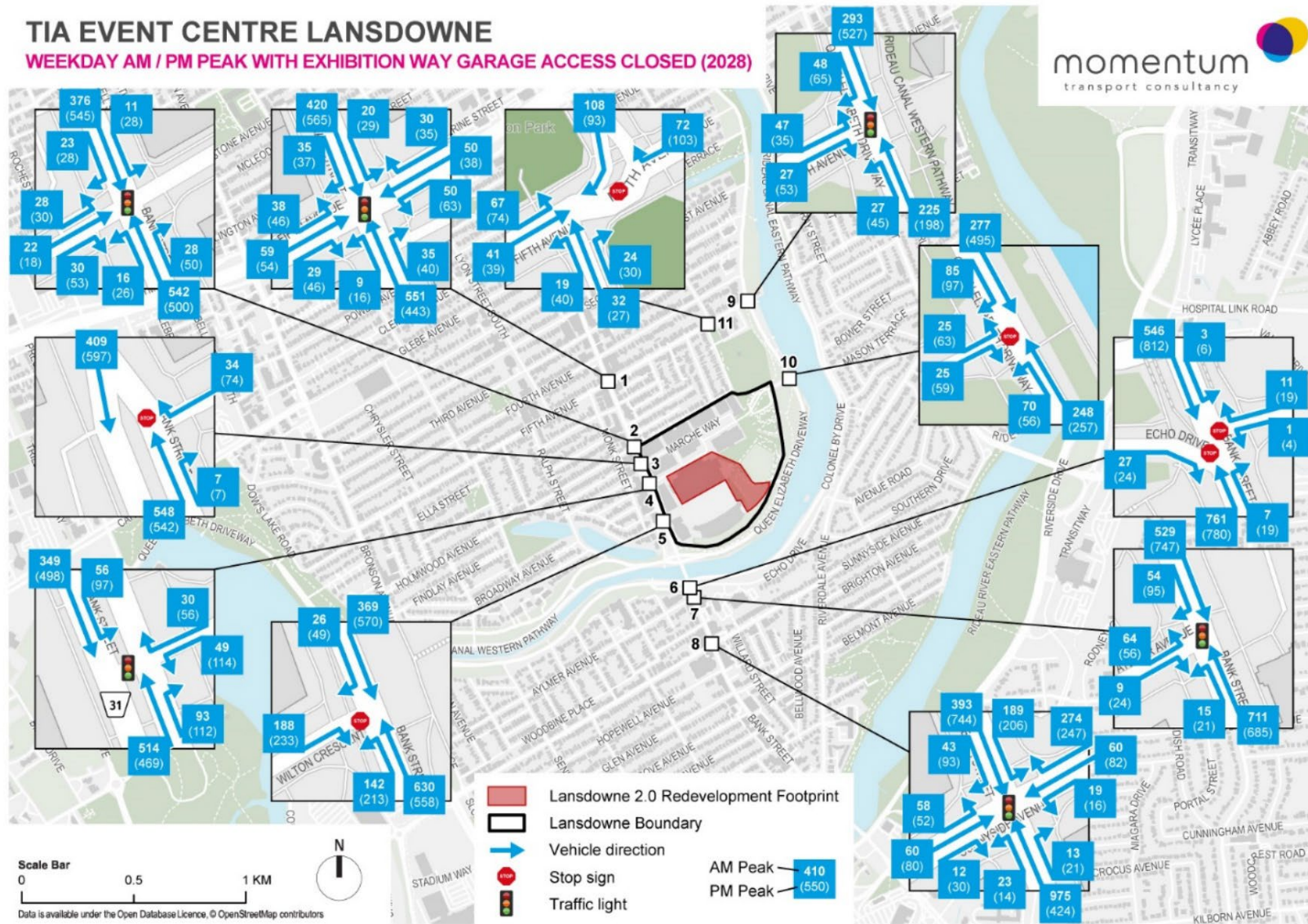








Figure 3.7: 2028 Total Future Traffic Volumes (Saturday PM)

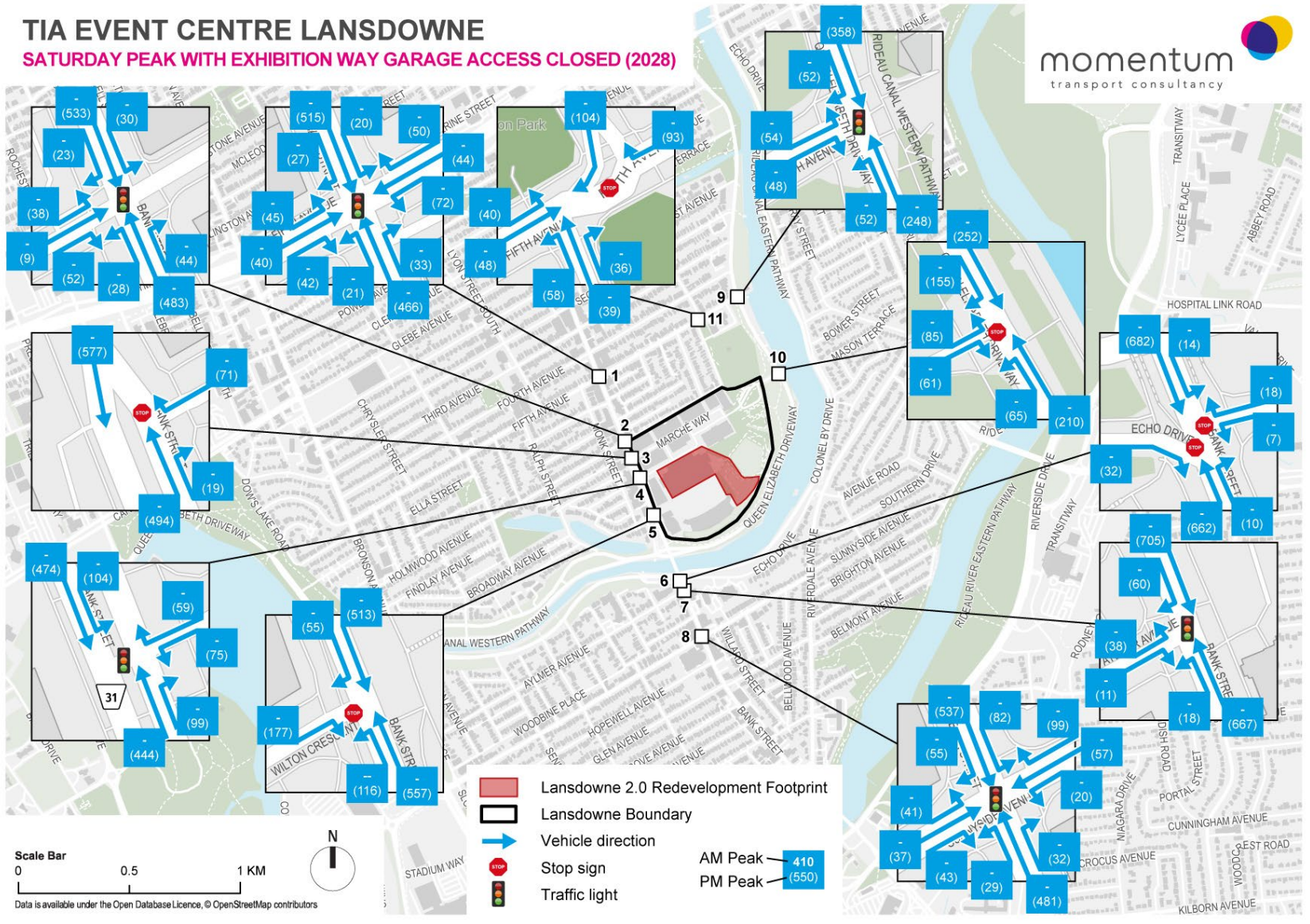












Figure 3.10: 2028 Total Future Traffic Volumes on-site (Sunday PM)

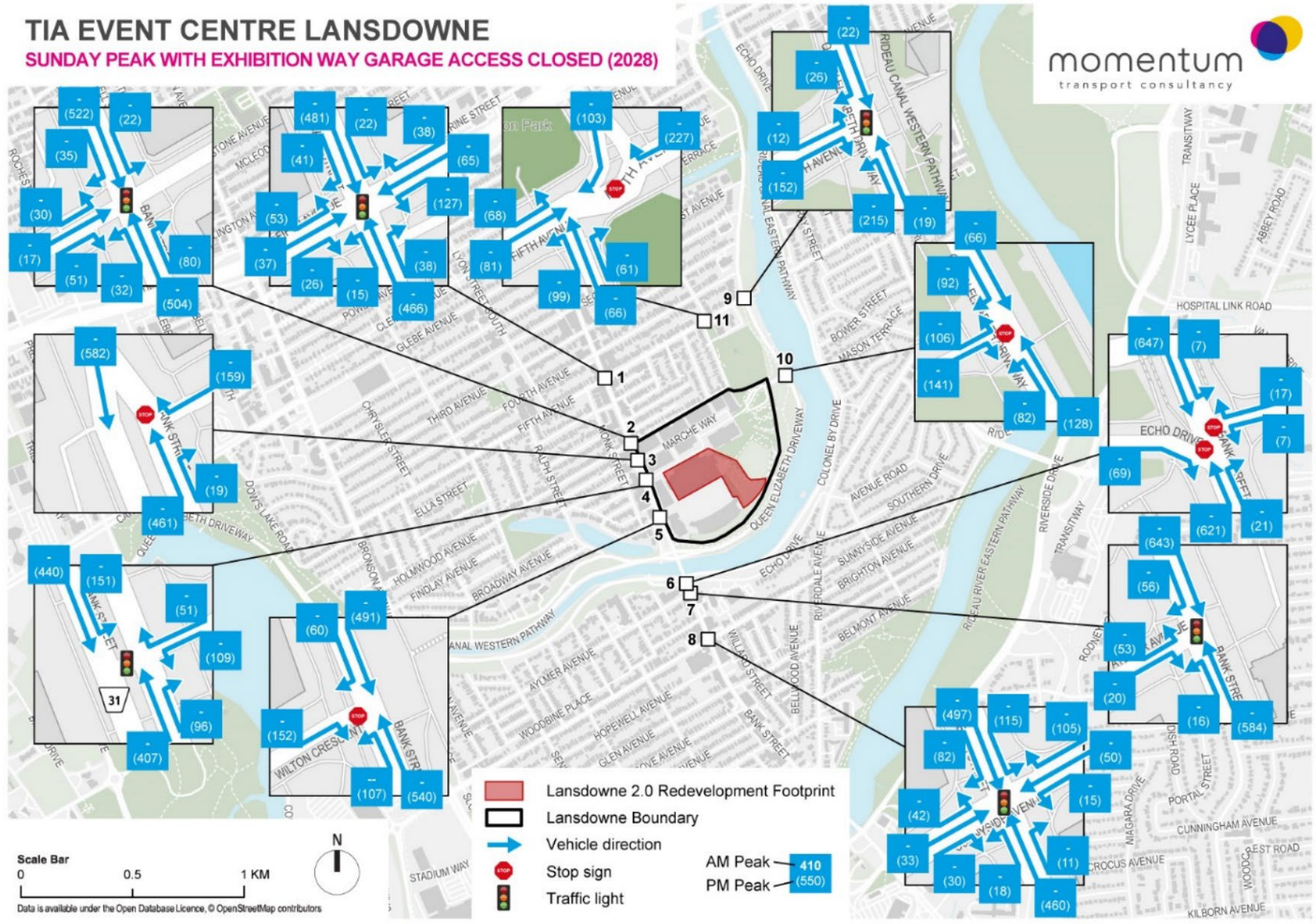
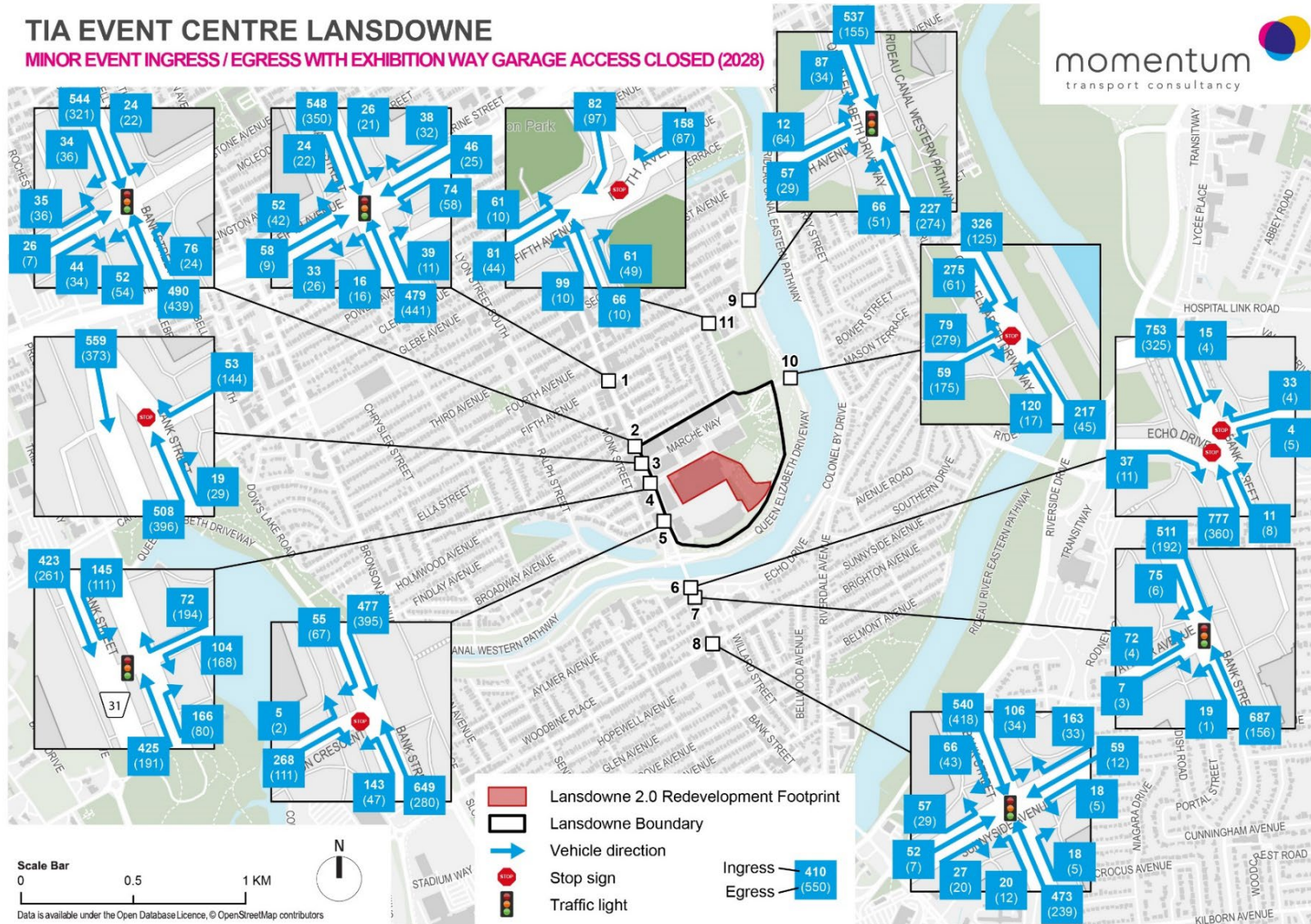




Figure 3.11: 2028 Total Future Traffic Volumes Minor Event







## **2033 TOTAL FUTURE TRAFFIC VOLUMES**

The 2033 Total Future horizon year represents the full build-out of the Lansdowne 2.0 redevelopment project inclusive of the new Event Centre (Phase 1), North Stadium Stands (Phase 2), and additional retail podium and two residential towers (Phase 3).

2033 Total Future traffic volumes were developed by applying a 0.5% background growth rate, explicit background development volumes from nearby developments, as well as new additional site generated trips as outlined in Table 3.8 and Figure 3.1 through Figure 3.4.

Similar to 2028 conditions, 2033 Total Future traffic volumes were derived by applying an assumed background growth rate of 0.5% per year to existing traffic volumes. Additionally, explicit background development traffic, as well as the Lansdowne 2.0 site generated traffic volumes were added.

Figure 3.13 through Figure 3.17 summarize projected 2033 traffic volumes inclusive of background development growth and full-build out site generated traffic volumes for Lansdowne 2.0.



Figure 3.13: 2033 Total Future Traffic Volumes (Weekday AM / PM)

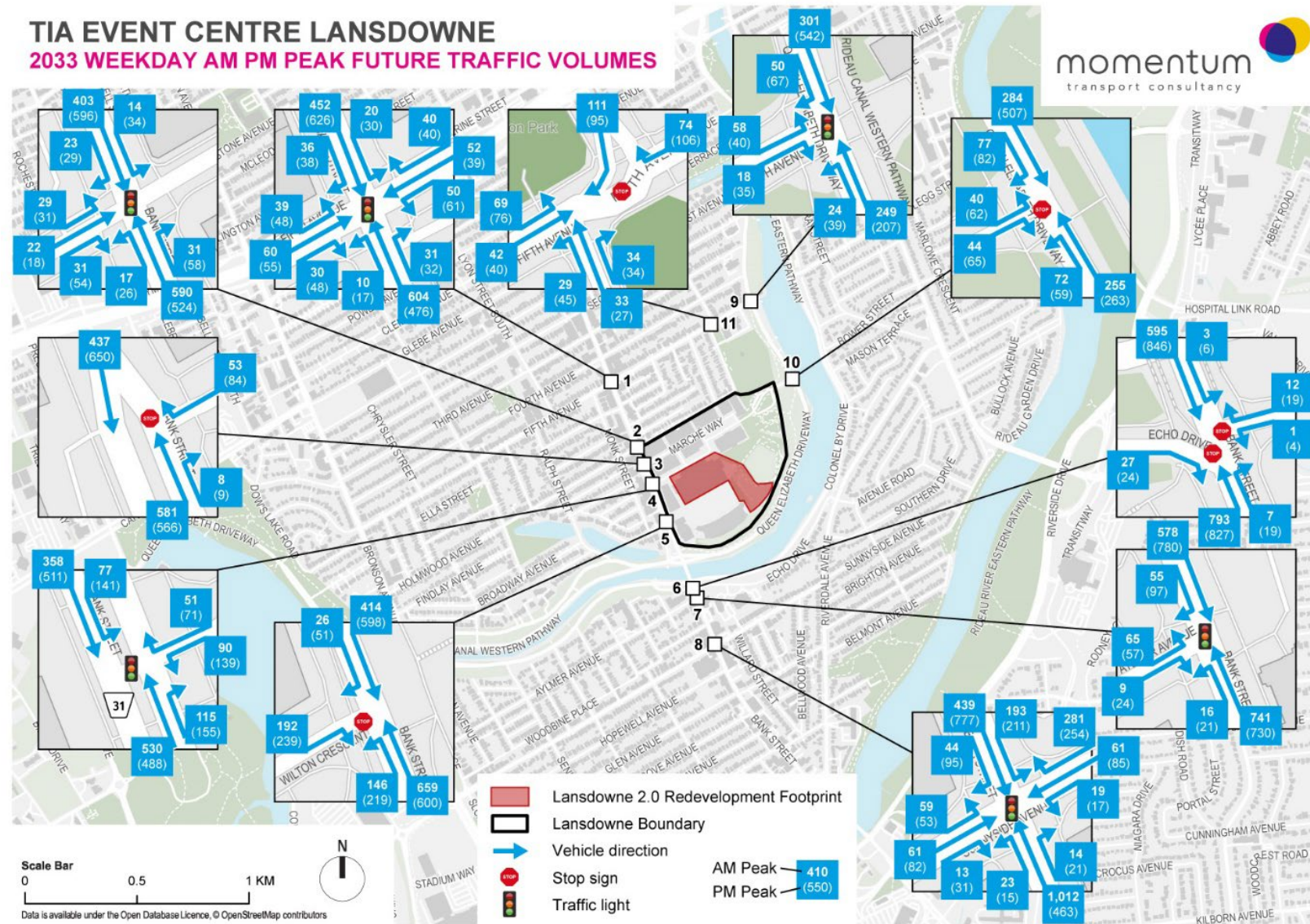








Figure 3.15: 2033 Total Future Traffic Volumes (Sunday PM)

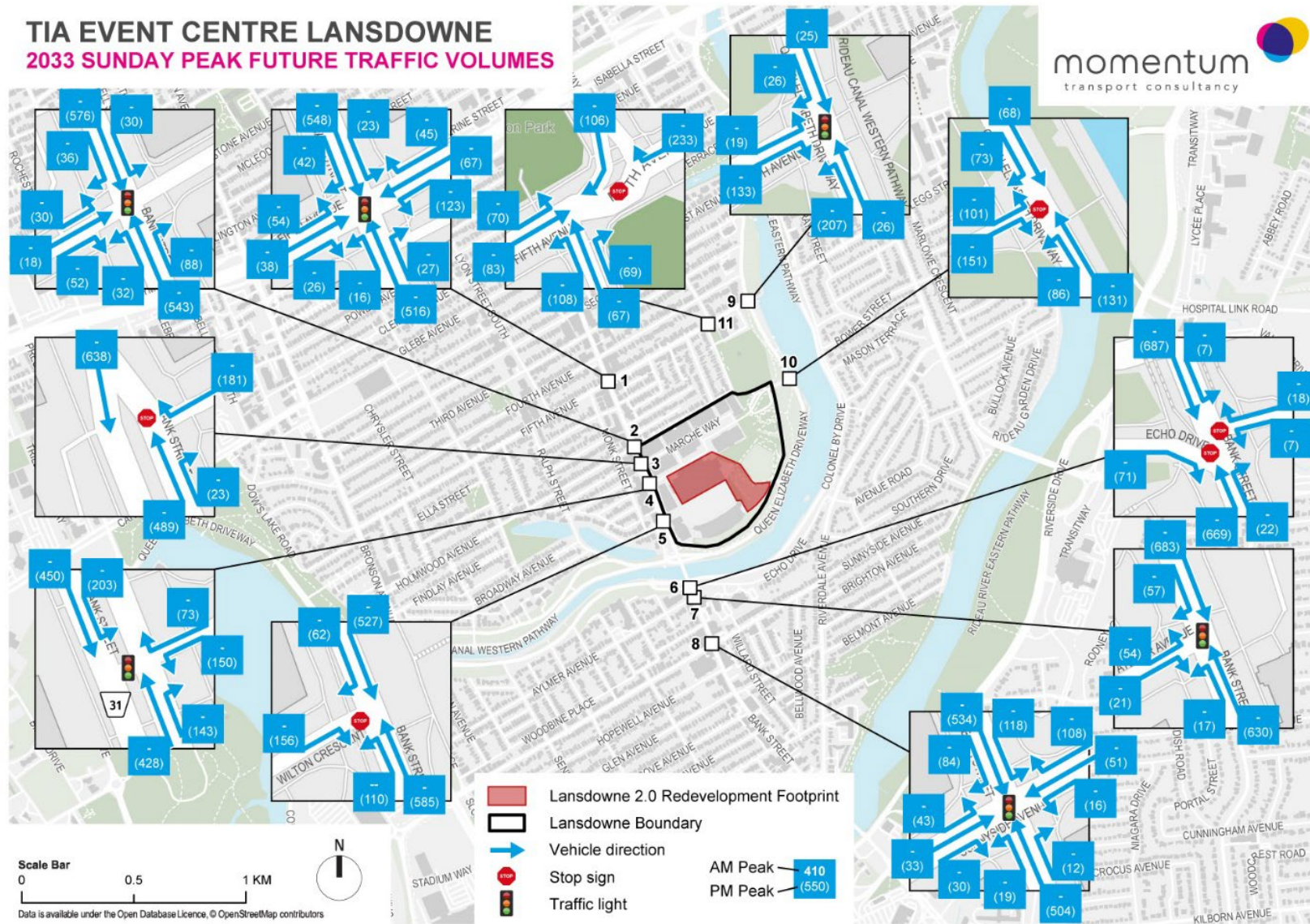




Figure 3.16: 2033 Total Future Traffic Volumes Minor Event (Ingress and Egress)

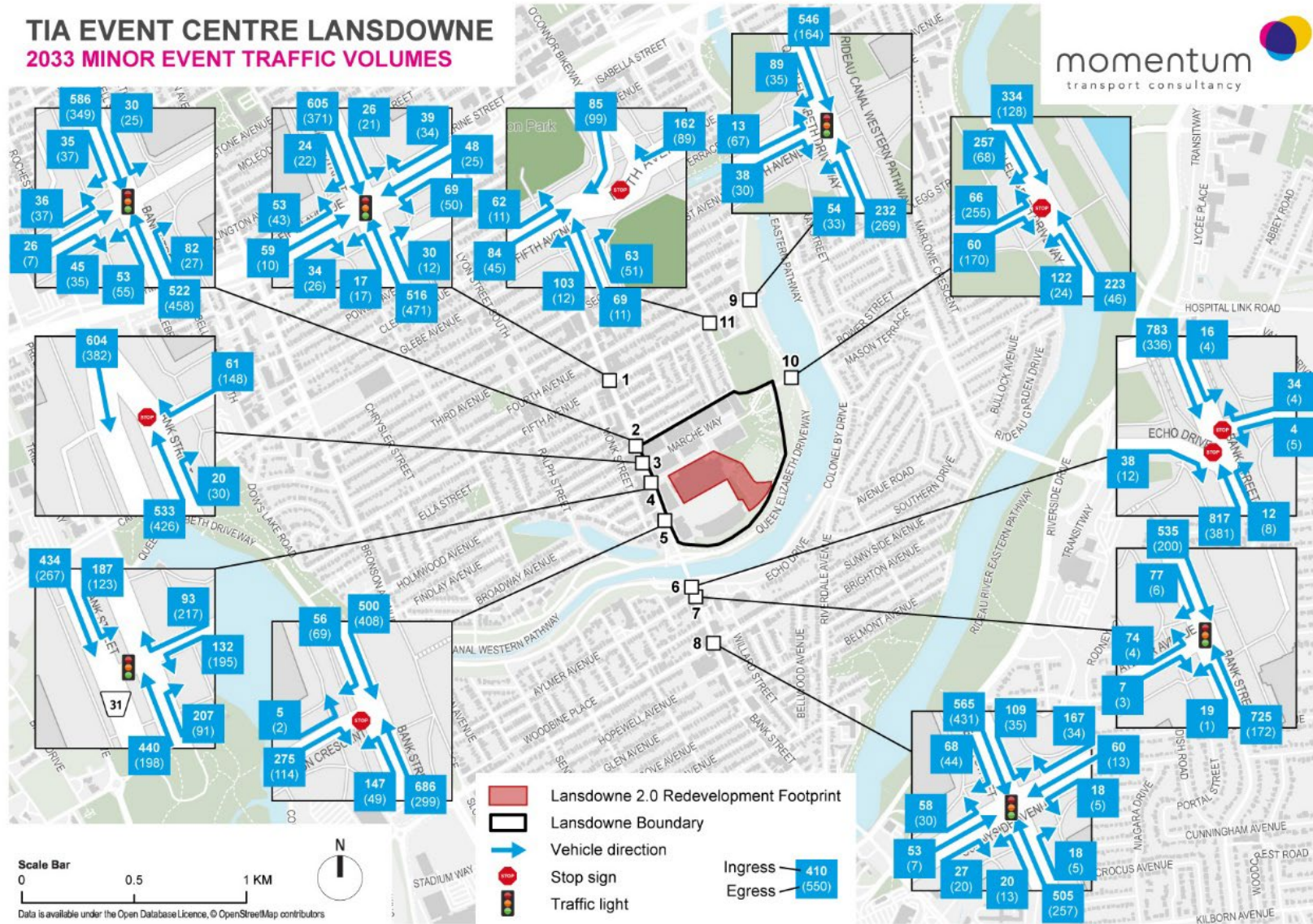
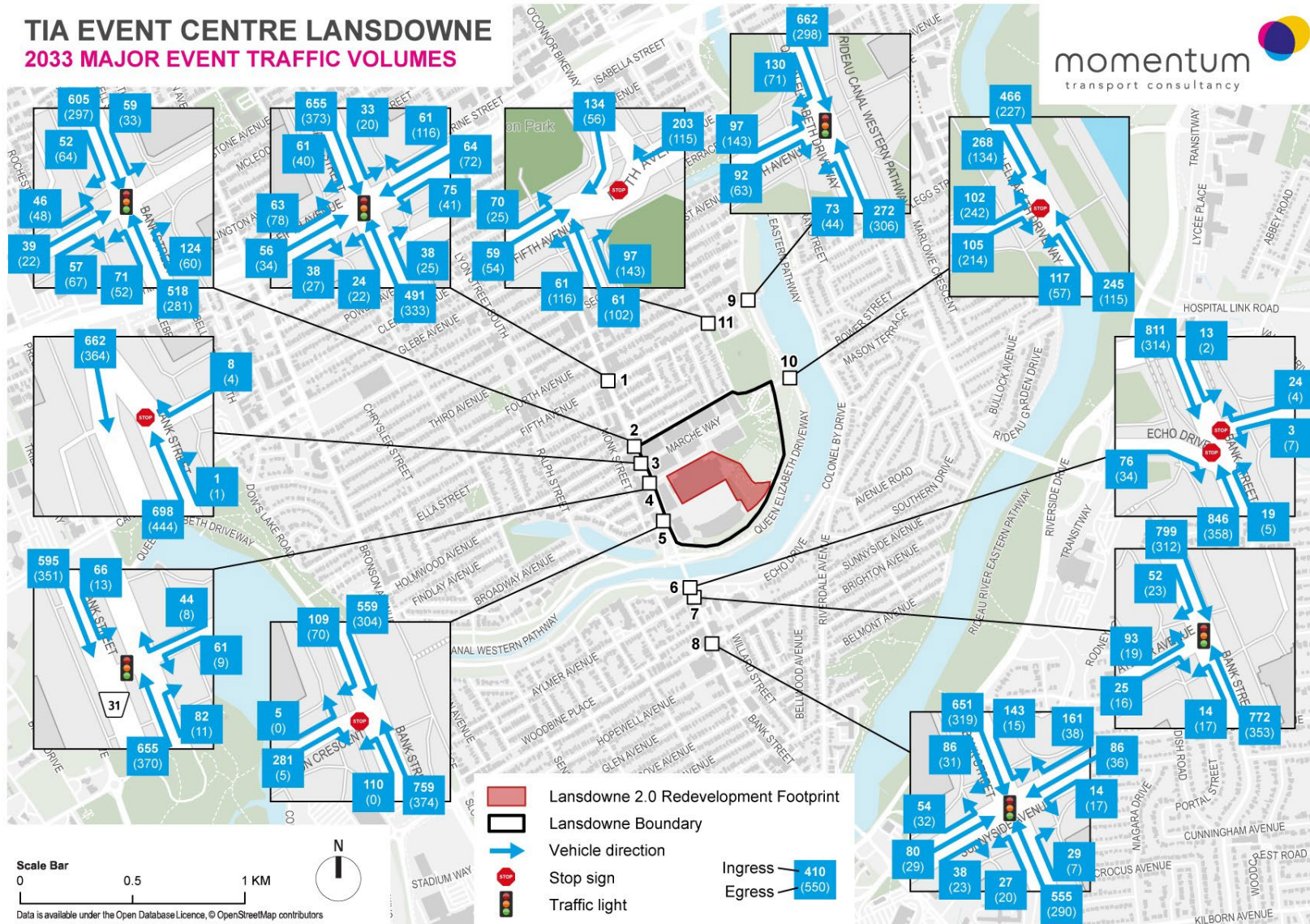




Figure 3.17: 2033 Total Future Traffic Volumes Major Event (Ingress and Egress)



## 4. STRATEGY REPORT

### 4.1 Development Design

#### DESIGN FOR SUSTAINABLE MODES

**Bicycle facilities:** Lansdowne is designed to accommodate cycling connectivity throughout the site. Many of the internal pathways, particularly Exhibition Way, Marche Way, and Princess Patricia Way, are designed as Pedestrian Priority Zones. Cycling access points to Lansdowne are provided at Bank Street at Exhibition Way and Marche Way, as well as three cycling connections to internal pathways on Holmwood Avenue. On the east and south side of Lansdowne, connections to the multi-use pathways on Queen Elizabeth Driveway are provided at numerous locations. Improved cycling crossing facilities are currently contemplated at the Queen Elizabeth Driveway and Princess Patricia Way site access intersection to Lansdowne. Surface bicycle parking is provided throughout the public realm at Lansdowne. In addition, for major events held on site, free valet bike parking storage is provided.

**Pedestrian facilities:** Lansdowne is designed to accommodate pedestrian movements throughout the site. Many of the internal pathways, particularly Exhibition Way, Marche Way, and Princess Patricia Way, are designed as Pedestrian Priority Zones. In recent years, the section of Princess Patricia Way between Exhibition Way and Marche Way (along the north side of the Aberdeen Pavilion) has been fully closed to vehicular traffic to better accommodate pedestrian flow. Pedestrian access points are currently to Lansdowne with pedestrian connections to Bank Street at Exhibition Way and Marche Way, as well as three pedestrian connections to sidewalks on Holmwood Avenue. On the east and south side of Lansdowne, pedestrian connections to the multi-use pathways on Queen Elizabeth Driveway are provided at numerous locations. Improved sidewalk and crossing facilities are currently contemplated at the Queen Elizabeth Driveway and Princess Patricia Way site access intersection to Lansdowne.

**Parking areas:** Lansdowne currently features an underground parking garage with a total of 1,380 spaces for public and residential use. As part of the Lansdowne 2.0 project, the underground parking garage is proposed to be expanded to include an additional 386 underground parking spaces dedicated to support the residential units and additional retail space, for a total of 1,766 parking spaces. Similar to today, access to the underground parking garage will be provided through two garage ramp entrances: one on Exhibition Way east of Bank Street, the other on Princess Patricia Way west of Queen Elizabeth Driveway. A residents-only private access to the underground garage is also available on Holmwood Avenue.

**Transit facilities:** Transit stops for OC Transpo routes 6 and 7 are currently serviced by stops located at the intersection of Bank Street and Exhibition Way. In addition, these bus stops accommodate 450-series enhanced transit service during Major Events held at Lansdowne. There are sidewalks along both sides of Bank Street as well as adequate pedestrian crosswalks to access the transit stops. The new multi-purpose event centre will be located within the 400 meter transit catchment area.



## **CIRCULATION AND ACCESS**

Site access and circulation at Lansdowne is expected to continue to be provided at the existing site access intersections on Bank Street and Queen Elizabeth Driveway for general public access, as well as Holmwood Avenue at the restricted, residents-only underground garage access.

Site circulation is expected to be managed with similar traffic management measures deployed at Lansdowne today. This includes providing general public traffic access and circulation at designated roadways including Exhibition Way, Marche Way, and Princess Patricia Way.

Paved pathways located at the south of the site in and around the Great Lawn are expected to operate as a restricted / limit-use pathway for emergency vehicle access, deliveries, and designated shuttle services including accessible ParaTranspo service.

Traffic management measures during major events (i.e. stadium events with attendance levels of 15,000 or more) will continue to restrict vehicular access through Lansdowne with temporary vehicle restrictions placed at Bank Street access intersections. Vehicular access will continue to be restricted to the Queen Elizabeth Driveway intersection to provide access to the underground parking garage ramp at Princess Patricia Way, as well as for the shuttle loop for pick-up and drop-off activity. Vehicular circulation through the site will continue to be restricted during major events.

For minor events, particularly at the new event centre, traffic management measures will be required to restrict vehicular access to the new event centre main entrance area. This will require the deployment of traffic control devices at the intersection of Exhibition Way and the internal service road in order to divert inbound traffic from Bank Street to Marche Way. Permitted vehicles, including accessible ParaTranspo buses, will be permitted to travel on Exhibition Way to the designated accessible passenger pick-up and drop-off area.

Proposed site access and internal circulation schemes for regular operations, minor events, and major events after the completion of the Lansdowne 2.0 redevelopment program are illustrated in Figure 4.1 through Figure 4.3.

## **NEW STREET NETWORKS**

Not applicable; exempted during screening and scoping.

Figure 4.1: Lansdowne 2.0 Internal Site Circulation Plan (Regular Operations)

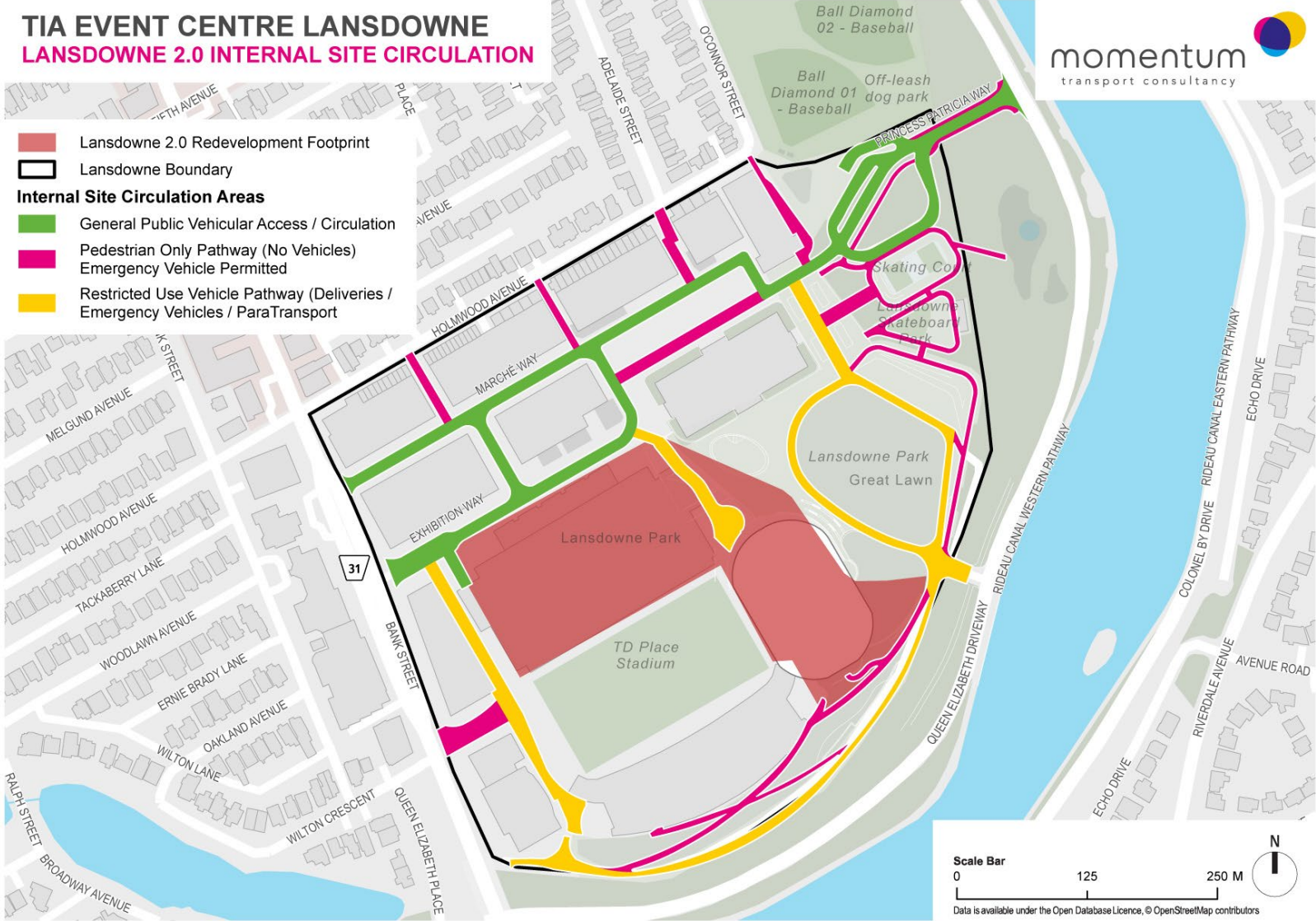


Figure 4.2: Lansdowne 2.0 Internal Site Circulation Plan (Minor Events)





Figure 4.3: Lansdowne 2.0 Internal Site Circulation Plan (Major Events)



## 4.2 Parking

### **PARKING SUPPLY**

**Auto Parking** - Lansdowne currently features an underground parking garage with a total of 1,380 spaces for public and residential use. No additional parking spaces are proposed as part of the proposed site plan application for the new event centre (Phase 1).

As part of the overall Lansdowne 2.0 project, the underground parking garage is proposed to be expanded to include an additional 386 underground parking spaces dedicated to support the additional retail space and residential units, for a total of 1,766 parking spaces. These additional spaces are contemplated as part of subsequent phases of development.

**Bicycle Parking** - Lansdowne benefits from existing surface bicycle parking that supports current day to day activity as well as special events at Lansdowne. No additional parking spaces are proposed as part of the proposed site plan application for the new event centre (Phase 1).

As part of the overall Lansdowne 2.0 project, additional bicycle parking spaces are required to subsequent phases of development at Lansdowne, namely Phase 3 for the new retail podium and two residential towers. Based on the City of Ottawa Zoning By-Laws, the minimum bicycle parking requirement for the subject property is 0.5 spaces per dwelling unit. To offset the reduced parking requirements and to encourage alternative modes of transportation, the residential bicycle parking rate is proposed to be increased to 1 space per dwelling unit, for a total of 770 bicycle parking spaces. All other bicycle parking requirements for non-residential uses are not proposed to be changed and will comply with the applicable requirements of Section 111 of the Zoning By-law.

The total number and allocation of bicycle parking spaces will be finalized in subsequent phases of design development for Lansdowne 2.0.

### **SPILLOVER PARKING**

Not applicable.

## 4.3 Boundary Street Design

### DESIGN CONCEPT

Lansdowne is located in a unique geographic location within the City of Ottawa as it interfaces with Bank Street - a traditional Mainstreet to the west, Holmwood Avenue – a local residential street to the north, and the Queen Elizabeth Driveway – a scenic parkway with regional multi-use pathways.

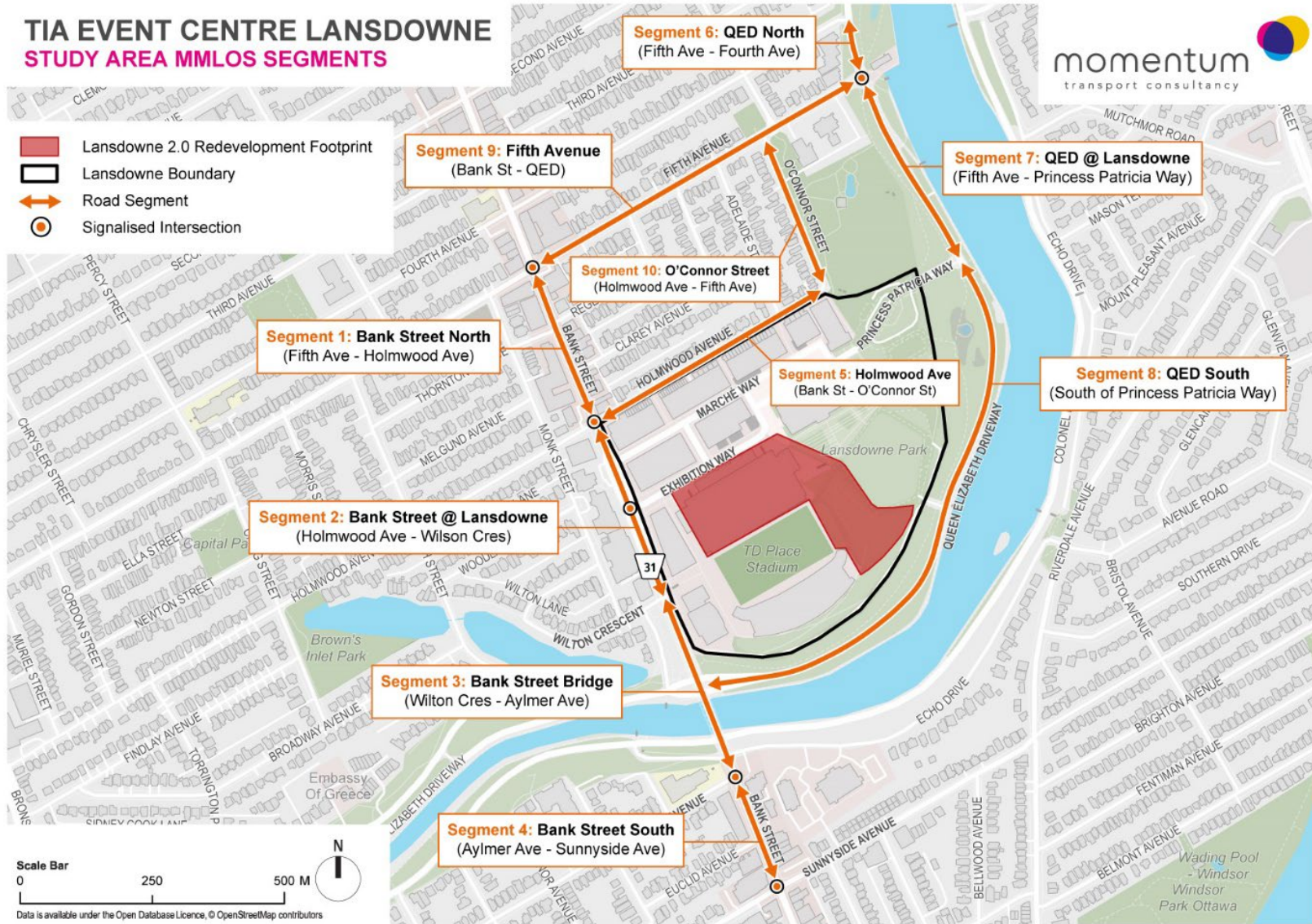
A Multimodal Level of Service (MMLoS) analysis was conducted for the following key roadway segments interfacing with Lansdowne:

- Segment 1 – Bank Street North (Fifth Avenue to Holmwood Avenue)
- Segment 2 – Bank Street at Lansdowne (Holmwood Avenue to Wilton Crescent)
- Segment 3 – Bank Street Bridge (Wilton Crescent to Aylmer Avenue)
- Segment 4 – Bank Street South (Aylmer Avenue to Sunnyside Avenue)
- Segment 5 – Holmwood Avenue (Bank Street to O'Connor Street)
- Segment 6 – QED North (Fifth Avenue to Fourth Avenue)
- Segment 7 – QED at Lansdowne (Fifth Avenue to Princess Patricia Way)
- Segment 8 – QED South (South of Princess Patricia Way)
- Segment 9 – Fifth Avenue (Bank Street to QED)
- Segment 10 – O'Connor Street (Holmwood Avenue to Fifth Avenue)

Figure 4.4 illustrates location of the MMLoS segments assessed.



Figure 4.4: Study Area MMLOS Segments



#### 4.3.1 Multi-Modal Level of Service (MMLOS)

As per the City of Ottawa Official Plan (Schedule A), Lansdowne falls within the Inner Urban Transect Policy Area, with Bank Street identified as a Mainstreet Corridor. For the purposes of the MMLOS analysis, the following designations were adopted from the Multi-Modal Level of Service (MMLOS) Guidelines:

**Bank Street** is classified as an Arterial road with a Traditional Main Street designation.

The following MMLOS targets were assumed for Bank Street:

Pedestrian Level of Service (PLOS) target of B.

Bicycle Level of Service (BLOS) target of C based on a Local Route designation .

Transit Level of Service (TLOS) target of D.

Truck Level of Service (TkLOS) target of D.

Auto Level of Service (LOS) of D.

**Holmwood Avenue** is classified as a Local road with a General Urban Area designation.

The following MMLOS targets were assumed for Holmwood Avenue:

Pedestrian Level of Service (PLOS) target of C.

Bicycle Level of Service (BLOS) target of B based on a Local Route designation .

No Transit Level of Service (TLOS) target is defined.

No Truck Level of Service (TkLOS) target is defined.

Auto Level of Service (LOS) of D.

**Queen Elizabeth Driveway** is classified as an Arterial with a General Urban Area designation.

The following MMLOS targets were assumed for Queen Elizabeth Driveway:

Pedestrian Level of Service (PLOS) target of A

Bicycle Level of Service (BLOS) target of B based on a Local Route designation

No Transit Level of Service (TLOS) target is defined

No Truck Level of Service (TkLOS) was adopted as QED is not a truck route.

Auto Level of Service (LOS) of D

**Fifth Avenue** is classified as a Collector road with a General Urban Area designation.

The following MMLOS targets were assumed for Fifth Avenue:

Pedestrian Level of Service (PLOS) target of C

Bicycle Level of Service (BLOS) target of B based on a Local Route designation

No Transit Level of Service (TLOS) target is defined

No Truck Level of Service (TkLOS) target is defined

Auto Level of Service (LOS) of D

**O'Connor Street** is classified as a Local Road with a General Urban Area designation.

The following MMLOS targets were assumed for O'Connor Street:

Pedestrian Level of Service (PLOS) target of C

Bicycle Level of Service (BLOS) target of B based on a Local Route designation

No Transit Level of Service (TLOS) target is defined

No Truck Level of Service (TkLOS) target is defined

Auto Level of Service (LOS) of D

**Table 4.1** summarizes the MMLOS targets and performance for roadway segments.

**Appendix C** contains the detailed MMLOS analysis.

Table 4.1: MMLOS Targets and Results (Segments)

Segment		PLOS		BLOS		TLOS		TkLOS	
		Target	Actual	Target	Actual	Target	Actual	Target	Actual
1	Bank Street North (Fifth - Holmwood)	B	B	C	E	D	F	D	D
2	Bank Street @ Lansdowne (Holmwood - Wilton)	B	C	C	E	D	F	D	D
3	Bank Street Bridge (Wilton - Aylmer)	B	C	C	A	D	D	D	D
4	Bank Street South (Aylmer - Sunnyside)	B	C	C	E	D	F	D	A
5	Holmwood Ave (Bank - O'Connor)	C	A	B	B	N/A	N/A	N/A	N/A
6	QED North (Fifth - Fourth)	A	F	B	A	N/A	N/A	N/A	N/A
7	QED @ Lansdowne (Fifth - Princess Patricia Way)	A	B	B	A	N/A	N/A	N/A	N/A
8	QED South (South of Princess Patricia Way)	A	B	B	A	N/A	N/A	N/A	N/A
9	Fifth Ave (Bank - QED)	C	E	B	C	N/A	N/A	N/A	N/A
10	O'Connor St (Bank - QED)	C	E	B	A	N/A	N/A	N/A	N/A



**Bank Street:**

The PLOS target of B along Bank Street, across the frontage of Lansdowne, is currently being met on the east side of the road segment. On the west side of Bank Street, however, the target is not met due to the boulevard widths. As a whole segment, Bank Street, across the frontage of Lansdowne, does not meet the PLOS target.

The BLOS target of C along Bank Street, across the frontage of Lansdowne, is currently met in the northbound travel direction as there is a curbside bike lane. However, in the southbound travel direction there is no dedicated bicycling facility. As a whole segment, Bank Street, across the frontage of Lansdowne, does not meet the BLOS target.

This BLOS target of C is not currently being met north of Wilton Crescent and south of Aylmer Avenue due to the number of vehicle lanes and lack of bicycling facilities. The BLOS target of C is, however, met over the Bank Street Bridge, between Wilton Crescent and Aylmer Avenue, due to the recently installed bicycle facilities. In order to improve the BLOS on Bank Street, improved bicycling facilities would be required.

The TLOS target of D along Bank Street, across the frontage of Lansdowne, is currently not being met due to the mixed operating condition of transit along the corridor and resulting congestion related delays. To improve the TLOS along Bank Street, improved transit priority measures can be implemented to limit delays to transit along the corridor.

**Holmwood Avenue:**

The BLOS target of B along Holmwood Avenue is currently being met on the southside of the road segment. However, the north side has a BLOS C due to the narrow bicycle lane width. Therefore, as a whole segment, Holmwood Avenue does not meet the BLOS target of B.

**Queen Elizabeth Driveway:**

The PLOS target of A along Queen Elizabeth Driveway is met for the sections south of Fifth Avenue which utilizes the multi-use pathway. North of Fifth Avenue, however, the PLOS is F because of the lack of a proper sidewalk on the west side of the corridor. It was noted, however, that there is an alternative sidewalk that is adjacent to the recent development at the Northwest corner of the intersection.

The BLOS target of B along Queen Elizabeth Driveway is currently being met due to the provision of a multi-use pathways along the Rideau Canal. It is notable however that this facility is shared with other AT users which can impact the quality of the service in practice and may put some of the higher speed cyclists into the traffic lane, especially during busy times.

**Fifth Avenue:**

The PLOS target of C along Fifth Avenue is currently not being met due to the sidewalk width, lack of buffer from traffic, and vehicle operating speeds.

The BLOS target of B is currently met on Fifth Avenue between Bank Street and O'Connor Street. However, this target is not met between O'Connor Street and Queen Elizabeth Driveway due to the narrow bike lane widths. As a whole, Fifth Avenue does not currently meet the BLOS target of B.

**O'Connor Street:**

The PLOS target of C along O'Connor Street is currently not being met due to the sidewalk widths and lack of buffer from traffic. In order to meet the PLOS target, wider sidewalks and/or boulevard buffers are needed on both sides of O'Connor Street.

The BLOS target of B along O'Connor Street is currently being met as the segment scores an LOS A in both directions of travel. It is to be noted, however, that while the southbound bike lane is separated from vehicle traffic, it traverses several residential driveways. This presents potential conflicting movements that are not reflected in the segment's BLOS.

## 4.4 Access Intersection Design

### ACCESS LOCATION

Access to Lansdowne will continue to be facilitated at three key locations: a primary all-movements access at the intersection of Bank Street / Exhibition Way, a secondary all-movements access at Queen Elizabeth Driveway and Princess Patricia Way, and a minor right-in/right-out only access on Bank Street and Marche Way.

### INTERSECTION CONTROL

The primary Bank Street / Exhibition Way intersection access is signalized and accommodates all-movements. The secondary Queen Elizabeth Driveway / Princess Patricia Way intersection access is Stop-Controlled on the minor approach. The minor Bank Street / Marche Way intersection is a right-in/right-out only intersection with a Stop-Control on the minor approach.

## 4.5 Transportation Demand Management

The initial Lansdowne Redevelopment project featured a comprehensive Transportation Demand Management (TDM) strategy to address day-to-day and special event transportation requirements. The Transportation Demand Management Plan (October 2011) for Lansdowne outlined strategies for encouraging residents, employees, and visitors to Lansdowne to utilize transit and active transportation modes to reduce reliance on single occupant vehicles (SOV) and automobile use. The plan included recommendations for both day-to-day operations (residents, employees and retail patrons), as well as for special events with attendance levels of 10,000 patrons (arena events), 25,000 patrons (stadium events), and 40,000 plus patrons (unique, expanded stadium events).

A hallmark of the TDM plan for Lansdowne is the provision of free transit service to all ticketholders attending ticketed events at Lansdowne. This innovative TDM strategy, which is the first of its kind in North America for a large mixed-use entertainment district, provides free transit to all ticketed events starting 2 hours prior to the start of events and 2 hours after the end of events held at Lansdowne. The cost of any enhanced transit service provided for events with attendance levels of 5,000 or more are borne by OSEG.

The comprehensive TDM program implemented in 2014 as part of the original revitalization of Lansdowne Park will continue to play a critical role in supporting the transportation program for Lansdowne 2.0. This includes the provision of free transit for all ticketed events at Lansdowne.

## **TDM PROGRAM**

The City of Ottawa's TDM-supportive design and infrastructure elements checklist was consulted to identify and incorporate TDM supportive measures into the design stage. An updated Transportation Demand Management Strategy for Lansdowne 2.0 was developed as part of the Lansdowne 2.0 Transportation Impact Assessment Study (Stantec – July 2023).

The TDM Checklist in support of the event centre (Phase 1) is included in Appendix D.

## **4.6 Neighbourhood Traffic Management**

Not applicable; exempted during screening and scoping.

## **4.7 Transit**

### **ROUTE CAPACITY**

Service on Bank Street currently operates with headways of 12-minutes or less on both Routes 6 and 7.

As part of the TDM program for special events at Lansdowne. Ticketed events with attendance levels of 5,000 or less are accommodated with regularly scheduled bus service on Bank Street with no service enhancements.

For ticketed events with attendance levels between 5,000 and 10,000 attendees, service enhancements on bus Route 6 and 7 are provided to support additional transit ridership demands for events. enhanced service can range from 2 additional bus trips to 8 extra trips depending on depending on attendance levels. The cost of additional trips added to support events is bourn by OSEG.

It is anticipated that the current transit service enhancements provided for minor events (attendance levels of 10,000 or less) for Phase 1 (multi-purpose event centre) will be supported adequately through the current TDM program and transit service enhancements.

For the full-build out of Lansdowne 2.0 (i.e. Phase 3), transit modal shares of 25%, 14%, and 29% were assumed for the proposed multi-family residential, shopping center, and general office land-uses.

This is expected to result in a peak hour net increase in transit trips of 152 trips during the Weekday AM peak hour, 119 transit trips in the Weekday PM Peak hour, 146 transit trips in the Weekend Saturday peak hour, and 167 transit trips in the Weekend Sunday peak hour

Currently, OC Transpo Route 6 and Route 7 provide service along Bank Street with connections to key destinations in Ottawa. Service is provided on weekdays and weekends with an average headway of 12 minutes for each route in both directions. This translates to a total of 20 two-way transit trips on Bank Street at Lansdowne (5 trips per bus route, per direction).

The OC Transpo fleet is comprised of various bus types including 40' standard buses, higher capacity 60' articulated buses, and double-decker buses.

Depending on the fleet vehicle used, the passenger capacity across the fleet varies between 57 to 110 passengers per bus, depending on the bus type.



On average, the following capacities are provided:

**Standard 40' buses:** the total carrying capacity per bus ranges between 57 to 85 passengers (standing and seated). An assumed carrying capacity of 70 passengers is assumed for Standard 40' buses.

**Articulated 60' buses:** the total carrying capacity per bus is 110 passengers (standing and seated).

**Double Decker buses:** the total carrying capacity per bus ranges between 96 to 105 passengers (standing and seated). An assumed carrying capacity of 100 passengers per bus is assumed for Double Decker buses.

Based on the current 20 two-way transit trips along Bank Street, current transit passenger carrying capacity ranges between 1,400 passengers / hr to 2200 passengers per hour, depending on the fleet mix used.

For planning purposes, an average two-way transit carrying capacity of 1,870 passengers per hour is assumed.

OC Transpo currently utilizes all bus types on Routes 6 and 7 along Bank Street. OC Transpo plans vehicle fleet mix for each trip booking to match observed and projected ridership. Based on information provided by OC Transpo, the following passenger demands are to be assumed for current ridership by bus type:

*Standard 40' Buses:*

- 40 passengers per vehicle, averaged over an hour during off-peaks.
- 45 passengers per vehicle, averaged over an hour during peak periods.

*Articulated 60' Buses:*

- 60 passengers per vehicle, averaged over an hour during off-peaks.
- 70 passengers per vehicle, averaged over an hour during peak periods.

*Double Decker Buses:*

- 85 passengers per vehicle, averaged over an hour during off-peaks.
- 90 passengers per vehicle, averaged over an hour during peak periods.

Based on the transit ridership, current two-way transit demands along Bank Street range between 900 passengers / hr to 1,800 passengers per hour depending on the fleet mix used.

For planning purposes, an average two-way transit demand of 1,400 passengers / hr is assumed for current service along Bank Street on Routes 6 and 7.

It is anticipated that the current two-way transit demands generated by Lansdowne 2.0, which ranges between 119 to 167 passengers / hr, can be accommodated within the current scheduled services on Bank Street.

The provision for transit service requirements for the full-build out of Lansdowne 2.0 should be confirmed as part of subsequent studies in support of Phase 2 and Phase 3 of development.

## 4.8 Intersection Design

### INTERSECTION CONTROL

The existing intersection control for Lansdowne will be maintained as part of the Lansdowne 2.0 redevelopment.

### INTERSECTION DESIGN

An assessment of the study area intersections was undertaken to determine the operational characteristics under the various horizons identified in the Screening and Scoping report. Intersection operational analysis was performed with Synchro 12 software package and the MMLOS analysis was completed for all modes and compared against the City of Ottawa's MMLOS targets.

#### 4.8.1 Existing Conditions

##### Intersection Capacity Analysis

Intersection operational analysis under Existing Conditions is summarized in this section.

Detailed Synchro level of service analysis results can be found in Appendix E.

Table 4.2: Existing Weekday AM and PM Peak Hour Conditions (Study Area Intersections)

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				AM	PM	AM	PM	AM	PM	AM	PM
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	C	D	0.36	0.65	21.9	35.1	27.2	31.7
		WB	Left	C	C	0.18	0.39	22.9	33.1	14.0	17.3
			Through / Right	B	B	0.21	0.29	15.9	17.7	16.0	14.4
		NB	Left / Through / Right	A	A	0.38	0.27	3.8	9.7	8.2	43.6
		SB	Left / Through / Right	A	A	0.32	0.36	8.5	6.1	25.6	34.0
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.38</b>	<b>0.65</b>	<b>8.6</b>	<b>12.1</b>	<b>--</b>	<b>--</b>
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	D	0.47	0.53	37.6	38.3	22.6	26.7
		NB	Left / Through / Right	A	A	0.29	0.30	2.6	1.9	10.8	9.0
		SB	Left / Through / Right	A	A	0.21	0.31	3.1	4.7	13.2	21.1
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.47</b>	<b>0.53</b>	<b>5.4</b>	<b>6.1</b>	<b>--</b>	<b>--</b>

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				AM	PM	AM	PM	AM	PM	AM	PM
Bank St & Exhibition Way	Signalized	WB	Left	C	D	0.27	0.50	32.5	35.1	17.2	30.8
			Right	B	D	0.20	0.28	13.3	10.5	7.5	9.4
		NB	Left / Through / Right	B	A	0.37	0.31	10.1	5.2	40.0	27.6
			SB	Left	A	A	0.14	0.28	8.5	4.8	11.6
		Through		A	A	0.16	0.23	6.7	3.1	22.7	9.6
		<b>Overall Intersection</b>		<b>B</b>	<b>A</b>	<b>0.37</b>	<b>0.50</b>	<b>10.1</b>	<b>7.3</b>	--	--
Bank St & Wilton Cr	Minor Stop	EB	Right	C	F	0.49	0.82	22.0	53.2	15.6	40.8
			NB	Left	B	B	0.20	0.36	10.7	13.6	5.7
		Through		A	A	--	--	1.8	3.3	5.7	13.7
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.49</b>	<b>0.82</b>	<b>4.8</b>	<b>10.2</b>	--	--
Bank St & Echo Dr	Minor Stop	EB	Right	B	C	0.06	0.07	12.5	16.1	1.2	1.2
			<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.06</b>	<b>0.07</b>	<b>0.3</b>	<b>0.2</b>	--
Bank St & Aylmer Ave	Signalized	EB	Left / Right	C	C	0.26	0.34	29.5	31.1	19.9	22.8
			NB	Left / Through	A	A	0.42	0.38	3.8	4.9	16.8
		SB		Through / Right	A	A	0.33	0.45	7.2	7.6	28.1
			<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.42</b>	<b>0.45</b>	<b>6.5</b>	<b>7.5</b>	--
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	C	D	0.43	0.65	26.8	42.2	32.6	53.6
			WB	Left / Through / Right	C	D	0.76	0.93	22.5	53.1	67.9
		NB		Left / Through / Right	B	A	0.69	0.29	16.4	9.2	80.8
			SB	Left / Through / Right	B	C	0.78	0.88	19.2	20.2	30.7
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.10</b>	<b>0.32</b>	<b>1.6</b>	<b>2.6</b>	--	--
QED & Princess Patricia Way	Minor Stop	NB	Left / Through	A	A	0.06	0.05	8.2	8.9	1.2	1.2
			EB	Left / Right	B	C	0.10	0.32	13.1	19.5	1.8
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.10</b>	<b>0.32</b>	<b>1.6</b>	<b>2.6</b>	--	--



Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				AM	PM	AM	PM	AM	PM	AM	PM
Queen Elizabeth Dr & Fifth Ave	Signalized	EB	Left / Right	B	D	0.21	0.37	17.6	36.6	12.9	22.0
		NB	Left / Through	A	A	0.32	0.24	7.7	5.0	21.9	21.5
		SB	Through / Right	A	A	0.42	0.53	8.6	7.7	30.5	66.0
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.42</b>	<b>0.53</b>	<b>9.2</b>	<b>9.2</b>	--	--
Bank St & Marche Way	Minor Stop	WB	Left / Right	C	B	0.57	0.15	21.1	12.9	21.0	3.0
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.57</b>	<b>0.15</b>	<b>4.6</b>	<b>0.8</b>	--	--
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	A	A	0.14	0.15	7.9	8.0	--	--
		WB	Right	A	A	0.07	0.10	6.4	6.5	--	--
		NB	Left / Through / Right	A	A	0.09	0.12	7.5	7.7	--	--
		SB	Right	A	A	0.10	0.09	6.6	6.5	--	--
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.14</b>	<b>0.15</b>	<b>7.1</b>	<b>7.2</b>	--	--

Table 4.3: Existing Weekday AM and PM Peak Hour Conditions (Internal Lansdowne Intersections)

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				AM	PM	AM	PM	AM	PM	AM	PM
Garage Access at Exhibition Way	Two-Way Stop	WB	Left	A	A	0.0	0.01	0.0	0.1	0.0	0.1
			Through	A	A	--	0.01	0.7	0.4	--	0.1
		NB	Left / Right	B	C	0.05	0.14	12.9	15.6	0.2	3.6
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.11</b>	<b>0.16</b>	<b>1.3</b>	<b>1.9</b>	--	--
Exhibition Way and Service Roadway	All-Way Stop	EB	Left / Through	A	A	0.13	0.16	7.7	7.9	--	--
		WB	Through / Right	A	A	0.08	0.18	7.4	7.9	--	--
		SB	Left / Right	A	A	0.01	0.01	7.2	7.4	--	--
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.14</b>	<b>0.18</b>	<b>7.6</b>	<b>7.9</b>	--	--
Marché Way and Service Roadway	All-Way Stop	EB	Left / Through	A	A	0.00	0.01	6.7	6.6	--	--
		WB	Left / Through	A	A	0.15	0.01	7.7	7.1	--	--
		NB	Left / Right	A	A	0.01	0.01	7.1	6.8	--	--
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.15</b>	<b>0.01</b>	<b>7.6</b>	<b>6.9</b>	--	--

Marché Way and Exhibition Way	All-Way Stop	EB	Through / Right	A	A	0.00	0.01	6.9	7.0	--	--
		WB	Left / Through	A	A	0.15	0.19	8.1	8.5	--	--
		NB	Left / Right	A	A	0.14	0.14	7.8	7.4	--	--
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.16</b>	<b>0.19</b>	<b>8.0</b>	<b>7.9</b>	<b>--</b>	<b>--</b>
Garage Access at Princess Patricia Way	Two-Way Stop	EB	Left	A	A	0.00	0.00	0.00	0.00	0.1	0.1
			Through	A	A	0.00	0.00	1.0	0.7	0.1	0.1
		SB	Left / Right	A	A	0.01	0.07	9.3	9.5	0.3	1.7
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.09</b>	<b>0.07</b>	<b>0.7</b>	<b>2.5</b>	<b>--</b>	<b>--</b>

All study area intersections are currently operating with overall acceptable levels of service under the Weekday AM and PM peak hour conditions.

The intersection of Bank Street and Sunnyside Avenue is currently operating with specific movements at or close to theoretical capacity in the southbound approach (AM Peak) and westbound approach (PM Peak). The eastbound approach at intersection of Bank Street and Wilton Crescent is currently operating with a LOS F during the PM peak hour. The delays are associated with limited gaps in traffic in the southbound direction associated with the recently installed 3-lane cross-section of Bank Street.

No mitigation measures are recommended to improve intersection operations.

Table 4.4: Existing Weekend Saturday Peak Hour Conditions (Study Area Intersections)

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	C	0.63	34.2	28.1
		WB	Left	D	0.46	36.6	19.4
			Through / Right	B	0.39	18.5	17.0
		NB	Left / Through / Right	A	0.27	3.7	14.5
		SB	Left / Through / Right	A	0.29	5.1	28.2
		<b>Overall Intersection</b>		<b>A</b>	<b>0.63</b>	<b>9.7</b>	<b>--</b>
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	0.54	38.5	26.7
		NB	Left / Through / Right	A	0.29	2.2	9.2
		SB	Left / Through / Right	A	0.30	3.6	16.1
		<b>Overall Intersection</b>		<b>A</b>	<b>0.54</b>	<b>5.7</b>	<b>--</b>
Bank St & Exhibition Way	Signalized	WB	Left	C	0.39	33.9	23.9
			Right	B	0.33	11.8	10.4
		NB	Left / Through / Right	A	0.28	4.5	22.7
		SB	Left	A	0.28	6.9	16.5
			Through	A	0.21	4.5	22.2
		<b>Overall Intersection</b>		<b>A</b>	<b>0.39</b>	<b>7.0</b>	<b>--</b>
Bank St & Wilton Cr	Minor Stop	NB	Left	B	0.19	11.6	4.2
			Through	A	--	1.8	4.2
		EB	Right	D	0.58	29.9	20.4
<b>Overall Intersection</b>		<b>B</b>	<b>0.58</b>	<b>5.1</b>	<b>--</b>		
Bank St & Echo Dr	Minor Stop	EB	Right	B	0.08	14.3	1.8
		<b>Overall Intersection</b>		<b>A</b>	<b>0.08</b>	<b>0.3</b>	<b>--</b>
Bank St & Aylmer Ave	Signalized	EB	Left / Right	C	0.20	30.2	15.8
		NB	Left / Through	A	0.37	5.5	22.4
		SB	Through / Right	A	0.40	7.2	38.4
		<b>Overall Intersection</b>		<b>A</b>	<b>0.40</b>	<b>7.1</b>	<b>--</b>



Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	E	0.75	59.8	37.5
		WB	Left / Through / Right	D	0.71	35.9	38.6
		NB	Left / Through / Right	A	0.31	6.6	32.6
		SB	Left / Through / Right	A	0.44	4.1	11.2
		<b>Overall Intersection</b>		<b>B</b>	<b>0.75</b>	<b>13.2</b>	<b>--</b>
QED & Princess Patricia Way	Minor Stop	NB	Left / Through	A	0.05	8.3	1.2
		EB	Left / Right	C	0.28	15.2	6.6
		<b>Overall Intersection</b>		<b>A</b>	<b>0.28</b>	<b>3.0</b>	<b>--</b>
QED & Fifth Ave	Signalized	EB	Left / Right	D	0.42	37.3	25.2
		NB	Left / Through	A	0.29	5.4	27.5
		SB	Through / Right	A	0.37	6.1	40.5
		<b>Overall Intersection</b>		<b>A</b>	<b>0.42</b>	<b>9.2</b>	<b>--</b>
Bank St & Marche Way	Minor Stop	WB	Left / Right	B	0.14	12.4	3.0
		<b>Overall Intersection</b>		<b>A</b>	<b>0.14</b>	<b>0.8</b>	<b>--</b>
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	A	0.11	7.9	--
		WB	Right	A	0.09	6.5	--
		NB	Left / Through / Right	A	0.16	7.9	--
		SB	Right	A	0.10	6.6	--
		<b>Overall Intersection</b>		<b>A</b>	<b>0.16</b>	<b>7.2</b>	<b>--</b>

Table 4.5: Existing Weekend Saturday Peak Hour Conditions (Internal Lansdowne Intersections)

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95th (m)
Garage Access at Exhibition Way	Two-Way Stop	WB	Left	A	0.00	8.4	0
			Through	A	--	0	--
		NB	Left / Right	C	0.18	15.3	0.7
		<b>Overall Intersection</b>		<b>A</b>	<b>0.19</b>	<b>2.9</b>	<b>--</b>
Exhibition Way and Service Roadway	All-Way Stop	EB	Left / Through	A	0.15	7.8	--
		WB	Through / Right	A	0.11	7.5	--
		SB	Left / Right	A	0.01	7.3	--
		<b>Overall Intersection</b>		<b>A</b>	<b>0.15</b>	<b>7.7</b>	<b>--</b>
Marché Way and Service Roadway	All-Way Stop	EB	Left / Through	A	0.02	7	--
		WB	Left / Through	A	0.09	7.4	--
		NB	Left / Right	A	0.01	7	--
		<b>Overall Intersection</b>		<b>A</b>	<b>0.09</b>	<b>7.3</b>	<b>--</b>
Marché Way and Exhibition Way	All-Way Stop	EB	Through / Right	A	0.02	7.3	--
		WB	Left / Through	A	0.12	8.1	--
		NB	Left / Right	A	0.15	8.1	--
		<b>Overall Intersection</b>		<b>A</b>	<b>0.16</b>	<b>8.0</b>	<b>--</b>
Garage Access at Princess Patricia Way	Two-Way Stop	EB	Left	A	0.00	7.6	0.1
			Through	A	--	0	0.1
		SB	Left / Right	B	0.13	10.1	3.5
		<b>Overall Intersection</b>		<b>A</b>	<b>0.13</b>	<b>3.3</b>	<b>--</b>

As illustrated above, all study area intersections are currently operating with overall acceptable levels of service under Weekend Saturday peak hour conditions.

Table 4.6: Existing Weekend Sunday Peak Hour Conditions (Study Area Intersections)

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	C	0.53	30.2	26.4
		WB	Left	D	0.65	41.7	30.7
			Through / Right	C	0.36	20.1	20.0
		NB	Left / Through / Right	A	0.30	7.9	51.3
		SB	Left / Through / Right	A	0.33	6.5	30.8
		<b>Overall Intersection</b>		<b>B</b>	<b>0.65</b>	<b>12.9</b>	<b>--</b>
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	0.53	38.2	26.7
		NB	Left / Through / Right	A	0.34	7.2	49.5
		SB	Left / Through / Right	A	0.30	8.2	44.3
		<b>Overall Intersection</b>		<b>A</b>	<b>0.53</b>	<b>10.0</b>	<b>--</b>
Bank St & Exhibition Way	Signalized	WB	Left	D	0.53	35.8	31.2
			Right	B	0.29	10.2	9.4
		NB	Left / Through / Right	B	0.36	11.3	37.9
		SB	Left	B	0.41	12.4	26.0
			Through	A	0.21	5.1	23.4
		<b>Overall Intersection</b>		<b>B</b>	<b>0.53</b>	<b>11.6</b>	<b>--</b>
Bank St & Wilton Cr	Minor Stop	NB	Left	B	0.18	11.4	5.1
			Through	A	--	1.7	5.1
		EB	Right	E	0.62	25.5	28.8
		<b>Overall Intersection</b>		<b>A</b>	<b>0.62</b>	<b>4.6</b>	<b>--</b>
Bank St & Echo Dr	Minor Stop	EB	Right	C	0.21	17.8	0.8
		<b>Overall Intersection</b>		<b>A</b>	<b>0.41</b>	<b>1.1</b>	<b>--</b>
Bank St & Aylmer Ave	Signalized	EB	Left / Right	D	0.40	35.7	21.9
		NB	Left / Through	A	0.27	2.4	14.3
		SB	Through / Right	A	0.31	3.4	26.2
		<b>Overall Intersection</b>		<b>A</b>	<b>0.40</b>	<b>4.6</b>	<b>--</b>



Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	E	0.78	67.8	34.5
		WB	Left / Through / Right	C	0.70	32.8	35.5
		NB	Left / Through / Right	B	0.37	16.5	47.5
		SB	Left / Through / Right	A	0.49	4.7	11.3
		<b>Overall Intersection</b>		<b>B</b>	<b>0.78</b>	<b>16.5</b>	<b>--</b>
QED & Princess Patricia Way	Minor Stop	NB	Left / Through	A	0.05	7.6	0.2
		EB	Left / Right	B	0.31	11.9	1.4
		<b>Overall Intersection</b>		<b>A</b>	<b>0.23</b>	<b>5.3</b>	<b>--</b>
QED & Fifth Ave	Signalized	EB	Left / Right	D	0.61	40.6	37.4
		NB	Left / Through	A	0.29	7.3	27.9
		SB	Through / Right	A	0.04	5.6	5.7
		<b>Overall Intersection</b>		<b>B</b>	<b>0.61</b>	<b>19.1</b>	<b>--</b>
Bank St & Marche Way	Minor Stop	WB	Left / Right	B	0.30	14	1.3
		<b>Overall Intersection</b>		<b>A</b>	<b>0.27</b>	<b>1.9</b>	<b>--</b>
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	A	0.23	9.9	0.9
		WB	Right	A	0.30	9.4	1.3
		NB	Left / Through / Right	B	0.34	10.6	1.5
		SB	Right	A	0.14	8.5	0.5
		<b>Overall Intersection</b>		<b>A</b>	<b>0.34</b>	<b>9.8</b>	<b>--</b>

Table 4.7: Existing Weekend Saturday Peak Hour Conditions (Internal Lansdowne Intersections)

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95th (m)
Garage Access at Exhibition Way	Two-Way Stop	WB	Left	A	0.00	8.5	0
			Through	A	--	0	--
		NB	Left / Right	C	0.24	17.1	1
		<b>Overall Intersection</b>		<b>A</b>	<b>0.25</b>	<b>3.2</b>	<b>--</b>
Exhibition Way and Service Roadway	All-Way Stop	EB	Left / Through	A	0.18	8	0.7
		WB	Through / Right	A	0.13	7.7	0.5
		SB	Left / Right	A	0.01	7.4	0
		<b>Overall Intersection</b>		<b>A</b>	<b>0.18</b>	<b>7.9</b>	<b>--</b>
Marché Way and Service Roadway	All-Way Stop	EB	Left / Through	A	0.02	7.1	0.1
		WB	Left / Through	A	0.2	8	0.7
		NB	Left / Right	A	0.01	7.2	0
		<b>Overall Intersection</b>		<b>A</b>	<b>0.20</b>	<b>7.9</b>	<b>--</b>
Marché Way and Exhibition Way	All-Way Stop	EB	Through / Right	A	0.02	7.3	0.1
		WB	Left / Through	A	0.07	7.9	0.3
		NB	Left / Right	A	0.18	8.2	0.7
		<b>Overall Intersection</b>		<b>A</b>	<b>0.19</b>	<b>8.0</b>	<b>--</b>
Garage Access at Princess Patricia Way	Two-Way Stop	EB	Left	A	0.00	7.5	0
			Through	A	--	0	--
		SB	Left / Right	B	0.23	10.7	0.9
		<b>Overall Intersection</b>		<b>A</b>	<b>0.23</b>	<b>5.3</b>	<b>--</b>

As illustrated above, all study area intersections are currently operating with overall acceptable levels of service under Weekend Saturday peak hour conditions.

As illustrated above, all study area intersections are currently operating with overall acceptable levels of service on Weekend Sunday peak periods with concurrent events at Lansdowne.

The eastbound approach at intersection of Bank Street and Wilton Crescent is currently operating with a LOS E. The delays at this intersection are not directly attributed to event traffic held at Lansdowne and are associated with limited gaps in traffic in the southbound direction associated with the recently installed 3-lane cross-section of Bank Street.

No mitigation measure is recommended to improve intersection operations.

Table 4.8: Existing Minor Event (Arena at TD Place) Peak Hour Conditions

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	D	C	0.65	0.51	36.9	31.9	32.3	18.8
		WB	Left	C	C	0.42	0.34	33.3	34.4	18.8	15.5
			Through / Right	B	B	0.30	0.30	19.0	19.5	15.6	12.6
		NB	Left / Through / Right	B	A	0.30	0.24	10.0	6.0	49.8	34.2
		SB	Left / Through / Right	A	A	0.35	0.20	6.3	3.6	33.6	15.6
		<b>Overall Intersection</b>		<b>B</b>	<b>A</b>	<b>0.65</b>	<b>0.51</b>	<b>12.6</b>	<b>9.0</b>	--	--
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	D	0.54	0.47	38.1	37.7	27.8	22.3
		NB	Left / Through / Right	A	A	0.37	0.29	2.9	3.7	13.9	22.1
		SB	Left / Through / Right	A	A	0.32	0.20	4.8	4.4	20.2	24.4
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.54</b>	<b>0.47</b>	<b>6.5</b>	<b>6.6</b>	--	--
Bank St & Exhibition Way	Signalized	WB	Left	D	D	0.50	0.64	35.1	36.4	30.8	43.5
			Right	B	D	0.37	0.57	10.5	9.6	11.2	16.2
		NB	Left / Through / Right	A	A	0.33	0.17	4.9	4.9	26.6	12.4
		SB	Left	A	A	0.41	0.25	7.4	5.8	10.5	8.8
			Through	A	A	0.20	0.14	3.1	4.4	8.8	7.6
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.50</b>	<b>0.64</b>	<b>7.6</b>	<b>11.6</b>	--	--
Bank St & Wilton Cr	Minor Stop	EB	Right	F	C	0.85	0.32	52.8	18.8	45.6	7.8
		NB	Left	B	B	0.19	0.07	12.1	10.3	5.3	1.8
			Through	A	A	--	--	2.2	0.6	5.3	1.8
		<b>Overall Intersection</b>		<b>B</b>	<b>A</b>	<b>0.85</b>	<b>0.32</b>	<b>10.5</b>	<b>2.9</b>	--	--
Bank St & Echo Dr	Minor Stop	EB	Right	C	B	0.11	0.02	15.8	10.4	2.4	0.6
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.11</b>	<b>0.02</b>	<b>0.4</b>	<b>0.2</b>	--	--



Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Bank St & Aylmer Ave	Signalized	EB	Left / Right	D	C	0.35	0.03	36.4	27.2	26.1	4.4
		NB	Left / Through	A	A	0.39	0.08	5.4	5.3	23.6	8.1
		SB	Through / Right	A	A	0.32	0.10	6.4	5.2	28.0	9.6
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.39</b>	<b>0.10</b>	<b>7.6</b>	<b>5.7</b>	--	--
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	D	D	0.73	0.48	52.2	44.4	#42.6	19.1
		WB	Left / Through / Right	C	C	0.76	0.33	32.6	20.8	49.7	11.9
		NB	Left / Through / Right	A	A	0.30	0.12	8.1	3.2	32.2	11.0
		SB	Left / Through / Right	A	A	0.53	0.24	7.5	3.5	23.4	21.2
		<b>Overall Intersection</b>		<b>B</b>	<b>A</b>	<b>0.76</b>	<b>0.48</b>	<b>15.2</b>	<b>7.0</b>	--	--
QED & Princess Patricia Way	Minor Stop	NB	Left / Through	A	A	0.13	0.01	9.3	7.6	2.4	0.0
		EB	Left / Right	C	C	0.36	0.59	21.6	16.1	9.6	24.0
		<b>Overall Intersection</b>		<b>C</b>	<b>A</b>	<b>0.36</b>	<b>0.59</b>	<b>3.4</b>	<b>10.4</b>	--	--
Queen Elizabeth Dr & Fifth Ave	Signalized	EB	Left / Right	C	C	0.38	0.39	28.6	28.7	22.4	23.4
		NB	Left / Through	A	A	0.34	0.32	6.8	6.5	27.9	29.4
		SB	Through / Right	B	A	0.63	0.20	10.7	5.6	78.2	18.0
		<b>Overall Intersection</b>		<b>B</b>	<b>A</b>	<b>0.63</b>	<b>0.39</b>	<b>11.2</b>	<b>9.8</b>	--	--
Bank St & Marche Way	Minor Stop	WB	Left / Right	B	B	0.11	0.27	12.3	13.4	2.4	6.6
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.11</b>	<b>0.27</b>	<b>0.6</b>	<b>2.1</b>	--	--
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	A	A	0.15	0.07	8.1	7.4	--	--
		WB	Right	A	A	0.13	0.06	6.7	6.4	--	--
		NB	Left / Through / Right	A	A	0.18	0.08	8.0	7.0	--	--
		SB	Right	A	A	0.08	0.09	6.5	6.5	--	--
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.18</b>	<b>0.09</b>	<b>7.4</b>	<b>6.8</b>	--	--

Table 4.9: Existing Minor Event (Arena at TD Place) Internal Lansdowne Intersections

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Garage Access at Exhibition Way	Two-Way Stop	WB	Left	A	A	0.00	--	8.8	0	0	0
			Through	A	A	--	0	0	0	--	0
		NB	Left / Right	C	C	0.29	0.43	19.8	24.7	1.2	2.1
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.30</b>	<b>0.44</b>	<b>3.3</b>	<b>5.2</b>	<b>--</b>	<b>--</b>
Exhibition Way and Service Roadway	All-Way Stop	EB	Left / Through	A	A	0.28	0.25	8.7	8.7	1.2	1
		WB	Through / Right	A	A	0.15	0.35	7.9	9.4	0.5	1.6
		SB	Left / Right	A	A	0.01	0.01	7.6	7.9	0	0
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.29</b>	<b>0.36</b>	<b>8.4</b>	<b>9.1</b>	<b>--</b>	<b>--</b>
Marché Way and Service Roadway	All-Way Stop	EB	Left / Through	A	A	0.02	0.03	7	7.2	0.1	0.1
		WB	Left / Through	A	A	0.06	0.18	7.3	7.9	0.2	0.7
		NB	Left / Right	A	A	0.01	0.01	7	7.2	0	0
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.07</b>	<b>0.18</b>	<b>7.2</b>	<b>7.8</b>	<b>--</b>	<b>--</b>
Marché Way and Exhibition Way	All-Way Stop	EB	Through / Right	A	A	0.03	0.03	7.8	7.6	0.1	0.1
		WB	Left / Through	A	A	0.23	0.11	9.2	8.2	0.9	0.4
		NB	Left / Right	A	A	0.31	0.25	9.7	8.5	1.4	1
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.32</b>	<b>0.25</b>	<b>9.4</b>	<b>8.3</b>	<b>--</b>	<b>--</b>
Garage Access at Princess Patricia Way	Two-Way Stop	EB	Left	A	A	0.00	0.00	8.1	7.4	0	0.00
			Through	A	A	--	0.00	0	0.00	--	0.00
		SB	Left / Right	B	B	0.14	0.47	11.3	13.2	0.5	19.6
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.14</b>	<b>0.47</b>	<b>2.2</b>	<b>9.3</b>	<b>--</b>	<b>--</b>

As illustrated above, all study area intersections are currently operating with overall acceptable levels of service during Minor Events held at the Arena at TD Place.

The eastbound approach at intersection of Bank Street and Wilton Crescent is currently operating with a LOS F. This occurs during the event Ingress period which overlaps with the regular PM peak period. The delays at this intersection are not directly attributed to event traffic held at Lansdowne and are associated with limited gaps in traffic in the southbound direction associated with the recently installed 3-lane cross-section of Bank Street. No mitigation measures are recommended to improve intersection operations.

Table 4.10: Existing Major Event (Stadium at TD Place) Peak Hour Conditions

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	D	D	0.67	0.65	35.8	36.0	34.5	31.8
		WB	Left	C	C	0.42	0.21	30.3	24.7	19.8	12.1
			Through / Right	B	B	0.40	0.45	17.4	19.3	20.3	23.1
		NB	Left / Through / Right	A	A	0.32	0.20	6.5	5.6	28.7	18.9
		SB	Left / Through / Right	A	A	0.42	0.23	7.4	5.6	41.4	21.1
		<b>Overall Intersection</b>		<b>B</b>	<b>B</b>	<b>0.67</b>	<b>0.65</b>	<b>11.6</b>	<b>11.8</b>	--	--
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	D	0.61	0.61	38.5	38.7	34.1	32.8
		NB	Left / Through / Right	A	A	0.48	0.25	7.1	5.0	38.8	17.4
		SB	Left / Through / Right	A	A	0.42	0.23	6.7	4.8	37.4	16.6
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.61</b>	<b>0.61</b>	<b>9.8</b>	<b>10.0</b>	--	--
Bank St & Exhibition Way	Signalized	WB	Left	<i>Movements Temporarily Restricted During Major Events</i>							
			Right								
		NB	Left / Through / Right	A	A	0.24	0.12	0.2	0.1	0.0	0.0
		SB	Left	<i>Movements Temporarily Restricted During Major Events</i>							
			Through	A	A	0.21	0.12	0.1	0.1	0.0	0.0
<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.24</b>	<b>0.12</b>	<b>0.2</b>	<b>0.1</b>	--	--		
Bank St & Wilton Cr	Minor Stop	EB	Right	F	B	0.97	0.01	81.9	13.2	60.0	0.0
		NB	Left	B	A	0.19	--	12.1	0.0	5.3	0.0
			Through	A	--	--	--	2.2	--	5.3	0.0
		<b>Overall Intersection</b>		<b>C</b>	<b>A</b>	<b>0.97</b>	<b>0.01</b>	<b>14.2</b>	<b>0.1</b>	--	--
Bank St & Echo Dr	Minor Stop	EB	Right	C	B	0.22	0.05	17.7	10.3	4.8	1.2
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.22</b>	<b>0.05</b>	<b>0.8</b>	<b>0.5</b>	--	--



Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Bank St & Aylmer Ave	Signalized	EB	Left / Right	D	C	0.50	0.17	38.1	23.5	33.9	11.4
		NB	Left / Through	A	A	0.41	0.19	7.8	5.9	43.3	16.6
		SB	Through / Right	A	A	0.43	0.17	7.9	5.5	47.0	14.4
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.50</b>	<b>0.19</b>	<b>9.9</b>	<b>6.6</b>	--	--
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	E	D	0.84	0.53	64.5	42.8	62.2	24.9
		WB	Left / Through / Right	D	C	0.82	0.48	43.7	28.2	69.7	21.2
		NB	Left / Through / Right	A	A	0.36	0.15	7.8	4.1	31.4	13.6
		SB	Left / Through / Right	B	A	0.68	0.18	12.8	4.1	64.8	15.4
		<b>Overall Intersection</b>		<b>C</b>	<b>B</b>	<b>0.84</b>	<b>0.53</b>	<b>20.2</b>	<b>10.6</b>	--	--
QED & Princess Patricia Way	Minor Stop	NB	Left / Through	A	A	0.14	0.05	9.9	8.2	3.0	0.6
		EB	Left / Right	F	E	0.77	0.87	50.5	39.7	34.2	58.8
		<b>Overall Intersection</b>		<b>D</b>	<b>C</b>	<b>0.77</b>	<b>0.87</b>	<b>8.7</b>	<b>19.2</b>	--	--
Queen Elizabeth Dr & Fifth Ave	Signalized	EB	Left / Right	C	D	0.58	0.68	33.3	36.7	35.6	45.8
		NB	Left / Through	B	A	0.56	0.40	11.9	8.6	49.3	39.1
		SB	Through / Right	B	A	0.81	0.39	18.9	8.4	156.5	39.1
		<b>Overall Intersection</b>		<b>B</b>	<b>B</b>	<b>0.81</b>	<b>0.68</b>	<b>18.8</b>	<b>14.6</b>	--	--
Bank St & Marche Way	Minor Stop	WB	Left / Right	<i>Movements Temporarily Restricted During Major Events</i>							
		<b>Overall Intersection</b>									
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	A	A	0.17	0.11	8.5	8.5	--	--
		WB	Right	A	A	0.19	0.11	6.9	6.6	--	--
		NB	Left / Through / Right	A	B	0.26	0.43	8.4	10	--	--
		SB	Right	A	A	0.13	0.05	6.7	6.4	--	--
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.26</b>	<b>0.43</b>	<b>7.7</b>	<b>8.8</b>	--	--

As illustrated above, all study area intersections are currently operating with overall acceptable levels of service during Major Events held at the Stadium at TD Place.

The eastbound approach at intersection of Bank Street and Wilton Crescent is currently operating with a LOS F. This occurs during the event Ingress period which overlaps with the regular PM peak period. The delays at this intersection are not directly attributed to event traffic held at Lansdowne and are associated with limited gaps in traffic in the southbound direction associated with the recently installed 3-lane cross-section of Bank Street. No mitigation measures are recommended to improve intersection operations.

In addition, the eastbound approach at the Queen Elizabeth Drive and Princess Patricia Way intersection is shown to operate with an LOS rating of F and E for the Ingress and Egress periods, respectively. Although the analysis indicates that the movements are operating with delays, the performance of these intersections are adequately managed through the deployment of Ottawa Police Point duty as part of the traffic management measures for Major Events at Lansdowne.

No mitigation measures are recommended to improve intersection operations.

#### 4.8.2 2028 Future Conditions

##### Intersection Capacity Analysis

Intersection operational analysis under Future 2028 Conditions are summarized in this section.

Detailed Synchro level of service analysis results can be found in Appendix E.

Table 4.11: 2028 Future Weekday AM and PM Peak Hour

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				AM	PM	AM	PM	AM	PM	AM	PM
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	C	C	0.37	0.44	22.2	22.5	28.4	31.7
		WB	Left	C	C	0.20	0.26	23.1	24.4	14.8	17.9
			Through / Right	B	B	0.21	0.20	15.9	14.1	16.4	14.3
		NB	Left / Through / Right	A	B	0.40	0.35	3.5	13.9	5.3	50.1
		SB	Left / Through / Right	A	A	0.33	0.44	8.6	9.8	26.4	37.5
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.40</b>	<b>0.44</b>	<b>8.6</b>	<b>13.4</b>	<b>--</b>	<b>--</b>

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				AM	PM	AM	PM	AM	PM	AM	PM
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	D	0.48	0.55	37.8	38.8	23.3	27.6
		NB	Left / Through / Right	A	A	0.30	0.33	2.2	1.9	4.4	9.1
		SB	Left / Through / Right	A	A	0.21	0.33	3.1	3.4	13.6	14.3
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.48</b>	<b>0.55</b>	<b>5.2</b>	<b>5.5</b>	--	--
Bank St & Exhibition Way	Signalized	WB	Left	C	D	0.26	0.51	32.4	35.4	16.5	30.2
			Right	B	B	0.19	0.27	13.5	10.6	7.1	9.0
		NB	Left / Through / Right	A	A	0.36	0.32	9.1	5.5	40.8	29.0
		SB	Left	A	A	0.13	0.25	8.1	4.7	10.5	5.8
			Through	A	A	0.16	0.24	6.6	3.1	23.7	10.2
<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.36</b>	<b>0.51</b>	<b>9.4</b>	<b>7.3</b>	--	--		
Bank St & Wilton Cr	Minor Stop	EB	Right	C	F	0.52	0.89	23.5	66.9	27.4	88.7
		NB	Left	B	B	0.21	0.38	10.9	14.4	6.1	15.2
			Through	A	A	--	--	1.9	3.8		
<b>Overall Intersection</b>		<b>A</b>	<b>C</b>	<b>0.52</b>	<b>0.89</b>	<b>5.3</b>	<b>12.9</b>	--	--		
Bank St & Echo Dr	Minor Stop	EB	Right	B	C	0.06	0.1	12.8	20.0	2.2	3.2
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.36</b>	<b>0.53</b>	<b>0.3</b>	<b>0.3</b>	--	--
Bank St & Aylmer Ave	Signalized	EB	Left / Right	C	C	0.30	0.37	29.6	31.5	21.8	24.2
		NB	Left / Through	A	A	0.44	0.41	3.5	4.3	m15.2	m14.2
		SB	Through / Right	A	A	0.35	0.48	7.4	8.0	29.5	47.8
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.44</b>	<b>0.48</b>	<b>6.5</b>	<b>7.6</b>	--	--
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	D	F	0.72	1.15	49.6	154.9	#47.3	#76.3
		WB	Left / Through / Right	D	F	0.89	1.10	38.8	104	#80.4	#111.2
		NB	Left / Through / Right	D	C	0.96	0.45	43.1	20.4	#128.8	45.7
		SB	Left / Through / Right	B	C	1.14dl	0.91	16.2	20.6	30.9	#99.6
		<b>Overall Intersection</b>		<b>C</b>	<b>D</b>	<b>0.96</b>	<b>1.15</b>	<b>34.9</b>	<b>45.7</b>	--	--



Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				AM	PM	AM	PM	AM	PM	AM	PM
QED & Princess Patricia Way	Minor Stop	NB	Left	A	A	0.06	0.06	8.3	9.1	1.6	1.7
			Through	A		--		0			
		EB	Left / Right	B	C	0.12	0.42	14.1	23.7	3.1	15.2
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.10</b>	<b>0.42</b>	<b>1.8</b>	<b>2.6</b>	<b>--</b>	<b>--</b>
Queen Elizabeth Dr & Fifth Ave	Signalized	EB	Left / Right	C	C	0.23	0.34	23.8	31.8	19.2	26.3
		NB	Left / Through	C	B	0.50	0.44	21.3	15.0	48.5	42.6
		SB	Through / Right	C	C	0.64	0.77	24.5	23.2	67.2	119.7
		<b>Overall Intersection</b>		<b>C</b>	<b>C</b>	<b>0.64</b>	<b>0.77</b>	<b>23.2</b>	<b>21.9</b>	<b>--</b>	<b>--</b>
Bank St & Marche Way	Minor Stop	WB	Right	B	A	0.08	0.16	12.8	9.5	1.4	4.5
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.08</b>	<b>0.16</b>	<b>0.4</b>	<b>0.9</b>	<b>--</b>	<b>--</b>
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	A	A	0.15	0.16	8.4	8.6	0.5	0.6
		WB	Right	A	A	0.09	0.13	7.3	7.5	0.3	0.4
		NB	Left / Through / Right	A	A	0.10	0.13	7.9	8.2	0.3	0.5
		SB	Right	A	A	0.13	0.12	7.5	7.5	0.4	0.4
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.15</b>	<b>0.16</b>	<b>7.8</b>	<b>8</b>	<b>--</b>	<b>--</b>

Table 4.12: 2028 Future Weekday AM and PM Peak (Internal Lansdowne Intersections)

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				AM	PM	AM	PM	AM	PM	AM	PM
Exhibition Way and Service Roadway	All-Way Stop	EB	Left / Through	A	A	0.19	0.28	8.1	8.7	0.7	1.1
		WB	Through / Right	A	A	0.11	0.23	7.6	8.4	0.4	0.9
		SB	Left / Right	A	A	0.01	0.01	7.4	7.7	0	--
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.20</b>	<b>0.53</b>	<b>7.9</b>	<b>8.5</b>	<b>--</b>	<b>--</b>
Marché Way and Service Roadway	All-Way Stop	EB	Left / Through	A	A	0.00	0.01	6.7	6.6	--	--
		WB	Left / Through	A	A	0.15	0.01	7.7	7.1	0.6	--
		NB	Left / Right	A	A	0.01	0.01	7.1	6.8	--	--
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.16</b>	<b>0.01</b>	<b>7.6</b>	<b>6.9</b>	<b>--</b>	<b>--</b>
Marché Way and Exhibition Way	All-Way Stop	EB	Through / Right	A	A	0.00	0.01	7.1	7.4	--	--
		WB	Left / Through	A	A	0.17	0.21	8.4	9	0.6	0.8
		NB	Left / Right	A	A	0.21	0.29	8.2	8.5	0.8	1.3
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.21</b>	<b>0.30</b>	<b>8.3</b>	<b>8.7</b>	<b>--</b>	<b>--</b>

Garage Access at Princess Patricia Way	Two-Way Stop	EB	Left	A	A	0.04	0.07	7.7	7.8	1.0	1.8
			Through	A	A	--	--	0	--	--	--
		SB	Left / Right	A	B	0.03	0.17	9.8	11.4	0.6	4.6
			<b>Overall Intersection</b>	<b>A</b>	<b>A</b>	<b>0.04</b>	<b>0.17</b>	<b>2.2</b>	<b>4.7</b>	<b>--</b>	<b>--</b>

As illustrated in the tables above, all study area intersections are projected to continue to operate with overall acceptable levels of service under the 2028 Future Weekday AM and PM peak hour conditions.

The intersection of Bank Street and Sunnyside Avenue is projected to continue to operate with specific movements at or close to theoretical capacity in the southbound approach (AM Peak) and westbound approach (PM Peak).

In addition, the eastbound approach at intersection of Bank Street and Wilton Crescent is projected to continue to operate with a LOS F due to vehicle delays during the PM peak hour. The delays are associated with limited gaps in traffic in the southbound direction associated with the recently installed 3-lane cross-section of Bank Street.

With the temporary closure of the Exhibition Way garage ramp and assumed re-routed traffic, all internal study area intersections as Lansdowne are projected to operate acceptably with no delays or queues.

Table 4.13: 2028 Future Weekend Saturday Peak Hour (Study Area Intersections)

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	C	0.39	20.6	27.0
		WB	Left	C	0.28	24.7	19.9
			Through / Right	B	0.25	13.2	16.5
		NB	Left / Through / Right	B	0.36	12.9	51.0
		SB	Left / Through / Right	A	0.38	9.2	32.2
		<b>Overall Intersection</b>		<b>B</b>	<b>0.39</b>	<b>12.7</b>	<b>--</b>
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	0.55	38.8	27.2
		NB	Left / Through / Right	A	0.31	2.3	9.0
		SB	Left / Through / Right	A	0.32	3.9	22.0
		<b>Overall Intersection</b>		<b>A</b>	<b>0.55</b>	<b>6.0</b>	<b>--</b>
Bank St & Exhibition Way	Signalized	WB	Left	C	0.37	33.9	22.2
			Right	B	0.31	11.8	9.7
		NB	Left / Through / Right	A	0.29	4.5	23.3
		SB	Left	A	0.25	6.9	5.5
			Through	A	0.23	4.5	9.5
		<b>Overall Intersection</b>		<b>A</b>	<b>0.37</b>	<b>5.9</b>	<b>--</b>
Bank St & Wilton Cr	Minor Stop	NB	Left	B	0.20	11.9	6.0
			Through	A	--	2	--
		EB	Right	D	0.62	33.5	41.9
<b>Overall Intersection</b>		<b>A</b>	<b>0.62</b>	<b>6.0</b>	<b>--</b>		
Bank St & Echo Dr	Minor Stop	EB	Right	B	0.08	14.9	3.6
		<b>Overall Intersection</b>		<b>A</b>	<b>0.08</b>	<b>0.4</b>	<b>--</b>
Bank St & Aylmer Ave	Signalized	EB	Left / Right	C	0.23	30.2	16.7
		NB	Left / Through	A	0.39	5.8	28.1
		SB	Through / Right	A	0.42	7.4	41.0
		<b>Overall Intersection</b>		<b>A</b>	<b>0.42</b>	<b>7.4</b>	<b>--</b>



Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	D	0.59	43.8	40.4
		WB	Left / Through / Right	C	0.63	31.3	42.9
		NB	Left / Through / Right	C	0.55	22.1	55.8
		SB	Left / Through / Right	A	0.53	4.6	9.7
		<b>Overall Intersection</b>		<b>B</b>	<b>0.63</b>	<b>17.1</b>	<b>--</b>
QED & Princess Patricia Way	Minor Stop	NB	Left	A	0.07	8.4	1.6
			Through	A	--	0	--
		EB	Left / Right	C	0.36	17.6	11.9
		<b>Overall Intersection</b>		<b>A</b>	<b>0.36</b>	<b>3.8</b>	<b>--</b>
QED & Fifth Ave	Signalized	EB	Left / Right	C	0.38	32.7	29.7
		NB	Left / Through	B	0.45	14.6	49.9
		SB	Through / Right	B	0.53	15.9	69.1
		<b>Overall Intersection</b>		<b>B</b>	<b>0.53</b>	<b>17.5</b>	<b>--</b>
Bank St & Marche Way	Minor Stop	WB	Right	B	0.14	12.4	3.0
		SB	Left	A	0.00	9.3	0
		<b>Overall Intersection</b>		<b>A</b>	<b>0.14</b>	<b>0.9</b>	<b>--</b>
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	A	0.18	8.4	--
		WB	Right	A	0.13	8.4	--
		NB	Left / Through / Right	A	0.12	7.6	--
		SB	Right	A	0.13	7.5	--
		<b>Overall Intersection</b>		<b>A</b>	<b>0.18</b>	<b>8</b>	<b>--</b>

Table 4.14: 2028 Future Weekend Saturday Peak Hour (Internal Lansdowne Intersections)

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95th (m)
Exhibition Way and Service Roadway	All-Way Stop	EB	Left / Through	A	0.27	8.6	--
		WB	Through / Right	A	0.18	8.1	--
		SB	Left / Right	A	0.01	7.6	--
		<b>Overall Intersection</b>		<b>A</b>	<b>0.27</b>	<b>8.4</b>	<b>--</b>
Marché Way and Service Roadway	All-Way Stop	EB	Left / Through	A	0.01	7	--
		WB	Left / Through	A	0.02	7	--
		NB	Left / Right	A	0.1	7.4	--
		<b>Overall Intersection</b>		<b>A</b>	<b>--</b>	<b>7.3</b>	<b>--</b>
Marché Way and Exhibition Way	All-Way Stop	EB	Through / Right	A	0.31	9.2	--
		WB	Left / Through	A	0.03	7.7	--
		NB	Left / Right	A	0.14	8.6	--
		<b>Overall Intersection</b>		<b>A</b>	<b>--</b>	<b>9</b>	<b>--</b>
Garage Access at Princess Patricia Way	Two-Way Stop	EB	Left	A	0.08	7.9	1.9
			Through	A	--	0	--
		SB	Left / Right	B	0.34	13.4	11.2
		<b>Overall Intersection</b>		<b>A</b>	<b>0.34</b>	<b>6.2</b>	<b>--</b>

As illustrated in the tables above, all study area intersections are projected to continue to operate with overall acceptable levels of service under the 2028 Future Weekend Saturday peak hour conditions.

With the temporary closure of the Exhibition Way garage ramp and assumed re-routed traffic, all internal study area intersections as Lansdowne are projected to operate acceptably with no delays or queues.

Table 4.15: 2028 Future Weekend Sunday Peak Hour (Study Area Intersections)

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	C	0.38	22.6	26.8
		WB	Left	C	0.48	29.3	33.0
			Through / Right	B	0.27	16.6	20.2
		NB	Left / Through / Right	B	0.36	10.4	48.2
		SB	Left / Through / Right	A	0.38	9.0	30.9
<b>Overall Intersection</b>				<b>B</b>	<b>0.48</b>	<b>13.0</b>	<b>--</b>
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	0.55	38.5	26.9
		NB	Left / Through / Right	A	0.36	2.4	11.1
		SB	Left / Through / Right	A	0.31	9.3	44.5
		<b>Overall Intersection</b>				<b>A</b>	<b>0.55</b>
Bank St & Exhibition Way	Signalized	WB	Left	D	0.55	37.9	28.9
			Right	B	0.27	11.0	8.5
		NB	Left / Through / Right	B	0.36	11.5	38.1
		SB	Left	A	0.38	8.4	11.1
			Through	A	0.22	4.2	12.3
<b>Overall Intersection</b>				<b>B</b>	<b>0.55</b>	<b>10.8</b>	<b>--</b>
Bank St & Wilton Cr	Minor Stop	NB	Left/Through	B	0.18	11.7	5.4
		EB	Right	D	0.52	27.5	32.4
		<b>Overall Intersection</b>				<b>A</b>	<b>0.52</b>
Bank St & Echo Dr	Minor Stop	EB	Right	C	0.23	18.6	8.3
		<b>Overall Intersection</b>				<b>A</b>	<b>0.23</b>
Bank St & Aylmer Ave	Signalized	EB	Left / Right	D	0.43	36.0	23.1
		NB	Left / Through	A	0.29	2.6	15.0
		SB	Through / Right	A	0.32	3.6	28.4
		<b>Overall Intersection</b>				<b>A</b>	<b>0.43</b>
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	E	0.77	65.0	34.8
		WB	Left / Through / Right	C	0.71	34.0	36.5
		NB	Left / Through / Right	B	0.39	17.0	48.7
		SB	Left / Through / Right	A	0.51	5.2	11.8
		<b>Overall Intersection</b>				<b>B</b>	<b>0.77</b>



Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
QED & Princess Patricia Way	Minor Stop	NB	Left / Through	A	0.06	7.7	3.3
		EB	Left / Right	B	0.39	13.3	13.3
		<b>Overall Intersection</b>		<b>A</b>	<b>0.39</b>	<b>6.4</b>	<b>--</b>
QED & Fifth Ave	Signalized	EB	Left / Right	C	0.59	29.9	35.1
		NB	Left / Through	A	0.38	9.3	30.5
		SB	Through / Right	A	0.06	6.4	6.8
		<b>Overall Intersection</b>		<b>A</b>	<b>0.59</b>	<b>16.6</b>	<b>--</b>
Bank St & Marche Way	Minor Stop	WB	Left / Right	C	0.33	15.1	9.3
		<b>Overall Intersection</b>		<b>A</b>	<b>0.33</b>	<b>2</b>	<b>--</b>
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	A	0.244	10	--
		WB	Right	A	0.315	0.6	--
		NB	Left / Through / Right	B	0.351	10.7	--
		SB	Right	A	0.15	8.6	--
		<b>Overall Intersection</b>		<b>A</b>	<b>--</b>	<b>9.9</b>	<b>--</b>

Table 4.16: 2028 Future Weekend Sunday Peak Hour (Internal Lansdowne Intersections)

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
Exhibition Way and Service Roadway	All-Way Stop	EB	Left / Through	A	0.32	9.1	--
		WB	Through / Right	A	0.22	8.4	--
		SB	Left / Right	A	0.01	7.8	--
		<b>Overall Intersection</b>		<b>A</b>	<b>0.32</b>	<b>8.8</b>	<b>--</b>
Marché Way and Service Roadway	All-Way Stop	EB	Left / Through	A	0.01	7.2	--
		WB	Left / Through	A	0.02	7.1	--
		NB	Left / Right	A	0.21	8	--
		<b>Overall Intersection</b>		<b>A</b>	<b>0.21</b>	<b>7.9</b>	<b>--</b>
Marché Way and Exhibition Way	All-Way Stop	EB	Through / Right	A	0.4	9.6	--
		WB	Left / Through	A	0.03	7.8	--
		NB	Left / Right	A	0.1	8.4	--
		<b>Overall Intersection</b>		<b>A</b>	<b>0.40</b>	<b>9.3</b>	<b>--</b>

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95th (m)
Garage Access at Princess Patricia Way	Two-Way Stop	EB	Left	A	0.09	7.9	2.2
			Through	A	--	0	2.2
		SB	Left / Right	C	0.5	16.9	20.7
		<b>Overall Intersection</b>		<b>A</b>	<b>0.5</b>	<b>8.9</b>	<b>--</b>

As illustrated in the tables above, all study area intersections are projected to continue to operate with overall acceptable levels of service under the 2028 Future Weekend Sunday peak hour conditions.

With the temporary closure of the Exhibition Way garage ramp and assumed re-routed traffic, all internal study area intersections as Lansdowne are projected to operate acceptably with no delays or queues.

Table 4.17: 2028 Future Minor Event Peak Hour (Study Area Intersections)

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	C	B	0.45	0.25	24.4	17.5	32.8	16.9
			Left	C	C	0.30	0.22	25.1	23.6	20.5	16.6
		WB	Through / Right	B	B	0.28	0.16	12.7	12.7	17.4	11.6
			Left / Through / Right	B	B	0.37	0.31	13.5	11.4	53.4	39.7
		SB	Left / Through / Right	A	A	0.41	0.27	9.5	8.2	35.1	21.5
<b>Overall Intersection</b>		<b>B</b>	<b>B</b>	<b>0.45</b>	<b>0.31</b>	<b>13.5</b>	<b>11.4</b>	<b>--</b>	<b>--</b>		
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	D	0.56	0.48	38.5	38.1	28.3	22.9
			Left / Through / Right	A	A	0.38	0.29	3.0	3.8	13.0	22.0
		SB	Left / Through / Right	A	A	0.33	0.21	3.6	2.6	9.7	7.0
			<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.56</b>	<b>0.48</b>	<b>6.1</b>	<b>6.1</b>	<b>--</b>

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Bank St & Exhibition Way	Signalized	WB	Left	D	D	0.48	0.63	35.1	36.7	28.2	40.2
			Right	B	A	0.33	0.56	10.9	9.8	10.3	15.5
		NB	Left / Through / Right	A	A	0.33	0.18	5.0	4.8	27.1	12.5
		SB	Left	A	A	0.38	0.26	6.5	5.8	8.1	8.7
			Through	A	A	0.21	0.15	3.0	4.1	8.7	7.7
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.48</b>	<b>0.63</b>	<b>7.2</b>	<b>11.0</b>	--	--
Bank St & Wilton Cr	Minor Stop	EB	Right	F	C	0.89	0.33	62.1	19.4	93.9	13.3
		NB	Left	B	B	0.23	0.07	12	10.4	7.4	1.8
			Through	A	A	--	--	2.5	0.6	7.4	1.8
		<b>Overall Intersection</b>		<b>C</b>	<b>A</b>	<b>0.89</b>	<b>0.33</b>	<b>12.7</b>	<b>3.2</b>	--	--
Bank St & Echo Dr	Minor Stop	EB	Right	C	B	0.11	0.01	16.3	10.4	5.4	0.7
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.11</b>	<b>0.01</b>	<b>0.4</b>	<b>0.2</b>	--	--
Bank St & Aylmer Ave	Signalized	EB	Left / Right	D	C	0.36	0.03	36.7	27.2	26.6	4.4
		NB	Left / Through	A	A	0.40	0.09	5.0	4.0	20.7	5.0
		SB	Through / Right	A	A	0.34	0.11	6.5	5.3	29.5	9.7
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.40</b>	<b>0.11</b>	<b>7.5</b>	<b>5.1</b>	--	--
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	E	C	0.78	0.26	62.2	32.8	#58.0	20.1
		WB	Left / Through / Right	D	B	0.81	0.20	40.2	16.3	#67.2	12.4
		NB	Left / Through / Right	C	B	0.49	0.24	21.2	17.8	51.4	25.1
		SB	Left / Through / Right	A	A	0.59	0.33	7.5	7.1	18.1	19.4
		<b>Overall Intersection</b>		<b>C</b>	<b>B</b>	<b>0.81</b>	<b>0.33</b>	<b>21.4</b>	<b>12.5</b>	--	--
QED & Princess Patricia Way	Minor Stop	NB	Left / Through	A	A	0.14	0.01	9.5	7.7	4.6	2.2
		EB	Left / Right	D	C	0.51	0.65	29.3	17.9	29.8	37.1
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.51</b>	<b>0.65</b>	<b>4.8</b>	<b>11.8</b>	--	--
Queen Elizabeth Dr & Fifth Ave	Signalized	EB	Left / Right	C	C	0.41	0.35	33.4	31.8	31.3	27.5
		NB	Left / Through	C	B	0.67	0.45	23.0	14.6	65.8	53.2
		SB	Through / Right	C	B	0.82	0.25	26.1	11.8	#148.1	28.9
		<b>Overall Intersection</b>		<b>C</b>	<b>B</b>	<b>0.82</b>	<b>0.45</b>	<b>26.0</b>	<b>16.3</b>	--	--



Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Bank St & Marche Way	Minor Stop	WB	Left / Right	B	B	0.11	0.28	13	14	3.0	9.9
		SB	Through	A		0.00		9.4			
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.11</b>	<b>0.28</b>	<b>0.6</b>	<b>2.2</b>	--	--
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	A	A	0.16	0.07	8.7	7.7	--	--
		WB	Right	A	A	0.17	0.07	7.9	7.1	--	--
		NB	Left / Through / Right	A	A	0.19	0.08	8.7	7.3	--	--
		SB	Right	A	A	0.10	0.11	7.7	7.1	--	--
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.19</b>	<b>0.11</b>	<b>8.3</b>	<b>7.3</b>	--	--

Table 4.18: 2028 Future Minor Event Peak Hour (Internal Lansdowne Intersections)

Intersection	Intersection Control	Approach/ Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Exhibition Way and Service Roadway	All-Way Stop	EB	Left / Through	B	A	0.42	0.27	10.1	9	--	--
		WB	Through / Right	A	B	0.25	0.48	8.7	10.9	--	--
		SB	Left / Right	A	A	0.01	0.01	8	8.2	--	--
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.42</b>	<b>0.48</b>	<b>9.6</b>	<b>10.2</b>	<b>--</b>	<b>--</b>
Marché Way and Service Roadway	All-Way Stop	EB	Left / Through	A	A	0.02	0.03	7	7.2	--	--
		WB	Left / Through	A	A	0.06	0.18	7.3	7.9	--	--
		NB	Left / Right	A	A	0.01	0.01	7	7.2	--	--
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.06</b>	<b>0.18</b>	<b>7.2</b>	<b>7.8</b>	<b>--</b>	<b>--</b>
Marché Way and Exhibition Way	All-Way Stop	EB	Through / Right	A	A	0.03	0.04	8.3	7.9	--	--
		WB	Left / Through	A	A	0.26	0.12	10	8.6	--	--
		NB	Left / Right	B	A	0.53	0.37	12.6	9.8	--	--
		<b>Overall Intersection</b>		<b>B</b>	<b>A</b>	<b>0.53</b>	<b>0.37</b>	<b>11.7</b>	<b>9.4</b>	<b>--</b>	<b>--</b>
Garage Access at Princess Patricia Way	Two-Way Stop	EB	Left	A	A	0.09	0.00	8.6	7.4	2.5	0
			Through	A	A	--	--	0	0	2.5	--
		SB	Left / Right	C	C	0.33	0.58	16.3	15.3	11.3	29.5
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.33</b>	<b>0.58</b>	<b>4.8</b>	<b>11.3</b>		

As illustrated above, all study area intersections are projected to operate acceptably under Future 2028 operating conditions with overall acceptable levels of service during Minor Events held at the Arena at TD Place.

The eastbound approach at intersection of Bank Street and Wilton Crescent is expected to operate with a LOS F. This occurs during the event Ingress period which overlaps with the regular PM peak period. The delays at this intersection are not directly attributed to event traffic held at Lansdowne and are associated with limited gaps in traffic in the southbound direction associated with the recently installed 3-lane cross-section of Bank Street. No mitigation measures are recommended to improve intersection operations.

With the temporary closure of the Exhibition Way garage ramp and assumed re-routed traffic, all internal study area intersections as Lansdowne are projected to operate acceptably with no delays or queues.

#### 4.8.3 2033 Total Future Conditions

##### Intersection Capacity Analysis

Intersection operational analysis under Future 2033 Full Build-Out Conditions are summarized in this section.

Detailed Synchro level of service analysis results can be found in Appendix E.

Table 4.19: 2033 Future Weekday AM and PM Peak Hour

Intersection	Intersection Control	Approach/Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				AM	PM	AM	PM	AM	PM	AM	PM
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	D	C	0.63	0.45	36.4	22.8	30.4	32.7
		WB	Left	C	C	0.35	0.25	31.8	24.3	15.6	17.5
			Through / Right	C	B	0.38	0.21	20.1	13.7	18.1	14.7
		NB	Left / Through / Right	A	B	0.36	0.37	1.6	15.1	5.1	53.9
		SB	Left / Through / Right	A	B	0.30	0.48	5.6	10.3	26.0	42.4
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.63</b>	<b>0.48</b>	<b>8.4</b>	<b>14.0</b>	<b>--</b>	<b>--</b>
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	D	0.48	0.56	37.7	38.8	23.5	27.8
		NB	Left / Through / Right	A	A	0.33	0.35	1.9	2.1	6.6	10.4
		SB	Left / Through / Right	A	A	0.23	0.37	3.2	3.4	15.1	16.1
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.48</b>	<b>0.56</b>	<b>4.9</b>	<b>5.5</b>	<b>--</b>	<b>--</b>
Bank St & Exhibition Way	Signalized	WB	Left	C	D	0.43	0.57	34.6	36.1	25.4	34.7
			Right	B	A	0.27	0.31	11.5	9.7	8.9	9.7
		NB	Left / Through / Right	B	A	0.42	0.40	11.3	6.8	48.8	34.8
		SB	Left	B	A	0.19	0.43	10.5	8.0	14.2	9.5
			Through	A	A	0.17	0.28	7.5	3.9	24.5	11.4
		<b>Overall Intersection</b>		<b>B</b>	<b>A</b>	<b>0.43</b>	<b>0.57</b>	<b>11.9</b>	<b>8.8</b>	<b>--</b>	<b>--</b>
Bank St & Wilton Cr	Minor Stop	NB	Left	B	C	0.22	0.41	11.3	15.1	6.7	16.9
			Through	A	A	--	--	2.2	4.3	6.7	16.9
		EB	Right	D	F	0.58	0.95	26.7	82.1	32.7	101
		<b>Overall Intersection</b>		<b>D</b>	<b>D</b>	<b>0.58</b>	<b>0.95</b>	<b>5.7</b>	<b>15.1</b>	<b>--</b>	<b>--</b>



Intersection	Intersection Control	Approach/ Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				AM	PM	AM	PM	AM	PM	AM	PM
Bank St & Echo Dr	Minor Stop	EB	Right	B	C	0.07	0.11	13.5	20.9	2.4	3.5
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.07</b>	<b>0.11</b>	<b>0.3</b>	<b>0.3</b>	--	--
Bank St & Aylmer Ave	Signalized	EB	Left / Right	C	C	0.30	0.38	29.7	31.6	22.1	24.5
		NB	Left / Through	A	A	0.46	0.44	4.1	4.7	M17.3	m17.4
		SB	Through / Right	A	A	0.37	0.50	7.6	8.2	32.6	51.0
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.46</b>	<b>0.50</b>	<b>6.9</b>	<b>7.8</b>	--	--
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	D	F	0.65	1.23	38.3	184.2	37.4	#79.2
		WB	Left / Through / Right	C	F	0.88	1.14	33.7	116.2	#76.1	#116.6
		NB	Left / Through / Right	B	C	0.69	0.48	15.4	21.0	91.0	50.2
		SB	Left / Through / Right	C	C	1.20dl	0.95	21.4	27.0	#87.9	#117.3
		<b>Overall Intersection</b>		<b>C</b>	<b>D</b>	<b>0.88</b>	<b>1.23</b>	<b>21.6</b>	<b>53.0</b>	--	--
QED & Princess Patricia Way	Minor Stop	NB	Left / Through	A	A	0.07	0.07	8.3	9.1	1.7	1.8
		EB	Left / Right	C	C	0.21	0.43	15	24.3	5.7	16.2
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.21</b>	<b>0.43</b>	<b>2.4</b>	<b>3.5</b>	--	--
Queen Elizabeth Dr & Fifth Ave	Signalized	EB	Left / Right	C	C	0.35	0.28	30.8	30.7	21.1	23.1
		NB	Left / Through	A	B	0.26	0.43	5.2	14.7	26.1	42.4
		SB	Through / Right	A	C	0.32	0.79	5.7	24.5	34.5	#129.4
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.32</b>	<b>0.79</b>	<b>2.4</b>	<b>22.4</b>	--	--
Bank St & Marche Way	Minor Stop	WB	Left / Right	B	B	0.12	0.19	13.5	14.1	2.1	5.4
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.12</b>	<b>0.19</b>	<b>0.7</b>	<b>1</b>	--	--
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	A	A	0.16	0.17	8.5	8.6	--	--
		WB	Right	A	A	0.09	0.13	7.4	7.6	--	--
		NB	Left / Through / Right	A	A	0.13	0.15	8	8.3	--	--
		SB	Right	A	A	0.13	0.12	7.5	7.6	--	--

Intersection	Intersection Control	Approach / Movement	LOS		V/C		Total Delay (s)		Queue 95 <sup>th</sup> (m)	
			AM	PM	AM	PM	AM	PM	AM	PM
		<b>Overall Intersection</b>	<b>A</b>	<b>A</b>	<b>0.16</b>	<b>0.17</b>	<b>7.9</b>	<b>8</b>	<b>--</b>	<b>--</b>

As illustrated above, all study area intersections are projected to continue to operate with overall acceptable levels of service under the 2033 Future Weekday AM and PM peak hour conditions.

The intersection of Bank Street and Sunnyside Avenue is projected to continue to operate with specific movements at or close to theoretical capacity in the southbound approach (AM Peak) and westbound approach (PM Peak).

In addition, the eastbound approach at intersection of Bank Street and Wilton Crescent is projected to continue to operate with a LOS F due to vehicle delays during the PM peak hour. The delays are associated with limited gaps in traffic in the southbound direction associated with the recently installed 3-lane cross-section of Bank Street.

No mitigation measure are recommended to improve intersection operations.

Table 4.20: 2033 Future Weekend Saturday Peak Hour (Study Area Intersections)

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	C	0.40	20.9	28.0
		WB	Left	C	0.27	24.6	19.2
			Through / Right	B	0.27	12.8	17.0
		NB	Left / Through / Right	B	0.39	14.3	56.9
		SB	Left / Through / Right	A	0.43	9.6	36.6
		<b>Overall Intersection</b>		<b>B</b>	<b>0.43</b>	<b>13.3</b>	<b>--</b>
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	0.56	38.9	27.7
		NB	Left / Through / Right	A	0.34	2.3	11.2
		SB	Left / Through / Right	A	0.36	3.9	28.4
		<b>Overall Intersection</b>		<b>A</b>	<b>0.56</b>	<b>5.8</b>	<b>--</b>

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
Bank St & Exhibition Way	Signalized	WB	Left	D	0.50	35.3	29.7
			Right	B	0.36	10.6	11.0
		NB	Left / Through / Right	A	0.34	5.4	29.8
			SB	Left	A	0.40	7.0
		Through		A	0.24	3.1	9.9
		<b>Overall Intersection</b>				<b>A</b>	<b>0.50</b>
Bank St & Wilton Cr	Minor Stop	NB	Left	B	0.19	12.3	6.5
			Through	A	--	2.3	6.5
		EB	Right	E	0.68	39	64.1
		<b>Overall Intersection</b>				<b>A</b>	<b>0.68</b>
Bank St & Echo Dr	Minor Stop	EB	Right	C	0.10	15.6	4.0
		<b>Overall Intersection</b>				<b>A</b>	<b>0.10</b>
Bank St & Aylmer Ave	Signalized	EB	Left / Right	C	0.24	30.0	17.3
		NB	Left / Through	A	0.42	6.6	35.6
		SB	Through / Right	A	0.45	7.7	44.2
		<b>Overall Intersection</b>				<b>A</b>	<b>0.45</b>
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	D	0.61	45.0	#43.8
		WB	Left / Through / Right	C	0.64	32.0	#44.2
		NB	Left / Through / Right	C	0.59	23.1	61.7
		SB	Left / Through / Right	A	0.57	4.9	10.3
		<b>Overall Intersection</b>				<b>B</b>	<b>0.64</b>
QED & Princess Patricia Way	Minor Stop	NB	Left / Through	A	0.07	8.4	1.7
		EB	Left / Right	C	0.37	17.8	12.3
		<b>Overall Intersection</b>				<b>A</b>	<b>0.38</b>
QED & Fifth Ave	Signalized	EB	Left / Right	C	0.35	31.9	27.5
		NB	Left / Through	B	0.43	14.4	49.4
		SB	Through / Right	B	0.55	16.3	72.1
		<b>Overall Intersection</b>				<b>B</b>	<b>0.55</b>



Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
Bank St & Marche Way	Minor Stop	WB	Left / Right	B	0.188	13.8	5.9
		<b>Overall Intersection</b>		<b>--</b>	<b>--</b>	<b>1</b>	<b>--</b>
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	A	0.133	8.5	--
		WB	Right	A	0.12	7.7	--
		NB	Left / Through / Right	A	0.21	8.6	--
		SB	Right	A	0.13	7.6	--
		<b>Overall Intersection</b>		<b>A</b>	<b>0.21</b>	<b>8.1</b>	<b>--</b>

As illustrated above, all study area intersections are projected to continue to operate with acceptable levels of service under 2033 Future Weekend Saturday conditions.

Table 4.21: 2033 Future Weekend Sunday Peak Hour (Internal Lansdowne Intersections)

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	C	0.39	22.9	27.3
		WB	Left	C	0.47	29.0	32.2
			Through / Right	B	0.29	16.4	21.3
		NB	Left / Through / Right	A	0.38	10.0	46.7
		SB	Left / Through / Right	A	0.43	9.6	36.0
		<b>Overall Intersection</b>		<b>B</b>	<b>0.47</b>	<b>12.8</b>	<b>--</b>
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	0.55	38.6	27.3
		NB	Left / Through / Right	A	0.39	2.4	13.4
		SB	Left / Through / Right	B	0.35	10.2	53.0
		<b>Overall Intersection</b>		<b>A</b>	<b>0.55</b>	<b>8.5</b>	<b>--</b>
Bank St & Exhibition Way	Signalized	WB	Left	D	0.63	38.2	36.7
			Right	A	0.31	9.4	9.6
		NB	Left / Through / Right	B	0.48	14.3	47.5

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
		SB	Left	B	0.61	17.3	#25.1
			Through	A	0.25	4.6	12.6
		<b>Overall Intersection</b>			<b>B</b>	<b>0.63</b>	<b>14.0</b>
Bank St & Wilton Cr	Minor Stop	NB	Left	B	0.19	12	6.0
			Through	A	--	2.1	6.0
		EB	Right	D	0.56	30.8	38.1
		<b>Overall Intersection</b>			<b>A</b>	<b>0.56</b>	<b>5.2</b>
Bank St & Echo Dr	Minor Stop	EB	Right	C	0.25	19.8	9.4
		<b>Overall Intersection</b>			<b>A</b>	<b>0.25</b>	<b>1.0</b>
Bank St & Aylmer Ave	Signalized	EB	Left / Right	D	0.43	35.9	23.2
		NB	Left / Through	A	0.31	3.1	20.6
		SB	Through / Right	A	0.34	3.7	30.8
		<b>Overall Intersection</b>			<b>A</b>	<b>0.43</b>	<b>5.1</b>
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	E	0.78	65.8	34.9
		WB	Left / Through / Right	C	0.73	34.9	37.5
		NB	Left / Through / Right	B	0.43	17.7	54.1
		SB	Left / Through / Right	A	0.55	5.8	12.4
		<b>Overall Intersection</b>			<b>B</b>	<b>0.78</b>	<b>17.3</b>
QED & Princess Patricia Way	Minor Stop	NB	Left / Through	A	0.07	7.7	1.6
		EB	Left / Right	B	0.39	13.2	14.1
		<b>Overall Intersection</b>			<b>A</b>	<b>0.39</b>	<b>6.5</b>
QED & Fifth Ave	Signalized	EB	Left / Right	C	0.56	28.9	32.6
		NB	Left / Through	A	0.37	9.1	30.3
		SB	Through / Right	A	0.06	6.3	7.1
		<b>Overall Intersection</b>			<b>B</b>	<b>0.56</b>	<b>15.7</b>
Bank St & Marche Way	Minor Stop	WB	Left / Right	C	0.39	16.3	12.3
		<b>Overall Intersection</b>			<b>A</b>	<b>0.39</b>	<b>2.3</b>
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	B	0.26	10.3	--

Intersection	Intersection Control	Approach / Movement		LOS	V/C	Total Delay (s)	Queue 95 <sup>th</sup> (m)
		WB	Right	A	0.33	9.9	--
		NB	Left / Through / Right	B	0.39	11.3	--
		SB	Right	A	0.16	8.8	--
		<b>Overall Intersection</b>		<b>B</b>	<b>0.39</b>	<b>10.3</b>	<b>--</b>

As illustrated above, all study area intersections are projected to continue to operate with acceptable levels of service under 2033 Future Weekend Sunday conditions.

Table 4.22: 2033 Future Minor Event Peak Hour (Study Area Intersections)

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95 <sup>th</sup> (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	D	C	0.67	0.52	37.5	32.2	33.9	19.6
			Left	C	C	0.44	0.36	33.2	35.0	19.6	16.3
		WB	Through / Right	B	B	0.40	0.32	15.9	19.2	18.1	13.1
			Left / Through / Right	B	A	0.33	0.25	11.1	6.4	56.1	37.3
		SB	Left / Through / Right	A	A	0.38	0.21	6.9	3.7	38.3	17.2
		<b>Overall Intersection</b>		<b>B</b>	<b>A</b>	<b>0.67</b>	<b>0.52</b>	<b>13.1</b>	<b>9.2</b>	<b>--</b>	<b>--</b>
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	D	0.55	0.48	38.2	37.9	28.8	23.3
			Left / Through / Right	A	A	0.40	0.30	3.0	3.8	15.2	23.1
		SB	Left / Through / Right	A	A	0.35	0.22	4.9	4.6	9.3	26.8
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.55</b>	<b>0.48</b>	<b>6.5</b>	<b>6.8</b>	<b>--</b>	<b>--</b>
Bank St & Exhibition Way	Signalized	WB	Left	D	D	0.54	0.66	35.5	36.6	33.6	45.0
			Right	B	D	0.38	0.58	10.1	9.4	11.3	16.1
		NB	Left / Through / Right	A	A	0.39	0.18	5.8	5.0	30.4	13.3
		SB	Left	B	A	0.54	0.28	12.3	6.3	19.0	10.0
			Through	A	A	0.23	0.15	3.6	4.4	9.4	8.1



Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.54</b>	<b>0.66</b>	<b>8.9</b>	<b>11.5</b>	--	--
Bank St & Wilton Cr	Minor Stop	EB	Right	F	C	0.94	0.34	72.4	19.8	103.7	14.2
		NB	Left	B	B	0.25	0.08	12.2	10.4	7.8	1.9
			Through	A	A	--	--	2.7	0.7	7.8	1.9
		<b>Overall Intersection</b>		<b>D</b>	<b>A</b>	<b>0.94</b>	<b>0.34</b>	<b>14.3</b>	<b>3.2</b>	--	--
Bank St & Echo Dr	Minor Stop	EB	Right	C	B	0.121	0.02	16.8	10.5	5.7	0.7
		<b>Overall Intersection</b>		<b>A</b>	--	<b>0.12</b>	<b>0.02</b>	<b>0.4</b>	<b>0.2</b>	--	--
Bank St & Aylmer Ave	Signalized	EB	Left / Right	D	C	0.36	0.03	36.7	27.2	27.1	4.4
		NB	Left / Through	A	A	0.42	0.09	5.5	5.4	26.2	8.8
		SB	Through / Right	A	A	0.34	0.11	6.6	5.3	31.0	10.0
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.42</b>	<b>0.11</b>	<b>7.8</b>	<b>5.7</b>	--	--
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	D	D	0.71	0.50	48.8	45.9	#47.4	19.7
		WB	Left / Through / Right	C	B	0.76	0.33	33.3	19.9	#59.8	12.3
		NB	Left / Through / Right	A	A	0.34	0.14	8.9	3.7	35.2	12.1
		SB	Left / Through / Right	A	A	0.59	0.27	8.6	4.2	24.3	23.0
		<b>Overall Intersection</b>		<b>B</b>	<b>A</b>	<b>0.76</b>	<b>0.50</b>	<b>15.6</b>	<b>7.6</b>	--	--
QED & Princess Patricia Way	Minor Stop	NB	Left / Through	A	A	0.144	0.02	9.5	7.7	4.0	0.5
		EB	Left / Right	D	C	0.457	0.625	26.3	17.4	17.5	33.7
		<b>Overall Intersection</b>		--	--	--	--	<b>4.2</b>	<b>10.9</b>	--	--
Queen Elizabeth Dr & Fifth Ave	Signalized	EB	Left / Right	C	C	0.40	0.41	29.0	29.0	23.7	24.3
		NB	Left / Through	A	A	0.37	0.33	7.2	6.7	31.3	30.8
		SB	Through / Right	B	A	0.67	0.21	11.7	5.7	88.0	19.4
		<b>Overall Intersection</b>		<b>B</b>	<b>A</b>	<b>0.67</b>	<b>0.41</b>	<b>12.0</b>	<b>10.0</b>	--	--
Bank St & Marche Way	Minor Stop	WB	Left / Right	B	B	0.13	0.29	12.7	13.6	3.3	1.2
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>0.13</b>	<b>0.29</b>	<b>0.7</b>	<b>2.1</b>	--	--

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	A	A	0.172	0.076	8.8	7.8	--	--
		WB	Right	A	A	0.181	0.06	8	7.1	--	--
		NB	Left / Through / Right	A	A	0.213	0.008	8.9	7.3	--	--
		SB	Right	A	A	0.11	0.113	7.7	7.2	--	--
		<b>Overall Intersection</b>		<b>A</b>	<b>A</b>	<b>--</b>	<b>--</b>	<b>8.4</b>	<b>7.3</b>	<b>--</b>	<b>--</b>

As illustrated above, all study area intersections are projected to continue to operate with overall acceptable levels of service in the 2033 Future horizon year for Minor Events held at TD Place.

The eastbound approach at intersection of Bank Street and Wilton Crescent is projected to continue to operate with a LOS F due to vehicle delays incurred on the minor approach. This occurs during the Ingress period which overlaps with the regular PM peak period. The delays at this intersection are not directly attributed to event traffic held at Lansdowne and are associated with limited gaps in traffic in the southbound direction as a result of the recently installed 3-lane cross-section of Bank Street.

No mitigation measures are recommended to improve intersection operations.

Table 4.23: 2033 Future Major Event Peak Hour (Study Area Intersections)

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Bank St & Fifth Ave	Signalized	EB	Left / Through / Right	D	D	0.69	0.76	36.5	46.5	36.3	35.7
			Left	C	C	0.43	0.21	30.7	24.3	20.8	12.7
		WB	Through / Right	B	B	0.42	0.58	17.5	18.9	21.8	29.6
			Left / Through / Right	A	A	0.35	0.24	6.9	6.4	31.6	20.5
		SB	Left / Through / Right	A	A	0.47	0.27	8.0	6.5	46.8	23.3
		<b>Overall Intersection</b>	<b>B</b>	<b>B</b>	<b>0.69</b>	<b>0.76</b>	<b>12.0</b>	<b>13.8</b>	--	--	
Bank St & Holmwood Ave	Signalized	EB	Left / Through / Right	D	D	0.62	0.62	38.5	38.9	35.3	34.2
			Left / Through / Right	A	A	0.52	0.27	4.2	3.6	47.6	20.1
		SB	Left / Through / Right	A	A	0.47	0.25	7.5	5.2	43.7	19.1
			<b>Overall Intersection</b>	<b>A</b>	<b>A</b>	<b>0.62</b>	<b>0.62</b>	<b>8.8</b>	<b>9.5</b>	--	--
Bank St & Exhibition Way	Signalized	WB	Left	<i>Movements Temporarily Restricted During Major Events</i>							
			Right	<i>Movements Temporarily Restricted During Major Events</i>							
		NB	Left / Through / Right	A	C	0.36	0.15	4.9	2.4	31.8	13.7
			Left	<i>Movements Temporarily Restricted During Major Events</i>							
		SB	Through	A	A	0.28	0.14	3.8	1.8	18.7	10.1
<b>Overall Intersection</b>	<b>A</b>	<b>A</b>	<b>0.36</b>	<b>0.15</b>	<b>5.8</b>	<b>2.6</b>	--	--			
Bank St & Wilton Cr	Minor Stop	EB	Right	F	B	1.09	0.01	119	13.5	131.7	0.4
			NB	Left	B	A	0.21	0	12.6	0	6.4
		Through		A	--	--	--	2.6	0	6.4	0.0
		<b>Overall Intersection</b>	<b>E</b>	<b>A</b>	<b>1.09</b>	<b>0.01</b>	<b>20.5</b>	<b>0.1</b>	--	--	
Bank St & Echo Dr	Minor Stop	EB	Right	C	B	0.25	0.06	19.4	10.5	13.2	1.8
			<b>Overall Intersection</b>	<b>A</b>	<b>A</b>	<b>0.25</b>	<b>0.06</b>	<b>0.9</b>	<b>0.5</b>	--	--

Intersection	Intersection Control	Approach / Movement		LOS		V/C		Total Delay (s)		Queue 95th (m)	
				Ingress	Egress	Ingress	Egress	Ingress	Egress	Ingress	Egress
Bank St & Aylmer Ave	Signalized	EB	Left / Right	D	C	0.52	0.17	38.8	23.5	35.4	11.9
		NB	Left / Through	A	A	0.44	0.21	8.2	6.0	48.3	18.2
		SB	Through / Right	A	A	0.46	0.18	8.2	5.6	51.7	15.7
		<b>Overall Intersection</b>		<b>B</b>	<b>A</b>	<b>0.52</b>	<b>0.21</b>	<b>10.3</b>	<b>6.6</b>	--	--
Bank St & Sunnyside Ave	Signalized	EB	Left / Through / Right	E	D	0.88	0.56	72.0	43.6	#67.4	26.7
		WB	Left / Through / Right	D	C	0.86	0.48	49.0	28.4	#78.0	22.2
		NB	Left / Through / Right	A	A	0.39	0.16	8.3	4.4	34.7	15.4
		SB	Left / Through / Right	B	A	0.76	0.19	15.4	4.3	#67.4	17.3
		<b>Overall Intersection</b>		<b>C</b>	<b>B</b>	<b>0.88</b>	<b>0.56</b>	<b>22.8</b>	<b>10.8</b>	--	--
QED & Princess Patricia Way	Minor Stop	NB	Left / Through	B	A	0.16	0.05	10.2	8.3	4.9	1.3
		EB	Left / Right	F	E	0.93	0.93	82.4	50.0	75.2	86.8
		<b>Overall Intersection</b>		<b>C</b>	<b>C</b>	<b>0.93</b>	<b>0.93</b>	<b>14</b>	<b>23.5</b>	--	--
Queen Elizabeth Dr & Fifth Ave	Signalized	EB	Left / Right	D	D	0.68	0.72	36.9	39	#45.2	#53.5
		NB	Left / Through	B	A	0.69	0.41	17.9	8.9	#70.0	40.7
		SB	Through / Right	C	A	0.87	0.41	23.7	8.7	#169.4	42.0
		<b>Overall Intersection</b>		<b>C</b>	<b>B</b>	<b>0.87</b>	<b>0.72</b>	<b>24.1</b>	<b>15.5</b>	--	--
Bank St & Marche Way	Minor Stop	WB	Left / Right	<i>Movements Temporarily Restricted During Major Events</i>							
		<b>Overall Intersection</b>									
Fifth Ave & O'Connor St	All-Way Stop	EB	Left / Through	B	A	0.21	0.13	10.1	9	--	--
		WB	Right	A	A	0.28	0.16	9.7	8.4	--	--
		NB	Left / Through / Right	A	B	0.26	0.49	9.2	11.4	--	--
		SB	Right	A	A	0.19	0.08	8.6	7.7	--	--
		<b>Overall Intersection</b>		<b>A</b>	<b>B</b>	<b>0.28</b>	<b>0.49</b>	<b>9.5</b>	<b>8.8</b>	--	--



As illustrated above, all study area intersections are projected to continue to operate with overall acceptable levels of service during the 2033 Future horizon year for Major Events held at TD Place.

The eastbound approach at intersection of Bank Street and Wilton Crescent is projected to continue to operate with a LOS F due to vehicle delays incurred on the minor approach. This occurs during the event Ingress period which overlaps with the regular PM peak period. The delays at this intersection are not directly attributed to event traffic held at Lansdowne and are associated with limited gaps in traffic in the southbound direction due to the recently installed 3-lane cross-section of Bank Street.

In addition, the eastbound approach at the Queen Elizabeth Drive and Princess Patricia Way intersection is shown to operate with an LOS rating of E for the Ingress periods. Although the analysis indicates that the movements are operating with delays, the performance of these intersections are expected to continue to be adequately managed through the deployment of Ottawa Police Point duty as part of the traffic management measures for Major Events at Lansdowne.

No mitigation measures are recommended to improve intersection operations.

## 5. SUMMARY AND CONCLUSIONS

This Transportation Impact Assessment (TIA) was prepared in support of a Site Plan Application (SPA) for the proposed multi-purpose Event Centre at Lansdowne Park located in the Glebe community of Ottawa, Ontario.

The proposed multi-purpose Event Centre represents Phase 1 of the Lansdowne 2.0 plan which seeks to replace existing city-owned infrastructure while adding additional density to the site. The overall Lansdowne 2.0 proposed plan includes the following phases of development:

**Phase 1** (*Anticipated completion of 2028*) consists of building a new 5,500 seat (up to 6,500 spectators) multipurpose event centre that will be home to the OHL's Ottawa 67's, the CEBL's Ottawa BlackJacks, the PWHL Ottawa, and other indoor events such as shows and concerts. As this phase of Lansdowne 2.0 replaces the programming provided at the existing 9,800 seat TD Place Arena, it is not expected to generate additional transportation demands to Lansdowne.

**Phase 2** (*Anticipated completion between 2030 and 2031*) consists of replacing the existing functionally obsolete north stadium stands and arena complex at TD Place Stadium with a new 11,200 seat (12,100 spectator) north stand structure. This new facility replaces the existing north stadium stands, which currently has a capacity of 14,028 spectators, and would result in a reduction of approximately 2,000 spectator capacity at TD Place Stadium. This venue will continue to be the home of the CFL's Ottawa RedBlacks and the CPL's Ottawa Atlético. As this phase of Lansdowne 2.0 replaces existing programming currently provided at TD Place Stadium, it is not expected to generate additional transportation demands to Lansdowne.

**Phase 3** (*Anticipated completion between 2032 and 2036*) represents the full build-out of Lansdowne 2.0 and consists of replacing the existing 41,000 ft<sup>2</sup> of commercial retail and box office annex to the Stadium on Exhibition Way with 49,635 ft<sup>2</sup> of new podium-level commercial retail space. This represents a net increase of 8,635 ft<sup>2</sup> of commercial retail space from what is currently provided today. In addition, this phase includes the construction of two new residential towers with a total of 770 new dwelling units. Additional underground parking space will be constructed by extending the existing facility to accommodate an additional 386 parking spaces to service the new residential units and additional retail space, resulting in a total of 1,766 underground parking spaces at Lansdowne.

Under Phase 1, no additional trip generation demands are forecasted as the proposed multi-purpose event centre replaces the existing programming at the Arena at TD Place. It is anticipated that internal circulation and access within Lansdowne will be altered in an interim operating condition in 2028 during the construction of subsequent phases of Lansdowne 2.0.

The full build-out of Lansdowne 2.0 development is anticipated to generate between 130 and 180 net new auto trips (two-way) during the Weekday AM, Weekday PM, and Weekend Saturday and Sunday peak periods.

An analysis of study area intersections was completed under Existing Conditions, the interim 2028 Future Conditions (i.e. the completion of the new event centre and construction of subsequent phases of Lansdowne 2.0, as well as the 2033 Future Conditions (Full Build-Out of Lansdowne 2.0).

All study area intersections were shown to operate acceptably with similar levels of services currently observed today.

In conclusion, the analysis found that the anticipated Phase 1 of Lansdowne 2.0 will result in minimal impact to the overall traffic operations in the area. From a transportation standpoint, the proposed multi-purpose Event Centre can be accommodated by the future transportation network with the continued adoption of the existing comprehensive Transportation Demand Management strategy.

# **APPENDIX A - TURNING MOVEMENT COUNT DATA**





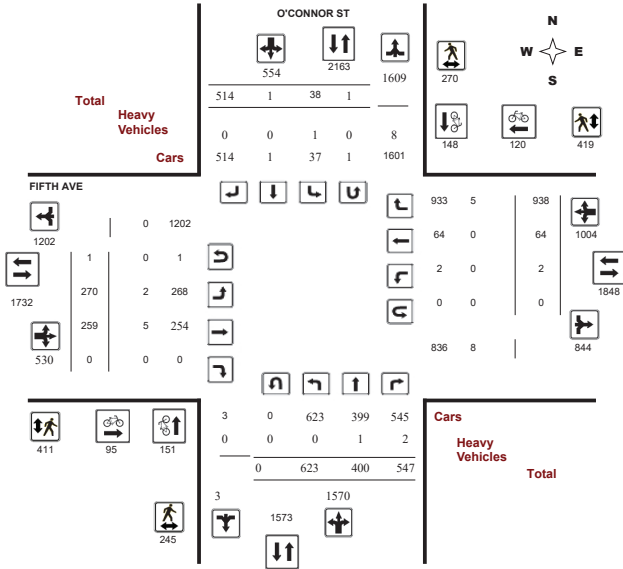
# Transportation Services - Traffic Services

## Turning Movement Count - Study Results FIFTH AVE @ O'CONNOR ST

Survey Date: Friday, August 05, 2022  
Start Time: 16:00

WO No: 40983  
Device: Miovision

### Full Study Diagram



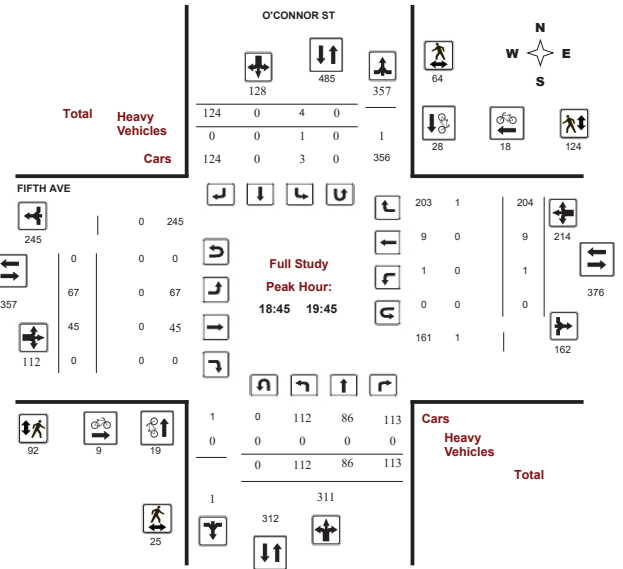
# Transportation Services - Traffic Services

## Turning Movement Count - Study Results FIFTH AVE @ O'CONNOR ST

Survey Date: Friday, August 05, 2022  
Start Time: 16:00

WO No: 40983  
Device: Miovision

### Full Study Peak Hour Diagram



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results FIFTH AVE @ O'CONNOR ST

Survey Date: Friday, August 05, 2022  
Start Time: 16:00

WO No: 40983  
Device: Miovision

### Full Study 15 Minute Increments

Time Period	Northbound				Southbound				Eastbound				Westbound				Grand Total			
	LT	ST	RT	N TOT	LT	ST	RT	S TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT				
16:00	16:15	8	4	8	20	10	0	35	45	65	13	7	0	20	0	1	23	24	44	109
16:15	16:30	12	11	9	32	2	0	29	29	60	7	10	0	17	0	0	30	30	47	107
16:30	16:45	18	10	8	36	1	0	21	22	58	18	10	0	28	0	0	28	28	56	114
16:45	17:00	15	11	7	33	3	0	27	31	64	10	6	0	16	0	0	35	35	51	115
17:00	17:15	9	9	10	28	2	0	13	15	43	11	18	0	29	0	4	26	32	61	104
17:15	17:30	19	13	22	54	6	0	17	23	77	6	13	0	19	0	1	27	28	47	124
17:30	17:45	30	15	32	77	1	0	24	25	102	8	12	0	20	0	3	39	42	62	164
17:45	18:00	24	17	19	60	3	0	27	30	90	10	8	0	16	0	6	52	58	74	164
18:00	18:15	36	14	27	77	0	0	28	28	105	18	7	0	25	0	9	51	60	85	190
18:15	18:30	14	18	33	65	0	0	20	20	85	14	17	0	31	1	9	46	56	87	172
18:30	18:45	25	25	19	69	0	0	20	20	89	11	17	0	28	0	1	34	35	63	152
18:45	19:00	34	21	22	77	1	0	42	43	120	19	7	0	26	0	0	30	30	56	176
19:00	19:15	34	21	27	82	1	0	34	35	117	19	12	0	31	1	4	53	58	89	206
19:15	19:30	23	20	28	71	1	0	29	30	101	15	12	0	27	0	4	60	64	91	192
19:30	19:45	21	24	36	81	1	0	19	20	101	14	14	0	28	0	1	61	62	90	191
19:45	20:00	25	19	22	66	0	0	13	13	79	11	13	0	24	0	1	28	29	53	132
20:00	20:15	23	12	13	48	1	0	15	16	64	7	6	0	13	0	1	23	24	37	101
20:15	20:30	36	8	19	63	0	0	12	12	75	4	7	0	11	0	1	12	13	24	99
20:30	20:45	34	9	10	53	1	0	8	9	62	6	6	0	12	0	0	17	17	29	91
20:45	21:00	11	7	13	31	0	0	11	11	42	4	6	0	10	0	2	24	26	36	78
21:00	21:15	22	9	15	46	1	0	7	8	54	5	11	0	16	0	2	21	23	39	93
21:15	21:30	15	6	12	33	0	1	8	9	42	5	3	0	9	0	4	19	23	32	74
21:30	21:45	19	10	9	38	0	0	8	8	46	4	3	0	7	0	3	14	17	24	70
21:45	22:00	15	9	16	40	0	0	9	9	49	2	6	0	8	0	1	25	26	34	83
22:00	22:15	19	11	20	50	0	0	7	7	57	5	10	0	15	0	1	33	34	49	106
22:15	22:30	22	25	35	82	2	0	7	9	91	9	7	0	16	0	0	21	21	37	128
22:30	22:45	20	16	23	59	1	0	12	13	72	5	5	0	10	0	0	38	38	48	120
22:45	23:00	9	8	12	29	0	0	6	6	35	1	4	0	5	0	0	26	26	31	66
23:00	23:15	13	8	8	29	0	0	5	5	34	2	3	0	5	0	2	15	17	22	56
23:15	23:30	5	4	5	14	0	0	1	1	15	4	0	0	4	0	1	8	9	13	28
23:30	23:45	5	3	3	11	0	0	2	2	13	1	1	0	2	0	1	8	9	11	24
23:45	00:00	8	3	5	16	0	0	1	1	17	2	0	0	2	0	1	9	10	12	29
Total:		623	400	547	1570	38	1	514	554	2124	270	259	0	530	2	64	938	1004	1534	3,658

Note: U-Turns are included in Totals.



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results FIFTH AVE @ O'CONNOR ST

Survey Date: Friday, August 05, 2022  
Start Time: 16:00

WO No: 40983  
Device: Miovision

### Full Study Cyclist Volume

Time Period	Northbound			Southbound			Street Total	Eastbound			Westbound			Street Total	Grand Total
	LT	ST	RT	LT	ST	RT		LT	ST	RT	LT	ST	RT		
16:00	16:15	3	6	9	4	6	10	19	19	15	15	15	15	15	19
16:15	16:30	3	2	5	7	3	10	15	15	15	15	15	15	15	15
16:30	16:45	4	4	8	5	7	12	20	20	19	19	19	19	19	19
16:45	17:00	4	7	11	4	4	8	19	19	19	19	19	19	19	19
17:00	17:15	5	4	9	9	7	16	25	25	30	30	30	30	30	30
17:15	17:30	9	12	21	6	3	9	30	30	15	15	15	15	15	15
17:30	17:45	2	5	7	0	8	8	15	15	22	22	22	22	22	22
17:45	18:00	2	13	15	3	4	7	22	22	16	16	16	16	16	16
18:00	18:15	4	4	8	2	6	8	16	16	15	15	15	15	15	15
18:15	18:30	2	6	8	1	6	7	15	15	15	15	15	15	15	15
18:30	18:45	5	9	14	5	5	10	24	24	24	24	24	24	24	24
18:45	19:00	4	4	8	0	9	9	17	17	19	19	19	19	19	19
19:00	19:15	7	8	15	4	4	8	19	19	19	19	19	19	19	19
19:15	19:30	4	8	12	4	5	9	21	21	21	21	21	21	21	21
19:30	19:45	4	8	12	1	4	5	19	19	19	19	19	19	19	19
19:45	20:00	2	5	7	1	5	6	13	13	13	13	13	13	13	13
20:00	20:15	1	2	3	1	1	2	5	5	5	5	5	5	5	5
20:15	20:30	5	2	7	1	3	4	11	11	11	11	11	11	11	11
20:30	20:45	0	8	8	1	4	5	13	13	13	13	13	13	13	13
20:45	21:00	0	0	0	4	5	9	9	9	9	9	9	9	9	9
21:00	21:15	0	3	3	2	3	5	8	8	8	8	8	8	8	8
21:15	21:30	5	3	8	8	5	13	21	21	21	21	21	21	21	21
21:30	21:45	3	5	8	2	4	6	14	14	14	14	14	14	14	14
21:45	22:00	10	6	16	4	2	6	22	22	22	22	22	22	22	22
22:00	22:15	22	5	27	7	4	11	38	38	38	38	38	38	38	38
22:15	22:30	18	2	20	4	1	5	25	25	25	25	25	25	25	25
22:30	22:45	5	0	5	3	3	6	11	11	11	11	11	11	11	11
22:45	23:00	10	6	16	0	0	6	22	22	22	22	22	22	22	22
23:00	23:15	1	0	1	1	2	3	4	4	4	4	4	4	4	4
23:15	23:30	3	0	3	0	1	1	4	4	4	4	4	4	4	4
23:30	23:45	0	1	1	0	0	0	1	1	1	1	1	1	1	1
23:45	00:00	4	0	1	1	0	1	5	5	5	5	5	5	5	5
Total		151	148	299	95	120	215	514	514	514	514	514	514	514	514



Transportation Services - Traffic Services

Turning Movement Count - Study Results
FIFTH AVE @ O'CONNOR ST

Survey Date: Friday, August 05, 2022
Start Time: 16:00

WO No: 40983
Device: Miovision

Full Study Pedestrian Volume

Table with columns: Time Period, NB Approach, SB Approach, Total, EB Approach, WB Approach, Grand Total. Rows show pedestrian volume for various time periods from 16:00 to 23:45.



Transportation Services - Traffic Services

Turning Movement Count - Study Results
FIFTH AVE @ O'CONNOR ST

Survey Date: Friday, August 05, 2022
Start Time: 16:00

WO No: 40983
Device: Miovision

Full Study Heavy Vehicles

Table with columns: Time Period, Northbound, Southbound, Eastbound, Westbound, Grand Total. Rows show heavy vehicle volume for various time periods from 16:00 to 23:45.



Transportation Services - Traffic Services

Turning Movement Count - Study Results
FIFTH AVE @ O'CONNOR ST

Survey Date: Friday, August 05, 2022
Start Time: 16:00

WO No: 40983
Device: Miovision

Full Study 15 Minute U-Turn Total

Table with columns: Time Period, Northbound U-Turn Total, Southbound U-Turn Total, Eastbound U-Turn Total, Westbound U-Turn Total, Total. Rows show 15-minute U-turn totals for various time periods from 16:00 to 23:45.

5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC

Tue May 3, 2022
Full Length (6:30 AM-9:30 AM, 11:30 AM-2 PM, 3:30 PM-6 PM)
All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 947989, Location: 45.399403, -75.68617

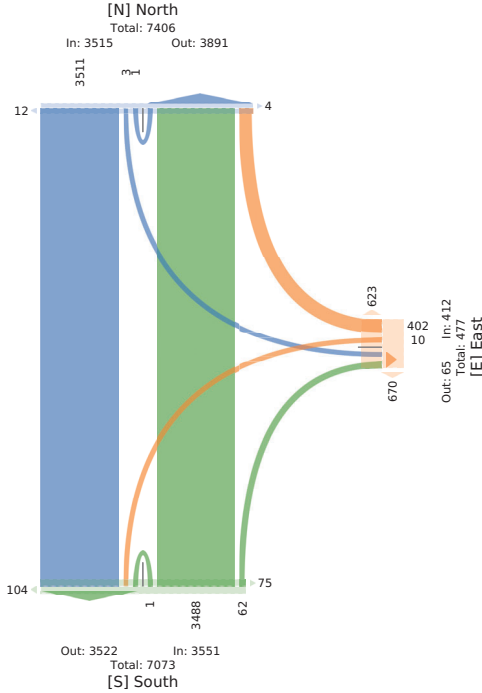


Provided by: City of Ottawa
100 Constellation Dr,
Nepean, ON, K2G 5J9, CA

Table with columns: Leg Direction, Time, North Southbound, East Westbound, South Northbound, Int. Rows show traffic counts and percentages for various vehicle types and directions.

^Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC  
 Tue May 3, 2022  
 Full Length (6:30 AM-9:30 AM, 11:30 AM-2 PM, 3:30 PM-6 PM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 947989, Location: 45.399403, -75.68617



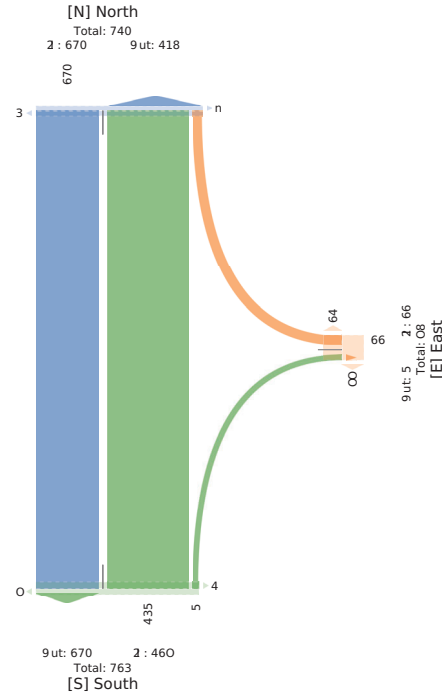
5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC  
 Tue May 3, 2022  
 F M L eal.rg130 F M h (130 F M6  
 F:: Aa-e- r0 P) G asi Md0ryr-e, c eaHy, l ei e-Gas, v lryr-e ds Bdai, v lryr-e ds Ad--Ra:16  
 F:: MdHtwesG  
 km (1 D) g, 9 dra0dst 1470 (103, HD47895D



9eP kReGis	0d0 Ed0, dusi				Ja-C Se-Cdusi				Ed0 0d0, dusi				kC			
	T	9	W	FNN	leU	B	9	W	FNN	leU	B	T		W	FNN	leU
20220403g30F M	(3	0	0	(3	5	50	0	0	50	51	2	540	0	54	2	218
g14F M	52	0	0	52	0	(	0	0	(	24	2	540	0	54	1	212
000F M	(1	0	0	(1	0	D	0	0	D	25	0	52	0	52	2	230
(54F M	g0	0	0	g0	2	D	0	0	D	56	2	505	0	503	5	500
T0d:	3g	0	0	3g	3	33	0	0	33	11	D	41D	0	431	(	(64
* FNNdr)	500*	0*	0*	h	h	500*	0*	0*	h	h	57*	(g1*	0*	h	h	h
* T0d:	152*	0*	0*	152*	h	37*	0*	0*	37*	h	07*	418*	0*	443*	h	h
1c %	0200	h	h	0200	h	0200	h	h	0200	h	0204	023D	h	0231	h	0225
9 P) G asi Md0ryr-e:	3D	0	0	3D	h	2D	0	0	2D	h	4	11	0	1gl	h	888
* 9 P) G asi Md0ryr-e:	(12*	0*	0*	(12*	h	g5*	0*	0*	g5*	h	131*	(0*	0*	(08*	h	(20*
c eaHy	20	0	0	20	h	4	0	0	4	h	0	30	0	30	h	44
* c eaHy	40*	0*	0*	40*	h	542*	0*	0*	542*	h	0*	47*	0*	47*	h	417
v lryr-e ds Bdai	5	0	0	5	h	5	0	0	5	h	2	5g	0	20	h	22
* v lryr-e ds Bdai	03*	0*	0*	03*	h	30*	0*	0*	30*	h	2g*	31*	0*	37*	h	29*
l ei e-Gas:	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h
* l ei e-Gas:	h	h	h	h	h	500*	h	h	h	h	11*	h	h	h	h	500*
v lryr-e ds Ad--Ra:	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h
* v lryr-e ds Ad--Ra:	h	h	h	h	h	h	h	h	h	h	45*	h	h	h	h	h

l ei e-Gas- asi v lryr-e ds Ad--Ra:179t 9eC Br B P) C T T) u, W hTus

5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC  
 Tue May 3, 2022  
 AM Peak (8:30 AM - 9:30 AM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 947989, Location: 45.399403, -75.68617



5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC  
 Tue May 3, 2022  
 M F L ay Lan g 2180 LM ( t 180 LM6  
 : A- A9:9 gl IP) G asi Mi G dya09, r eacy, l ei e-Gas9, Hl0ya09 i s vial, Hl0ya09 i s  
 - d 99Ba06  
 : AMi ceRes0  
 vk hmi Dn0m l i oa0 sh l 78mmi 03, (175:45t D



1eP kReGis	0d0 Ed0, dusi				Ja-C Se-Cdusi				Ed0 0d0, dusi				kC			
	T	1	W	NN	leU	v	1	W	NN	leU	v	T		W	NN	leU
20220703t280LM	t0D	0	0	t0D	0	t3	t	0	t1	73	7	10m	0	t11	5	237
t2H7LM	t25	0	0	t25	0	(D	0	0	(D	1m	3	11m	0	t22	0	257
t180LM	t1m	0	0	t1m	0	15	0	0	15	3	3	12D	0	t30	1	257
(h7LM	t11	0	0	t11	0	13	0	0	13	1m	1	10m	0	t10	m	230
Tl GA	155	0	0	155	0	7m	t	0	50	142	12	151	0	115	1m	1002
* : NNi ao)	100*	0*	0*	(	h	m0*	18*	0*	(	h	29*	m3*	0*	(	(	(
* Tl GA	158*	0*	0*	158*	h	78*	08*	0*	58*	h	18*	158*	0*	118*	h	(
Lr %	0882	(	(	0882	(	0854	0870	(	0842	(	0870	0882	(	0882	(	0843
1 P) G asi Mi G dya09	121	0	0	121	(	72	t	0	73	(	11	13t	0	112	(	m0
* 1 P) G asi Mi G dya09	m0*	0*	0*	m0*	h	448*	t00*	0*	448*	h	m0*	m0*	0*	m0*	h	m0*
r eacy	3t	0	0	3t	(	D	0	0	D	(	0	20	0	20	(	74
* r eacy	58*	0*	0*	58*	h	t18*	0*	0*	t18*	h	0*	18*	0*	18*	h	78*
Hl0ya09 i s vial	t1	0	0	t1	(	0	0	0	0	(	t	13	0	t1	(	27
* Hl0ya09 i s vial	28*	0*	0*	28*	h	0*	0*	0*	0*	h	48*	28*	0*	28*	h	28*
l ei e-Gas:	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(
* l ei e-Gas:	(	(	(	(	(	(	(	(	(	(	m0*	(	(	(	(	t00*
Hl0ya09 i s - d 99Ba06	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(
* Hl0ya09 i s - d 99Ba06	(	(	(	(	(	(	(	(	(	(	08*	(	(	(	(	0*

l ei e-Gas- asi Hl0ya09 i s - d 99Ba06 h1 eC v hv P) C T T) d, W hTus



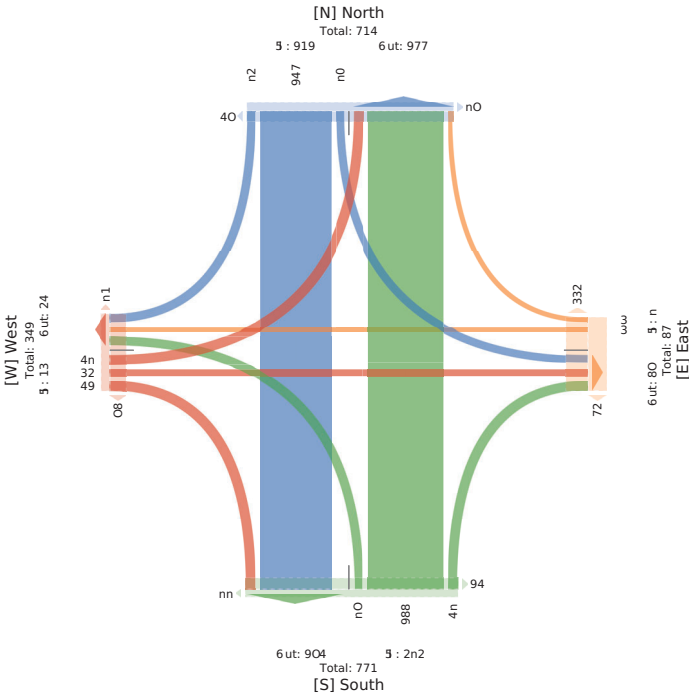
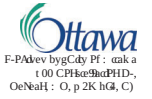




5566814 - COVID - BANK ST @ HOLMWOOD AVE - M... - TMC  
 Tue May 3, 2022  
 M/P Pay kea ( 8.2-30 km 9: -30 km)  
 l C3 GilleL B ghtLanP Mtdrory @L, c eaHy, kePeLoanL, v Ayr@Ldn BdaP, v Ayr@Ldn  
 s oLLRa(C)  
 l CMdlHewentL  
 n - D47D2, i drat@n- 45.3DD6D1, 975.161513



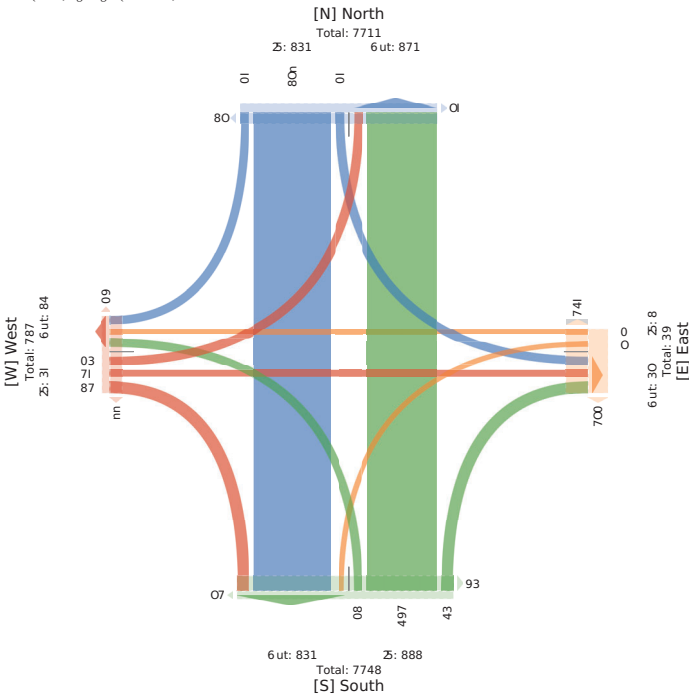
5566814 - COVID - BANK ST @ HOLMWOOD AVE - M... - TMC  
 Tue May 3, 2022  
 FM Feal Ingh FM ( hg h FM6 : Ae-a9Feal 1 Pu-  
 ) 9C Sasses l dr c a h MP-P-B)Bs, 1 eaAy, FevesedhH, RdyBhs PhwPav, RdyBhs PH  
 C-Pssk a9 B  
 ) 9MP-PeMehH  
 lDg447442, l PkbaPjnhB4454. , (7h8 5. h. 3



5566814 - COVID - BANK ST @ HOLMWOOD AVE - M... - TMC  
 Tue May 3, 2022  
 AM AeaP (8 - AM 9-8 - AM) 9l CesaLLAeaP i gus  
 h lLr lamen ldr c h avB MghsRyRen, i eaCy, AeLbenkAvn, wdyRen gy mgarB wdyRen gy  
 t sgml aP)  
 h lLMgGcDevitH  
 47 85(, 552, dgRahgv8(- 65515b, 9 - 6b1b-b3



5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC  
 Tue May 3, 2022  
 Full Length (6:30 AM-9:30 AM, 11:30 AM-2 PM, 3:30 PM-6 PM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on  
 Crosswalk)  
 All Movements  
 ID: 947024, Location: 48359. . . 2. - 83578408



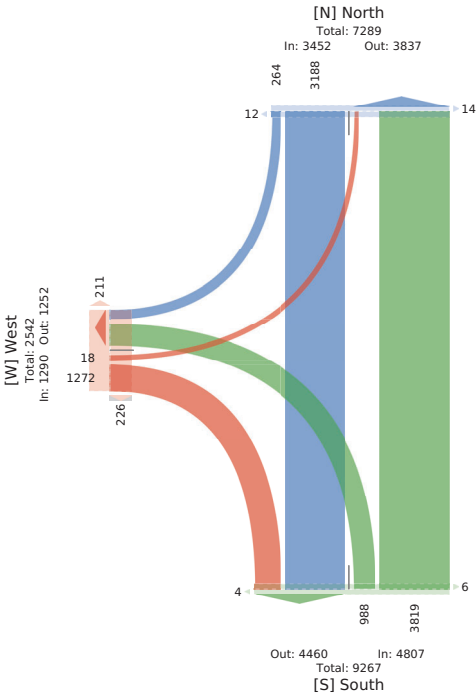
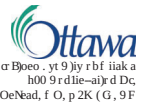
Time	Northbound					Southbound					Westbound					Eastbound										
	h	t	i	w	nn	h	t	i	w	nn	h	t	i	w	nn	h	t	i	w	nn	h	t	i	w	nn	
2022-08-03 06:00AM	5	14	7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ngbFM	7	133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ngbFM	7	142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phw	27	13	27	0	0	0	2	3	0	0	0	274	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* NNPhw	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* TruS	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F1 %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
i dr c a h MP-P-B)Bs	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* i dr c a h MP-P-B)Bs	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 eaAy	0	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* 1 eaAy	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RdyBhs PhwPav	3	15	1	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* RdyBhs PhwPav	1	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FevesedhH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* FevesedhH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RdyBhs PHC-Pssk a9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
* RdyBhs PHC-Pssk a9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

FevesedhH aH RdyBhs PHC-Pssk a9 Bi gi efc, wgwdr c, TgTr-u, WgW(Tu-H

5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC  
 Tue May 3, 2022  
 Full Length (6:30 AM-9:30 AM, 11:30 AM-2 PM, 3:30 PM-6 PM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 947024, Location: 4859... 2, -, 8578408



5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC  
 Tue May 3, 2022  
 FM 1 eal.rgh( FM 6: th( F MA  
 F - 9 -a1le rP(C)S11 ado Mr r cHHe1, v eaBy, l eoe1c1ad1, R)HHe1 rd wrao, R)HHe1 rd  
 9 r 1lk a-LA  
 F - Mr Bmed1  
 ID: 4g024, Pr(Hi)rdt 4( 7: 8882, 8B( 75g( 40(



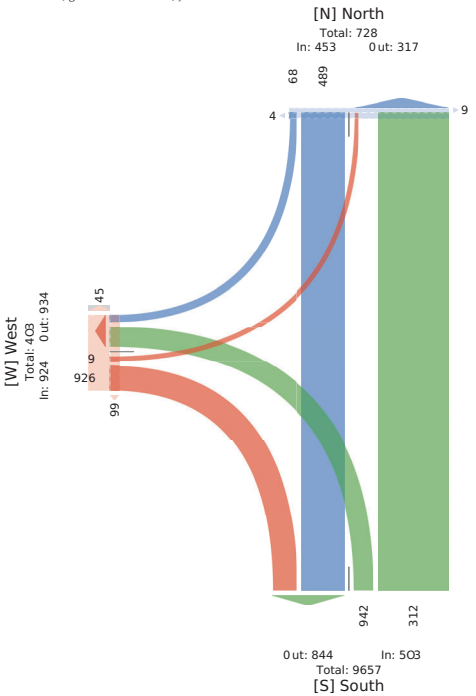
Pec. DyeHrd	Ordis Jruis. rudo					Jruis Ordis. rudo					E ell Sall. rudo				
	w	T	W	FNN	l eol.	T	P	W	FNN	l eol.	w	P	W	FNN	l eol.
20220403 gthFM	8	5	0	82	0	b23	2	0	h2	0	4h	0	0	4h	h3
g30FM	h0	h	0	g	2	h(	34	0	hg	0	h	0	0	h	hg
g4FM	(	h0	0	h	0	hg	38	0	222	0	4	0	0	4	h
g05M	3	h0	0	h04	2	h4	38	0	hg3	0	35	h	0	38	h
Tria	2	3	h	0	385	4	50g	h3	0	845	0	hg2	h	0	hg3
* FNBa18	55*	37*	0*	0*	6	6	gh3*	hg1*	0*	6	4	::1*	01*	0*	6
* Tria	h7*	257*	0*	2g2*	6	6	455*	h075*	0*	87*	4	h37*	07*	0*	h47*
lv%	072	078.5	6	0785	6	6	0788	0782	6	0782	4	0724	02(0	6	072
P(C)S11 ado Mr r cHHe1	24	330	0	3(4	6	6	3h	h2:	0	550	6	h88	h	0	h8g
* P(C)S11 ado Mr r cHHe1	:50*	:47*	0*	:47*	6	6	g89*	:37*	0*	gg4*	6	:87*	h00*	0*	:87*
* v ealy	h	h8	0	hg	6	6	4h	2	0	43	6	h	0	0	h
* v ealy	47*	43*	0*	47*	6	6	58*	h7*	0*	4*	6	07*	0*	0*	07*
R)HHe1 rd wrao	0	4	0	4	6	6	35	8	0	43	6	4	0	0	4
* R)HHe1 rd wrao	0*	h*	0*	h*	6	6	(7*	(h*	0*	4*	6	27*	0*	0*	27*
* l eoe1c1ad1	6	6	6	6	2	6	6	6	6	6	6	6	6	6	6
* l eoe1c1ad1	6	6	6	6	07*	6	6	6	6	6	6	6	6	6	6
R)HHe1 rd 9 r 1lk a-L	6	6	6	6	2	6	6	6	6	6	6	6	6	6	6
* R)HHe1 rd 9 r 1lk a-L	6	6	6	6	07*	6	6	6	6	6	6	6	6	6	6

l eoe1c1ad1 ado R)HHe1 rd 9 r 1lk a-L7P( Pe1, wt w(Csi, Tr Tscu, W WGTud

5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC  
 Tue May 3, 2022  
 AM Peak (8: -9 AM) 1: -9 AM  
 Ass Lsai1e (g1nd aor Mcd:Hvysel, Bealy, Per eidh0i, whyysel co mcar, whyysel co LH111 askC  
 Ass McReDeod  
 47: 158025, gcvadro: 59.316662, j69.189509



5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC  
 Tue May 3, 2022  
 MB 1ay Lean g 2180 LM ( 1180 LM6  
 : Av A9e9 gl IP)Qas1 Mi G dyoA9, r eacy, Lel e9D1as9, HByoA91s vial, HByoA91s  
 : d 99BaA6  
 : AMi ceRes0  
 vk hmi D21, l i oaE sh143n8882, (845D4104



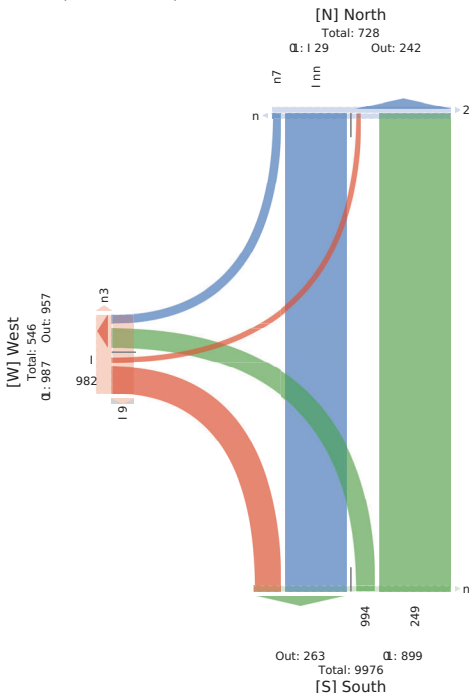
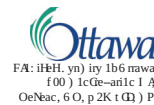
IeP k h0E s	OidJ JiuG. iusi					JiuG OidJ. iusi					E e9C SagC iusi				
	v	T	W	NN	LeL	T	l	W	NN	LeL	v	l	W	NN	LeL
20220403 r2180LM	D	n2	0	100	0	r22	34	0	148	2	34	2	0	38	18
r2180LM	D	112	0	120	4	123	28	0	140	0	15	0	0	15	36.5
1180LM	4	114	0	120	1	135	23	0	14m	0	40	1	0	4	14
1h4LM	D	103	0	111	1	120	24	0	114	0	31	1	0	34	20
T1QA	2m	122	0	14	8	40	110	0	51	2	154	1	0	15m	51
* ; NN(ae)	57*	875*	0*	0*	(	(	127*	120*	0*	(	(	875*	21*	0*	(
* T1QA	21*	312*	0*	355*	(	(	107*	128*	0*	105*	(	131*	07*	0*	137*
Lr %	0705	0708	(	0780	(	(	0701	0715	(	0764	(	0711	0700	(	0718
1P)Qas1 Mi G dyoA9	2D	3D4	0	1t3	(	(	151	110	0	481	(	156	1	0	154
* 1P)Qas1 Mi G dyoA9	n65*	m2*	0*	m5*	(	(	n25*	100*	0*	n87*	(	n65*	100*	0*	n85*
r eacy	t	24	0	25	(	(	21	0	0	21	(	t	0	0	t
* r eacy	31*	42*	0*	47*	(	(	17*	0*	0*	37*	(	05*	0*	0*	05*
HByoA91s vial	0	12	0	12	(	(	13	0	0	13	(	3	0	0	3
* HByoA91s vial	0*	21*	0*	28*	(	(	25*	0*	0*	21*	(	17*	0*	0*	17*
Le1 e9D1as9	(	(	(	(	5	(	(	(	(	2	(	(	(	(	58
Le1 e9D1as9	(	(	(	(	4	100*	(	(	(	100*	(	(	(	(	m3*
HByoA91s - d 99BaA6	(	(	(	(	1	(	(	(	(	0	(	(	(	(	1
* HByoA91s - d 99BaA6	(	(	(	(	117*	(	(	(	(	0*	(	(	(	(	17*

Le1 e9D1as9 as1 HByoA91s - d 99BaA671 h1 eC v h v IP)C ThT) di, WhW(Tud

5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC  
 Tue May 3, 2022  
 M/Pay keaf ( 8.2-30 km 9: -30 kM)  
 l Cš GllLeB ħhtLanP Mtdđryr@L, c eaĥy, kePeLoan, v Ayrr@Ldn BdaP, v Ayrr@Ldn  
 s allLRa(C)  
 l (CMdHwentL  
 nĥ - D47024, i drat@n- 45.3D662, 955.175405



5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC  
 Tue May 3, 2022  
 FM Feal 3igt FM hgngt FM (h6: eA- Feal 9 luA  
 P - ) -a(Cš idorCacHM1rAyv-C 9 ea: y, FeĤGAcC BivvyeC1c R1aĤ BivvyeC1c  
 ) A(CGva-l (C)  
 P - M1: ek ecrC  
 nĥ nĤg402g, s lvanl cngt 3D882, Ĥt 754 g0t



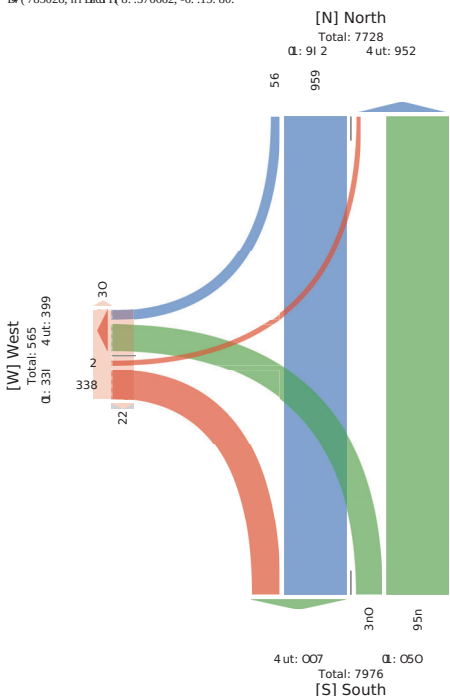
Lk e	O1A0					J1um					E eĤ				
	R	T	W	PNN	FeĤL	T	s	W	PNN	FeĤL	R	s	W	PNN	FeĤL
20220503 3gg FM	f5	fg2	0	ft4	0	fg0	35	0	f85	0	l3	0	0	l3	f3
g0FM	14	f3f	0	fgD	0	ffD	18	0	f85	0	g8	2	0	gD	15
g4FM	ff	f33	0	fgg	0	fg0	82	0	222	0	80	f	0	8f	11
g0FM	3	f3D	0	fg2	0	fgf	g2	0	f43	0	15	0	0	15	f5
T1m	g4	fg	0	tD	0	fg0	208	0	8g0	0	225	3	0	22D	50
* PNNLavo	4T*	DT*	0*	h	h	825*	288*	0*	h	h	D8*	f3*	0*	h	h
T1m	3T*	3g8*	0*	382*	h	3g8*	f32*	0*	g85*	h	fg8*	02*	0*	fg5*	h
P9*	0563	0TqD	h	0T88	h	0T13	0832	h	078D	h	08f3	0788	h	07f2	h
s idorCacHM1rAyv-C	g5	t0D	0	ttt	h	t0D	203	0	8f2	h	22f	3	0	22g	h
* s idorCacHM1rAyv-C	D7*	D8*	0*	D85*	h	Dg8*	DdT*	0*	D7*	h	D8*	f00*	0*	D8*	h
9 ea: y	f	ft	0	f5	h	f8	2	0	fD	h	0	0	0	0	h
9 ea: y	2T*	2T*	0*	2B*	h	3T*	f70*	0*	2T*	h	0*	0*	0*	0*	h
BivvyeC1c R1aĤ	f	2f	0	22	h	fg	2	0	f5	h	t	0	0	t	h
* BivvyeC1c R1aĤ	2T*	3T*	0*	3B*	h	25*	f70*	0*	2T*	h	22*	0*	0*	22*	h
* FeĤGAcC	h	h	h	h	0	h	h	h	h	0	h	h	h	h	0
BivvyeC1c ) A(CGva-l	h	h	h	h	0	h	h	h	h	0	h	h	h	h	0
* BivvyeC1c ) A(CGva-l	h	h	h	h	0	h	h	h	h	0	h	h	h	h	0

FeĤGAcCacHBivvyeC1c ) A(CGva-l 7s ns eĤr, RnRidor, TnToA, WnWhTuk

5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC  
 Tue May 3, 2022  
 AM AeaP k(8: AM - 8(8: AM9 - ) l eGAs AeaP L i uC  
 g s h s att e Ĥndr a aĤV Mi G ĤBet, L ea l y, AevetGĤH, RĤBet i Hwi av, RĤBet i H  
 ĤGttmasP9  
 g s Mi l eĤ eĤt  
 DĤ ( 785028, ni Bnd Ĥ 8: .376662, -6: .15: 80:



5566814 - COVID - BANK ST @ ECHO DR - MAY 03... - TMC  
 Tue May 3, 2022  
 Full Length (6:30 AM-9:30 AM, 11:30 AM-2 PM, 3:30 PM-6 PM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 947081, Location: 485987.9, - 85/74334



Leg Direction	North					East					South					West					
	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	
2022-08-03 6:00AM	0	118	0	0	118	0	1	0	0	1	0	140	0	0	140	0	1	0	0	1	
7:00AM	0	484	2	0	486	4	9	0	0	9	43	6	694	0	60	0	17	0	0	17	
9:00AM	0	242	4	0	246	0	4	0	1	8	14	4	30	0	311	1	4	0	0	4	
11:00AM	0	267	4	0	271	2	8	0	0	8	20	3	277	0	291	0	7	0	0	7	
12:00PM	0	880	7	0	887	1	9	1	9	1	20	13	862	1	8	6	16	0	1	1	
1:00PM	0	8	2	10	0	622	0	28	0	1	33	26	84	0	8	3	14	0	0	14	
3:00PM	1	3	1	2	0	3	4	1	9	0	1	0	10	71	0	333	0	11	0	0	11
4:00PM	2	70	6	0	77	1	17	0	4	0	22	17	88	0	6	3	23	0	0	23	
8:00PM	2	690	6	1	699	10	13	0	4	0	1	11	673	0	694	1	32	0	2	34	
<b>Total</b>	<b>8</b>	<b>4422</b>	<b>43</b>	<b>1</b>	<b>44</b>	<b>21</b>	<b>101</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>131</b>	<b>96</b>	<b>4</b>	<b>0</b>	<b>4702</b>	<b>141</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>144</b>	
% Approach	0%	97%	1%	0%	0%	0%	0%	0%	0%	0%	0%	23%	97%	0%	0%	0%	9%	91%	0%	1%	
% Total	0%	46%	0%	0%	46%	1%	0%	0%	0%	1%	1%	13%	49%	0%	0%	1%	13%	0%	0%	13%	
Lights and Motorcycles	1	4137	40	1	4178	0	0	26	2	27	0	67	43	0	444	0	138	0	1	137	
% Lights and Motorcycles	20%	93%	93%	100%	93%	0%	0%	96%	100%	45%	0%	0%	93%	0%	0%	0%	85%	0%	100%	98%	
Heavy	0	162	0	0	162	1	1	0	0	1	1	1	170	1	0	1	1	0	0	1	
% Heavy	0%	3%	0%	0%	3%	100%	0%	0%	0%	0%	100%	35%	100%	0%	0%	0%	0%	0%	0%	0%	
Bicycles on Road	4	122	3	0	129	30	1	1	0	32	2	2	146	0	1	3	8	0	0	8	
% Bicycles on Road	70%	2%	5%	0%	25%	29%	100%	3%	0%	24%	27%	3%	0%	0%	3%	33%	0%	0%	0%	33%	
Pedestrians	-	-	-	-	-	19	-	-	-	-	604	-	-	-	-	6	-	-	-	-	
% Pedestrians	-	-	-	-	-	90%	-	-	-	-	97%	-	-	-	-	78%	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	10	-	-	-	-	1	-	-	-	-	
% Bicycles on Crosswalk	-	-	-	-	-	98%	-	-	-	-	13%	-	-	-	-	145%	-	-	-	-	

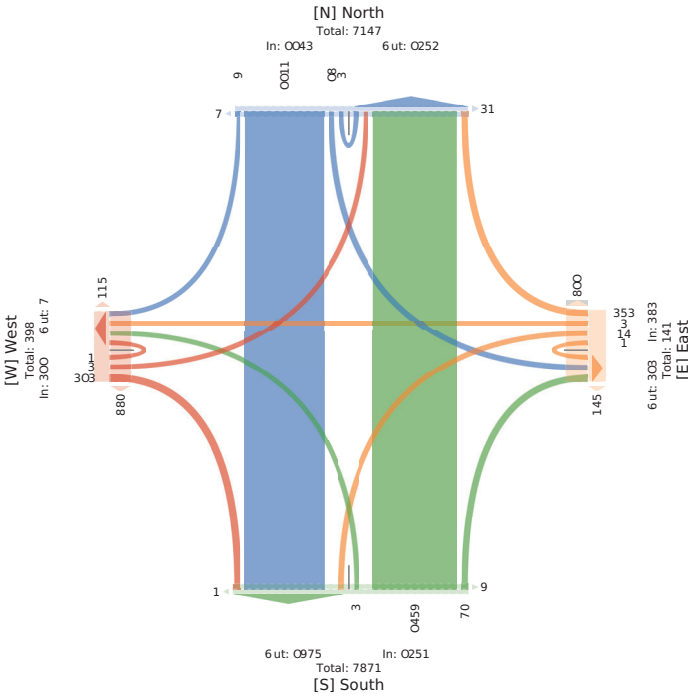
Pedestrians and Bicycles on Crosswalk: L: Left, R: Right, T: Thru, U: U-Turn



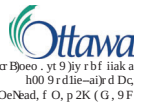
5566814 - COVID - BANK ST @ ECHO DR - MAY 03... - TMC  
 Tue May 3, 2022  
 Full Length (6:30 AM-9:30 AM, 11:30 AM-2 PM, 3:30 PM-6 PM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 947081, Location: 485987.9, - 8574334



Provided by: City of Ottawa  
 100 Constellation Dr,  
 Nepean, ON, K2G 8J9, CA



5566814 - COVID - BANK ST @ ECHO DR - MAY 03... - TMC  
 Tue May 3, 2022  
 FM 1 ea l r g h F M 6 : th ( F MA  
 F - 9 a l l e l r P C S i a d o M r i r d H e l , v e a B y , l e o e l i a d l R H H e l r d w r a o , R H H e l r d  
 9 r 1 l k a - L A  
 F - M r B e m e d i  
 I D t : 4 g 0 ( h , P r H i ) d r t 4 ( 7 8 : ( g 8 : 6 6 ( 7 5 g 4 3 3 4



1 r c B p o o v t 9 j y r b f B i a k a  
 h 0 0 9 r d i e - a l j r d D e  
 O e N a s , f O , p 2 K ( G , 9 F

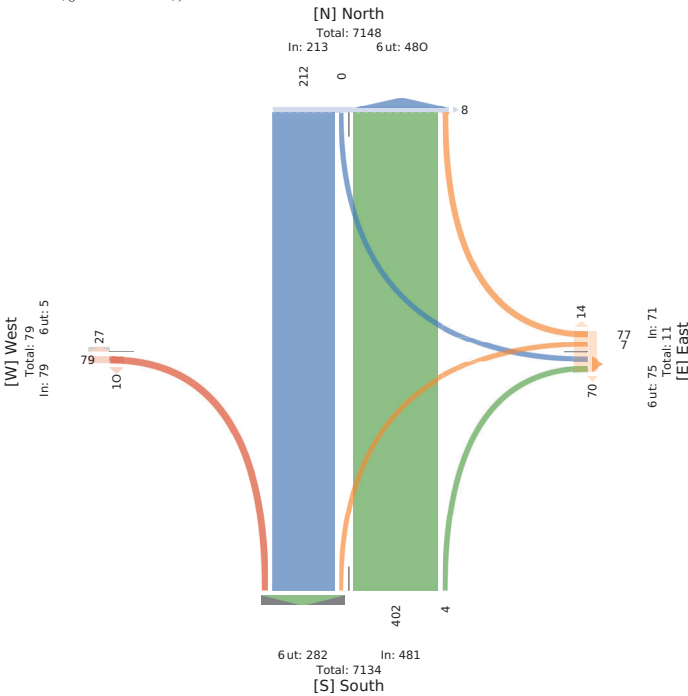
Pec	Ords					Jali					Erus					S eli											
	DyeHyd	Erus.rudo	Jali	S eli.rudo	Erus.rudo	S eli.rudo	Jali	S eli.rudo	Erus.rudo	S eli.rudo	Jali	S eli.rudo	Erus.rudo	S eli.rudo	Jali	S eli.rudo	Erus.rudo	S eli.rudo									
Time	w	T	P	W	FNN	l eol	w	T	P	W	FNN	l eol	w	T	P	W	FNN	l eol									
20220(03)gh(FM	0	h04	0	0	h04	h	4	0	0	0	4	h2	2	h4	0	0	h5	0	4	0	0	0	4	2	25g		
g30FM	0	h20	h	0	h2h	3	4	0	0	0	4	h0	3	h4	0	0	h8	0	0	0	0	0	0	0	30g		
g4FM	0	h1	0	0	h1	0	0	0	0	0	0	h0	h	2h	0	0	2h5	0	0	0	0	0	0	0	30g		
g0FM	0	h42	2	0	h44	0	3	0	h	0	4	h	h	h2	0	0	h3	0	2	0	0	0	0	0	33g		
Tria	0	(2	3	0	(2g	4	h	0	h	0	h2	40	0	h	0	0	h42	0	h	0	0	0	h	0	h0h		
* FNraH	0	2	0	0	0	6	4	h	0	0	0	6	6	0	0	0	0	6	h00	0	0	0	0	0	6	6	
* Tria	0	40	0	0	40	6	0	0	0	0	0	6	6	0	0	0	6	h00	0	0	0	0	0	0	6	6	
1 v %	6	0	2	h4	0	2	h	0	0	0	6	0	2	h	0	0	6	0	2	h	0	0	0	6	0	2	h
P311 ad o M r i r d H e l	0	00	3	0	03	6	2	0	h	0	3	6	h	55	0	0	552	6	h	0	0	0	h	6	h	h	
* P311 ad o M r i r d H e l	0	(	2	h	0	0	(	2	h	0	0	(	2	h	0	0	(	2	h	0	0	0	(	2	h	0	0
v e a B y	0	h	0	0	h	6	0	0	0	0	0	6	0	43	0	0	43	6	0	0	0	0	0	0	6	5h	
* R H H e l r d w r a o	0	8	0	0	8	6	0	0	0	0	0	6	0	5	h	0	0	38	6	0	0	0	0	0	6	43	
* l e o e l i a d l	6	6	6	6	6	3	6	6	6	6	6	3	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
* R H H e l r d 9 r 1 l k a - L	6	6	6	6	6	h	6	6	6	6	6	h	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
* R H H e l r d 9 r 1 l k a - L	6	6	6	6	6	h	6	6	6	6	6	h	6	6	6	6	6	6	6	6	6	6	6	6	6	6	

l e o e l i a d l a d o R H H e l r d 9 r 1 l k a - L P e h , w t w ( S i , T t T s u , W W G I u d

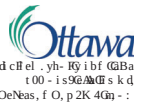
5566814 - COVID - BANK ST @ ECHO DR - MAY 03... - TMC  
 Tue May 3, 2022  
 AM Peak (8-9 AM) 1 : - 9 AM C  
 A s L s a i e ( g t n d a o r M c d H y v s e i , B e a l y , P e r e i d h o i , w h y v s e i c o m c a r , w h y v s e i c o  
 L H i i l a s k  
 A s M c R e D e o d  
 4 7 : 1 5 8 0 9 - , g c v a d r o : 5 9 . 3 1 9 8 6 1 , ) 6 9 . 1 8 5 3 3 5



PH r r e r b y : L h i c i O d h i a  
 - 0 0 L c o i s s a d o 7 H  
 N e p e a n , O N , K 2 G 9 J 1 , L A



5566814 - COVID - BANK ST @ ECHO DR - MAY 03... - TMC  
 Tue May 3, 2022  
 M B l e a n g L 2 8 0 L M ( t 1 8 0 L M 6  
 : A v A 9 2 9 g l P P a s l M i G d y o a 9 , r e a c y , L e l e 9 d i s 9 , H i y o a 9 i s v i a l , H i y o a 9 i s  
 - d 9 9 B a h 6  
 : A M i c e R e s 0  
 w k h m l I D 4 t , l i o a e s h l 4 3 m l D B m ( 8 4 5 1 3 3 1



L d e l e l - y h - R y r b f G a B a  
 t 0 0 - i s 9 8 A B e s k d  
 O e N a s , f O , p 2 K 4 6 m - :

I e P	O i d j					J a o C					E u d j					S e 9 C										
	E i u d j	J a o C	E u d j	S e 9 C	J a o C	E i u d j	J a o C	E u d j	S e 9 C	J a o C	E i u d j	J a o C	E u d j	S e 9 C	J a o C	E i u d j	J a o C	E u d j	S e 9 C							
T R e	v	T	1	W	N N	L e l U	v	T	1	W	N N	L e l U	v	T	1	W	N N	L e l U	v	T	1	W	N N	L e l U	w C	
202204031280LM	0	124	2	0	128	0	3	0	0	0	3	14	1	114	0	0	11m	0	1	0	0	0	1	20	21g	
1284LM	0	141	1	0	144	0	2	1	1	0	1	24	2	145	0	0	140	0	3	0	0	0	3	14	32g	
180LM	0	150	4	0	153	0	4	0	1	0	m	25	D	118	0	0	144	0	2	0	0	0	2	11	30m	
1h4LM	0	130	2	0	110	0	m	0	1	0	10	20	D	130	0	0	130	3	3	0	0	0	3	22	2m	
T i G 4	0	41h	10	0	4m	0	1m	1	5	0	25	m	22	480	0	0	500	3	12	0	0	0	12	8	1233	
* N d a o	0	n 0 3	1 3	0	0	(	(	8 3 1	3 1 2	2 3	0	0	(	3 8	n 5 3	0	0	0	(	1 0 0	0	0	0	0	(	(
* T i G 4	0	1 6 1	0	0	1 0 5	0	(	1 2	0	1	0	2 1	(	1 2	1 5 3	0	0	1 0 5	(	1 3	0	0	0	0	(	(
L r %	0	(	0 3 5	0	0 2 0 0	(	0 1 5 4	(	0 7 8 3	(	0 7 8 4	(	0 7 3 m	(	0 5 0 8	0	0 2 1	(	(	0 7 1 0	(	0 7 8 4	(	(	0 7 8 4	(
1 P P a s l M i G d y o a 9	0	41	1	0	44	0	1	8	0	5	0	23	(	1	8	43m	0	0	445	(	1	2	0	0	12	(
* 1 P P a s l M i G d y o a 9	0	n 8 0	1 0 0	0	n 8 1	0	(	h 3	0	0	1 0 0	0	1 1 3	0	8 8 3	n 8 3	0	0	n 8 2	0	1 0 0	0	0	0	1 0 0	(
r e a c y	0	28	0	0	28	0	0	0	0	0	0	0	(	0	23	0	0	23	(	0	0	0	0	0	0	40
* r e a c y	0	1 5 2	0	0	1 5 2	0	(	0	0	0	0	0	(	0	1 1 8	0	0	3 1 2	(	0	0	0	0	0	0	1 1
H i y o a 9 i s v i a l	0	11	0	0	11	0	(	2	1	0	0	3	(	4	15	0	0	2	(	0	0	0	0	0	0	30
* H i y o a 9 i s v i a l	0	2 1	0	0	2 1	0	(	0 2	1 0 0	0	0	1 1 2	(	2 2 8	2 1 2	0	0	3 7	0	0	0	0	0	0	3 1	
L e l e 9 d i s 9	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(
* L e l e 9 d i s 9	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(
H i y o a 9 i s - d 9 8 B a h	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(
* H i y o a 9 i s - d 9 8 B a h	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(	(

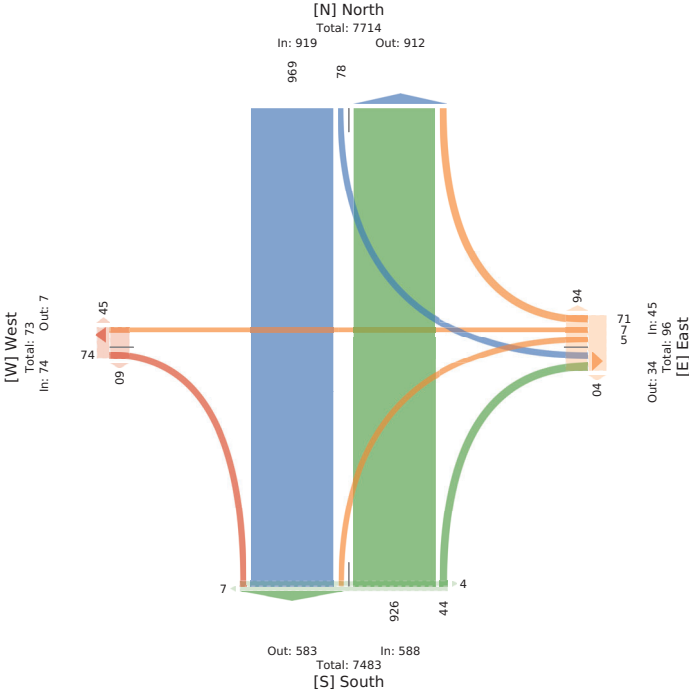
L e l e 9 d i s 9 a s l H i y o a 9 i s - d 9 8 B a h 7 1 h e C v h v P ( C h T ) d i , W h W T u d

5566814 - COVID - BANK ST @ ECHO DR - MAY 03... - TMC

Tue May 3, 2022  
 M: 8:00 AM - 8:30 AM  
 1 (C) s Gille B ght LanP Mtdr y r @ L, c ea h y, ke PeLoAn, v Ay r @ Ldn Bda P, v Ay r @ Ldn s all LRa (C)  
 i (CML) emech  
 ID47(50: . . i LvanLc4 : 67: 517, 81: 65(33)

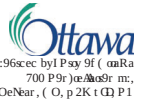


City of Ottawa  
 Nepean, ON, K2G 5J1



5566814 - COVID - BANK ST @ ECHO DR - MAY 03... - TMC

Tue May 3, 2022  
 Full Feal In FM gt FMhg( 6eaAFeal - 9u:  
 1 (AP A))e lC s d q arc M96: H(H), - ea6y, Fece)osar), v s(H) 9r B9ac, v s(H) 9r P:9))RaAh  
 1 AM96ewer d  
 km l Dn40t 7, C9Haa9r l n t B D 45D g5t 8 4n33n



City of Ottawa  
 Nepean, ( O, p 2K t CD) P 1

Ca ms eH6r	O9:ad EhauBbur c					J ajo S e j d b u r c					Ehual O9:ad b u r c					S e j o J a j d b u r c									
	B	T	C	W	1 NN	B	T	C	W	1 NN	B	T	C	W	1 NN	B	T	C	W	1 NN					
2022g h g 03 n 00FM	0	755	t	0	742	0	n	0	7	0	34	2	74n	0	0	74	0	D	0	0	0	D	3n	342	
n 07FM	0	713	0	0	701	7	5	0	7	0	4	32	3	202	0	0	206	0	3	0	0	0	3	3n	472
n 08FM	7	204	0	0	200	0	2	0	0	0	2	3n	...	755	0	0	743	0	...	0	0	0	...	400	
n 09FM	7	71D	7	0	207	0	1	0	2	0	5	23	5	712	0	0	71D	0	1	0	0	0	1	23	472
T9a4	2	540	...	0	544	7	74	0	n	0	22	724	74	541	0	0	553	0	23	0	0	0	23	772	7.0.
* 1 N9aH	08*	113*	08*	0*	0*	g	478*	0*	748*	0*	g	28*	135*	0*	0*	g	700*	0*	0*	0*	g	g	g	g	
* T9a4	08*	043*	08*	0*	n 07*	g	72*	0*	02*	0*	78*	g	72*	a 50*	0*	0*	n 07*	g	78*	0*	0*	0*	78*	g	g
F- %	g	08D2	08t 0	g	08D4	g	08t 0	g	08 00	g	0604	g	08t 0	08E7	g	08E2	g	08 3D	g	g	g	08 3D	g	08 0	
Ci d q arc M96: H(H)	0	530	t	0	53t	g	73	0	n	0	75	g	7t	57	0	0	537	g	23	0	0	0	23	g	7t.0.
* M96: H(H)	0*	138*	438*	0*	138*	g	52*	0*	700*	0*	538*	g	438*	138*	0*	0*	138*	g	700*	0*	0*	0*	700*	g	138*
* - ea6y	0	7	0	0	7.	g	0	0	0	0	0	g	0	75	0	0	75	g	0	0	0	0	0	g	33
* - ea6y	0*	28*	0*	0*	28*	g	0*	0*	0*	0*	g	0*	28*	0*	0*	28*	g	0*	0*	0*	0*	0*	g	28*	
v s(H) 9r B9ac	2	3n	7	0	35	g	1	0	0	0	1	g	3	22	0	0	2t	g	0	0	0	0	0	g	5
* v s(H) 9r B9ac	700*	n 07*	7.8*	0*	n 07*	g	258*	0*	0*	0*	228*	g	7.8*	28*	0*	0*	32*	g	0*	0*	0*	0*	0*	g	n 07*
Fece)osar)	g	g	g	g	g	7	g	g	g	g	g	72t	g	g	g	g	g	g	g	g	g	g	g	g	12
* Fece)osar)	g	g	g	g	g	700*	g	g	g	g	g	156*	g	g	g	g	g	g	g	g	g	g	g	g	8429*
v s(H) 9r P:9))RaA	g	g	g	g	g	0	g	g	g	g	g	3	g	g	g	g	g	g	g	g	g	g	g	g	20
* v s(H) 9r P:9))RaA	g	g	g	g	g	0*	g	g	g	g	g	28*	g	g	g	g	g	g	g	g	g	g	g	g	750*

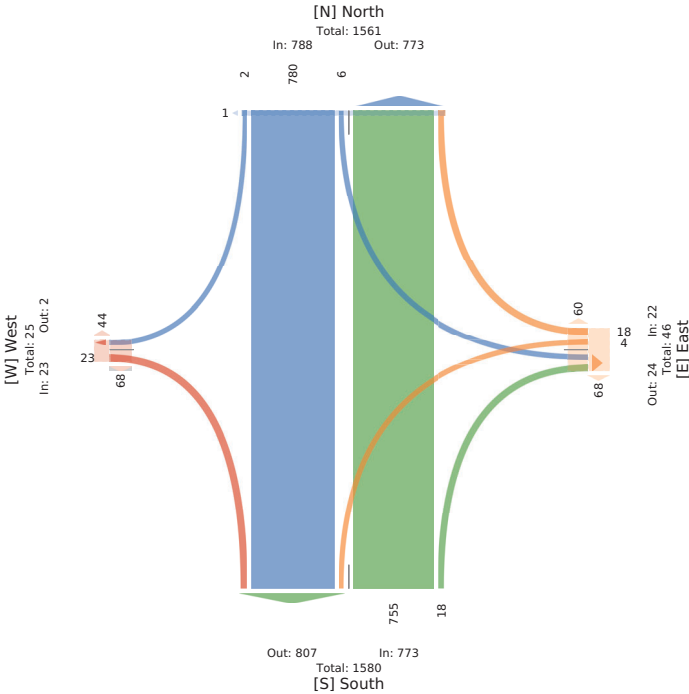
Fece)osar) arc v s(H) 9r P:9))RaA8Ci Cefq BI Bsi dq TI Tdu, W Wg f ur

5566814 - COVID - BANK ST @ ECHO DR - MAY 03... - TMC

Tue May 3, 2022  
 AM AeaP ( AM 8: AM- 89) elaC/ aeaP s Lul  
 i (C) g h h e h k n o t h a C H M L L i v y v e h s e a y, A e h h l m a c, B a y y e h L c R l a H B a y y e h L c  
 g l l h w a P -  
 i (CML) emech  
 ID47(50: . . i LvanLc4 : 67: 517, 81: 65(33)



City of Ottawa  
 Nepean, 9 N, K2G : J7, gi



5566814 - COVID - BANK ST @ AYLMER AVE - MAY... - TMC

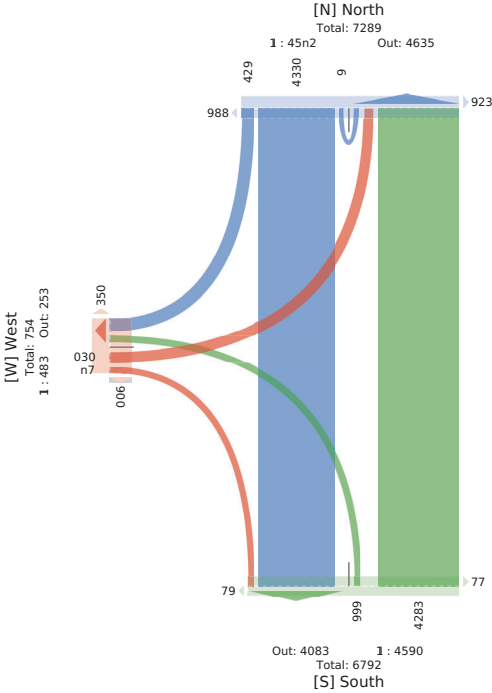
Tue May 3, 2022  
 Full Length (6:30 AM-9:30 AM, 11:30 AM-2 PM, 3:30 PM-6 PM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 947085, Location: 48.3986, -58.674156



City of Ottawa  
 100 Constellation Dr,  
 Nepean, ON, K2G 8J9, CA

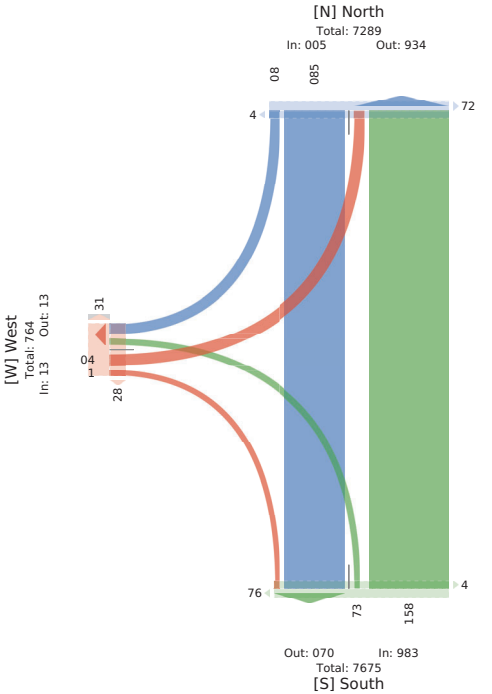
Leg Direction	North Southbound					South Northbound					West Eastbound					
	R	T	U	App	Ped*	T	L	U	App	Ped*	R	L	U	App	Ped*	
2022-08-03 6:00AM	15	211	1	229	16	238	2	0	235	8	0	10	0	10	17	456
5:00AM	42	476	0	827	24	689	18	0	654	21	5	89	0	66	57	1267
7:00AM	84	409	0	463	18	815	5	0	824	9	4	35	0	41	39	1027
9:00AM	21	218	0	236	6	242	5	0	249	5	8	10	0	18	20	800
11:00AM	38	262	0	295	13	277	7	0	296	6	1	12	0	13	39	606
12:00PM	80	830	0	870	29	827	15	0	848	22	10	44	0	84	73	1159
1:00PM	49	882	0	601	30	811	9	0	820	35	13	32	0	48	65	1166
3:00PM	80	367	0	417	21	384	10	0	364	10	13	23	0	36	84	717
4:00PM	65	662	0	529	48	626	18	0	641	27	12	83	0	68	100	1438
8:00PM	66	827	0	894	83	842	21	0	863	48	14	43	0	85	103	1214
<b>Total</b>	481	4223	1	4658	282	4802	111	0	4613	190	59	323	0	402	601	9690
% Approach	9.6%	90.3%	0%	0%	-	95.6%	2.4%	0%	-	-	19.5%	70.3%	0%	-	-	-
% Total	4.5%	43.6%	0%	47.2%	-	46.8%	1.1%	0%	45.6%	-	0.7%	3.3%	0%	4.1%	-	-
Lights and Motorcycles	343	4046	0	4379	-	4226	105	0	4333	-	52	274	0	386	-	9057
% Lights and Motorcycles	56.1%	98.7%	0%	93.9%	-	83.9%	96.4%	0%	93.9%	-	91.1%	75.9%	0%	77.0%	-	93.5%
Heavy	15	139	1	165	-	149	4	0	183	-	8	15	0	22	-	332
% Heavy	3.7%	3.3%	100%	3.4%	-	3.3%	3.6%	0%	3.3%	-	6.3%	8.3%	0%	8.8%	-	3.4%
Bicycles on Road	91	37	0	129	-	125	0	0	125	-	2	22	0	24	-	270
% Bicycles on Road	20.2%	0.9%	0%	2.7%	-	2.7%	0%	0%	2.7%	-	2.8%	6.7%	0%	6.0%	-	2.9%
Pedestrians	-	-	-	-	230	-	-	-	-	169	-	-	-	-	473	-
% Pedestrians	-	-	-	-	91.3%	-	-	-	-	77.9%	-	-	-	-	70.4%	-
Bicycles on Crosswalk	-	-	-	-	22	-	-	-	-	21	-	-	-	-	117	-
% Bicycles on Crosswalk	-	-	-	-	7.5%	-	-	-	-	11.1%	-	-	-	-	19.6%	-

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn



Pec DyeHrd	Ords Jruis. rudo				l e o l	Jruis Ords. rudo				l e o l	E e l i S a l l . r u d o				l e o l			
	w	T	W	FNN		T	P	W	FNN		w	P	W	FNN				
20220403 g h b F M	4	h0	0	h07	h3	h74	2	0	h4	5	7	h g	0	2h	37	2:5		
g30F M	h0	h33	0	h73	h3	h40	(	0	h4	h	2	h g	0	h4	h g	3:6		
g71F M	h7	h2	0	h55	h3	h40	g	0	h4g	h h	0	h3	0	h3	h	3:5		
h00F M	h g	h4	0	h35	h2	h5h	0	0	h5h	h	0	h3	0	h4	h0	3:8		
T r i a	(	0	04	0	(	4	2h	540	h7	0	g07	20	5	(	0	57	g5	h32g
* F N r a h	38*	4h8*	0*	6	6	4:8*	28*	0*	6	6	4:8*	408*	0*	6	6	6	6	6
* T r i a	38*	3:8*	0*	72h*	6	(	2h*	h8*	0*	(	3h*	4	0h*	7h*	0*	7h*	6	6
l v %	08g2	08:3	6	087g	6	08:43	08:00	6	08g4	6	08g	08:3	6	08g5	6	08g5	6	08g5
P C i i a d o M r i r c h e l	7h	743	0	(	37	6	52	h3	0	53:	6	5	7:	0	(	7	6	h225
* P C i i a d o M r i r c h e l	:2h*	45h*	0*	4(	g*	6	408*	42h*	0*	405*	6	h00*	:2h*	0*	:7h*	6	42h*	6
v e a b y	2	h3	0	h(	6	35	h	0	3g	6	0	(	0	(	0	(	6	6
* v e a b y	7h*	2h*	0*	2h*	6	(	h*	gB*	0*	(	h*	0*	:5*	0*	g8*	6	7h*	6
R h e l r d w r a o	g	3	0	h0	6	24	0	0	24	6	0	(	0	(	0	(	6	77
* R h e l r d w r a o	h7h*	0h5*	0*	h8*	6	7h*	0*	0*	7h*	6	0*	:5*	0*	g8*	6	3h*	6	3h*
l e o l i c j a d o	6	6	6	6	h4	6	6	6	6	20	6	6	6	6	6	6	6	6
* l e o l i c j a d o	6	6	6	6	40g*	6	6	6	6	h00*	6	6	6	6	6	6	6	g8h*
R h e l r d 9 r 1 l k . a . l	6	6	6	6	2	6	6	6	6	0	6	6	6	6	6	6	6	h g
* R h e l r d 9 r 1 l k . a . l	6	6	6	6	4g*	6	6	6	6	0*	6	6	6	6	6	6	6	22h*

l e o l i c j a d o R h e l r d 9 r 1 l k a - L B P t P e h , w t w j C i , T r T s u , W W G T u d



l e p k h o e s	O i d j J i u g . i u s i				l e l	J i u g O i d j . i u s i				l e l	E e c S a 9 C i u s i				l e l	w c
	v	T	W	( NN		T	I	W	( NN		v	I	W	( NN		
20220403 t r i 8 0 M	14	t14	0	130	m	t11	3	0	t11	3	0	7	0	7	21	2h
t r i 4 g M	20	117	0	157	1	117	4	0	142	3	1	4	0	5	113	324
t r i 8 0 L M	14	112	0	147	3	11m	2	0	14	5	2	m	0	11	1m	3m
t 2 h 4 l M	11	132	0	115	t2	133	3	0	135	1	2	10	0	12	27	2h
T r i a	51	435	0	500	20	470	13	0	428	15	4	3h	0	35	1h	12m
* ( NN i a o )	108*	Dh8*	0*	6	6	g7h*	2h*	0*	6	6	13h*	Dh*	0*	6	6	6
* T r i a	48*	118*	0*	1m2*	6	15h*	1h*	0*	17h*	6	0h*	2h*	0*	3h*	6	6
l r %	0810	08:03	6	08h1	6	08:44	08:40	6	08hD	6	08:24	08:00	6	08hD	6	08:23
1 P j O a s l M i G d y o a 9	13	40m	0	442	6	435	13	0	41m	6	4	24	0	30	6	113h
* 1 P j O a s l M i G d y o a 9	57h*	m8h*	0*	m2h*	6	m1h*	10h*	0*	m1h*	6	10h*	Dh5*	0*	Dh8*	6	m2h*
r e a c y	4	22	0	27	6	22	0	0	22	6	0	3	0	3	6	42
* r e a c y	7h*	1h*	0*	1h*	6	3h*	0*	0*	3h*	6	0*	m8*	0*	Dh*	6	1h*
H i b y o a 9 i s v i a l	t5	4	0	2h	6	12	0	0	12	6	0	3	0	3	6	35
* H i b y o a 9 i s v i a l	24h*	0h7*	0*	3h*	6	2h*	0*	0*	2h*	6	0*	m8*	0*	Dh*	6	3h*
L e l e 9 G a s 9	6	6	6	6	27	6	6	6	6	15	6	6	6	6	6	72
* L e l e 9 G a s 9	6	6	6	6	m8*	6	6	6	6	100*	6	6	6	6	6	Dh*
H i b y o a 9 i s - d 9 8 a h	6	6	6	6	1	6	6	6	6	0	6	6	6	6	6	13
* H i b y o a 9 i s - d 9 8 a h	6	6	6	6	3h*	6	6	6	6	0*	6	6	6	6	6	4h*

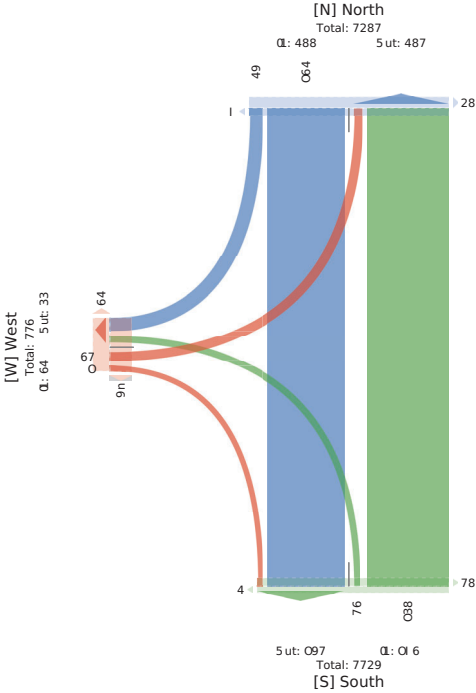
l e l e 9 G a s 9 a s l H i b y o a 9 i s - d 9 8 a h 1 h 1 e C v h v P C T h T ) d i , W W G T u d

5566814 - COVID - BANK ST @ AYLMER AVE - MAY... - TMC

Tue May 3, 2022  
 M: 7:30 AM - 9:30 AM  
 9:30 AM - 12:00 PM  
 12:00 PM - 3:00 PM  
 3:00 PM - 6:00 PM  
 6:00 PM - 9:00 PM  
 9:00 PM - 12:00 AM

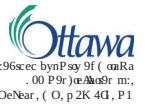


City of Ottawa  
 Nepean, ON, K2G 5J1 x 9



5566814 - COVID - BANK ST @ AYLMER AVE - MAY... - TMC

Tue May 3, 2022  
 FM Feal 13:00 FM gt r0 FMhg( 6eaWFeal - 9u:  
 1 AP A)je ICs d0 arc M90: H(H), - ea6y, Fecel0sar), v s(H) 9r B9ac, v s(H) 9r  
 P:9)RaA  
 1 AM9Gewer0  
 km1 t D47, C9H09rnt 481 45, g/45D . 75



City of Ottawa  
 Nepean, ON, K2G 5J1 x 9

Time	[N] North				[W] West				[S] South							
	B	T	W	1 NN	FecL	T	C	W	1 NN	FecL	B	C	W	1 NN	FecL	100%
2022-04-03 3:00 PM	32	15	0	22D	2	7	1	0	74	3	2	1	0	..	30	1.1
3:45 PM	10	7	0	10	1	10	5	0	10	7	..	1	0	24	21	100
4:00 PM	4	5	0	7	1	7	5	0	77	3	7	7	0	24	24	300
4:15 PM	22	10	0	22	2	10	0	15	10	..	12	0	3	24	355	
<b>Total</b>	17	722	0	101	10	554	7	0	512	23	2	42	0	73	0	454
<b>% Approach</b>	0.8%	13.2%	0%	4.8%	0.8%	17.8%	2.8%	0%	3.8%	4.2%	21.7%	7.8%	0%	1.8%	0%	8.6%
<b>% Total</b>	48%	158%	0%	4.8%	8%	128%	8.8%	0%	138%	8%	8%	38%	0%	1.8%	0%	8.6%
<b>% Lights and Motorcycles</b>	0.8%	13.2%	0%	4.8%	0.8%	17.8%	2.8%	0%	3.8%	4.2%	21.7%	7.8%	0%	1.8%	0%	8.6%
<b>% Heavy</b>	0.8%	13.2%	0%	4.8%	0.8%	17.8%	2.8%	0%	3.8%	4.2%	21.7%	7.8%	0%	1.8%	0%	8.6%
<b>% Bicycles on Road</b>	0.8%	13.2%	0%	4.8%	0.8%	17.8%	2.8%	0%	3.8%	4.2%	21.7%	7.8%	0%	1.8%	0%	8.6%
<b>% Pedestrians</b>	0.8%	13.2%	0%	4.8%	0.8%	17.8%	2.8%	0%	3.8%	4.2%	21.7%	7.8%	0%	1.8%	0%	8.6%
<b>% Bicycles on Crosswalk</b>	0.8%	13.2%	0%	4.8%	0.8%	17.8%	2.8%	0%	3.8%	4.2%	21.7%	7.8%	0%	1.8%	0%	8.6%

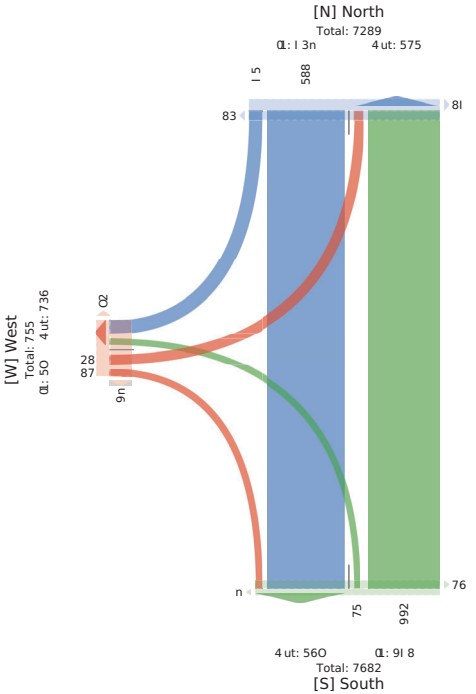
^Fecel0sar) arc v s(H) 9r P:9)RaA8CnCeFq BnBs d0 TnTdu, WnWgtur

5566814 - COVID - BANK ST @ AYLMER AVE - MAY... - TMC

Tue May 3, 2022  
 AM AeaP k(30 AM 8: (30 AM- 89) elacAeap s Lul  
 i Cg Ghheh k nioth acHMLLjvyv(s ea)y, Aehhrlach, Bayv0eh Lc RLaH Bayv0eh Lc  
 g LHhwaP-  
 i (LML) emech  
 ID(4: 705, t LvantLc( : 50451, 8 507: b. 1



City of Ottawa  
 Nepean, 9 N, K2G 5J4, gi



5566814 - COVID - QUEEN ELIZABETH DRWY @ FIF... - TMC

Tue May 3, 2022  
 Full Length (6:30 AM-9:30 AM, 11:30 AM-2 PM, 3:30 PM-6 PM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 947066, Location: 48303921, -. 83719. 4

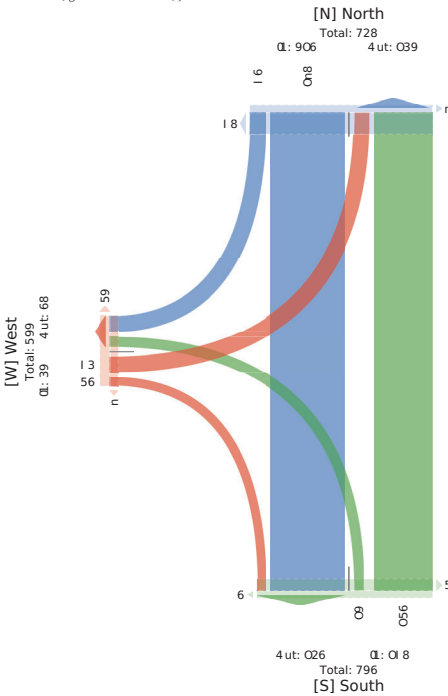
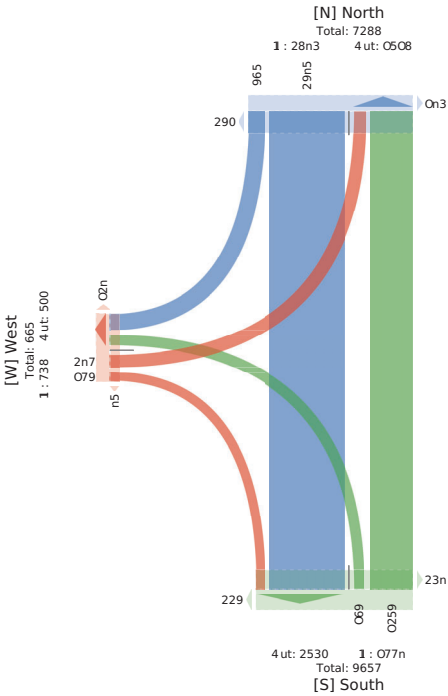


City of Ottawa  
 Nepean, ON, K2G 8J9, CA

Leg Direction	North					South					West					
	Eouthbound					Northbound					Westbound					
Time	R	T	U	App	Ped*	T	L	U	App	Ped*	R	L	U	App	Ped*	100%
2022-08-03 6:00 AM	8	42	0	4	13	32	1	0	33	11	3	4	0	..	..	7.
7:00 AM	23	14	0	19	22	141	..	0	147	2	8	1	0	22	13	36.
8:00 AM	44	21	0	318	4	212	21	0	233	2	18	46	0	61	20	600
9:00 AM	24	107	0	132	18	73	13	0	96	11	11	20	0	31	7	289
10:00 AM	30	131	0	161	19	61	8	0	66	23	9	17	0	2	16	284
12:00 PM	86	286	0	312	83	132	2	0	189	2	16	38	0	81	26	822
1:00 PM	83	240	0	293	46	13	26	0	163	88	12	23	0	38	24	491
3:00 PM	26	233	0	289	48	9	23	0	120	3	17	18	0	33	16	412
4:00 PM	68	808	0	80	8	16	36	0	203	66	32	39	0	1	23	744
8:00 PM	69	408	0	4	4	71	191	34	0	228	100	22	4	0	69	39
<b>Total</b>	398	2368	0	2,60	397	1283	193	0	1446	429	143	264	0	40	191	4613
<b>% Approach</b>	145%	785%	0%	..	..	765%	133%	0%	..	..	383%	643%	0%	..	..	..
<b>% Total</b>	75%	815%	0%	895%	..	2.5%	42%	0%	315%	..	33%	85%	0%	75%	..	..
<b>Lights and Motorcycles</b>	36	2329	0	2696	..	1222	193	0	1418	..	137	284	0	292	..	4803
<b>% Lights and Motorcycles</b>	923%	978%	0%	9.5%	..	9.3%	100%	0%	9.5%	..	963%	962%	0%	962%	..	9.3%
<b>Heavy</b>	9	18	0	24	..	10	0	0	10	..	2	4	0	6	..	40
<b>% Heavy</b>	2.9%	0.8%	0%	0.9%	..	0.9%	0%	0%	0.5%	..	1.8%	1.8%	0%	1.5%	..	0.9%
<b>Bicycles on Road</b>	19	21	0	40	..	21	0	0	21	..	3	6	0	9	..	0
<b>% Bicycles on Road</b>	4.5%	0.9%	0%	1.5%	..	1.5%	0%	0%	1.8%	..	2.3%	2.9%	0%	2.5%	..	1.9%
<b>% Pedestrians</b>	..	..	..	..	290	..	..	..	..	369	..	..	..	..	174	..
<b>% Bicycles on Crosswalk</b>	..	..	..	..	107	..	..	..	..	60	..	..	..	..	..	..
<b>% Bicycles on Crosswalk</b>	..	..	..	..	2.9%	..	..	..	..	143%	..	..	..	..	..	3.5%

\*Pedestrians and Bicycles on Crosswalk: L: Left, R: Right, T: Thru, U: U-Turn





Time	Ords				Jruis				E ell				Lel U					
	w	T	W	FNN	T	P	W	FNN	w	P	W	FNN						
20220403 ghr(F M	hg	74	0	g2	ht	(	h	7	0	(	5	7	2	5	0	:	g	
g30F M	h0	gh	0	1h	g	7g	3	0	5h	(	4	h2	0	h7	4		h5g	
g44F M	g	g3	0	1h	h7	15	(	0	72	5	g	h	0	23	4		h57	
:00F M	hh	(	2	0	73	h0	dh	:	0	(	0	1	3	h2	0	h	(	h2g
T)ia-	45	2g0	0	325	4g	2h5	23	0	240	23	h5	47	0	73	2h		730	
* FNR aH	h48*	g18*	0*	6	g	:08*	:8*	0*	6	g	258*	538*	0*	6	g		g	
* T)ia-	5*	448*	0*	(h8*	g	348*	38*	0*	3g8*	g	28*	58*	0*	h08*	g		g	
1v% P)Cil1 ado Mr ir cHHe1	08hg	08dg	6	08g	g	08g	08f3:	6	08g4	g	083h	08f(	0	6	0854		08g4	
* P)Cil1 ado Mr ir cHHe1	40	25g	0	3hg	g	2h(	23	0	23g	g	h5	4(	0	72	g		7hg	
* P)Cil1 ado Mr ir cHHe1	g8h*	:8*	0*	:52*	g	:8*	h00*	0*	:8*	g	h00*	:5g*	0*	:g8*	g		:g8*	
* v ealy	2	0	0	2	g	2	0	0	2	g	0	0	0	0	0		4	
* v ealy	48*	0*	0*	08*	g	08*	0*	0*	08*	g	0*	0*	0*	0*	0*		08*	
R)HHe1 rd wrao	(	2	0	5	g	0	0	0	0	g	0	h	0	h	g		8	
* R)HHe1 rd wrao	h08*	08*	0*	28*	g	0*	0*	0*	0*	g	0*	28*	0*	h0*	g		h8*	
* l eoe1clad1	6	6	6	6	g	6	6	6	6	h	6	6	6	6	6		20	
* l eoe1clad1	6	6	6	6	7g8*	6	6	6	6	5g8*	6	6	6	6	6		(8*	
R)HHe1 rd 9 r 1lk a-L	6	6	6	6	h	6	6	6	6	(	6	6	6	6	h		h	
* R)HHe1 rd 9 r 1lk a-L	6	6	6	6	3h8*	6	6	6	6	6	6	6	6	6	48*		g	

l eoe1clad1 ado R)HHe1 rd 9 r 1lk a-LBPt Pelt, wt w)Cs, Tr Tscu, W WGIud

Time	Os)jP				Jsu)P				E e-)				Lel U				
	H	T	W	6NN	T	9	W	6NN	H	9	W	6NN					
20220703 t 2600LM	tm	40	0	5m	tt	27	5	0	32	2t	7	t2	0	t5	3		t20
12h 7LM	t3	47	0	5D	tt	2m	7	0	3l	2t	4	7	0	tt	tt		t23
12h00LM	tt	47	0	5m	tt	37	4	0	11	17	t	D	0	m	7		t2m
12h 7LM	t0	44	0	54	tt	13	m	0	72	17	1	10	0	tt	5		t12
T)ia-	74	274	0	3t2	72	132	25	0	17m	52	14	37	0	7t	24		722
* 6NNsu)P	t58*	128*	0*	h	h	180*	158*	0*	h	h	38*	428*	0*	h	h		h
* T)ia-	t08*	108*	0*	7m8*	h	278*	78*	0*	308*	h	38*	48*	0*	m8*	h		h
Lo % 9)P) aC Ms)jdyde-	0835	08h	h	08D	h	08D	0870	h	0857	h	0845	08D	h	0827	h		08g2
* 9)P) aC Ms)jdyde-	74	272	0	30D	h	t2D	25	0	t77	h	t4	32	0	1D	h		7tt
* 9)P) aC Ms)jdyde-	t00*	m8*	0*	m8*	h	m8*	t00*	0*	m8*	h	t00*	m8*	0*	m8*	h		m8*
* o eary	0	3	0	3	h	3	0	0	3	h	0	t	0	t	h		5
* o eary	0*	t8*	0*	t8*	h	28*	0*	0*	t8*	h	0*	28*	0*	28*	h		t8*
* c Blyde- sCHsal	0	t	0	t	h	t	0	0	t	h	0	2	0	2	h		1
* c Blyde- sCHsal	0*	08*	0*	08*	h	08*	0*	0*	08*	h	0*	78*	0*	38*	h		08*
* Lel e-)BGC	h	h	h	h	h	12	h	h	h	h	45	h	h	h	h		24
* Lel e-)BGC	h	h	h	h	5h8*	h	h	h	h	h	h	h	h	h	100*		h
* c Blyde- sCAis--v a(n	h	h	h	h	tt	h	h	h	h	7	h	h	h	h	0		0
* c Blyde- sCAis--v a(n	h	h	h	h	h	200*	h	h	h	48*	h	h	h	h	0*		0

l eoe1clad1 c Blyde- sCAis--v a(n89k9e8), HRHHP, TKTPiu, WkWHtuc

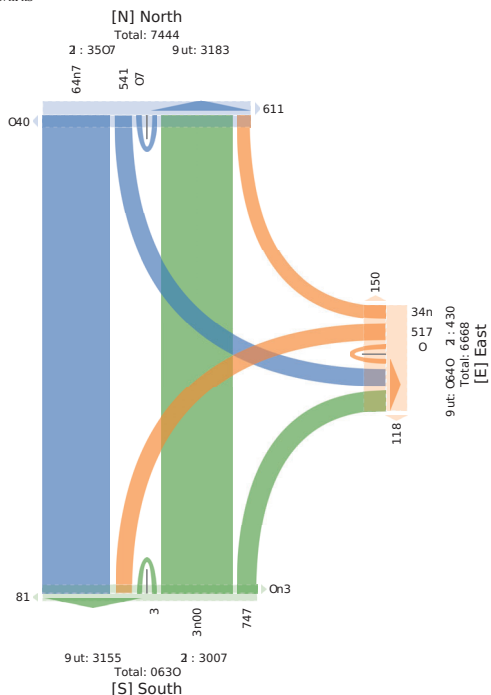


5566814 - COVID - BANK ST @ EXHIBITION WAY -... - TMC

Tue May 3, 2022  
 Full Length (6  
 : ll Ala--e- (Lght- anl MPP)G)De-, s eal y, dele-i)9n-, o9)C)De- Pn r Pa l, o9)C)De- Pn  
 A)P--c allB  
 : ll MPi ev ent-  
 Bkwnll 2m LPat9PnwDn6k7l8D) 5 m67n7k3



d)Pi 9el- ykBy Pbf ttoe a  
 (00 APn-tellatPn R),  
 Nepean, f N, K2G rnk, A:



5566814 - COVID - BANK ST @ EXHIBITION WAY -... - TMC

Tue May 3, 2022  
 FM 1 eal.rgh( FM 6: th( F MA  
 F - 9 -a1le1 rP)Csil ado Mr rir d)He1, v eaBy, l eoelcjad1 R)H)He1 rd wrao, R)H)He1 rd  
 9 r 1lk a-LA  
 F - Mr Bemedi  
 IDt : ( 042(, Pr H)rdt 7(8: g457, 64( 65g( g: 3



l r B)oo- vt 9) jy r bf hlk a  
 r00 9 r dle-alk) d Dc,  
 OeNad, f O, p 2K ( G, 9 F

Pec DyeHyd	Ords Eruis. rudo				Jall S ell. rudo				Eruis Ords. rudo				ld			
	T	P	W	FNN	l eol	w	P	W	FNN	l eol	w	T		W	FNN	l eol
202201 03 gbr f M	52	20	0	g2		h0	h0	0	20	2h	3h	h	0	k22	4	227
g30F M	45	h7	0	10		h7	hg	0	32	h5	25	h2g	0	h7		245
g7f M	h04	22	0	h2	7	5	h3	0	h	h4	22	h3	0	h4	2	323
00F M	g4	6	0	1	5	2	h0	0	h2	h3	2h	h23	0	h77	7	2h
Tia	332	57	0	3.5	27	32	h	0	g3	57	h00	7	0	1	22	h07
* FNRh	g3g*	h5g*	0*	6	6	3g6*	5h6*	0*	6	6	h5g*	g3g*	0*	6	6	6
* Tia	30h*	5g*	0*	35g*	6	3g*	7g*	0*	4g*	6	h5g*	75h*	0*	10*	6	6
1v%	084h	0824	6	0857	6	0g4h	08:7	6	087h	6	0g30	0g0h	6	0g77	6	0g2h
P)Csil ado Mr rir d)He1	3h5	50	0	345	6	3h	74	0	4g	6	g4	77h	0	2g	6	g2
* P)Csil ado Mr rir d)He1	:(8*	:3g*	0*	:7g*	6	:5g*	:2g*	0*	:7g*	6	g4g*	g:8*	0*	gg8*	6	h6*
v eaBy	h7	7	0	hg	6	h	3	0	7	6	5	33	0	3:	6	5h
* v eaBy	7g*	5g*	0*	7g*	6	3h*	(8*	0*	7g*	6	5g*	5g*	0*	5g*	6	(8*
R)H)He1 rd wrao	2	0	0	2	6	0	h	0	h	6	4	2h	0	2g	6	3h
* R)H)He1 rd wrao	0g*	0*	0*	0g*	6	0*	2h*	0*	h2*	6	4g*	7g*	0*	7g*	6	2g*
l eoelcjad1	6	6	6	6	27	6	6	6	6	50	6	6	6	6	6	2h
* l eoelcjad1	6	6	6	6	00*	6	6	6	6	3g*	6	6	6	6	6	(8*
R)H)He1 rd 9 r 1lk a-L	6	6	6	6	0	6	6	6	6	7	6	6	6	6	6	h
* R)H)He1 rd 9 r 1lk a-L	6	6	6	6	0*	6	6	6	6	5g*	6	6	6	6	6	7g*

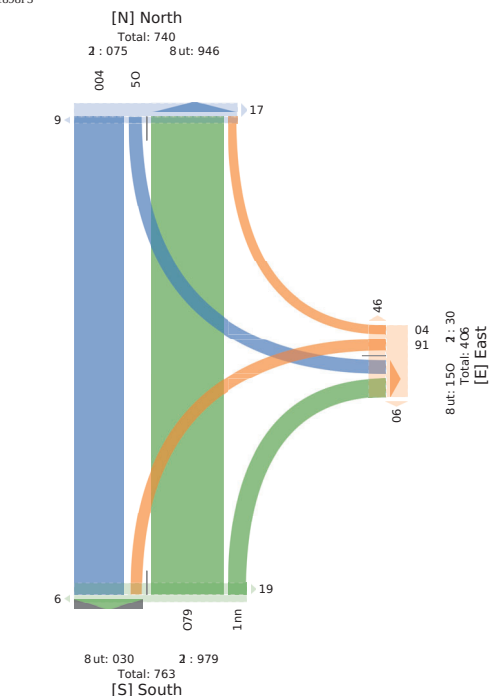
l eoelcjad1 ado R)H)He1 rd 9 r 1lk a-LB)Pt Pelt, wt w)Csi, Tt Tscu, W WGTud

5566814 - COVID - BANK ST @ EXHIBITION WAY -... - TMC

Tue May 3, 2022  
 AM Peak (8-9 AM) 1:-9 AM C  
 Ass Lsaiie (ght nd aor Mcd)Hyvsei, Bealy, Per eid)noi, whyvsei co mcar, whyvsei co  
 LH)il askC  
 Ass McReDeod  
 47 : 190529, gcvadro: .96l 851., )59g 898l 3



P)H)er r: L)h cf O)h) a  
 -00 Lcoi)ssado 7 H  
 Nepean, ON, K2G 9)l, LA



5566814 - COVID - BANK ST @ EXHIBITION WAY -... - TMC

Tue May 3, 2022  
 MB l ay Lean g 2h0 LM ( t h0 LM6  
 : Av- A99:9 gl IP)Qasl Mi G dyoA9, r eacy, Lel e9)as9, H)yoA9)is vial, H)yoA9)is  
 - d 99Ba)6  
 : AM)l ceRes9  
 wk hml 0)21, l iia)E sh4l 7)8)D54, (l 758l 8)8



Ld e)l e- y)h- R) 1bf G)Ba  
 t00 - is 9)A)E) s k d  
 OeNad, f O, p 2K l G) - :

l eP k)k)E) s	O) d E)u)G. i)usl				J)u)C S e)C)usl				E)u)G O) d) i)usl				w)C			
	T	l	W	NN	Le)l	v	l	W	NN	Le)l	v	T		W	NN	Le)l
202201 03 t 2h0 LM	8l	tm	0	t04	n	t2	t1	0	2D	2h	23	t02	0	t21	l	215
t2h) LM	00m	l8	t	128	t1	2h	l0	0	3h	3h	23	mD	0	t20	l4	22h
t)h0) LM	l05	l1	0	l21	h3	lD	l3	0	30	34	2h	l10	0	l3h	l3	282
t)h) LM	h8	23	0	l15	l1	l5	23	0	3m	35	l8	mD	0	l11	9	210
T)G	3h8	D	t	45m	l1	55	5h	0	t2D	l35	8l	405	0	4m	42	1000
* : N)l)ao	83g*	l50*	02*		(	l20*	407*	0*		(	l130*	827*	0*		(	(
* T)G	352*	5h7	07*	432*		51*	l75*	0*	l17*		l8h*	310*	0*	4l2*		(
Lz%	07m5	07h1	07l0	07h0		0735	07m0		07h0		07h0	07h4l		07h8		(
l)P)Qasl Mi G dyoA9	3l8	D	t	42m		50	lD	0	t1D		lD	3l8	0	4l1		(
* l)P)Qasl Mi G dyoA9	nt 1*	m25*	l00*	m 1*		m07h*	m27*	0*	m21*		m05*	m21*	0*	m27*		(
r eacy	25	l	0	3t		t	t	0	2		4	tm	0	23		(
* r eacy	55*	53*	0*	55*		l7*	l75*	0*	l75*		43*	43*	0*	43*		(
H)yoA9)is vial	m	0	0	m		l	3	0	8		4	m	0	l3		(
* H)yoA9)is vial	23*	0*	0*	t h*		lD5*	4h*	0*	55*		43*	22*	0*	25*		(
l eoelcjad1																
* l eoelcjad1																
H)yoA9)is - d 99Ba)6																
* H)yoA9)is - d 99Ba)6																

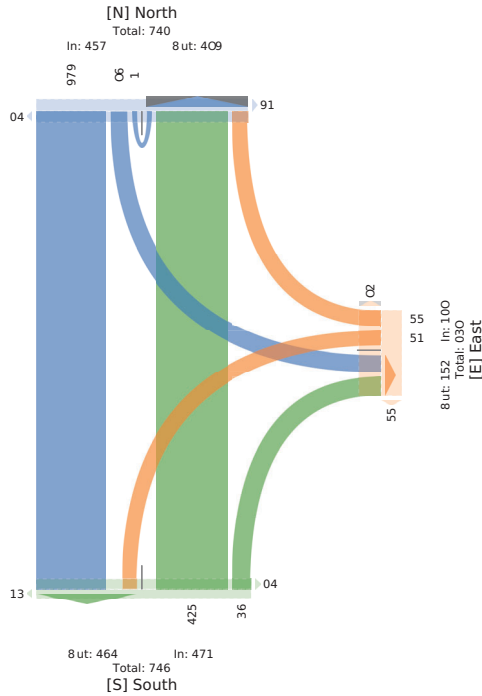
l Lel e9)as9asl H)yoA9)is - d 99Ba)67l h1 e)C v)h)P)C)T)H) d)l, W)W)T)ud

5566814 - COVID - BANK ST @ EXHIBITION WAY ... - TMC

Tue May 3, 2022  
 M/PPay kea( 8.2-30 km 9: -30 kM)  
 l Cs GllLeB ghtLanP Mtdcrry@L, c eaHy, kePeLoanL, v Ayr@Ldn BdaP, v Ayr@Ldn  
 s allLRa(C)  
 l CMdHwEntL  
 n - D40724, i drat@n- 54.3D6715, 974.1646D3

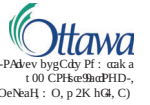


kaHReP-s Ays dI OnaRa  
 00 s dnLeGat@n 1 q  
 Nepean, ON, K2G-4J1 s 1



5566814 - COVID - BANK ST @ EXHIBITION WAY ... - TMC

Tue May 3, 2022  
 FM Feal lng h FM ( hg h FM6( : Ae-a9Feal 1 Pu- )  
 9C/SSes li drs avh MPP-B/Es, 1 eaA, FevesedhF, Rdy/Es PhwPav, Rdy/Es PH  
 C-Pssk a9 6  
 ) 9MPAmeHts  
 lDg4h072h, i PbaPPhgnh@457. n, (7h8 5h543



F-PAAevyGdy P: : msk a  
 l 00 CPfksa@HHD-,  
 OeNaH : O, p 2K hG, C)

I eo DdehdfH	OP-a EPaa bbaHk					Jasc S eshPaHk					EPaar OP-a bbaHk				
	T	W	U	9 pp	10	T	W	U	9 pp	10	T	W	U	9 pp	10
20220403 ng hFM	11	3	4	1	33	2	3	3	0	37	2	3	3	0	37
ng hFM	12	3	0	1	32	3	3	0	37	3	3	0	37	3	
ng hFM	12	3	0	1	32	3	3	0	37	3	3	0	37	3	
T h	17	11	3	2	44	4	4	1	11	0	17	11	3	2	44
* ) NNPaH	508*	148*	09*	08*	0854	1	308*	188*	0*	0*	218*	758*	08*	0*	0*
* T h	3h8*	5h*	0h*	0h*	0h*	1	ndh*	5h*	0*	138*	4h*	33h*	0h*	0h*	0h*
F1 %	08h0	0800	0800	0800	0854	1	082h	0842	1	0873	1	0874	08h	0810	08h7
l drs avh MPP-B/Es	mm0	112	2	2	hhn	1	0	107	0	1.7	1	11h	n22	1	h35
* l drs avh MPP-B/Es	42h*	44h*	100*	43h*	43h*	1	45h*	40h*	0*	43h*	1	40h*	43h*	100*	42h*
1 eaA	1h	0	0	0	th	1	0	0	0	0	1	1h	0	0	th
* 1 eaA	3h2*	0*	0*	2h*	0*	1	0*	0*	0*	0*	1	0h5*	3h*	0*	2h*
Rdy/Es PhwPav	2h	1	0	22	1	1	11	0	1.2	1	11	17	0	25	1
* Rdy/Es PhwPav	nh*	0h*	0*	3h*	0*	1	1h*	4h*	0*	0*	1	5h*	3h*	0*	nh*
FevesedhF	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
* FevesedhF	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rdy/Es PHC-Psk a9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
* Rdy/Es PHC-Psk a9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

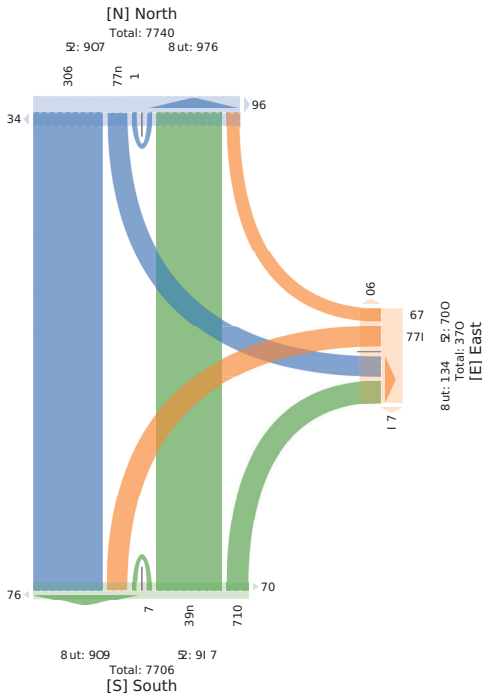
l FevesedhF avh Rdy/Es PHC-Psk a9 Bi gi efc, wgwdr, TgTr-u, WgWtu-H

5566814 - COVID - BANK ST @ EXHIBITION WAY ... - TMC

Tue May 3, 2022  
 AM AeaP (8 - AM 9: 8 - AM) 91 CesaL AeaP i gus  
 h llr lamen ldr c h avB MghsRyRen, i eaCy, AelBnklaiv, wdyRen gv mgarB wdyRen gv  
 t sgml aIP)  
 l lLMGcDeviH  
 4785-0.2-, dgRahgv8(-681. b, 9 - 61-153



AegChBbFyBt dP gOI lHh a  
 00 t gvdHlghy 7 s,  
 Nepean, 1 N, K2G-1J5, t h



5566814 - COVID - BANK ST @ FIFTH AVE - MAY ... - TMC

Tue May 3, 2022  
 Fl lnuagI ( 6 A0 9 MPA0 9 M, 33A0 9 M2 ) M, - A0 ) M) ) MC  
 9 lLs laivt fnd (h age Molyrcydia, Heavy, ) ueuIrdgi, Bdyclai and Roae, Bdyclai and s roaiwalc  
 9 lLMovomugh  
 lD443-78, n ocahbgA4.503: 8, 84: 7847



rovduke byAs dy of Ottawa  
 300 s ogihlilabD, Nupaag, ON, K2G 4J1, 9

I eo DdehdfH	North Sol h bol ge					East T uilbol ge					South North bol ge					T uah Eastbol ge								
	R	W	U	9 pp	10	R	W	U	9 pp	10	R	W	U	9 pp	10	R	W	U	9 pp	10				
20220403: 405M	4	33	7	0	32P	1	8	5	32	0	2	37	2	335	3	0	338	0	3	8	0	33	P	
406M	3	24	0	0	27h	2	32	22	3	47	0	37	39	4	0	52	29	35	38	0	0	3	h	
407M	25	17	20	0	52	302	42	52	0	32h	33	2	440	3	0	47P	39	5	5	0	0	0	h	
408M	38	203	5	0	222	-P	5	7	2	0	-4	-P	P	22h	0	0	2-P	0	37	25	23	0	h	
409M	37	2	0	33	0	24P	5	3	34	0	0	3	30P	32	2	0	253	5h	23	P	25	0	h	
410M	-2	55h	23	0	400	P7	-2	42	0	320	24	27	54	38	0	430	P7	27	2	0	0	h	37P	
411M	-	50h	37	0	593	4	-7	25	13	0	32	395	20	525	3	0	547	7h	-2	3P	-4	0	h	34
412M	32	282	7	0	392	84	34	22	29	0	11	33h	P	392	4	0	2h	31	20	28	3	0	h	3
413M	5	432	34	0	48	89	25	53	44	0	320	25	24	5	5	3	0	402	97	-3	5	54	0	h
414M	-	44P	27	0	12	77	-5	-8	47	0	32P	24h	0	5	4	3	0	573	137	54	42	54	0	h
Wah	2-P	530	3-P	0	0877	32	22	243	75	3	72	352	38P	03	P2	3	0	74	5	223	242	2h	0	h
% 9 ppaat	1	0	0	0	1	2	2	29	3	55	4	1	5	9	2	2	0	1	27	8	2	7	4	0
% Wah	2	0	0	0	53	1	2	4	2	1	52	0	4	9	1	2	0	1	25	2	7	0	0	1
% nd (h age Molyrcydia)	22	0	0	0	572	1	3h	384	14	3	8	5	342	30	77	3	0	58	20P	38P	22	0	0	h
% nd (h age Molyrcydia)	15	0	0	0	93	1	74	5	1	0	74	2	75	1	0	0	0	1	15	0	0	0	0	h
% Heavy	P	3h3	0	0	37	1	33	P	32	0	2	1	374	0	0	0	0	0	0	0	0	0	0	h
% Heavy	7	40	2	0	57	1	5	0	0	0	0	1	5	4	0	0	0	1	3	5	32	3	0	h
Bdyclai and Roae	5	33	0	0	32	1	22	8	8	0	P	1	23	322	3	0	355	1	P	4	0	0	h	
% Bdyclai and Roae	3	0	0	0	2	1	8	2	8	3	0	33	33	0	0	0	0	1	5	3	37	3	0	h
3 ueuIrdgi	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	h
% ueuIrdgi	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	h
Bdyclai and s roaiwalc	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	h
% Bdyclai and s roaiwalc	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	h

ueuIrdgi age Bdyclai and s roaiwalc, n Anuuf RARD (h WAWrU, UAUWrg



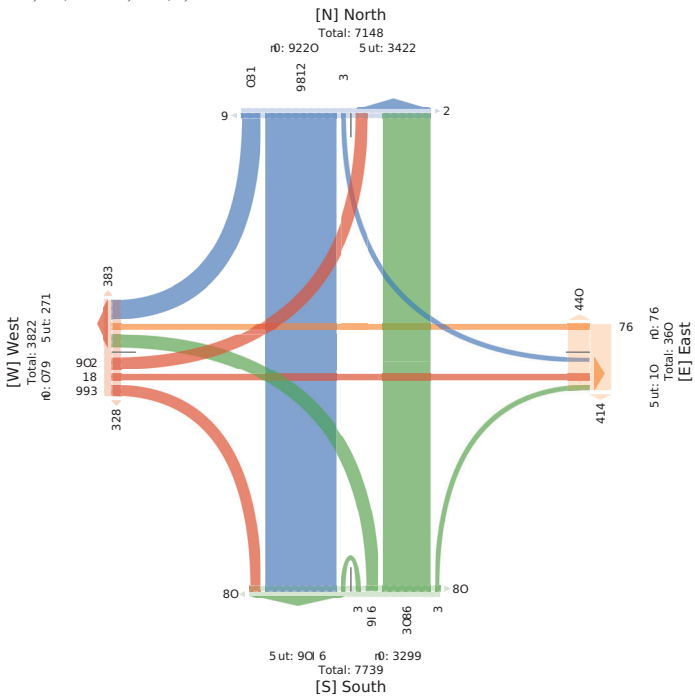
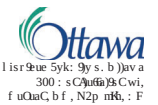




5566814 - COVID - QUEEN ELIZABETH DRWY @ PRI... - TMC  
 Wed May 11, 2022  
 Full Length (6:30 AM-9:30 AM, 3:30 PM-6 PM, 11:30 AM-1:15 PM, 1:15 PM-2 PMC  
 All s lai ei (Lghti and Mr tr ch)Hei, v eaBy, Pedetioanni, RdHHei r n w ad, RdHHei r n  
 s r iik aln C  
 All Mr Bf ent  
 B: 9) 1811, Lr Htra n: 8) 780148, -4) 76. 034.



5566814 - COVID - QUEEN ELIZABETH DRWY @ PRI... - TMC  
 T ue May 33, 2022  
 F M l ual. rg F M t h F M(  
 F 6: GaAuAn- 9P)AaGc Ms j s idyduA o u ar y, l ueu/9hCA c 9hdyu/As CHsae, c 9hdyu/As C  
 : is Av a f L  
 F 6: Ms ru Bu QCA  
 Rckhml 33, - s da)B Ck l mD0341, t4nDg084g



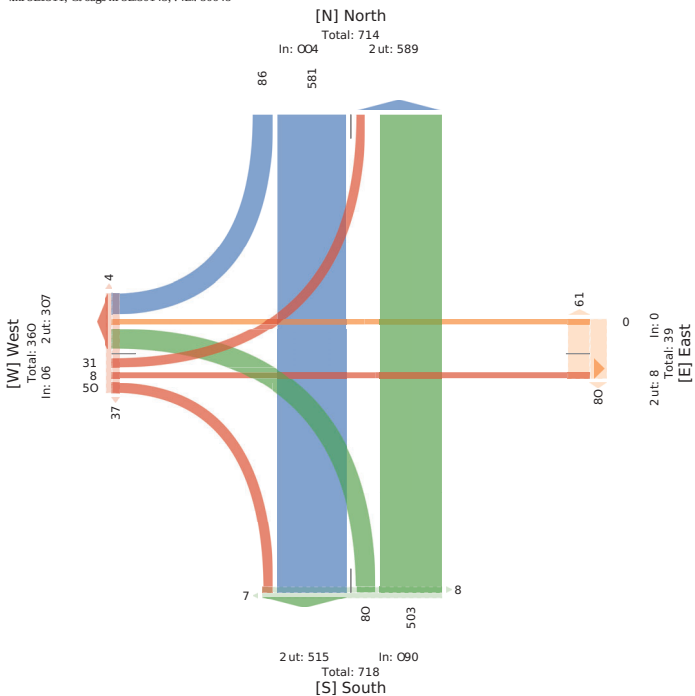
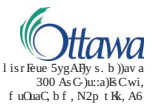
wBuD9C	f s i P					G a /					s i s P					T u a /							
	H	S	W	F	O	H	S	W	F	O	H	S	W	F	O	H	S	W	F	O			
20220r033 g00F M	30	70	0	0	40	0	3	0	0	3	11	0	m	32	0	7g	8	3	1	0	g	3	314
g00F M	3g	m	0	0	4g	0	3	0	0	3	18	0	m	37	0	42	1	1	8	1	0	33	8
g00F M	28	78	0	0	87	0	2	0	0	2	1m	0	dh	20	0	1h	2	3	3	7	0	20	8
g00F M	34	h3	0	0	30g	0	0	0	0	0	20	0	m	3m	0	7m	2	8	3	m	0	h	30
Sj3e	7g	27h	0	0	884	0	1	0	0	1	3m	0	213	78	0	801	33	28	7	3h	0	1g	22
* FODsAP	30D*	4h3*	0*	0*	1	0*	300*	0*	0*	1	0*	4h3*	203*	0*	1	140*	320*	8D*	0*	1	1		
* Sj3e	h3*	8g3*	0*	0*	1gD*	0*	0D*	0*	0*	0D*	0*	81h*	h3*	0*	18h*	1	83*	20*	21h*	0*	7h*		
1 o %	048h	0481	1	1	044m	1	1	1	1	1	1	0478	04gg	1	047g	1	0428	1	04h2	1	04h8		
- 9P)AaGc Ms j s idyduA	74	277	0	0	888	1	0	0	0	0	1	0	28m	78	0	2hg	1	22	0	3h	0	13	
- 9P)AaGc Ms j s idyduA	hg3*	hg3*	0*	0*	hg3*	0*	0*	0*	0*	0*	0*	h4h*	300*	0*	hg3*	1	h3*	0*	300*	0*	hg3*		
o u ar y	3	3	0	0	2	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	
* o u ar y	30r	0h*	0*	0*	0D*	1	0*	0*	0*	0*	1	0*	0*	0*	0*	1	0*	0*	0*	0*	0*		
c 9hdyu/As CHsae	0	2	0	0	2	1	0	1	0	0	1	1	0	0	7	1	3	7	0	0	4	1	
* c 9hdyu/As CHsae	0*	0h*	0*	0*	0D*	0*	300*	0*	0*	300*	0*	21h*	0*	0*	21D*	1	11h*	300*	0*	31D*	1		
1 ueu/9hCA	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
* 1 ueu/9hCA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
c 9hdyu/As C: is Av a f L	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
* c 9hdyu/As C: is Av a f L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

1) ueu/9hCAaGc c 9hdyu/As C: is Av a f L D k- u.), HgHHP), SgSPe, WkWS6C

5566814 - COVID - QUEEN ELIZABETH DRWY @ PRI... - TMC  
 Wed May 11, 2022  
 AM Peak (8 AM : 5 AM-  
 9B) 9h l ei (Csl g j abd Mt g nyoel, r eacy, Pedelgahl, Hsoyoel th v t ad, Hsoyoel th  
 ) r l l Ba3-  
 9B Mt ce Rehj  
 ml 5D311, Cr oage hl 3D90143, :4DX 80648



5566814 - COVID - QUEEN ELIZABETH DRWY @ PRI... - TMC  
 T ue May 33, 2022  
 MReay l ual. r32glt l M h3gt l M(  
 6 : Aa- u- t9P) aGc Ms j s idydu- o, u ar y, l ueu-)lG C, c 9hdyu- s CHsae, c 9hdyu- s C  
 Ais- v a f L  
 6 : Ms ru Bu Q-  
 Rwgkt 3n83, 9s da)B Cgm l nD3Dm hD l4708D7



wBuD9C	f s i P					G a /					s i s P					T u a /						
	H	S	W	F	O	H	S	W	F	O	H	S	W	F	O	H	S	W	F	O		
20220r033 g00F M	20	D	0	0	K7	0	3	0	0	3	10	0	BD	8	0	m	38	3	1	0	3k	31
32glt l M	3	h4	0	0	333	0	3	0	0	3	44	0	13	1	0	14	h	D	8	4	0	34
32glt l M	3D	77	0	0	30k	3	0	2	0	0	18	8	0	14	0	4	8	D	0	34	33	
3g00 M	3k	4	0	0	70	0	3	0	0	3	13	0	4	0	m	3	D	32	7	0	2D	
Sj3e	4D	82D	0	0	8km	3	0	1	0	1	233	0	3DD	3D	0	3km	7	88	3k	24	0	
* 6ODsAP	30D*	n7D*	0*	0*	h	1	0*	300*	0*	0*	h	1	0*	k3e*	7D*	0*	h	h2B*	24h*	88B*	0*	
* Sj3e	30D*	n7D*	0*	0*	17E*	1	0*	0E*	0*	0E*	1	0*	24h*	2k*	0*	27k*	h	mE*	21*	8k*	0*	
1 o %	0787	07D	h	h	0k0m	h	h	h	h	h	h	0F33	0D07	h	07mm	h	048t	h	07D	h	0k2k	
9P) aGc Ms j s idydu-	4t	837	0	0	878	1	0	0	0	0	h	0	3D0	3D	0	37D	h	83	0	2m	0	
* 9P) aGc Ms j s idydu-	k1D*	k1D*	0*	0*	k1D*	0*	0*	0*	0*	0*	h	0	k4D*	300*	0*	k4h*	h	h8k*	0*	k2B*	0*	
o u ar y	2	2	0	0	m	1	0	0	0	0	1	0	2	0	0	2	h	2	0	0	0	2
* o u ar y	80*	0h*	0*	0*	30*	1	0*	0*	0*	0*	1	0*	3D*	0*	0*	31D*	h	4E*	0*	0*	21*	
c 9hdyu- s CHsae	0	D	0	0	D	1	0	1	0	0	1	1	0	0	1	1	0	3k	2	0	23	
* c 9hdyu- s CHsae	0*	2D*	0*	0*	3D*	1	0*	300*	0*	0*	1	0*	2D*	0*	0*	21*	h	0*	300*	D*	0*	
1 ueu-)lG C	h	h	h	h	3	h	h	h	h	h	7m	h	h	h	h	7	h	h	h	h	h	88
* 1 ueu-)lG C	h	h	h	h	h300*	h	h	h	h	h8k7*	h	h	h	h	h300*	h	h	h	h	h	h72k*	
c 9hdyu- s CAis--v a f L	h	h	h	h	0	h	h	h	h	32D	h	h	h	h	0	h	h	h	h	h	D	
* c 9hdyu- s CAis--v a f L	h	h	h	h	0*	h	h	h	h	h40E*	h	h	h	h	0*	h	h	h	h	0*	h	

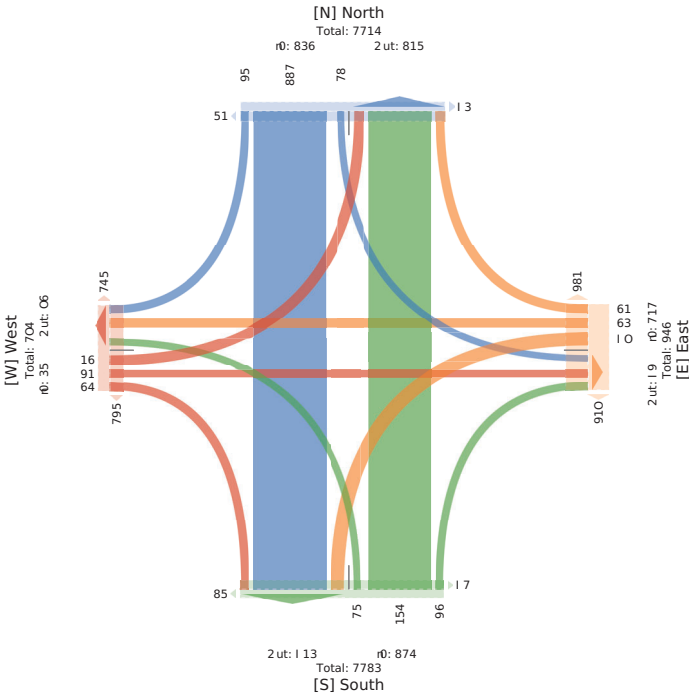
1) ueu-)lG C aGc c 9hdyu- s CAis--v a f L (9g9u.), HgHHP), SgSPe, WkWS6C







5566814 - COVID - BANK ST @ FIFTH AVE - MAY ... - TMC  
 Sat May 7, 2022  
 PM Peak (WKND) (1:30 PM - 2:30 PM) - Overall Peak Hour  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 949152, Location: 45.40167, -75.68758



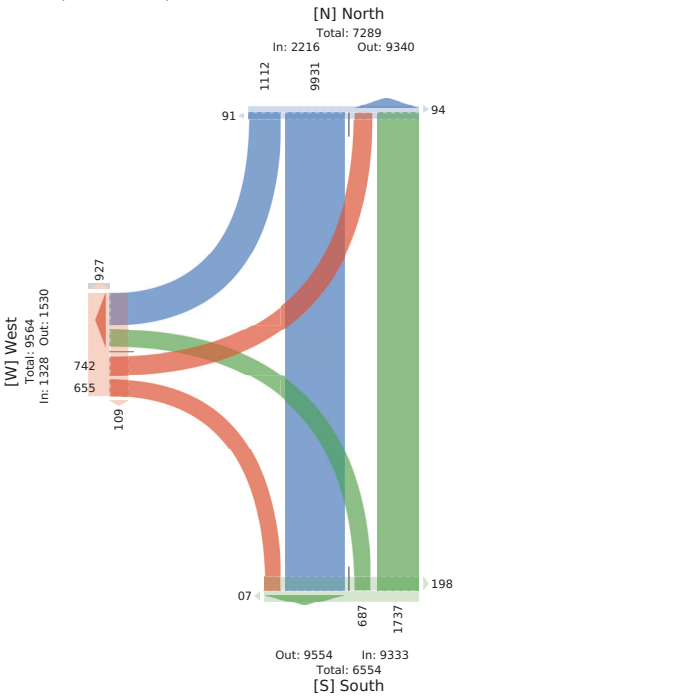
5566814 - COVID - QUEEN ELIZABETH DRWY @ PRI... - TMC  
 Tue/May y3, 2, ,  
 0F11 Lngt d( 62:A2 - M91:A2 PM)  
 - II Clusss (Lit hes ugd Moeacacns3Hnuv3Pndnsrings3Bicacns and Road3Bicacns and Crosswalk)  
 - II Movmnges  
 ID: 4746113, Location: 78526y739y8Q. 2Ay.



Lit Dirctioog	North ToFthofgd					ToFth Northofgd					E nse Susbofgd					lge
	R	W	U	- pp	Prd*	W	L	U	- pp	Prd*	R	L	U	- pp	Prd*	
Winn	.2	.4	.2	.6	.2	.6	.2	.4	.2	.6	.2	.4	.2	.6	.2	.6
6:22M	47	117	2	64	2	68A	81	2	24	4	82	12	2	2	79	
6:22PM	6	116	2	64	2	691	17	2	72	6	77	88	2	44	48	
6:22PM	4	116	2	64	2	68A	14	2	8	1	71	14	2	668	72	
7:22PM	668	162	2	7	8	648	11	2	16	7	81	12	2	661	88	
A:22PM	676	162	2	7	8	648	11	2	16	7	81	12	2	661	88	
7:22PM	674	162	2	7	8	646	84	2	82	1	8	4	2	6	4	
8:22PM	7A	1y	2	862	1	6.4	41	2	8	7	7	1	2	647	71	
1:22PM	664	677	2	1A	6	4	A	2	642	1	4	84	2	64	7.6	
Wval	666A	26	2	667	7	6828	748	2	222	67	711	8yA	2	624A	76y	
% - pproach	63%	115%	2%	9	9	78%	75%	2%	9	9	77%	88%	2%	9	9	
% Wval	63%	115%	2%	8.5	9	78%	75%	2%	9	9	77%	88%	2%	61.5%	9	
Lit hes ugd Monocacns	6244	67y	2	671	9	6771	747	2	6472	9	788	817	2	6264	9	
% Lit hes ugd Monocacns	4.3%	4y8%	2%	4y9%	9	413%	445	2%	4y5%	9	4y3%	4.5%	2%	4.9%	9	
% Hnuv	23%	28%	2%	29%	9	23%	25%	2%	28%	9	63%	29%	2%	62%	9	
Bicacns and Road	y	86	2	R	9	86	2	2	86	4	A	y	2	62	9	
% Bicacns and Road	23%	58%	2%	65%	9	47%	2%	2%	9%	9	23%	65%	2%	62%	9	
Pndnsrings	9	9	9	9	7y	9	9	9	9	28	9	9	9	9	9	
% Pndnsrings	9	9	9	9	4y9%	9	9	9	9	485%	9	9	9	9	y.5%	
Bicacns and Crosswalk	9	9	9	9	6	9	9	9	9	4	9	9	9	9	42	
% Bicacns and Crosswalk	9	9	9	9	3%	9	9	9	9	75%	9	9	9	9	63%	

\*Pndnsrings ugd Bicacns and CrosswalkSL: Lnf8R: Rit he3W WrfE3U: U9Wfng

5566814 - COVID - QUEEN ELIZABETH DRWY @ PRI... - TMC  
 Sat May 7, 2022  
 Full Length (10:30 AM-6:30 PM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 949166, Location: 45.40174, -75.680378



5566814 - COVID - QUEEN ELIZABETH DRWY @ PRI... - TMC  
 Tue/May y3, 2, ,  
 MfFua l un g h ( 6 : gA -92 l M 1A92 l M:  
 P ) CjssLS g lloes ur F McacHavyls3BLuR3l LFLsdfr s3w0vyls cr kcuF3w0vyls cr  
 CHssmujn:  
 P ) McRLL Lres  
 lB - 474A883l cvudftr - 75.72Ay73ly5.8b29yb



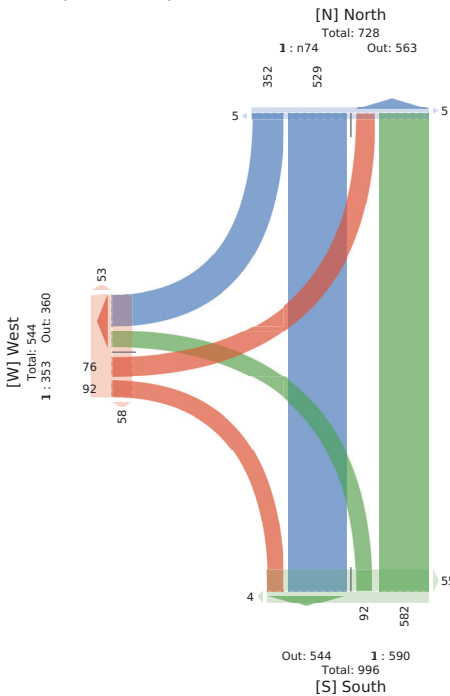
Lid 60Hvdr	( chio TcJmf cJrF					TcJoo (chof cJrF					L lse Eust cJrF					De
	k	S	W	Ppp	lLFU	S	i	W	Ppp	lLFU	k	i	W	Ppp	lLFU	
.2, 125ly A-92l M	94	55	2	47	1	78	2	2	88	7	A	A2	2	..	AD	
A-75l M	92	h2	2	46	2	5	16	2	8y	h	ly	18	2	99	b	
A:22 M	15	5A	2	18	1	7y	AA	2	5b	10	AP	..	2	98	10	
A:6l M	92	54	2	46	2	54	b	2	8y	9	AA	AA	2	92	AD	
Scuo	A	75	2	984	7	27	57	2	5b	9A	57	8y	2	A	7A	
* Pphtoes	99.8*	88.7*	2*	1	1	94.4*	2.4*	2*	1	1	77.8*	55.7*	2*	1	1	
* Scuo	88.8*	9.3*	2*	74.9*	1	y.9*	y.*	2*	97.5*	1	y.*	4.2*	2*	16.*	1	
l B%	2yhb	2y84	1	2.67A	1	2.65	2.8y5	1	2.45A	1	2y47	2y8	1	2.679	1	
l lloes ur F McacHavyls	A	..	2	954	1	22	57	2	57	1	59	87	2	1ly	1	
* l lloes ur F McacHavyls	4b.7*	48.y*	2*	4y9*	1	4b.2*	A22*	2*	4b.7*	1	4b.4*	45.5*	2*	48.y*	1	
Blalb	A	2	2	A	1	A	2	2	A	1	A	2	2	A	1	
* Blalb	2.b*	2*	2*	2.9*	1	2.5*	2*	2*	2.7*	1	A4*	2*	2*	2.b*	1	
w0avyls cr kcuF	A	b	2	4	1	9	2	2	9	1	2	9	2	9	1	
* w0avyls cr kcuF	2.b*	9.9*	2*	2*	1	A5*	2*	2*	A.*	1	2*	7.5*	2*	2*	1	
lLFsdfrs	1	1	1	1	7	1	1	1	1	4	1	1	1	1	98	
* lLFsdfrs	1	1	1	1	A22*	1	1	1	1	49.5*	1	1	1	1	byb*	
w0avyls cr CHssmujn	1	1	1	1	2	1	1	1	1	1	1	1	1	1	5	
* w0avyls cr CHssmujn	1	1	1	1	2*	1	1	1	1	8.5*	1	1	1	1	A.*	

lLFsdfrs ur F w0avyls cr CHssmujn. i - i L08k - k lloesS - SoH3W - WSlJH

5566814 - COVID - QUEEN ELIZABETH DRWY @ PRI... - TMC  
 Sat May 7, 2022  
 Midday Peak (WKND) (12:30 PM A1:30 PM)  
 - II Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 - II Movements  
 ID: 949155, Location: 4. 60174, A. 680378



5566814 - COVID - QUEEN ELIZABETH DRWY @ PRI... - TMC  
 Tue May y3, 2, .  
 0M 0Ful In g t h ( 6: A2 0M - 9: A2 0M(- 1 P)u(CD)Ful s i d)  
 o Cr Gccfc l HFRS: usk Mi d )nandfCs FuPa30RkFulvuv31 vnafr i wDi uk31 vnafr i w  
 r ji cc4 u d  
 o CMi P17 Fw:  
 th : 5. 5b993H muel w . 6f. 2by. 3-y69C2Ayo



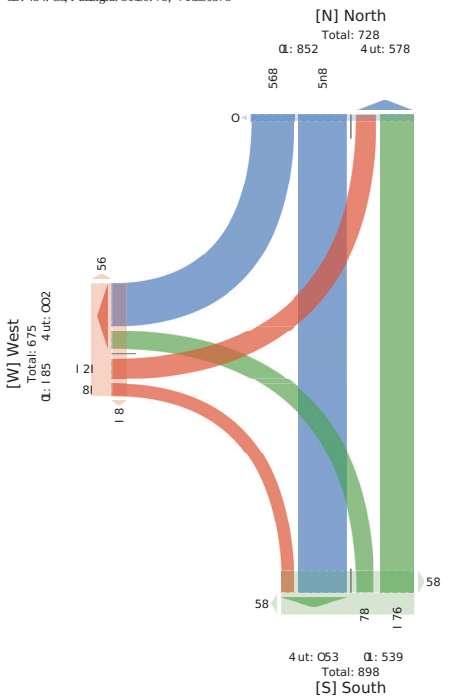
hB	hB w	hB	hB w	hB	hB w	hB	hB w	hB	hB w	hB	hB w	hB	hB w	hB	hB w
2	26	2y	6	A20M	9	96	2	b	y	2	2	9	6	2	y
6	60M	9	99	2	b	0	2	9	9	2	90	b	0	2	9
9	230M	66	60	2	b	0	2	9	9	2	90	b	0	2	9
9	360M	9	09	2	b	62	2	2	6	2	90	2	6	2	90
Start	6	y	2	6	2	A	b	0	2	95	62	6	2	b	6
* o RQI sub	y	b	2	6	5	2	2	2	2	2	2	2	2	2	2
* Start	9	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Os %	2	6	2	2	2	2	2	2	2	2	2	2	2	2	2
HFRS: usk Mi d )nandfCs	6	2	2	2	2	2	2	2	2	2	2	2	2	2	2
* HFRS: usk Mi d )nandfCs	b	2	2	2	2	2	2	2	2	2	2	2	2	2	2
s RPa	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
* s RPa	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
I vnafr i wDi uk	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
* I vnafr i wDi uk	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
o HFRS: usk Mi d )nandfCs	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
* o HFRS: usk Mi d )nandfCs	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
I vnafr i wDi uk	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
* I vnafr i wDi uk	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
o HFRS: usk Mi d )nandfCs	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
* o HFRS: usk Mi d )nandfCs	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

4)RkFcyvne usk I vnafr i wDi uk

5566814 - COVID - QUEEN ELIZABETH DRWY @ PRI... - TMC  
 Sat May 7, 2022  
 PM Peak (WKND) (1:30 PM - 03:30 PM) - v r el a H Peak o u l  
 CHS H L L L L (i ght Ladc Mutal B H L o eary, Pccel i g d, R g y B H L u d wuac, R g y B H L u d  
 s l u L m a l k)  
 CHM ur e l e d t L  
 ID: 454. 0Q i u B t a g d: 5160. 75, -71680378



5566814 - COVID - BANK ST @ AYLME AVE - MAY... - TMC  
 Tue May y3, 2, .  
 0Fll Lngt h (62: A2 - M91: A2 PM)  
 - II Cluuss (Lit hes ugd Mooraacalns 3Hnava3Pndnsrings3Bicacns and Road3Bicacns and Crosswalk)  
 - II Movmnges  
 ID: 476A883Locuog: 875M7139y75L 86y1



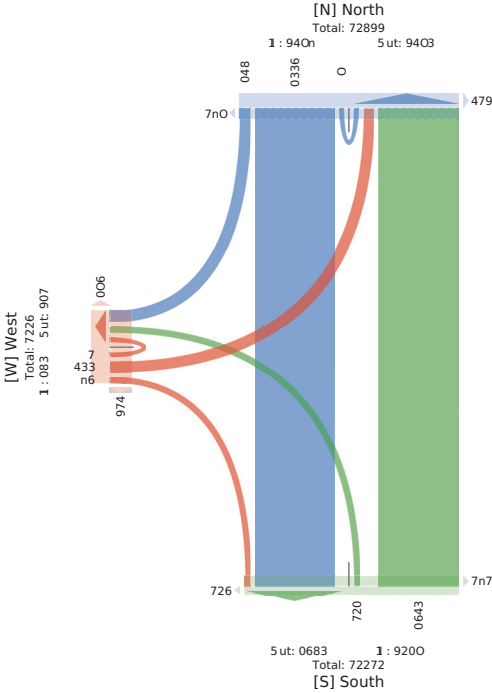
Lat	Dirnctog	North	North	North	North	North	North	North	North	North	North	North	North	North	North
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
66:23	M	8y	182	2	17y	8y	7	8	6	2	12	2	7	6A	81
6:22PM		7y	1A	2	142	11	746	2	744	A	2	82	2	8	667
6:22PM		78	1	4	2	y8A	y3	1	A	67	2	1A	8	4	A1
6:22PM		11	14	2	y12	2	18y	68	2	116	12	4	7	2	1y
A22PM		14	177	2	y	8	74	11	6y	2	1	7	AB	62	16
8:22PM		76	7y2	2	1	6	4A	114	6y	2	1	1	82	6	12
7:22PM		76	761	2	7	1y	A	7	1	8	2	742	8	6A	8y
1:22PM		61	6	2	8y	67	18	8	2	1	2	3	A	68	2
Wval		8A1	8	4	7	A	8	3y	84A	628	2	728	2	2	4
% prouch		5	465	2%	9	9	4y5%	3%	2%	9	9	615%	5%	25%	9
% Wval		82%	873%	2%	845	9	873%	62%	2%	815%	9	23%	81%	2%	89%
Lit hes ugd Mooraacalns		A2	812A	2	844A	9	81A8	622	2	8yA8	9	y8	A86	6	861
% Lit hes ugd Mooraacalns		43%	485	2%	4A5%	9	46%	415	2%	4A6%	9	4A3%	y94%	622%	58%
Hnava		4y	2	44	9	4	6	2	44	9	6	2	A	9	26
% Hnava		25%	5%	2%	68%	9	5%	65%	2%	2%	9	5%	25%	2%	22%
Bicacns and Road		88	6	4	2	87	9	21	A	2	24	9	A	81	2
% Bicacns and Road		62%	A4%	622%	83%	9	85%	5%	2%	83%	9	A5%	665%	2%	625%
Pndnsrings		9	9	9	9	886	9	9	9	9	8	9	9	9	9
% Pndnsrings		9	9	9	9	42%	9	9	9	9	9	9	9	9	9
Bicacns and Crosswalk		9	9	9	9	81	9	9	9	9	A	9	9	9	9
% Bicacns and Crosswalk		9	9	9	9	43%	9	9	9	9	9	9	9	9	9

\*Pndnsrings ugd Bicacns and Crosswalk5L: Lnfr3R: Rit he3W Wfr3U: U9Mfg

5566814 - COVID - BANK ST @ AYLMER AVE - MAY... - TMC  
 Sat May 7, 2022  
 Full Length (10:30 AM-6:30 PM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 941355, Location: 54.3946, -74.685176



Provided by: City of Ottawa  
 100 Constellation Dr,  
 Nepean, ON, K2G 4J9, CA



5566814 - COVID - BANK ST @ AYLMER AVE - MAY... - TMC  
 Tue/May 3, 2, 2,  
 M/F/Wa i Lun g: h ( 6 : gA -911 M PA911 M:  
 ) (Cs GiiLi gl0r e ucF MHHbBLI 3R Luwa3l LFI u0ici 3k BBLI H: mHfE3k BbBLI H: s vH11 u0:  
 ) (CMHdLdLca  
 46 - 71A8993d HhHhH- 91371. 3By15 b9Ay.



1 vMPLF fa-s (b) HCNm u  
 A22 s H e d.0aH 6 v3  
 ( 1pluc3N( 3h, K 1G7s )

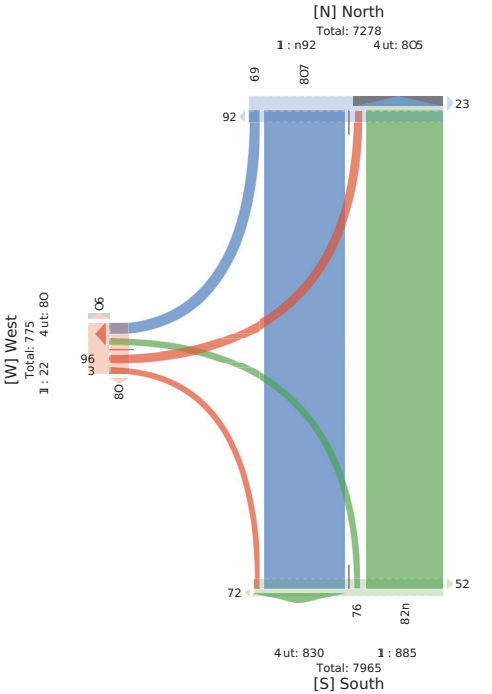
dl0 60Ldkt	( Har Tff e fH cF	Tff e ( Har fH cF	Lie Eud fH cF	
SDL	m S W ) pp	S d W ) pp	m d W ) pp	
, 2, , 2, 1Ry A -911 M	A Ay, 2 A0	A B , 2 A 1	8 y 2 A2	817
A22 M	A Ay, 2 A0	A , 9 2 A2	, 9 2 ,	81
A41 M	A A, 9 2 Ay, , B	AA 8 2 A0	A b 2 7	81
A62 M	AB A, 7 2 Ab, AB	Ay , 2 AyB	7 8 A 2 A2	81
Sfuc	10 , BA 2 y69	bb , 3y Al 2 , ,	7 81 2 90	A62
* ) ppHb	35* 7, 3* 2* P	7, 3* , 3* 2* P	, 23* y73* 2* P	
* Sfuc	83* 9, 3* 2* 1A2*	995* A2* 2* 9 2*	, 25* , 9* 2* 85*	
1R%	251b 25y. P 25b2	P 25y. 25, 1 P 25, 7	P 25, y 23Ab P 23yb	25, 1
d0r e u c F MHHbBLI	9, . 8, 2 , yb	P , 28 Al 2 , . Ab	P b , 7 2 By	A888
* d0r e u c F MHHbBLI	b, 3* 7, 3* 2* 7, 3*	P 785* A2* 2* 785*	P bb5* b, 5* 2* b59*	7, 5*
Rlwa	2 A 2 A 2 A	P A0 2 2 2 A0	P 2 2 2 2 2	
* Rlwa	2* Ab* 2* A6*	P , 5* 2* 2* , 5*	P 2* 2* 2* 2*	Ab*
k BbBLI H: mHf	y 8y 2 99	P 82 2 2 2 82	P A , 2 y	ba
* k BbBLI H: mHf	A5* 13* 2* , 2*	P 95* 2* 2* 99*	P A0* A, 5* 2* A15*	15*
1LFI u0ci	P P P P P	P P P P P	P P P P P	
* 1LFI u0ci	P P P P P	P P P P P	P P P P P	
k BbBLI H: s vH11 u0	P P P P P	P P P P P	P P P P P	
* k BbBLI H: s vH11 u0	P P P P P	P P P P P	P P P P P	

4 LFI u0ci ucF k BbBLI H: s vH11 u0 s d LQ8m-mbr eS-Sr v3W-W5J uc

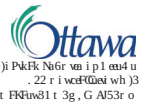
5566814 - COVID - BANK ST @ AYLMER AVE - MAY... - TMC  
 Sat May 7, 2022  
 Midday Peak (WKND) (12:30PM - 1:30PM)  
 l (Cs GiiLeL (gihntLaod Mr tr chH0L, v eaBy, Pedeltiaol, RiH H0Lro wrad, RiH H0Lro s r lImaK)  
 l (CMr B0l eotL  
 9D: 4A1533, gr Htiro: 3A54A6, -7A683176



Por Bded by: s i ty r i Ottawa  
 100 s r ol eGt0r o Dc  
 Nepean, ON, K2G A4, s 1



5566814 - COVID - BANK ST @ AYLMER AVE - MAY... - TMC  
 Tue/May 3, 2, 2,  
 0M 0Ful In g t h ( L, G A0M - 9G A0M(- 1 P) uCD Ful s i d)  
 o Cr G0cF: l HMR e: unK Mi d ) n r n f c 3s Fu Pa 30 Fc Fy u v c 31 v n r f c i w D i u k 31 v n r f c i w  
 r j i c04 u0 f  
 o (CMr PF7 Fw: e  
 th 65A 9: : 3H nmei w6: A95A'3-yAf Q . yf



0) j Pk f: N6\* v a i p 1 m s u  
 22 r i v c f G0e wh j 3  
 r Fk f u 31 t 3g, G A153 r o

HBB h v Hnd w	f i dR T i d d R d k	T i d d R f i d d R d k	a f c e E u d f H c F	
Sv F	D S W o NK 0RLU	S H W o NK 0RLU	D H W o NK 0RLU	
, 2, , 2A2y, 6 AM	, y , fy 2 , 0 , G	, y: 2 2 , y: y	9 , , 2 , A	19 999
9620M	, 0 , y0 2 , 5f 5	, A5 : 2 , f9 y	, , 2 2 , , 9A	99
96 A0M	, , A 2 , f9 , 2	, 12 A 2 , fA , ,	, , 9 2 , , y 12	9AA
9820M	, , f, 2 , 0 , f	, 0 , 2 , 0 ,	, , , 2 , 9 , f	9A2
Sfuc	f0 fA0 2 y, f y9	fYA , , 2 fG	, , , N 2 fy , ,	1, 95
* o H0L u0	5b* 52h* 2* ,	5Ch* , H* 2* ,	, f, b* 0H* 2* ,	
* Sfuc	H* : : b* 2* : 5b* ,	: A* 2b* 2* : f, b* ,	: 2b* 90C* 2* : b* ,	
0s %	26, , 26, f - 26, :	: 262y 26A2 - 26, :	: 2H 00 2H0y - 2H2, -	26Q
HMR e: unK Mi d j n r n f c	f, , 199 2 f5: ,	, f, , 2 2 f9, ,	, , A 2 fA ,	, 95
* HMR e: unK Mi d j n r n f c	Chy* 5fh* 2* 5Ae*	, 5, b* 526* 2* 5, b* ,	, , 22* 5fh* 2* 5yR*	5, b* ,
s FuPa	, A 2 , f ,	, 9 , 2 , ,	, 2 2 2 2	, 92
* s FuPa	, b* , 3* 2* , b* ,	, b* 5b* 2* , b* ,	, 2* 2* 2* 2*	, b*
l v n r f c i w D i u k	f , 2 2 , f ,	, 2 2 2 2 : 2	, 2 , , 2 ,	, A0
* l v n r f c i w D i u k	Ch0* , b* 2* , b* ,	A6* 2* 2* A0*	, 2* 9H* 2* 98*	, 98*
0Rk f y u v c	, , , , fA	, , , ,	, , , ,	, 12
* 0Rk f y u v c	, , , , 032*	, , , , 5, 9*	, , , , 038*	,
l v n r f c i w j ) c04 u0 f	, , , , 0	, , , ,	, , , ,	, 12
* l v n r f c i w j ) c04 u0 f	, , , , , 10*	, , , , , 39*	, , , , , f, b*	,

4 B F c y u v c unK l v n r f c i w j ) c04 u0 b H H f p 3 D 5 D H E R s 6 S f 9 d 3 W 6 W 5 d j w

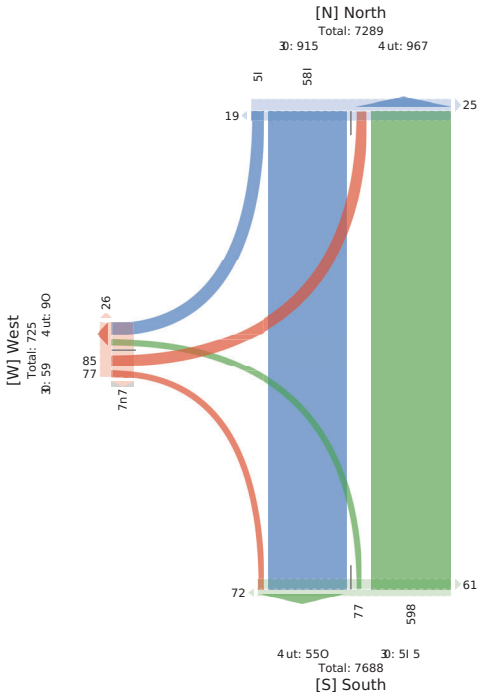


5566814 - COVID - BANK ST @ AYLMEYER AV - MAY... - TMC

Sat May 7, 2022  
 PM Peak (WKND) (21:30 PM - 03:30 PM) - v r r e l a t e  
 C H S H L L E L (i g h t L a d c M u t u l B y B M L o e a r y , P e c e l t a g d , R g y B M L u d w a c , R g y B M L u d s l u L m a l t )  
 C H M u r e l e d t L  
 9 D 1 4 3 5 Q ; i u f a t g d 1 : 3 , 0 4 3 6 , - 7 3 . 6 8 : 5 7 6



Plur g e c b y l s g y u f v t a m a  
 5 0 0 s u d i t e H i g d D L  
 N e a p e a d , v N , K 2 G 3 1 4 , S C



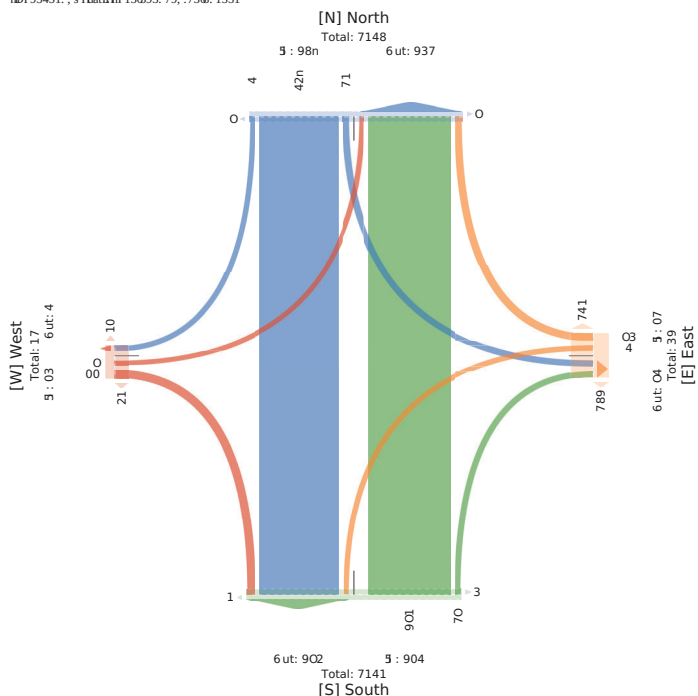
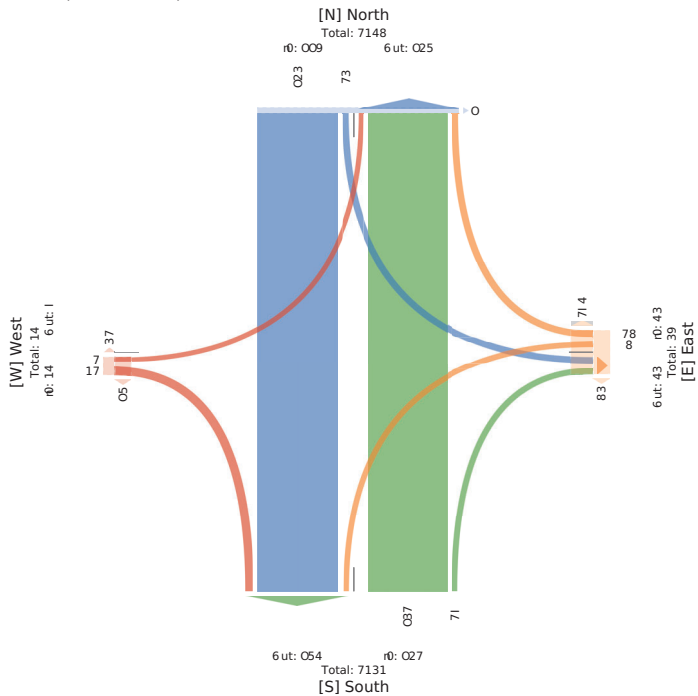
5566814 - COVID - BANK ST @ ECHO DR - MAY 07... - TMC

Tue/May 3, 2, .  
 0 F I L n g h t ( 6 2 : A 2 - M 9 : A 2 P M )  
 - I I C l a s s e s ( L i t h u g d M o t o r c a c i n s 3 H n u v a 3 P n d r s r i u g s 3 B i c a c i n s a n d R o a d 3 B i c a c i n s a n d C r o s s w a l k )  
 - I I M o v e m e n t s  
 I D : 4 7 6 A 9 8 5 3 L o c a t i o n : 8 7 . A 7 5 y 4 3 9 / 7 . 1 5 8 A 9 8



P r o v i d e d b y : C i t y o f O t t a w a  
 6 2 2 C o n s e n t u o u g D r 3  
 N n p n u g 3 0 N 3 K , G 7 1 4 3 C 1

Dir	Disctg	North					East					South					Sig										
		R	W	L	U	-pp	Phd	R	W	L	U	-pp	Phd	R	W	L		U	-pp	Phd							
2	1,6	62	2	1A6	5	68	2	1	2	2	2	1088	66	176	2	2	11	6	A2	2	2	2	A2	622	60A		
6	22PM	6	1A	6A	2	18y	8	2	2	8	2	8	18	5	182	2	2	185	2	A6	2	2	2	AA	6	2	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2	2	A6	68	60V
6	22PM	6	18y	67	2	11A	A	65	6	1	2	17	656	66	1	2	2	1A	8	AA	2	2	2				



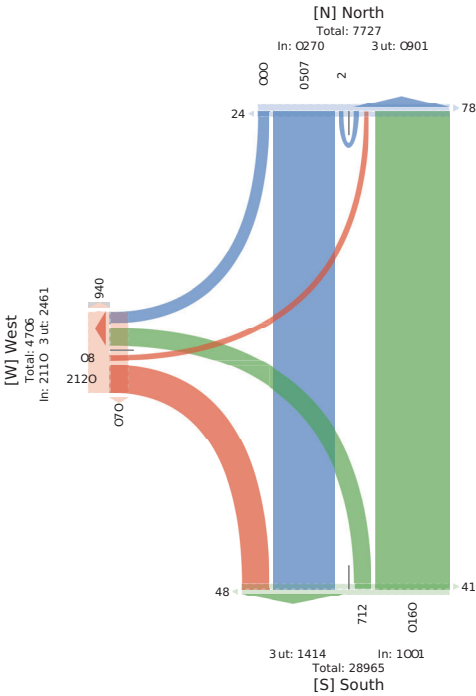
Lst Dirnctog	North TotFahbFgd					ToFah NorehboFgd					E nse SusshoFgd					lge
	R	W	U	- pp	Pnd*	W	L	U	- pp	Pnd*	R	L	U	- pp	Pnd*	
62:22-M	6	6	2	8		7	82	2	67		14	2	2	14	81	
66:22-M	7	871	2	72		777	628	2	174		6	6	2	6	44	
6:22PM	87	873	2	72		68	78A	62	172		66	6	2	646	688	
6:22PM	74	884	2	72		66	742	668	188		6	27	2	6A	676	
6:22PM	78	841	2	772		A	718	62	2	1y	A	2	1	2	6.1	
A:22PM	77	766	2	711		7	A	66A	2	141	y	68	A	2	6y	
8:22PM	11	764	2	7.7	6	1,8	661	2	y82	y	6	A	y	2	642	
7:22PM	74	867	2	8y8	4	1,y	621	2	yAA	62	6,8	7	2	6.4	6,2	
1:22PM	AA	68	6	8	68	4A	8A	2	AA	2	2	A	2	A	87	
<b>% - pproach</b>	62%	43%	2%	9	9	83%	67%	2%	9	9	43%	9%	2%	9	9	
<b>% Wnal</b>	82%	AVB%	2%	Ay3%	9	863%	y3%	2%	8.3%	9	6A3%	23%	2%	6A3%	9	
<b>Lit hes ugd Monocachs</b>	862	88.1	6	A 4y	9	8	A	2	727	9	68A	8	2	68y	9	
<b>% Lit hes ugd Monocachs</b>	4,5%	4A6%	622%	4A5	9	4,3%	413%	2%	4,5%	9	473%	732%	2%	483%	9	
<b>% Hnuv</b>	6	47	2	41	9	62	7	2	63y	9	2	2	2	2	9	
<b>% Hnuv</b>	25	97%	2%	96%	9	5%	23%	2%	92%	9	236%	2%	2%	236%	9	
<b>Bicacns and Road</b>	AA	67y	2	642	9	12	1	2	1	9	y8	1	2	2	9	
<b>% Bicacns and Road</b>	y3%	85%	2%	85%	9	73%	AB%	2%	75%	9	894%	6792%	2%	73%	9	
<b>Pndnsriungs</b>	9	9	9	9	42	9	9	9	9	82	9	9	9	9	6272	
<b>% Pndnsriungs</b>	9	9	9	9	45%	9	9	9	9	54%	9	9	9	9	4894%	
<b>Bicacns and Crosswalk</b>	9	9	9	9	1	9	9	9	9	7	9	9	9	9	7y	
<b>% Bicacns and Crosswalk</b>	9	9	9	9	5%	9	9	9	9	663%	9	9	9	9	736%	

\*Pndnsriungs ugd Bicacns and Crosswalk5L: Lnfe3R: Rit he3W Wht3U: U9Wng

5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC  
 Sat May 7, 2022  
 Full Length (10:30 AM-6:30 PM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 941346, Location: 54.397772, -74.684504



5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC  
 Tue/May y3, 2, .  
 M/F/Tue 1 Lun g h ( 6 : gAA92 1 M PA -92 1 M:  
 1 ) CjssLs g lloes ur F Mce: HavjLs3BLuRa3l LFLsd#r s3w0avjLs cr kcuF3w0avjLs cr  
 CHssm:n  
 1 ) McRLL Lrs  
 IB - 47A9783i cvud#tr - 57.94yyy, 3y7.8b7527



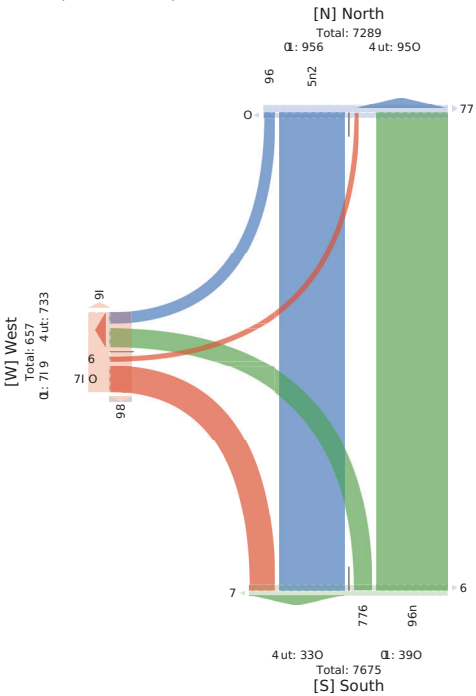
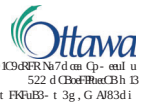
Lid 6Hd#tr	Cld Tcl of cJrF					Tcl n ( cld of cJrF					Lse Eust cJrF				
	k	S	W	1 pp	1 LFL	S	i	W	1 pp	1 LFL	k	i	W	1 pp	1 LFL
AA	ABA	2	AB	5	AB	95	2	AB7	2	72	A	2	7A	2	97b
AA571 M	Av	A24	2	A 8	2	AB	2	AB8	A	52	2	2	52	99	99
A 22 M	Av	A 9	2	AB	2	ABA	92	2	ABA	94	2	2	5A	9y	97d
A 37 M	AA	A 3	2	AB	2	AA	2	AB2	2	59	2	2	59	5	9A
Scaj	79	542	2	759	AB	794	A8	2	87	5	Av	9	2	Av7	Av2
* 1 ppHaw	4b*	42,*	2*	P	P	b,y*	4y9*	2*	P	P	4b9*	A3*	2*	P	P
* Scaj	9,4*	97,8*	2*	94,8*	P	94,9*	b,*	2*	9y,8*	P	A,8*	2,*	2*	A,8*	P
1 B%	2,yA4	2,4A	P	2,4,4	P	2,422	2,69A	P	2,42b	P	2,b,2	2,9y7	P	2,bA4	P
1 lloes ur F Mce:HavjLs	58	57y	2	729	P	54b	AAA	2	824	P	AB5	9	2	ABy	P
* 1 lloes ur F Mce:HavjLs	b8,b*	49,9*	2*	4,8*	P	4,5*	4b,*	2*	49,5*	P	47,9*	A2,2*	2*	47,5*	P
BLuB	2	Av	2	Av	P	Av	2	A4	P	2	2	2	2	2	P
* BLuB	2*	9,7*	2*	9,4*	P	9,*	Ab* 2*	2*	4*	P	2*	2*	2*	2*	P
w0avjLs cr kcuF	y	AB	2	9	P	5	2	2	5	P	b	2	2	b	P
* w0avjLs cr kcuF	Ab,*	9,9*	2*	5,*	P	5,7*	2*	2*	9,y*	P	5,y*	2*	2*	5,8*	P
1 LFLs	P	P	P	P	A	P	P	P	P	5	P	P	P	P	A4
* 1 LFLs	P	P	P	P	4,9*	P	P	P	P	A2,2*	P	P	P	P	45,b*
w0avjLs cr CHssm:n	P	P	P	P	A	P	P	P	P	2	P	P	P	P	B
* w0avjLs cr CHssm:n	P	P	P	P	y,y*	P	P	P	P	2*	P	P	P	P	7,*

4) LFLsd#r s ur F w0avjLs cr CHssm:n. i - i LQBk - k lloes - SoH3W - WSJH

5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC  
 Sat May 7, 2022  
 Midday Peak (WKND) (11:30 AM - 12:30 PM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 941345, Location: . 4697772, -74684. 04



5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC  
 Tue/May y3, 2, .  
 0M 0Ful In g t h ( 16 0M : A0M ( : - 9FluP0Ful ) G 1  
 i lPd lloes ur F Mce: HavjLs3BLuRa3l LFLsd#r s3w0avjLs cr kcuF3w0avjLs cr  
 CHssm:n  
 1 ) McRLL Lrs  
 IB - 47A9783i cvud#tr - 57.94yyy, 3y7.8b7527



Lid 6Hd#tr	Cld Tcl of cJrF					Tcl n ( cld of cJrF					Lse Eust cJrF				
	k	S	W	1 pp	1 LFL	S	i	W	1 pp	1 LFL	k	i	W	1 pp	1 LFL
AA	ABA	2	AB	5	AB	95	2	AB7	2	72	A	2	7A	2	97b
AA571 M	Av	A24	2	A 8	2	AB	2	AB8	A	52	2	2	52	99	99
A 22 M	Av	A 9	2	AB	2	ABA	92	2	ABA	94	2	2	5A	9y	97d
A 37 M	AA	A 3	2	AB	2	AA	2	AB2	2	59	2	2	59	5	9A
Scaj	79	542	2	759	AB	794	A8	2	87	5	Av	9	2	Av7	Av2
* 1 ppHaw	4b*	42,*	2*	P	P	b,y*	4y9*	2*	P	P	4b9*	A3*	2*	P	P
* Scaj	9,4*	97,8*	2*	94,8*	P	94,9*	b,*	2*	9y,8*	P	A,8*	2,*	2*	A,8*	P
1 B%	2,yA4	2,4A	P	2,4,4	P	2,422	2,69A	P	2,42b	P	2,b,2	2,9y7	P	2,bA4	P
1 lloes ur F Mce:HavjLs	58	57y	2	729	P	54b	AAA	2	824	P	AB5	9	2	ABy	P
* 1 lloes ur F Mce:HavjLs	b8,b*	49,9*	2*	4,8*	P	4,5*	4b,*	2*	49,5*	P	47,9*	A2,2*	2*	47,5*	P
BLuB	2	Av	2	Av	P	Av	2	A4	P	2	2	2	2	2	P
* BLuB	2*	9,7*	2*	9,4*	P	9,*	Ab* 2*	2*	4*	P	2*	2*	2*	2*	P
w0avjLs cr kcuF	y	AB	2	9	P	5	2	2	5	P	b	2	2	b	P
* w0avjLs cr kcuF	Ab,*	9,9*	2*	5,*	P	5,7*	2*	2*	9,y*	P	5,y*	2*	2*	5,8*	P
1 LFLs	P	P	P	P	A	P	P	P	P	5	P	P	P	P	A4
* 1 LFLs	P	P	P	P	4,9*	P	P	P	P	A2,2*	P	P	P	P	45,b*
w0avjLs cr CHssm:n	P	P	P	P	A	P	P	P	P	2	P	P	P	P	B
* w0avjLs cr CHssm:n	P	P	P	P	y,y*	P	P	P	P	2*	P	P	P	P	7,*

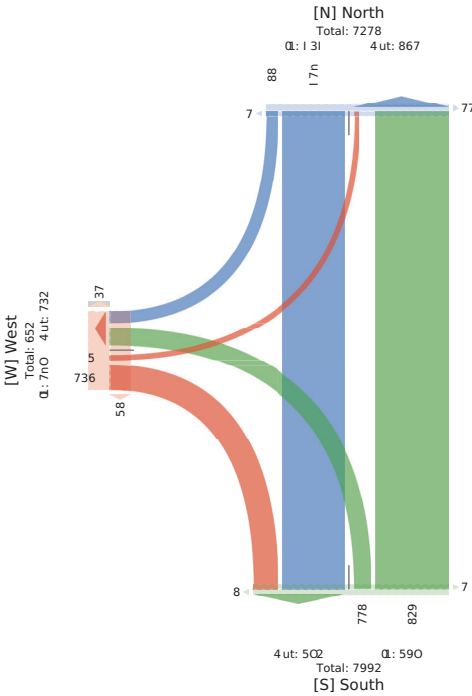
4) LFLsd#r s ur F w0avjLs cr CHssm:n. i - i LQBk - k lloes - SoH3W - WSJH

5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC

Sat May 7, 2022  
 PM Peak (WKND) (1 PM : 3 PM) : - Qvar Peak 1 Hov  
 u r AnaGRcs Li gtCahn MHFdydrc1 eaQy, PeneGdahc c ldydrcH BFhn, c ldydrcCH  
 AvHCRark)  
 u r MHdwehC  
 nDl 93453, s HattHl 13697772, :736 83103



PvHEnen byl Alty H - traKa  
 400 AHGematH Dc  
 Nepean, - N, K2G 3J9, Au



5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC

Tue/May 3, 2,  
 0Fl Lngt h (62:A2 - M9I:A2 PM)  
 - II Clusses (Lit hsg ugd Moeacrcs3Hnuv3Pndrsriugs3Bicacns and Roud3Bicacns og  
 Crosswalk)  
 - II Movmngs  
 ID: 476A743, Location: 875W482A39/73. 16y



Providnd ba: Cta of Ottawa  
 622 Cogsnllutog Dr3  
 Nnpng3ON3K, G 7J43C

Dirctng	Nth					Ese					Trah					S ne					
	R	W	L	U	-pp	R	W	L	U	-pp	R	W	L	U	-pp	R	W	L	U	-pp	
Wm	6	71	2	2	7y	6	AA	2	6	2	AB	47	6	2	2	2	82	1	2	2	2
66:22-M	7,6	2	2	7,7	A	1,2	2	2	18	17	68	72y	2	2	2	7,6	62	2	2	2	
6:22PM	7y	6	2	782	2	46	2	2	2	4	87A	812	2	2	2	8,1	67	2	2	2	
6:22PM	76	2	2	7,2	6	48	2	2	8	2	4	847	8,3y	2	2	882	68	2	2	2	
6:22PM	74	6	2	748	2	47	2	2	8	2	44	76A	6	728	2	2	761	6y	2	2	
8:22PM	741	6	2	126	2	667	2	2	8	2	664	1,1	A	8,3y	2	2	7,6	6	2	2	
8:22PM	7y8	2	2	7y1	A	646	6	6	2	688	18	AA	761	6	2	772	61	2	2	2	
7:22PM	7y	6	2	7A4	A	6,2	2	2	2	6	1,8	A	847	2	2	2	76	2	2	2	
1:22PM	17	1	2	1,6	6	3	2	2	6	2	34	4y	6	1,3y	2	2	87	1	6	2	
Wsd	67	84M	6	2	88, A	6	64	6	6	2	7y	8881	67	A	7,7	6	82AA	622	6	2	
% ppswh	23%	44%	23%	2%	8y2%	9	473%	23%	83%	2%	9	4	82%	473%	2%	2%	9	113%	46%	2%	
% Lit hsg ugd Moeacrcs	62	867	7	2	86yA	9	yy2	2	AI	2	21	9	616	A222	6	1	Ay18	9	2	2	
% Lit hsg ugd Moeacrcs	113%	483%	863%	2%	483%	9	483%	2%	4y9%	2%	483%	9	4	32%	448%	622%	448%	1	622%	2%	
% Haava	2%	3%	61%	2%	3%	9	25%	2%	2%	2%	25%	9	23%	2%	2%	2%	2%	2%	2%		
% Bicacns og Road	7	6A	7	2	68	9	8A	6	6	2	87	9	6A	677	2	2	61	5	2	2	
% Bicacns og Road	AA6%	AD%	863%	2%	AG	9	75%	622%	13%	2%	75%	9	y3%	85%	2%	2%	85	9	2%	622%	
Pndrsriugs	9	9	9	9	9	66	9	9	9	9	9	8627	9	9	9	9	9	9	9		
% Pndrsriugs	9	9	9	9	9	9463%	9	9	9	9	94422%	9	9	9	9	9	9	9	9		
% Bicacns og Crosswalk	9	9	9	9	9	6	9	9	9	9	86	9	9	9	9	2	9	9	9		
% Bicacns og Crosswalk	9	9	9	9	9	9	9	9	9	9	62%	9	9	9	9	2%	9	9	9		

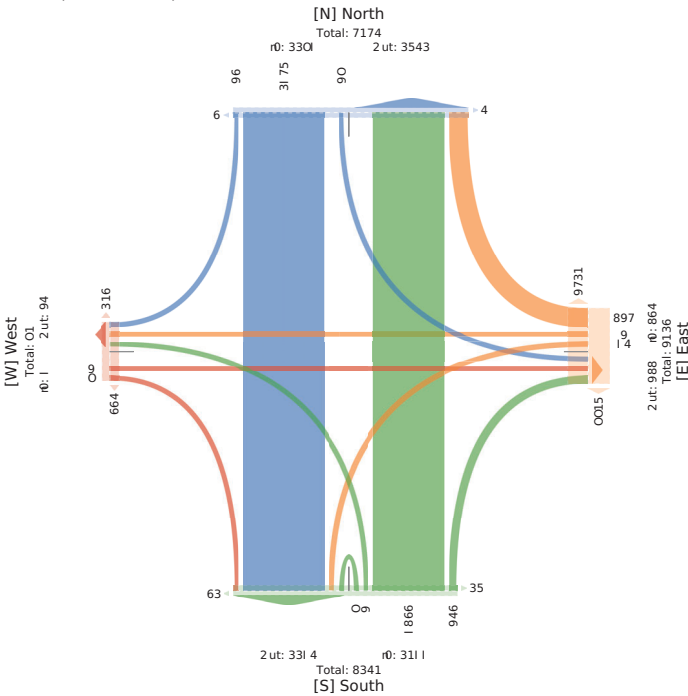
Pndrsriugs ugd Bicacns og CrosswalkSL: LnfR: Rit hsgW WtrF3U: U9AFg

5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC

Sat May 7, 2022  
 Full Length (10:30 AM-6:30 PM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on  
 Crosswalk)  
 All Movements  
 ID: 941349, Location: 54.399503, -74.68617



Provided by: City of Ottawa  
 100 Constellation Dr,  
 Nepean, ON, K2G 4J9, CA



5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC

Tue/May 3, 2,  
 Mofua 1 lan g h (6 : gAA92 1 M PA -92 1 M:  
 1 ) Cussls g iloes ur F Mccr Havyls3BLuRa31 LFLsdtr s3wkvls cr kcuF3wkvls cr  
 CHssm:n)  
 1 ) McrRl Lrs  
 IB - 47A97431 cvudtr - 875W448293B/75 b. Ay



1 H4RFF fa: Cta of Ottawa  
 A22 Cers4)udtr 6 I3  
 ( 1Plur3N( 3h, K 7G3C1

Ld	cHo					Use					TcBio					Lse					
	k	S	i	W	1pp	k	S	i	W	1pp	k	S	i	W	1pp	k	S	i	W	1pp	
SO L	A	AB4	2	AV	2	AB	2	2	2	AB	9	AB9	2	2	AB	7	2	2	2	2	
AA871 M	2	AB	2	2	AB	2	AB	2	2	AB	34	9	AB	2	2	AY	7	2	2	2	
A 221 M	2	AB2	2	2	AB2	2	7	2	2	2	y	47	AA	AA	2	2	A	7	9	2	
A 471 M	A	AB	2	2	AB4	2	A	2	2	2	AB	A	ADy	2	2	AD4	2	2	2	2	
* Sca	7	7	2	7,4	1	4	2	2	2	y7	88A	8y	2	2	2	84y	A	2	2	2	
* 1 pphs	28*	448*	28*	2*	P	14,5*	2*	16*	2*	P	195*	4,38*	2*	2*	P	2*	2*	2*	2*	P	
* Sca	25*	849*	25*	2*	849*	1*	5*	2*	25*	2*	5*	165*	8,52*	2*	2*	895*	1*	2*	2*	2*	2*
1 B92722 2986 2572 P 25K...	1	252b	P25722	P 25A	1	252b	P25722	P 25A	1	252b	P25722	P 25A	1	252b	P25722	P 25A	1	252b	P25722	P 25A	
1 iloes ur F Mccr Havyls	79	2	2	798	1	b	2	2	2	y8	1	88y	2	2	8,7	1	2	2	2		
* 1 iloes ur F Mccr Havyls	A22*	485*	2*	2*	495*	1	485*	2*	A22*	2*	485*	1	A22*	493*	2*	2*	495*	2*	2*	2*	
* Bilab	2*	A	2	2	AB	1	2	2	2	2	2	2	Ay	2	2	2	Ay	2	2	2	
* Bilab	2*	3*	A22*	2*	95*	1	2*	2*	2*	2*	1	2*	95*	2*	2*	98*	1	2*	2*	2*	
* wkvls cr kcuF	2*	Ay	2	2	Ay	1	A	2	2	2	A	1	2	Ay	2	2	Ay	2	2	2	
* wkvls cr kcuF	2*	92*	2*	2*	92*	1	AB*	2*	2*	2*	AB*	1	2*	95*	2*	92*	1	2*	2*	2*	
* 1 FLsdtr	P	P	P	P	P	1	P	P	P	P	P	3y2	P	P	P	P	P	P	P	P	
* 1 FLsdtr	P	P	P	P	P	1	P	P	P	P	P	P4y2*	P	P	P	P	P	P	P	P	
* wkvls cr CHssm:n)	P	P	P	P	P	1	P	P	P	P	P	AA	P	P	P	P	P	P	P	P	
* wkvls cr CHssm:n)	P	P	P	P	P	1	P	P	P	P	P	P	P	P	P	P	P	P	P	P	

1) LFLsdtr ur F wkvls cr CHssm:n)Si - i L08K - k iloesS - SoHE3W - WSEH







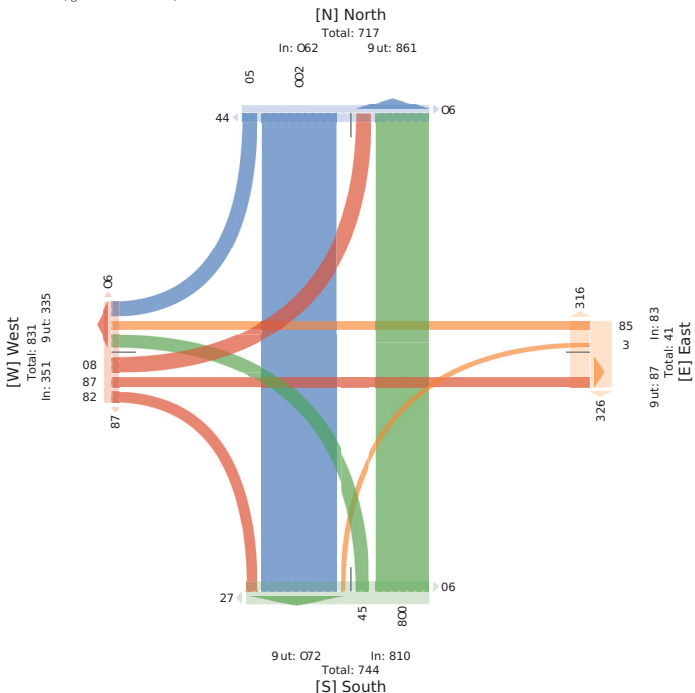




Par B d e d y: s i y i f O t t a w a  
 100 s o l l e t G a t i o D e  
 Nepean, ON, K2G 4A4, s 1



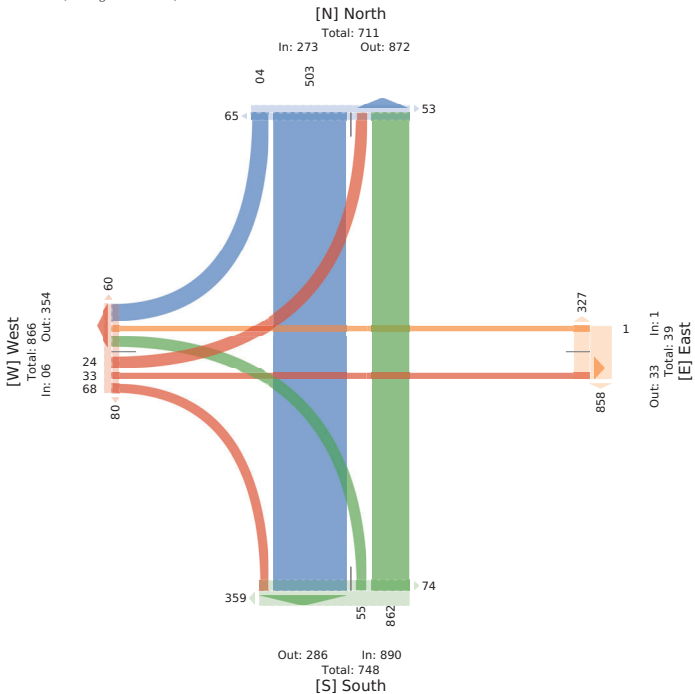
O j P k R N: v i w e f i p 1 m a u  
 . 22 r i w e f i G e i w h 3  
 t F k R u w l i 3 g, G 6 J 5 3 o



Plur g e c d y: s g y u l v t r a m a  
 500 s u l l e t H i g d D L  
 Nepean, v N, K2G 1J4, s C



Provi d n t b a: C i m o f O t t a w a  
 622 C o s n a l l u o g D r 3  
 N n p n g 30 N 3 K, G 7 143-9



Lst Dirrectio	North To/FrbhoFgd					East S madoFgd					To/Fn NorthhoFgd					S me EudoFgd					Age										
	R	W	L	U	-pp	R	W	L	U	-pp	R	W	L	U	-pp	R	W	L	U	-pp											
2, . 927By 62-22 M	7	68	8A	2	...	9	A	61	6A	2	3y	12	66	66	2	7A	11	67	4	1	2	y2	y7	3y							
60-22 M	81	844	y6	2	161	9	4A	8	1	2	61A	622	7	8	1	2	74E	94	8	8	AA	2	6A	616	68A						
6: 22PM	72	84y	7	2	1A	9	44	7A	2	2	6y	6, 4	A2	87A	7	2	768	4	82	6	8A	2	668	6	68A						
6:22PM	y2	846	y1	6	1A	9	62y	yA	6	2	64	6v	1	88y	1	2	847	1v	88	6	6	2	66	6	68A						
6:22PM	7A	777	47	2	y2A	9	4	77	2	677	41	64	8y	40	2	7A	6, 7	6	4	AA	2	64	6	68A							
A22PM	84	7y1	4	2	y68	9	4	76	6	2	616	44	8	8	2	78y	6, 3	6y	8	78	2	64	6	6716							
8:22PM	88	7	1	44	2	114	9	4y	86	6	2	672	64	2	76	7	2	77y	1	68	72	71	2	682	6	6761					
7:22PM	11	87y	y	2	747	9	2	AA	6A	2	6A	12	64	7A	6	2	787	40	A2	78	2	66	2	6868							
1:22PM	A	6	6	2	7	9	AA	6y	7	2	77	34	4	AA	61	2	1A	6	67	67	A2	2	12	2	11A						
<b>W e a l</b>	8A0	82AA	117	6	7606	9	y4y	AA	6	A	2	6, 7A	68A	6y4	A	yA	2	2	8, y	y40	...	A24	Ay	2	414	68	681				
% approach	5%	3%	6A2%	2%	9	9	7, 5%	A63%	45%	2%	9	9	85%	423%	73%	2%	9	9	45%	A69%	A	3%	2%	9	9	9					
% W e a l	45%	A63%	75%	2%	885%	9	15%	A8%	63%	2%	625%	9	65%	A6%	65%	2%	A5%	9	5%	3%	A5%	2%	9%	9	9						
<b>L i t h e u g d M o o r c a c h n s</b>	A	1	A	21	178	6	8	8y	9	y	...	A	6	A	2	6, y	9	6y7	A177	64	2	8284	9	...	A	4y	A11	2	481	9	66214
% Lit h e u g d M o o r c a c h n s	5%	483%	4	5%	622%	483%	9	4	2%	4y5%	622%	2%	4y9%	9	9	4y5%	483%	445%	2%	485%	9	4	5%	416%	4	3%	2%	4y4%	9	475%	
% H a n o a	8	1	...	2	621	9	A	8	2	2	y	9	2	4y	6	2	4	9	...	A	2	2	7	9	...	A	2	2	7	9	61
% B i c a c h n s o u d R o a d	45%	65%	25%	2%	3%	9	23%	62%	2%	2%	23%	9	9	2%	25%	2%	9%	9	25%	62%	2%	2%	25%	9	63%						
% B i c a c h n s o u d R o a d	y	617	4	2	6	9	6	y	2	2	64	9	8	6	6	2	6, 7	9	A	4	1	2	6	9	68A						
% B i c a c h n s o u d R o a d	63%	83%	63%	2%	47%	9	63%	65%	2%	2%	65%	9	5	5	A8%	2%	2%	3%	9	62%	3%	63%	2%	63%	9	54%					
% P n d s r i n g s	9	9	9	9	9	2	9	9	9	9	9	9	6A	9	9	9	9	9	9	9	9	9	9	9	68, 1						
% P n d s r i n g s	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9							
% B i c a c h n s o u d R o a d	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9							
% B i c a c h n s o u d R o a d	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9							
% B i c a c h n s o u d R o a d	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9							

P n d s r i n g s u g d B i c a c h n s o u d C r o s s w u k 5 L: L n f e R: R i t h e W W h r F 3 U: U 9 W F g

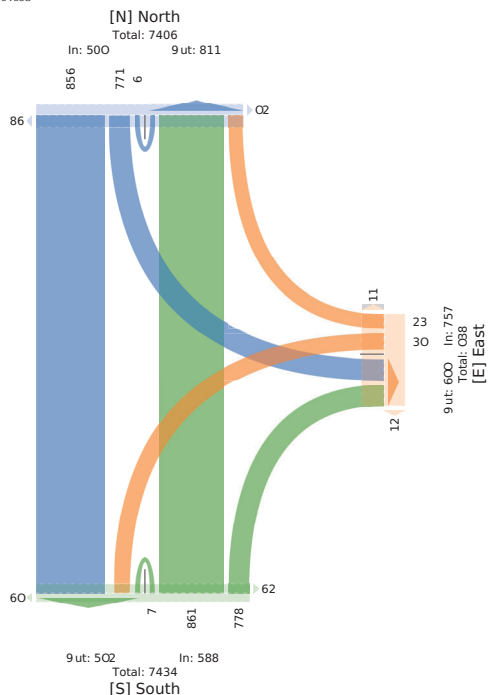








Provided by: City of Ottawa  
 100 Constellation Dr,  
 Nepean, ON, K2G 4J9, CA



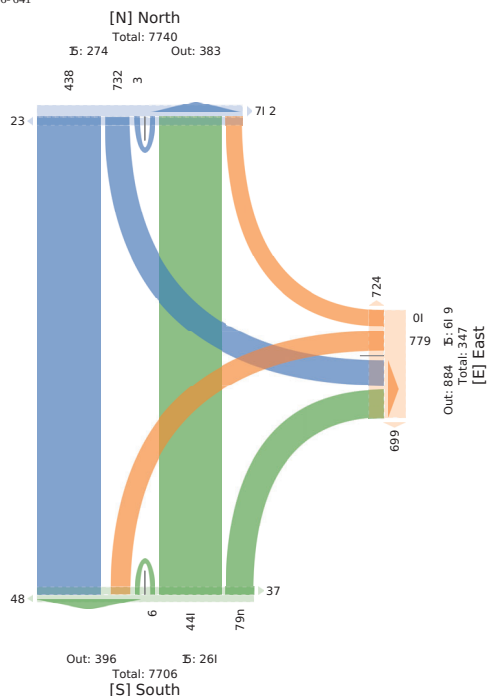
0) j PkkR Nc: i w 1 j 1 msc u  
 22 r i ucaRQcst wh j3  
 r HkFw3l t 3g, G - J53r o

hB h u f u e w	i j R Ti d d n d u k					E u c e n F e n d u k					T i d d r l i d r n d u k					a e		
	S	H	W	o	o	D	H	W	o	o	D	S	W	o	o			
2, , 2, 9-30:6:A 0M	..	2	6	..	.00	..	f	A	2	A	..	2	2	..	0y	..	f	6-
AZ20M	..	5	A6	..	.12	6	..	0	66	2	A6	..	22	A	50	..	6f	6y
A - 0M	..	6	..	..	.7y	7h	..	y	60	2	05	..	..	Ay	..	..	06	6y
A620M	..	2	A2	2	.A	6	..	5	A	2	+6	..	..	A6	..	..	25	2
* S i a c	A	6	..	..	..	0A	..	..	52	2	..	2y	AA	..	yf	A0	..	0.2
* o i k u s h	y6H*	..	..	2H*	..	9	..	..	A6b*	..	..	..	9	..	fH*	y.12*	2H*	9
* S i a c	6 .A*	..	..	2H*	..	A.0P*	..	..	Ch*	..	..	..	AH*	..	..	62b*	2b*	A62*
o s %	2Hf*	..	..	2Hf*	..	2Hf*	..	..	2Hf*	..	2Hf*	..	..	2Hf*	..	2Hf*	..	2Hf*
HfRc uk Mi d ) nandfrc	A	..	..	..	..	..	..	..	fO	..	..	..	..	..	..	..	..	..
* HfRc uk Mi d ) nandfrc	56H*	..	..	..	..	..	..	..	5-10P*	50P*	..	..	..	..	..	..	..	
s FuPa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
* s FuPa	6b*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
i vnanfrc i w Di uk	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
* i vnanfrc i w Di uk	6b*	..	..	..	..	..	..	..	6b*	..	..	..	..	..	..	..	..	..
o i k u s h	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
o i k u s h	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
i vnanfrc i w j) cc4 utL	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
* i vnanfrc i w j) cc4 utL	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

h R f c y w v z u k i v n a n f r c i w r j i c c 4 u t l b t H p e D D H R e S S S t Q d 3 W W S d j w



Plur g e c s y s g y u f i t r a m a  
 500 s u l t e H g u d I L  
 Nepean, v N, K2G - J4, S C



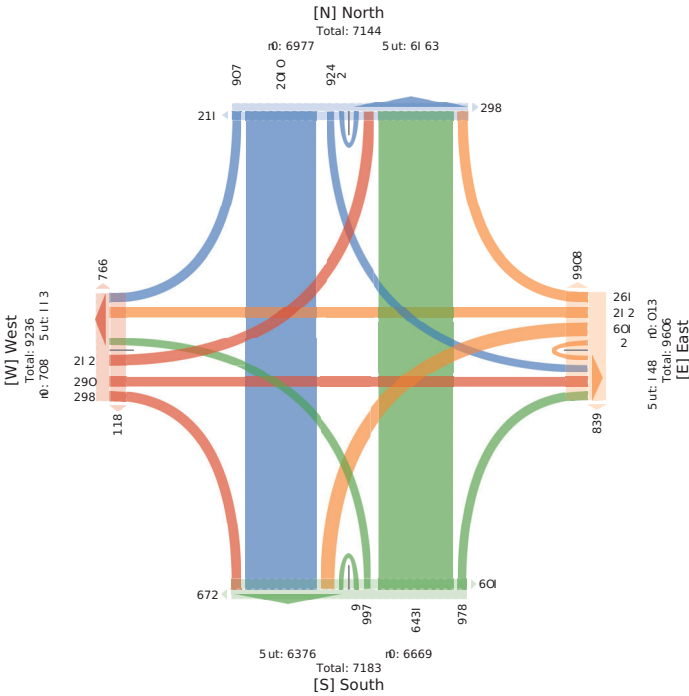
122 C u e s t l l M u e 1 d 0 n M 3 f O 3 p , K D 3 9 C P

L i n e l i n e n o	D u b b E u f u s u f e d					U M e S m s u f e d					E u f u s D u b b u f e d					S m s J M e u f e d				
	B	W	L	U	PNN	B	W	L	U	PNN	B	W	L	U	PNN	B	W	L	U	PNN
2, , 2, 9-30:6:A 0M	..	2	6	..	.00	..	f	A	2	A	..	2	2	..	0y	..	f	6-	..	..
AZ20M	..	5	A6	..	.12	6	..	0	66	2	A6	..	22	A	50	..	6f	6y	..	..
A - 0M	..	6	..	..	.7y	7h	..	y	60	2	05	..	..	Ay	..	..	06	6y	..	..
A620M	..	2	A2	2	.A	6	..	5	A	2	+6	..	..	A6	..	..	25	2	..	..
* S i a c	A	6	..	..	..	..	..	..	52	2	..	2y	AA	..	yf	A0	..	0.2	..	..
* o i k u s h	y6H*	..	..	2H*	..	9	..	..	A6b*	..	..	..	9	..	fH*	y.12*	2H*	9	..	..
* S i a c	6 .A*	..	..	2H*	..	A.0P*	..	..	Ch*	..	..	..	AH*	..	..	62b*	2b*	A62*	..	..
o s %	2Hf*	..	..	2Hf*	..	2Hf*	..	..	2Hf*	..	2Hf*	..	..	2Hf*	..	2Hf*	..	2Hf*	..	..
HfRc uk Mi d ) nandfrc	A	..	..	..	..	..	..	..	fO	..	..	..	..	..	..	..	..	..	..	..
* HfRc uk Mi d ) nandfrc	56H*	..	..	..	..	..	..	..	5-10P*	50P*	..	..	..	..	..	..	..	..	..	
s FuPa	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
* s FuPa	6b*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
i vnanfrc i w Di uk	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
* i vnanfrc i w Di uk	6b*	..	..	..	..	..	..	..	6b*	..	..	..	..	..	..	..	..	..	..	..
o i k u s h	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
o i k u s h	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
i vnanfrc i w j) cc4 utL	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
* i vnanfrc i w j) cc4 utL	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

n d n s t a M s M e d v i r a r i n s u e C a s s R M v L L n h 3 B B i g h 3 W W h e F 3 U : U 9 F e

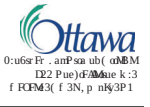
5566814 - COVID - BANK ST @ FIFTH AVE - MAY ... - TMC

Mon May 9, 2022  
 Full Length (4:30 PM-12:30 AM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 949153, Location: 45.40167, -75.68758



5566814 - COVID - BANK ST @ FIFTH AVE - MAY ... - TMC

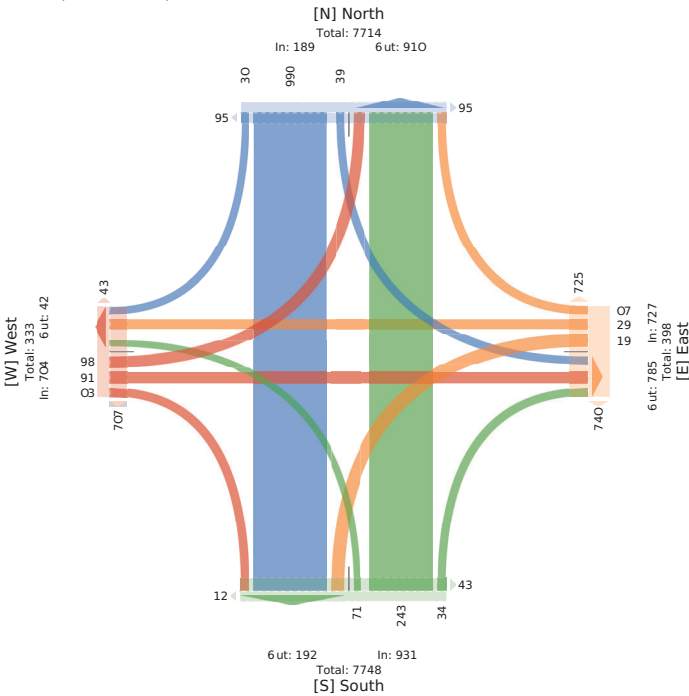
Tue May 3, 2022  
 Full Length (4:30 PM-12:30 AM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 949153, Location: 45.40167, -75.68758



Dir	Phase	Color	Duration	Offset	Priority	Phase	Color	Duration	Offset	Priority	Phase	Color	Duration	Offset	Priority
North	1	Blue	42	0	0	2	Green	42	0	0	3	Red	42	0	0
South	1	Green	42	0	0	2	Blue	42	0	0	3	Red	42	0	0
West	1	Red	42	0	0	2	Orange	42	0	0	3	Blue	42	0	0
East	1	Orange	42	0	0	2	Blue	42	0	0	3	Red	42	0	0

5566814 - COVID - BANK ST @ FIFTH AVE - MAY ... - TMC

Tue May 3, 2022  
 PM Peak (May 09 2022 5PM - 6 PM) - Overall Peak Hour  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 949153, Location: 45.40167, -75.68758



5566814 - COVID - BANK ST @ FIFTH AVE - MAY ... - TMC

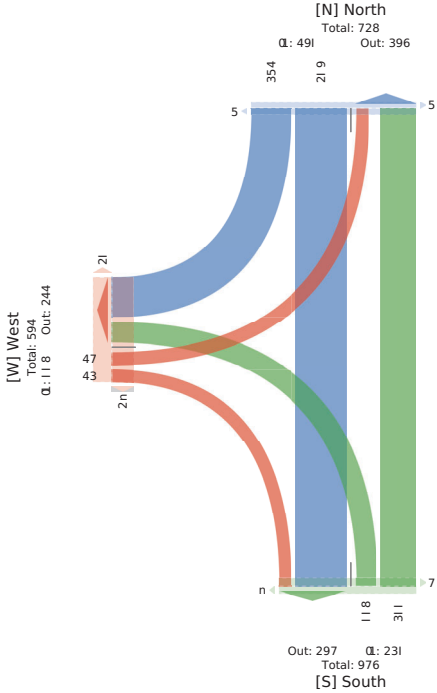
Tue May 3, 2022  
 PM Peak (May 09 2022 5PM - 6 PM) - Overall Peak Hour  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 949153, Location: 45.40167, -75.68758



Dir	Phase	Color	Duration	Offset	Priority	Dir	Phase	Color	Duration	Offset	Priority	Dir	Phase	Color	Duration	Offset	Priority
North	1	Blue	42	0	0	South	1	Green	42	0	0	West	1	Red	42	0	0
North	2	Green	42	0	0	South	2	Blue	42	0	0	West	2	Orange	42	0	0
North	3	Red	42	0	0	South	3	Red	42	0	0	West	3	Blue	42	0	0
North	4	Orange	42	0	0	South	4	Blue	42	0	0	West	4	Red	42	0	0

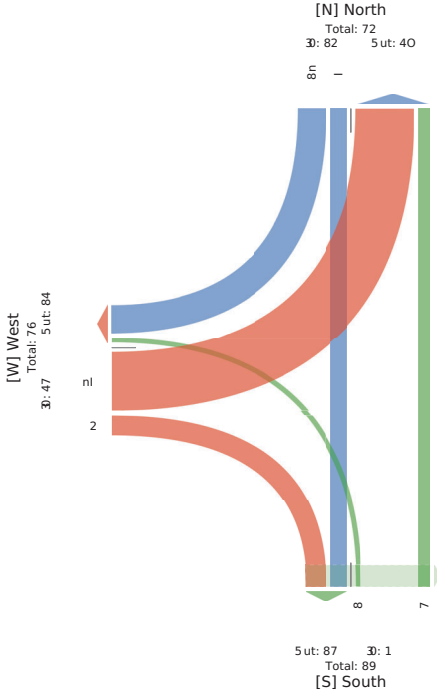






e-RAei MCP	OGaB (CuB, CuP)				J CuB (OGB, CuP)				E e6i Sa6L CuP)				B1	
	c	T	W	FNN	e	T	W	FNN	e	c	W	FNN		e
0, 00g, Dg, 30w, F M	8	5		33		5		5		m	3l		03	5D
30aDF M	m	5		1		3		0		m	k		35	00
TChk	30	7		38		m	3		D	0	8	07		5m
* F NNCu3	774*	554*		g		8, 4*	0, 4*		g		054*	174*		g
* TChk	03a*	3, 0*		53a*		14*	34*		8a*		3a4*	106*		D6*
1d%	, 4D	, 4l		g		, 4k		g		, 455	, 4D		g	, 4l
* A96aP) MCC3 yi le6	30	7		38		m	3		D		8	07		5m
* A96aP) MCC3 yi le6	3, *	3, *		3, *		3, *	3, *		3, *		3, *	3, *		3, *
d eaoy														
* d eaoy														
r Ayi le6 CP c Ca)														
* r Ayi le6 CP c Ca)														
e) e6kAP6	g	g	g	g		g	g	g	g	0	g	g	g	g
* e) e6kAP6	g	g	g	g	g	g	g	g	g	g	g	g	g	g
r Ayi le6 CP (sCGHalL4)	g	g	g	g	g	g	g	g	g	g	g	g	g	g
* r Ayi le6 CP (sCGHalL4)	g	g	g	g	g	g	g	g	g	g	g	g	g	g

l) e) e6kAP6 aP) r Ayi le6 CP ( sCGHalL4: w: eb2c w: A9J2Twt9su2WwMgtusP



Lag l inerieue	Outh Jufth, ufed				Jufth Outh, ufed				E inst SM: ufed				inst			
	B	W	U	PNN	-nd*	W	L	U	PNN	-nd*	B	L		U	PNN	-nd*
2, , 2E0y 6:22-T	DB	Aly	2	AyD	AD	AD	11	2	A65	1A	6	68	2	DE	y	51A
D:22-T	4A	6yy	2	Dk	DB	84D	15	2	8YA	1D	4	42	2	44	114	1A6
8:22-T	65	D21	2	Dy	66	64y	12	1	6y2	1A	11	65	2	Dy	18	12y5
4:22-T	D	6A2	1	6DB	1	625	5	2	618	1	A	14	2	2	88	5y
5:22-T	15	AAA	2	AD	18	A44	8	1	A66	12	A	12	2	1A	A5	465
y:22-T	D	66	1	685	D	A12	4	2	A14	1	y	2	2	AI	D	518
12:22-T	4	, 8	2	, 8y	2	14A		2	14D		A	D	2	5	113	6D
11:22-T		, 1	2	1, A	2	5A	2	2	5A	2		6	2	8	4	1
2, , 2E0y 2, 22P T	1	, y	2	A2	2	1y	2	2	1y	2	2	1	2	1	4	DE
% PNNuMh	43%	y, 2%	27%	9	9	y45%	, 7%	27%	9	9	105%	56%	2%	9	9	9
% WntH	62%	682%	2%	DE2%	9	663%	12%	2%	6D3%	9	22%	ADR	2%	67%	9	9
Lights Md T unuarInS	1y6	, 524	1	A22	9	, 4, D	82		, 454	9	6	, 24	2	6y	9	82y6
% Lights Md T unuarInS	487%	yDE%	DE2%	yA0%	9	y68%	y85%	122%	y62%	9	122%	y, 2%	2%	y62%	9	y62%
% c nMh	2	84	1	65	9	64	1	2	65	9	2	1	2	1	9	114
% v irarInS ue BuM	81	5	2	16A	9	12y	1	2	112	9	2	1D	2	1D	9	85
% v irarInS ue BuM	, A5%	, 2%	2%	62%	9	A5%	12%	2%	A2%	9	2%	82%	2%	D9%	9	67%
- ndnstaM3	9	9	9	9	1y8	9	9	9	9	5y	9	9	9	9	9	6AA
% - ndnstaM3	9	9	9	9	y12%	9	9	9	9	y15%	9	9	9	9	9	552%
v irarInS ue CausSRMw	9	9	9	9	15	9	9	9	9	9	9	9	9	9	9	D
% v irarInS ue CausSRMw	9	9	9	9	56%	9	9	9	9	52%	9	9	9	9	1, 2%	9

\* - ndnstaM3 Md v irarInS ue CausSRMw/L: LnH3B: Bigh3W Whd3U: U9Wfæ









5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC

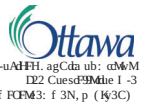
Mon May 9, 2022  
 Full Length (4:30 PM-12:30 AM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)  
 All Movements  
 ID: 95135, Location: 45697772, -75B, 5405



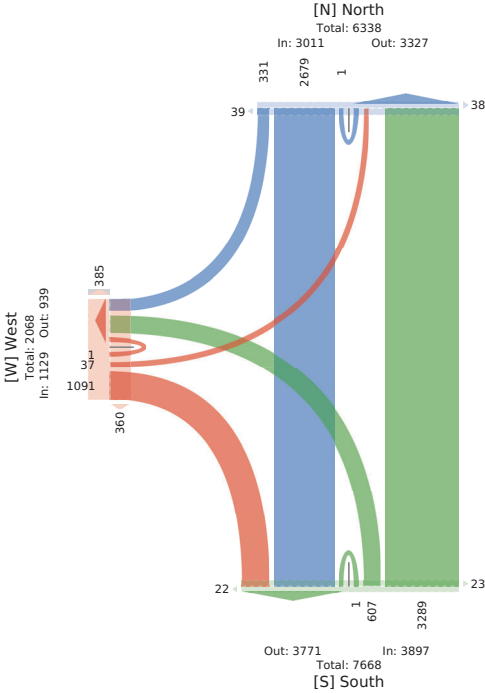
Provided by: City of Ottawa  
 100 Constellation Dr,  
 Nepean, ON, K2G 5J9, CA

5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC

Tue May 3, 20, 00  
 0T 0FM 12 M 2y, 2, ng 20T h (g 2 0T 6h: AF-MB0FM 1 uP-)  
 9)C6M6S li drs MHT uau-vav9S1 FMa30H5e0M3Bdav9S ue RuMBBdav9S ue C-usswM 6  
 9)T uAk Fecs  
 n8 gy( D ( 43i uvM4egni 7y888, 316( 75d n2(



0-uAHFH, agCda ul: nMWM  
 F22 Cues93Mte 1-3  
 f FCM3: f 3N, p (H3C)



5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC

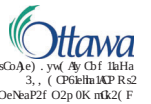
Mon May 9, 2022  
 PM Peak (May 09 2022 5-60PM) O60 PMV) r l ehuPeak AoCH  
 s uLuniei (gt ddi anBMoonRyRei, AeaLy, Pekeidnini, wlyRei on moaB wlyRei on  
 LHii i auk  
 : s uMol eDend  
 : 4-9016CB, goRdn- 50697772, 7083C500



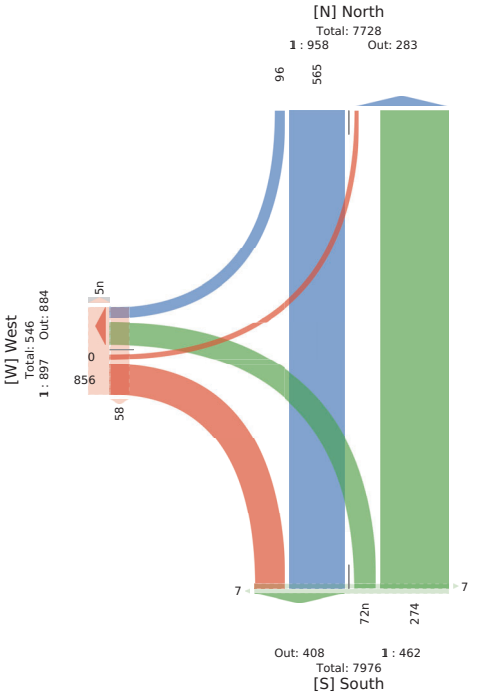
PHo HsBBy- Lty of r and a  
 100 Lontesudon 4 H  
 Nepean, r N, K2G 0J9, LS

5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC

Tue May 3, 20, 00  
 F M l eal nMay 3, 0, 00 30F M g3 F Mt  
 Fh( h66e6 tr A916 aP) MCC3i yi h62 eaoy2l e)e6kAP2r Ayi h6 CP c Ca) 2r Ayi h6 CP  
 ( sCGHhL  
 F hM CDev eP6  
 Rk wkn8 n12: G a1CPw4nfl k88802gim5Dn1, m



1 sGdA e) yw Ay Cbf lhaH  
 3, ( CP6kth IAP R2  
 OeNa2P O2p OK nK2( F



Sd F	f u-o				f u-o				f u-o				f u-o			
	R	S	W	OD	R	S	W	OD	R	S	W	OD	R	S	W	OD
2, , h2(hly ng 20T	D	D	2	D	D	n4	2	22	((	D	2	(5	..	..	..	..
ngtOT	D	D	2	D	D	..	2	D	..	..	2	..	..	..	..	..
(g2OT	D	D	2	D	D	..	2	2	(5	2	2	(5	..	..	..	..
(dOT	D	D	2	D	D	..	2	D	..	..	2	..	..	..	..	..
SuM	(4	n4	2	(n	2	5D	D	2	845	..	..	..	..	..	..	..
* ) O0uM	D	2*	4y2*	2*	..	h	847*	D	2*	..	h	y42*	D	2*	..	..
* SuM	1*	2*	2*	1a2*	..	h	1y2*	D	2*	..	h	1Q*	2*	2*	..	..
01%	2*	n	278n	h	27y	..	h	275(	2782	h	2755	..	278D	27*	..	..
1 drs MHT uau-vav9S	(5	m2	2	ny5	..	h	(55	D	2	..	h	..	..	..	..	..
* 1 drs MHT uau-vav9S	y55*	y23*	2*	yD*	..	h	yD*	y42*	2*	..	yD*	..	..	..	..	..
1 FMa	2	D	2	D	..	h	y	D	2	..	D	..	..	..	..	..
* 1 FMa	2*	17*	2*	17*	..	h	D	2*	2*	..	D	..	..	..	..	..
Bdav9S ue RuM	..	..	..	..	..	h	..	..	..	..	..	..	..	..	..	..
* Bdav9S ue RuM	1*	2*	2*	17*	..	h	5*	D	2*	..	h	87*	2*	2*	..	..
0H5e0M	h	h	h	h	..	h	h	h	h	..	h	h	h	h	..	..
0H5e0M	h	h	h	h	..	h	h	h	h	..	h	h	h	h	..	..
Bdav9S ue C-usswM	h	h	h	h	..	h	h	h	h	..	h	h	h	h	..	..
* Bdav9S ue C-usswM	h	h	h	h	..	h	h	h	h	..	h	h	h	h	..	..

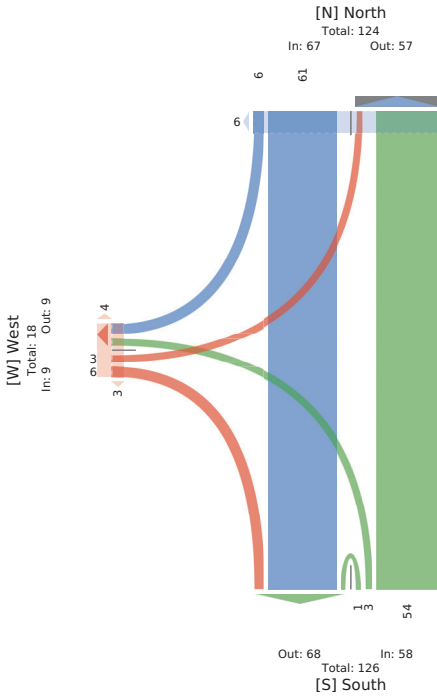
4) e) e6kAP6 aP) r Ayi h6 CP ( sCGHhL: we eB2: wc A9127v19su2WwWjTusP

5566814 - COVID - BANK ST @ WILTON CRES - MA... - TMC

Tue May 3, 20, 00  
 AM Peak (May 3, 0, 00 30AM 83 AM:  
 A-9-a)e) (l 6L) agh Mt it ndy-e)2o ear y2Pehe)in(ig)2c (yde-e) t g Ht ah2c (yde-e) t g  
 9rt )v a-k:  
 A-Mt r eBegi)  
 Rwni D34D72l t dai(gn5D4l 666028D17D5, D

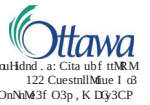


Pr r d'eh bynB Qy Tt Oliav a  
 3, , 9t g)ie-aif g wri  
 Nepeag2ON2K0G DJI 29 A



5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC

Tue T M y3, 2, ,  
 OFH Lnegh (6:A2 - T 9L :A2 P T )  
 Pll CIMegs (Lights Md T utuarInS3c nMh3- ndnstoM3svirInS ue BuM3virInS ue  
 CusswM)6  
 Pll T uHh nets  
 nh : yDlA13Lur Mue: 6D7y62A3BDR5418



- auHhdn: a Cita ub f nM  
 122 Cuesnll Mue 1 B  
 OnNm3f O3p, K D33CP

Lag I Intrdue	Quoth EuRth. uFed				JMc S st. uFed				EuRth Quoth. uFed				mt			
	W	L	U	PNN	B	L	U	PNN	B	W	U	PNN				
.2, , 9Ddy 6:22-T	A26	A	2	A28	.1	DD	1	2	DD	186	4	,A6	2	,66	y	428
D22-T	D42	.	2	D6	A	1,6	2	2	1,6	698	1y	DEI	2	D2	11	1,24
4:22-T	686	1	2	68D	2	152	2	2	152	566	62	DEI	2	D1	18	1194
8:22-T	65.	D	2	658	1	,2y	A	2	,1	441	9y	616	2	6DA	1	11D
5:22-T	648	2	2	648	6	54	A	1	y2	A26	11	AW	2	A6y	1A	584
y:22-T	AU5	2	2	AU5	6	y4	D	2	121	11A	16	A24	2	A2	6	8Ay
12:22-T	A81	2	2	A81	2	1DD	D	2	142	515	,y	A66	1	616	8	y6D
11:22-T	154	2	2	154	2	8.	.	2	86	44	12	,1A	2	,,A	A	65A
.2, , 9Ddy 21, 22PT	42	2	2	42	6	,4	1	2	,8	,,1	4	DD	1	4.	1	16y
% PNNaMh	y2%	27%	2%	6A2%	9	y83%	,2%	27%	9	9	D3%	y63%	27%	6	9	9
% VnaMh	6A2%	27%	2%	6A2%	9	1A2%	27%	2%	1A2%	9	,3%	627%	2%	6	9	9
Lights Md T utuarInS	A2, y	4	2	A2D	9	y5,	2	1	122A	9	182	,844	1	,yA8	9	4y8D
% Lights Md T utuarInS	y63%	DE3%	2%	y63%	9	y83%	122%	122%	y83%	9	y83%	yA5%	DE2%	y62%	9	y63%
% c nMh	8A	2	2	8A	9	6	2	2	6	9	2	DE	2	DE	9	1D
% c nMh	,2%	2%	2%	,2%	9	23%	2%	2%	23%	9	2%	,2%	2%	13%	9	13%
virarInS ue BuM	y2	D	2	yD	9	18	2	2	18	9	6	1,4	1	1A	9	,6A
% virarInS ue BuM	,2%	6D3%	2%	A2%	9	13%	2%	2%	13%	9	,2%	67%	DE2%	62	9	A2%
- ndnstoM3	9	9	9	14	9	9	9	9	AQ2	9	9	9	9	9	9	88
% - ndnstoM3	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	122%
virarInS ue CusswM	9	9	9	9	9	9	9	9	1y	9	9	9	9	9	9	2
% virarInS ue CusswM	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	2%

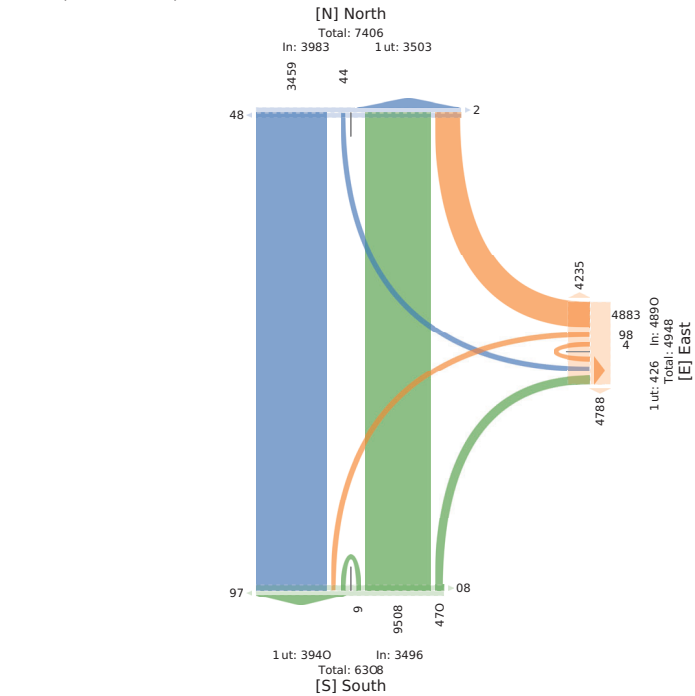
\* - ndnstoM3 Md virarInS ue CusswM)7L: Lnh3B: Bigh3W WhdF3U: U9Mfœ

5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC

Mon May 9, 2022  
 Full Length (4:30 PM-12:30 AM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on  
 Crosswalk)  
 All Movements  
 ID: 9513. 1, Location: 45699403, -756 8. 17

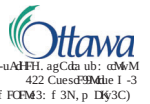


Provided by: City of Ottawa  
 100 Constellation Dr,  
 Nepean, ON, K2G 5J9, CA



5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC

Tue T M y3, 2, ,  
 OT OFM IT M 2y, 2, , ng 2OT h (g 2 OT 6h: AF-MB0FM 1 uP-  
 9)Cm3s li dr s MHT uau-vaV3S1 FMa30FHScM3BdavaS ue RuMBBdavaS ue  
 C-usswM) 6  
 9)T uAfk Fees  
 nh gyDit n43i uvMtheg7Dl yy72t 3f (Dh5n4(

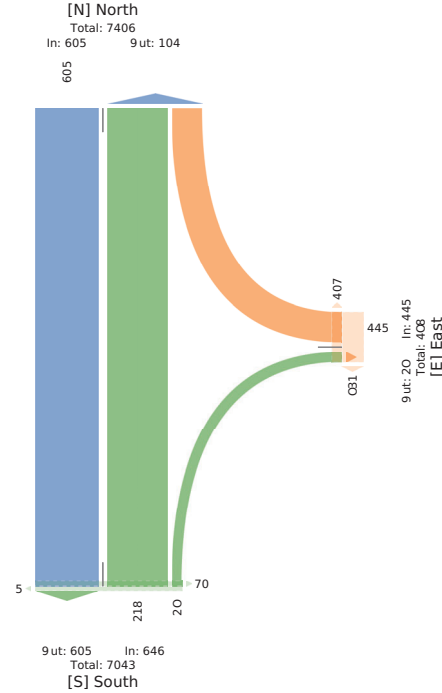


0-uAHFH: agCda ub: nM  
 422 Cuesnll Mue 1-3  
 f FCM3: f 3N, p D33(C)

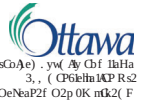
I fo I d fVnde	F u-a FuPr. uPeH				CMc E Fic. uPeH				F u-a F u-a. uPeH				mc			
	S	i	W	) OD	R	i	W	) OD	R	S	W	) OD				
.2, , hDdy ng 2OT	472	2	2	472	2	D	2	2	D	4	4,	2	4,	,	t, D	
ng)DT	444	2	2	444	2	D	2	2	D	14	4,	4,	2	477	,	147
(g)DT	447	2	2	447	2	D	2	2	D	14	4,	4,	2	4D	5	12,
(g)DT	45	2	2	45	2	DE	2	2	DE	49y	42	427	2	447	4	142
SuMh	D2	2	2	D2	2	,,1	2	2	,,1	555	7h	7y	2	D D	4	4, D
* ) ODuM:	422	* 2*	* 2*	h	h	422	* 2*	* 2*	h	h	58*	y48*	* 2*	h	h	h
* SuMh	728	* 2*	* 2*	728	* h	4(6*	* 2*	* 2*	4(6*	h	18*	158*	* 2*	7,8*	h	h
01%	28yn	h	h	28yn	h	28D	h	h	28D	h	2815	28y2	h	28y7	h	28(4
i dr s MHT uau-vaV3S	754	2	2	754	h	,,4	2	2	,,4	h	7D	7D	2	7yD	h	44(
* i dr s MHT uau-vaV3S	yDh*	* 2*	* 2*	yDh*	h	yy8h*	* 2*	* 2*	yy8h*	h	y(6*	yt8*	* 2*	y78*	h	yDh*
1 FMa	42	2	2	42	h	2	2	2	2	h	2	y	2	y	h	4y
* 1 FMa	,8*	* 2*	* 2*	,8*	h	2*	* 2*	* 2*	2*	h	2*	48*	* 2*	48*	h	487
BdavaS ue RuM	4,	2	2	4,	h	,,	2	2	,,	h	4	,2	2	4	h	1D
* BdavaS ue RuM	,8*	* 2*	* 2*	,8*	h	28*	* 2*	* 2*	28*	h	,8*	78*	* 2*	78*	h	,8*
0)FScM3	h	h	h	h	h	h	h	h	h	h	55h	h	h	h	h	4h
* 0)FScM3	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	422*
BdavaS ue CusswM	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	2
* BdavaS ue CusswM	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	2*

4)FScM3 MhBdavaS ue C-usswM) 8i gi R3RgRdr cSgSr -P3W)MS P-e

5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC  
 Mon May 3, 2022  
 PM Peak (May 09 2022 5-60PM) O60 PMV) r l eia uPeak AoCh  
 s uLuniei (glt ddi anBMoortRyRei, AeaLy, PeReidnii, wRyRei on moaB wRyRei on  
 LHii1 aukv  
 s uMol eDend  
 :4 - 913653, goRdon- .17699.06, )OI58530



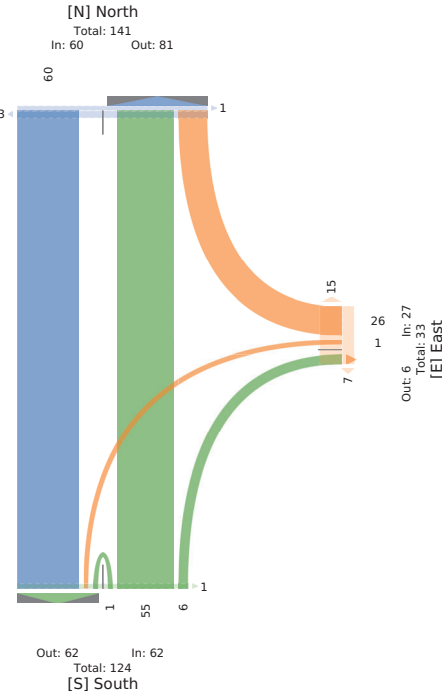
5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC  
 Tue May 3, 20, 00  
 FM Peak (May 3, 0, 00 30F M g3 FMt  
 Fh( h666tr A9B6aP) MCCSi yi h62d eaoy2l e) e6kAPG2r Ayi h6CP c Ca) 2r Ayi h6CP  
 ( sCGHalL7  
 FihMCoev eP6E  
 RkwnBf D2: G1a1CPw4mfl k4, 12gimL6D38



[-e- RAei MCP	OCaB EGaB, CuP)	JaeI S e6i CuP)	ECaB OCaB, CuP)		
TA e	T : W FNN l e)U	c : W FNN l e)U	c T W FNN l e)U	P1	
0, 00g ngB, 30w, FM	11 , , , 11 3	35 , , , 35 3l	4 18 3 40 3	kl	
30aof M	08 , , , 08 1	5 3 , , k 3l	0 35 , , 0, ,	nd	
TChh	Q , , , Q 4	0D 3 , , 08 00	D nm 3 0D 3	34k	
* FNNCaI9	3, , * , * g	kD* 1B* , * g	kB* 55B* 3D*	g	g
* TChh	4, 1* , * , * 4, 1*	303* , 3* , * 35D*	42* 118* , 3* , * 43D*	g	g
14%	, 2D3 g g , 2D3	, 2D3 , 20g , 18m	, 28m , 25D g , 25m	g	g
* A9EaP) MCCSi yi h6	nd , , , nd	0D 3 , , 08	D 45 , , nd	g	g
* A9EaP) MCCSi yi h6	kl 1* , * , * kl 1*	3, , * 3, , * 3, , *	3, , * 581* , * 583*	g	g
d eaoy	1 , , , 1	g , , , g	1 , , , 1	I	D
* d eaoy	nd* , * , * nd*	g , * , * , * g	, * ndr* , * 45*	g	42*
r Ayi h6CP c Ca)	3 , , , 3	g , , , g	4 3 , , m	g	D
* r Ayi h6CP c Ca)	3B* , * , * 3B*	g , * , * , * g	, * 81* 3, , * 5B*	g	42*
1 e) e6kAPG	g g g g 4	g g g g 00	g g g g 3	g	g
1 e) e6kAPG	g g g g 3, *	g g g g 3, *	g g g g 3, *	g	g
r Ayi h6CP ( sCGHalL7	g g g g , *	g g g g , *	g g g g , *	g	g
* r Ayi h6CP ( sCGHalL7	g g g g , *	g g g g , *	g g g g , *	g	g

1) e) e6kAPG aP) r Ayi h6CP ( sCGHalL7: w: eb2c w A92Twt9su2WwWgtusP

5566814 - COVID - BANK ST @ MARCHE WAY - MAY... - TMC  
 Tue May 3, 20, 00  
 AM Peak (May 3, 0, 00 30AM 83 AM:  
 A-- 9-a))e (l 6L) agh Mt it ndyde)2o ear y2Pehe)in6g)2c @yde) t g Ht ah2c @yde) t g  
 9 ut )v a-k:  
 A-- Mt r eBegi)  
 Rwnf D347321 t dai@gn5D4115, 428D71736



5566814 - COVID - BANK ST @ HOLMWOOD AVE - M... - TMC  
 Tue T M y3, 2, .  
 OFH Length (6:A2 - T 9L, :e) PT )  
 P1 CIMoss (Lights Md T utuarlns3c nM3-ndnstaM3v irarlns ue BuM3v irarlns ue CaussRnM3)  
 P1 T uHk nets  
 r h yDI A463Lur Mue: 6D7y8y43BfD84D4A



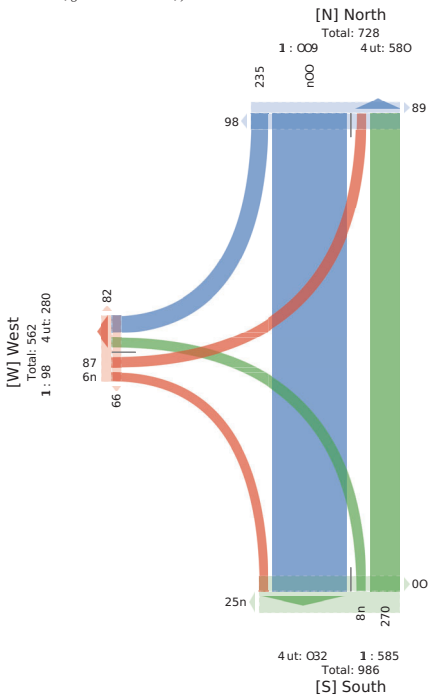
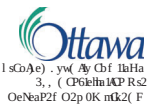
Lang I nterface	Quoth EuFh, ufed	J M S mt, ufed	EuFh Quoth, ufed	S no J M, ufed
Wk n	B W L U PNN nst	B W L U PNN nst	B W L U PNN nst	B W L U PNN nst
, 2, 908y622-T	14 52 5 2 ,yA	19 2 2 2 2 2 18A	AD , AB AI 2 A06 82	AI 11 11 2 DA 11
1222-T	AA 18A , 6 2 422 138	1 , , , 2 D 611	54 688 DE 2 416 142	6A , D AB 2 12, , 2, 1A 1
422-T	6 61y AB 2 655 AA	, 6 2 2 4 50R	128 13y 6A 1 441 12	46 A, A2 2 1,4 , 1,52
522-T	A2 AHA AI 2 6, 6 11y	1 2 2 2 1 444	111 65D 6D 2 4A 22	85 A AI 2 10E , 61 1,24
822-T	, , , Apy , 1 A 66D 42	1 1 2 2 , , A2	AD AB, 16 2 6, 1 11A	AI y 12 2 DE 80 y18
y22-T	, A ,yA , 8 2 A66 65	2 1 2 2 1 , A	AA A62 , , 2 AyD 44	AI 12 14 2 DE 54 5p5
1222-T	AB AA , 4 2 62, 11A	2 , , 2 2 , 803	, y 6, A 65 2 6yy 12	AI y AB 2 58 , , 1, 901
1122-T	11 15y 5 1 198 ,y	2 2 2 2 2 2 5A	D 13y , 6 2 188 ,y	y D , , 2 A 81 82
, 2, 908y21, 229P-T	, , , ID , 2 Dy ,y	2 2 2 2 2 2 , 2	, SA D , , B ,	A 2 A 2 4 4 165
WkM	15y , 81y 182 6 A 6, 81E	D 12 , 2 15 A10	6/A A55 , 81 A AByD 1103	AA 1AA 1yD 2 40R 1,42 581
% PNNMh	47% 887 % 13% 23%	9 9,y87% DE8% 113% 2%	9 117% 812% 51% 23%	9 9DE% , 27% ,y2% 2% 9 3 9
% WkM	13% A78% , 38% 23% 612%	9 23% 23% 2% 2% 21%	9 130% 625% A9% 2% 6y3%	9 62% 15% , 13% 2% 80% 9 3
Lights Md T utuarlns	158 , 521 158 6 A55	9 2 2 2 2 2 2	612 A64 , 55 A A6M	9 A8B 11A 1y1 2 4, , 564E
% Lights Md T utuarlns	y53% y63% y87% 122% y63%	9 2% 2% 2% 2% 2%	9 y63% y13% y87% 122% y13%	9 y40% 81E% y53% y63% y1E%
c nMh	2 5D 2 2 2 5D	9 1 2 2 2 1 9	2 1D 1 2 1D 9	, 2 , 2 6 9 1M
% c nMh	2% , 2% 2% 2% 2%	9 2,2% 2% 2% 2% 19%	9 2% 15% 28% 2% 15%	9 23% , 2% 12% 2% 2% 9 13%
% v irarlns ue BuM3	D BA , 2 y2 9 6 12 2 14 9	, 6 54 A 2 12A	9 12 , 2 2 A 9 61	
% v irarlns ue BuM3	13% , 3% 17% 2% , 30%	9 822% 122% 122% 2% y63%	9 103% , 30% 17% 2% , 2%	9 92% 112% 12% 2% 63% 9 93%
% ndnstaM3	9 9 9 9 9 86A	9 9 9 9 9 A8B	9 9 9 9 9 11AC	9 9 9 9 9 1,6
% ndnstaM3	9 9 9 9 9 9y2%	9 9 9 9 9 9y2%	9 9 9 9 9 9y2%	9 9 9 9 9 9y2%
% v irarlns ue CaussRnM3	9 9 9 9 9 1, 9 9 9 9 9 4	9 9 9 9 9 9 4	9 9 9 9 9 11	9 9 9 9 9 11
% v irarlns ue CaussRnM3	9 9 9 9 9 13%	9 9 9 9 9 27%	9 9 9 9 9 13%	9 9 9 9 9 13%

\* ndnstaM3 Md v irarlns ue CaussRnM3L: Lht3B: Bight3W VhtF3U: U9WFe



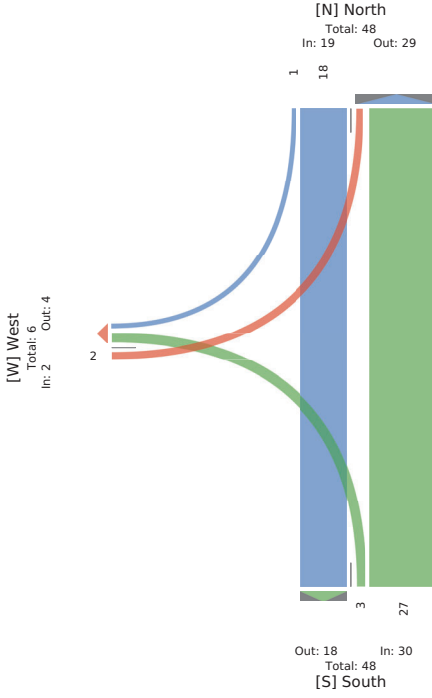






E- e6l RAct 1CP	OC3B JCuB. CuP)				JCuB OC3B. CuP)				E- e6l Sa6L CuP)				BP1	
	c	T	W	FNN	e)U	T	W	FNN	e)U	c	W	FNN		e)U
0, 00g, 30w, FM	33			33		35	0		33					1
30mFM	3	5		4		3	3		3		0		0	03
<b>TCh9</b>	3	34		3k		05	1		1		0		0	nb
* FNCA9	nb*	k7b*		*		k, 9*	3, 9*		*		g	g	3, **	*
* TCh9	08*	1nb*		158*		nbk*	nbk*		nbk*		g	g	1k*	1k*
1d%	80m	87, k		g	870	8K5	8, 5m		g	8	8m	g	8m	8, 8m
* A96aP) MCCSi yi h6	3	34		3k		05	1		1		0		0	nb
* A96aP) MCCSi yi h6	3, **	3, **		3, **		3, **	3, **		3, **		3, **		3, **	3, **
d eaoy														
r Ayi h6 CP c Ca)														
* r Ayi h6 CP c Ca)														
e) e6kAPG	g	g	g	g	g	g	g	g	g	g	g	g	g	g
r Ayi h6 CP c CGHHLR	g	g	g	g	g	g	g	g	g	g	g	g	g	g
* r Ayi h6 CP c CGHHLR	g	g	g	g	g	g	g	g	g	g	g	g	g	g

1) e) e6kAPG aP) r Ayi h6 CP ( sCGHHLR: w: eh2c w: A912Wt9su2WwWgtUsP



Log I nter time	Dwh BuFh. ufed				J M6 S nst. ufed				BuFh Ouath. ufed				S nst J M6. ufed													
	B	W	L	U	PNN	nt*	B	W	L	U	PNN	nt*	B	W	L	U	PNN	nt*								
2, 908E 622-T	A	41	81	2	A0D	9	45	6	A	2	12D	A6	5	16	12	2	4	A6	12	A	D	2	D5	4A	4y2	
1222-T	86	11	5	12A	2	8yD	9	105	14	14	2	A	1, 8	14	684	1y	2	12A	A6	8	D	12D	2	14A	15A	1081
822-T	DA	8y	54	2	DA	9	1A8	DE	y	2	1y	1, 4	15	DE	y	2	1y	62	A	A	D	2	118	101	155	
422-T	A6	61D	42	2	D1	9	45	AD	16	2	1, 4	1A8	1	A61	D	2	615	A6	y	y	A6	2	5D	y5	111D	
522-T	5	A84	66	2	6y	9	66	16	12	2	85	51	11	A4	8	2	A66	y	A6	A6	D	2	y	84	y4A	
y22-T	A	58	A6	2	A0B	9	61	2	D	2	88	A3	y	A2A	14	1	A02	11	1A	15	A4	2	85	10	5, 2	
1222-T	A4	A6	5	2	6y	9	AD	1D	D	2	DD	1A6	8	1y	16	2	4y	2	A	12	A4	2	86	10	548	
1122-T	1	D8	1	2	A22	9	15	A	D	2	8	61	A	116	8	2	164	2	D	5	11	2	6	11	6y4	
2, 908E 1, 22P-T	5	D8	8	2	41	9	A	1	2	2	6	4	2	64	A	2	DE	2		1	A	2	8		1A6	
<b>W6M</b>	A2A	y64	616	2	A05	9	185	1y	85	2	54D	425	56	855	16y	1	y	102	141	22	4A	2	866	851	516y	
% FNNA6	51%	4y2%	1, 26%	2%	9	841%	102%	45%	2%	9	3%	y	2%	18%	2%	9	3, 88%	A13%	6, 26%	2%	9	8				
% W6M	68%	A61%	18%	2%	6D3%	9	41%	26%	25%	2%	122%	9	12%	A02%	15%	2%	A03%	9	7%	13%	A05%	2%	43%	9	9	
<b>Lights Mid T unararins</b>	84	44	616	2	A6yA	9	18D	18	88	2	584	8	4y	D12	168	1	468	9	182	1yA	BD	2	815	8	44, 6	
% Lights Mid T unararins	553%	y63%	yy3%	2%	y62%	9	yy23%	y58%	y43%	2%	yy73%	9	y62%	yA5%	y52%	122%	y62%	9	yA8%	y13%	y43%	2%	y62%	9	y65%	
% c mB	D	DE	1	2	48	9	2	2	2	2	9	2	DE	2	62	9			1	2	D	9	16A			
% v irarins ue BuM	111	1, D	A	2	1Ay	9	1	A	2	8	9	D	112	1	2	118	9	y	D	4	2	1	8	1, 5		
% v irarins ue BuM	A0%	61%	22%	2%	A0%	9	23%	12%	3%	2%	22%	9	82%	63%	29%	2%	62%	9	18%	13%	2%	A0%	9	A0%	9	A0%
% v irarins ue BuM	9	9	9	9	9	2	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
% v irarins ue BuM	9	9	9	9	9	2	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
% v irarins ue BuM	9	9	9	9	9	2	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
% v irarins ue BuM	9	9	9	9	9	2	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	

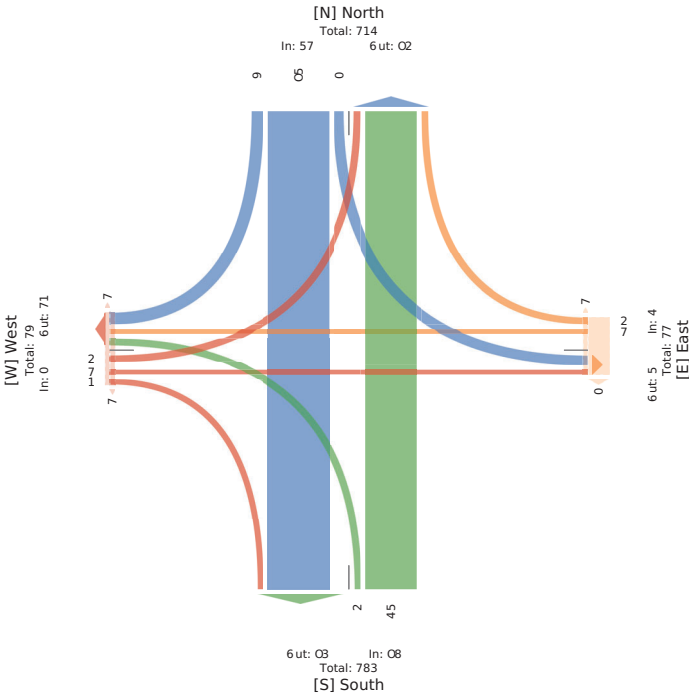
- ndnstaMs Md v irarins ue CaussRMBW/L: Lnh3B: Bight3W WhF3U: U9W6e





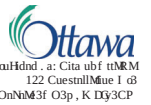
5566814 - COVID - BANK ST @ SUNNYSIDE AVE - ... - TMC

Tue May 3, 20, 00  
 AM Peak (May 3, 0, 00 30AM 83 AM:  
 A-9-a)e) (l 6L) agh Mt it ndy-e)2o ear y2Pehe)in(ig)2c (y-d)e) t g Ht ah2c (y-d)e) t g  
 9 it )v a-k:  
 A-Mt r eBegi)  
 Beni D347321 t dai@gm5D41 501 3287D6145, 1



5566814 - COVID - BANK ST @ EXHIBITION WAY - ... - TMC

Tue T M y3, 2, ,  
 OFI Length (6:A2 - T 9L :A2 P T )  
 PII CILeghs (Lights Md T utuarInS3c nMh3- ndnstoiM3v irarInS ue BuM3v irarInS ue  
 CausRmM)  
 PII T uHh nets  
 rh : yDl6143Lur Mue: 6Dy854635D88DyA

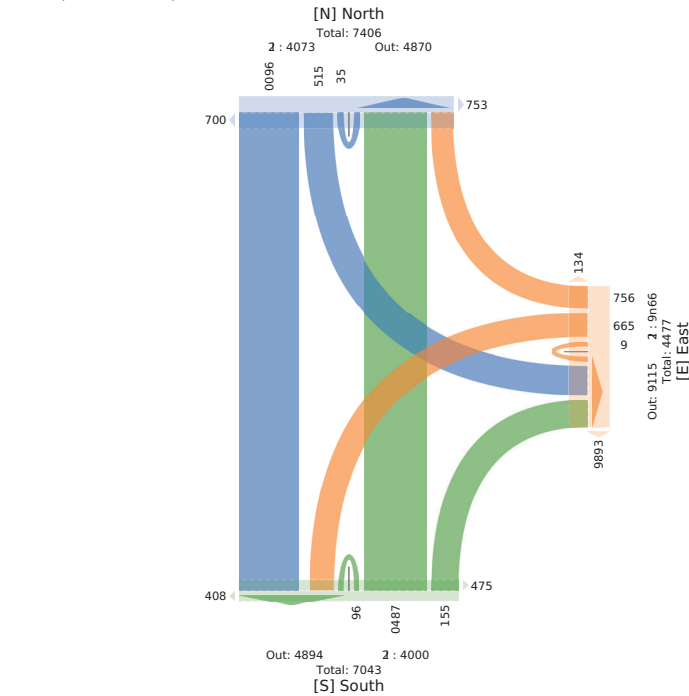


Lag I Intrdue	Outh Eufh. uFed					JMt S st. uFed					Eufh Outh. uFed				
	W	L	U	PNN	-nd*	B	L	U	PNN	-nd*	B	W	U	PNN	-nd*
.2, .9D3y 6:22-T	.25	84	.	.yD	5,	Ag	41	2	122	113	y2	.18	1	Ay	At
D22-T	611	14D	y	BD	151	84	118	2	26	As	184	61D	.	42A	y8
4:22-T	AD	11D	1,	8,	55	81	81	2	14	66	186	6,6	4	416	168
5:22-T	A,8	11D	12	8y4	-4,	58	84	2	146	AD	1,1	AA	A	685	176
8:22-T	.y4	1A5	A	6A4	44	42	5D	2	1AD	142	8A	8,	2	AD	68
y22-T	.d	y8	5	AO2	4,	41	52	2	1A1	56	84	68	1	AO	8
12:22-T	.41	125	11	Agy	6,	15A	168	2	A 1	..A	y6	.26	6	A2	14
11:22-T	1AA	4D	.	.22	A	12A	11D	2	.18	AA	62	116	2	1D6	.5
.2, .9D3y 6:22-T	61	18	A	4,	A	14	.D	1	6,	11	1D	AB	2	DA	A
% PNNuMh	45%	A2%	17%	9	9	65%	11	5%	23%	9	4	.5%	51%	21%	9
% VnuMh	58%	1,7%	27%	612%	9	83%	y8%	2%	181%	9	117%	.y2%	27%	622%	9
Lights Md T unuarInS	.251	y5D	Dy	A2D	9	4y2	5A1	1	16,5	9	88,	.y6	15	AyA	9
% CnuMh	52	A	2	5A	9	A	6	2	5	4	4	12	2	D	9
% CnuMh	A2%	28%	2%	2%	9	23%	23%	2%	23%	9	25%	.1%	2%	15%	9
% v irarInS ue BuM	54	11	2	85	9	6	Ag	2	6A	9	11	4,	2	5A	9
% v irarInS ue BuM	A2%	17%	2%	2%	9	24%	10%	2%	3%	9	17%	.5%	2%	76%	9
% v irarInS ue CausRmM	9	9	9	9	1y8	9	9	9	9	18A1	9	9	9	9	454
% v irarInS ue CausRmM	9	9	9	9	1y	9	9	9	9	Ag	9	9	9	9	1A
% v irarInS ue CausRmM	9	9	9	9	10%	9	9	9	9	2%	9	9	9	9	13%

\* - ndnstoiM3s Md v irarInS ue CausRmM7L: Lnh3B: Bigh3W Wht3U: U9MFe

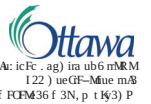
5566814 - COVID - BANK ST @ EXHIBITION WAY - ... - TMC

Mon May 9, 2022  
 Full Length (4:30 PM-12:30 AM)  
 All Classes (Lights and Motorcycles, Heavy, Pedestrians, Bicycles on Road, Bicycles on  
 Crosswalk)  
 All Movements  
 ID: 95141, Location: 456978.4, -856 75793



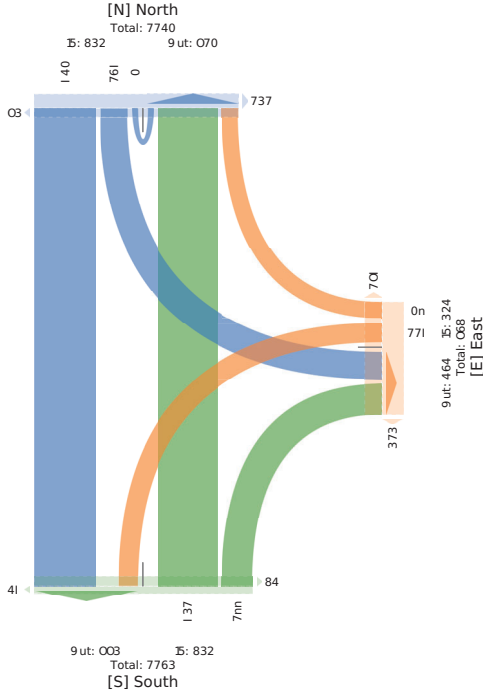
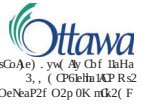
5566814 - COVID - BANK ST @ EXHIBITION WAY - ... - TMC

Tue T M y3, 2, ,  
 OT OFM IT M 2y, 2, , ngit OT ht gt OT (h6: FMA OFM 9 u1A  
 P - ) -MFCIs idotMcT e unuAhHFC9 FMA30FCFGAMGv ihHFCue BuM3v ihHFCue  
 ) AICRM ( ) AICRM ( )  
 P - T u: FwFerC  
 lngyt Inl DBs uifMuegnt 4y85Dh3f6i 4Rt 8y7



sRl mAHue	Julio f uo.ulec					GME E FG.ulec					Julio f uo.ulec				
	S	s	W	POD	ORL	B	s	W	POD	ORL	B	S	W	POD	ORL
.2, .9D3y 6:22-T	117	ny	1	11P	n2	.7	.y	2	t,	8y	t7	12D	2	1y	.1
t(20T	1,1	.8	2	1ny	7%	.h	71	2	t1	85	ny	12n	2	11P	.n
t(20T	8	nl	.	1,8	60	.8	72	2	t8	11y	h,	12n	2	1AD	13
t(20T	11y	tD	1	182	11	ln	.n	2	78	5,	11	125	2	1D	71
% PNNuMh	52%	.84*	14%	h	h	n74*	tD*	2*	h	h	7,4*	D34*	2*	h	h
% VnuMh	72%	1,4*	24*	n72*	h	D*	54*	2*	1nd*	h	174*	.y4*	2*	n74*	h
% CnuMh	24y5	245,	2402	240P	h	24yt	2471	h	24Dh	h	24yl	2411	h	2478	h
% v irarInS ue BuM	7y2	157	8	t5l	h	8y	125	2	1yD	h	1yD	7yn	2	ty2	h
% v irarInS ue BuM	8y4*	yy4*	122*	y,4*	h	122*	y74*	2*	yDyP	h	y84*	y74P	2*	yt4*	h
% v irarInS ue CausRmM	1y	2	2	1y	h	2	1	2	1	h	2	12	2	12	h
% v irarInS ue CausRmM	n4*	2*	2*	74*	h	2*	24*	2*	24*	h	2*	.4*	2*	14P	h
% v irarInS ue CausRmM	.y	1	2	72	h	2	D	2	D	h	7	15	2	.2	h
% v irarInS ue CausRmM	DyP	24P	2*	n6*	h	2*	t4P	2*	74*	h	14*	n4*	2*	74*	h
% v irarInS ue CausRmM	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h
% v irarInS ue CausRmM	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h
% v irarInS ue CausRmM	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h
% v irarInS ue CausRmM	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h

h)FCFGAMC v ihHFCue ) AICRM 4s gs Fr3BgBidar3SgsA3WMS1A



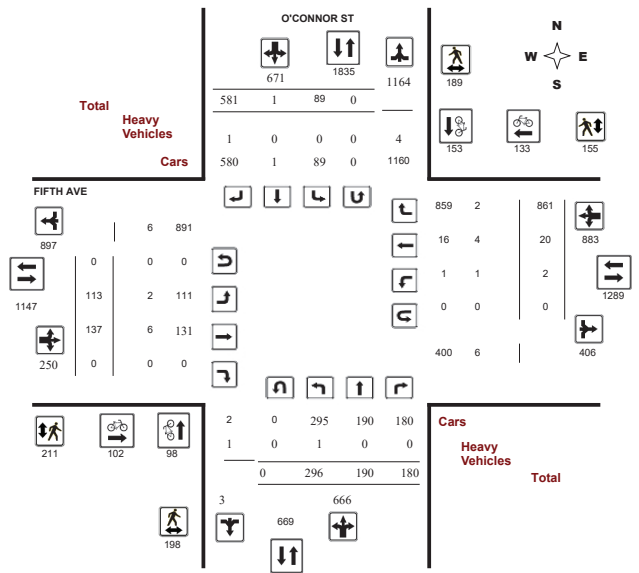
Transportation Services - Traffic Services

Turning Movement Count - Study Results  
 FIFTH AVE @ O'CONNOR ST

Survey Date: Tuesday, July 26, 2022  
 Start Time: 16:00

WO No: 40492  
 Device: Miovision

Full Study Diagram





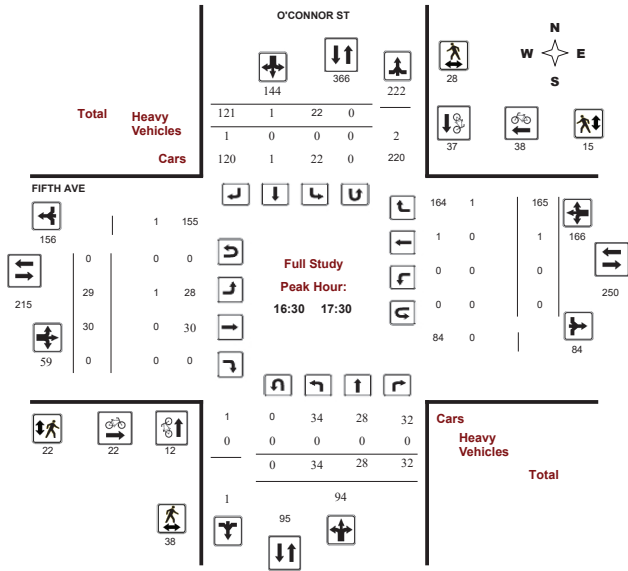
Transportation Services - Traffic Services

Turning Movement Count - Study Results
FIFTH AVE @ O'CONNOR ST

Survey Date: Tuesday, July 26, 2022
Start Time: 16:00

WO No: 40492
Device: Miovision

Full Study Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results
FIFTH AVE @ O'CONNOR ST

Survey Date: Tuesday, July 26, 2022
Start Time: 16:00

WO No: 40492
Device: Miovision

Full Study 15 Minute Increments

Table with columns for Time Period, Northbound, Southbound, Eastbound, Westbound, and Grand Total. Rows represent 15-minute intervals from 16:00 to 23:45.

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results
FIFTH AVE @ O'CONNOR ST

Survey Date: Tuesday, July 26, 2022
Start Time: 16:00

WO No: 40492
Device: Miovision

Full Study Cyclist Volume

Table showing cyclist volume counts for Northbound, Southbound, Eastbound, and Westbound directions at the intersection of Fifth Ave and O'Connor St.



Transportation Services - Traffic Services

Turning Movement Count - Study Results
FIFTH AVE @ O'CONNOR ST

Survey Date: Tuesday, July 26, 2022
Start Time: 16:00

WO No: 40492
Device: Miovision

Full Study Pedestrian Volume

Table showing pedestrian volume counts for NB, SB, EB, and WB approaches at the intersection of Fifth Ave and O'Connor St.



Turning Movement Count - Study Results
FIFTH AVE @ O'CONNOR ST

Survey Date: Tuesday, July 26, 2022
Start Time: 16:00

WO No: 40492
Device: Miovision

Full Study Heavy Vehicles

Table with columns for Time Period, Northbound, Southbound, Eastbound, Westbound, and Grand Total. Rows list time intervals from 16:00 to 23:45.



Turning Movement Count - Study Results
FIFTH AVE @ O'CONNOR ST

Survey Date: Tuesday, July 26, 2022
Start Time: 16:00

WO No: 40492
Device: Miovision

Full Study 15 Minute U-Turn Total

Table with columns for Time Period, Northbound U-Turn Total, Southbound U-Turn Total, Eastbound U-Turn Total, Westbound U-Turn Total, and Total. Rows list time intervals from 16:00 to 23:45.

5589707 - BANK ST @ AYLME AVE - OCT 14 2022 - TMC
Tue May 3, 20F00
TL Ln g h b j G AF - 9 133AF - 9 P
) IL C i B i g i G n d h j i s t d 9 o y u r a l g i 2 c g s H 2 - g d j g y s t i 2 v n a r a l g i o t B o s d 2 v n a r a l g i o t
C u s i i R s l w P
) I L 9 o h j k g y
n h A 3 F F 0 B 4 2 n o a s y o t A 7 8 4 7 5 2 1 7 8 D 3 3 5 2 b a g C o d g A 1 5 3 3 P



Full Study 15 Minute U-Turn Total
FIFTH AVE @ O'CONNOR ST

Large data table with columns for vehicle types (W, U, P, B, N, S, D, L, R, T, E, W, S, D, L, R, T, E) and percentages. Includes summary rows for % v n a r a l g i o t C u s i i R s l w and % g d j g y s t i 2 v n a r a l g i o t.

Summary table with columns for vehicle types and percentages. Includes a row for % v n a r a l g i o t C u s i i R s l w and a row for % g d j g y s t i 2 v n a r a l g i o t.

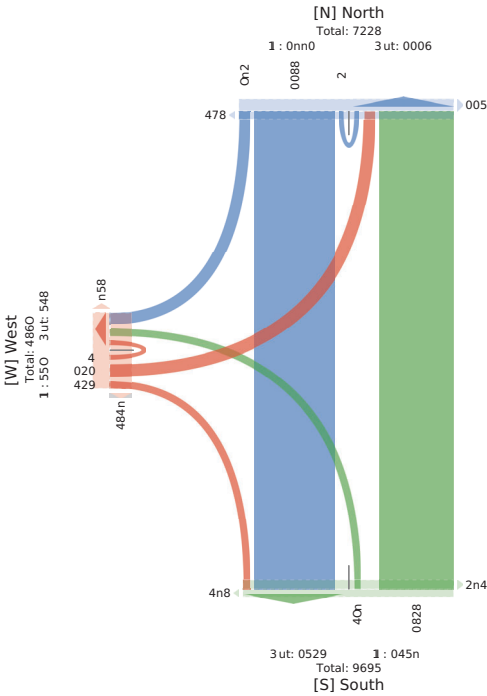
\* g d j g y s t i 2 v n a r a l g i o t C u s i i R s l w n A n g g e B A B d h j y 2 W A W i 2 U A U I W t



5589707 - BANK ST @ AYLMEY AVE - OCT 14 2022 - TMC  
 Sat M7, 20FuFF  
 SL Lengh7 t 3 u A - 6, 3 u A - P  
 ) ILCLsiini le th(2 sgd - o'zayr ylni 0c nsHf0Andni 7zsgl0v tyr ylni og Bosd0v tyr ylni og  
 Caa i R s l w P  
 ) LL - o'fhk ng7  
 nk 3, uuFTI 90e oys7og3245 94. 06845 DE, 8. 0br7c s PHh(2u., 2, u:



5589707 - BANK ST @ AYLMEY AVE - OCT 14 2022 - TMC  
 Tue M7, 20FD0  
 LL Lengh(6 L : 636 1 L A M-nug9l ngt 1 P u  
 C9s 9gi ini h dory g eHL P'Puavahi 21 ng-v2l nfhuygci2Bava9hi Pc RpgH2Bava9hi Pc  
 s uPi w g 9 A  
 C9L P-nk ncy  
 nk ( 3FF0D42d PagePc ( , 678452: 65D 3. 52b0n s PHh( , F53, F38



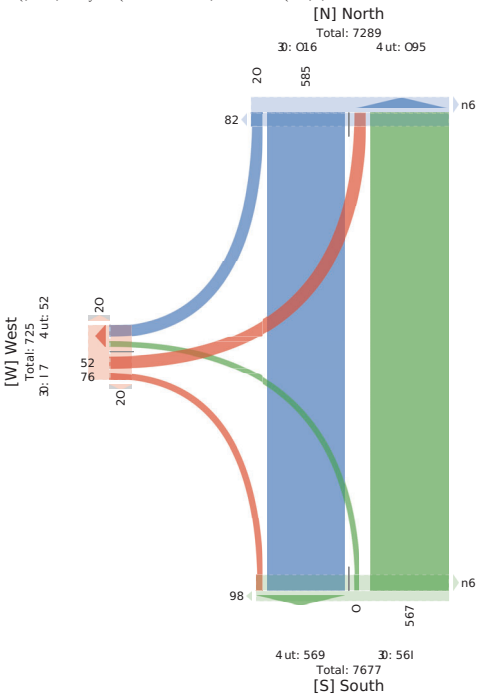
Wkn	bPlyr Pjch				bPlyr Pjch				E any Sgd Pjch							
	R	W	U	Cpp	R	W	U	Cpp	R	W	U	Cpp				
0F00:3F3, (36) L	34	304	F	0FD	3D	0F3	0	F	0F8	3,	8	3D	F	03	86	80
(8F) L	0	3	F	0F3	34	3D	8	F	3D	3F	F	3	F	5	8F	80
(6) L	3	F	3D	00	3	3	F	3	3	6	04	34	F	08	80	80
60F3 L	3D	34	F	030	00	340	0	F	34	34	D	06	F	88	84	84
% Wggt	5D	6	F	DF	DB	63	D	F	64	5L	36	5	F	43	385	3566
% Cpp/ggt	DF	43%	F%			4D8%	37%	F%			353%	D8%	F%			
% Wggt	2%	2%	F%	DE%		67%	F%	F%	67%		F%	2%	F%	67%		
11T	F545	F2,5		F66F		F700	F55		F704		F215	F26F		F55		F785
dery gHL P'Puavahi	58	54D	F	53		F	D	F	36		38	8	F	D5		3650
% dery gHL P'Puavahi	405%	4,2%	F%	4,7%		4,2%	38%	F%	4,7%		D2%	45%	F%	4,7%		4,2%
ng-v	3	3	F	3D		38	F	F	38		F	0	F	0		88
% ng-v	33%	02%	F%	02%		37%	F%	F%	37%		F%	05%	F%	07%		03%
Bava9hi Pc RpgH	00	F	05		83	F	F	F	83		0	3	F	8		5F
% Bava9hi Pc RpgH	63%	81%	F%	87%		7%	F%	F%	7%		38%	3%	F%	87%		87%
% nfhuygci					5				55							305
% nfhuygci				483%					4,7%							4,7%
Bava9hi Pc s uPi w g 9 A					6				0							8
% Bava9hi Pc s uPi w g 9 A				57%					03%							07%

1 nfhuygci gHL Bava9hi Pc s uPi w g 9 A (dn9QR (Rory2W W g 9 A) 2U(U:W) ut

5589707 - BANK ST @ AYLMEY AVE - OCT 14 2022 - TMC  
 Sat M7, 20FuFF  
 SL Lengh(7 t 3 u A - 6, 3 u A - P  
 ) ILCLsiini le th(2 sgd - o'zayr ylni 0c nsHf0Andni 7zsgl0v tyr ylni og Bosd0v tyr ylni og  
 Caa i R s l w P  
 ) LL - o'fhk ng7  
 nk 3, uuFTI 90e oys7og3245 94. 06845 DE, 8. 0br7c s PHh(2u., 2, u:



5589707 - BANK ST @ ECHO DR - OCT 14 2022 - TMC  
 Tue M7, 20FD0  
 LL Lengh(6 A F - 9 E3AF - 9 P  
 ) ILCLsiini le th(2 sgd - o'zayr ylni 0c nsHf0Andni 7zsgl0v tyr ylni og Bosd0v tyr ylni og  
 Caa i R s l w P  
 ) LL - o'fhk ng7  
 nk ( 3FF0D42d PagePc ( , 678452: 65D 3. 52b0n s PHh( , F53, F38



Wkn	bPlyr Pjch				bPlyr Pjch				E any Sgd Pjch							
	R	W	U	Cpp	R	W	U	Cpp	R	W	U	Cpp				
0F00:3F3, (36) L	34	304	F	0FD	3D	0F3	0	F	0F8	3,	8	3D	F	03	86	80
(8F) L	0	3	F	0F3	34	3D	8	F	3D	3F	F	3	F	5	8F	80
(6) L	3	F	3D	00	3	3	F	3	3	6	04	34	F	08	80	80
60F3 L	3D	34	F	030	00	340	0	F	34	34	D	06	F	88	84	84
% Wggt	5D	6	F	DF	DB	63	D	F	64	5L	36	5	F	43	385	3566
% Cpp/ggt	DF	43%	F%			4D8%	37%	F%			353%	D8%	F%			
% Wggt	2%	2%	F%	DE%		67%	F%	F%	67%		F%	2%	F%	67%		
11T	F545	F2,5		F66F		F700	F55		F704		F215	F26F		F55		F785
dery gHL P'Puavahi	58	54D	F	53		F	D	F	36		38	8	F	D5		3650
% dery gHL P'Puavahi	405%	4,2%	F%	4,7%		4,2%	38%	F%	4,7%		D2%	45%	F%	4,7%		4,2%
ng-v	3	3	F	3D		38	F	F	38		F	0	F	0		88
% ng-v	33%	02%	F%	02%		37%	F%	F%	37%		F%	05%	F%	07%		03%
Bava9hi Pc RpgH	00	F	05		83	F	F	F	83		0	3	F	8		5F
% Bava9hi Pc RpgH	63%	81%	F%	87%		7%	F%	F%	7%		38%	3%	F%	87%		87%
% nfhuygci					5				55							305
% nfhuygci				483%					4,7%							4,7%
Bava9hi Pc s uPi w g 9 A					6				0							8
% Bava9hi Pc s uPi w g 9 A				57%					03%							07%

1 nfhuygci gHL Bava9hi Pc s uPi w g 9 A (dn9QR (Rory2W W g 9 A) 2U(U:W) ut

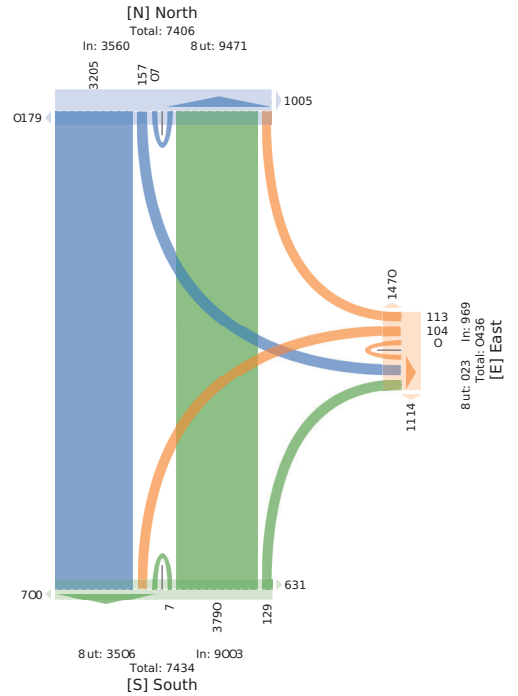


Ingh l agwot	Noaf bol g f o l t d				Esty S g f o l t d				bol Noaf f o l t d						
	W	n	U	) pp	- g	B	n	U	) pp	- g	B	W	U	) pp	- g
% v aralgi ot Cuii Rslw	1	1	1	1	F2%	1	1	1	1	F2%	1	1	1	1	32%

\* g d g j y s t i s t d v aralgi ot Cuii Rslw n Ang @ 2 BAB d h i ( 2 VAW d 2 U AU W U t

5589707 - BANK ST @ EXHIBITION WAY - OCT 14 ... - TMC

Sat My7, 20FuFF  
 1 L leng h ( 3 1 L : 6 3 1 L A : M - ng 5 l ngt 1 P u )  
 C 9 s 9 i n i h d e r y j g c H L P y u a v a 9 i 2 1 n g - v 2 l n h i y u g c i 2 B a v a 9 i P c R p g 2 B a v a 9 i P c  
 s u P i w g 9 A  
 C 9 L P - n k n c y  
 n h ( 3 F F 0 B 4 2 d P a g y P c ( , 6 7 8 D E , 2 : 5 6 7 D 6 D 8 4 2 b e n s P H ( , F , 3 5 3 F 4



5589707 - BANK ST @ EXHIBITION WAY - OCT 14 ... - TMC

Tue My3, 20Fu0  
 1 L leng h ( 3 6 1 L : 6 3 6 1 L A : M - ng 5 l ngt 1 P u )  
 C 9 s 9 i n i h d e r y j g c H L P y u a v a 9 i 2 1 n g - v 2 l n h i y u g c i 2 B a v a 9 i P c R p g 2 B a v a 9 i P c  
 s u P i w g 9 A  
 C 9 L P - n k n c y  
 n h ( 3 F F 0 B 4 2 d P a g y P c ( , 6 7 8 D E , 2 : 5 6 7 D 6 D 8 4 2 b e n s P H ( , F , 3 5 3 F 4



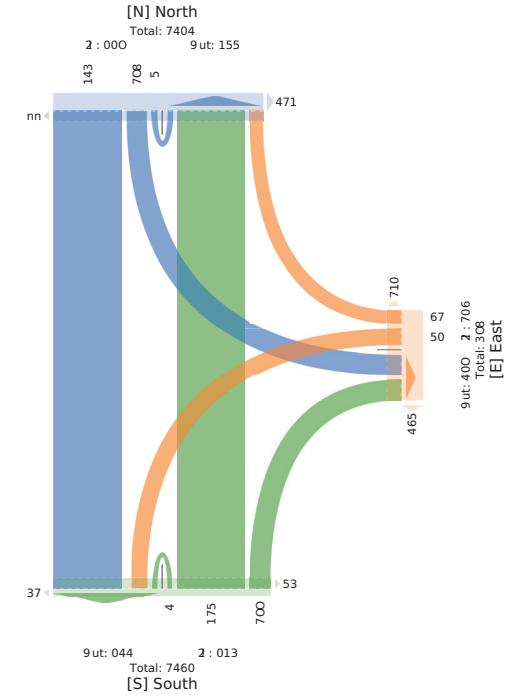
5589707 - BANK ST @ EXHIBITION WAY - OCT 14 ... - TMC

Sat My7, 20FuFF  
 1 L leng h ( 1 1 L : 1 ( , 1 1 L 3 : M e a n - l e n g 6 P a )  
 C - s - n i e i h d r 2 n c H L P P a y v e i 0 6 e n A w l e h i 2 a n c i 0 B t y v e i P c R p h F B t y v e i P c  
 s u P i w n g 3  
 C - L P a e k e c 7  
 n h ( , u u F T ) 9 0 d P y n 7 P c ( 2 1 4 5 D 8 2 0 : 1 4 8 D I E 9 0 b r e s P H ( 2 u 8 , , u 9



Ingh l agwot	N P a r b P y f P c H				E g y S u f P c H				b P y N P a r f P c H						
	W	d	U	Cpp	l i n f	R	d	U	Cpp	l i n f	R	W	U	Cpp	l i n f
0 F 0 0 3 F 3 , ( 3 6 1 L	335	4	3	3.3	63	3D	03	F	48	DE	45	340	F	3.8	05
( 4 6 1 L	33	4	3	3.3	63	3	0D	F	48	DE	45	340	F	3.8	05
( 6 3 1 L	340	44	6	35F	DE	38	0	F	4	3, F	4	33D	F	360	46
6 0 1 1 L	368	33	0	350	31%	3D	04	F	3	335	0	363	3	35	41%
<b>% V P g j</b>	60	34F	8	4	41%	53	8	F	3.5	46	344	638	0	6	346
<b>% C p p u P a r</b>	587%	382%	32%	1	1	076%	657%	P%	1	1	076%	587%	F2%	1	1
<b>% V P g j</b>	463%	D3%	F2%	1	1	7%	76%	P%	339%	1	87%	463%	F2%	1	1
<b>1 1 T</b>	F26F	F56F	F26F	F26F	F26F	F26F	F26F	F26F	F26F	F26F	F26F	F26F	F26F	F26F	F26F
<b>d e r y j g c H L P y u a v a 9 i</b>	8	36	8	44	44%	5	8	F	3.3	3	30D	8	0	0	3, 3D
<b>% d e r y j g c H L P y u a v a 9 i</b>	8	36	887%	3F%	867%	8	7%	858%	P%	8.7%	8	7%	867%	3F%	867%
<b>1 n g - v</b>	35	F	F	35	35%	F	3	F	3	3	4	33	F	3	40
<b>% 1 n g - v</b>	47%	P%	P%	07%	07%	P%	33%	P%	F2%	07%	07%	P%	07%	07%	07%
<b>B a v a 9 i P c R p g 2</b>	30	3	F	34	34%	3	F	6	6%	6%	0	3	F	3	4
<b>% B a v a 9 i P c R p g 2</b>	07%	F2%	P%	07%	07%	67%	33%	P%	43%	33%	07%	P%	07%	07%	07%
<b>1 n h i y u g c i</b>	1	1	1	1	41%	1	1	1	1	40	1	1	1	1	30%
<b>% 1 n h i y u g c i</b>	1	1	1	1	887%	1	1	1	1	887%	1	1	1	1	807%
<b>B a v a 9 i P c s u P i w g 9</b>	1	1	1	1	4	1	1	1	1	4	1	1	1	1	3F
<b>% B a v a 9 i P c s u P i w g 9</b>	1	1	1	1	33%	1	1	1	1	F5%	1	1	1	1	57%

\* 1 n h i y u g c i g c H B a v a 9 i P c s u P i w g 9 7 d ( d n 9 2 R R e r j 2 W W u j 2 U ( U : W j u c











5589707 - BANK ST @ WILTON CRES - OCT 14 2022 - TMC

Tue May 3, 20F00  
 TL Lng h ( 6 AF - 9 P  
 ) IL Csi i g h d h ( y st d 9 o y u r a l g i 2 c g s H 2 - g d g j y s t i 2 v r a r a l g i o t B o s d 2 v r a r a l g i o t C u i i R s l w P  
 ) IL 9 o h h k g y  
 n h 3 F F 0 B 4 2 n o a s y o t A 4 7 8 5 5 0 2 1 5 4 7 D 4 , F 4 2 b e g C o d g A , F 3 0 3 F



ngh l agayst Wk g	Nouq bol y f o l t d				bol y Nouq f o l t d				E g y S s i j o l t d									
	B	W	U	J	pp	- g d *	W	n	U	J	pp	- g d *	B	n	U	J	pp	- g d *
% v r a l g i o t C u i i R s l w																		
1 1 1 1 1 F 2 % 1 1 1 1 1 F 2 % 1 1 1 1 1 3 2 % 1																		

\* - g d g j y s t i s t d v r a r a l g i o t C u i i R s l w n A n g 0 2 B A B d h i y 2 W A W i d 2 U A U I W t

ngh l agayst Wk g	Nouq bol y f o l t d				bol y Nouq f o l t d				E g y S s i j o l t d									
	B	W	U	J	pp	- g d *	W	n	U	J	pp	- g d *	B	n	U	J	pp	- g d *
0F00B3F3 ; AF-9																		
3F 30: F 3: 3																		
30 : 4 F 3.3 F .3 4 F . . . . : : F																		
33 338 F 3: F 3																		
3,4 .4 F 38F F 4D 3 F 48 .8 :58																		
c o l u W s l 03 0:0 F 303 0																		
053 DF F 243 F 338 . F F 304 04 :58																		
AF-9 34 3:8 F 34 . 3																		
3,4 .3 F 35. F .4. F F 4. : : D																		
84-9 D 3: F F 3: D 3																		
3,8 . F F 008 F . F 3 F 3 . 8 . 02																		
AF-9 3. 3:0 F 3. . 3																		
3, D . . F 380 F 5. F F 5. : F																		
44-9 0F 3:4 F 344 : 3																		
3, F . . F 38. F 4. F F 4. . 8 . F4																		
c o l u W s l 45 4. . F 48: 34																		
.30 358 F 583 F 0. . 3 F 0,4 353																		
44F-9 : F 34. F 30 F																		
35. .5 F 003 F .4 4 F 5F 4. . 54																		
44-9 05 333 3 3:8 3F																		
3DF 00 F 0F0 F 50 F F 50 .3 : 3:																		
44F-9 0. 33D F 3. . 4																		
3DD 3 F 3D 4 5. F F 5. . . . F.																		
44-9 0. 333 F 3:4 3:																		
343 F F 343 F 44 F F 44 .8 : : 3																		
c o l u W s l 3F5 . 8. 3 . 90 0D																		
.8: 5F F 5. : 4 0,4 4 F 05F 0 F 3:4																		
D4F-9 4F 38F F 340 33																		
35. F F 35. 3 . F 3 F 3 . : : 15:																		
84-9 : D 3F4 F 3. : . 350 F F 350 30																		
: : F F : : D3 : D																		
AF-9 4: DF F 3: 50																		
3,8 0 F F 353 31: 40 F F F 40 30. : 4.																		
44-9 43 8: F 3,5 D3																		
3:3 3 F 3:0 38 . D F F . D 30: : 05																		
c o l u W s l 380 : 8F F 4D 003																		
. . . : F . . 8 4F 35: 3 F 35. : F 3,4																		
54F-9 : F 33. F 34. 54																		
3DF F F 3DF 0. . . F F . . . D : 5D																		
54-9 : 5 335 F 34. : 4																		
34F F F 34F 3. 40 F F 40 .3 : 4.																		
54F-9 : 0 388 F 3,3 03																		
3, F F F 3, F 8 . . . F F . . . 03 : 05																		
54-9 : 3 38F F 3:3 3:																		
304 F F 304 38 43 F F 43 .3 : F5																		
c o l u W s l 3, F . . F F 4D 340																		
484 F F 484 5F 38: F F 38: 0F : 3: D																		
D4F-9 : 0 D3 F 303 D3																		
33: F F 33: 0: . . F F : : 0: 05																		
D4F-9 0D D4 F 33: 3:																		
33: F F 33. 4. . F F F . F : : 3: 0,5																		
D4-9 0F . . F D 3:																		
8. F F 8. 0 0D F F 0D 04 0F3																		
c o l u W s l 3F. : : F F . : . 3D																		
. . . F F . . . 35 3:8 F F 3:8 3F5 3F03																		
84F-9 0: 50 F 84 35																		
3F. F F 3F. 3F :3 F F : : 3: 8 0 0																		
84-9 38 DF F 88 3:																		
3F4 F F 3F4 0 0 F F 0 03 0F.																		
84F-9 3. 55 F 83 00																		
D F F D 08 F F F F : : F 355																		
84-9 00 . D F 8F 43																		
83 F F 83 43 3 F F 3 : : D 3D0																		
c o l u W s l 5D 085 F : 54 3F:																		
DD F F DD 80 . . F F . . 303 585																		
34F-9 3F : D F 4D 19																		
5F F F 5F : 4. . F F : 3D 3:0																		
3F4-9 3. : 5 F D 33																		
3FF F F 3FF : D F F F : : 303																		
3FAF-9 0F 85 F 335 0:																		
D F F D D 13 F F 3 3 : : 0FF																		
3FA-9 0F 58 F 88 . 5D																		
F F 5D . : D F F : D 05 034																		
c o l u W s l . . 083 F : 44 . 5																		
: : F F F : : F F4 . 0 F 3 . : 08F 50D																		
33AF-9 3: 80 F 3F4 0																		
.4 0 F .5 0 0D F F 0D 35 0FF																		
334-9 33 . : F 5. 30																		
. . D F 5. 3 03 3 F 00 05 35F																		
c o l u W s l 0. 344 F 358 3:																		
3:3 3F F 3,3 : . 8 3 F 4F . : : 5F																		
W s l 5D : 354 3 : 8:4 3F3																		
: 330 : 0 F . 4. . . . 304D 3. 3 305: 3,53 8,80																		
%) p p u s a t 382% DF3% P% 1																		
802% 57% P% 1 8D3% 37% F2% 1 1 1																		
% W s l D3% : D3% P% : F2% 1																		
: 02% : 7% P% : 2% 1 3:7% F2% P% 3:2% 1 1																		
n h ( y s t d 9 o y u r a l g i 558 08: 5 3 : 535																		
: D54 : 08 F : 0F. : 3000 8 3 30: 0 1 834:																		
% n h ( y s t d 9 o y u r a l g i 8D5% 8D3% 3F3% 8: 2%																		
: 8:2% 8:2% P% 8:2% 1 853% . 2% 3F3% 8: 2% 1 8:2%																		
c g s h : 3. . F 3, F																		
3: D 0 F 3, F : : 3 F 5 : : 015																		
% c g s h F2% : 2% P% : 2%																		
: 7% F2% P% : 2% 1 F2% 52% P% F2% 1 : 7%																		
v r a l g i o t B o s d 3F0 F 3FD																		
: 88 33 F 33F : : F F : . : 1 040																		
% v r a l g i o t B o s d F2% : 3% P% 07%																		
: 07% : 7% P% 07% 1 07% 0E% P% 07% 1 07%																		
- g d g j y s t i 1 1 1 1 1 88D																		
1 1 1 1 1 . . F 1 1 1 1 1 3. . .																		
% - g d g j y s t i 1 1 1 1 1 885%																		
1 1 1 1 1 885% 1 1 1 1 1 885% 1 1 1 1 1 885% 1																		
v r a l g i o t C u i i R s l w 1 1 1 1 1 : 1 1 1 1 1 0 1 1 1 1 1 05																		

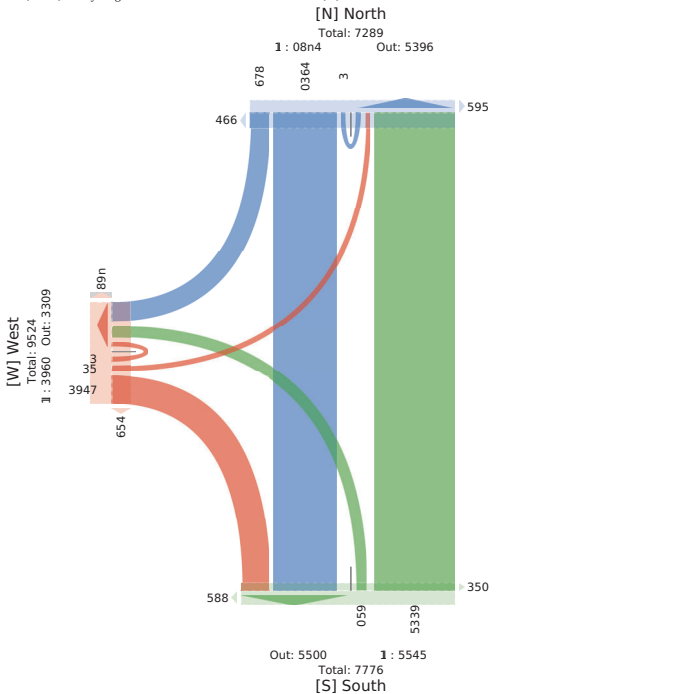
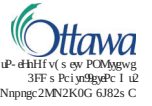
5589707 - BANK ST @ WILTON CRES - OCT 14 2022 - TMC

Sat May 7, 20F00  
 SL Lng h ( 3 u A - 6 , 3 u A - P  
 ) IL Csi i n l e t h ( 2 s g d - o z b a y t n i 0 c n s H 0 A n d n i 2 s g i 0 v t y r y l n i o t B o s d 0 v t y r y l n i o t C a o i R s l w P  
 ) IL - o h h k g t  
 n h 3 , u u F T 9 0 e o y s 7 o g 3 2 9 4 5 . . . F 0 6 9 4 D 2 u 9 0 b t h C o d n 3 2 u 8 , F , u :



5589707 - BANK ST @ WILTON CRES - OCT 14 2022 - TMC

Tue May 3, 20F00  
 L L L n g h ( 3 6 1 L : 6 3 6 1 L A M - n g 5 B i n g t 1 P u  
 ) C 9 s 9 g i i n l d o r y g e H L P p u a v a h i 2 1 n g - v 2 1 n h i y u g c i 2 B a v a h i P c R p g H 2 B a v a h i P c s u P i w g 9 A  
 C 9 L P - n k n c y  
 n h ( 3 F F 0 B 6 2 d P a g y P c ( , 6 F 8 5 5 0 2 : 5 6 4 D 5 , F 6 2 b e n s P H h ( , F 3 0 3 F 7



Wk n	N D a r b P y f P c h				b P y r N P a r f P c h				E n i y S a j y P c h						
	R	W	U	C p p	l n F	W	d	U	C p p	l n F	R	d	U	C p p	l n F
0F00:3E3, : 061 L															
D 37F F 37D 5															
3,8 . F F 008 F . F 3 F 3 . 3 . 8 . 0D															
701 L 3. 370 F 3. . 3															
3, D . . F 380 F 5. F F 5. 7F . 30															
: 61 L 0F 376 F 366 7															
3, F 7. F 38. F 6. F F 6. . 8 . 16															
670 L 7F 36. F 3D 1															
35. : 5 F 003 1 6 6 F 5F 6. : 56															
W s l 50 663 F . 07 30															
. 63 3D F D F . 066 . . F 0,3 3D 350F															
% C a p a r 334% D1% P% :															
: 554% 004% P% : : 85:4% 04% P% : : :															
% W s l 47% 704% P% 7:4%															
: 754% 3F4% P% : D4% : 3:4% F4% P% 364% : : :															
I 1 T F4 F F 48F. : F487															
: F488 F45. : F487 : F41D F4FF : F488 : F48:															
d e a r y g e H L P p u a v a h i 53 63D F 6D8															
. 3. 358 F 587 : 0,7 . . F 0,8 : 3:73															
% d e a r y g e H L P p u a v a h i 8D4% 8:4% P% 8:4%															
: 8:4% 8:4% P% 8:4% : 86:4% 3F3% P% 86:4% : 8:4%															
1 n g - v 3 35 F 3D															
: 36 3 F 3. : 0 F F 0 : 7:															
% 1 n g - v 34% 74% P% 04%															
: 04% F4% P% 34% : F43% P% P% F43% : 04%															
B a v a h i P c R p g H F 3. F 3.															
: 00 6 F 05 : 3F F F 3F : 67															
% B a v a h i P c R p g H P% 04% P% 04%															
: 74% 04% P% 74% : 74% P% P% 74% : 74%															
1 n h i y u g c i : : : : 3F															
: : : : : F : : : : : 3D:															
% 1 n h i y u g c i : : : : 8F4%															
: : : : : : : : : : : 8D4% : 1															
B a v a h i P c s u P i w g 9 : : : : 3															
: : : : : : : : : : : 3 : 3 : 2 : 7:															
% B a v a h i P c s u P i w g 9 : : : : 84%															
: : : : : : : : : : : 34% : :															

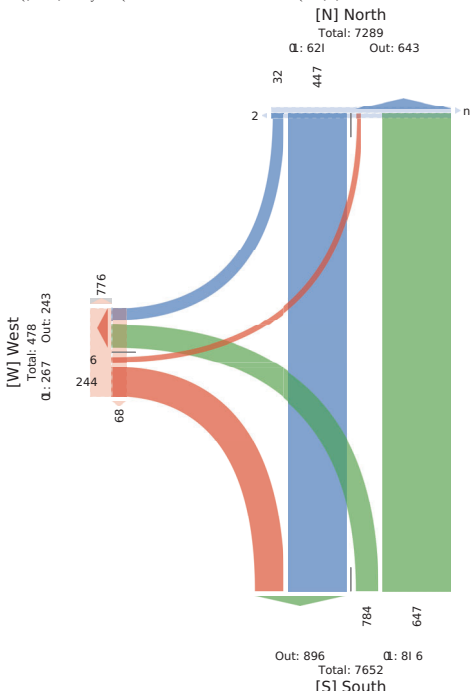
\* 1 n h i y u g c i g e H B a v a h i P c s u P i w g 9 4 d ( d n 0 2 R ( R e a r 2 W W u 2 U ( U : W ) t

5589707 - BANK ST @ WILTON CRES - OCT 14 2022 - TMC

Sat M7, 20FuFF  
 1 L eng h2(, 1 L L : 1(, 1 L L 3: M'ean-1 eng 6 P)a  
 C--s-ni ei htor 2 nchL P'Pyvy-ei 06 en/a/0l ehki 7nci0Btyy-ei Pc P'PhfDBtyy-ei Pc  
 s aPi wng3  
 C--L P'ek ec7  
 n(, uuFT) 10d Pyn7P( 21945... F0: 19D12u10br'e s P'F( 2u8, F, u4



1 p'AhH'V(s D' P'OM'fwn  
 u u s P'ci 7--n7P: 1 a0  
 Nepenc0M'N'KFG 1J50s C



[W] West  
 Total: 478  
 In: 267 Out: 243

5589707 - QUEEN ELIZABETH DRWY @ FIFTH AVE ... - TMC

Tue M7, 20FuF0  
 TI L'ng h2( G AF - 9 133AF - 9 P  
 ) IL'Csii gi 6ndh( y st d 9'ouyralgi 2c gsH2-gdgi yst i2vnr algi ot Bosd2vnr algi ot  
 Cuii RslwP  
 ) IL- oH'k ng7  
 n( A3FF0D 32noasyot A 47 F: 80321542 D885, 2beng CodgA F: 333F:



noH'gdi F'Acop o'OM'f'Rs  
 3FF C'oi glls'gt 1 a2  
 Npns'g0M'N'KFG 9J50C)

Ingh l' ap'p'ot	Noag bol y fol t d				bol y Noag fol t d				E g'y Sai y ol t d								
	B	W	U	) pp -g'it*	W	n	U	) pp -g'it*	B	n	U	) pp -g'it*					
0F0013FB ; AF-9	0D	34F	F	35D	05	44	30	F	5	01	5	8	F	3	8	0.3	
col ut WeyL	5	054	F	300	3	334	05	F	3	0	4	34	38	F	5	0	
AF-9	34	3.0	F	355	3	4	3F	F	3	3	5	38	F	0	13	0.1	
AF-9	0	3FD	F	30	38	0	35	F	58	1F	30	35	F	08	310	0. F	
AF-9	0D	3. D	F	38	0	33	F	54	4	5	34	F	00	0F	08	08	
AF-9	34F	0F	F	0F3	0	4	3D	F	5	10	3F	35	F	05	0	1F0	
col ut WeyL	33F	48	F	5E	18	0.4	4	F	083	3.5	1	1	D	F	3F	50	33F3
4F-9	0	3. F	F	3D	1	35	F	D	1	03	3F	F	3	0	0	085	
4F-9	08	354	F	0E	38	45	3	F	5F	F	05	3	F	F	30	3	
4F-9	0D	3	F	3	13	5	03	F	85	15	08	00	F	43	310	30	
4F-9	15	F	F	55	05	15	3	F	4	15	04	00	F	5	05	355	
col ut WeyL	335	433	F	0D	303	0	5	F	3E	301	310	15	F	3.8	18	33F3	
AF-9	11	F	F	8	0	4F	00	F	50	0	0	00	F	4	1	03F	
AF-9	1F	0	F	50	18	8	5	F	4	85	0	38	F	0	13	35F	
AF-9	00	4	F	5	13	40	33	F	1	18	3	3D	F	1	1	3.1	
AF-9	05	F	F	5	1	1D	0D	F	1	1	04	3F	F	1.4	13	35	
col ut WeyL	330	38	F	1F4	3:8	3D8	D	F	045	11	15	8	F	34	343	53D	
5AF-9	4	F	3F	3F	4F	0	F	5	0	0	0	F	5	0	0	00	
5AF-9	3	5F	F	3F3	30	33	F	45	1	0	35	F	1	34	0F3	0F3	
5AF-9	05	16	F	33	1	1	D	F	43	1	15	04	F	0	1	005	
5AF-9	08	5	F	3F0	34	0D	38	F	5	04	34	00	F	5	8	3D	
col ut WeyL	3	0D	F	35	1	3.5	1	F	0.3	35	310	16	F	310	4	D5	
D4F-9	0	3	F	15	3	34	3	F	15	34	30	3	F	04	4	348	
D4F-9	3	45	F	5	3	08	5	F	1	33	34	35	F	0	3F	3.3	
D4F-9	3F	1	F	4	30	0	33	F	15	34	D	D	F	3	3	3F	
D4F-9	D	4	F	3	33	08	1	F	14	0F	3F	4	F	34	1	333	
col ut WeyL	1	F	03	F	05	4F	33D	15	F	344	19	4	1	F	DD	10	435
8AF-9	3	F	F	5	4	0	33	F	1	00	38	3	F	1	3	3.1	
8AF-9	35	D	F	D	3D	15	3	F	43	05	33	3F	F	03	3	345	
8AF-9	0	D	F	80	D	8	1	F	40	03	3	34	F	0D	8	350	
8AF-9	0F	3F3	F	303	D	5	00	F	84	34	3	03	F	1	38	04F	
col ut WeyL	55	085	F	15	18	3D0	4F	F	0	0	4	1	F	33	45	500	
3FAF-9	3D	1	F	D	03	48	30	F	53	D	33	0D	F	18	43	380	
3FAF-9	24	15	F	D	1	0	1	F	8F	0	35	3	F	4D	1	0F	
3FAF-9	3	43	F	4	0F	D	1	F	D	00	38	0	F	3	3	03F	
3FAF-9	33	D	F	8	30	8	4	F	5	5	3	0	F	18	0	3.0	
col ut WeyL	4D	00F	F	05D	3FF	08	04	F	138	310	1	3	F	385	308	58	
33AF-9	3F	1	F	4F	1	5F	3	F	D	1	33	F	34	1	3	80	
33AF-9	3F	1	F	4	D	08	1	F	1	4	F	4	F	4	1	80	
col ut WeyL	0F	D	F	3E	33	88	3D	F	335	8	3	F	0F	5	0.3	0.3	
WeyL	5	0.5	F	1FD	15	3.4	30	F	0F.5	3003	43F	4.1	F	3F5	1F5	40D	
% p'p'asaf	032%	510%	F%	1	1	587%	0F7%	F%	1	1	57%	407%	F%	1	1	1	
% WeyL	337%	33%	F%	407%	1	04%	7%	F%	37%	1	52%	1%	F%	3.7%	1	1	
n'ndh( y st d 9'ouyralgi	53F	0	F	1:3	1	345F	1F5	F	3855	1	4F3	444	F	3F4	1	1	
% n'ndh( y st d 9'ouyralgi	8.5%	852%	F%	857%	1	8.3%	8D0%	F%	8.2%	1	8D0%	8D0%	F%	8D0%	1	85D%	
% c g'it	2	40	F	44	1	44	1	F	4D	1	1	1	F	5	1	30F	
% c g'it	F2%	37%	F%	37%	1	1.7%	F2%	F%	0D%	1	F1%	F2%	F%	F2%	1	3D%	
vnr algi ot Bosd	03	38	F	F	1	3F	0	F	30	1	4	4	F	3F	1	0	
% vnr algi ot Bosd	07%	F5%	F%	37%	1	F7%	F2%	F%	F2%	1	33%	F2%	F%	F2%	1	F2%	
-gdgi yst i	1	1	1	1	4D	1	1	1	1	3300	1	1	1	1	4D4	1	
% -gdgi yst i	1	1	1	1	837%	1	1	1	1	837%	1	1	1	1	8.7%	1	
vnr algi ot Cuii Rslw	1	1	1	1	4	1	1	1	1	88	1	1	1	1	00	1	

Ingh l' ap'p'ot	Noag bol y fol t d	bol y Noag fol t d	E g'y Sai y ol t d													
Wk g	B	W	U	) pp -g'it*	W	n	U	) pp -g'it*	B	n	U	) pp -g'it*				
% vnr algi ot Cuii Rslw	1	1	1	1	1E%	1	1	1	1	1D%	1	1	1	1	2%	1

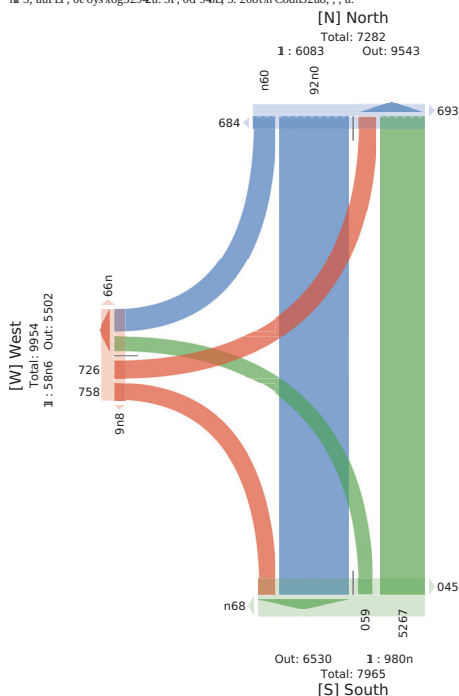
\* -gdgi yst i st d vnr algi ot Cuii Rslw n'ng@2B'AB'hdh( y'V'AW' d 2U'AU'W' u

5589707 - QUEEN ELIZABETH DRWY @ FIFTH AVE ... - TMC

Sat M7, 20FuFF  
 SI L'eng h2( k 3 u A - 6, 3 u A - P  
 ) IL'Csii ni le th( 7 sgd - o'bayr ylni 0c nsH'0Andni 7s'gi 0v tyr ylni ot Bosd 0v tyr ylni ot  
 Cuii RslwP  
 ) IL- oH'k ng7  
 n( 3, uuFD, 0e oys 7og 3294u: 5F, 06 94D] 5. 20br'rh Codn 32u8, , , u:



Ao H'ndi F'3CG' o'OM'f'Rs  
 u Cogi Tlls 7og 1 a0  
 Npns'g0M'N'KFG 9J50C)



[W] West  
 Total: 9954  
 In: 58n6 Out: 5502



5589707 - QUEEN ELIZABETH DRWY @ FIFTH AVE ... - TMC

Tue May 3, 20F00

1 L 1 ng h ( 6 1 L : 6 6 1 L A M ng 9 l ngt 1 P u)

C9s gji ni ldeory gchL PpBava9hi 21 ng-v2l nfhijugci 2Bava9hi Pc RPhf2Bava9hi Pc

s uPiw9g A

C9BL P-nk ncy

nh ( 3FF0D432d PagePc ( , 67 F48032:567 D885, 2b9n s PH( , F. 333F4



1 uP-ehHfV(s dy PDMZnwn

3FF Cot ylglyst 1 u2

Nngpr 2MN2K0G 6J82s C

Wk n	Npar bP y Pj cH				bP y Pj cH				E nly Sg y Pj cH							
	R	W	U	Cpp	W	U	Cpp	l nF	R	d	U	Cpp	l nF			
0F00:3F3, (, 6L	, 4	36D	F	0E3	0,	6,	3D	F	5,	40	3F	35	F	05	0,	4F0
60H L	04	3	F	3D	..	..	35	F	DF	..	03	3F	F	43	0,	085
636 L	08	356	F	09,	38	65	34	F	5F	3	05	34	F	F	30	43
648 L	0D	34	F	3,	43	5,	03	F	85	45	08	00	F	63	31	430
% Wp9	304	108	F	500	30F	066	8	F	40,	356	DF	0	F	3, 8	DF	3006
% Cpp9	3,7%	D87%	F%	..	..	5D5%	033%	F%	..	..	6E%	..	37%	F%	..	..
% Wp9	3F2%	632%	F%	..	..	0FD%	67%	F%	0,7%	..	53%	67%	F%	307%	..	..
11T	F54,	FDR,	..	F83D	..	FDL,	FDD3	..	FDD0	..	F5,3	F56	..	F506	..	F850
deryl gchL PpBava9hi	3F8	34	F	500	..	0,5	D	F	436	..	D	0	F	3, D	..	3318
% deryl gchL PpBava9hi	DF%	856%	F%	8,3%	..	8,3%	8DE%	F%	85D%	..	8DE%	3F%	F%	887%	..	8,57%
1 ng-v	F	8	F	8	..	5	3	F	D	..	F	F	F	F	..	35
% 1 ng-v	F%	37%	F%	3D%	..	05%	37%	F%	05%	..	F%	F%	F%	F%	..	37%
Bava9hi Pc RPhf	3,	5	F	03	..	3	F	F	3	..	3	F	F	3	..	04
% Bava9hi Pc RPhf	33%	37%	F%	03%	..	F7%	F%	F%	F7%	..	37%	F%	F%	F7%	..	37%
1 nfhijugci	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50
% 1 nfhijugci	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	84D%
Bava9hi Pc s uPiw9g	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0
% Bava9hi Pc s uPiw9g	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2%

1 nfhijugci gchBava9hi Pc s uPiw9g 7d(dn9QR(R99z2W(W9j 2U(U:W ut

5589707 - QUEEN ELIZABETH DRWY @ FIFTH AVE ... - TMC

Sat M7, 20FuFF

1 L 1 eng h(21 1 L : 1(21 1 L 3: M'ean-1 eng 6 P) a

C-- s nli ei hltor 2 nchL PZPavy-ei 06 enA/wl ehki 2nci 0Btyvye-i Pc RPhfDBtyvye-i Pc

s aPiwng3

C-- L PAek ec7

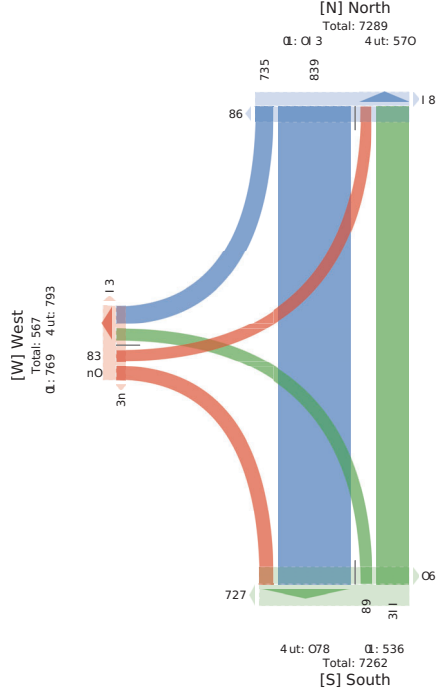
nh ( , uufDB, 0dPyn7Pc( 21:4e95F, 0: 14D) 5, 20btr s PH( 2u8, , , u9



1 uPAtHfV(s dy PDMZnwn

uu s Pci 2-nPc 1 aD

Nepenc 0MN0KFG 1J50s C



5589707 - QUEEN ELIZABETH DRWY @ PRINCESS PA... - TMC

Tue May 3, 20F00

1 L 1 ng h( 6 AF-9 133AF-9 P

) IL Csi gi 6n( y st d 9 oyur algi 2c gsH2- gdgi yst i 2v nralgi ot Bosd2v nralgi ot

Cuui RslwP

nh 03Fhjk g y

nh 3FF0D442noas9yt A, 78 F34, 2478D: 4DE, eg CodgA, F5Fb3F:



1 uP-ehHfV(s dy PDMZnwn

3FF Cot ylglyst 1 u2

Nngpr 2MN2K0G 7Jb2C)

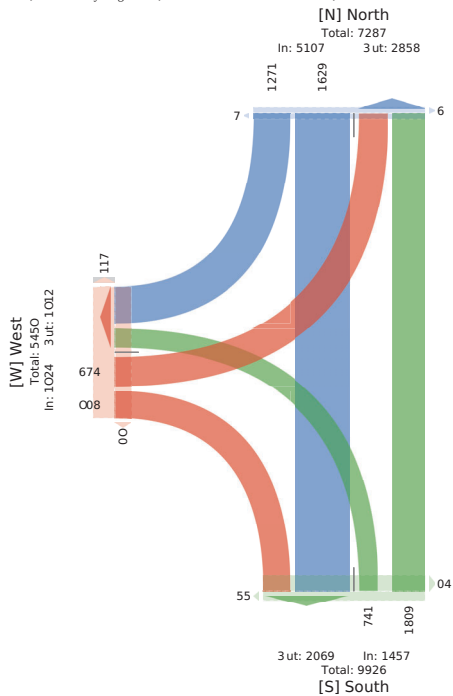
Wk g	Noag ol y fol d				ol y Noag fol d				E g y Ss y fol d							
	B	W	U	pp	W	n	U	pp	B	n	U	pp				
0F00BF13: AF-9	: 5	337	F	373	F	77	37	F	4F	..	3:	30	F	07	3F	0,5
AF-9	: 3	85	F	304	F	70	03	F	4:	..	3:	3:	F	0	3F	0,0
c ol de W9yl	54	033	F	04D	F	384	15	F	3:	..	1:0	07	F	74	0F	40
AF-9	: 7	3,7	F	3DF	F	05	3F	F	15	5	0D	0	F	73	5	054
AF-9	: F	D	F	30:	..	77	36	F	4:	0	37	00	F	14	5	0:
AF-9	: b	300	F	353	F	53	34	F	4D	3	00	3,	F	15	D	047
AF-9	: b	30F	F	35b	F	57	0:	F	DD	D	3:	35	F	0b	D	0D5
c ol de W9yl	34:	5F	F	5:	..	0F4	5b	F	045	34	4D	47	F	37:	13	3F50
7AF-9	57	335	F	3D8	F	5F	0F	F	DF	..	0F	3D	F	D	3:	0bb
7AF-9	D	33b	F	0F:	F	70	13	F	D	..	0D	13	F	7b	b	1,7
7AF-9	7D	DE	F	3,	..	77	13	F	DE	5	15	0b	F	57	3:	0b7
7AF-9	: 1	00	F	57	F	0b	0:	F	70	0	37	0,	F	1b	D	375
c ol de W9yl	07F	1:	7b	F	..	385	397	F	4E3	37	bb	39D	F	0E3	1:	3087
5AF-9	57	0:	F	D	..	4	..	F	b3	3	0:	0:	F	4	3	004
5AF-9	7F	33	F	53	F	03	F	F	53	1	13	17	F	55	7	3D3
5AF-9	14	03	F	7D	F	15	1:	F	DF	..	0:	07	F	D	7	3D5
5AF-9	: F	b	F	4b	..	70	10	F	D	3F	0F	34	F	14	33	0FF
c ol de W9yl	3b0	b7	F	0D4	..	355	37F	F	35	3D	b4	3F3	F	3bD	10	DF3
4AF-9	0b	70	F	D8	0	7:	0D	F	D8	4	3:	3D	F	13	D	3b:
4AF-9	44	0	F	33b	0	04	3b	F	5	0	03	3b	F	F	b	0F7
4AF-9	53	5F	F	303	F	34	0F	F	14	..	0D	1:	F	50	F	00F
4AF-9	..	..	F	DD	F	37	33	F	05	0	00	1:	F	75	3:	34F
c ol de W9yl	033	3bD	F	1Fb	..	330	4D	F	3bF	37	D	3F7	F	3D:	3D	4D:
D87-9	07	4	F	40	F	2b	0	F	03	3	0F	04	F	14	F	3,F
D87-9	1:	0	F	45	F	0:	3F	F	1:	..	0:	30	F	7	..	3,1
DAF-9	3:	1:	F	4	F	00	7	F	04	F	3D	3b	F	14	5	333
D87-9	00	D	F	5F	0	33	3F	F	03	F	0:	00	F	7	5	305
c ol de W9yl	b,	353	F	077	0	47	04	F	3F0	..	D	DF	F	35,	35	703
bAF-9	: 0	..	F	47	F	3,	30	F	05	0	F	0,	F	7,	0	377
bAF-9	: F	73	F	D8	F	00	4	F	0b	F	0b	0	F	53	1:	343
bAF-9	0b	70	F	D8	3	00	D	F	F	0	17	15	F	43	0	3D0
bAF-9	: 1	5D	F	333	3	0,	37	F	b	0	1D	4F	F	33D	5	05D
c ol de W9yl	3:	03,	F	1D	0	DD	0	F	30,	5	3,0	350	F	F:	3:	445
3FAF-9	0:	7F	F	4:	F	13	37	F	15	35	73	15	F	8F	3F	0b6
3FAF-9	15	70	F	DD	F	0D	b	F	14	5	7b	5b	F	3D0	..	07:
3FAF-9	07	17	F	4F	F	05	33	F	14	5	70	5F	F	330	..	03b
3FA7-9	3,	13	F	77	F	3b	37	F	1:	..	1:	4	F	DF	3	35b
c ol de W9yl	bD	3DD	F	0E6	F	3F,	7F	F	37,	0D	3b7	037	F	3F	3b	DFF
33AF-9	35	0D	F	..	..	35	0	F	3D	F	15	40	F	3FD	3	34F
33AF-9	35	05	F	0	F	b	0	F	33	F	0:	3b	F	0	F	b7
c ol de W9yl	: 0	7,	F	D5	F	07	..	F	0b	F	7b	b3	F	37F	3	057
W9yl	3073	3b0,	F	147	3,	3f4,	753	F	357	3Fb	DAF	b75	F	3D05	3b:	55:5
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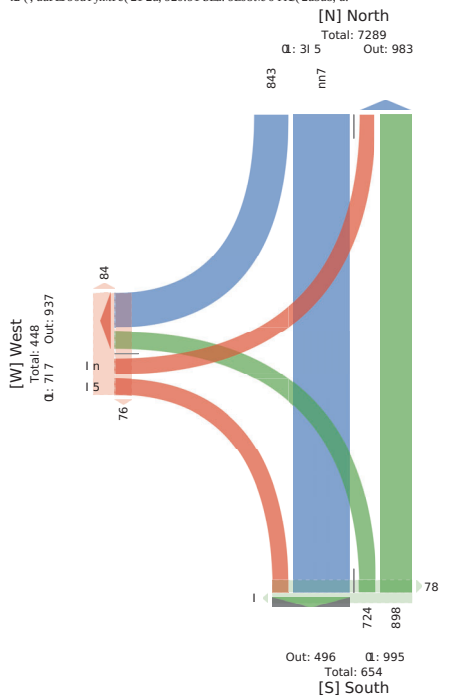
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5589707 - QUEEN ELIZABETH DRWY @ PRINCESS PA... - TMC  
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# **APPENDIX B - INTERSECTION COLLISION DATA**



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** AYLMER AVE @ BANK ST

**Traffic Control:** Traffic signal

**Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jul-28, Tue,20:27	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Bicycle	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Cyclist	
2015-Aug-24, Mon,13:28	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Mar-17, Thu,18:15	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Delivery van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Jun-12, Sun,11:35	Rain	SMV other	Non-fatal injury	Wet	East	Turning left	Automobile, station wagon	Pedestrian	1
2016-Jul-06, Wed,13:32	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jul-18, Mon,17:37	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2017-Jan-31, Tue,17:10	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Jul-01, Sat,22:34	Clear	Rear end	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jul-08, Sat,18:29	Clear	SMV other	Non-fatal injury	Dry	North	Turning left	School bus	Pedestrian	1
2017-Aug-01, Tue,17:39	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-30, Wed,08:10	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-28, Fri,13:46	Rain	Angle	P.D. only	Wet	West	Turning left	Unknown	Other motor vehicle	0
					North	Going ahead	Delivery van	Other motor vehicle	





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** AYLMER AVE @ BANK ST

**Traffic Control:** Traffic signal

**Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jan-05, Sat,01:45	Clear	Sideswipe	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-14, Thu,21:55	Clear	Turning movement	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-20, Fri,08:45	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-21, Sat,16:00	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Passenger van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Oct-10, Sat,11:39	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2021-Mar-11, Thu,20:00	Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	

**Location:** BANK ST @ ECHO DR

**Traffic Control:** Stop sign

**Total Collisions:** 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-26, Mon,12:17	Clear	Rear end	P.D. only	Ice	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2015-May-06, Wed,11:23	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jul-09, Thu,20:45	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Aug-16, Tue,17:39	Rain	Angle	P.D. only	Wet	East	Turning right	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** BANK ST @ ECHO DR

**Traffic Control:** Stop sign

**Total Collisions:** 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Jan-24, Tue,09:05	Freezing Rain	Approaching	P.D. only	Ice	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Unknown	Passenger van	Other motor vehicle	
					East	Unknown	Automobile, station wagon	Other motor vehicle	
					East	Unknown	Pick-up truck	Other motor vehicle	
2017-Feb-22, Wed,14:35	Clear	Angle	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2019-Feb-05, Tue,08:39	Rain	Sideswipe	P.D. only	Wet	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Municipal transit bus	Other motor vehicle	
2019-Jun-26, Wed,23:50	Clear	Turning movement	P.D. only	Dry	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Aug-20, Fri,14:15	Clear	Other	P.D. only	Dry	North	Reversing	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	

**Location:** BANK ST @ EXHIBITION WAY

**Traffic Control:** Traffic signal

**Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-08, Thu,12:14	Snow	Rear end	P.D. only	Packed snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Truck - closed	Other motor vehicle	
2015-Mar-14, Sat,23:43	Snow	Rear end	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jul-17, Fri,23:22	Clear	Turning movement	P.D. only	Wet	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Making "U" turn	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** BANK ST @ EXHIBITION WAY

**Traffic Control:** Traffic signal

**Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Oct-13, Tue,12:03	Fog, mist, smoke, dust	Turning movement	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2015-Nov-06, Fri,11:04	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2016-Sep-03, Sat,21:58	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2016-Nov-13, Sun,11:35	Clear	SMV other	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Pedestrian	2
2016-Nov-24, Thu,06:52	Snow	Rear end	P.D. only	Loose snow	North	Turning right	Passenger van	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Aug-12, Sat,11:20	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-11, Sun,17:20	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2018-Nov-13, Tue,03:36	Snow	SMV other	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Curb	0
2018-Nov-20, Tue,21:00	Snow	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-06, Thu,21:45	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-08, Sun,13:30	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Unknown	Automobile, station wagon	Other motor vehicle	

**Location:** BANK ST @ FIFTH AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 23

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
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# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** BANK ST @ FIFTH AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 23

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Feb-06, Fri,17:49	Clear	Sideswipe	P.D. only	Slush	North	Going ahead	Delivery van	Other motor vehicle	0
					North	Stopped	Municipal transit bus	Other motor vehicle	
2015-Mar-15, Sun,16:59	Clear	Angle	P.D. only	Dry	South	Going ahead	Passenger van	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	
2015-May-26, Tue,18:00	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Sep-03, Thu,10:18	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-04, Fri,18:42	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Unknown	Automobile, station wagon	Other motor vehicle	
2016-Oct-06, Thu,18:44	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2016-Oct-19, Wed,16:29	Clear	Turning movement	P.D. only	Dry	West	Turning right	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Nov-25, Fri,19:26	Clear	Turning movement	P.D. only	Wet	North	Turning left	School bus	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-May-15, Mon,08:48	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jun-26, Mon,22:42	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2017-Dec-16, Sat,16:52	Clear	SMV unattended vehicle	P.D. only	Wet	East	Turning left	Fire vehicle	Unattended vehicle	0





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** BANK ST @ FIFTH AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 23

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Apr-26, Thu,07:12	Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Truck - closed	Other motor vehicle	0
					South	Stopped	Truck - tractor	Other motor vehicle	
2019-Mar-07, Thu,13:38	Clear	SMV other	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Pedestrian	1
2019-Aug-16, Fri,23:17	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-03, Thu,06:13	Clear	Turning movement	Non-fatal injury	Dry	North	Going ahead	Bicycle	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Cyclist	
2019-Oct-06, Sun,00:00	Rain	Angle	P.D. only	Wet	West	Turning right	Fire vehicle	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-21, Thu,18:18	Rain	Turning movement	Non-fatal injury	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jan-04, Sat,17:15	Clear	Rear end	P.D. only	Wet	North	Stopped	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Feb-15, Sat,14:00	Clear	Rear end	P.D. only	Packed snow	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Aug-28, Fri,11:58	Clear	Sideswipe	P.D. only	Dry	North	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Nov-05, Thu,11:11	Clear	SMV other	Non-fatal injury	Dry	West	Turning left	Pick-up truck	Pedestrian	1
2021-Mar-17, Wed,13:56	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2021-Mar-17, Wed,14:58	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** BANK ST @ HOLMWOOD AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 21

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-05, Mon,19:25	Clear	Rear end	Non-fatal injury	Slush	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-May-17, Tue,17:08	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-May-25, Wed,08:51	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jun-16, Thu,09:00	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Motorcycle	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jul-07, Thu,14:06	Clear	Rear end	P.D. only	Dry	North	Going ahead	Unknown	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Aug-12, Fri,11:30	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Nov-15, Tue,15:24	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Dec-18, Sun,12:26	Clear	Approaching	Non-fatal injury	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-17, Fri,12:17	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-May-10, Wed,20:45	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-22, Wed,09:23	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2018-Oct-05, Fri,22:45	Clear	Sideswipe	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** BANK ST @ HOLMWOOD AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 21

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Nov-21, Thu,13:56	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Truck - dump	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-13, Fri,18:00	Rain	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Unknown	Other motor vehicle	
2019-Dec-28, Sat,11:42	Clear	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jan-14, Tue,12:20	Clear	Rear end	P.D. only	Wet	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Aug-15, Sat,20:23	Clear	Rear end	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Sep-04, Fri,11:00	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Sep-04, Fri,17:40	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Jun-22, Tue,08:00	Clear	Other	P.D. only	Dry	West	Reversing	Truck - closed	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Sep-20, Mon,11:35	Clear	Angle	P.D. only	Dry	East	Turning right	Unknown	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	

**Location:** BANK ST @ MARCHE WAY

**Traffic Control:** Stop sign

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-25, Sun,06:25	Freezing Rain	SMV other	Non-fatal injury	Ice	West	Turning right	Automobile, station wagon	Pedestrian	1



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** BANK ST @ MARCHE WAY

**Traffic Control:** Stop sign

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Aug-30, Mon,17:06	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	

**Location:** BANK ST @ SUNNYSIDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 37

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-15, Thu,20:34	Clear	Sideswipe	P.D. only	Slush	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jan-22, Thu,10:28	Clear	Rear end	P.D. only	Ice	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Feb-11, Wed,22:08	Snow	Angle	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Mar-18, Wed,16:25	Clear	Rear end	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-May-13, Wed,18:10	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2015-May-26, Tue,07:02	Clear	Sideswipe	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2015-Jun-18, Thu,15:38	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Truck - tractor	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jun-25, Thu,09:30	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Motorcycle	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jun-28, Sun,20:10	Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** BANK ST @ SUNNYSIDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 37

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Sep-29, Tue,17:59	Rain	Turning movement	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Sep-30, Wed,15:00	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Oct-15, Thu,12:42	Rain	Rear end	P.D. only	Wet	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Dec-29, Tue,15:30	Snow	Sideswipe	P.D. only	Loose snow	North	Unknown	Unknown	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2016-Jun-09, Thu,20:39	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Oct-08, Sat,21:31	Clear	Rear end	P.D. only	Dry	North	Going ahead	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-30, Wed,16:44	Rain	SMV other	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Pedestrian	1
2016-Dec-17, Sat,11:41	Clear	Rear end	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jan-28, Sat,08:58	Rain	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-14, Tue,12:42	Clear	Turning movement	P.D. only	Loose snow	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2017-May-20, Sat,17:53	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** BANK ST @ SUNNYSIDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 37

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Jun-25, Sun,09:30	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-10, Thu,13:59	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Truck - tractor	Other motor vehicle	
2017-Sep-11, Mon,07:46	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-25, Mon,21:17	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Bicycle	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Cyclist	
2017-Nov-09, Thu,21:06	Rain	SMV other	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Pedestrian	1
2018-Aug-01, Wed,16:36	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-14, Fri,13:34	Clear	SMV other	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Pedestrian	1
2018-Oct-06, Sat,16:40	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Municipal transit bus	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-31, Wed,15:51	Rain	Rear end	Non-fatal injury	Wet	South	Going ahead	Passenger van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-02, Sat,09:50	Snow	Rear end	P.D. only	Loose snow	South	Going ahead	Unknown	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2019-Apr-26, Fri,15:15	Rain	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-27, Fri,14:04	Clear	Sideswipe	P.D. only	Dry	South	Stopped	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** BANK ST @ SUNNYSIDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 37

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2020-Aug-08, Sat,17:53	Clear	Sideswipe	P.D. only	Dry	South	Turning right	Municipal transit bus	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2021-Feb-15, Mon,08:29	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2021-May-11, Tue,10:51	Clear	Turning movement	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2021-Aug-26, Thu,15:23	Clear	SMV other	Non-fatal injury	Dry	North	Going ahead	Motorcycle	Skidding/sliding	0
2021-Oct-02, Sat,01:00	Rain	Turning movement	P.D. only	Wet	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** BANK ST @ WILTON CRES

**Traffic Control:** Stop sign

**Total Collisions:** 26

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-30, Fri,15:45	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Apr-03, Fri,22:13	Rain	Turning movement	P.D. only	Wet	South	Turning right	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Sep-25, Fri,12:22	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2015-Oct-25, Sun,22:40	Clear	Turning movement	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-07, Sun,12:07	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Truck - closed	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** BANK ST @ WILTON CRES

**Traffic Control:** Stop sign

**Total Collisions:** 26

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Apr-01, Fri,18:31	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Municipal transit bus	Other motor vehicle	
2016-Apr-19, Tue,14:40	Clear	Rear end	P.D. only	Dry	North	Going ahead	Delivery van	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2016-May-28, Sat,14:38	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jun-15, Wed,14:08	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2016-Oct-01, Sat,13:19	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2016-Oct-11, Tue,10:30	Clear	Angle	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2016-Dec-12, Mon,14:20	Drifting Snow	Rear end	P.D. only	Packed snow	South	Going ahead	Municipal transit bus	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2017-Jul-28, Fri,17:07	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2017-Sep-24, Sun,13:23	Clear	Sideswipe	Non-fatal injury	Dry	North	Stopped	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2017-Dec-14, Thu,08:45	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Jan-12, Fri,12:22	Rain	Sideswipe	P.D. only	Wet	North	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Unknown	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** BANK ST @ WILTON CRES

**Traffic Control:** Stop sign

**Total Collisions:** 26

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jun-19, Tue,13:49	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2018-Oct-19, Fri,22:50	Clear	Rear end	Non-fatal injury	Wet	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-15, Thu,17:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-12, Wed,11:20	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-01, Sat,15:40	Clear	Turning movement	P.D. only	Dry	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-23, Sun,22:45	Clear	Turning movement	P.D. only	Dry	North	Turning left	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-14, Sun,10:45	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-21, Sat,06:39	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Curb	0
2020-Feb-21, Fri,15:23	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2021-Nov-27, Sat,19:59	Rain	Turning movement	Non-fatal injury	Wet	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** FIFTH AVE @ QUEEN ELIZABETH DRWY

**Traffic Control:** Traffic signal

**Total Collisions:** 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-12, Tue,15:10	Snow	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Jan-13, Wed,08:30	Clear	Sideswipe	P.D. only	Loose snow	North	Unknown	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Apr-15, Fri,18:32	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2016-Apr-23, Sat,19:45	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Aug-20, Sat,17:15	Clear	SMV other	P.D. only	Dry	South	Turning left	Pick-up truck	Pole (sign, parking meter)	0
2016-Oct-16, Sun,10:35	Rain	Turning movement	Non-fatal injury	Wet	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					South	Overtaking	Pick-up truck	Other motor vehicle	
2016-Dec-29, Thu,16:50	Snow	Rear end	Non-fatal injury	Slush	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Truck-other	Other motor vehicle	
2017-Jul-06, Thu,20:45	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Truck - closed	Other motor vehicle	
2017-Dec-15, Fri,18:19	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2019-Jan-17, Thu,17:20	Clear	Rear end	P.D. only	Wet	South	Going ahead	Passenger van	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	

**Location:** PRINCESS PATRICIA WAY @ QUEEN ELIZABETH DRWY

**Traffic Control:** Stop sign

**Total Collisions:** 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
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# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2021

**Location:** PRINCESS PATRICIA WAY @ QUEEN ELIZABETH DRWY

**Traffic Control:** Stop sign

**Total Collisions:** 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-May-18, Wed,11:56	Clear	Rear end	P.D. only	Dry	North	Going ahead	Motorcycle	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-May-06, Sat,15:30	Rain	Approaching	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jun-30, Fri,17:48	Clear	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Mar-19, Mon,23:36	Clear	Sideswipe	P.D. only	Dry	South	Merging	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-15, Fri,18:12	Clear	Angle	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-03, Sun,21:00	Clear	Angle	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Apr-22, Mon,20:38	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Motorcycle	Other motor vehicle	
2019-Aug-24, Sat,17:05	Clear	Angle	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

## **APPENDIX C - MMLOS ANALYSIS DATA**

## Multi-Modal Level of Service - Segments Form

Consultant	Momentum
Scenario	Existing / Future
Segment	Bank Street

Project	Lansdowne 2.0 - EC
Date	August 2024

SEGMENTS		Bank St	Section 1	Section 2A	Section 2B	Section 3	Section 4
			5 Ave - Holmwood	(SB) Holmwood - Wilton	(NB) Holmwood - Wilton	Wilton - Aylmer	Aylmer - Sunnyside
Pedestrian	Sidewalk Width	C	≥ 2 m	≥ 2 m	≥ 2 m	≥ 2 m	1.8 m
	Boulevard Width		0.5 - 2 m	< 0.5	> 2 m	0.5 - 2 m	0.5 - 2 m
	Avg Daily Curb Lane Traffic Volume		> 3000	> 3000	> 3000	> 3000	> 3000
	Operating Speed On-Street Parking		> 30 to 50 km/h yes	> 30 to 50 km/h no	> 30 to 50 km/h no	> 30 to 50 km/h no	> 30 to 50 km/h yes
	Exposure to Traffic PLoS		B	C	B	C	C
Level of Service		B	C	B	C	C	
Bicycle	Type of Cycling Facility	E	Mixed Traffic	Mixed Traffic	Curbside Bike Lane	Physically Separated	Mixed Traffic
	Number of Travel Lanes		4-5 lanes total	4-5 lanes total	2 ea. dir. (w median)		4-5 lanes total
	Operating Speed		>40 to <50 km/h	>40 to <50 km/h	≤ 50 km/h		>40 to <50 km/h
	# of Lanes & Operating Speed LoS		E	E	C	-	E
	Bike Lane (+ Parking Lane) Width				≥ 1.2 to <1.5 m		
	Bike Lane Width LoS		-	-	C	-	-
	Bike Lane Blockages				Frequent		
	Blockage LoS		-	-	C	-	-
Level of Service		E	E	C	A	E	
Transit	Facility Type	F	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≤ 0.4	Vt/Vp ≤ 0.4	Vt/Vp ≤ 0.4	Vt/Vp ≥ 0.8	Vt/Vp ≤ 0.4
	Level of Service		F	F	F	D	F
Truck	Truck Lane Width	D	≤ 3.2 m	> 3.7 m	≤ 3.2 m	≤ 3.5 m	≤ 3.5 m
	Travel Lanes per Direction		> 1	> 1	> 1	1	> 1
	Level of Service		D	A	D	C	A

### Multi-Modal Level of Service - Segments Form

Consultant	Momentum
Scenario	Existing / Future
Segment	Holmwood Avenue

Project	Lansdowne 2.0 - EC
Date	August 2024

SEGMENTS		Holmwood Ave	Section 5A Northside	Section 5B Southside
Pedestrian	Sidewalk Width	<b>B</b>	1.8 m	1.8 m
	Boulevard Width		< 0.5 m	< 0.5 m
	Avg Daily Curb Lane Traffic Volume		≤ 3000	≤ 3000
	Operating Speed		> 30 to 50 km/h	> 30 to 50 km/h
	On-Street Parking		no	yes
	<b>Exposure to Traffic PLoS</b>		<b>B</b>	<b>B</b>
<b>Level of Service</b>			<b>B</b>	<b>B</b>
Bicycle	Type of Cycling Facility	<b>C</b>	Curbside Bike Lane	Mixed Traffic
	Number of Travel Lanes		≤ 1 each direction	≤ 2 (no centreline)
	Operating Speed		≤ 50 km/h	>40 to <50 km/h
	<b># of Lanes &amp; Operating Speed LoS</b>		<b>A</b>	<b>B</b>
	Bike Lane (+ Parking Lane) Width		≥ 1.2 to <1.5 m	
	<b>Bike Lane Width LoS</b>		<b>C</b>	-
	Bike Lane Blockages		Rare	
	<b>Blockage LoS</b>		<b>A</b>	-
<b>Level of Service</b>			<b>C</b>	<b>B</b>
Transit	Facility Type	-		
	Friction or Ratio Transit:Posted Speed			
	<b>Level of Service</b>		-	-
Truck	Truck Lane Width	-		
	Travel Lanes per Direction			
	<b>Level of Service</b>		-	-



### Multi-Modal Level of Service - Segments Form

Consultant	Momentum
Scenario	Existing / Future
Segment	Queen Elizabeth Driveway (QED)

Project	Lansdowne 2.0 - EC
Date	August 2024

SEGMENTS		QED	Section 6A	Section 6B	Section 7	Section 8
			Fifth Ave - Fourth Ave. (SB)	Fifth Ave - Fourth Ave. (NB)	Fifth Ave - Princess Patricia Way	South of Princess Patricia Way
Pedestrian	Sidewalk Width	F	no sidewalk	≥ 2 m	≥ 2 m	≥ 2 m
	Boulevard Width		n/a	0.5 - 2 m	> 2 m	> 2 m
	Avg Daily Curb Lane Traffic Volume		> 3000	> 3000	> 3000	> 3000
	Operating Speed		> 30 to 50 km/h	> 30 to 50 km/h	> 30 to 50 km/h	> 30 to 50 km/h
	On-Street Parking		no	no	no	no
	Exposure to Traffic PLoS		F	C	B	B
	Level of Service	F	C	B	-	
Bicycle	Type of Cycling Facility	A	Physically Separated	Physically Separated	Physically Separated	Physically Separated
	Number of Travel Lanes					
	Operating Speed					
	# of Lanes & Operating Speed LoS		-	-	-	-
	Bike Lane (+ Parking Lane) Width					
	Bike Lane Width LoS		-	-	-	-
	Bike Lane Blockages					
	Blockage LoS		-	-	-	-
	Level of Service	A	A	A	A	
Transit	Facility Type	-				
	Friction or Ratio Transit:Posted Speed					
	Level of Service		-	-	-	-
Truck	Truck Lane Width	-				
	Travel Lanes per Direction					
	Level of Service		-	-	-	-
Auto	Level of Service	Not Applicable				

## Multi-Modal Level of Service - Segments Form

Consultant	Momentum
Scenario	Existing / Future
Segment	Fifth Avenue

Project	Lansdowne 2.0 - EC
Date	August 2024

SEGMENTS		Fifth Ave	Section 9A	Section 9B
			Bank St - R. O'Connor St	R. O'Connor St - QED
Pedestrian	Sidewalk Width	E	1.5 m	1.5 m
	Boulevard Width		< 0.5 m	< 0.5 m
	Avg Daily Curb Lane Traffic Volume		≤ 3000	≤ 3000
	Operating Speed		> 30 to 50 km/h	> 30 to 50 km/h
	On-Street Parking		yes	yes
	<b>Exposure to Traffic PLoS</b>		E	E
	<b>Level of Service</b>	E	E	
Bicycle	Type of Cycling Facility	C	Mixed Traffic	Curbside Bike Lane
	Number of Travel Lanes		≤ 2 (no centreline)	≤ 1 each direction
	Operating Speed		>40 to <50 km/h	≤ 50 km/h
	<b># of Lanes &amp; Operating Speed LoS</b>		B	A
	Bike Lane (+ Parking Lane) Width			≥ 1.2 to <1.5 m
	<b>Bike Lane Width LoS</b>		-	C
	Bike Lane Blockages			Rare
	<b>Blockage LoS</b>		-	A
	<b>Level of Service</b>	B	C	
Transit	Facility Type	-		
	Friction or Ratio Transit:Posted Speed			
	<b>Level of Service</b>		-	-
Truck	Truck Lane Width	-		
	Travel Lanes per Direction			
	<b>Level of Service</b>		-	-

## Multi-Modal Level of Service - Segments Form

Consultant	Momentum
Scenario	Exiting / Future
Comments	O'Connor Street

Project	Lansdowne 2.0 - EC
Date	August 2024

SEGMENTS		R.O'Connor	Section 10A (West Side) Holmwood - Fifth Ave	Section 10A (East Side) Holmwood - Fifth Ave
Pedestrian	Sidewalk Width	E	1.5 m	1.5 m
	Boulevard Width		< 0.5 m	< 0.5 m
	Avg Daily Curb Lane Traffic Volume		≤ 3000	≤ 3000
	Operating Speed		≤ 30 km/h	> 30 to 50 km/h
	On-Street Parking		no	yes
	<b>Exposure to Traffic PLoS</b>		<b>D</b>	<b>E</b>
	<b>Level of Service</b>	<b>D</b>	<b>E</b>	
Bicycle	Type of Cycling Facility	A	Physically Separated	Mixed Traffic
	Number of Travel Lanes			≤ 2 (no centreline)
	Operating Speed			≤ 40 km/h
	<b># of Lanes &amp; Operating Speed LoS</b>		-	<b>A</b>
	Bike Lane (+ Parking Lane) Width			
	<b>Bike Lane Width LoS</b>		-	-
	Bike Lane Blockages			
	<b>Blockage LoS</b>		-	-
	<b>Level of Service</b>	<b>A</b>	<b>A</b>	
Transit	Facility Type	-		
	Friction or Ratio Transit:Posted Speed			
	<b>Level of Service</b>		-	-
Truck	Truck Lane Width	-		
	Travel Lanes per Direction			
	<b>Level of Service</b>		-	-
Auto	<b>Level of Service</b>	<b>Not Applicable</b>		

# APPENDIX D - TDM CHECKLIST

## Transportation Demand Management Measures Overview

### Lansdowne 2.0 - Event Centre

The Transportation Demand Management (TDM) program implemented in 2014 to support special events at Lansdowne Park and TD Place has been largely effective in diverting automobile trips from traveling directly to Lansdowne for special events.

A key hallmark of the TDM program and a large contributor to its success for the Lansdowne Revitalization project is the provision of free transit service to all ticketed events at no cost to event goers. Maintaining and enhancing this provision will be critical in maintaining the success of the program as part of the Lansdowne 2.0 redevelopment project.

The initial TDM plan for the Lansdowne Revitalization identified varying levels of enhanced transit and shuttle services needed to support following event sizes:

- 7,000 – 10,000 attendees, representative of average and sold-out arena events.
- 13,000 attendees, representative of smaller stadium events with attendance levels ranging between 10,000 - 15,000.
- 18,000 - 25,000 attendees, representative of average and sold-out stadium events including CFL Ottawa Redblacks football games.
- 40,000 attendees, representative of jewel ‘mega events’. These events are infrequent and require temporary expanded stadium seating capacity, and/or the concurrent use of venues at Lansdowne.

The above attendance level scenarios were developed based on the capacities of the Stadium at TD Place (assumed to be 25,000) and the Arena at TD Place (9,800).

As part of the Lansdowne 2.0 project, the existing 9,800 seat indoor TD Place Arena will be replaced with a new standalone 5,500 seat (6,500 spectator) multi-purpose event centre that will be the new home to the OHL’s Ottawa 67’s, the CEBL’s Ottawa BlackJacks, PWHL Ottawa hockey, and other indoor ticketed events. This change will effectively cap indoor arena events to 6,500 attendees, down from the previous 9,800 maximum capacity level that was previously identified for sold-out arena events.

The current spectator capacity for the Stadium at TD Place is 24,000. Under Lansdowne 2.0 project, the existing north stadium stands will be reconstructed with a seated capacity of 11,200 spectators (12,100 total spectators), representing a decrease from the current



capacity of 14,028 spectators for the existing north stadium stands. This represents a total capacity of 22,000 spectators for the new stadium (2,000 less seats than what is provided today).

Based on the *Lansdowne 2.0 Transportation Demand Management Strategy Report (June 30, 2023 – Stantec)* event, varying levels of event sizes have been refined to reflect the new event centre and stadium capacities. Consistent with the original TDM Plan, events at Lansdowne are categorized as either Minor Events or Major Events.

Minor Events constitute events and programming at Lansdowne with total attendance levels of 10,000 or less, typically representative of indoor events or those that do not require the provision of substantial Park & Shuttle service (i.e. OC Transpo 450-Series service). Major Events are those with attendance levels of 10,000 or more and are typically outdoor stadium events that require enhanced transit service and the provision of Park & Shuttle service.

### **Lansdowne 2.0 Attendance Levels**

The Lansdowne 2.0 concept was adjusted since the submission of the *Lansdowne 2.0 Transportation Demand Management Strategy Report* in 2023. This included the reduction of the proposed density from three residential towers with 1,200 units to two towers with 700 units. Other changes include the removal of a proposed 1,500 seat music hall from the podium level retail that is proposed to be attached to the new north stadium stands.

Attendance level thresholds were adjusted to reflect the new concept plan:

#### **Minor Events**

- 3,000 attendees or less, representative of smaller indoor events at the new Event Centre, and other public events held at Lansdowne.
- 3,000 - 6,500 attendees, representative of average and maximum sold-out indoor events at the new Event Centre.
- Between 6,500 and 10,000 attendees, representative of concurrent sold-out indoor events at the new Event Centre with other events occurring at Lansdowne such as the Ottawa's Farmer Market, BluesFest, or other outdoor festivals held on site.

#### **Major Events**

- 13,000 attendees, representative of events between 10,000 and 15,000 attendees including smaller stadium events.

- 18,000 - 22,000 attendees, representative of average and sold-out stadium events.
- 29,000 attendees, representative of concurrently held sold-out indoor events at the new Event Centre, and a sold-out event at the Stadium. It is noted that while the overlapping of two sold-out events is unlikely, this scenario is accounted for as
- 40,000 representing a large 'Mega Event' with expanded Stadium seating capacity, or concurrent large events.

Based on information received from the Ottawa Sports and Entertainment Group, smaller events with attendance levels of 5,000 attendees or less represent the majority of ticketed events at Lansdowne. For 2024, out of total 161 events expected at Lansdowne, approximately 128 events (79%) are planned to have attendance levels under 5,000 attendees.

### **Lansdowne 2.0 Modal Share Targets**

The Lansdowne 2.0 Transportation Demand Management Strategy (Stantec – July 2023), provided revised modal share targets for Major Events and Minor Events for Lansdowne 2.0.

Table 1 summarized the modal share targets for Lansdowne 2.0, including those for the new Event Centre (Minor Events).

Table 2 documents the corresponding person trips forecasted for events at Lansdowne 2.0 under various event sizes. Consistent with the initial TDM plan, the auto mode which accounts for both on-site and on-street parking, is assumed to be maximized at 8,225 person trips based on a limited on-street parking supply of 2,175 spaces within the vicinity of Lansdowne, and 600 on-site parking spaces.

**Table 1: Lansdowne 2.0 Modal Share Targets for Varying Attendance Levels**

Attendance Level	Mega Event: Expanded Stadium Seating + Event Centre							
	Concurrent Sold-Out Stadium + Event Centre							40,000
	Sold-Out Stadium Event						29,000	
	Average Stadium Event					22,000		18,000
	Small Stadium Event				13,000			
	Event Centre + LP Events*			10,000				
	Event Centre		6,500					
	3,000	6,500		10,000	13,000	18,000	22,000	29,000
<b>Transit / Park &amp; Shuttle</b>	10%	10%	10%	52%	52%	52%	54%	59%
<b>Walking &amp; Cycling</b>	10%	10%	10%	11%	11%	11%	11%	13%
<b>Drive &amp; Park</b>	75%	75%	75%	32%	32%	32%	28%	21%
<b>Other**</b>	5%	5%	5%	5%	5%	5%	7%	7%

**Table 2: Lansdowne 2.0 Person Trips Per Mode for Varying Attendance Levels**

Attendance Level	Mega Event: Expanded Stadium Seating + Event Centre							
	Concurrent Sold-Out Stadium + Event Centre							40,000
	Sold-Out Stadium Event						29,000	
	Average Stadium Event					22,000		18,000
	Small Stadium Event				13,000			
	Event Centre + LP Events*			10,000				
	Event Centre		6,500					
	3,000	6,500		10,000	13,000	18,000	22,000	29,000
<b>Transit / Park &amp; Shuttle</b>	300	650	1,000	6,760	9,360	11,440	15,555	23,775
<b>Walking &amp; Cycling</b>	300	650	1,000	1,430	1,980	2,420	3,190	5,200
<b>Drive &amp; Park</b>	2,250	4,875	7,500	4,160	5,760	7,040	8,225	8,225
<b>Other**</b>	150	325	500	650	900	1,100	2,030	2,800

\* LP Events – Lansdowne Park Events and Festivals

\*\* Other – represents other modes such as RideShare (Uber/Lyft), Taxis, Drop-offs, Private Shuttle buses

## Special Events Transportation Services

### Minor Events (Less than 15,000 attendees)

#### **Free Transit Service:**

The basic elements of the TDM Plan to accommodate Minor Events at Lansdowne do not change as part of the Lansdowne 2.0 project. A key hallmark of the service delivery is the continued provision of free transit to all ticketed events at Lansdowne, irrespective of event size, starting two hours prior to the start of events, and up to two hours after the end of events.

Depending on the anticipated attendance levels, enhancements on OC Transpo Routes 6 and 7 through additional trips are arranged by OC Transpo as needed to ensure adequate transit capacity is provided.

The cost of additional transit service enhancement is provided at no additional cost to event goers and is borne by OSEG.

#### **Walking and Cycling:**

Information promoting walking and cycling as a convenient way to travel to TD Place is featured throughout TD Place communications. Walking and cycling to Lansdowne is promoted through the use of the scenic multi-use pathway along the Rideau Canal and the use of the 285 bike rings provided on-site. Additional information on walking and cycling connections is provided on the City of Ottawa Lansdowne Park website.

#### **On-Site Parking Management:**

On-site parking at TD Place is available for use during special events. As on-site parking is limited and shared with other visitors to Lansdowne, event attendees are encouraged to pre-purchase on-site parking to reserve a space and to limit increased drive-up demand. This messaging is provided for minor events held at Lansdowne including concerts, events, Ottawa 67's, Atletico, BlackJacks, and PWHL games.

#### **Alternative Off-Site Parking:**

To limit drive-up parking at Lansdowne for minor events, OSEG is currently identifying nearby off-street parking near Lansdowne as an alternative to on-site parking, particularly for use during minor events when Park & Shuttle service is not provided.

Intercepting inbound auto travelers for Minor Events at alternative parking facilities that are typically underutilized on weekday evenings and weekends has the potential to reduce direct auto travel to Lansdowne. Alternative parking information is currently provided on

the TD Place website and provides information on nearby lots that are within a 20, 30, and 40-minute walk to Lansdowne. In addition, parking facilities with access to Routes 6 and 7 are identified for convenience to address First / Last Mile connectivity through free transit service on Bank Street for ticket holders.

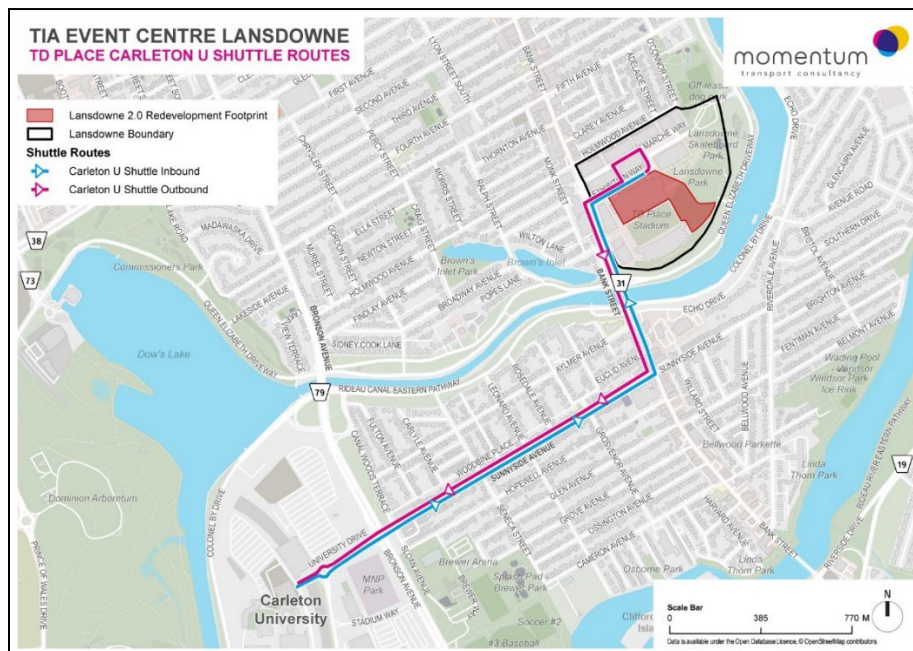
OSEG is currently exploring options to aggregate the availability of off-site alternative parking, and the ability to pre-purchase or reserve alternative nearby off-street parking, through third party parking service providers.

**Carleton U Shuttle:**

For Ottawa 67’s and PHWL Ottawa games, park & shuttle service is provided to ticket holders from Carleton University. Ticket holders can park at Carleton University starting 90 minutes before the start of Ottawa 67’s and PHWL Ottawa games with services provided until 60 minutes post-games. The cost of parking and shuttle service is free to ticket holders and is borne by OSEG. Shuttle bus service is provided from Carleton University’s P18 Parkade with service provided to Lansdowne provided through Sunnyside Avenue and Bank Street.

While the Carleton U shuttle is currently used to support Ottawa 67’s and PHWL Ottawa events, it can also be used to supplement enhanced transit coverage for concurrent special events at Lansdowne with total on-site attendance levels exceeding the 10,000 threshold but less than 15,000 attendees where further transportation services are required to support major events.

**Figure 1: Carleton U Shuttle**





## Major Events (More than 15,000 attendees)

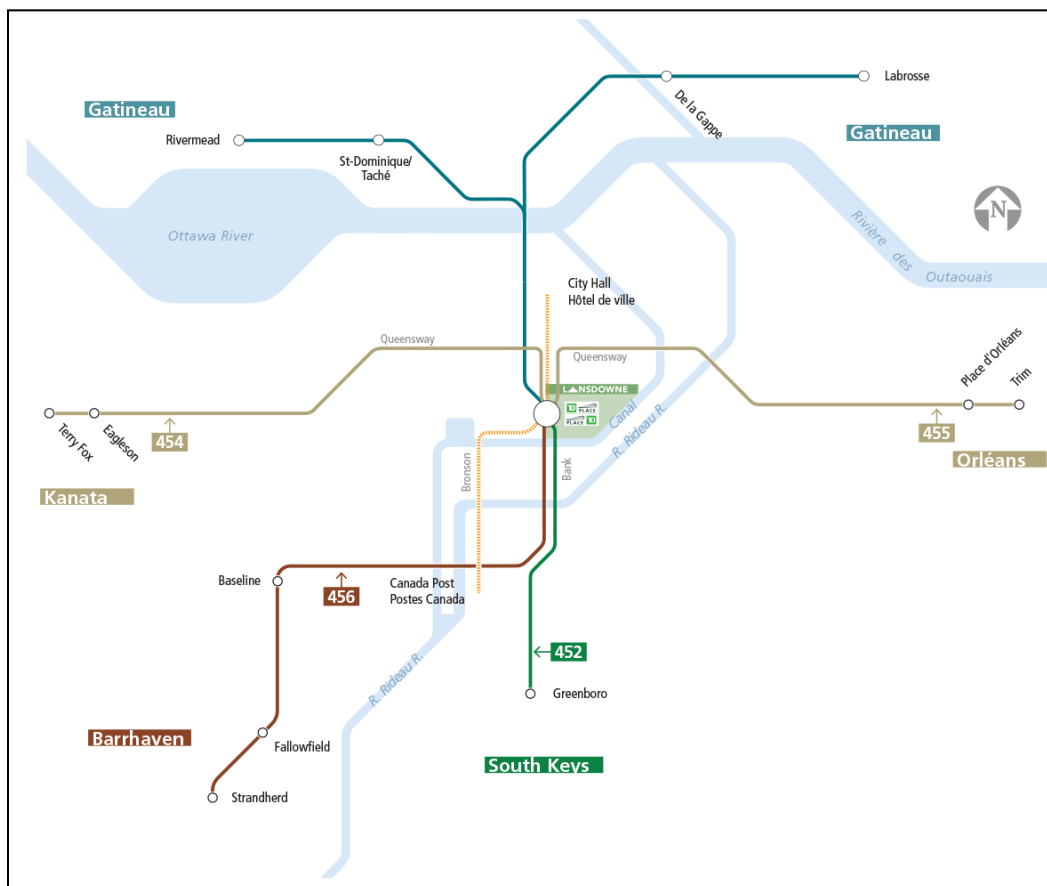
No significant changes are anticipated to the provision of transportation services to support major events with attendance levels of 15,000 or more. Transportation services provided for outdoor stadium events will continue to be provided in their current format.

This includes the provision of free, direct parking and shuttle service from satellite locations that are operated by OC Transpo, the Société de Transport de l'Outaouais (STO), and OSEG.

## Enhanced Transit / Park & Shuttle:

For major events with attendance levels between 15,000 – 22,000 (stadium events), enhanced transit service and 450-series shuttles provided by OC Transpo and the STO will continue to provide service on Bank Street.

Figure 1: TD Place Park & Shuttle Network Map

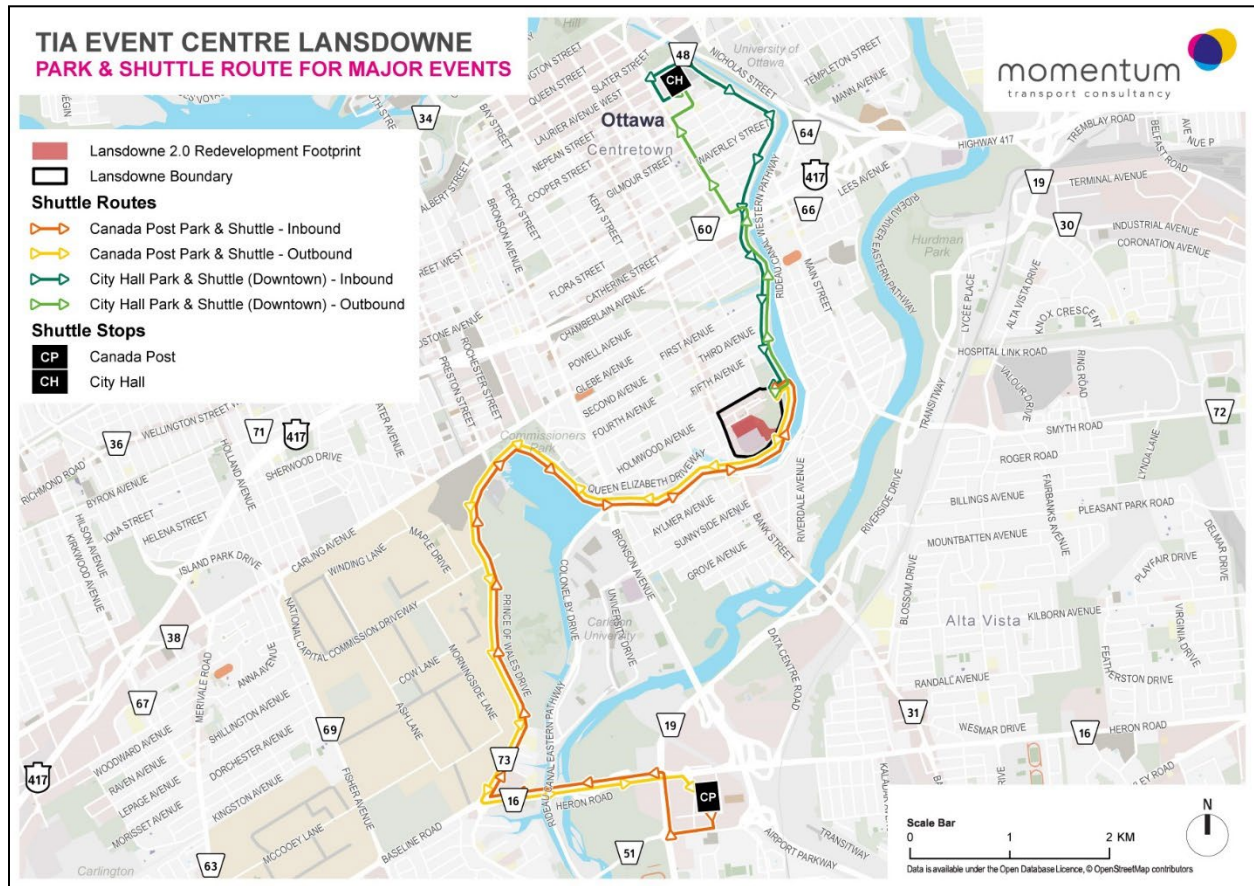


source: OC Transpo

Under Lansdowne 2.0, the use of nearby satellite parking and shuttle service from City Hall and Canada Post is expected to continue to be provided by OSEG for major events with attendance levels of 15,000 or more.

TD Place Park & Shuttle service from Canada Post and City Hall provide service to the Shuttle Loop on the east side of Lansdowne and require access on Queen Elizabeth Driveway.

**Figure 2: TD Place Park & Shuttle Routes Operated by OSEG for Major Events**



Continued cooperation and coordination with key stakeholders including the City of Ottawa and the National Capital Commission (NCC) will be required to successfully deliver Major Events at Lansdowne. QED will continue to play a significant role in supporting multimodal access to Lansdowne. In addition to supporting active mode trip access through the multi-use pathway system, QED plays a critical role in supporting vehicular access to the site during Major Events for both residents and retail patrons. The access is also used as the primary drop-off area for RideShare service providers such as Uber and Lyft, as well as Park & Shuttle services from Canada Post and City Hall.

The timing of closures on QED should be coordinated closely by the NCC, the City of Ottawa, and OSEG for Major Events. While the majority of access to Lansdowne is facilitated on the 450-series service on Bank Street, the QED will primarily accommodate parking garage access during event Ingress and Egress time periods when access on Bank Street is fully restricted to vehicular traffic due to pedestrian demands.

Opportunities to streamline and adjust Park & Shuttle services from Canada Post and City Hall should continue to be explored and changes to services provided should be informed through consultations with key stakeholders including OC Transpo, City of Ottawa, and the NCC. This includes a period evaluation of the number of satellite parking facilities needed to match service demands.

### **Walking and Cycling:**

Information promoting walking and cycling as a convenient way to travel to TD Place is featured throughout TD Place communications. Walking and cycling to Lansdowne is promoted through the use of the scenic multi-use pathway along the Rideau Canal and the use of the 285 bike rings provided on-site. Additional information on walking and cycling connections is provided on the City of Ottawa Lansdowne Park website.

For major events with attendance levels of 15,000 or more, additional bike parking is provided and promoted for free valet bike parking is provided near TD Place Gate 4 south of the Aberdeen Pavilion.

**Figure 3: TD Place Bike & Park Valet Service for Major Events (2015)**



### **On-Site Parking Management:**

For major events at Lansdowne, primarily Ottawa Redblacks CFL Football games, no on-site parking is provided for purchase and drive-up is discouraged through regular messaging and trip planning information featured on-line. A limited number of parking passes are provided to club and suite ticket holders with access. Major event attendees are strongly encouraged to utilize the free Park & Shuttle service, cycling or walk to travel to Lansdowne for major events.

### **Alternative Off-Site Parking:**

Similar to minor events, information on nearby off-street parking near Lansdowne is provided as an alternative to on-site parking.

### **Mega Events (Attendance Levels of 29,000 or more)**

Mega Events scenarios are infrequent events representative of expanded capacity or concurrently running events with attendance levels that exceed typical sold-out events at the stadium. These scenarios require additional transportation services and traffic management measures.

Under the initial Lansdowne Revitalization Plan, Mega Events were identified to accommodate expanded seating stadium events with attendance levels reaching 40,000 including large concerts, or once-in-a-lifetime jewel events such as the CFL Grey Cup.

Under Lansdowne 2.0, the definition of Mega Events has been revised to include concurrent sold-out event centre and stadium events held at Lansdowne with a combined attendance level of 29,000.

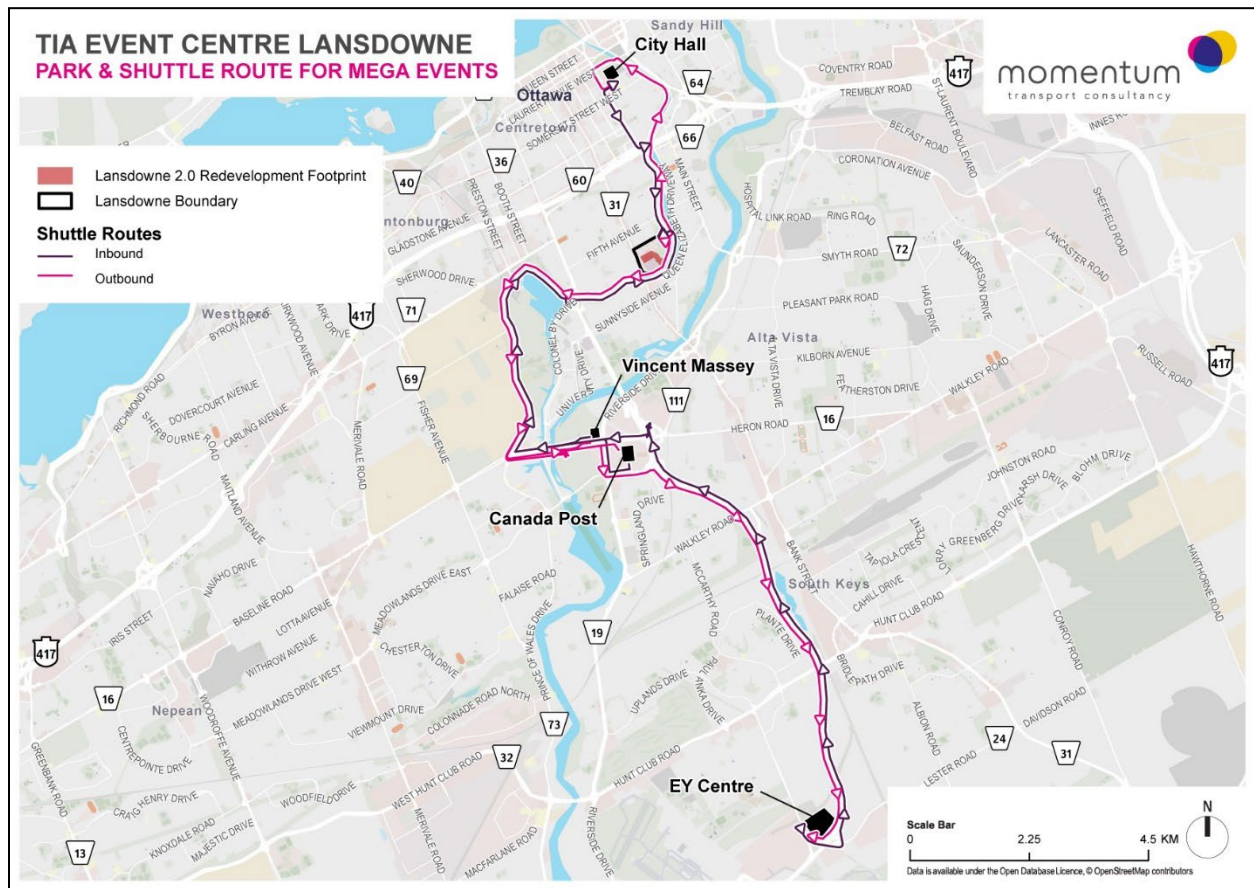
Further enhancements to 450-series service will be required to support special events with attendance levels of 29,000 or more. It is anticipated that a total of 30 to 35 additional transit trips are required across the 450-series service to meet transit demands for 40,000 person mega events.

In addition to the provision of 450-series service and TD Place Park & Shuttle service from City Hall and Canada Post, additional off-site satellite Park & Shuttle service may be required to support demands, particularly for mega events at the 40,000 person attendance level. For a 40,000 attendance mega events, additional Park & Shuttle facilities should be secured at Vincent Massey Park and/or the EY Centre depending on the attendance level and level of service requirements.

For 40,000 attendance Mega Events, restricted access on QED may be required to support enhanced Park & Shuttle operations from satellite parking locations.



Figure 4: TD Place Park & Shuttle Routes Operated by OSEG for Mega Events



### Summary of Required Transportation Services by Varying Event Size

A summary of required transit, off-site parking, and shuttle services is provided in Table 3.



**Table 3: Lansdowne 2.0 Transportation Services Required for Varying Event Sizes**

Event Size / Classification	Mega Event: Expanded Stadium Seating + Event Centre							
	Concurrent Sold-Out Stadium + Event Centre							
	Sold-Out Stadium Event							
	Average Stadium Event							
	Small Stadium Event							
	Event Centre + LP Events*							
	Event Centre							
	Transportation Services Provided	3,000	5,000	10,000	15,000	18,000	22,000	29,000
	-	-	-	-	-	-	-	
	5,000	10,000	15,000	18,000	22,000	29,000	40,000	
	Minor Events		Major Events			Mega Events		
Enhanced Transit Service	<i>Not Required</i>	Increased transit service on Bank Street Route 6 and Route 7 (as required)						
Valet Bike Parking	<i>Not Required</i>		Free, Secure Valet Bike Parking					
Park & Shuttle	<i>Not Required</i>		As Required (Carleton U Shuttle)	Enhanced Transit 450-Series shuttle service from OC Transpo / STO				
				Satellite Park & Shuttle Service from City Hall and Canada Post				
Additional Park & Shuttle Service	<i>Not Required</i>						Additional Service from Vincent Massey and/or EY Centre (As Required)	

## **Additional TDM Opportunities**

The July 2023 TDM Strategy Report developed for Lansdowne 2.0 recognizes the challenges associated with Minor Events at Lansdowne, particularly on busy weekend periods with overlapping programming, and the challenges associated with traffic delays experienced by all road users on Bank Street. These challenges are especially pronounced when there are programming closures on QED to support community programming such as Winterlude, the Ottawa Race Weekend events, and the most recent closures of QED on weekends as part of a pilot project to support active modes on the scenic parkway. These closures result in a significant diversion of traffic onto Bank Street which increases delays and cut through traffic on local neighborhood streets. The report identified future opportunities to further enhance the TDM program for special events at Lansdowne.

## **Transit Priority Improvements**

Opportunities to improve transit service along Bank Street for Routes 6 and 7 will be evaluated through the City of Ottawa's Active and Transit Operations study for Bank Street. Potential improvements, which may include transit signal priority measures and enhanced bus shelters, can improve transit service reliability and passenger comfort. These improvements to service reliability and passenger comfort on Bank Street will help to promote transit service to Lansdowne as a viable and attractive option for day-to-day travel, as well as for Minor Events.

## **Fare Free Zone Pilot**

Opportunities to promote transit use, particularly on busy weekends, could potentially include exploring the feasibility of introducing a "Fare Free" zone on Bank Street to support local businesses, including Lansdowne, and reduce the reliance on auto travel.

This initiative can support programming at Lansdowne during busy weekend periods that include the Ottawa Farmer's Market or 613Flea, as well as merchants along Bank Street between downtown Ottawa and the Glebe. The "Fare Free" zone can be provided on Route 6 and/or 7 during certain hours and specific days of the week. For example, service delivery could potentially include providing "Fare Free" service on Route 7, between Carleton University and downtown Ottawa (Rideau Station), on Saturdays and Sundays between the hours of 9:00 AM and 3:00 PM.

The feasibility and challenges of providing "Fare Free" service on Bank Street will need to be studied and evaluated. This type of service should be considered as part of the traffic management strategy to support alternative modes of transportation and to reduce traffic impacts associated with events such as Winterlude, Ottawa Race Weekend, etc.

## Introduction

The City of Ottawa's *Transportation Impact Assessment (TIA) Guidelines* (specifically Module 4.1—Development Design) requires proponents of qualifying developments to use the City's **TDM-Supportive Development Design and Infrastructure Checklist** to assess the opportunity to implement design elements that are supportive of sustainable modes. The goal of this assessment is to ensure that the development provides safe and efficient access for all users, while creating an environment that encourages walking, cycling and transit use.

The remaining sections of this document are:

- Using the Checklist
- Glossary
- TDM-Supportive Development Design and Infrastructure Checklist: Non-Residential Developments
- TDM-Supportive Development Design and Infrastructure Checklist: Residential Developments

**Readers are encouraged to contact the City of Ottawa's TDM Officer for any guidance and assistance they require to complete this checklist.**

## Using the Checklist

This **TDM-Supportive Development Design and Infrastructure Checklist** document includes two actual checklists, one for non-residential developments (office, institutional, retail or industrial) and one for residential developments (multi-family or condominium only; subdivisions are exempt). Readers may download the applicable checklist in electronic format and complete it electronically, or print it out and complete it by hand. As an alternative, they may create a freestanding document that lists the design and infrastructure measures being proposed and provides additional detail on them.

Each measure in the checklist is numbered for easy reference. Each measure is also flagged as:

- **REQUIRED** —The Official Plan or Zoning By-law provides related guidance that must be followed.
- **BASIC** —The measure is generally feasible and effective, and in most cases would benefit the development and its users.
- **BETTER** —The measure could maximize support for users of sustainable modes, and optimize development performance.

## Glossary

This glossary defines and describes the following measures that are identified in the **TDM-Supportive Development Design and Infrastructure Checklist**:

### ***Walking & cycling: Routes***

- Building location & access points
- Facilities for walking & cycling
- Amenities for walking & cycling

### ***Walking & cycling: End-of-trip facilities***

- Bicycle parking
- Secure bicycle parking
- Shower & change facilities
- Bicycle repair station

### ***Transit***

- Walking routes to transit
- Customer amenities

### ***Ridesharing***

- Pick-up & drop-off facilities
- Carpool parking

### ***Carsharing & bikesharing***

- Carshare parking spaces
- Bikeshare station location

### ***Parking***

- Number of parking spaces
- Separate long-term & short-term parking areas

### ***Other***

- On-site amenities to minimize off-site trips

In addition to specific references made in this glossary, readers should consult the City of Ottawa's design and planning guidelines for a variety of different land uses and contexts, available on the City's website at [www.ottawa.ca](http://www.ottawa.ca). Readers may also find the following resources to be helpful:

- *Promoting Sustainable Transportation through Site Design*, Institute of Transportation Engineers, 2004 ([www.cite7.org/wpdm-package/iterp-promoting-sustainable-transportation](http://www.cite7.org/wpdm-package/iterp-promoting-sustainable-transportation))
- *Bicycle End-of-Trip Facilities: A Guide for Canadian Municipalities and Employers*, Transport Canada, 2010 ([www.fcm.ca/Documents/tools/GMF/Transport\\_Canada/BikeEndofTrip\\_EN.pdf](http://www.fcm.ca/Documents/tools/GMF/Transport_Canada/BikeEndofTrip_EN.pdf))

► ***Walking & cycling: Routes***

**Building location & access points.** Correctly positioning buildings and their entrances can help make walking convenient, comfortable and safe. Minimizing travel distances and maximizing visibility are key.

**Facilities for walking & cycling.** The Official Plan gives clear direction on the provision and design of walking and cycling facilities for both access and circulation. On larger, busier sites (e.g. multi-building campuses) the inclusion of sidewalks, pathways, marked crossings, stop signs and traffic calming features can create a safer and more supportive environment for active transportation.

**Amenities for walking & cycling.** Lighting, landscaping, benches and wayfinding can make walking and cycling safer and more secure, comfortable and accessible.

► ***Walking & cycling: End-of-trip facilities***

**Bicycle parking.** The Official Plan and Zoning By-law both address the need for adequate bicycle parking at developments. Weather protection and theft prevention are major concerns for commuters who spend hundreds or thousands of dollars on a quality bicycle. Bicycle racks should have a design that enables secure locking while preventing damage to wheels. They should be located within sight of busy areas such as main building entrances or staffed parking kiosks.

**Secure bicycle parking.** Ottawa's Zoning By-law requires a secure area for bicycles at office or residential developments having more than 50 bicycle parking spaces. Lockable outdoor bike cages or indoor storage rooms that limit access to registered users are ideal.

**Shower & change facilities.** Longer-distance cyclists, joggers and even pedestrians can need a place to shower and change at work; the lack of such facilities is a major barrier to active commuting. Lockers and drying racks provide a place to store gear away from workspaces, and showers and grooming stations allow commuters to make themselves presentable for the office.

**Bicycle repair station.** Cycling commuters can experience maintenance issues that make the homeward trip difficult or impossible. A small supply of tools (e.g. air pump, Allen keys, wrenches) and supplies (e.g. inner tube patches, chain lubricant) in the workplace can help.

► ***Transit***

**Customer amenities.** Larger developments that feature an on-site transit stop can make transit use more attractive by providing shelters, lighting and benches. Even better, they could integrate the passenger waiting area into a building entrance.



► **Ridesharing**

**Pick-up & drop-off facilities.** Having a safe place to load or unload passengers (for carpools as well as taxis and ride-hailing services) without obstructing pedestrians, cyclists or other vehicles can help make carpooling work.

**Carpool parking.** At destinations with large parking lots (or lots that regularly fill to capacity), signed priority carpool parking spaces can be an effective ridesharing incentive. Priority spaces are frequently abused by non-carpoolers, so a system to provide registered users with vehicle identification tags is recommended.

► **Carsharing & bikesharing**

**Carshare parking spaces.** For developments where carsharing could be an attractive option for employees, visitors or residents, ensuring an attractive location for future carshare parking spaces can avoid challenges associated with future retrofits.

**Bikeshare station location.** For developments where bikesharing could be an attractive option for employees, visitor or residents, ensuring an attractive location for a future bikeshare station can avoid challenges associated with future retrofits.

► **Parking**

**Number of parking spaces.** Parking capacity is an important variable in development design, as it can either support or subvert the mode share targets set during the transportation impact analysis (TIA). While the Zoning By-law establishes any minimum and/or maximum requirements for parking capacity, it also allows a reduction in any minimum to reflect the existence of on-site shower, change and locker rooms provided for cyclists.

**Separate long-term & short-term parking areas.** Because access to unused parking spaces can be a powerful incentive to drive, developments can better manage their parking supply and travel behaviours by separating long-term from short-term parking through the use of landscaping, gated controls or signs. Doing so makes it difficult for long-term parkers (e.g. commuters) to park in short-term areas (e.g. for visitors) as long as enforcement occurs; it also protects long-term parking capacity for its intended users.

► **Other**

**On-site amenities to minimize off-site trips.** Developments that offer facilities to limit employees' need for a car during their commute (e.g. to drop off children at daycare) or during their workday (e.g. to hit the gym) can free employees to make the commuting decision that otherwise works best for them.

**TDM-Supportive Development Design and Infrastructure Checklist:**  
*Non-Residential Developments (office, institutional, retail or industrial)*

<b>Legend</b>	
<b>REQUIRED</b>	The Official Plan or Zoning By-law provides related guidance that must be followed
<b>BASIC</b>	The measure is generally feasible and effective, and in most cases would benefit the development and its users
<b>BETTER</b>	The measure could maximize support for users of sustainable modes, and optimize development performance

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>1. WALKING &amp; CYCLING: ROUTES</b>		
<b>1.1 Building location &amp; access points</b>		
BASIC	1.1.1 Locate building close to the street, and do not locate parking areas between the street and building entrances	<input checked="" type="checkbox"/>
BASIC	1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	<input checked="" type="checkbox"/>
BASIC	1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	<input checked="" type="checkbox"/>
<b>1.2 Facilities for walking &amp; cycling</b>		
REQUIRED	1.2.1 Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations ( <i>see Official Plan policy 4.3.3</i> )	<input checked="" type="checkbox"/>
REQUIRED	1.2.2 Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible ( <i>see Official Plan policy 4.3.12</i> )	<input checked="" type="checkbox"/>

<b>TDM-supportive design &amp; infrastructure measures: <i>Non-residential developments</i></b>		<b>Check if completed &amp; add descriptions, explanations or plan/drawing references</b>
<b>REQUIRED</b>	1.2.3 Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks ( <i>see Official Plan policy 4.3.10</i> )	<input checked="" type="checkbox"/>
<b>REQUIRED</b>	1.2.4 Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps ( <i>see Official Plan policy 4.3.10</i> )	<input checked="" type="checkbox"/>
<b>REQUIRED</b>	1.2.5 Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians ( <i>see Official Plan policy 4.3.11</i> )	<input checked="" type="checkbox"/>
<b>BASIC</b>	1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	<input checked="" type="checkbox"/>
<b>BASIC</b>	1.2.7 Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	<input checked="" type="checkbox"/>
<b>BASIC</b>	1.2.8 Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	<input checked="" type="checkbox"/>
<b>1.3 Amenities for walking &amp; cycling</b>		
<b>BASIC</b>	1.3.1 Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	<input checked="" type="checkbox"/>
<b>BASIC</b>	1.3.2 Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	<input checked="" type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>2. WALKING &amp; CYCLING: END-OF-TRIP FACILITIES</b>		
<b>2.1 Bicycle parking</b>		
REQUIRED	2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see <i>Official Plan policy 4.3.6</i> )	<input checked="" type="checkbox"/>
REQUIRED	2.1.2 Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (see <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
REQUIRED	2.1.3 Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
BASIC	2.1.4 Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	<input type="checkbox"/>
BETTER	2.1.5 Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	<input type="checkbox"/>
<b>2.2 Secure bicycle parking</b>		
REQUIRED	2.2.1 Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see <i>Zoning By-law Section 111</i> )	<input type="checkbox"/>
BETTER	2.2.2 Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	<input type="checkbox"/>
<b>2.3 Shower &amp; change facilities</b>		
BASIC	2.3.1 Provide shower and change facilities for the use of active commuters	<input type="checkbox"/> N/A
BETTER	2.3.2 In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	<input type="checkbox"/> N/A
<b>2.4 Bicycle repair station</b>		
BETTER	2.4.1 Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	<input type="checkbox"/> N/A

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>3. TRANSIT</b>		
<b>3.1 Customer amenities</b>		
BASIC	3.1.1 Provide shelters, lighting and benches at any on-site transit stops	<input checked="" type="checkbox"/>
BASIC	3.1.2 Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	<input type="checkbox"/> N/A
BETTER	3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	<input type="checkbox"/> N/A
<b>4. RIDESHARING</b>		
<b>4.1 Pick-up &amp; drop-off facilities</b>		
BASIC	4.1.1 Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	<input checked="" type="checkbox"/>
<b>4.2 Carpool parking</b>		
BASIC	4.2.1 Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	<input type="checkbox"/> N/A
BETTER	4.2.2 At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	<input type="checkbox"/> N/A
<b>5. CARSHARING &amp; BIKESHARING</b>		
<b>5.1 Carshare parking spaces</b>		
BETTER	5.1.1 Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces ( <i>see Zoning By-law Section 94</i> )	<input type="checkbox"/> To be confirmed as part of Phase 3 of Lansdowne 2.0
<b>5.2 Bikeshare station location</b>		
BETTER	5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	<input type="checkbox"/> To be confirmed as part of Phase 3 of Lansdowne 2.0



TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>6. PARKING</b>		
<b>6.1 Number of parking spaces</b>		
<b>REQUIRED</b>	6.1.1 Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	<input checked="" type="checkbox"/>
<b>BASIC</b>	6.1.2 Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	<input checked="" type="checkbox"/>
<b>BASIC</b>	6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly ( <i>see Zoning By-law Section 104</i> )	<input checked="" type="checkbox"/>
<b>BETTER</b>	6.1.4 Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking ( <i>see Zoning By-law Section 111</i> )	<input type="checkbox"/> N/A
<b>6.2 Separate long-term &amp; short-term parking areas</b>		
<b>BETTER</b>	6.2.1 Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	<input checked="" type="checkbox"/>
<b>7. OTHER</b>		
<b>7.1 On-site amenities to minimize off-site trips</b>		
<b>BETTER</b>	7.1.1 Provide on-site amenities to minimize mid-day or mid-commute errands	<input checked="" type="checkbox"/>

## Introduction

The City of Ottawa's *Transportation Impact Assessment (TIA) Guidelines* (specifically Module 4.3—Transportation Demand Management) requires proponents of qualifying developments to assess the context, need and opportunity for transportation demand management (TDM) measures at their development. The guidelines require that proponents complete the City's **TDM Measures Checklist**, at a minimum, to identify any TDM measures being proposed.

The remaining sections of this document are:

- Using the Checklist
- Glossary
- TDM Measures Checklist: Non-Residential Developments
- TDM Measures Checklist: Residential developments

**Readers are encouraged to contact the City of Ottawa's TDM Officer for any guidance and assistance they require to complete this checklist.**

## Using the Checklist

The City's *TIA Guidelines* are designed so that *Module 3.1—Development-Generated Travel Demand*, *Module 4.1—Development Design*, and *Module 4.2—Parking* are complete before a proponent begins *Module 4.3—Transportation Demand Management*.

Within Module 4.3, *Element 4.3.1—Context for TDM* and *Element 4.3.2—Need and Opportunity* are intended to create an understanding of the need for any TDM measures, and of the results they are expected to achieve or support. Once those two elements are complete, proponents begin *Element 4.3.3—TDM Program* that requires proponents to identify proposed TDM measures using the **TDM Measures Checklist**, at a minimum. The *TIA Guidelines* note that the City may require additional analysis for large or complex development proposals, or those that represent a higher degree of performance risk; as well, proponents proposing TDM measures for a new development must also propose an implementation plan that addresses planning and coordination, funding and human resources, timelines for action, performance targets and monitoring requirements.

This **TDM Measures Checklist** document includes two actual checklists, one for non-residential developments (office, institutional, retail or industrial) and one for residential developments (multi-family, condominium or subdivision). Readers may download the applicable checklist in electronic format and complete it electronically, or print it out and complete it by hand. As an alternative, they may create a freestanding document that lists the TDM measures being proposed and provides additional detail on them, including an implementation plan as required by the City's *TIA Guidelines*.

Each measure in the checklist is numbered for easy reference. Each measure is also flagged as:

- **BASIC** —The measure is generally feasible and effective, and in most cases would benefit the development and its users.
- **BETTER** —The measure could maximize support for users of sustainable modes, and optimize development performance.
- **★** —The measure is one of the most dependably effective tools to encourage the use of sustainable modes.

## **Glossary**

This glossary defines and describes the following measures that are identified in the **TDM Measures Checklist**:

<p><b><i>TDM program management</i></b></p> <ul style="list-style-type: none"><li>▪ Program coordinator</li><li>▪ Travel surveys</li></ul> <p><b><i>Parking</i></b></p> <ul style="list-style-type: none"><li>▪ Priced parking</li></ul> <p><b><i>Walking &amp; cycling</i></b></p> <ul style="list-style-type: none"><li>▪ Information on walking/cycling routes &amp; destinations</li><li>▪ Bicycle skills training</li><li>▪ Valet bike parking</li></ul> <p><b><i>Transit</i></b></p> <ul style="list-style-type: none"><li>▪ Transit information</li><li>▪ Transit fare incentives</li><li>▪ Enhanced public transit service</li><li>▪ Private transit service</li></ul> <p><b><i>Ridesharing</i></b></p> <ul style="list-style-type: none"><li>▪ Ridematching service</li><li>▪ Carpool parking price incentives</li><li>▪ Vanpool service</li></ul> <p><b><i>Carsharing &amp; bikesharing</i></b></p> <ul style="list-style-type: none"><li>▪ Bikeshare stations &amp; memberships</li><li>▪ Carshare vehicles &amp; memberships</li></ul> <p><b><i>TDM marketing &amp; communications</i></b></p> <ul style="list-style-type: none"><li>▪ Multimodal travel information</li><li>▪ Personalized trip planning</li><li>▪ Promotions</li></ul> <p><b><i>Other incentives &amp; amenities</i></b></p> <ul style="list-style-type: none"><li>▪ Emergency ride home</li><li>▪ Alternative work arrangements</li><li>▪ Local business travel options</li><li>▪ Commuter incentives</li><li>▪ On-site amenities</li></ul>
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For further information on selecting and implementing TDM measures (particularly as they apply to non-residential developments, with a focus on workplaces), readers may find it helpful to consult Transport Canada's *Workplace Travel Plans: Guidance for Canadian Employers*, which can be downloaded in English and French from the ACT Canada website at [www.actcanada.com/resources/act-resources](http://www.actcanada.com/resources/act-resources).

► ***TDM program management***

While some TDM measures can be implemented with a minimum of effort through routine channels (e.g. parking or human resources), more complex measures or a larger development site may warrant assigning responsibility for TDM program coordination to a designated person either inside or outside the implementing organization. Similarly, some TDM measures are more effective if they are targeted or customized for specific audiences, and would benefit from the collection of related information.

**Program coordinator.** This person is charged with day-to-day TDM program development and implementation. Only in very large employers with thousands of workers is this likely to be a full-time, dedicated position. Usually, it is added to an existing role in parking, real estate, human resources or environmental management. In practice, this role may be called TDM coordinator, commute trip reduction coordinator or employee transportation coordinator. The City of Ottawa can identify external resources (e.g. non-profit organizations or consultants) that could provide these services.

**Travel surveys.** Travel surveys are most commonly conducted at workplaces, but can be helpful in other settings. They identify how and why people travel the way they do, and what barriers and opportunities exist for different behaviours. They usually capture the following information:

- *Personal data* including home address or postal code, destination, job type or function, employment status (full-time, part-time and/or teleworker), gender, age and hours of work
- *Commute information* including distance or time for the trip between home and work, usual methods of commuting, and reasons for choosing them
- *Barriers and opportunities* including why other commuting methods are unattractive, willingness to consider other options, and what improvements to other options could make them more attractive

► ***Parking***

**Priced parking.** Charging for parking is typically among the most effective ways of getting drivers to consider other travel options. While drivers may not support parking fees, they can be more accepting if the revenues are used to improve other travel options (e.g. new showers and change rooms, improved bicycle parking or subsidized transit passes). At workplaces or daytime destinations, parking discounts (e.g. early bird specials, daily passes that cost significantly less than the equivalent hourly charge, monthly passes that cost significantly less than the equivalent daily charge) encourage long-term parking and discourage the use of other travel options. For residential uses, unbundling parking costs from dwelling purchase, lease or rental costs provides an incentive for residents to own fewer cars, and can reduce car use and the costs of parking provision.

► **Walking & cycling**

Active transportation options like cycling and walking are particularly attractive for short trips (typically up to 5 km and 2 km, respectively). Other supportive factors include an active, health-conscious audience, and development proximity to high-quality walking and cycling networks. Common challenges to active transportation include rain, darkness, snowy or icy conditions, personal safety concerns, the potential for bicycle theft, and a lack of shower and change facilities for those making longer trips.

**Information on walking/cycling routes & destinations.** Ottawa, Gatineau and the National Capital Commission all publish maps to help people identify the most convenient and comfortable walking or cycling routes.

**Bicycle skills training.** Potential cyclists can be intimidated by the need to ride on roads shared with motor vehicles. This barrier can be reduced or eliminated by offering cycling skills training to interested cyclists (e.g. CAN-BIKE certification courses).

**Valet bike parking.** For large events, temporary “valet parking” areas can be easily set up to maximize convenience and security for cyclists. Experienced local non-profit groups can help.

► **Transit**

**Transit information.** Difficulty in finding or understanding basic information on transit fares, routes and schedules can prevent people from trying transit. Employers can help by providing online links to OC Transpo and STO websites. Transit users also appreciate visible maps and schedules of transit routes that serve the site; even better, a screen that shows real-time transit arrival information is particularly useful at sites with many transit users and an adjacent transit stop or station.

**Transit fare incentives.** Free or subsidized transit fares are an attractive incentive for non-transit riders to try transit. Many non-users are unsure of how to pay a fare, and providing tickets or a preloaded PRESTO card (or, for special events, pre-arranging with OC Transpo that transit fares are included with event tickets) overcome that barrier.

**Enhanced public transit service.** OC Transpo may adjust transit routes, stop locations, service hours or frequencies for an agreed fee under contract, or at no cost where warranted by the potential ridership increase. Information provided by a survey of people who travel to a given development can support these decisions.

**Private transit service.** At remote suburban or rural workplaces, a poor transit connection to the nearest rapid transit station can be an obstacle for potential transit users, and an employer in this situation could initiate a private shuttle service to make transit use more feasible or attractive. Other circumstances where a shuttle makes sense include large special events, or a residential development for people with limited independent mobility who still require regular access to shops and services.



### ► **Ridesharing**

Ridesharing's potential is greatest in situations where transit ridership is low, where parking costs are high, and/or where large numbers of car commuters (e.g. employees or full-time students) live reasonably far from the workplace.

**Ridematching service.** Potential carpoolers in Ottawa are served by [www.OttawaRideMatch.com](http://www.OttawaRideMatch.com), an online service to help people find carpool partners. Employers can arrange for a dedicated portal where their employees can search for potential carpool partners only among their colleagues, if they desire. Some very large employers may establish internal ridematching services, to maximize employee uptake and corporate control. Ridematching service providers typically include a waiver to relieve employers of liability when their employees start carpooling through a ridematching service. Ridesharing with co-workers also tends to eliminate security concerns.

**Carpool parking price incentives.** Discounted parking fees for carpools can be an extra incentive to rideshare.

**Vanpool service.** Vanpools operate in the Toronto and Vancouver metropolitan areas, where vans that carry up to about ten occupants are driven by one of the vanpool members. Vanpools tend to operate on a cost-recovery basis, and are most practical for long-distance commutes where transit is not an option. Current legislation in Ontario does not permit third-party (i.e. private or non-profit) vanpool services, but does permit employers to operate internal vanpools.

### ► **Carsharing & bikesharing**

**Bikeshare station & memberships.** VeloGO Bike Share and Right Bike both operate bikesharing services in Ottawa. Developments that would benefit from having a bikeshare station installed at or near their development may negotiate directly with either service provider.

**Carshare vehicles & memberships.** VRTUCAR and Zipcar both operate carsharing services in Ottawa, for use by the general public or by businesses as an alternative to corporate fleets. Carsharing services offer 24-hour access, self-serve reservation systems, itemized monthly billings, and outsourcing of all financing, insurance, maintenance and administrative responsibilities.

### ► **TDM marketing & communications**

**Multimodal travel information.** Aside from mode-specific information discussed elsewhere in this document, multimodal information that identifies and explains the full range of travel options available to people can be very influential—especially when provided at times and locations where individuals are actively choosing among those options. Examples include: employees when their employer is relocating, or when they are joining a new employer; students when they are starting a program at a new institution; visitors or customers travelling to an unfamiliar destination, or when faced with new options (e.g. shuttle services or parking restrictions); and residents when they purchase or occupy a residence that is new to them.

**Personalized trip planning.** As an extension to the simple provision of information, this technique (also known as *individualized marketing*) is effective in helping people make more sustainable travel choices. The approach involves identifying who is most likely to change their travel choices (notably relocating employees, students or residents) giving them customized information, training and incentives to support them in making that change. It may be conducted with assistance from an external service provider with the necessary skills, and delivered in a variety of settings including workplaces and homes.

**Promotions.** Special events and incentives can raise awareness and encourage individuals to examine and try new travel options.

- *Special events* can help attract attention, build participation and celebrate successes. Events that have been held in Ottawa include Earth Day (in April) Bike to Work Month (in May), Environment Week (early June), International Car Free Day (September 22), and Canadian Ridesharing Week (October). At workplaces or educational institutions, similarly effective internal events could include workshops, lunch-and-learns, inter-departmental challenges, pancake breakfasts, and so on.
- *Incentives* can encourage trial of sustainable modes, and might include loyalty rewards for duration or consistency of activity (e.g. 1,000 km commuted by bicycle), participation prizes (e.g. for completing a survey or joining a special event), or personal recognition that highlights individual accomplishments.

#### ► **Other incentives & amenities**

**Emergency ride home.** This measure assures non-driving commuters that they will be able to get home quickly and conveniently in case of family emergency (or in some workplaces, in case of unexpected overtime, severe weather conditions, or the early departure of a carpool driver) by offering a chit or reimbursement for taxi, carshare or rental car usage. Limits on annual usage or cost per employee may be set, although across North America the actual rates of usage are typically very low.

**Alternative work arrangements.** A number of alternatives to the standard 9-to-5, Monday-to-Friday workweek can support sustainable commuting (and work-life balance) at workplaces:

- *Flexible working hours* allow transit commuters to take advantage of the fastest and most convenient transit services, and allow potential carpoolers to include people who work slightly different schedules in their search for carpool partners. They also allow active commuters to travel at least one direction in daylight, either in the morning or the afternoon, during the winter.
- *Compressed workweeks* allow employees to work their required hours over fewer days (e.g. five days in four, or ten days in nine), eliminating the need to commute on certain days. For employees, this can promote work-life balance and gives flexibility for appointments. For employers, this can permit extended service hours as well as reduced parking demands if employees stagger their days off.
- *Telework* is a normal part of many workplaces. It helps reduce commuting activity, and can lead to significant cost savings through workspace sharing. Telework initiatives involve many stakeholders, and may face as much resistance as support within an organization. Consultation, education and training are helpful.

**Local business travel options.** A common obstacle for people who might prefer to not drive to work is that their employer requires them to bring a car to work so they can make business trips during the day. Giving employees convenient alternatives to private cars for local business travel during the workday makes walking, cycling, transit or carpooling in someone else's car more practical.

- *Walking and cycling*—Active transportation can be a convenient and enjoyable way to make short business trips. They can also reduce employer expenses, although they may require extra travel time. Providing a fleet of shared bikes, or reimbursing cyclists for the kilometres they ride, are inexpensive ways to validate their choice.
- *Public transit*—Transit can be convenient and inexpensive compared to driving. OC Transpo's PRESTO cards are transferable among employees and automatically reloadable, making them the perfect tool for enabling transit use during the day.
- *Ridesharing*—When multiple employees attend the same off-site meeting or event, they can be reminded to carpool whenever possible.
- *Taxis or ride-hailing*—Taxis and ride-hailing can eliminate parking costs, save time and eliminate collision liability concerns. Taxi chits eliminate cash transactions and minimize paperwork.
  - *Fleet vehicles or carsharing*—Fleet vehicles can be cost-effective for high travel volumes, while carsharing is a great option for less frequent trips.
  - *Interoffice shuttles*—Employers with multiple worksites in the region could use a shuttle service to move people as well as mail or supplies.
  - *Videoconferencing*—New technologies mean that staying in the office to hold meetings electronically is more viable, affordable and productive than ever.

**Commuter incentives.** Financial incentives can help create a level playing field and support commuting by sustainable modes. A "commuting allowance" given to all employees as a taxable benefit is one such incentive; employees who choose to drive could then be charged for parking, while other employees could use the allowance for transit fares or cycling equipment, or for spending or saving. (Note that in the United States this practice is known as "parking cash-out," and is popular because commuting allowances are not taxable up to a certain limit). Alternatively, a monthly commuting allowance for non-driving employees would give drivers an incentive to choose a different commuting mode. Another practical incentive for active commuters or transit users is to offer them discounted "rainy day" parking passes for a small number of days each month.

**On-site amenities.** Developments that offer services to limit employees' need for a car during their commute (e.g. to drop off clothing at the dry cleaners) or during their workday (e.g. to buy lunch) can free employees to make the commuting decision that otherwise works best for them.

**TDM Measures Checklist:**  
*Non-Residential Developments (office, institutional, retail or industrial)*

<b>Legend</b>	
<b>BASIC</b>	The measure is generally feasible and effective, and in most cases would benefit the development and its users
<b>BETTER</b>	The measure could maximize support for users of sustainable modes, and optimize development performance
★	The measure is one of the most dependably effective tools to encourage the use of sustainable modes

TDM measures: <i>Non-residential developments</i>		Check if proposed & add descriptions
<b>1. TDM PROGRAM MANAGEMENT</b>		
<b>1.1 Program coordinator</b>		
BASIC	★	1.1.1 Designate an internal coordinator, or contract with an external coordinator
		<input checked="" type="checkbox"/> Currently in place
<b>1.2 Travel surveys</b>		
BETTER		1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress
		<input checked="" type="checkbox"/> Currently in place
<b>2. WALKING AND CYCLING</b>		
<b>2.1 Information on walking/cycling routes &amp; destinations</b>		
BASIC		2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances
		<input checked="" type="checkbox"/>
<b>2.2 Bicycle skills training</b>		
<i>Commuter travel</i>		
BETTER	★	2.2.1 Offer on-site cycling courses for commuters, or subsidize off-site courses
		<input type="checkbox"/> N/A
<b>2.3 Valet bike parking</b>		
<i>Visitor travel</i>		
BETTER		2.3.1 Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)
		<input checked="" type="checkbox"/> Current provided for Major Events

TDM measures: <i>Non-residential developments</i>		Check if proposed & add descriptions
<b>3. TRANSIT</b>		
<b>3.1 Transit information</b>		
BASIC	3.1.1 Display relevant transit schedules and route maps at entrances	<input checked="" type="checkbox"/>
BASIC	3.1.2 Provide online links to OC Transpo and STO information	<input checked="" type="checkbox"/>
BETTER	3.1.3 Provide real-time arrival information display at entrances	<input type="checkbox"/> N/A
<b>3.2 Transit fare incentives</b>		
<i>Commuter travel</i>		
BETTER	3.2.1 Offer preloaded PRESTO cards to encourage commuters to use transit	<input type="checkbox"/> N/A
BETTER ★	3.2.2 Subsidize or reimburse monthly transit pass purchases by employees	<input type="checkbox"/> N/A
<i>Visitor travel</i>		
BETTER	3.2.3 Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	<input checked="" type="checkbox"/>
<b>3.3 Enhanced public transit service</b>		
<i>Commuter travel</i>		
BETTER	3.3.1 Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	<input type="checkbox"/> N/A
<i>Visitor travel</i>		
BETTER	3.3.2 Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	<input checked="" type="checkbox"/>
<b>3.4 Private transit service</b>		
<i>Commuter travel</i>		
BETTER	3.4.1 Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	<input checked="" type="checkbox"/>
<i>Visitor travel</i>		
BETTER	3.4.2 Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	<input checked="" type="checkbox"/>



TDM measures: <i>Non-residential developments</i>		Check if proposed & add descriptions
<b>4. RIDESHARING</b>		
<b>4.1 Ridematching service</b>		
<i>Commuter travel</i>		
BASIC ★	4.1.1 Provide a dedicated ridematching portal at OttawaRideMatch.com	<input type="checkbox"/> N/A
<b>4.2 Carpool parking price incentives</b>		
<i>Commuter travel</i>		
BETTER	4.2.1 Provide discounts on parking costs for registered carpools	<input type="checkbox"/> N/A
<b>4.3 Vanpool service</b>		
<i>Commuter travel</i>		
BETTER	4.3.1 Provide a vanpooling service for long-distance commuters	<input type="checkbox"/> N/A
<b>5. CARSHARING &amp; BIKESHARING</b>		
<b>5.1 Bikeshare stations &amp; memberships</b>		
BETTER	5.1.1 Contract with provider to install on-site bikeshare station for use by commuters and visitors	<input type="checkbox"/> N/A
<i>Commuter travel</i>		
BETTER	5.1.2 Provide employees with bikeshare memberships for local business travel	<input type="checkbox"/> N/A
<b>5.2 Carshare vehicles &amp; memberships</b>		
<i>Commuter travel</i>		
BETTER	5.2.1 Contract with provider to install on-site carshare vehicles and promote their use by tenants	<input type="checkbox"/> N/A
BETTER	5.2.2 Provide employees with carshare memberships for local business travel	<input type="checkbox"/> N/A
<b>6. PARKING</b>		
<b>6.1 Priced parking</b>		
<i>Commuter travel</i>		
BASIC ★	6.1.1 Charge for long-term parking (daily, weekly, monthly)	<input checked="" type="checkbox"/>
BASIC	6.1.2 Unbundle parking cost from lease rates at multi-tenant sites	<input checked="" type="checkbox"/>
<i>Visitor travel</i>		
BETTER	6.1.3 Charge for short-term parking (hourly)	<input checked="" type="checkbox"/>

TDM measures: <i>Non-residential developments</i>		Check if proposed & add descriptions
<b>7. TDM MARKETING &amp; COMMUNICATIONS</b>		
<b>7.1 Multimodal travel information</b>		
<i>Commuter travel</i>		
BASIC ★	7.1.1 Provide a multimodal travel option information package to new/relocating employees and students	<input checked="" type="checkbox"/>
<i>Visitor travel</i>		
BETTER ★	7.1.2 Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	<input checked="" type="checkbox"/>
<b>7.2 Personalized trip planning</b>		
<i>Commuter travel</i>		
BETTER ★	7.2.1 Offer personalized trip planning to new/relocating employees	<input type="checkbox"/> N/A
<b>7.3 Promotions</b>		
<i>Commuter travel</i>		
BETTER	7.3.1 Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	<input checked="" type="checkbox"/>
<b>8. OTHER INCENTIVES &amp; AMENITIES</b>		
<b>8.1 Emergency ride home</b>		
<i>Commuter travel</i>		
BETTER ★	8.1.1 Provide emergency ride home service to non-driving commuters	<input type="checkbox"/> N/A
<b>8.2 Alternative work arrangements</b>		
<i>Commuter travel</i>		
BASIC ★	8.2.1 Encourage flexible work hours	<input type="checkbox"/>
BETTER	8.2.2 Encourage compressed workweeks	<input type="checkbox"/> N/A
BETTER ★	8.2.3 Encourage telework	<input type="checkbox"/>
<b>8.3 Local business travel options</b>		
<i>Commuter travel</i>		
BASIC ★	8.3.1 Provide local business travel options that minimize the need for employees to bring a personal car to work	<input type="checkbox"/> N/A
<b>8.4 Commuter incentives</b>		
<i>Commuter travel</i>		
BETTER	8.4.1 Offer employees a taxable, mode-neutral commuting allowance	<input type="checkbox"/> N/A
<b>8.5 On-site amenities</b>		
<i>Commuter travel</i>		
BETTER	8.5.1 Provide on-site amenities/services to minimize mid-day or mid-commute errands	<input type="checkbox"/> N/A

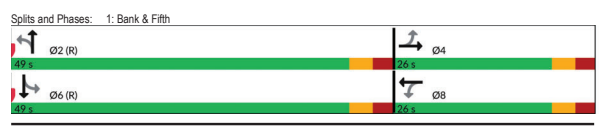
# **APPENDIX E - SYNCHRO SUMMARY SHEETS**

# **Existing Conditions**

# Existing Scenario

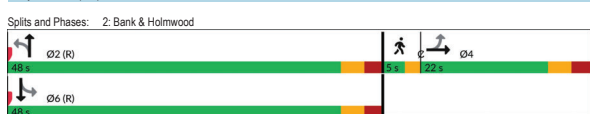
## Weekday AM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	37	57	47	49	9	534	19	410
Future Volume (vph)	37	57	47	49	9	534	19	410
Lane Group Flow (vph)	0	135	52	86	0	635	0	515
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	2	8	2	2	6	6	6
Permitted Phases	4	8	8	2	6	6	6	6
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)	20.5	20.5	20.5		43.5		43.5	
Actuated g/C Ratio	0.27	0.27	0.27		0.58		0.58	
v/c Ratio	0.36	0.18	0.21		0.38		0.32	
Control Delay (s/veh)	21.9	22.9	15.9		3.7		8.5	
Queue Delay	0.0	0.0	0.0		0.0		0.0	
Total Delay (s/veh)	21.9	22.9	15.9		3.7		8.5	
LOS	C	C	B		A		A	
Approach Delay (s/veh)	21.9		18.5		3.7		8.5	
Approach LOS	C		B		A		A	
Queue Length 50th (m)	12.9	5.6	5.7		6.6		17.1	
Queue Length 95th (m)	27.2	14.0	16.0		8.1		25.6	
Internal Link Dist (m)	49.7		112.4		195.6		190.0	
Turn Bay Length (m)			45.0					
Base Capacity (vph)	376	290	418		1655		1594	
Starvation Cap Reductn	0	0	0		0		0	
Spillback Cap Reductn	0	0	0		0		0	
Storage Cap Reductn	0	0	0		0		0	
Reduced v/c Ratio	0.36	0.18	0.21		0.38		0.32	

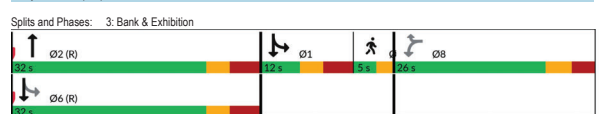


Existing Weekday AM Peak Hour Lansdowne 2.0 Transportation Impact Assessment 7:30 am 11/21/2017 Synchro 12 Report Page 1

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations						
Traffic Volume (vph)	21	16	521	11	366	
Future Volume (vph)	21	16	521	11	366	
Lane Group Flow (vph)	85	0	627	0	443	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	6	6	3	
Permitted Phases	4	2	6	6	3	
Detector Phase	4	2	2	6	6	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	
Lead/Lag		Lag				Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	10.0	57.5	57.5	57.5	57.5	
Actuated g/C Ratio	0.13	0.77	0.77	0.77	0.77	
v/c Ratio	0.47	0.29	0.21	0.21	0.21	
Control Delay (s/veh)	37.6	1.0	3.1	3.1	3.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.6	1.0	3.1	3.1	3.1	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	37.6	1.0	3.1	3.1	3.1	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	11.3	1.7	6.9	6.9	6.9	
Queue Length 95th (m)	22.6	4.5	13.2	13.2	13.2	
Internal Link Dist (m)	39.8	31.5	195.6	195.6	195.6	
Turn Bay Length (m)						
Base Capacity (vph)	298	2141	2154	2154	2154	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.29	0.29	0.21	0.21	0.21	



Lane Group	WBL	WBR	NBT	SBL	SBT	Ø6	Ø7
Lane Configurations							
Traffic Volume (vph)	51	32	495	64	332		
Future Volume (vph)	51	32	495	64	332		
Lane Group Flow (vph)	57	36	661	71	369		
Turn Type	Perm	Perm	NA	custom	NA		
Protected Phases	8	8	2	1	16	6	7
Permitted Phases	8	8	6	6	6	6	6
Detector Phase	8	8	2	1	16	6	7
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	1.0	10.0	4.0	4.0
Minimum Split (s)	26.0	26.0	27.0	7.9	44.0	8.0	8.0
Total Split (s)	26.0	26.0	32.0	12.0	32.0	5.0	5.0
Total Split (%)	34.7%	34.7%	42.7%	16.0%	43%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9		
Lead/Lag			Lead			Lag	
Lead-Lag Optimize?			Yes			Yes	
Recall Mode	None	None	C-Max	None	C-Max	None	
Act Effct Green (s)	10.3	10.3	42.7	47.8	56.1		
Actuated g/C Ratio	0.14	0.14	0.57	0.64	0.75		
v/c Ratio	0.29	0.20	0.41	0.17	0.16		
Control Delay (s/veh)	33.0	13.2	10.6	11.6	9.0		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	33.0	13.2	10.6	11.6	9.0		
LOS	C	B	B	B	A		
Approach Delay (s/veh)	25.3	10.6	9.4	9.4	9.4		
Approach LOS	C	B	B	B	A		
Queue Length 50th (m)	7.4	0.0	26.3	5.7	15.7		
Queue Length 95th (m)	17.2	7.4	40.3	12.2	22.9		
Internal Link Dist (m)	30.6	33.7	44.8	44.8	44.8		
Turn Bay Length (m)			40.0				
Base Capacity (vph)	377	316	1623	427	2350		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.15	0.11	0.41	0.17	0.16		





Queues  
6: Bank & Aylmer

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	58	14	690	509	
Future Volume (vph)	58	14	690	509	
Lane Group Flow (vph)	71	0	783	622	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	6	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	20.0	55.0	55.0	55.0	5.0
Total Split (s)	20.0	55.0	55.0	55.0	5.0
Total Split (%)	25.0%	68.8%	68.0%	60.8%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.0	50.3	50.3	50.3	
Actuated g/C Ratio	0.18	0.63	0.63	0.63	
v/c Ratio	0.26	0.42	0.33	0.33	
Control Delay (s/veh)	29.5	3.6	7.2	7.2	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	29.5	3.6	7.2	7.2	
LOS	C	A	A	A	
Approach Delay (s/veh)	29.5	3.6	7.2	7.2	
Approach LOS	C	A	A	A	
Queue Length 50th (m)	8.6	10.4	19.6		
Queue Length 95th (m)	19.9	14.6	28.1		
Internal Link Dist (m)	76.7	28.1	10.1		
Turn Bay Length (m)					
Base Capacity (vph)	281	1848	1877		
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.25	0.42	0.33	0.33	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 4 (5%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay (s/veh): 6.4	Intersection LOS: A
Intersection Capacity Utilization 51.3%	ICU Level of Service A
Analysis Period (min) 15	
m. Volume for 95th percentile queue is metered by upstream signal.	



Queues  
7: Bank & Sunnyside

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	↔
Traffic Volume (vph)	46	23	217	280	
Future Volume (vph)	46	23	217	280	
Lane Group Flow (vph)	70	0	267	363	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases	2				
Detector Phase	10	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	32.0	32.0	32.0	16.0
Total Split (s)	22.0	32.0	32.0	32.0	16.0
Total Split (%)	31.4%	45.7%	45.7%	45.7%	23%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	Max	None
Act Effct Green (s)	10.0	25.2	25.2	25.2	
Actuated g/C Ratio	0.21	0.53	0.53	0.53	
v/c Ratio	0.21	0.32	0.42	0.42	
Control Delay (s/veh)	17.6	7.7	8.6	8.6	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	17.6	7.7	8.6	8.6	
LOS	B	A	A	A	
Approach Delay (s/veh)	17.6	7.7	8.6	8.6	
Approach LOS	B	A	A	A	
Queue Length 50th (m)	4.9	11.2	16.2		
Queue Length 95th (m)	12.9	21.9	30.5		
Internal Link Dist (m)	57.2	0.1	5.9		
Turn Bay Length (m)					
Base Capacity (vph)	535	841	873		
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.13	0.32	0.42	0.42	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 47.7	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay (s/veh): 9.2	Intersection LOS: A
Intersection Capacity Utilization 51.0%	ICU Level of Service A
Analysis Period (min) 15	



Queues  
7: Bank & Sunnyside

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø6	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔			
Traffic Volume (vph)	56	58	18	58	22	945	183	374			
Future Volume (vph)	56	58	18	58	22	945	183	374			
Lane Group Flow (vph)	0	139	0	380	0	1088	0	666			
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA			
Protected Phases	4	8	8	2	2	1	1.6	3	6	7	
Permitted Phases	4	8	8	2	2	6					
Detector Phase	4	4	8	8	2	2	1	1.6			
Switch Phase											
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	1.0	17.0	1.0	
Minimum Split (s)	26.0	26.0	26.0	26.0	38.0	38.0	11.0	5.0	49.0	5.0	
Total Split (s)	26.0	26.0	26.0	26.0	38.0	38.0	11.0	5.0	38.0	5.0	
Total Split (%)	32.5%	32.5%	32.5%	32.5%	47.5%	47.5%	13.8%	6%	48%	6%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	2.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	0.0	3.0	0.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0							
Total Lost Time (s)	5.6	5.6	5.6	5.6							
Lead/Lag	Lag	Lag	Lag	Lag					Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes	Yes	
Recall Mode	None	None	None	None	C-Max	C-Max	None	None	C-Max	None	
Act Effct Green (s)	20.2	20.2	20.2	20.2	34.4	34.4	42.4				
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.43	0.53	0.53				
v/c Ratio	0.68	0.68	0.68	0.68	0.86	0.86	0.67				
Control Delay (s/veh)	43.0	43.0	43.0	43.0	30.6	30.6	19.5				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay (s/veh)	43.0	43.0	43.0	43.0	30.6	30.6	19.5				
LOS	D	D	C	C	C	C	B				
Approach Delay (s/veh)	43.0	43.0	32.4	30.6	19.5	19.5					
Approach LOS	D	D	C	C	B	B					
Queue Length 50th (m)	18.1	23.2	80.4	29.9							
Queue Length 95th (m)	35.5	48.0	112.0	48.4							
Internal Link Dist (m)	75.1	136.0	63.1	79.0							
Turn Bay Length (m)											
Base Capacity (vph)	231	469	1265	990							
Starvation Cap Reductn	0	0	0	0	0	0	0				
Spillback Cap Reductn	0	0	0	0	0	0	0				
Storage Cap Reductn	0	0	0	0	0	0	0				
Reduced v/c Ratio	0.60	0.81	0.86	0.67							

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 79 (99%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 28.4	Intersection LOS: C
Intersection Capacity Utilization 92.2%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Queues  
9: Queen Elizabeth Drive & Fifth

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	↔
Traffic Volume (vph)	46	23	217	280	
Future Volume (vph)	46	23	217	280	
Lane Group Flow (vph)	70	0	267	363	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases	2				
Detector Phase	10	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	32.0	32.0	32.0	16.0
Total Split (s)	22.0	32.0	32.0	32.0	16.0
Total Split (%)	31.4%	45.7%	45.7%	45.7%	23%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	Max	None
Act Effct Green (s)	10.0	25.2	25.2	25.2	
Actuated g/C Ratio	0.21	0.53	0.53	0.53	
v/c Ratio	0.21	0.32	0.42	0.42	
Control Delay (s/veh)	17.6	7.7	8.6	8.6	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	17.6	7.7	8.6	8.6	
LOS	B	A	A	A	
Approach Delay (s/veh)	17.6	7.7	8.6	8.6	
Approach LOS	B	A	A	A	
Queue Length 50th (m)	4.9	11.2	16.2		
Queue Length 95th (m)	12.9	21.9	30.5		
Internal Link Dist (m)	57.2	0.1	5.9		
Turn Bay Length (m)					
Base Capacity (vph)	535	841	873		
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.13	0.32	0.42	0.42	

Intersection Summary	
Cycle Length: 70	
Actuated Cycle Length: 47.7	
Natural Cycle: 70	

Intersection						
Intersection Delay, s/veh	7.6					
Intersection LOS	A					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	5	104	65	5	5	5
Future Vol, veh/h	5	104	70	5	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	116	72	6	6	6
Number of Lanes	0	1	1	0	1	0
Approach	EB	WB	SB			
Opposing Approach	WB	EB				
Opposing Lanes	1	1	0			
Conflicting Approach Left	SB		WB			
Conflicting Lanes Left	1	0	1			
Conflicting Approach Right		SB	EB			
Conflicting Lanes Right	0	1	1			
HCM Control Delay, s/veh	7.7	7.4	7.2			
HCM LOS	A	A	A			

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	0%	50%
Vol Thru, %	95%	93%	0%
Vol Right, %	0%	7%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	109	70	10
LT Vol	5	0	5
Through Vol	104	65	0
RT Vol	0	5	5
Lane Flow Rate	121	78	11
Geometry Grp	1	1	1
Degree of Util (X)	0.135	0.086	0.013
Departure Headway (Hd)	4.021	4.001	4.074
Convergence, Y/N	Yes	Yes	Yes
Cap	893	894	866
Service Time	2.041	2.03	2.157
HCM Lane V/C Ratio	0.135	0.087	0.013
HCM Control Delay, s/veh	7.7	7.4	7.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.3	0

Intersection						
Intersection Delay, s/veh	7.9					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	2	5	65	55	69	40
Future Vol, veh/h	2	5	65	55	69	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	6	72	61	77	44
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	NB			
Opposing Approach	WB	EB				
Opposing Lanes	1	1	0			
Conflicting Approach Left		NB	EB			
Conflicting Lanes Left	0	1	1			
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1	0	1			
HCM Control Delay, s/veh	6.9	8.1	7.8			
HCM LOS	A	A	A			

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	63%	0%	54%
Vol Thru, %	0%	29%	46%
Vol Right, %	37%	71%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	109	7	120
LT Vol	69	0	65
Through Vol	0	2	55
RT Vol	40	5	0
Lane Flow Rate	121	8	133
Geometry Grp	1	1	1
Degree of Util (X)	0.137	0.008	0.158
Departure Headway (Hd)	4.086	3.822	4.262
Convergence, Y/N	Yes	Yes	Yes
Cap	866	820	835
Service Time	2.164	1.915	2.32
HCM Lane V/C Ratio	0.14	0.009	0.159
HCM Control Delay, s/veh	7.8	6.9	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0	0.6

Intersection						
Intersection Delay, s/veh	7.6					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	2	5	5	119	5	5
Future Vol, veh/h	2	5	5	119	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	6	6	132	6	6
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	NB			
Opposing Approach	WB	EB	NB			
Opposing Lanes	1	1	0			
Conflicting Approach Left		NB	EB			
Conflicting Lanes Left	0	1	1			
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1	0	1			
HCM Control Delay, s/veh	6.7	7.7	7.1			
HCM LOS	A	A	A			

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	4%
Vol Thru, %	0%	29%	96%
Vol Right, %	50%	71%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	7	124
LT Vol	5	0	5
Through Vol	0	2	119
RT Vol	5	5	0
Lane Flow Rate	11	8	138
Geometry Grp	1	1	1
Degree of Util (X)	0.012	0.008	0.152
Departure Headway (Hd)	3.985	3.627	3.968
Convergence, Y/N	Yes	Yes	Yes
Cap	890	865	908
Service Time	2.045	1.656	1.972
HCM Lane V/C Ratio	0.012	0.008	0.152
HCM Control Delay, s/veh	7.1	6.7	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.5

Intersection												
Intersection Delay, s/veh	7.8											
Intersection LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↔				↔
Traffic Vol, veh/h	65	40	0	0	0	70	18	31	23	0	0	105
Future Vol, veh/h	65	40	0	0	0	70	18	31	23	0	0	105
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	44	0	0	0	78	20	34	26	0	0	117
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1
Approach	EB	WB	NB	WB	NB	SB						
Opposing Approach	WB	EB	SB	WB	NB	SB						
Opposing Lanes	1	1	1	1	1	1						
Conflicting Approach Left	SB		NB	EB	WB	SB						
Conflicting Lanes Left	1	1	1	1	1	1						
Conflicting Approach Right	NB		SB	WB	EB	NB						
Conflicting Lanes Right	1	1	1	1	1	1						
HCM Control Delay, s/veh	8.4			7.3	7.8							
HCM LOS	A			A	A							

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	62%	0%	0%
Vol Thru, %	43%	38%	0%	0%
Vol Right, %	32%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	105	70	105
LT Vol	18	65	0	0
Through Vol	31	40	0	0
RT Vol	23	0	70	105
Lane Flow Rate	80	117	78	117
Geometry Grp	1	1	1	1
Degree of Util (X)	0.096	0.148	0.084	0.125
Departure Headway (Hd)	4.341	4.562	3.881	3.855
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	828	791	926	932
Service Time	2.356	2.562	1.935	1.868
HCM Lane V/C Ratio	0.097	0.148	0.084	0.126
HCM Control Delay, s/veh	7.8	8.4	7.3	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.3	0.4

Intersection					
Int Delay, s/veh	5.1				
Movement	EBL	EBR	NBL	NBT	SBR
Lane Configurations	↔ ↕ ↕ ↕ ↕ ↕				
Traffic Vol, veh/h	1	182	138	608	351
Future Vol, veh/h	1	182	138	608	351
Conflicting Peds, #/hr	0	0	178	0	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0
Grade, %	0	-	-	0	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5
Mvmt Flow	1	202	153	676	390

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1226	582	596
Stage 1	582	-	-
Stage 2	644	-	-
Critical Hdwy	6.675	6.275	4.175
Critical Hdwy Stg 1	5.475	-	-
Critical Hdwy Stg 2	5.875	-	-
Follow-up Hdwy	3.54753	3.4752	2.475
Pot Cap-1 Maneuver	180	505	961
Stage 1	550	-	-
Stage 2	479	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	90	410	780
Mov Cap-2 Maneuver	90	-	-
Stage 1	339	-	-
Stage 2	389	-	-

Approach	EB	NB	SB
HCM Control Delay, s/42.04		3.44	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	634	-	410	-
HCM Lane V/C Ratio	0.197	-	0.493	-
HCM Control Delay (s/veh)	10.7	1.8	22	-
HCM Lane LOS	B	A	C	-
HCM 95th %tile Q(veh)	0.7	-	2.7	-

Intersection					
Int Delay, s/veh	0.3				
Movement	EBL	EBR	NBL	NBT	SBR
Lane Configurations	↔ ↕ ↕ ↕ ↕ ↕				
Traffic Vol, veh/h	0	26	0	735	523
Future Vol, veh/h	0	26	0	735	523
Conflicting Peds, #/hr	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0
Grade, %	0	-	-	0	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5
Mvmt Flow	0	29	0	817	581

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	581	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.275	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-3.3475	-
Pot Cap-1 Maneuver	0	506	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	506	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/42.55		0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTEBLn1	SBT
Capacity (veh/h)	-	506
HCM Lane V/C Ratio	-	0.057
HCM Control Delay (s/veh)	-	12.6
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	0.2

Intersection					
Int Delay, s/veh	1.6				
Movement	EBL	EBR	NBL	NBT	SBR
Lane Configurations	↔ ↕ ↕ ↕ ↕ ↕				
Traffic Vol, veh/h	19	23	63	241	269
Future Vol, veh/h	19	23	63	241	269
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0
Grade, %	0	-	-	0	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0
Mvmt Flow	21	26	70	268	299

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	744	337	374
Stage 1	337	-	-
Stage 2	408	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	385	710	1195
Stage 1	728	-	-
Stage 2	676	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	358	710	1195
Mov Cap-2 Maneuver	358	-	-
Stage 1	678	-	-
Stage 2	676	-	-

Approach	EB	NB	SB
HCM Control Delay, s/43.09		1.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	373	-	492	-
HCM Lane V/C Ratio	0.059	-	0.095	-
HCM Control Delay (s/veh)	8.2	0	13.1	-
HCM Lane LOS	A	A	B	-
HCM 95th %tile Q(veh)	0.2	-	0.3	-

Intersection					
Int Delay, s/veh	0.4				
Movement	WBL	WBR	NBT	NBR	SBL
Lane Configurations	↔ ↕ ↕ ↕ ↕ ↕				
Traffic Vol, veh/h	0	33	527	7	0
Future Vol, veh/h	0	33	527	7	0
Conflicting Peds, #/hr	0	0	0	100	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0
Grade, %	0	-	-	0	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	15	6	0	5
Mvmt Flow	0	37	586	8	0

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	397	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.2	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.45	-
Pot Cap-1 Maneuver	0	567	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	507	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/42.65		0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBT
Capacity (veh/h)	-	507	-
HCM Lane V/C Ratio	-	0.072	-
HCM Control Delay (s/veh)	-	12.6	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.2	-

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	[Diagram]					
Traffic Vol, veh/h	104	60	5	65	18	5
Future Vol, veh/h	104	60	5	65	18	5
Conflicting Peds, #/hr	0	100	100	0	100	100
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	67	6	72	20	6

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	282	0	432	349
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1280	-	580	694
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1145	-	462	555
Mov Cap-2 Maneuver	-	-	-	-	462	-
Stage 1	-	-	-	-	709	-
Stage 2	-	-	-	-	755	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.58	12.93
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	479	-	-	129	-
HCM Lane V/C Ratio	0.053	-	-	0.005	-
HCM Control Delay (s/veh)	12.9	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %ile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBL	WBR	SBL	SBR
Lane Configurations	[Diagram]					
Traffic Vol, veh/h	5	37	116	15	5	4
Future Vol, veh/h	5	37	116	15	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	41	129	17	6	4

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	146	0	-	0	189	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	52	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1437	-	-	-	800	911
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	970	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1437	-	-	-	796	911
Mov Cap-2 Maneuver	-	-	-	-	796	-
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	970	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.89	0	9.32
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBL	WBR	SBLn1
Capacity (veh/h)	214	-	-	-	844
HCM Lane V/C Ratio	0.004	-	-	-	0.012
HCM Control Delay (s/veh)	7.5	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %ile Q(veh)	0	-	-	-	0

# Existing Scenario

## Weekday PM Peak Hour

### Queues

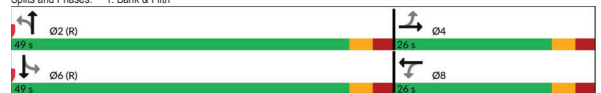
#### 1: Bank & Fifth

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	[Diagram]							
Traffic Volume (vph)	45	52	58	37	16	435	28	559
Future Volume (vph)	45	52	58	37	16	435	28	559
Lane Group Flow (vph)	0	158	64	79	0	534	0	692
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	8	8	2	2	6	6	6
Permitted Phases	4	8	8	2	2	6	6	6
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	12.6	12.6	12.6	12.6	51.4	51.4	51.4	51.4
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.69	0.69	0.69	0.69
v/c Ratio	0.65	0.39	0.29	0.27	0.27	0.36	0.36	0.36
Control Delay (s/veh)	35.1	33.1	17.7	8.7	6.1	6.1	6.1	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.1	33.1	17.7	8.7	6.1	6.1	6.1	6.1
LOS	D	C	B	A	A	A	A	A
Approach Delay (s/veh)	35.1	24.6	8.7	6.1	6.1	6.1	6.1	6.1
Approach LOS	D	C	A	A	A	A	A	A
Queue Length 50th (m)	16.8	8.2	5.0	11.5	17.5	17.5	17.5	17.5
Queue Length 95th (m)	31.7	17.3	14.4	43.2	34.0	34.0	34.0	34.0
Internal Link Dist (m)	49.7	45.0	112.4	195.6	190.0	190.0	190.0	190.0
Turn Bay Length (m)								
Base Capacity (vph)	375	265	419	1951	1939	1939	1939	1939
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.24	0.19	0.27	0.36	0.36	0.36	0.36

#### Intersection Summary

Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 47 (63%), Referenced to phase 2:NBL and 6:SBT, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay (s/veh): 11.7	Intersection LOS: B
Intersection Capacity Utilization 65.8%	ICU Level of Service C
Analysis Period (min) 15	

#### Splits and Phases: 1: Bank & Fifth



Queues  
2: Bank & Holmwood

08/01/2024

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	↔	
Traffic Volume (vph)	17	25	481	27	536	
Future Volume (vph)	17	25	481	27	536	
Lane Group Flow (vph)	108	0	616	0	656	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	3	
Detector Phase	4	2	2	6	3	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	
Lead/Lag	Lag					Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.2	56.4	56.4	56.4	56.4	
Actuated g/C Ratio	0.15	0.75	0.75	0.75	0.75	
v/c Ratio	0.53	0.30	0.31	0.31	0.31	
Control Delay (s/veh)	38.3	4.7	4.7	4.7	4.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.3	4.7	4.7	4.7	4.7	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	38.3	4.7	4.7	4.7	4.7	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	14.3	13.6	24.4	24.4	24.4	
Queue Length 95th (m)	26.7	25.8	21.1	21.1	21.1	
Internal Link Dist (m)	39.8	31.5	195.6	195.6	195.6	
Turn Bay Length (m)						
Base Capacity (vph)	295	2041	2112	2112	2112	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.37	0.30	0.31	0.31	0.31	

Intersection Summary						
Cycle Length:	75					
Actuated Cycle Length:	75					
Offset:	74 (99%), Referenced to phase 2:NBL and 6:SBT, Start of Green					
Natural Cycle:	75					
Control Type:	Actuated-Coordinated					
Maximum v/c Ratio:	0.53					
Intersection Signal Delay (s/veh):	7.4			Intersection LOS: A		
Intersection Capacity Utilization:	62.9%			ICU Level of Service B		
Analysis Period (min):	15					

Splits and Phases: 2: Bank & Holmwood



Queues  
6: Bank & Aylmer

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	52	17	665	722	
Future Volume (vph)	52	17	665	722	
Lane Group Flow (vph)	81	0	758	899	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	3	
Detector Phase	4	2	6	3	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.0	60.3	60.3	60.3	
Actuated g/C Ratio	0.16	0.97	0.97	0.97	
v/c Ratio	0.34	0.38	0.45	0.45	
Control Delay (s/veh)	31.1	6.3	7.6	7.6	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	31.1	6.3	7.6	7.6	
LOS	C	A	A	A	
Approach Delay (s/veh)	31.1	6.3	7.6	7.6	
Approach LOS	C	A	A	A	
Queue Length 50th (m)	9.6	26.8	32.6	32.6	
Queue Length 95th (m)	22.8	32.6	43.7	43.7	
Internal Link Dist (m)	76.7	28.1	10.1	10.1	
Turn Bay Length (m)					
Base Capacity (vph)	280	1975	2006	2006	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.29	0.38	0.45	0.45	

Intersection Summary						
Cycle Length:	90					
Actuated Cycle Length:	90					
Offset:	87 (97%), Referenced to phase 2:NBL and 6:SBT, Start of Green					
Natural Cycle:	90					
Control Type:	Actuated-Coordinated					
Maximum v/c Ratio:	0.45					
Intersection Signal Delay (s/veh):	8.1			Intersection LOS: A		
Intersection Capacity Utilization:	52.9%			ICU Level of Service A		
Analysis Period (min):	15					
m: Volume for 95th percentile queue is metered by upstream signal.						

Splits and Phases: 6: Bank & Aylmer



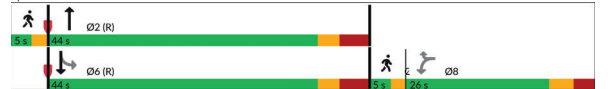
Queues  
3: Bank & Exhibition

08/01/2024

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	↔	↔	↔	↔	↔		
Traffic Volume (vph)	118	61	453	113	476		
Future Volume (vph)	118	61	453	113	476		
Lane Group Flow (vph)	131	68	644	126	529		
Turn Type	Perm	Perm	NA	Perm	NA		
Protected Phases	8	8	2	6	1	7	
Permitted Phases	8	8	2	6	1	7	
Detector Phase	8	8	2	6	1	7	
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	44.0	44.0	44.0	5.0	5.0
Total Split (s)	26.0	26.0	44.0	44.0	44.0	5.0	5.0
Total Split (%)	32.5%	32.5%	55.0%	55.0%	55.0%	6%	6%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9		
Lead/Lag	Lag	Lag					Lead
Lead-Lag Optimize?							Yes
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	12.7	12.7	58.7	58.7	58.7		
Actuated g/C Ratio	0.16	0.16	0.73	0.73	0.73		
v/c Ratio	0.54	0.29	0.31	0.28	0.23		
Control Delay (s/veh)	39.1	10.9	5.2	8.0	5.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	39.1	10.9	5.2	8.0	5.3		
LOS	D	B	A	A	A		
Approach Delay (s/veh)	29.4	5.2	5.8	5.8	5.8		
Approach LOS	C	A	A	A	A		
Queue Length 50th (m)	18.7	0.0	15.8	6.5	13.6		
Queue Length 95th (m)	32.7	9.7	29.0	18.3	24.5		
Internal Link Dist (m)	30.6	33.7	40.0	44.8	44.8		
Turn Bay Length (m)							
Base Capacity (vph)	372	326	2110	452	2328		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.35	0.21	0.31	0.28	0.23		

Intersection Summary							
Cycle Length:	80						
Actuated Cycle Length:	80						
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green						
Natural Cycle:	80						
Control Type:	Actuated-Coordinated						
Maximum v/c Ratio:	0.54						
Intersection Signal Delay (s/veh):	8.7			Intersection LOS: A			
Intersection Capacity Utilization:	60.0%			ICU Level of Service B			
Analysis Period (min):	15						

Splits and Phases: 3: Bank & Exhibition



Queues  
7: Bank & Sunnyside

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø6	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔			
Traffic Volume (vph)	50	78	16	80	14	408	200	717			
Future Volume (vph)	50	78	16	80	14	408	200	717			
Lane Group Flow (vph)	0	175	0	374	0	492	0	1119			
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA			
Protected Phases	4	4	8	8	2	2	1	1.6	3	6	7
Permitted Phases	4	4	8	8	2	2	1	1.6	3	6	7
Detector Phase	4	4	8	8	2	2	1	1.6	3	6	7
Switch Phase											
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	1.0	17.0	1.0	1.0
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	5.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	5.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	6%	48%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	0.0	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0					
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0					
Lead/Lag	Lag	Lag	Lag	Lag					Lead		Lead
Lead-Lag Optimize?					Yes	Yes					Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	None	C-Max	None	None
Act Effct Green (s)	24.4	24.4	24.4	24.4	37.0	37.0	48.2				
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.41	0.41	0.54				
v/c Ratio	0.65	0.53	0.43	0.43	0.91	0.91					
Control Delay (s/veh)	42.2	53.1	20.2	22.5	22.5	22.5					
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0					





Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	↔
Traffic Volume (vph)	34	37	189	502	
Future Volume (vph)	34	37	189	502	
Lane Group Flow (vph)	75	0	251	628	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases		2			
Detector Phase	10	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	28.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7				6.8
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	C-Max	None
Act Effct Green (s)	10.7		56.8	56.8	
Actuated g/C Ratio	0.13		0.71	0.71	
v/c Ratio	0.37		0.24	0.53	
Control Delay (s/veh)	36.6		5.0	7.7	
Queue Delay	0.0		0.0	0.0	
Total Delay (s/veh)	36.6		5.0	7.7	
LOS	D		A	A	
Approach Delay (s/veh)	36.6		5.0	7.7	
Approach LOS	D		A	A	
Queue Length 50th (m)	10.7		10.6	35.2	
Queue Length 95th (m)	22.0		21.5	66.0	
Internal Link Dist (m)	57.2		0.1	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	293		1028	1178	
Starvation Cap Reductn	0		0	0	
Spillback Cap Reductn	0		0	0	
Storage Cap Reductn	0		0	0	
Reduced v/c Ratio	0.26		0.24	0.53	
<b>Intersection Summary</b>					
Cycle Length: 80					
Actuated Cycle Length: 80					
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green					
Natural Cycle: 80					
Control Type: Actuated-Coordinated					
Maximum v/c Ratio: 0.53					
Intersection Signal Delay (s/veh): 9.2					
Intersection Capacity Utilization 62.6%					
ICU Level of Service B					
Analysis Period (min) 15					

Splits and Phases: 9: Queen Elizabeth Drive & Fifth



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	5	118	136	5	5	5
Future Volume (vph)	5	118	136	5	5	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.995	0.932			
Flt Protected		0.998	0.976			
Satd. Flow (prot)	0	1683	1678	0	1534	0
Flt Permitted		0.998	0.976			
Satd. Flow (perm)	0	1683	1678	0	1534	0
Link Speed (k/h)		30	30			
Link Distance (m)		61.9	92.7		69.2	
Travel Time (s)		7.4	11.1		8.3	
Conf. Peds. (#/hr)	100			100	100	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	131	151	6	6	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	137	157	0	12	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	Yes	Yes
Lane Alignment	Left	Left	Right	Left	Right	
Median Width(m)		0.0	0.0		3.2	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	24			14	24	14
Sign Control		Stop	Stop		Stop	
<b>Intersection Summary</b>						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 32.8%						
ICU Level of Service A						
Analysis Period (min) 15						

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	5	5	5	5	5
Future Volume (vph)	3	5	5	5	5	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.910			0.932		
Flt Protected				0.976	0.976	
Satd. Flow (prot)	1535	0	0	1646	1534	0
Flt Permitted				0.976	0.976	
Satd. Flow (perm)	1535	0	0	1646	1534	0
Link Speed (k/h)				30	30	
Link Distance (m)				115.2	88.5	69.2
Travel Time (s)				13.8	10.6	8.3
Conf. Peds. (#/hr)		100	100		100	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	6	6	6	6	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	0	0	12	12	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)		0.0	0.0		3.2	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		1.6	1.6		1.6	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)		14	24		24	14
Sign Control	Stop			Stop	Stop	
<b>Intersection Summary</b>						
Area Type: Other						
Control Type: Unsignalized						
Intersection Capacity Utilization 32.7%						
ICU Level of Service A						
Analysis Period (min) 15						

Lanes, Volumes, Timings  
14: Exhibition & Marche

08/01/2024

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	5	136	5	5	118
Future Volume (vph)	3	5	136	5	5	118
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.910			0.871		
Flt Protected			0.954	0.998		
Satd. Flow (prot)	1535	0	0	1609	1466	0
Flt Permitted			0.954	0.998		
Satd. Flow (perm)	1535	0	0	1609	1466	0
Link Speed (kh)	30		30	30		30
Link Distance (m)	88.5		119.7	28.7		25.4
Travel Time (s)	10.6		14.4	3.4		8.3
Confl. Peds. (#/hr)		100	100		100	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	6	151	6	6	131
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	0	0	157	137	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Right	Right
Median Width(m)	0.0		0.0	3.2		0.0
Link Offset(m)	0.0		0.0	0.0		0.0
Crosswalk Width(m)	1.6		1.6	1.6		1.6
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (kh)		14	24		24	14
Sign Control	Stop		Stop	Stop		Stop
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	35.3%			ICU Level of Service A		
Analysis Period (min)	15					

Existing Weekday PM Peak Hour Lansdowne 2.0 Transportation Impact Assessment 9:50 am 01/13/2023

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HCM 7th TWSC  
4: Bank & Wilton

08/01/2024

<b>Intersection</b>						
Int Delay, s/veh	10.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	3	226	207	540	545	48
Future Vol, veh/h	3	226	207	540	545	48
Conflicting Peds. #/hr	0	0	178	0	0	167
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	251	230	600	606	53
<b>Major/Minor</b>						
Minor2	Minor1	Major1	Major2			
Conflicting Flow All	1570	810	837	0	-	0
Stage 1	810	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	111	379	795	-	-	-
Stage 1	436	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	42	308	645	-	-	-
Mov Cap-2 Maneuver	42	-	-	-	-	-
Stage 1	203	-	-	-	-	-
Stage 2	344	-	-	-	-	-
<b>Approach</b>						
EB	NB	SB				
HCM Control Delay, s/62.93	6.17	0				
HCM LOS	F					
<b>Minor Lane/Major Mvmt</b>						
NBL	NBTEBLn1	SBT	SBR			
Capacity (veh/h)	538	-	308	-	-	-
HCM Lane V/C Ratio	0.356	-	0.817	-	-	-
HCM Control Delay (s/veh)	13.6	3.3	52.9	-	-	-
HCM Lane LOS	B	A	F	-	-	-
HCM 95th %tile Q(veh)	1.6	-	6.8	-	-	-

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Lanes, Volumes, Timings  
37: O' Connor & Fifth

08/01/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	72	38	0	0	0	100	39	26	29	0	0	90
Future Volume (vph)	72	38	0	0	0	100	39	26	29	0	0	90
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.865		0.958				
Flt Protected			0.968					0.980				
Satd. Flow (prot)	0	1632	0	0	0	1459	0	1583	0	0	0	1459
Flt Permitted			0.968					0.980				
Satd. Flow (perm)	0	1632	0	0	0	1459	0	1583	0	0	0	1459
Link Speed (kh)		30			30			30				30
Link Distance (m)		211.4			68.9			224.9				85.7
Travel Time (s)		25.4			8.3			27.0				10.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	80	42	0	0	0	111	43	29	32	0	0	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	122	0	0	0	111	0	104	0	0	0	100
Enter Blocked Intersection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)	0.0		0.0		0.0		0.0		0.0		0.0	0.0
Link Offset(m)	0.0		0.0		0.0		0.0		0.0		0.0	0.0
Crosswalk Width(m)	1.6		1.6		1.6		1.6		1.6		1.6	1.6
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (kh)	97		97		97		97		97		97	97
Sign Control	Stop		Stop		Stop		Stop		Stop		Stop	Stop
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	28.4%						ICU Level of Service A					
Analysis Period (min)	15											

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HCM 7th TWSC  
5: Bank & Echo

08/01/2024

<b>Intersection</b>						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	23	0	755	780	2
Future Vol, veh/h	0	23	0	755	780	2
Conflicting Peds. #/hr	0	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	26	0	839	867	2
<b>Major/Minor</b>						
Minor2	Minor1	Major1	Major2			
Conflicting Flow All	-	954	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	313	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	284	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
<b>Approach</b>						
EB	NB	SB				
HCM Control Delay, s/v 18.9	0	0				
HCM LOS	C					
<b>Minor Lane/Major Mvmt</b>						
NBTEBLn1	SBT	SBR				
Capacity (veh/h)	-	284	-	-	-	-
HCM Lane V/C Ratio	-	0.09	-	-	-	-
HCM Control Delay (s/veh)	-	18.9	-	-	-	-
HCM Lane LOS	-	C	-	-	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-	-	-

Existing Weekday PM Peak Hour Lansdowne 2.0 Transportation Impact Assessment 9:50 am 01/13/2023

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Intersection					
Int Delay, s/veh	2.6				
Movement	EBL	EBR	NBL	NBT	SBR
Lane Configurations	W	W	W	W	W
Traffic Vol, veh/h	51	54	45	249	480
Future Vol, veh/h	51	54	45	249	480
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0
Mvmt Flow	57	60	50	277	533
Major/Minor					
Conflicting Flow All	947	570	607	0	0
Stage 1	570	-	-	-	-
Stage 2	377	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	292	525	981	-	-
Stage 1	570	-	-	-	-
Stage 2	698	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	275	525	981	-	-
Mov Cap-2 Maneuver	275	-	-	-	-
Stage 1	535	-	-	-	-
Stage 2	698	-	-	-	-
Approach					
	EB	NB	SB		
HCM Control Delay, s/veh	1.36	0	0		
HCM LOS	C				
Minor Lane/Major Mvmt					
	NBL	NBE	NBLn1	SBT	SBR
Capacity (veh/h)	276	-	364	-	-
HCM Lane V/C Ratio	0.051	-	0.321	-	-
HCM Control Delay (s/veh)	8.9	0	19.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.4	-	-

Intersection					
Int Delay, s/veh	1.8				
Movement	EBT	EBR	WBL	WBT	NBL
Lane Configurations	W	W	W	W	W
Traffic Vol, veh/h	118	122	5	136	43
Future Vol, veh/h	118	122	5	136	43
Conflicting Peds, #/hr	0	100	100	0	100
Sign Control	Free	Free	Free	Free	Stop
RT Channelized	None	None	None	None	None
Storage Length	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0
Grade, %	0	-	-	0	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2
Mvmt Flow	131	136	6	151	48
Major/Minor					
Conflicting Flow All	0	0	367	0	561
Stage 1	-	-	-	299	-
Stage 2	-	-	-	262	-
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1192	-	489
Stage 1	-	-	-	752	-
Stage 2	-	-	-	782	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1066	-	389
Mov Cap-2 Maneuver	-	-	-	-	389
Stage 1	-	-	-	-	673
Stage 2	-	-	-	-	695
Approach					
	EB	WB	NB		
HCM Control Delay, s/v	0	0.3	15.41		
HCM LOS			C		
Minor Lane/Major Mvmt					
	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	399	-	-	64	-
HCM Lane V/C Ratio	0.134	-	-	0.005	-
HCM Control Delay (s/veh)	15.4	-	-	8.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection					
Int Delay, s/veh	0.8				
Movement	WBL	WBR	NBT	NBR	SBL
Lane Configurations	W	W	W	W	W
Traffic Vol, veh/h	5	72	522	7	1
Future Vol, veh/h	5	72	522	7	1
Conflicting Peds, #/hr	0	0	0	100	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	0	-	0
Grade, %	0	-	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	3	2	0	3
Mvmt Flow	6	80	580	8	1
Major/Minor					
Conflicting Flow All	1012	394	0	0	688
Stage 1	684	-	-	-	-
Stage 2	328	-	-	-	-
Critical Hdwy	6.8	6.96	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.33	-	-	2.2
Pot Cap-1 Maneuver	239	602	-	-	916
Stage 1	468	-	-	-	-
Stage 2	708	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	213	539	-	-	819
Mov Cap-2 Maneuver	213	-	-	-	-
Stage 1	418	-	-	-	-
Stage 2	707	-	-	-	-
Approach					
	WB	NB	SB		
HCM Control Delay, s/veh	0	0.02	0.02		
HCM LOS	B				
Minor Lane/Major Mvmt					
	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	539	819	-
HCM Lane V/C Ratio	-	-	0.149	0.001	-
HCM Control Delay (s/veh)	-	-	12.8	9.4	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0	-

Intersection					
Int Delay, s/veh	2.4				
Movement	EBL	EBT	WBT	WBR	SBL
Lane Configurations	W	W	W	W	W
Traffic Vol, veh/h	5	56	23	88	49
Future Vol, veh/h	5	56	23	88	49
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop
RT Channelized	None	None	None	None	None
Storage Length	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0
Grade, %	-	0	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2
Mvmt Flow	6	62	26	98	54
Major/Minor					
Conflicting Flow All	123	0	-	0	148
Stage 1	-	-	-	-	74
Stage 2	-	-	-	-	73
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1464	-	-	-	844
Stage 1	-	-	-	-	948
Stage 2	-	-	-	-	950
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1464	-	-	-	841
Mov Cap-2 Maneuver	-	-	-	-	841
Stage 1	-	-	-	-	945
Stage 2	-	-	-	-	950
Approach					
	EB	WB	SB		
HCM Control Delay, s/v	0.61	0	9.54		
HCM LOS			A		
Minor Lane/Major Mvmt					
	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	148	-	-	-	853
HCM Lane V/C Ratio	0.004	-	-	-	0.07
HCM Control Delay (s/veh)	7.5	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

# Existing Scenario

## Saturday Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	44	39	65	43	20	461	19	510
Traffic Volume (vph)	44	39	65	43	20	461	19	510
Future Volume (vph)	0	138	72	102	0	560	0	617
Lane Group Flow (vph)	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Turn Type	4	2	8	2	2	6	6	6
Protected Phases	4	8	8	2	2	6	6	6
Permitted Phases	4	8	8	2	2	6	6	6
Detector Phase	4	8	8	2	2	6	6	6
Switch Phase	4	8	8	2	2	6	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	11.7	11.7	11.7	11.7	55.6	55.6	55.6	55.6
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.74	0.74	0.74	0.74
v/c Ratio	0.63	0.46	0.39	0.27	0.27	0.29	0.29	0.29
Control Delay (s/veh)	34.2	36.6	18.5	8.6	5.1	5.1	5.1	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.2	36.6	18.5	8.6	5.1	5.1	5.1	5.1
LOS	C	D	B	A	A	A	A	A
Approach Delay (s/veh)	34.2	36.6	18.5	8.6	5.1	5.1	5.1	5.1
Approach LOS	C	D	B	A	A	A	A	A
Queue Length 50th (m)	13.9	9.4	6.0	11.5	14.3	14.3	14.3	14.3
Queue Length 95th (m)	28.1	19.4	17.0	47.2	28.2	28.2	28.2	28.2
Internal Link Dist (m)	49.7	45.0	112.4	195.6	190.0	190.0	190.0	190.0
Turn Bay Length (m)								
Base Capacity (vph)	361	276	421	2097	2122	2122	2122	2122
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.26	0.24	0.27	0.29	0.29	0.29	0.29

Intersection Summary  
Cycle Length: 75  
Actuated Cycle Length: 75  
Offset: 47 (63%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
Natural Cycle: 75  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.63  
Intersection Signal Delay (s/veh): 11.6  
Intersection Capacity Utilization 55.8%  
ICU Level of Service B  
Analysis Period (min) 15



Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	44	44	44	44	44	44
Traffic Volume (vph)	9	27	469	29	522	
Future Volume (vph)	9	27	469	29	522	
Lane Group Flow (vph)	107	0	599	0	636	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	6	3	6	3
Permitted Phases	4	2	6	3	6	3
Detector Phase	4	2	6	3	6	3
Switch Phase	4	2	6	3	6	3
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	5.2
Lead/Lag		Lag				Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.3	56.4	56.4	56.4	56.4	56.4
Actuated g/C Ratio	0.15	0.75	0.75	0.75	0.75	0.75
v/c Ratio	0.54	0.29	0.30	0.30	0.30	0.30
Control Delay (s/veh)	38.5	3.1	5.5	5.5	5.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.5	3.1	5.5	5.5	5.5	5.5
LOS	D	A	A	A	A	A
Approach Delay (s/veh)	38.5	3.1	5.5	5.5	5.5	5.5
Approach LOS	D	A	A	A	A	A
Queue Length 50th (m)	14.2	3.2	24.0	24.0	24.0	24.0
Queue Length 95th (m)	26.7	15.9	41.2	41.2	41.2	41.2
Internal Link Dist (m)	39.8	31.5	195.6	195.6	195.6	195.6
Turn Bay Length (m)						
Base Capacity (vph)	291	2040	2106	2106	2106	2106
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.29	0.30	0.30	0.30	0.30

Intersection Summary  
Cycle Length: 75  
Actuated Cycle Length: 75  
Offset: 74 (99%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
Natural Cycle: 75  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.54  
Intersection Signal Delay (s/veh): 7.0  
Intersection Capacity Utilization 62.9%  
ICU Level of Service B  
Analysis Period (min) 15



Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	83	68	429	119	452		
Traffic Volume (vph)	83	68	429	119	452		
Future Volume (vph)	92	76	604	132	502		
Lane Group Flow (vph)	Perm	Perm	NA	Perm	NA		
Turn Type	8	8	2	6	1	7	
Protected Phases	8	8	2	6	1	7	
Permitted Phases	8	8	2	6	1	7	
Detector Phase	8	8	2	6	1	7	
Switch Phase	8	8	2	6	1	7	
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	39.0	39.0	5.0	5.0
Total Split (s)	26.0	26.0	39.0	39.0	39.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	52.0%	52.0%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9	6.9	6.9
Lead/Lag		Lag					Lead
Lead-Lag Optimize?							
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	11.1	11.1	55.4	55.4	55.4	55.4	55.4
Actuated g/C Ratio	0.15	0.15	0.74	0.74	0.74	0.74	0.74
v/c Ratio	0.41	0.33	0.28	0.28	0.21	0.21	0.21
Control Delay (s/veh)	34.4	11.6	4.6	5.0	3.1	3.1	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.4	11.6	4.6	5.0	3.1	3.1	3.1
LOS	C	B	A	A	A	A	A
Approach Delay (s/veh)	24.1	4.6	3.5	3.5	3.5	3.5	3.5
Approach LOS	C	B	A	A	A	A	A
Queue Length 50th (m)	12.2	0.0	12.9	4.0	8.1	8.1	8.1
Queue Length 95th (m)	23.9	10.3	23.4	8.1	11.0	11.0	11.0
Internal Link Dist (m)	30.6	33.7	40.0	44.8	44.8	44.8	44.8
Turn Bay Length (m)							
Base Capacity (vph)	399	351	2160	467	2342	2342	2342
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.22	0.28	0.28	0.21	0.21	0.21

Intersection Summary  
Cycle Length: 75  
Actuated Cycle Length: 75  
Offset: 70 (93%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
Natural Cycle: 75  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.41  
Intersection Signal Delay (s/veh): 6.4  
Intersection Capacity Utilization 58.8%  
ICU Level of Service B  
Analysis Period (min) 15



Queues  
6: Bank & Aylmer

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	35	15	647	681	
Future Volume (vph)	35	15	647	681	
Lane Group Flow (vph)	49	0	736	816	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6		
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	19.5	35.2	35.2	35.2	4.0
Total Split (s)	20.0	65.0	65.0	65.0	5.0
Total Split (%)	22.2%	72.2%	72.2%	72.2%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.0	60.3	60.3		
Actuated g/C Ratio	0.16	0.67	0.67		
v/c Ratio	0.20	0.37	0.40		
Control Delay (s/veh)	30.3	5.0	7.2		
Queue Delay	0.0	0.0	0.0		
Total Delay (s/veh)	30.3	5.0	7.2		
LOS	C	A	A		
Approach Delay (s/veh)	30.3	5.0	7.2		
Approach LOS	C	A	A		
Queue Length 50th (m)	5.9	18.9	28.5		
Queue Length 95th (m)	15.8	24.5	38.4		
Internal Link Dist (m)	76.7	28.1	10.1		
Turn Bay Length (m)					
Base Capacity (vph)	248	1989	2051		
Starvation Cap Reductn	0	0	0		
Spillback Cap Reductn	0	0	0		
Storage Cap Reductn	0	0	0		
Reduced v/c Ratio	0.20	0.37	0.40		

Splits and Phases: 6: Bank & Aylmer

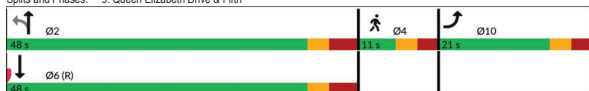


Queues  
9: Queen Elizabeth Drive & Fifth

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	52	40	235	339	
Future Volume (vph)	52	40	235	339	
Lane Group Flow (vph)	90	0	305	433	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases		2			
Detector Phase	10	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	C-Max	None
Act Effct Green (s)	11.1	56.4	56.4		
Actuated g/C Ratio	0.14	0.71	0.71		
v/c Ratio	0.42	0.29	0.37		
Control Delay (s/veh)	37.3	5.4	6.1		
Queue Delay	0.0	0.0	0.0		
Total Delay (s/veh)	37.3	5.4	6.1		
LOS	D	A	A		
Approach Delay (s/veh)	37.3	5.4	6.1		
Approach LOS	D	A	A		
Queue Length 50th (m)	12.9	13.3	20.4		
Queue Length 95th (m)	25.2	27.5	40.5		
Internal Link Dist (m)	97.2	0.1	5.9		
Turn Bay Length (m)					
Base Capacity (vph)	297	1070	1168		
Starvation Cap Reductn	0	0	0		
Spillback Cap Reductn	0	0	0		
Storage Cap Reductn	0	0	0		
Reduced v/c Ratio	0.30	0.29	0.37		

Splits and Phases: 9: Queen Elizabeth Drive & Fifth

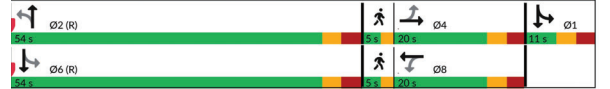


Queues  
7: Bank & Sunnyside

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø6	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔			
Traffic Volume (vph)	40	36	19	55	28	464	80	516			
Future Volume (vph)	40	36	19	55	28	464	80	516			
Lane Group Flow (vph)	0	131	0	189	0	591	0	721			
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA			
Protected Phases	4	8	8	2	2	1	1.6	3	6	7	
Permitted Phases	4	8	8	2	2	1	1.6				
Detector Phase	4	4	8	8	2	2	1	1.6			
Switch Phase											
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	1.0	17.0	1.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	54.0	54.0	11.0	5.0	54.0	5.0	
Total Split (s)	20.0	20.0	20.0	20.0	54.0	54.0	11.0	5.0	54.0	5.0	
Total Split (%)	22.2%	22.2%	22.2%	22.2%	60.0%	60.0%	12.2%	6%	60%	6%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	2.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	0.0	3.0	0.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0							
Total Lost Time (s)	5.6	5.6	5.6	5.6							
Lead/Lag	Lag	Lag	Lag	Lag					Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes	Yes	
Recall Mode	None	None	None	None	C-Max	C-Max	None	None	C-Max	None	
Act Effct Green (s)	18.0	18.0	18.0	18.0	48.2	48.2		54.6			
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.54	0.54		0.61			
v/c Ratio	0.63	0.66	0.66	0.66	0.40	0.48		0.48			
Control Delay (s/veh)	46.7	33.4	33.4	33.4	13.2	6.3		6.3			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			
Total Delay (s/veh)	46.7	33.4	33.4	33.4	13.2	6.3		6.3			
LOS	D	C	C	C	B	A		A			
Approach Delay (s/veh)	46.7	33.4	33.4	33.4	13.2	6.3		6.3			
Approach LOS	D	C	C	C	B	A		A			
Queue Length 50th (m)	20.4	19.7	28.9	28.9	15.8						
Queue Length 95th (m)	39.1	42.1	40.7	40.7	19.5						
Internal Link Dist (m)	75.1	136.0	63.1	79.0							
Turn Bay Length (m)											
Base Capacity (vph)	211	290	1451	1504							
Starvation Cap Reductn	0	0	0	0							
Spillback Cap Reductn	0	0	0	0							
Storage Cap Reductn	0	0	0	0							
Reduced v/c Ratio	0.62	0.65	0.40	0.48							

Splits and Phases: 7: Bank & Sunnyside



HCM 7th AWSC  
12: Exhibition & Paul Askin

08/01/2024

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol. veh/h	5	116	63	5	5	5
Future Vol. veh/h	5	116	63	5	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	129	92	6	6	6
Number of Lanes	0	1	1	0	1	0
Approach	EB	WB	SB			
Opposing Approach	WB	EB				
Opposing Lanes	1	1	0			
Conflicting Approach Left	SB			WB		
Conflicting Lanes Left	1	0	1			
Conflicting Approach Right		SB	EB			
Conflicting Lanes Right	0	1	1			
HCM Control Delay, s/veh	7.8	7.5	7.3			
HCM LOS	A	A	A			
Lane	EBLn1	WBLn1	SBLn1			
Vol Left, %	4%	0%	50%			
Vol Thru, %	96%	94%	0%			
Vol Right, %	0%	6%	50%			
Sign Control	Stop	Stop	Stop			
Traffic Vol by Lane	121	68	10			
LT Vol	5	0	5			
Through Vol	116	63	0			
RT Vol	0	5	5			
Lane Flow Rate	134	98	11			
Geometry Grp	1	1	1			
Degree of Util (X)	0.151	0.109	0.013			
Departure Headway (Hd)	4.035	4.02	4.131			
Convergence, Y/N	Yes	Yes	Yes			
Cap	869	850	851			
Service Time	2.059	2.052	2.23			
HCM Lane v/c Ratio	0.151	0.11	0.013			
HCM Control Delay, s/veh	7.8	7.5	7.3			
HCM Lane LOS	A	A	A			
HCM 95th-ile Q	0.5	0.4	0			



Intersection						
Intersection Delay, s/veh	7.3					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	15	5	5	70	5	5
Future Vol, veh/h	15	5	5	70	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	6	6	78	6	6
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left	NB		EB			
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1		0		1	
HCM Control Delay, s/veh	7		7.4		7	
HCM LOS	A		A		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	7%
Vol Thru, %	0%	75%	93%
Vol Right, %	50%	25%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	20	75
LT Vol	5	0	5
Through Vol	0	15	70
RT Vol	5	5	0
Lane Flow Rate	11	22	83
Geometry Grp	1	1	1
Degree of Util (X)	0.012	0.024	0.092
Departure Headway (Hd)	3.916	3.866	3.984
Convergence, Y/N	Yes	Yes	Yes
Cap	509	927	903
Service Time	1.959	1.895	1.991
HCM Lane V/C Ratio	0.012	0.024	0.092
HCM Control Delay, s/veh	7	7	7.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.3

Intersection												
Intersection Delay, s/veh	8											
Intersection LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↔			↔	↔
Traffic Vol, veh/h	39	46	0	0	0	0	90	56	38	35	0	0
Future Vol, veh/h	39	46	0	0	0	0	90	56	38	35	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	51	0	0	0	0	100	62	42	39	0	0
Number of Lanes	0	1	0	0	0	0	1	0	1	0	0	0
Approach	EB	EB	EB	WB	NB	WB	NB	WB	NB	WB	NB	WB
Opposing Approach	WB	WB		EB		SB		NB		NB		
Opposing Lanes	1	1		1		1		1		1		
Conflicting Approach Left	SB		NB		EB		WB					
Conflicting Lanes Left	1		1		1		1			1		
Conflicting Approach Right	NB		SB		WB		EB					
Conflicting Lanes Right	1		1		1		1			1		
HCM Control Delay, s/veh	8.4		7.5		8.4		7.5			7.5		
HCM LOS	A		A		A		A			A		
Lane	NBLn1	EBLn1	WBLn1	SBLn1								
Vol Left, %	43%	46%	0%	0%								
Vol Thru, %	29%	54%	0%	0%								
Vol Right, %	27%	0%	100%	100%								
Sign Control	Stop	Stop	Stop	Stop								
Traffic Vol by Lane	129	85	90	101								
LT Vol	56	39	0	0								
Through Vol	38	46	0	0								
RT Vol	35	0	90	101								
Lane Flow Rate	143	94	100	112								
Geometry Grp	1	1	1	1								
Degree of Util (X)	0.175	0.123	0.111	0.122								
Departure Headway (Hd)	4.403	4.684	3.999	3.926								
Convergence, Y/N	Yes	Yes	Yes	Yes								
Cap	816	767	897	813								
Service Time	2.423	2.103	2.019	1.946								
HCM Lane V/C Ratio	0.175	0.123	0.111	0.123								
HCM Control Delay, s/veh	8.4	8.4	7.5	7.5								
HCM Lane LOS	A	A	A	A								
HCM 95th-tile Q	0.6	0.4	0.4	0.4								

Intersection						
Intersection Delay, s/veh	8					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	15	5	83	5	101	20
Future Vol, veh/h	15	5	83	5	101	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	6	92	6	112	22
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left	NB		EB			
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1		0		1	
HCM Control Delay, s/veh	7.3		8.1		8.1	
HCM LOS	A		A		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	83%	0%	94%
Vol Thru, %	0%	75%	6%
Vol Right, %	17%	25%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	121	20	88
LT Vol	101	0	83
Through Vol	0	15	5
RT Vol	20	5	0
Lane Flow Rate	134	22	98
Geometry Grp	1	1	1
Degree of Util (X)	0.157	0.026	0.119
Departure Headway (Hd)	4.21	4.2	4.378
Convergence, Y/N	Yes	Yes	Yes
Cap	843	858	810
Service Time	2.283	2.2	2.456
HCM Lane V/C Ratio	0.159	0.026	0.121
HCM Control Delay, s/veh	8.1	7.3	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0.1	0.4

Intersection						
Int Delay, s/veh	5.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔
Traffic Vol, veh/h	3	172	113	539	490	53
Future Vol, veh/h	3	172	113	539	490	53
Conflicting Peds, #/hr	0	0	178	0	0	107
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	3	191	126	599	544	59
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1302	752	781	0	-	0
Stage 1	752	-	-	-	-	-
Stage 2	551	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.52853	3.2852	2.285	-	-	-
Pot Cap-1 Maneuver	163	407	829	-	-	-
Stage 1	462	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	83	331	673	-	-	-
Mov Cap-2 Maneuver	83	-	-	-	-	-
Stage 1	291	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s/veh	3.52		0			
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	561	-	331	-	-	-
HCM Lane V/C Ratio	0.187	-	0.578	-	-	-
HCM Control Delay (s/veh)	11.6	1.8	29.8	-	-	-
HCM Lane LOS	B	A	D	-	-	-
HCM 95th %tile Q(veh)	0.7	-	3.4	-	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Vol, veh/h	1	31	0	641	654	0
Future Vol, veh/h	1	31	0	641	654	0
Conflicting Peds, #/hr	0	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	0	0	-
Grade, %	0	-	0	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	34	0	712	727	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1083	727	- 0 - 0
Stage 1	727	-	- - - -
Stage 2	356	-	- - - -
Critical Hdwy	6.645	6.245	- - - -
Critical Hdwy Stg 1	5.445	-	- - - -
Critical Hdwy Stg 2	5.845	-	- - - -
Follow-up Hdwy	3.52853	3.285	- - - -
Pot Cap-1 Maneuver	224	421	0 - - 0
Stage 1	475	-	0 - - 0
Stage 2	678	-	0 - - 0
Platoon blocked, %	-	-	- - - -
Mov Cap-1 Maneuver	224	421	- - - -
Mov Cap-2 Maneuver	224	-	- - - -
Stage 1	475	-	- - - -
Stage 2	678	-	- - - -

Approach	EB	NB	SB
HCM Control Delay, s/4.31	B	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBLn1	SBT
Capacity (veh/h)	-	421	-
HCM Lane V/C Ratio	-	0.082	-
HCM Control Delay (s/veh)	-	14.3	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.3	-

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	67	54	54	204	245	124
Future Vol, veh/h	67	54	54	204	245	124
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	0	0	-
Grade, %	0	-	0	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	74	60	60	227	272	138

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	688	341	410 0 - 0
Stage 1	341	-	- - - -
Stage 2	347	-	- - - -
Critical Hdwy	6.4	6.2	4.1 - - -
Critical Hdwy Stg 1	5.4	-	- - - -
Critical Hdwy Stg 2	5.4	-	- - - -
Follow-up Hdwy	3.5	3.3	2.2 - - -
Pot Cap-1 Maneuver	415	706	1160 - - -
Stage 1	725	-	- - - -
Stage 2	720	-	- - - -
Platoon blocked, %	-	-	- - - -
Mov Cap-1 Maneuver	391	706	1160 - - -
Mov Cap-2 Maneuver	391	-	- - - -
Stage 1	682	-	- - - -
Stage 2	720	-	- - - -

Approach	EB	NB	SB
HCM Control Delay, s/45.16	C	1.73	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBLn1	SBT	SBR
Capacity (veh/h)	377	-	488	-
HCM Lane V/C Ratio	0.052	-	0.276	-
HCM Control Delay (s/veh)	8.3	0	15.2	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q(veh)	0.2	-	1.1	-

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↕	↕	↕	↕	↕
Traffic Vol, veh/h	6	69	479	18	2	565
Future Vol, veh/h	6	69	479	18	2	565
Conflicting Peds, #/hr	0	0	0	100	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	0	-
Grade, %	0	-	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	2	2
Mvmt Flow	7	77	532	20	2	628

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	961	376	0 0 652 0
Stage 1	642	-	- - - -
Stage 2	318	-	- - - -
Critical Hdwy	6.8	6.9	- - 4.14 - -
Critical Hdwy Stg 1	5.8	-	- - - -
Critical Hdwy Stg 2	5.8	-	- - - -
Follow-up Hdwy	3.5	3.3	- 2.22 - -
Pot Cap-1 Maneuver	258	627	- - 930 - -
Stage 1	491	-	- - - -
Stage 2	716	-	- - - -
Platoon blocked, %	-	-	- - - -
Mov Cap-1 Maneuver	230	561	- - 832 - -
Mov Cap-2 Maneuver	230	-	- - - -
Stage 1	439	-	- - - -
Stage 2	714	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s/42.43	B	0	0.03
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBLn1	SBL	SBT
Capacity (veh/h)	-	561	832	-
HCM Lane V/C Ratio	-	0.137	0.003	-
HCM Control Delay (s/veh)	-	12.4	9.3	-
HCM Lane LOS	-	B	A	-
HCM 95th %tile Q(veh)	-	0.5	0	-

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	116	117	5	83	68	5
Future Vol, veh/h	116	117	5	83	68	5
Conflicting Peds, #/hr	0	100	100	0	100	100
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	0	0	-
Grade, %	0	-	0	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	129	130	6	92	76	6

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0 359	0 497 394
Stage 1	-	-	- 294 -
Stage 2	-	-	- 203 -
Critical Hdwy	-	- 4.12	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	-	- 2.218	- 3.518 3.318
Pot Cap-1 Maneuver	-	- 1200	- 532 655
Stage 1	-	-	- 756 -
Stage 2	-	-	- 831 -
Platoon blocked, %	-	-	- - - -
Mov Cap-1 Maneuver	-	- 1073	- 423 524
Mov Cap-2 Maneuver	-	-	- 423 -
Stage 1	-	-	- 676 -
Stage 2	-	-	- 739 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.48	15.34
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	429	-	102	-
HCM Lane V/C Ratio	0.189	-	0.005	-
HCM Control Delay (s/veh)	15.3	-	8.4	0
HCM Lane LOS	C	-	A	A
HCM 95th %tile Q(veh)	0.7	-	0	-

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	30	72	106	91	5
Future Vol, veh/h	5	30	72	106	91	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	33	80	118	101	6
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	198	0	0	183	139	
Stage 1	-	-	-	139	-	
Stage 2	-	-	-	44	-	
Critical Hdwy	4.12	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1375	-	-	806	909	
Stage 1	-	-	-	888	-	
Stage 2	-	-	-	978	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	1375	-	-	803	909	
Mov Cap-2 Maneuver	-	-	-	803	-	
Stage 1	-	-	-	884	-	
Stage 2	-	-	-	978	-	
Approach	EB	WB	SB			
HCM Control Delay, s/v 1.09	0	10.13				
HCM LOS			B			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	257	-	-	-	808	
HCM Lane V/C Ratio	0.004	-	-	-	0.132	
HCM Control Delay (s/veh)	7.6	0	-	-	10.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %ile Q(veh)	0	-	-	-	0.5	

# Existing Scenario

## Sunday Peak Hour

### Queues

#### 1: Bank & Fifth

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	52	36	118	64	15	468	22	486
Future Volume (vph)	52	36	118	64	15	468	22	486
Lane Group Flow (vph)	0	126	131	112	0	566	0	608
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	8	8	2	2	6	6	6
Permitted Phases	4	4	8	8	2	2	6	6
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag							
Lead-Lag Optimize?	None							
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	14.0	14.0	14.0	14.0	50.0	50.0	50.0	50.0
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.67	0.67	0.67	0.67
v/c Ratio	0.53	0.65	0.36	0.30	0.30	0.33	0.33	0.33
Control Delay (s/veh)	30.2	41.7	20.1	7.9	6.5	6.5	6.5	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.2	41.7	20.1	7.9	6.5	6.5	6.5	6.5
LOS	C	D	C	C	A	A	A	A
Approach Delay (s/veh)	30.2	31.8	7.9	6.5	6.5	6.5	6.5	6.5
Approach LOS	C	C	A	A	A	A	A	A
Queue Length 50th (m)	13.6	17.3	9.0	32.0	15.8	15.8	15.8	15.8
Queue Length 95th (m)	26.4	30.7	20.0	51.3	30.8	30.8	30.8	30.8
Internal Link Dist (m)	49.7	112.4	195.6	190.0	190.0	190.0	190.0	190.0
Turn Bay Length (m)	45.0							
Base Capacity (vph)	338	297	431	1903	1869	1869	1869	1869
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.44	0.26	0.30	0.33	0.33	0.33	0.33
Intersection Summary								
Cycle Length: 75								
Actuated Cycle Length: 75								
Offset: 42 (56%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green								
Natural Cycle: 75								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 0.65								
Intersection Signal Delay (s/veh): 12.9					Intersection LOS: B			
Intersection Capacity Utilization 58.2%					ICU Level of Service B			
Analysis Period (min) 15								
Splits and Phases: 1: Bank & Fifth								

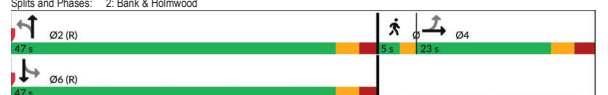


### Queues

#### 2: Bank & Holmwood

08/01/2024

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	17	0	31	484	22	519	
Future Volume (vph)	17	0	31	484	22	519	
Lane Group Flow (vph)	107	2	0	670	0	639	
Turn Type	NA	Perm	NA	Perm	NA	NA	
Protected Phases	4	2	2	6	3	3	
Permitted Phases	4	2	2	6	6	6	
Detector Phase	4	2	2	6	6	6	
Switch Phase							
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0	
Minimum Split (s)	23.0	47.0	47.0	47.0	47.0	5.0	
Total Split (s)	23.0	47.0	47.0	47.0	47.0	5.0	
Total Split (%)	30.7%	62.7%	62.7%	62.7%	62.7%	7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	0.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	5.2	
Lead/Lag	Lag						
Lead-Lag Optimize?	None						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	11.2	0.0	56.4	56.4	56.4	56.4	
Actuated g/C Ratio	0.15	0.00	0.75	0.75	0.75	0.75	
v/c Ratio	0.53	0.01	0.34	0.30	0.30	0.30	
Control Delay (s/veh)	38.2	0.0	7.2	8.2	8.2	8.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.2	0.0	7.2	8.2	8.2	8.2	
LOS	D	A	A	A	A	A	
Approach Delay (s/veh)	38.2	7.2	8.2	8.2	8.2	8.2	
Approach LOS	D	A	A	A	A	A	
Queue Length 50th (m)	14.2	0.0	30.2	19.5	19.5	19.5	
Queue Length 95th (m)	26.7	0.0	49.5	44.3	44.3	44.3	
Internal Link Dist (m)	39.8	116.8	31.5	195.6	195.6	195.6	
Turn Bay Length (m)	45.0						
Base Capacity (vph)	313	143	1966	2124	2124	2124	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.34	0.01	0.34	0.30	0.30	0.30	
Intersection Summary							
Cycle Length: 75							
Actuated Cycle Length: 75							
Offset: 16 (21%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green							
Natural Cycle: 75							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.53							
Intersection Signal Delay (s/veh): 10.0					Intersection LOS: A		
Intersection Capacity Utilization 58%					ICU Level of Service H		
Analysis Period (min) 15							
Splits and Phases: 2: Bank & Holmwood							

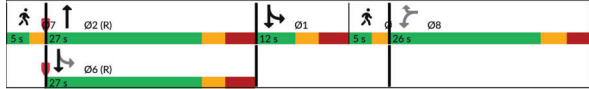


Queues  
3: Bank & Exhibition

08/01/2024

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø3	Ø6	Ø7
Lane Configurations	↔	↔	↕	↕	↕			
Traffic Volume (vph)	120	63	397	170	423			
Future Volume (vph)	120	63	397	170	423			
Lane Group Flow (vph)	133	70	570	189	470			
Turn Type	Perm	Perm	NA	custom	NA			
Protected Phases		2	1	16	3	6	7	
Permitted Phases	8	8		6				
Detector Phase	8	8	2	1	16			
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	1.0	3.0	10.0	3.0	
Minimum Split (s)	26.0	26.0	27.0	7.9	5.0	27.0	5.0	
Total Split (s)	26.0	26.0	27.0	12.0	5.0	27.0	5.0	
Total Split (%)	34.7%	34.7%	36.0%	10.0%	7%	36%	7%	
Yellow Time (s)	3.3	3.3	3.0	3.0	2.0	3.0	2.0	
All-Red Time (s)	3.0	3.0	3.9	3.9	0.0	3.9	0.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0				
Total Lost Time (s)	6.3	6.3	6.9	6.9				
Lead/Lag			Lead		Lag			
Lead-Lag Optimize?			Yes		Yes			
Recall Mode	None	None	C-Max	None	None	C-Max	None	
Act Effect Green (s)	12.5	12.5	40.6	45.7	54.0			
Actuated g/C Ratio	0.17	0.17	0.54	0.61	0.72			
v/c Ratio	0.53	0.29	0.36	0.41	0.21			
Control Delay (s/veh)	35.8	10.2	11.3	12.4	5.1			
Queue Delay	0.0	0.0	0.0	0.0	0.0			
Total Delay (s/veh)	35.8	10.2	11.3	12.4	5.1			
LOS	D	B	B	B	A			
Approach Delay (s/veh)	27.0	11.3		7.1				
Approach LOS	C	B		A				
Queue Length 50th (m)	17.6	0.0	21.9	7.5	10.4			
Queue Length 95th (m)	31.2	9.4	37.9	26.0	23.4			
Internal Link Dist (m)	30.6		33.7		44.8			
Turn Bay Length (m)			40.0					
Base Capacity (vph)	399	347	1584	462	2283			
Starvation Cap Reductn	0	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0			
Storage Cap Reductn	0	0	0	0	0			
Reduced v/c Ratio	0.33	0.20	0.36	0.41	0.21			

Splits and Phases: 3: Bank & Exhibition

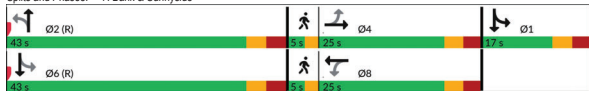


Queues  
7: Bank & Sunnyside

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø6	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔			
Traffic Volume (vph)	41	32	15	49	18	448	113	482			
Future Volume (vph)	41	32	15	49	18	448	113	482			
Lane Group Flow (vph)	0	114	0	185	0	530	0	751			
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA			
Protected Phases		4		8		2	1	16	3	6	7
Permitted Phases	4		8		2		6				
Detector Phase	4	4	8	8	2	2	1	16			
Switch Phase											
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	1.0	17.0	1.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	5.0	43.0	5.0	
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	5.0	43.0	5.0	
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	6%	48%	6%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	2.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	0.0	3.0	0.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0						
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0						
Lead/Lag	Lag	Lag	Lag	Lag				Lead	Lead		
Lead-Lag Optimize?			Yes	Yes				Yes	Yes		
Recall Mode	None	None	None	None	C-Max	C-Max	None	None	C-Max	None	
Act Effect Green (s)	14.6	14.6	14.6	14.6	44.6	44.6	58.0				
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.50	0.50	0.64				
v/c Ratio	0.78	0.70	0.37	0.37	0.49						
Control Delay (s/veh)	67.8	32.8	16.5	4.7							
Queue Delay	0.0	0.0	0.0	0.0	0.0						
Total Delay (s/veh)	67.8	32.8	16.5	4.7							
LOS	E	C	C	B	A						
Approach Delay (s/veh)	67.8	32.8	16.5	4.7							
Approach LOS	E	C	C	B	A						
Queue Length 50th (m)	19.1	16.5	28.7	8.6							
Queue Length 95th (m)	34.5	35.5	47.5	11.3							
Internal Link Dist (m)	75.1	136.0	63.1	79.0							
Turn Bay Length (m)											
Base Capacity (vph)	199	333	1417	1547							
Starvation Cap Reductn	0	0	0	0	0						
Spillback Cap Reductn	0	0	0	0	0						
Storage Cap Reductn	0	0	0	0	0						
Reduced v/c Ratio	0.57	0.56	0.37	0.49							

Splits and Phases: 7: Bank & Sunnyside



Queues  
6: Bank & Aylmer

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↕	↕	
Traffic Volume (vph)	50	13	572	627	
Future Volume (vph)	50	13	572	627	
Lane Group Flow (vph)	76	0	650	753	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2		6	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	4.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag			Lead	
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effect Green (s)	10.8	72.6	72.6	72.6	
Actuated g/C Ratio	0.12	0.81	0.81	0.81	
v/c Ratio	0.40	0.27	0.31		
Control Delay (s/veh)	35.7	2.4	3.4		
Queue Delay	0.0	0.0	0.0		
Total Delay (s/veh)	35.7	2.4	3.4		
LOS	D	A	A		
Approach Delay (s/veh)	35.7	2.4	3.4		
Approach LOS	D	A	A		
Queue Length 50th (m)	9.6	10.8	15.8		
Queue Length 95th (m)	21.9	14.3	26.2		
Internal Link Dist (m)	76.7	28.1	10.1		
Turn Bay Length (m)					
Base Capacity (vph)	281	2411	2463		
Starvation Cap Reductn	0	0	0		
Spillback Cap Reductn	0	0	0		
Storage Cap Reductn	0	0	0		
Reduced v/c Ratio	0.27	0.27	0.31		

Splits and Phases: 6: Bank & Aylmer

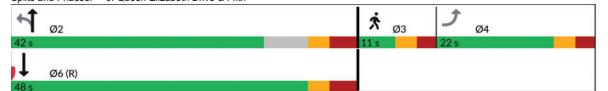


Queues  
9: Queen Elizabeth Drive & Fifth

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↕	↕	
Traffic Volume (vph)	12	198	12	11	
Future Volume (vph)	12	198	12	11	
Lane Group Flow (vph)	154	0	233	40	
Turn Type	Perm	Perm	NA	NA	
Protected Phases		4	2	6	3
Permitted Phases	4	2		6	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	42.0	42.0	42.0	9.7
Total Split (s)	22.0	42.0	42.0	42.0	11.0
Total Split (%)	27.2%	51.9%	51.9%	59.3%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8		
Lead/Lag	Lag			Lead	
Lead-Lag Optimize?					
Recall Mode	Min	None	None	C-Max	None
Act Effect Green (s)	14.0	54.5	54.5		
Actuated g/C Ratio	0.17	0.67	0.67		
v/c Ratio	0.61	0.29	0.04		
Control Delay (s/veh)	40.6	7.3	5.6		
Queue Delay	0.0	0.0	0.0		
Total Delay (s/veh)	40.6	7.3	5.6		
LOS	D	A	A		
Approach Delay (s/veh)	40.6	7.3	5.6		
Approach LOS	D	A	A		
Queue Length 50th (m)	22.3	12.4	1.8		
Queue Length 95th (m)	37.4	27.9	5.7		
Internal Link Dist (m)	57.2	0.1	5.9		
Turn Bay Length (m)					
Base Capacity (vph)	306	804	1026		
Starvation Cap Reductn	0	0	0		
Spillback Cap Reductn	0	0	0		
Storage Cap Reductn	0	0	0		
Reduced v/c Ratio	0.50	0.29	0.04		

Splits and Phases: 9: Queen Elizabeth Drive & Fifth



Intersection						
Intersection Delay, s/veh	7.9					
Intersection LOS	A					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	5	141	100	5	5	5
Future Vol, veh/h	5	141	100	5	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	157	111	6	6	6
Number of Lanes	0	1	1	0	1	0
Approach	EB	WB	SB			
Opposing Approach	WB	EB				
Opposing Lanes	1	1	0			
Conflicting Approach Left	SB		WB			
Conflicting Lanes Left	1	0	1			
Conflicting Approach Right		SB	EB			
Conflicting Lanes Right	0	1	1			
HCM Control Delay, s/veh	8	7.7	7.4			
HCM LOS	A	A	A			

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	0%	50%
Vol Thru, %	97%	95%	0%
Vol Right, %	0%	5%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	146	105	10
LT Vol	5	0	5
Through Vol	141	100	0
RT Vol	0	5	5
Lane Flow Rate	162	117	11
Geometry Grp	1	1	1
Degree of Util (X)	0.182	0.131	0.013
Departure Headway (Hd)	4.048	4.046	4.328
Convergence, Y/N	Yes	Yes	Yes
Cap	866	853	832
Service Time	2.076	2.084	2.328
HCM Lane V/C Ratio	0.183	0.133	0.013
HCM Control Delay, s/veh	8	7.7	7.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.5	0

Intersection						
Intersection Delay, s/veh	8					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	14	5	54	3	122	24
Future Vol, veh/h	14	5	54	3	122	24
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	6	60	3	136	27
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB	SB	SB
Opposing Approach	WB	EB				
Opposing Lanes	1	1	0			
Conflicting Approach Left		NB	EB			
Conflicting Lanes Left	0	1	1			
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1	0	1			
HCM Control Delay, s/veh	7.3	7.9	8.2			
HCM LOS	A	A	A			

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	84%	0%	95%
Vol Thru, %	0%	74%	5%
Vol Right, %	16%	26%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	146	19	57
LT Vol	122	0	54
Through Vol	0	14	3
RT Vol	24	5	0
Lane Flow Rate	162	21	63
Geometry Grp	1	1	1
Degree of Util (X)	0.187	0.025	0.078
Departure Headway (Hd)	4.148	4.216	4.425
Convergence, Y/N	Yes	Yes	Yes
Cap	860	854	798
Service Time	2.202	2.216	2.516
HCM Lane V/C Ratio	0.188	0.025	0.079
HCM Control Delay, s/veh	8.2	7.3	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.1	0.3

Intersection						
Intersection Delay, s/veh	7.9					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	14	5	5	158	5	5
Future Vol, veh/h	14	5	5	158	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	6	6	176	6	6
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB	SB	SB
Opposing Approach	WB	EB				
Opposing Lanes	1	1	0			
Conflicting Approach Left		NB	EB			
Conflicting Lanes Left	0	1	1			
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1	0	1			
HCM Control Delay, s/veh	7.1	8	7.2			
HCM LOS	A	A	A			

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	3%
Vol Thru, %	0%	74%	97%
Vol Right, %	50%	26%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	19	163
LT Vol	5	0	5
Through Vol	0	14	158
RT Vol	5	5	0
Lane Flow Rate	11	21	181
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.023	0.2
Departure Headway (Hd)	4.083	3.93	3.976
Convergence, Y/N	Yes	Yes	Yes
Cap	864	807	906
Service Time	2.166	1.969	1.985
HCM Lane V/C Ratio	0.013	0.023	0.2
HCM Control Delay, s/veh	7.2	7.1	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.7

Intersection												
Intersection Delay, s/veh	9.8											
Intersection LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↔				↔
Traffic Vol, veh/h	67	79	0	0	0	223	97	65	60	0	0	101
Future Vol, veh/h	67	79	0	0	0	223	97	65	60	0	0	101
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	88	0	0	0	248	108	72	67	0	0	112
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1
Approach	EB	WB	WB	NB	SB	SB						
Opposing Approach	WB	EB										
Opposing Lanes	1	1	0									
Conflicting Approach Left	SB		NB	EB								
Conflicting Lanes Left	1	1	1	1								
Conflicting Approach Right	NB		SB	WB								
Conflicting Lanes Right	1	1	1	1								
HCM Control Delay, s/veh	9.9	9.9	9.4	10.6								
HCM LOS	A	A	B	A								

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	46%	0%	0%
Vol Thru, %	29%	54%	0%	0%
Vol Right, %	27%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	222	146	223	101
LT Vol	97	67	0	0
Through Vol	65	79	0	0
RT Vol	60	0	223	101
Lane Flow Rate	247	162	248	112
Geometry Grp	1	1	1	1
Degree of Util (X)	0.339	0.234	0.304	0.144
Departure Headway (Hd)	4.943	5.183	4.417	4.619
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	720	855	805	765
Service Time	3.028	3.272	2.496	2.717
HCM Lane V/C Ratio	0.343	0.236	0.308	0.146
HCM Control Delay, s/veh	10.6	9.9	9.4	8.5
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.5	0.9	1.3	0.5



Intersection table for HCM 7th TWSC 4: Bank & Wilton. Includes Int Delay (4.6), Movement (EBL, EBR, NBL, NBT, SBT, SBR), Lane Configurations, Traffic Vol, Future Vol, Conflicting Peds, Sign Control, RT Channelized, Storage Length, Veh in Median Storage, Grade, Peak Hour Factor, Heavy Vehicles, and Mvmt Flow.

Major/Minor table for HCM 7th TWSC 4: Bank & Wilton. Columns: Major2, Major1, Major2. Rows include Conflicting Flow All, Stage 1, Stage 2, Critical Hdwy, Critical Hdwy Stg 1, Critical Hdwy Stg 2, Follow-up Hdwy, Pot Cap-1 Maneuver, Stage 1, Stage 2, Platoon blocked, Mov Cap-1 Maneuver, Mov Cap-2 Maneuver, Stage 1, Stage 2.

Approach table for HCM 7th TWSC 4: Bank & Wilton. Columns: EB, NB, SB. Rows include HCM Control Delay, HCM LOS.

Minor Lane/Major Mvmt table for HCM 7th TWSC 4: Bank & Wilton. Columns: NBL, NBTEBLn1, SBT, SBR. Rows include Capacity, HCM Lane V/C Ratio, HCM Control Delay, HCM Lane LOS, HCM 95th %tile Q(veh).

Intersection table for HCM 7th TWSC 5: Bank & Echo. Includes Int Delay (1), Movement (EBL, EBR, NBL, NBT, SBT, SBR), Lane Configurations, Traffic Vol, Future Vol, Conflicting Peds, Sign Control, RT Channelized, Storage Length, Veh in Median Storage, Grade, Peak Hour Factor, Heavy Vehicles, and Mvmt Flow.

Major/Minor table for HCM 7th TWSC 5: Bank & Echo. Columns: Minor2, Major1, Major2. Rows include Conflicting Flow All, Stage 1, Stage 2, Critical Hdwy, Critical Hdwy Stg 1, Critical Hdwy Stg 2, Follow-up Hdwy, Pot Cap-1 Maneuver, Stage 1, Stage 2, Platoon blocked, Mov Cap-1 Maneuver, Mov Cap-2 Maneuver, Stage 1, Stage 2.

Approach table for HCM 7th TWSC 5: Bank & Echo. Columns: EB, NB, SB. Rows include HCM Control Delay, HCM LOS.

Minor Lane/Major Mvmt table for HCM 7th TWSC 5: Bank & Echo. Columns: NBTEBLn1, SBT, SBR. Rows include Capacity, HCM Lane V/C Ratio, HCM Control Delay, HCM Lane LOS, HCM 95th %tile Q(veh).

Intersection table for HCM 7th TWSC 8: Queen Elizabeth Driveway /Queen Elizabeth Driveway & Princess Patricia Way. Includes Int Delay (5.8), Movement (EBL, EBR, NBL, NBT, SBT, SBR), Lane Configurations, Traffic Vol, Future Vol, Conflicting Peds, Sign Control, RT Channelized, Storage Length, Veh in Median Storage, Grade, Peak Hour Factor, Heavy Vehicles, and Mvmt Flow.

Major/Minor table for HCM 7th TWSC 8: Queen Elizabeth Driveway /Queen Elizabeth Driveway & Princess Patricia Way. Columns: Minor2, Major1, Major2. Rows include Conflicting Flow All, Stage 1, Stage 2, Critical Hdwy, Critical Hdwy Stg 1, Critical Hdwy Stg 2, Follow-up Hdwy, Pot Cap-1 Maneuver, Stage 1, Stage 2, Platoon blocked, Mov Cap-1 Maneuver, Mov Cap-2 Maneuver, Stage 1, Stage 2.

Approach table for HCM 7th TWSC 8: Queen Elizabeth Driveway /Queen Elizabeth Driveway & Princess Patricia Way. Columns: EB, NB, SB. Rows include HCM Control Delay, HCM LOS.

Minor Lane/Major Mvmt table for HCM 7th TWSC 8: Queen Elizabeth Driveway /Queen Elizabeth Driveway & Princess Patricia Way. Columns: NBL, NBTEBLn1, SBT, SBR. Rows include Capacity, HCM Lane V/C Ratio, HCM Control Delay, HCM Lane LOS, HCM 95th %tile Q(veh).

Intersection table for HCM 7th TWSC 10: Bank & Marche. Includes Int Delay (1.9), Movement (WBL, WBR, NBL, NBR, SBL, SBT), Lane Configurations, Traffic Vol, Future Vol, Conflicting Peds, Sign Control, RT Channelized, Storage Length, Veh in Median Storage, Grade, Peak Hour Factor, Heavy Vehicles, and Mvmt Flow.

Major/Minor table for HCM 7th TWSC 10: Bank & Marche. Columns: Minor1, Major1, Major2. Rows include Conflicting Flow All, Stage 1, Stage 2, Critical Hdwy, Critical Hdwy Stg 1, Critical Hdwy Stg 2, Follow-up Hdwy, Pot Cap-1 Maneuver, Stage 1, Stage 2, Platoon blocked, Mov Cap-1 Maneuver, Mov Cap-2 Maneuver, Stage 1, Stage 2.

Approach table for HCM 7th TWSC 10: Bank & Marche. Columns: WB, NB, SB. Rows include HCM Control Delay, HCM LOS.

Minor Lane/Major Mvmt table for HCM 7th TWSC 10: Bank & Marche. Columns: NBT, NBR/WBLn1, SBT. Rows include Capacity, HCM Lane V/C Ratio, HCM Control Delay, HCM Lane LOS, HCM 95th %tile Q(veh).

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	[Diagram]					
Traffic Vol, veh/h	141	145	5	100	83	5
Future Vol, veh/h	141	145	5	100	83	5
Conflicting Peds, #/hr	0 100 100 0 100 100					
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None					
Storage Length	-					
Veh in Median Storage, #	0					
Grade, %	0					
Peak Hour Factor	90					
Heavy Vehicles, %	2					
Mvmt Flow	157	161	6	111	92	6

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	418
Stage 1	-	-	337
Stage 2	-	-	222
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	1141	490
Stage 1	-	-	723
Stage 2	-	-	815
Platoon blocked, %	-		
Mov Cap-1 Maneuver	-	1020	389
Mov Cap-2 Maneuver	-	-	389
Stage 1	-	-	646
Stage 2	-	-	724

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.41	17.12
HCM LOS	C		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	394	-	-	86	-
HCM Lane V/C Ratio	0.248	-	-	0.005	-
HCM Control Delay (s/veh)	17.1	-	-	8.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %ile Q(veh)	1	-	-	0	-

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	[Diagram]					
Traffic Vol, veh/h	5	50	52	74	166	5
Future Vol, veh/h	5	50	52	74	166	5
Conflicting Peds, #/hr	0 0 0 0 0 0					
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None					
Storage Length	-					
Veh in Median Storage, #	0					
Grade, %	0					
Peak Hour Factor	90					
Heavy Vehicles, %	2					
Mvmt Flow	6	56	58	82	184	6

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	140	0	0
Stage 1	-	-	99
Stage 2	-	-	67
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1443	-	825
Stage 1	-	-	925
Stage 2	-	-	956
Platoon blocked, %	-		
Mov Cap-1 Maneuver	1443	-	822
Mov Cap-2 Maneuver	-	-	822
Stage 1	-	-	921
Stage 2	-	-	956

Approach	EB	WB	SB
HCM Control Delay, s/v	0.68	0	10.66
HCM LOS	B		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	164	-	-	825	-
HCM Lane V/C Ratio	0.004	-	-	0.23	-
HCM Control Delay (s/veh)	7.5	0	-	10.7	-
HCM Lane LOS	A	A	-	B	-
HCM 95th %ile Q(veh)	0	-	-	0.9	-

# Existing Scenario

## Minor Event Ingress

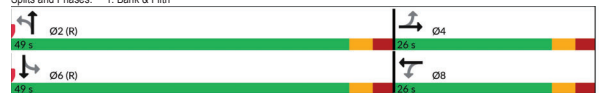
### Queues

#### 1: Bank & Fifth

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	[Diagram]							
Traffic Volume (vph)	50	56	65	45	16	482	25	557
Future Volume (vph)	50	56	65	45	16	482	25	557
Lane Group Flow (vph)	0	154	72	84	0	585	0	673
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4 8 8 2 2 6							
Permitted Phases	4 8 8 2 2 6 6							
Detector Phase	4 4 8 8 2 2 6 6							
Switch Phase	-							
Minimum Initial (s)	4.0							
Minimum Split (s)	26.0							
Total Split (s)	26.0							
Total Split (%)	34.7%							
Yellow Time (s)	3.0							
All-Red Time (s)	2.5							
Lost Time Adjust (s)	0.0							
Total Lost Time (s)	5.5							
Lead/Lag	-							
Lead-Lag Optimize?	-							
Recall Mode	None							
Act Effect Green (s)	13.1							
Actuated g/C Ratio	0.17							
v/c Ratio	0.65							
Control Delay (s/veh)	36.9							
Queue Delay	0.0							
Total Delay (s/veh)	36.9							
LOS	D							
Approach Delay (s/veh)	36.9							
Approach LOS	D							
Queue Length 50th (m)	17.7							
Queue Length 95th (m)	32.3							
Internal Link Dist (m)	49.7							
Turn Bay Length (m)	45.0							
Base Capacity (vph)	361							
Starvation Cap Reductn	0							
Spillback Cap Reductn	0							
Storage Cap Reductn	0							
Reduced v/c Ratio	0.43							

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 47 (63%), Referenced to phase 2:NBL and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay (s/veh): 12.6	Intersection LOS: B
Intersection Capacity Utilization 61.9%	ICU Level of Service B
Analysis Period (min) 15	

#### Splits and Phases: 1: Bank & Fifth



Queues  
2: Bank & Holmwood

08/01/2024

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	↔	
Traffic Volume (vph)	25	50	498	24	543	
Future Volume (vph)	25	50	498	24	543	
Lane Group Flow (vph)	114	0	682	0	667	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	3	
Detector Phase	4	2	2	6	3	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	
Lead/Lag	Lag					Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.4	56.3	56.3	56.3	56.3	
Actuated g/C Ratio	0.15	0.75	0.75	0.75	0.75	
v/c Ratio	0.54	0.37	0.37	0.32	0.32	
Control Delay (s/veh)	38.1	2.9	2.9	4.8	4.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.1	2.9	2.9	4.8	4.8	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	38.1	2.9	2.9	4.8	4.8	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	15.1	6.3	6.3	25.1	25.1	
Queue Length 95th (m)	27.8	13.9	13.9	20.2	20.2	
Internal Link Dist (m)	39.6	31.5	31.5	195.6	195.6	
Turn Bay Length (m)						
Base Capacity (vph)	303	1858	1858	2108	2108	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.38	0.37	0.37	0.32	0.32	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 74 (99%), Referenced to phase 2:NBL and 6:SBT, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay (s/veh): 6.5	Intersection LOS: A
Intersection Capacity Utilization 66.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Bank & Holmwood



Queues  
6: Bank & Aylmer

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	70	18	675	499	
Future Volume (vph)	70	18	675	499	
Lane Group Flow (vph)	86	0	770	635	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	3	
Detector Phase	4	2	6	3	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.0	60.3	60.3	60.3	
Actuated g/C Ratio	0.16	0.67	0.67	0.67	
v/c Ratio	0.35	0.39	0.32	0.32	
Control Delay (s/veh)	36.4	5.4	6.4	6.4	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.4	5.4	6.4	6.4	
LOS	D	A	A	A	
Approach Delay (s/veh)	36.4	5.4	6.4	6.4	
Approach LOS	D	A	A	A	
Queue Length 50th (m)	12.6	24.9	19.8	19.8	
Queue Length 95th (m)	26.1	23.6	28.0	28.0	
Internal Link Dist (m)	76.7	28.1	10.1	10.1	
Turn Bay Length (m)					
Base Capacity (vph)	288	1987	1980	1980	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.30	0.39	0.32	0.32	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 87 (97%), Referenced to phase 2:NBL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay (s/veh): 7.6	Intersection LOS: A
Intersection Capacity Utilization 53.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Bank & Aylmer



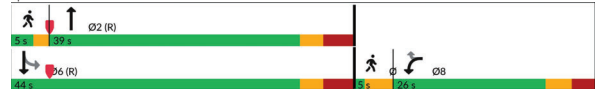
Queues  
3: Bank & Exhibition

08/01/2024

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	↔	↔	↔	↔	↔		
Traffic Volume (vph)	118	86	415	165	411		
Future Volume (vph)	118	86	415	165	411		
Lane Group Flow (vph)	131	96	668	183	457		
Turn Type	Prot	Perm	NA	Perm	NA		
Protected Phases	8	2	2	6	1	7	
Permitted Phases	8	2	2	6	1	7	
Detector Phase	8	2	2	6	1	7	
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	58.7%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	12.1	12.1	54.4	54.4	54.4		
Actuated g/C Ratio	0.16	0.16	0.73	0.73	0.73		
v/c Ratio	0.50	0.37	0.33	0.41	0.20		
Control Delay (s/veh)	35.1	10.5	4.9	7.4	3.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	35.1	10.5	4.9	7.4	3.1		
LOS	D	B	A	A	A		
Approach Delay (s/veh)	24.7	4.9	4.3	4.3	4.3		
Approach LOS	C	A	A	A	A		
Queue Length 50th (m)	17.4	0.0	14.0	5.3	6.7		
Queue Length 95th (m)	30.8	11.2	26.6	10.5	8.8		
Internal Link Dist (m)	30.6	33.7	40.0	44.8	44.8		
Turn Bay Length (m)							
Base Capacity (vph)	429	366	2044	446	2300		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.31	0.26	0.33	0.41	0.20		

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay (s/veh): 7.6	Intersection LOS: A
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Bank & Exhibition



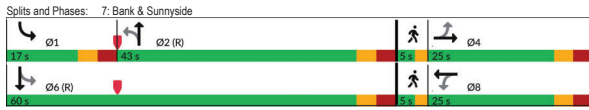
Queues  
7: Bank & Sunnyside

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	55	50	17	57	19	467	103	528		
Future Volume (vph)	55	50	17	57	19	467	103	528		
Lane Group Flow (vph)	0	146	0	258	0	559	0	772		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases	4	8	8	2	2	6	1	6	3	7
Permitted Phases	4	8	8	2	2	6	1	6	3	7
Detector Phase	4	8	8	2	2	6	1	6	3	7
Switch Phase										
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	17.0	1.0	1.0
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.9%	47.9%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	None	None
Act Effct Green (s)	20.1	20.1	20.1	20.1	58.3	58.3				
Actuated g/C Ratio	0.22	0.22	0.22	0.22	0.65	0.65				
v/c Ratio	0.73	0.76	0.30	0.30	0.53	0.53				
Control Delay (s/veh)	52.2	32.6	8.1	7.5	7.5	7.5				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay (s/veh)	52.2	32.6	8.1	7.5	7.5	7.5				
LOS	D	C	A	A	A	A				
Approach Delay (s/veh)	52.2	32.6	8.1	7.5	7.5	7.5				
Approach LOS	D	C	A	A	A	A				
Queue Length 50th (m)										

Queues  
7: Bank & Sunnyside

08/01/2024

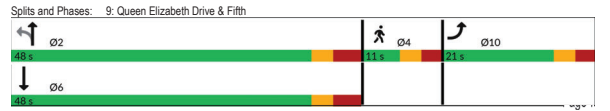


Queues  
9: Queen Elizabeth Drive & Fifth

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	↔
Traffic Volume (vph)	51	51	215	519	
Future Volume (vph)	51	51	215	519	
Lane Group Flow (vph)	97	0	296	670	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases		2			
Detector Phase	10	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	28.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7				6.8
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	Max	None
Act Effct Green (s)	10.7			41.2	
Actuated g/C Ratio	0.17			0.64	
v/c Ratio	0.39			0.34	
Control Delay (s/veh)	28.6			6.8	
Queue Delay	0.0			0.0	
Total Delay (s/veh)	28.6			6.8	
LOS	C			A	
Approach Delay (s/veh)	28.6			6.8	
Approach LOS	C			A	
Queue Length 50th (m)	10.4			13.2	
Queue Length 95th (m)	22.4			27.9	
Internal Link Dist (m)	57.2			0.1	
Turn Bay Length (m)					
Base Capacity (vph)	367			878	
Starvation Cap Reductn	0			0	
Spillback Cap Reductn	0			0	
Storage Cap Reductn	0			0	
Reduced v/c Ratio	0.26			0.34	

**Intersection Summary**  
 Cycle Length: 80  
 Actuated Cycle Length: 64.4  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay (s/veh): 11.2  
 Intersection LOS: B  
 Intersection Capacity Utilization 73.6%  
 ICU Level of Service D  
 Analysis Period (min) 15



HCM 7th AWSC  
12: Exhibition & Paul Askin

08/01/2024

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	5	222	117	5	5	5
Future Vol, veh/h	5	222	117	5	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	247	130	6	6	6
Number of Lanes	0	1	1	0	1	0
Approach	EB	WB	SB			
Opposing Approach	WB	EB				
Opposing Lanes	1	1	0			
Conflicting Approach Left	SB		WB			
Conflicting Lanes Left	1	0	1			
Conflicting Approach Right		SB	EB			
Conflicting Lanes Right	0	1	1			
HCM Control Delay, s/veh	8.7	7.9	7.6			
HCM LOS	A	A	A			

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	0%	50%
Vol Thru, %	98%	96%	0%
Vol Right, %	0%	4%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	227	122	10
LT Vol	5	0	5
Through Vol	222	117	0
RT Vol	0	5	5
Lane Flow Rate	252	136	11
Geometry Grp	1	1	1
Degree of Util (X)	0.284	0.155	0.014
Departure Headway (Hd)	4.059	4.117	4.56
Convergence, Y/N	Yes	Yes	Yes
Cap	863	865	790
Service Time	2.036	2.175	2.56
HCM Lane V/C Ratio	0.285	0.157	0.014
HCM Control Delay, s/veh	8.7	7.9	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.2	0.5	0

HCM 7th AWSC  
13: Paul Askin & Marche

08/01/2024

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	16	5	5	48	5	5
Future Vol, veh/h	16	5	5	48	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	6	6	53	6	6
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	NB			
Opposing Approach	WB	EB				
Opposing Lanes	1	1	0			
Conflicting Approach Left		NB	EB			
Conflicting Lanes Left	0	1	1			
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1	0	1			
HCM Control Delay, s/veh	7	7.3	7			
HCM LOS	A	A	A			

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	9%
Vol Thru, %	0%	76%	91%
Vol Right, %	50%	24%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	16	10	53
LT Vol	5	0	5
Through Vol	0	16	48
RT Vol	5	5	0
Lane Flow Rate	11	23	59
Geometry Grp	1	1	1
Degree of Util (X)	0.012	0.025	0.065
Departure Headway (Hd)	3.876	3.854	3.99
Convergence, Y/N	Yes	Yes	Yes
Cap	921	931	902
Service Time	1.908	1.869	1.907
HCM Lane V/C Ratio	0.012	0.025	0.065
HCM Control Delay, s/veh	7	7.3	7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.2

Intersection						
Intersection Delay, s/veh	9.4					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	16	5	117	44	211	16
Future Vol, veh/h	16	5	117	44	211	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	6	130	49	234	18
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	NB			
Opposing Approach	WB	EB	NB			
Opposing Lanes	1	1	0			
Conflicting Approach Left	0		NB	EB		
Conflicting Lanes Left	0		1	1		
Conflicting Approach Right	NB		WB			EB
Conflicting Lanes Right	1		0			1
HCM Control Delay, s/veh	7.8	9.2	9.7			
HCM LOS	A	A	A			

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	93%	0%	73%
Vol Thru, %	0%	76%	27%
Vol Right, %	7%	24%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	227	21	161
LT Vol	211	0	117
Through Vol	0	16	44
RT Vol	16	5	0
Lane Flow Rate	252	23	179
Geometry Grp	1	1	1
Degree of Util (X)	0.32	0.03	0.234
Departure Headway (Hd)	4.57	4.62	4.719
Convergence, Y/N	Yes	Yes	Yes
Cap	789	775	762
Service Time	2.589	2.648	2.741
HCM Lane V/C Ratio	0.319	0.03	0.235
HCM Control Delay, s/veh	9.7	7.8	9.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.4	0.1	0.9

Intersection				
Int Delay, s/veh	10.9			
Movement	EBL	EBR	NBL	NBR
Lane Configurations	↔	↔	↔	↔
Traffic Vol, veh/h	5	260	139	638
Future Vol, veh/h	5	260	139	638
Conflicting Peds, #/hr	0	0	178	0
Sign Control	Stop	Stop	Free	Free
RT Channelized	None	None	None	None
Storage Length	-	0	-	-
Veh in Median Storage, #	0	-	0	0
Grade, %	0	-	0	0
Peak Hour Factor	90	90	90	90
Heavy Vehicles, %	3	3	3	3
Mvmt Flow	6	289	154	709
Major/Minor	Minor2	Major1	Major2	
Conflicting Flow All	1389	725	755	0
Stage 1	725	-	-	-
Stage 2	663	-	-	-
Critical Hdwy	6.645	6.245	4.145	-
Critical Hdwy Stg 1	5.445	-	-	-
Critical Hdwy Stg 2	5.945	-	-	-
Follow-up Hdwy	3.52853	3.2852	2.285	-
Pot Cap-1 Maneuver	144	422	848	-
Stage 1	476	-	-	-
Stage 2	473	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	68	342	688	-
Stage 1	278	-	-	-
Stage 2	384	-	-	-
Approach	EB	NB	SB	
HCM Control Delay, s/62.66	3.98	0	0	
HCM LOS	F			
Minor Lane/Major Mvmt	NBL	NBE	EBLn1	SBL
Capacity (veh/h)	563	-	342	-
HCM Lane V/C Ratio	0.224	-	0.844	-
HCM Control Delay (s/veh)	11.7	2.3	52.7	-
HCM Lane LOS	B	A	F	-
HCM 95th %tile Q(veh)	0.9	-	7.6	-

Intersection										
Intersection Delay, s/veh	8.3									
Intersection LOS	A									
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	59	50	0	0	0	135	61	40	37	0
Future Vol, veh/h	59	50	0	0	0	135	61	40	37	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	56	0	0	0	150	68	44	41	0
Number of Lanes	0	1	0	0	0	1	0	1	0	0
Approach	EB	WB	NB							
Opposing Approach	WB	EB	NB							
Opposing Lanes	1	1	1							
Conflicting Approach Left	0		NB		EB		WB			
Conflicting Lanes Left	0		1		1		1			
Conflicting Approach Right	NB		SB		WB		EB			
Conflicting Lanes Right	1		1		1		1			
HCM Control Delay, s/veh	8.7		7.9		8.7		7.6			
HCM LOS	A		A		A		A			

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	54%	0%	0%
Vol Thru, %	29%	46%	0%	0%
Vol Right, %	27%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	138	109	135	80
LT Vol	61	59	0	0
Through Vol	40	50	0	0
RT Vol	37	0	135	80
Lane Flow Rate	153	121	150	89
Geometry Grp	1	1	1	1
Degree of Util (X)	0.194	0.16	0.168	0.102
Departure Headway (Hd)	4.556	4.743	4.024	4.114
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	787	756	891	869
Service Time	2.588	2.774	2.054	2.148
HCM Lane V/C Ratio	0.194	0.16	0.168	0.102
HCM Control Delay, s/veh	8.7	8.7	7.9	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.6	0.6	0.3

Intersection				
Int Delay, s/veh	0.4			
Movement	EBL	EBR	NBL	NBR
Lane Configurations	↔	↔	↔	↔
Traffic Vol, veh/h	4	36	0	762
Future Vol, veh/h	4	36	0	762
Conflicting Peds, #/hr	0	0	0	86
Sign Control	Stop	Stop	Free	Free
RT Channelized	None	None	None	None
Storage Length	-	0	-	-
Veh in Median Storage, #	0	-	0	0
Grade, %	0	-	0	0
Peak Hour Factor	90	90	90	90
Heavy Vehicles, %	3	3	3	3
Mvmt Flow	4	40	0	847
Major/Minor	Minor2	Major1	Major2	
Conflicting Flow All	1239	816	0	0
Stage 1	816	-	-	-
Stage 2	423	-	-	-
Critical Hdwy	6.645	6.245	-	-
Critical Hdwy Stg 1	5.445	-	-	-
Critical Hdwy Stg 2	5.945	-	-	-
Follow-up Hdwy	3.52853	3.285	-	-
Pot Cap-1 Maneuver	179	374	0	0
Stage 1	432	-	-	-
Stage 2	627	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	179	374	-	-
Stage 1	432	-	-	-
Stage 2	627	-	-	-
Approach	EB	NB	SB	
HCM Control Delay, s/45.77	0	0	0	
HCM LOS	C			
Minor Lane/Major Mvmt	NBL	NBE	EBLn1	SBL
Capacity (veh/h)	-	-	374	-
HCM Lane V/C Ratio	-	-	0.107	-
HCM Control Delay (s/veh)	-	-	15.8	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.4	-



Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	58	52	110	211	316	245
Future Vol, veh/h	58	52	110	211	316	245
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-	-
Grade, %	0	-	0	0	-	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	64	58	122	234	351	272

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	966	487	623
Stage 1	487	-	-
Stage 2	479	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	285	584	968
Stage 1	622	-	-
Stage 2	627	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	243	584	968
Mov Cap-2 Maneuver	243	-	-
Stage 1	531	-	-
Stage 2	627	-	-

Approach	EB	NB	SB
HCM Control Delay, s/1.71	3.17	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	617	-	336	-
HCM Lane V/C Ratio	0.126	-	0.364	-
HCM Control Delay (s/veh)	9.3	0	21.7	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q(veh)	0.4	-	1.6	-

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	53	501	19	2	560
Future Vol, veh/h	0	53	501	19	2	560
Conflicting Peds, #/hr	0	0	0	100	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-	-
Grade, %	0	-	0	0	-	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	2	2
Mvmt Flow	0	59	557	21	2	622

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	389	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.9	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.3	-
Pot Cap-1 Maneuver	0	615	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	550	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/1.27	0	0	0.03
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	-	550	814
HCM Lane V/C Ratio	-	-	0.107	0.003
HCM Control Delay (s/veh)	-	-	12.3	9.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	222	129	5	117	87	5
Future Vol, veh/h	222	129	5	117	87	5
Conflicting Peds, #/hr	0	100	100	0	100	100
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	0	0	0	-
Grade, %	0	-	0	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	247	143	6	130	97	6

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	490
Stage 1	-	-	418
Stage 2	-	-	241
Critical Hdwy	-	4.12	-
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	-
Pot Cap-1 Maneuver	-	1073	-
Stage 1	-	-	664
Stage 2	-	-	799
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	960	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	594
Stage 2	-	-	710

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.36	19.79
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	345	-	-	74	-
HCM Lane V/C Ratio	0.297	-	-	0.006	-
HCM Control Delay (s/veh)	19.8	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0	-

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	5	27	156	199	83	5
Future Vol, veh/h	5	27	156	199	83	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	0	0	0	0	0
Grade, %	-	0	0	0	-	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	30	173	221	92	6

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	394	0	0
Stage 1	-	-	284
Stage 2	-	-	41
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1164	-	-
Stage 1	-	-	764
Stage 2	-	-	981
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1164	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	761
Stage 2	-	-	981

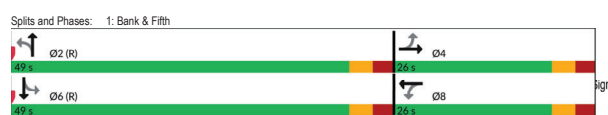
Approach	EB	WB	SB
HCM Control Delay, s/v1.27	0	0	11.29
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR/SBLn1
Capacity (veh/h)	281	-	-	670
HCM Lane V/C Ratio	0.005	-	-	0.146
HCM Control Delay (s/veh)	8.1	0	-	11.3
HCM Lane LOS	A	A	-	B
HCM 95th %tile Q(veh)	0	-	-	0.5

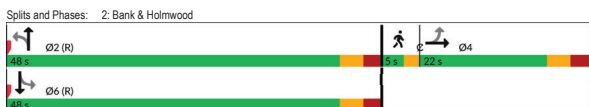
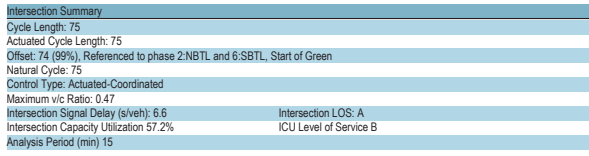
# Existing Scenario

## Minor Event Egress

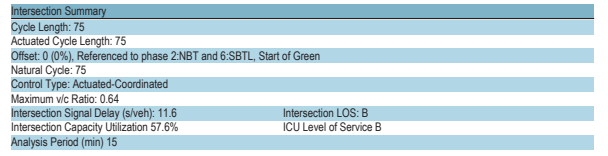
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	41	9	47	24	16	457	20	344
Traffic Volume (vph)	41	9	47	24	16	457	20	344
Future Volume (vph)	0	84	52	61	0	538	0	427
Lane Group Flow (vph)	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	2	2	2	2	2	2	6
Permitted Phases	4	4	8	8	2	2	6	6
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	9.4	9.4	9.4	9.4	57.9	57.9	57.9	57.9
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.77	0.77	0.77	0.77
v/c Ratio	0.51	0.34	0.30	0.24	0.24	0.20	0.20	0.20
Control Delay (s/veh)	31.9	34.4	19.5	6.0	3.6	3.6	3.6	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.9	34.4	19.5	6.0	3.6	3.6	3.6	3.6
LOS	C	C	B	A	A	A	A	A
Approach Delay (s/veh)	31.9	34.4	19.5	6.0	3.6	3.6	3.6	3.6
Approach LOS	C	C	B	A	A	A	A	A
Queue Length 50th (m)	7.5	6.9	3.5	12.8	7.5	7.5	7.5	7.5
Queue Length 95th (m)	18.8	15.5	12.6	34.2	15.6	15.6	15.6	15.6
Internal Link Dist (m)	49.7	45.0	112.4	195.6	190.0	190.0	190.0	190.0
Turn Bay Length (m)								
Base Capacity (vph)	330	341	402	2251	2168	2168	2168	2168
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.15	0.15	0.24	0.20	0.20	0.20	0.20



Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	41	52	445	22	325	41
Traffic Volume (vph)	7	52	445	22	325	41
Future Volume (vph)	84	0	579	0	424	0
Lane Group Flow (vph)	NA	Perm	NA	Perm	NA	NA
Protected Phases	4	2	2	2	2	3
Permitted Phases	4	2	2	2	2	6
Detector Phase	4	2	2	2	2	6
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	0.0
Lead/Lag		Lag				Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effect Green (s)	9.9	57.5	57.5	57.5	57.5	57.5
Actuated g/C Ratio	0.13	0.77	0.77	0.77	0.77	0.77
v/c Ratio	0.47	0.29	0.20	0.20	0.20	0.20
Control Delay (s/veh)	37.7	3.7	4.4	4.4	4.4	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.7	3.7	4.4	4.4	4.4	4.4
LOS	D	A	A	A	A	A
Approach Delay (s/veh)	37.7	3.7	4.4	4.4	4.4	4.4
Approach LOS	D	A	A	A	A	A
Queue Length 50th (m)	11.2	8.8	12.4	12.4	12.4	12.4
Queue Length 95th (m)	22.3	22.1	24.4	24.4	24.4	24.4
Internal Link Dist (m)	39.8	31.5	195.6	195.6	195.6	195.6
Turn Bay Length (m)						
Base Capacity (vph)	296	2029	2106	2106	2106	2106
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.29	0.20	0.20	0.20	0.20



Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	187	213	187	111	253	187	213
Traffic Volume (vph)	187	213	187	111	253	187	213
Future Volume (vph)	208	237	297	123	281	208	237
Lane Group Flow (vph)	Prot	Perm	NA	Perm	NA	NA	NA
Protected Phases	8	2	2	6	1	7	7
Permitted Phases	8	8	2	6	6	6	6
Detector Phase	8	8	2	6	6	6	6
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	58.7%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9	0.0	0.0
Lead/Lag		Lag	Lag	Lag		Lead	Lead
Lead-Lag Optimize?							
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effect Green (s)	14.9	14.9	46.9	46.9	46.9	46.9	46.9
Actuated g/C Ratio	0.20	0.20	0.63	0.63	0.63	0.63	0.63
v/c Ratio	0.64	0.57	0.17	0.25	0.14	0.25	0.14
Control Delay (s/veh)	36.4	9.6	4.9	5.8	4.4	4.4	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.4	9.6	4.9	5.8	4.4	4.4	4.4
LOS	D	A	A	A	A	A	A
Approach Delay (s/veh)	22.1	4.9	4.8	4.8	4.8	4.8	4.8
Approach LOS	C	A	A	A	A	A	A
Queue Length 50th (m)	27.3	0.0	5.4	4.2	5.0	5.0	5.0
Queue Length 95th (m)	43.5	16.2	12.4	8.8	7.6	7.6	7.6
Internal Link Dist (m)	30.6	33.7	40.0	44.8	44.8	44.8	44.8
Turn Bay Length (m)							
Base Capacity (vph)	431	471	1777	502	1985	1985	1985
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.50	0.17	0.25	0.14	0.25	0.14



Queues  
6: Bank & Aylmer

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	4	1	155	191	
Future Volume (vph)	4	1	155	191	
Lane Group Flow (vph)	7	0	173	219	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	3	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.0	60.3	60.3	60.3	
Actuated g/C Ratio	0.16	0.67	0.67	0.67	
v/c Ratio	0.03	0.08	0.10	0.10	
Control Delay (s/veh)	27.2	5.3	5.2	5.2	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	27.2	5.3	5.2	5.2	
LOS	C	A	A	A	
Approach Delay (s/veh)	27.2	5.3	5.2	5.2	
Approach LOS	C	A	A	A	
Queue Length 50th (m)	0.6	4.8	6.0	6.0	
Queue Length 95th (m)	4.4	8.1	9.6	9.6	
Internal Link Dist (m)	76.7	28.1	10.1	10.1	
Turn Bay Length (m)					
Base Capacity (vph)	253	2043	2103	2103	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.03	0.08	0.10	0.10	

Splits and Phases: 6: Bank & Aylmer

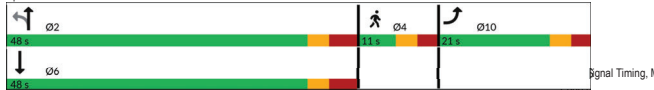


Queues  
9: Queen Elizabeth Drive & Fifth

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	64	31	264	152	
Future Volume (vph)	64	31	264	152	
Lane Group Flow (vph)	102	0	327	206	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases	10	2	6	4	
Detector Phase	10	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	Max	None
Act Effct Green (s)	10.8	41.2	41.2	41.2	
Actuated g/C Ratio	0.17	0.64	0.64	0.64	
v/c Ratio	0.39	0.32	0.20	0.20	
Control Delay (s/veh)	28.7	6.5	5.6	5.6	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	28.7	6.5	5.6	5.6	
LOS	C	A	A	A	
Approach Delay (s/veh)	28.7	6.5	5.6	5.6	
Approach LOS	C	A	A	A	
Queue Length 50th (m)	11.0	14.3	8.2	8.2	
Queue Length 95th (m)	23.4	29.4	18.0	18.0	
Internal Link Dist (m)	57.2	0.1	5.9	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	370	1030	1051	1051	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.28	0.32	0.20	0.20	

Splits and Phases: 9: Queen Elizabeth Drive & Fifth



Queues  
7: Bank & Sunnyside

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	28	7	5	12	12	236	33	411		
Future Volume (vph)	28	7	5	12	12	236	33	411		
Lane Group Flow (vph)	0	60	0	55	0	281	0	541		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases	4	8	8	2	2	1	6	3	7	
Permitted Phases	4	8	8	2	2	1	6	3	7	
Detector Phase	4	4	8	8	2	2	1	6		
Switch Phase										
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	17.0	1.0	1.0
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Max	Max	None	Max	None	None
Act Effct Green (s)	10.1	9.5	9.5	65.1	65.1	65.1	65.1	65.1		
Actuated g/C Ratio	0.13	0.12	0.12	0.82	0.82	0.82	0.82	0.82		
v/c Ratio	0.48	0.33	0.33	0.12	0.24	0.24	0.12	0.24		
Control Delay (s/veh)	44.4	20.8	20.8	3.2	3.5	3.5	3.2	3.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	44.4	20.8	20.8	3.2	3.5	3.5	3.2	3.5		
LOS	D	C	C	A	A	A	A	A		
Approach Delay (s/veh)	44.4	20.8	20.8	3.2	3.5	3.5	3.2	3.5		
Approach LOS	D	C	C	A	A	A	A	A		
Queue Length 50th (m)	9.3	2.8	2.8	5.4	11.3	11.3	5.4	11.3		
Queue Length 95th (m)	19.1	11.9	11.9	11.0	21.2	21.2	11.0	21.2		
Internal Link Dist (m)	75.1	136.0	136.0	63.1	79.0	79.0	63.1	79.0		
Turn Bay Length (m)										
Base Capacity (vph)	241	304	304	2387	2225	2225	2387	2225		
Starvation Cap Reductn	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.25	0.18	0.18	0.12	0.24	0.24	0.12	0.24		

Splits and Phases: 7: Bank & Sunnyside



HCM 7th AWSC  
12: Exhibition & Paul Askin

08/01/2024

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol. veh/h	5	190	275	5	5	5
Future Vol. veh/h	5	190	275	5	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	211	306	6	6	6
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	0	1	1
Conflicting Lanes Right	0	1	1
HCM Control Delay, s/veh	8.7	9.4	7.9
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	0%	50%
Vol Thru, %	97%	98%	0%
Vol Right, %	0%	2%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	195	280	10
LT Vol	5	0	5
Through Vol	190	275	0
RT Vol	0	5	5
Lane Flow Rate	217	311	11
Geometry Grp	1	1	1
Degree of Util (X)	0.252	0.355	0.015
Departure Headway (Hd)	4.191	4.105	4.857
Convergence, Y/N	Yes	Yes	Yes
Cap	967	668	741
Service Time	2.267	2.164	2.857
HCM Lane v/c Ratio	0.256	0.358	0.015
HCM Control Delay, s/veh	8.7	9.4	7.9
HCM Lane LOS	A	A	A
HCM 95th-ile Q	1	1.6	0

Intersection						
Intersection Delay, s/veh	7.8					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	24	5	5	144	5	5
Future Vol, veh/h	24	5	29	144	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	6	6	160	6	6
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left			NB	EB		
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1		0			
HCM Control Delay, s/veh	7.2		7.9		7.2	
HCM LOS	A		A		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	3%
Vol Thru, %	0%	83%	97%
Vol Right, %	50%	17%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	29	149
LT Vol	5	0	5
Through Vol	0	24	144
RT Vol	5	5	0
Lane Flow Rate	11	32	166
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.036	0.183
Departure Headway (Hd)	4.074	3.973	3.985
Convergence, Y/N	Yes	Yes	Yes
Cap	866	898	904
Service Time	2.157	2.009	1.997
HCM Lane V/C Ratio	0.013	0.036	0.184
HCM Control Delay, s/veh	7.2	7.2	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.7

Intersection												
Intersection Delay, s/veh	7.3											
Intersection LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↔				↔
Traffic Vol, veh/h	10	43	0	0	0	0	64	10	10	49	0	0
Future Vol, veh/h	10	43	0	0	0	0	64	10	10	49	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	48	0	0	0	0	71	11	11	54	0	0
Number of Lanes	0	1	0	0	0	0	1	0	1	0	0	0
Approach	EB	EB	EB	WB	NB	SB						
Opposing Approach	WB	EB		SB			NB					
Opposing Lanes	1	1		1			1					
Conflicting Approach Left	SB			NB			EB					
Conflicting Lanes Left	1			1			1					
Conflicting Approach Right	NB			SB			WB					
Conflicting Lanes Right	1			1			1					
HCM Control Delay, s/veh	7.7			7.1			7.3			7.1		
HCM LOS	A			A			A			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	19%	0%	0%
Vol Thru, %	14%	81%	0%	0%
Vol Right, %	71%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	53	64	94
LT Vol	10	10	0	0
Through Vol	10	43	0	0
RT Vol	49	0	64	94
Lane Flow Rate	77	59	71	104
Geometry Grp	1	1	1	1
Degree of Util (X)	0.082	0.071	0.073	0.105
Departure Headway (Hd)	3.841	4.34	3.691	3.616
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	922	819	959	979
Service Time	1.909	2.4	1.759	1.695
HCM Lane V/C Ratio	0.084	0.072	0.074	0.106
HCM Control Delay, s/veh	7.3	7.7	7.1	7.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.2	0.4

Intersection						
Intersection Delay, s/veh	8.3					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	24	5	73	5	129	66
Future Vol, veh/h	24	5	73	5	129	66
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	6	81	6	143	73
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left			NB	EB		
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1		0			
HCM Control Delay, s/veh	7.6		8.2		8.5	
HCM LOS	A		A		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	66%	0%	94%
Vol Thru, %	0%	83%	6%
Vol Right, %	34%	17%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	195	29	78
LT Vol	129	0	73
Through Vol	0	24	5
RT Vol	66	5	0
Lane Flow Rate	217	32	87
Geometry Grp	1	1	1
Degree of Util (X)	0.245	0.04	0.112
Departure Headway (Hd)	4.069	4.415	4.641
Convergence, Y/N	Yes	Yes	Yes
Cap	869	815	777
Service Time	2.157	2.418	2.643
HCM Lane V/C Ratio	0.25	0.039	0.112
HCM Control Delay, s/veh	8.5	7.6	8.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1	0.1	0.4

Intersection											
Int Delay, s/veh	3										
Movement	EBL	EBR	NBL	NBT	SBT	SBR					
Lane Configurations		↔		↔	↔	↔					
Traffic Vol, veh/h	2	108	46	276	389	65					
Future Vol, veh/h	2	108	46	276	389	65					
Conflicting Peds, #/hr	0	0	178	0	0	107					
Sign Control	Stop	Stop	Free	Free	Free	Free					
RT Channelized	-	None	-	None	-	None					
Storage Length	-	0	-	0	-	0					
Veh in Median Storage, #	0	-	-	0	0	0					
Grade, %	0	-	-	0	0	0					
Peak Hour Factor	90	90	90	90	90	90					
Heavy Vehicles, %	3	3	3	3	3	3					
Mvmt Flow	2	120	51	307	432	72					
Major/Minor	Minor2	Major1	Major2								
Conflicting Flow All	902	646	682	0	-	0					
Stage 1	646	-	-	-	-	-					
Stage 2	256	-	-	-	-	-					
Critical Hdwy	6.645	6.245	4.145	-	-	-					
Critical Hdwy Stg 1	5.445	-	-	-	-	-					
Critical Hdwy Stg 2	5.845	-	-	-	-	-					
Follow-up Hdwy	3.52853	3.2852	2.285	-	-	-					
Pot Cap-1 Maneuver	291	468	903	-	-	-					
Stage 1	518	-	-	-	-	-					
Stage 2	762	-	-	-	-	-					
Platoon blocked, %	-	-	-	-	-	-					
Mov Cap-1 Maneuver	177	380	733	-	-	-					
Mov Cap-2 Maneuver	177	-	-	-	-	-					
Stage 1	388	-	-	-	-	-					
Stage 2	618	-	-	-	-	-					
Approach	EB	NB	SB								
HCM Control Delay, s/veh	48.79	1.97	0								
HCM LOS	C										
Minor Lane/Major Mvmt	NBL	NBEBLn1	SBT	SBR							
Capacity (veh/h)	514	-	380	-							
HCM Lane V/C Ratio	0.07	-	0.316	-							
HCM Control Delay (s/veh)	10.3	0.6	18.8	-							
HCM Lane LOS	B	A	C	-							
HCM 95th-tile Q(veh)	0.2	-	1.3	-							

Intersection					
Int Delay, s/veh	0.2				
Movement	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Vol, veh/h	2	11	0	353	321
Future Vol, veh/h	2	11	0	353	321
Conflicting Peds, #/hr	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3
Mvmt Flow	2	12	0	392	357
Major/Minor					
Conflicting Flow All	553	357	-	0	-
Stage 1	357	-	-	-	-
Stage 2	196	-	-	-	-
Critical Hdwy	6.645	6.245	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-
Follow-up Hdwy	3.52853	3.285	-	-	-
Pot Cap-1 Maneuver	476	684	0	-	0
Stage 1	705	-	0	-	0
Stage 2	816	-	0	-	0
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	476	684	-	-	-
Mov Cap-2 Maneuver	476	-	-	-	-
Stage 1	705	-	-	-	-
Stage 2	816	-	-	-	-
Approach					
	EB	NB	SB		
HCM Control Delay, s/10.36		0	0		
HCM LOS	B				
Minor Lane/Major Mvmt					
	NBL	NBTLn1	SBT		
Capacity (veh/h)	-	684	-		
HCM Lane V/C Ratio	-	0.018	-		
HCM Control Delay (s/veh)	-	10.4	-		
HCM Lane LOS	-	B	-		
HCM 95th %tile Q(veh)	-	0.1	-		

Intersection					
Int Delay, s/veh	2.1				
Movement	WBL	WBR	NBT	NBR	SBL
Lane Configurations					
Traffic Vol, veh/h	5	144	409	29	0
Future Vol, veh/h	5	144	409	29	0
Conflicting Peds, #/hr	0	0	0	100	0
Sign Control	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	0	-	0
Grade, %	0	-	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	2
Mvmt Flow	6	160	454	32	0
Major/Minor					
Conflicting Flow All	768	343	0	0	-
Stage 1	571	-	-	-	-
Stage 2	198	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-
Pot Cap-1 Maneuver	342	658	-	0	-
Stage 1	534	-	-	0	-
Stage 2	822	-	-	0	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	306	589	-	-	-
Mov Cap-2 Maneuver	306	-	-	-	-
Stage 1	478	-	-	-	-
Stage 2	822	-	-	-	-
Approach					
	WB	NB	SB		
HCM Control Delay, s/13.38		0	0		
HCM LOS	B				
Minor Lane/Major Mvmt					
	NBT	NBR/WBLn1	SBT		
Capacity (veh/h)	-	589	-		
HCM Lane V/C Ratio	-	0.272	-		
HCM Control Delay (s/veh)	-	13.4	-		
HCM Lane LOS	-	B	-		
HCM 95th %tile Q(veh)	-	1.1	-		

Intersection					
Int Delay, s/veh	10.4				
Movement	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Vol, veh/h	251	166	17	44	121
Future Vol, veh/h	251	166	17	44	121
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0
Mvmt Flow	279	184	19	49	134
Major/Minor					
Conflicting Flow All	255	168	202	0	-
Stage 1	168	-	-	-	-
Stage 2	87	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	738	881	1382	-	-
Stage 1	866	-	-	-	-
Stage 2	942	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	728	881	1382	-	-
Mov Cap-2 Maneuver	728	-	-	-	-
Stage 1	854	-	-	-	-
Stage 2	942	-	-	-	-
Approach					
	EB	NB	SB		
HCM Control Delay, s/16.07		2.13	0		
HCM LOS	C				
Minor Lane/Major Mvmt					
	NBL	NBTLn1	SBT	SBR	
Capacity (veh/h)	502	-	782	-	-
HCM Lane V/C Ratio	0.014	-	0.593	-	-
HCM Control Delay (s/veh)	7.6	0	16.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	4	-	-

Intersection					
Int Delay, s/veh	5.2				
Movement	EBT	EBR	WBL	WBT	NBL
Lane Configurations					
Traffic Vol, veh/h	190	1	0	280	120
Future Vol, veh/h	190	1	0	280	120
Conflicting Peds, #/hr	0	100	100	0	100
Sign Control	Free	Free	Free	Free	Stop
RT Channelized	None	None	None	None	None
Storage Length	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0
Grade, %	0	-	-	0	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2
Mvmt Flow	211	1	0	311	133
Major/Minor					
Conflicting Flow All	0	0	312	0	723
Stage 1	-	-	-	-	312
Stage 2	-	-	-	-	411
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1248	-	393
Stage 1	-	-	-	-	742
Stage 2	-	-	-	-	669
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1116	-	314
Mov Cap-2 Maneuver	-	-	-	-	314
Stage 1	-	-	-	-	664
Stage 2	-	-	-	-	598
Approach					
	EB	WB	NB		
HCM Control Delay, s/v	0	0	24.68		
HCM LOS			C		
Minor Lane/Major Mvmt					
	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	319	-	-	1116	-
HCM Lane V/C Ratio	0.435	-	-	-	-
HCM Control Delay (s/veh)	24.7	-	-	-	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	2.1	-	-	0	-



Intersection					
Int Delay, s/veh	9.3				
Movement	EBL	EBT	WBT	WBR	SBL SBR
Lane Configurations					
Traffic Vol, veh/h	1	70	73	5	347 5
Future Vol, veh/h	1	70	73	5	347 5
Conflicting Peds, #/hr	0 0 0 0 0				
Sign Control	Free	Free	Free	Free	Stop Stop
RT Channelized	None	None	None	None	None
Storage Length	-				
Veh in Median Storage, #	0 0 - 0 -				
Grade, %	- 0 0 - 0 -				
Peak Hour Factor	90 90 90 90 90				
Heavy Vehicles, %	2 2 2 2 2				
Mvmt Flow	1	78	81	6	386 6
Major/Minor					
Conflicting Flow All	87	0	-	0	164 84
Stage 1	-	-	-	-	84 -
Stage 2	-	-	-	-	80 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1509	-	-	-	827 975
Stage 1	-	-	-	-	939 -
Stage 2	-	-	-	-	943 -
Platoon blocked, %	-				
Mov Cap-1 Maneuver	1509	-	-	-	826 975
Mov Cap-2 Maneuver	-	-	-	-	826 -
Stage 1	-	-	-	-	939 -
Stage 2	-	-	-	-	943 -
Approach					
EB	WB	SB			
HCM Control Delay, s/v	0.1	0	13.18		
HCM LOS	B				
Minor Lane/Major Mvmt					
EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	25	-	-	-	828
HCM Lane V/C Ratio	0.001	-	-	-	0.472
HCM Control Delay (s/veh)	7.4	0	-	-	13.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %ile Q(veh)	0	-	-	-	2.6

# Existing Scenario

## Major Event Ingress

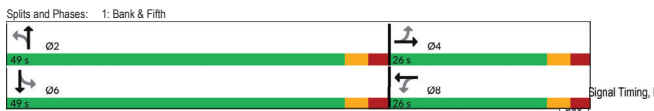
Existing (2022) Minor Event Egress Peak Hour Lansdowne 2.0 Transportation Impact Assessment 12:46 pm 05/05/2024 12:06 PM Signal Timing, A Page 6

### Queues

#### 1: Bank & Fifth

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	60	53	71	61	23	453	31	599
Future Volume (vph)	60	53	71	61	23	453	31	599
Lane Group Flow (vph)	0	166	79	126	0	569	0	764
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	8	8	2	2	6	6	6
Permitted Phases	4	4	8	8	2	2	6	6
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lag							
Lead-Lag Optimize?	None							
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	13.5	13.5	13.5	13.5	46.4	46.4	46.4	46.4
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.65	0.65	0.65	0.65
v/c Ratio	0.67	0.42	0.40	0.32	0.32	0.42	0.42	0.42
Control Delay (s/veh)	35.8	30.3	17.4	6.5	7.4	7.4	7.4	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.8	30.3	17.4	6.5	7.4	7.4	7.4	7.4
LOS	D	C	B	A	A	A	A	A
Approach Delay (s/veh)	35.8	22.4	6.5	7.4	7.4	7.4	7.4	7.4
Approach LOS	D	C	A	A	A	A	A	A
Queue Length 50th (m)	16.9	8.8	7.6	14.0	20.5	20.5	20.5	20.5
Queue Length 95th (m)	34.5	19.8	20.3	28.7	41.4	41.4	41.4	41.4
Internal Link Dist (m)	49.7	112.4	195.6	195.6	190.0	190.0	190.0	190.0
Turn Bay Length (m)	45.0							
Base Capacity (vph)	366	289	454	1791	1803	1803	1803	1803
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.27	0.28	0.32	0.42	0.42	0.42	0.42
Intersection Summary								
Cycle Length: 75								
Actuated Cycle Length: 71								
Natural Cycle: 75								
Control Type: Actuated-Uncoordinated								
Maximum v/c Ratio: 0.67								
Intersection Signal Delay (s/veh): 11.6					Intersection LOS: B			
Intersection Capacity Utilization 68.9%					ICU Level of Service C			
Analysis Period (min) 15								

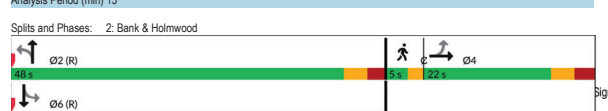


### Queues

#### 2: Bank & Holmwood

08/01/2024

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations						
Traffic Volume (vph)	37	67	479	53	554	
Future Volume (vph)	37	67	479	53	554	
Lane Group Flow (vph)	150	0	737	0	729	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	6	
Detector Phase	4	2	2	6	6	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	
Lead/Lag	Lag					
Lead-Lag Optimize?	None					
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effect Green (s)	13.2	51.0	51.0	51.0	51.0	
Actuated g/C Ratio	0.18	0.68	0.68	0.68	0.68	
v/c Ratio	0.61	0.48	0.48	0.42	0.42	
Control Delay (s/veh)	38.5	7.1	6.7	6.7	6.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.5	7.1	6.7	6.7	6.7	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	38.5	7.1	6.7	6.7	6.7	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	19.8	19.7	19.7	19.7	19.7	
Queue Length 95th (m)	34.1	38.8	37.4	37.4	37.4	
Internal Link Dist (m)	39.8	31.5	195.6	195.6	195.6	
Turn Bay Length (m)	45.0					
Base Capacity (vph)	314	1547	1739	1739	1739	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.48	0.48	0.42	0.42	0.42	
Intersection Summary						
Cycle Length: 75						
Actuated Cycle Length: 75						
Offset: 74 (99%), Referenced to phase 2:NBL and 6:SBT, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.61						
Intersection Signal Delay (s/veh): 9.8				Intersection LOS: A		
Intersection Capacity Utilization 72.0%				ICU Level of Service C		
Analysis Period (min) 15						

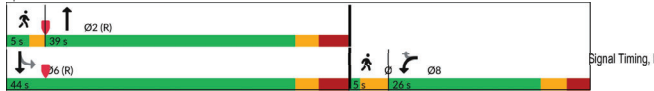


Queues  
3: Bank & Exhibition

08/01/2024

Lane Group	NBT	SBT	Ø1	Ø7	Ø8
Lane Configurations	↑↑	↑↑			
Traffic Volume (vph)	681	608			
Future Volume (vph)	681	608			
Lane Group Flow (vph)	757	676			
Turn Type	NA	NA			
Protected Phases	2	6	1	7	8
Permitted Phases					
Detector Phase	2	6			
Switch Phase					
Minimum Initial (s)	10.0	10.0	1.0	1.0	10.0
Minimum Split (s)	39.0	44.0	5.0	5.0	26.0
Total Split (s)	39.0	44.0	5.0	5.0	26.0
Total Split (%)	52.0%	58.7%	7%	7%	35%
Yellow Time (s)	3.0	3.0	2.0	3.5	3.3
All-Red Time (s)	3.9	3.9	0.0	0.0	3.0
Lost Time Adjust (s)	0.0	0.0			
Total Lost Time (s)	6.9	6.9			
Lead/Lag	Lag		Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes
Recall Mode	C-Max	C-Max	None	None	None
Act Effct Green (s)	75.0	75.0			
Actuated g/C Ratio	1.00	1.00			
v/c Ratio	0.24	0.21			
Control Delay (s/veh)	0.2	0.1			
Queue Delay	0.0	0.0			
Total Delay (s/veh)	0.2	0.1			
LOS	A	A			
Approach Delay (s/veh)	0.2	0.1			
Approach LOS	A	A			
Queue Length 50th (m)	0.0	0.0			
Queue Length 95th (m)	0.0	0.0			
Internal Link Dist (m)	33.7	44.8			
Turn Bay Length (m)					
Base Capacity (vph)	3204	3173			
Starvation Cap Reductn	0	0			
Spillback Cap Reductn	0	0			
Storage Cap Reductn	0	0			
Reduced v/c Ratio	0.24	0.21			

Splits and Phases: 3: Bank & Exhibition



Queues  
7: Bank & Sunnyside

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑		
Traffic Volume (vph)	51	76	13	81	26	509	135	605		
Future Volume (vph)	51	76	13	81	26	509	135	605		
Lane Group Flow (vph)	0	151	0	273	0	625	0	912		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases	4	4	8	8	2	2	1	6	3	7
Permitted Phases	4	4	8	8	2	2	1	6		
Detector Phase	4	4	8	8	2	2	1	6		
Switch Phase										
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	17.0	1.0	1.0
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Max	Max	None	Max	None	None
Act Effct Green (s)	18.7	18.7	18.7	18.7	54.0	54.0				
Actuated g/C Ratio	0.22	0.22	0.22	0.22	0.64	0.64				
v/c Ratio	0.54	0.82	0.82	0.82	0.36	0.68				
Control Delay (s/veh)	64.5	43.7	43.7	43.7	7.8	12.8				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay (s/veh)	64.5	43.7	43.7	43.7	7.8	12.8				
LOS	E	D	D	D	A	B				
Approach Delay (s/veh)	64.5	43.7	43.7	43.7	7.8	12.8				
Approach LOS	E	D	D	D	A	B				
Queue Length 50th (m)	28.0	29.6	29.6	29.6	22.2	43.8				
Queue Length 95th (m)	#62.2	#69.7	63.1	63.1	31.4	64.8				
Internal Link Dist (m)	75.1	136.0	63.1	63.1	79.0					
Turn Bay Length (m)										
Base Capacity (vph)	224	340	1743	1339						
Starvation Cap Reductn	0	0	0	0	0	0				
Spillback Cap Reductn	0	0	0	0	0	0				
Storage Cap Reductn	0	0	0	0	0	0				
Reduced v/c Ratio	0.81	0.80	0.36	0.68						

Splits and Phases: 7: Bank & Sunnyside



Queues  
6: Bank & Aylmer

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↑	↑	↑	↑	
Traffic Volume (vph)	88	13	714	745	
Future Volume (vph)	88	13	714	745	
Lane Group Flow (vph)	125	0	807	882	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	3	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.6	59.7	59.7		
Actuated g/C Ratio	0.16	0.66	0.66		
v/c Ratio	0.50	0.41	0.43		
Control Delay (s/veh)	38.1	7.8	7.9		
Queue Delay	0.0	0.0	0.0		
Total Delay (s/veh)	38.1	7.8	7.9		
LOS	D	A	A		
Approach Delay (s/veh)	38.1	7.8	7.9		
Approach LOS	D	A	A		
Queue Length 50th (m)	17.9	29.1	31.8		
Queue Length 95th (m)	33.9	43.3	47.0		
Internal Link Dist (m)	76.7	28.1	10.1		
Turn Bay Length (m)					
Base Capacity (vph)	282	1985	2047		
Starvation Cap Reductn	0	0	0		
Spillback Cap Reductn	0	0	0		
Storage Cap Reductn	0	0	0		
Reduced v/c Ratio	0.44	0.41	0.43		

Splits and Phases: 6: Bank & Aylmer



Queues  
9: Queen Elizabeth Drive & Fifth

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↑	↑	↑	↑	
Traffic Volume (vph)	62	69	255	629	
Future Volume (vph)	62	69	255	629	
Lane Group Flow (vph)	166	0	360	836	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases	10	2	6	4	
Detector Phase	10	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.7	10.8	10.8	31.8	9.7
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8		
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	Max	None
Act Effct Green (s)	12.4	41.3	41.3		
Actuated g/C Ratio	0.19	0.62	0.62		
v/c Ratio	0.58	0.56	0.81		
Control Delay (s/veh)	33.3	11.9	18.9		
Queue Delay	0.0	0.0	0.0		
Total Delay (s/veh)	33.3	11.9	18.9		
LOS	C	B	B		
Approach Delay (s/veh)	33.3	11.9	18.9		
Approach LOS	C	B	B		
Queue Length 50th (m)	18.8	21.9	67.5		
Queue Length 95th (m)	35.6	49.3	#156.5		
Internal Link Dist (m)	57.2	0.1	5.9		
Turn Bay Length (m)					
Base Capacity (vph)	352	646	1027		
Starvation Cap Reductn	0	0	0		
Spillback Cap Reductn	0	0	0		
Storage Cap Reductn	0	0	0		
Reduced v/c Ratio	0.47	0.56	0.81		

Splits and Phases: 9: Queen Elizabeth Drive & Fifth



Intersection						
Intersection Delay, s/veh	0					
Intersection LOS	-					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	0	1	1	0	1	0
Approach						
Opposing Approach	WB		EB			
Opposing Lanes	1		1		0	
Conflicting Approach Left	SB		WB			
Conflicting Lanes Left	1		0		1	
Conflicting Approach Right			SB		EB	
Conflicting Lanes Right			0		1	
HCM Control Delay, s/veh	0		0		0	
HCM LOS	-		-		-	

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	100%
Vol Right, %	0%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0
LT Vol	0	0	0
Through Vol	0	0	0
RT Vol	0	0	0
Lane Flow Rate	0	0	0
Geometry Grp	1	1	1
Degree of Util (X)	0	0	0
Departure Headway (Hd)	3.934	3.934	3.934
Convergence, Y/N	Yes	Yes	Yes
Cap	0	0	0
Service Time	1.934	1.934	1.934
HCM Lane V/C Ratio	0	0	0
HCM Control Delay, s/veh	6.9	6.9	6.9
HCM Lane LOS	N	N	N
HCM 95th-tile Q	0	0	0

Intersection						
Intersection Delay, s/veh	0					
Intersection LOS	-					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	0	1	1	0
Approach						
Opposing Approach	WB		WB		NB	
Opposing Lanes	1		1		0	
Conflicting Approach Left			NB		EB	
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB				WB	
Conflicting Lanes Right	1		0		1	
HCM Control Delay, s/veh	0		0		0	
HCM LOS	-		-		-	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	100%
Vol Right, %	0%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0
LT Vol	0	0	0
Through Vol	0	0	0
RT Vol	0	0	0
Lane Flow Rate	0	0	0
Geometry Grp	1	1	1
Degree of Util (X)	0	0	0
Departure Headway (Hd)	3.934	3.934	3.934
Convergence, Y/N	Yes	Yes	Yes
Cap	0	0	0
Service Time	1.934	1.934	1.934
HCM Lane V/C Ratio	0	0	0
HCM Control Delay, s/veh	6.9	6.9	6.9
HCM Lane LOS	N	N	N
HCM 95th-tile Q	0	0	0

Intersection						
Intersection Delay, s/veh	0					
Intersection LOS	-					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	0	1	1	0
Approach						
Opposing Approach	WB		WB		NB	
Opposing Lanes	1		1		0	
Conflicting Approach Left			NB		EB	
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB				WB	
Conflicting Lanes Right	1		0		1	
HCM Control Delay, s/veh	0		0		0	
HCM LOS	-		-		-	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	100%
Vol Right, %	0%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	0	0	0
LT Vol	0	0	0
Through Vol	0	0	0
RT Vol	0	0	0
Lane Flow Rate	0	0	0
Geometry Grp	1	1	1
Degree of Util (X)	0	0	0
Departure Headway (Hd)	3.934	3.934	3.934
Convergence, Y/N	Yes	Yes	Yes
Cap	0	0	0
Service Time	1.934	1.934	1.934
HCM Lane V/C Ratio	0	0	0
HCM Control Delay, s/veh	6.9	6.9	6.9
HCM Lane LOS	N	N	N
HCM 95th-tile Q	0	0	0

Intersection												
Intersection Delay, s/veh	9.3											
Intersection LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔			↔		
Traffic Vol, veh/h	66	56	0	0	0	192	57	58	93	0	0	127
Future Vol, veh/h	66	56	0	0	0	192	57	58	93	0	0	127
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	62	0	0	0	213	63	64	103	0	0	141
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1
Approach												
Opposing Approach	WB			WB			NB			SB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay, s/veh	9.5			9			9.8			8.5		
HCM LOS	A			A			A			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	54%	0%	0%
Vol Thru, %	28%	46%	0%	0%
Vol Right, %	45%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	208	122	192	127
LT Vol	57	56	0	0
Through Vol	58	56	0	0
RT Vol	93	0	192	127
Lane Flow Rate	231	136	213	141
Geometry Grp	1	1	1	1
Degree of Util (X)	0.301	0.194	0.259	0.174
Departure Headway (Hd)	4.693	5.147	4.369	4.433
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	760	691	815	802
Service Time	2.76	3.221	2.434	2.506
HCM Lane V/C Ratio	0.304	0.197	0.261	0.176
HCM Control Delay, s/veh	9.8	9.5	9	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.3	0.7	1	0.6

Intersection						
Int Delay, s/veh						
14.4						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	266	104	702	518	103
Future Vol, veh/h	0	266	104	702	518	103
Conflicting Peds, #/hr	0	0	178	0	0	107
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	296	116	780	576	114

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	- 811	868	0 - 0
Stage 1	- -	- -	- -
Stage 2	- -	- -	- -
Critical Hdwy	- 6.245	4.145	- -
Critical Hdwy Stg 1	- -	- -	- -
Critical Hdwy Stg 2	- -	- -	- -
Follow-up Hdwy	-3.32852	2.285	- -
Pot Cap-1 Maneuver	0	377	769 - -
Stage 1	0	- -	- -
Stage 2	0	- -	- -
Platoon blocked, %	- -	- -	- -
Mov Cap-1 Maneuver	- 306	624	- -
Mov Cap-2 Maneuver	- -	- -	- -
Stage 1	- -	- -	- -
Stage 2	- -	- -	- -

Approach	EB	NB	SB
HCM Control Delay, s/veh	1.31	3.48	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	465	-	306	-	-
HCM Lane V/C Ratio	0.185	-	0.967	-	-
HCM Control Delay (s/veh)	12.1	2.2	81.3	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.7	-	9.9	-	-

Intersection						
Int Delay, s/veh						
0.8						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	72	0	784	757	0
Future Vol, veh/h	0	72	0	784	757	0
Conflicting Peds, #/hr	0	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	80	0	871	841	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	- 841	- 0	- 0
Stage 1	- -	- -	- -
Stage 2	- -	- -	- -
Critical Hdwy	- 6.245	- -	- -
Critical Hdwy Stg 1	- -	- -	- -
Critical Hdwy Stg 2	- -	- -	- -
Follow-up Hdwy	-3.3285	- -	- -
Pot Cap-1 Maneuver	0	362	0 - - 0
Stage 1	0	- 0	- - 0
Stage 2	0	- 0	- - 0
Platoon blocked, %	- -	- -	- -
Mov Cap-1 Maneuver	- 362	- -	- -
Mov Cap-2 Maneuver	- -	- -	- -
Stage 1	- -	- -	- -
Stage 2	- -	- -	- -

Approach	EB	NB	SB
HCM Control Delay, s/veh	1.76	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBT
Capacity (veh/h)	- 362	-	-	-
HCM Lane V/C Ratio	- 0.221	-	-	-
HCM Control Delay (s/veh)	- 17.8	-	-	-
HCM Lane LOS	- C	-	-	-
HCM 95th %tile Q(veh)	- 0.8	-	-	-

Intersection						
Int Delay, s/veh						
8.7						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	94	97	105	232	441	256
Future Vol, veh/h	94	97	105	232	441	256
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	104	108	117	258	490	284

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1123	632	774 0 - 0
Stage 1	632	- -	- -
Stage 2	491	- -	- -
Critical Hdwy	6.4	6.2	4.1 - -
Critical Hdwy Stg 1	5.4	- -	- -
Critical Hdwy Stg 2	5.4	- -	- -
Follow-up Hdwy	3.5	3.3	2.2 - -
Pot Cap-1 Maneuver	229	484	850 - -
Stage 1	533	- -	- -
Stage 2	619	- -	- -
Platoon blocked, %	- -	- -	- -
Mov Cap-1 Maneuver	193	484	850 - -
Mov Cap-2 Maneuver	193	- -	- -
Stage 1	448	- -	- -
Stage 2	619	- -	- -

Approach	EB	NB	SB
HCM Control Delay, s/veh	6.28	3.09	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	561	-	278	-	-
HCM Lane V/C Ratio	0.137	-	0.765	-	-
HCM Control Delay (s/veh)	9.9	0	50.3	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.5	-	5.7	-	-

Intersection						
Int Delay, s/veh						
0						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	681	0	0	608
Future Vol, veh/h	0	0	681	0	0	608
Conflicting Peds, #/hr	0	0	0	100	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	-	0
Grade, %	0	-	-	0	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	2	2
Mvmt Flow	0	0	757	0	0	676

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	- 478	0	0 - -
Stage 1	- -	- -	- -
Stage 2	- -	- -	- -
Critical Hdwy	- 6.9	- -	- -
Critical Hdwy Stg 1	- -	- -	- -
Critical Hdwy Stg 2	- -	- -	- -
Follow-up Hdwy	- 3.3	- -	- -
Pot Cap-1 Maneuver	0	539	- - 0 -
Stage 1	0	- -	- - 0 -
Stage 2	0	- -	- - 0 -
Platoon blocked, %	- -	- -	- -
Mov Cap-1 Maneuver	- 482	- -	- -
Mov Cap-2 Maneuver	- -	- -	- -
Stage 1	- -	- -	- -
Stage 2	- -	- -	- -

Approach	WB	NB	SB
HCM Control Delay, s/veh	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	- -	- -	- -	- -
HCM Lane V/C Ratio	- -	- -	- -	- -
HCM Control Delay (s/veh)	- -	- -	0	- -
HCM Lane LOS	- -	- -	A	- -
HCM 95th %tile Q(veh)	- -	- -	- -	- -

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	100	100	0	100	100
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	202
Stage 1	-	-	101
Stage 2	-	-	101
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	1491	840
Stage 1	-	-	923
Stage 2	-	-	923
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1333	629
Mov Cap-2 Maneuver	-	-	629
Stage 1	-	-	825
Stage 2	-	-	825

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	1333	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %ile Q(veh)	-	-	0	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	0	0	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1	0	1
Stage 1	-	-	1
Stage 2	-	-	0
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1622	-	1083
Stage 1	-	-	1022
Stage 2	-	-	1022
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1622	-	1083
Mov Cap-2 Maneuver	-	-	1022
Stage 1	-	-	1022
Stage 2	-	-	1022

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %ile Q(veh)	0	-	-	-	-

# Existing Scenario

## Major Event Egress

### Queues

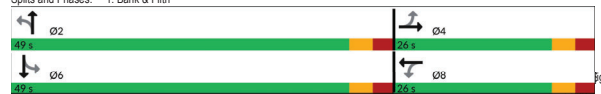
#### 1: Bank & Fifth

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	74	32	39	68	21	308	19	340
Future Volume (vph)	74	32	39	68	21	308	19	340
Lane Group Flow (vph)	0	147	43	143	0	392	0	441
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	8	8	2	2	6	6	6
Permitted Phases	4	8	8	2	2	6	6	6
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effect Green (s)	13.1	12.9	12.9	12.9	48.0	48.0	48.0	48.0
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.70	0.70	0.70	0.70
v/c Ratio	0.65	0.22	0.45	0.20	0.20	0.23	0.23	0.23
Control Delay (s/veh)	36.0	24.7	19.3	5.6	5.6	5.6	5.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.0	24.7	19.3	5.6	5.6	5.6	5.6	5.6
LOS	D	C	B	A	A	A	A	A
Approach Delay (s/veh)	36.0	24.7	19.3	5.6	5.6	5.6	5.6	5.6
Approach LOS	D	C	B	A	A	A	A	A
Queue Length 50th (m)	15.3	4.6	9.3	8.7	8.7	9.8	9.8	9.8
Queue Length 95th (m)	31.8	12.1	23.1	18.9	18.9	21.1	21.1	21.1
Internal Link Dist (m)	49.7	45.0	112.4	195.6	195.6	190.0	190.0	190.0
Turn Bay Length (m)								
Base Capacity (vph)	345	320	469	1945	1945	1954	1954	1954
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.13	0.30	0.20	0.20	0.23	0.23	0.23

#### Intersection Summary

Cycle Length: 75  
 Actuated Cycle Length: 68.4  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.65  
 Intersection Signal Delay (s/veh): 11.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 71.9%  
 ICU Level of Service C  
 Analysis Period (min) 15

#### Splits and Phases: 1: Bank & Fifth





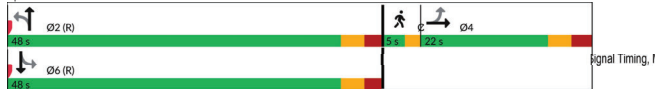
Queues  
2: Bank & Holmwood

08/01/2024

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	21	49	259	30	270	
Future Volume (vph)	21	49	259	30	270	
Lane Group Flow (vph)	143	0	405	0	401	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	6	
Detector Phase	4	2	2	6	6	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	
Lead/Lag	Lag					Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	13.1	51.1	51.1	51.1	51.1	
Actuated g/C Ratio	0.17	0.68	0.68	0.68	0.68	
v/c Ratio	0.61	0.25	0.23	0.23	0.23	
Control Delay (s/veh)	38.7	5.0	4.8	4.8	4.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.7	5.0	4.8	4.8	4.8	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	38.7	5.0	4.8	4.8	4.8	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	18.9	8.4	8.0	8.0	8.0	
Queue Length 95th (m)	32.8	17.4	16.6	16.6	16.6	
Internal Link Dist (m)	39.6	31.5	195.6			
Turn Bay Length (m)						
Base Capacity (vph)	304	1645	1778			
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.47	0.25	0.23	0.23	0.23	

Intersection Summary						
Cycle Length: 75						
Actuated Cycle Length: 75						
Offset: 74 (99%), Referenced to phase 2:NBL and 6:SBT, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.61						
Intersection Signal Delay (s/veh): 10.0	Intersection LOS: B					
Intersection Capacity Utilization 59.2%	ICU Level of Service B					
Analysis Period (min) 15						

Splits and Phases: 2: Bank & Holmwood



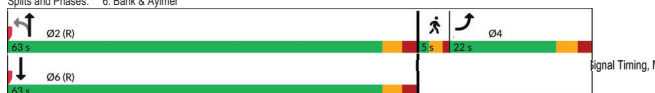
Queues  
6: Bank & Aylmer

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	↔
Traffic Volume (vph)	18	16	323	288	
Future Volume (vph)	18	16	323	288	
Lane Group Flow (vph)	37	0	377	344	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	6	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.0	60.3	60.3	60.3	
Actuated g/C Ratio	0.16	0.67	0.67	0.67	
v/c Ratio	0.17	0.19	0.17	0.17	
Control Delay (s/veh)	23.5	5.9	5.5	5.5	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	23.5	5.9	5.5	5.5	
LOS	C	A	A	A	
Approach Delay (s/veh)	23.5	5.9	5.5	5.5	
Approach LOS	C	A	A	A	
Queue Length 50th (m)	3.0	11.3	9.6	9.6	
Queue Length 95th (m)	11.4	16.6	14.4	14.4	
Internal Link Dist (m)	76.7	28.1	10.1		
Turn Bay Length (m)					
Base Capacity (vph)	261	1971	2055		
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.14	0.19	0.17	0.17	

Intersection Summary						
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 87 (97%), Referenced to phase 2:NBL and 6:SBT, Start of Green						
Natural Cycle: 90						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.19						
Intersection Signal Delay (s/veh): 6.6	Intersection LOS: A					
Intersection Capacity Utilization 45.6%	ICU Level of Service A					
Analysis Period (min) 15						

Splits and Phases: 6: Bank & Aylmer



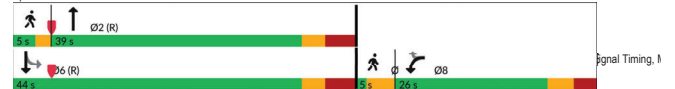
Queues  
3: Bank & Exhibition

08/01/2024

Lane Group	NBT	SBT	Ø1	Ø7	Ø8
Lane Configurations	↔	↔	↔	↔	↔
Traffic Volume (vph)	350	333			
Future Volume (vph)	350	333			
Lane Group Flow (vph)	389	370			
Turn Type	NA	NA			
Protected Phases	2	6	1	7	8
Permitted Phases	2	6			
Detector Phase	2	6			
Switch Phase					
Minimum Initial (s)	10.0	10.0	1.0	1.0	10.0
Minimum Split (s)	39.0	44.0	5.0	5.0	26.0
Total Split (s)	39.0	44.0	5.0	5.0	26.0
Total Split (%)	52.0%	58.7%	7%	7%	39%
Yellow Time (s)	3.0	3.0	2.0	3.5	3.3
All-Red Time (s)	3.9	3.9	0.0	0.0	3.0
Lost Time Adjust (s)	0.0	0.0			
Total Lost Time (s)	6.9	6.9			
Lead/Lag	Lag	Lead	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	None	None	None
Act Effct Green (s)	75.0	75.0			
Actuated g/C Ratio	1.00	1.00			
v/c Ratio	0.12	0.12			
Control Delay (s/veh)	0.1	0.1			
Queue Delay	0.0	0.0			
Total Delay (s/veh)	0.1	0.1			
LOS	A	A			
Approach Delay (s/veh)	0.1	0.1			
Approach LOS	A	A			
Queue Length 50th (m)	0.0	0.0			
Queue Length 95th (m)	0.0	0.0			
Internal Link Dist (m)	33.7	44.8			
Turn Bay Length (m)					
Base Capacity (vph)	3204	3173			
Starvation Cap Reductn	0	0			
Spillback Cap Reductn	0	0			
Storage Cap Reductn	0	0			
Reduced v/c Ratio	0.12	0.12			

Intersection Summary						
Cycle Length: 75						
Actuated Cycle Length: 75						
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.12						
Intersection Signal Delay (s/veh): 0.1	Intersection LOS: A					
Intersection Capacity Utilization 43.5%	ICU Level of Service A					
Analysis Period (min) 15						

Splits and Phases: 3: Bank & Exhibition

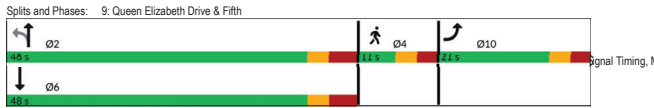


Queues  
7: Bank & Sunnyside

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	30	27	16	34	19	263	14	295		
Future Volume (vph)	30	27	16	34	19	263	14	295		
Lane Group Flow (vph)	0	87	0	96	0	321	0	376		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases	4	8	2	2	1	6	3	7		
Permitted Phases	4	8	8	2	2	6				
Detector Phase	4	4	8	8	2	2	1	6		
Switch Phase										
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	17.0	1.0	1.0
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Max	Max	None	None	None	None
Act Effct Green (s)	11.3	11.1	11.1	60.3	60.3					
Actuated g/C Ratio	0.14	0.14	0.14	0.76	0.76					
v/c Ratio	0.53	0.48	0.15	0.18	0.18					
Control Delay (s/veh)	42.8	28.2	4.1	4.1	4.1					
Queue Delay	0.0	0.0	0.0	0.0	0.0					
Total Delay (s/veh)	42.8	28.2	4.1	4.1	4.1					
LOS	D	C	A	A	A					
Approach Delay (s/veh)	42.8	28.2	4.1	4.1	4.1					
Approach LOS	D	C	A	A	A					
Queue Length 50th (m)	12.0	8.1	6.6	7.5	7.5					
Queue Length 95th (m)	24.9	21.2	13.6	15.4	15.4					
Internal Link Dist (m)	75.1	136.0	63.1	79.0						
Turn Bay Length (m)										
Base Capacity (vph)	283	327	2153	2117						
Starvation Cap Reductn	0	0	0	0	0					
Spillback Cap Reductn	0	0	0	0	0					
Storage Cap Reductn	0	0	0	0	0					
Reduced v/c Ratio	0.31	0.29	0.15	0.18	0.18					

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	Y				
Traffic Volume (vph)	132	42	298	283	
Future Vol. (veh/h)	132	42	298	283	
Lane Group Flow (vph)	214	0	378	388	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10		2	6	4
Permitted Phases		2			
Detector Phase	10	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.7	10.8	10.8	31.8	9.7
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adj. (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7		6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	Max	None
Act Effct Green (s)	13.6		41.2	41.2	
Actuated g/C Ratio	0.20		0.81	0.61	
v/c Ratio	0.68		0.40	0.39	
Control Delay (s/veh)	36.7		8.6	8.4	
Queue Delay	0.0		0.0	0.0	
Total Delay (s/veh)	36.7		8.6	8.4	
LOS	D		A	A	
Approach Delay (s/veh)	36.7		8.6	8.4	
Approach LOS	D		A	A	
Queue Length 50th (m)	25.0		22.7	23.2	
Queue Length 95th (m)	#45.8		39.1	39.1	
Internal Link Dist (m)	57.2		0.1	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	355		946	1005	
Starvation Cap Reductn	0		0	0	
Spillback Cap Reductn	0		0	0	
Storage Cap Reductn	0		0	0	
Reduced v/c Ratio	0.60		0.40	0.39	
<b>Intersection Summary</b>					
Cycle Length: 80					
Actuated Cycle Length: 67.3					
Natural Cycle: 65					
Control Type: Actuated-Uncoordinated					
Maximum v/c Ratio: 0.68					
Intersection Signal Delay (s/veh): 14.6	Intersection LOS: B				
Intersection Capacity Utilization 66.7%	ICU Level of Service C				
Analysis Period (min) 15					
# 95th percentile volume exceeds capacity, queue may be longer.					
Queue shown is maximum after two cycles.					



Intersection						
Intersection Delay, s/veh	0					
Intersection LOS	-					
Movement						
	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol. (veh/h)	0	0	0	0	0	0
Future Vol. (veh/h)	0	0	0	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	0	1	1	0
Approach						
	EB		WB	NB		
Opposing Approach	WB		EB			
Opposing Lanes	1		1	0		
Conflicting Approach Left			NB	EB		
Conflicting Lanes Left	0		1	1		
Conflicting Approach Right	NB			WB		
Conflicting Lanes Right	1		0	1		
HCM Control Delay, s/veh	0		0	0		
HCM LOS	-		-	-		
Lane						
	NBLn1	EBLn1	WBLn1			
Vol Left, %	0%	0%	0%			
Vol Thru, %	100%	100%	100%			
Vol Right, %	0%	0%	0%			
Sign Control	Stop	Stop	Stop			
Traffic Vol by Lane	0	0	0			
LT Vol	0	0	0			
Through Vol	0	0	0			
RT Vol	0	0	0			
Lane Flow Rate	0	0	0			
Geometry Grp	1	1	1			
Degree of Util (X)	0	0	0			
Departure Headway (Hd)	3.934	3.934	3.934			
Convergence, Y/N	Yes	Yes	Yes			
Cap	0	0	0			
Service Time	1.934	1.934	1.934			
HCM Lane V/C Ratio	0	0	0			
HCM Control Delay, s/veh	6.9	6.9	6.9			
HCM Lane LOS	N	N	N			
HCM 95th-tile Q	0	0	0			

Intersection						
Intersection Delay, s/veh	0					
Intersection LOS	-					
Movement						
	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol. (veh/h)	0	0	0	0	0	0
Future Vol. (veh/h)	0	0	0	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	0	1	1	0	1	0
Approach						
	EB	WB		SB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left		SB		WB		
Conflicting Lanes Left	1	0		1		
Conflicting Approach Right		SB		EB		
Conflicting Lanes Right	0	1		1		
HCM Control Delay, s/veh	0	0		0		
HCM LOS	-	-		-		
Lane						
	EBLn1	WBLn1	SBLn1			
Vol Left, %	0%	0%	0%			
Vol Thru, %	100%	100%	100%			
Vol Right, %	0%	0%	0%			
Sign Control	Stop	Stop	Stop			
Traffic Vol by Lane	0	0	0			
LT Vol	0	0	0			
Through Vol	0	0	0			
RT Vol	0	0	0			
Lane Flow Rate	0	0	0			
Geometry Grp	1	1	1			
Degree of Util (X)	0	0	0			
Departure Headway (Hd)	3.934	3.934	3.934			
Convergence, Y/N	Yes	Yes	Yes			
Cap	0	0	0			
Service Time	1.934	1.934	1.934			
HCM Lane V/C Ratio	0	0	0			
HCM Control Delay, s/veh	6.9	6.9	6.9			
HCM Lane LOS	N	N	N			
HCM 95th-tile Q	0	0	0			

Intersection						
Intersection Delay, s/veh	0					
Intersection LOS	-					
Movement						
	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol. (veh/h)	0	0	0	0	0	0
Future Vol. (veh/h)	0	0	0	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Number of Lanes	1	0	0	1	1	0
Approach						
	EB		WB	NB		
Opposing Approach	WB		EB			
Opposing Lanes	1		1	0		
Conflicting Approach Left			NB	EB		
Conflicting Lanes Left	0		1	1		
Conflicting Approach Right	NB			WB		
Conflicting Lanes Right	1		0	1		
HCM Control Delay, s/veh	0		0	0		
HCM LOS	-		-	-		
Lane						
	NBLn1	EBLn1	WBLn1			
Vol Left, %	0%	0%	0%			
Vol Thru, %	100%	100%	100%			
Vol Right, %	0%	0%	0%			
Sign Control	Stop	Stop	Stop			
Traffic Vol by Lane	0	0	0			
LT Vol	0	0	0			
Through Vol	0	0	0			
RT Vol	0	0	0			
Lane Flow Rate	0	0	0			
Geometry Grp	1	1	1			
Degree of Util (X)	0	0	0			
Departure Headway (Hd)	3.934	3.934	3.934			
Convergence, Y/N	Yes	Yes	Yes			
Cap	0	0	0			
Service Time	1.934	1.934	1.934			
HCM Lane V/C Ratio	0	0	0			
HCM Control Delay, s/veh	6.9	6.9	6.9			
HCM Lane LOS	N	N	N			
HCM 95th-tile Q	0	0	0			

Intersection													
Intersection Delay, s/veh	10												
Intersection LOS	A												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↖					↗	↘				↖	
Traffic Vol, veh/h	24	51	0	0	0	109	114	97	141	0	0	53	
Future Vol, veh/h	24	51	0	0	0	109	114	97	141	0	0	53	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	27	57	0	0	0	121	127	108	157	0	0	59	
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1	
Approach	EB	WB					NB	SB					
Opposing Approach	WB	EB					SB	NB					
Opposing Lanes	1	1					1	1					
Conflicting Approach Left	SB	NB					EB	WB					
Conflicting Lanes Left	1	1					1	1					
Conflicting Approach Right	NB	SB					WB	EB					
Conflicting Lanes Right	1	1					1	1					
HCM Control Delay, s/veh	8.9						8.3			11.1		7.6	
HCM LOS	A						A			B		A	

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	32%	32%	0%	0%
Vol Thru, %	28%	68%	0%	0%
Vol Right, %	40%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	352	75	109	53
LT Vol	114	24	0	0
Through Vol	97	51	0	0
RT Vol	141	0	109	53
Lane Flow Rate	391	83	121	59
Geometry Grp	1	1	1	1
Degree of Util (X)	0.468	0.119	0.15	0.07
Departure Headway (Hd)	4.307	5.145	4.444	4.249
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	837	694	803	839
Service Time	2.34	3.196	2.491	2.296
HCM Lane V/C Ratio	0.467	0.12	0.151	0.07
HCM Control Delay, s/veh	11.1	8.9	8.3	7.6
HCM Lane LOS	B	A	A	A
HCM 95th %ile Q	2.5	0.4	0.5	0.2

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗
Traffic Vol, veh/h	0	32	0	350	290	0
Future Vol, veh/h	0	32	0	350	290	0
Conflicting Peds, #/hr	0	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	36	0	389	322	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	- 322	- 0	- 0
Stage 1	- -	- -	- -
Stage 2	- -	- -	- -
Critical Hdwy	- 6.245	- -	- -
Critical Hdwy Stg 1	- -	- -	- -
Critical Hdwy Stg 2	- -	- -	- -
Follow-up Hdwy	- 3.3285	- -	- -
Pot Cap-1 Maneuver	0 715	0 -	0 -
Stage 1	0 -	0 -	0 -
Stage 2	0 -	0 -	0 -
Platoon blocked, %	- -	- -	- -
Mov Cap-1 Maneuver	- 715	- -	- -
Mov Cap-2 Maneuver	- -	- -	- -
Stage 1	- -	- -	- -
Stage 2	- -	- -	- -
Approach	EB	NB	SB
HCM Control Delay, s/veh	0	0	0
HCM LOS	B		
Minor Lane/Major Mvmt	NBTEBLn1	SBT	
Capacity (veh/h)	- 715	-	
HCM Lane V/C Ratio	- 0.05	-	
HCM Control Delay (s/veh)	- 10.3	-	
HCM Lane LOS	- B	-	
HCM 95th %ile Q(veh)	- 0.2	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗
Traffic Vol, veh/h	0	5	0	350	280	66
Future Vol, veh/h	0	5	0	350	280	66
Conflicting Peds, #/hr	0	0	178	0	0	107
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	6	0	389	311	73

Major/Minor	Minor2	Major1	Major2	
Conflicting Flow All	- 526	562	0 - 0	
Stage 1	- -	- -	- -	
Stage 2	- -	- -	- -	
Critical Hdwy	- 6.245	4.145	- -	
Critical Hdwy Stg 1	- -	- -	- -	
Critical Hdwy Stg 2	- -	- -	- -	
Follow-up Hdwy	- 3.32852	2.285	- -	
Pot Cap-1 Maneuver	0 549	1001	- -	
Stage 1	0 -	- -	- -	
Stage 2	0 -	- -	- -	
Platoon blocked, %	- -	- -	- -	
Mov Cap-1 Maneuver	- 445	812	- -	
Mov Cap-2 Maneuver	- -	- -	- -	
Stage 1	- -	- -	- -	
Stage 2	- -	- -	- -	
Approach	EB	NB	SB	
HCM Control Delay, s/veh	0	0	0	
HCM LOS	B			
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	812	- 445	- -	- -
HCM Lane V/C Ratio	- -	- 0.012	- -	- -
HCM Control Delay (s/veh)	0 -	13.2	- -	- -
HCM Lane LOS	A -	B	- -	- -
HCM 95th %ile Q(veh)	0 -	0	- -	- -

Intersection						
Int Delay, s/veh	19					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗
Traffic Vol, veh/h	238	210	50	109	215	127
Future Vol, veh/h	238	210	50	109	215	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	264	233	56	121	239	141

Major/Minor	Minor2	Major1	Major2	
Conflicting Flow All	542	309	380 0 - 0	
Stage 1	309	- -	- -	
Stage 2	232	- -	- -	
Critical Hdwy	6.4	6.2	4.1 - -	
Critical Hdwy Stg 1	5.4	- -	- -	
Critical Hdwy Stg 2	5.4	- -	- -	
Follow-up Hdwy	3.5	3.3	2.2 - -	
Pot Cap-1 Maneuver	505	735	1190 - -	
Stage 1	749	- -	- -	
Stage 2	811	- -	- -	
Platoon blocked, %	- -	- -	- -	
Mov Cap-1 Maneuver	480	735	1190 - -	
Mov Cap-2 Maneuver	480	- -	- -	
Stage 1	711	- -	- -	
Stage 2	811	- -	- -	
Approach	EB	NB	SB	
HCM Control Delay, s/veh	2.57	0	0	
HCM LOS	E			
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	566	- 573	- -	- -
HCM Lane V/C Ratio	0.047	- 0.868	- -	- -
HCM Control Delay (s/veh)	8.2	0	39.4 - -	- -
HCM Lane LOS	A	A	E - -	- -
HCM 95th %ile Q(veh)	0.1	- 9.7	- -	- -

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	0	350	0	0	333
Future Vol, veh/h	0	0	350	0	0	333
Conflicting Peds, #/hr	0	0	0	100	0	0
Sign Control	Free	Free	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	2	2
Mvmt Flow	0	0	389	0	0	370
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	294	0	0	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Critical Hdwy	-	6.9	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	
Follow-up Hdwy	-	3.3	-	-	-	
Pot Cap-1 Maneuver	0	708	-	-	0	
Stage 1	0	-	-	-	0	
Stage 2	0	-	-	-	0	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	-	633	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Approach	WB	NB	SB			
HCM Control Delay, s/v	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBT			
Capacity (veh/h)	-	-	-			
HCM Lane V/C Ratio	-	-	-			
HCM Control Delay (s/veh)	-	-	0			
HCM Lane LOS	-	-	A			
HCM 95th %ile Q(veh)	-	-	-			

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	100	100	0	100	100
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	101	0	202	
Stage 1	-	-	-	-	101	
Stage 2	-	-	-	-	101	
Critical Hdwy	-	-	4.12	-	6.42	
Critical Hdwy Stg 1	-	-	-	-	5.42	
Critical Hdwy Stg 2	-	-	-	-	5.42	
Follow-up Hdwy	-	-	2.218	-	3.518	
Pot Cap-1 Maneuver	-	-	1491	-	786	
Stage 1	-	-	-	-	923	
Stage 2	-	-	-	-	923	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	-	-	1333	-	629	
Mov Cap-2 Maneuver	-	-	-	-	629	
Stage 1	-	-	-	-	825	
Stage 2	-	-	-	-	825	
Approach	EB	WB	NB			
HCM Control Delay, s/v	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1333	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %ile Q(veh)	-	-	-	0	-	

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	1	0	-	0	1	
Stage 1	-	-	-	-	1	
Stage 2	-	-	-	-	0	
Critical Hdwy	4.12	-	-	-	6.42	
Critical Hdwy Stg 1	-	-	-	-	5.42	
Critical Hdwy Stg 2	-	-	-	-	5.42	
Follow-up Hdwy	2.218	-	-	-	3.518	
Pot Cap-1 Maneuver	1622	-	-	-	1022	
Stage 1	-	-	-	-	1022	
Stage 2	-	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	1622	-	-	-	1022	
Mov Cap-2 Maneuver	-	-	-	-	1022	
Stage 1	-	-	-	-	1022	
Stage 2	-	-	-	-	-	
Approach	EB	WB	SB			
HCM Control Delay, s/v	0	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR/SBLn1	SBR	
Capacity (veh/h)	1622	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s/veh)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %ile Q(veh)	0	-	-	-	-	

**2028**

**Interim Conditions**



# 2028 Scenario

## Weekday AM Peak Hour

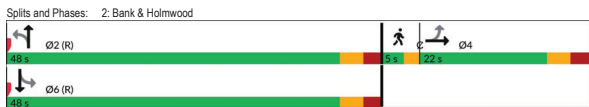
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	38	59	50	50	9	551	20	420
Traffic Volume (vph)	38	59	50	50	9	551	20	420
Future Volume (vph)	0	140	56	89	0	661	0	528
Lane Group Flow (vph)	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	2	8	2	2	6	6	6
Permitted Phases	4	8	2	6	49.0	49.0	49.0	49.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)	20.5	20.5	20.5	20.5	43.5	43.5	43.5	43.5
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.58	0.58	0.58	0.58
v/c Ratio	0.37	0.20	0.21	0.21	0.40	0.33	0.33	0.33
Control Delay (s/veh)	22.2	23.1	15.9	15.9	3.5	8.6	8.6	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.2	23.1	15.9	15.9	3.5	8.6	8.6	8.6
LOS	C	C	B	B	A	A	A	A
Approach Delay (s/veh)	22.2	18.7	3.5	3.5	8.6	8.6	8.6	8.6
Approach LOS	C	B	A	A	A	A	A	A
Queue Length 50th (m)	13.5	6.1	6.0	4.6	17.7	17.7	17.7	17.7
Queue Length 95th (m)	28.4	14.8	16.4	5.3	26.4	26.4	26.4	26.4
Internal Link Dist (m)	49.7	112.4	195.6	195.6	195.6	195.6	195.6	195.6
Turn Bay Length (m)		45.0						
Base Capacity (vph)	376	287	419	1647	1589	1589	1589	1589
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.20	0.21	0.40	0.33	0.33	0.33	0.33

**Intersection Summary**  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 33 (44%), Referenced to phase 2:NBL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.40  
 Intersection Signal Delay (s/veh): 8.6  
 Intersection LOS: A  
 Intersection Capacity Utilization 54.7%  
 ICU Level of Service A  
 Analysis Period (min) 15



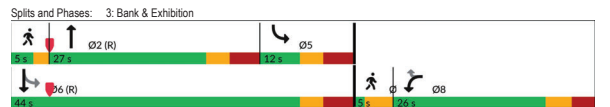
Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	4B	4B	4B	4B	4B	Ø3
Traffic Volume (vph)	22	16	542	11	376	
Future Volume (vph)	22	16	542	11	376	
Lane Group Flow (vph)	88	0	651	0	456	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	3	
Detector Phase	4	2	2	6	3	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0	0.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	0.0
Lead/Lag						Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	10.1	57.4	57.4	57.4	57.4	5.2
Actuated g/C Ratio	0.13	0.77	0.77	0.77	0.77	0.77
v/c Ratio	0.48	0.30	0.21	0.21	0.21	0.21
Control Delay (s/veh)	37.8	2.2	2.2	3.1	3.1	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.8	2.2	2.2	3.1	3.1	3.1
LOS	D	A	A	A	A	A
Approach Delay (s/veh)	37.8	2.2	2.2	3.1	3.1	3.1
Approach LOS	D	A	A	A	A	A
Queue Length 50th (m)	11.7	1.7	1.7	7.2	7.2	7.2
Queue Length 95th (m)	23.3	4.4	4.4	13.6	13.6	13.6
Internal Link Dist (m)	39.8	31.5	31.5	195.6	195.6	195.6
Turn Bay Length (m)						
Base Capacity (vph)	298	2138	2147	2147	2147	2147
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.30	0.21	0.21	0.21	0.21

**Intersection Summary**  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 28 (37%), Referenced to phase 2:NBL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.48  
 Intersection Signal Delay (s/veh): 5.2  
 Intersection LOS: A  
 Intersection Capacity Utilization 52.2%  
 ICU Level of Service A  
 Analysis Period (min) 15



Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	4B	4B	4B	4B	4B	Ø1	Ø7
Traffic Volume (vph)	49	30	514	56	349		
Future Volume (vph)	49	30	514	56	349		
Lane Group Flow (vph)	54	33	674	62	388		
Turn Type	Prot	Perm	NA	pm+pt	NA		
Protected Phases	8	2	5	6	1	7	
Permitted Phases	8	2	5	6	1	7	
Detector Phase	8	2	5	6	1	7	
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	1.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	27.0	12.0	44.0	5.0	5.0
Total Split (s)	26.0	26.0	27.0	12.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	36.0%	16.0%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	2.0	3.5	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9	0.0	0.0
Lead/Lag						Lead	Lead
Lead-Lag Optimize?						Yes	Yes
Recall Mode	None	None	C-Max	None	C-Max	None	None
Act Effct Green (s)	10.2	10.2	49.0	54.8	56.2	5.2	5.2
Actuated g/C Ratio	0.14	0.14	0.65	0.73	0.75	0.75	0.75
v/c Ratio	0.26	0.19	0.36	0.13	0.16	0.16	0.16
Control Delay (s/veh)	32.4	13.5	9.1	8.1	6.6	6.6	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.4	13.5	9.1	8.1	6.6	6.6	6.6
LOS	C	B	A	A	A	A	A
Approach Delay (s/veh)	25.2	9.1	6.8	6.8	6.8	6.8	6.8
Approach LOS	C	A	A	A	A	A	A
Queue Length 50th (m)	7.0	0.0	27.3	4.4	15.5	15.5	15.5
Queue Length 95th (m)	16.5	7.1	40.8	10.5	23.7	23.7	23.7
Internal Link Dist (m)	30.6	33.7	33.7	44.8	44.8	44.8	44.8
Turn Bay Length (m)			40.0				
Base Capacity (vph)	405	314	1867	488	2355	2355	2355
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.11	0.36	0.13	0.16	0.16	0.16

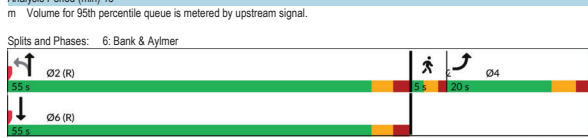
**Intersection Summary**  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 25 (33%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.36  
 Intersection Signal Delay (s/veh): 9.4  
 Intersection LOS: A  
 Intersection Capacity Utilization 55.1%  
 ICU Level of Service B  
 Analysis Period (min) 15



Queues  
6: Bank & Aylmer

07/31/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	64	15	711	529	
Future Volume (vph)	64	15	711	529	
Lane Group Flow (vph)	81	0	807	648	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	3	
Detector Phase	4	2	6	3	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	20.0	55.0	55.0	55.0	5.0
Total Split (s)	20.0	55.0	55.0	55.0	5.0
Total Split (%)	25.0%	68.8%	68.8%	68.8%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.0	50.3	50.3	50.3	
Actuated g/C Ratio	0.16	0.63	0.63	0.63	
v/c Ratio	0.30	0.44	0.35	0.35	
Control Delay (s/veh)	29.6	3.5	7.4	7.4	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	29.6	3.5	7.4	7.4	
LOS	C	A	A	A	
Approach Delay (s/veh)	29.6	3.5	7.4	7.4	
Approach LOS	C	A	A	A	
Queue Length 50th (m)	9.7	13.6	20.7	20.7	
Queue Length 95th (m)	21.8	m15.2	29.5	29.5	
Internal Link Dist (m)	76.7	28.1	10.1	10.1	
Turn Bay Length (m)					
Base Capacity (vph)	280	1844	1875	1875	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.29	0.44	0.35	0.35	



Queues  
9: Queen Elizabeth Drive & Fifth

07/31/2024

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	47	27	225	293	
Future Volume (vph)	47	27	225	293	
Lane Group Flow (vph)	82	0	280	379	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases		2			
Minimum Split (s)	22.0	32.0	32.0	32.0	16.0
Total Split (s)	22.0	32.0	32.0	32.0	16.0
Total Split (%)	31.4%	45.7%	45.7%	45.7%	23%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Act Effct Green (s)	16.3	25.2	25.2	25.2	
Actuated g/C Ratio	0.23	0.36	0.36	0.36	
v/c Ratio	0.23	0.50	0.64	0.64	
Control Delay (s/veh)	23.8	21.3	24.5	24.5	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	23.8	21.3	24.5	24.5	
LOS	C	C	C	C	
Approach Delay (s/veh)	23.8	21.3	24.5	24.5	
Approach LOS	C	C	C	C	
Queue Length 50th (m)	8.7	27.9	40.3	40.3	
Queue Length 95th (m)	19.2	48.5	67.2	67.2	
Internal Link Dist (m)	57.2	0.1	5.9	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	361	562	595	595	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.23	0.50	0.64	0.64	

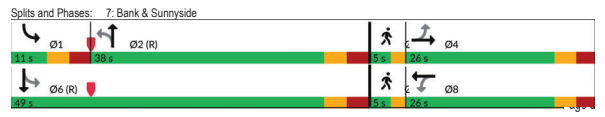


Queues  
7: Bank & Sunnyside

07/31/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	58	60	19	60	23	975	189	393		
Future Volume (vph)	58	60	19	60	23	975	189	393		
Lane Group Flow (vph)	0	144	0	392	0	1123	0	656		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases	4	8	8	2	6	3	7			
Permitted Phases	4	8	8	2	6	3	7			
Minimum Split (s)	26.0	26.0	26.0	26.0	38.0	38.0	11.0	49.0	5.0	5.0
Total Split (s)	26.0	26.0	26.0	26.0	38.0	38.0	11.0	49.0	5.0	5.0
Total Split (%)	32.5%	32.5%	32.5%	32.5%	47.5%	47.5%	13.8%	61.3%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Act Effct Green (s)	20.4	20.4	20.4	32.0	32.0	43.0	43.0	43.0		
Actuated g/C Ratio	0.26	0.26	0.26	0.40	0.40	0.54	0.54	0.54		
v/c Ratio	0.72	0.89	0.89	0.96	0.96	1.14dl	1.14dl	1.14dl		
Control Delay (s/veh)	49.6	38.8	38.8	43.1	43.1	16.2	16.2	16.2		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	49.6	38.8	38.8	43.1	43.1	16.2	16.2	16.2		
LOS	D	D	D	D	D	B	B	B		
Approach Delay (s/veh)	49.6	38.8	38.8	43.1	43.1	16.2	16.2	16.2		
Approach LOS	D	D	D	D	D	B	B	B		
Queue Length 50th (m)	19.9	28.0	28.0	84.9	84.9	20.8	20.8	20.8		
Queue Length 95th (m)	#47.3	#80.4	#80.4	#128.8	#128.8	30.9	30.9	30.9		
Internal Link Dist (m)	75.1	136.0	136.0	63.1	63.1	79.0	79.0	79.0		
Turn Bay Length (m)										
Base Capacity (vph)	201	439	439	1170	1170	962	962	962		
Starvation Cap Reductn	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.72	0.89	0.89	0.96	0.96	0.72	0.72	0.72		

**Intersection Summary**  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 10 (13%), Referenced to phase 2:NBL and 6:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay (s/veh): 34.9  
 Intersection LOS: C  
 Intersection Capacity Utilization 94.7%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 dl Defacto Left Lane. Record with 1 though lane as a left lane.



HCM 7th AWSC  
12: Exhibition & Paul Askin

07/31/2024

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol. veh/h	5	153	63	5	5	5
Future Vol. veh/h	5	153	63	5	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	170	92	6	6	6
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay, s/veh	8.1	7.6	7.4
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	0%	50%
Vol Thru, %	97%	94%	0%
Vol Right, %	0%	6%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	158	68	10
LT Vol	5	0	5
Through Vol	153	63	0
RT Vol	0	5	5
Lane Flow Rate	176	98	11
Geometry Grp	1	1	1
Degree of Util (X)	0.197	0.11	0.013
Departure Headway (Hd)	4.033	4.05	4.318
Convergence, Y/N	Yes	Yes	Yes
Cap	890	661	834
Service Time	2.058	2.091	2.318
HCM Lane v/c Ratio	0.198	0.111	0.013
HCM Control Delay, s/veh	8.1	7.6	7.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.4	0



Intersection						
Intersection Delay, s/veh	7.6					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	2	5	5	123	5	5
Future Vol, veh/h	2	5	5	123	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	6	6	137	6	6
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left	NB		EB			
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1		0		1	
HCM Control Delay, s/veh	6.7		7.7		7.1	
HCM LOS	A		A		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	4%
Vol Thru, %	0%	29%	96%
Vol Right, %	50%	71%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	7	128
LT Vol	5	0	5
Through Vol	0	2	123
RT Vol	5	5	0
Lane Flow Rate	11	8	142
Geometry Grp	1	1	1
Degree of Util (X)	0.012	0.008	0.157
Departure Headway (Hd)	3.993	3.63	3.967
Convergence, Y/N	Yes	Yes	Yes
Cap	888	964	909
Service Time	2.055	1.66	1.972
HCM Lane V/C Ratio	0.012	0.008	0.156
HCM Control Delay, s/veh	7.1	6.7	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.6

Intersection												
Intersection Delay, s/veh	7.8											
Intersection LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↔				↔
Traffic Vol, veh/h	67	41	0	0	0	72	19	32	24	0	0	108
Future Vol, veh/h	67	41	0	0	0	72	19	32	24	0	0	108
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	46	0	0	0	80	21	36	27	0	0	120
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1
Approach	EB	EB	EB	WB	NB	SB						
Opposing Approach	WB	EB		SB		NB						
Opposing Lanes	1	1		1		1						
Conflicting Approach Left	SB		NB		EB		WB					
Conflicting Lanes Left	1		1		1		1					
Conflicting Approach Right	NB		SB		WB		EB					
Conflicting Lanes Right	1		1		1		1					
HCM Control Delay, s/veh	8.4		7.3		7.9		7.5					
HCM LOS	A		A		A		A					
Lane	NBLn1	EBLn1	WBLn1	SBLn1								
Vol Left, %	25%	62%	0%	0%								
Vol Thru, %	43%	38%	0%	0%								
Vol Right, %	32%	0%	100%	100%								
Sign Control	Stop	Stop	Stop	Stop								
Traffic Vol by Lane	75	108	72	108								
LT Vol	19	67	0	0								
Through Vol	32	41	0	0								
RT Vol	24	0	72	108								
Lane Flow Rate	83	120	80	120								
Geometry Grp	1	1	1	1								
Degree of Util (X)	0.101	0.153	0.087	0.129								
Departure Headway (Hd)	4.358	4.583	3.9	3.872								
Convergence, Y/N	Yes	Yes	Yes	Yes								
Cap	624	787	920	928								
Service Time	2.376	2.593	1.917	1.898								
HCM Lane V/C Ratio	0.101	0.152	0.087	0.129								
HCM Control Delay, s/veh	7.9	8.4	7.3	7.5								
HCM Lane LOS	A	A	A	A								
HCM 95th-tile Q	0.3	0.5	0.3	0.4								

Intersection						
Intersection Delay, s/veh	8.3					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	2	5	67	57	87	87
Future Vol, veh/h	2	5	67	57	87	87
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	6	74	63	97	97
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left	NB		EB			
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1		0		1	
HCM Control Delay, s/veh	7.1		8.4		8.2	
HCM LOS	A		A		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	54%
Vol Thru, %	0%	29%	46%
Vol Right, %	50%	71%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	174	7	124
LT Vol	87	0	67
Through Vol	0	2	57
RT Vol	87	5	0
Lane Flow Rate	193	8	138
Geometry Grp	1	1	1
Degree of Util (X)	0.214	0.009	0.168
Departure Headway (Hd)	3.985	4.08	4.388
Convergence, Y/N	Yes	Yes	Yes
Cap	885	852	807
Service Time	2.078	2.08	2.473
HCM Lane V/C Ratio	0.218	0.009	0.171
HCM Control Delay, s/veh	8.2	7.1	8.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.8	0	0.6

Intersection										
Int Delay, s/veh	5.3									
Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations		↔	↔	↔	↔	↔				
Traffic Vol, veh/h	1	188	142	630	369	26				
Future Vol, veh/h	1	188	142	630	369	26				
Conflicting Peds, #/hr	0	0	178	0	0	107				
Sign Control	Stop	Stop	Free	Free	Free	Free				
RT Channelized	-	None	-	None	-	None				
Storage Length	-	0	-	-	-	-				
Veh in Median Storage, #	0	-	-	0	0	-				
Grade, %	0	-	-	0	0	-				
Peak Hour Factor	90	90	90	90	90	90				
Heavy Vehicles, %	5	5	5	5	5	5				
Mvmt Flow	1	209	158	700	410	29				
Major/Minor	Minor2	Major1	Major2							
Conflicting Flow All	1268	602	617	0	-	0				
Stage 1	602	-	-	-	-	-				
Stage 2	666	-	-	-	-	-				
Critical Hdwy	6.675	6.275	4.175	-	-	-				
Critical Hdwy Stg 1	5.475	-	-	-	-	-				
Critical Hdwy Stg 2	5.875	-	-	-	-	-				
Follow-up Hdwy	3.54753	3.4752	2.475	-	-	-				
Pot Cap-1 Maneuver	169	491	944	-	-	-				
Stage 1	538	-	-	-	-	-				
Stage 2	467	-	-	-	-	-				
Platoon blocked, %	-	-	-	-	-	-				
Mov Cap-1 Maneuver	83	399	766	-	-	-				
Mov Cap-2 Maneuver	83	-	-	-	-	-				
Stage 1	325	-	-	-	-	-				
Stage 2	379	-	-	-	-	-				
Approach	EB	NB	SB							
HCM Control Delay, s/23.53	3.58	0								
HCM LOS	C									
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR						
Capacity (veh/h)	617	-	399	-						
HCM Lane V/C Ratio	0.206	-	0.524	-						
HCM Control Delay (s/veh)	10.9	1.9	23.5	-						
HCM Lane LOS	B	A	C	-						
HCM 95th %tile Q(veh)	0.8	-	2.9	-						

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	
Lane Configurations		↕	↕	↕	↕	
Traffic Vol, veh/h	0	27	0	761	546	
Future Vol, veh/h	0	27	0	761	546	
Conflicting Peds, #/hr	0	0	0	0	86	
Sign Control	Stop	Stop	Free	Free	Free	
RT Channelized	None	None	None	None	None	
Storage Length	0	-	-	-	-	
Veh in Median Storage, #	0	-	0	0	-	
Grade, %	0	-	0	0	-	
Peak Hour Factor	90	90	90	90	90	
Heavy Vehicles, %	5	5	5	5	5	
Mvmt Flow	0	30	0	846	607	
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	607	-	0	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Critical Hdwy	-	6.275	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	
Follow-up Hdwy	-	-3.3475	-	-	-	
Pot Cap-1 Maneuver	0	489	0	-	0	
Stage 1	0	-	0	-	0	
Stage 2	0	-	0	-	0	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	-	489	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Approach	EB	NB	SB			
HCM Control Delay, s/42.85		0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT		
Capacity (veh/h)	-	489	-	-		
HCM Lane V/C Ratio	-	0.061	-	-		
HCM Control Delay (s/veh)	-	12.8	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.2	-	-		

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	
Lane Configurations		↕	↕	↕	↕	
Traffic Vol, veh/h	0	34	548	7	0	
Future Vol, veh/h	0	34	548	7	0	
Conflicting Peds, #/hr	0	0	0	100	0	
Sign Control	Stop	Stop	Free	Free	Free	
RT Channelized	None	None	None	None	None	
Storage Length	0	-	-	-	-	
Veh in Median Storage, #	0	-	0	-	0	
Grade, %	0	-	0	-	0	
Peak Hour Factor	90	90	90	90	90	
Heavy Vehicles, %	0	15	6	0	0	
Mvmt Flow	0	38	609	8	0	
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	408	0	0	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Critical Hdwy	-	7.2	-	-	-	
Critical Hdwy Stg 1	-	-	-	-	-	
Critical Hdwy Stg 2	-	-	-	-	-	
Follow-up Hdwy	-	-	-	-	-	
Pot Cap-1 Maneuver	0	557	-	-	0	
Stage 1	0	-	-	-	0	
Stage 2	0	-	-	-	0	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	-	498	-	-	-	
Mov Cap-2 Maneuver	-	-	-	-	-	
Stage 1	-	-	-	-	-	
Stage 2	-	-	-	-	-	
Approach	WB	NB	SB			
HCM Control Delay, s/42.82		0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBR	WBLn1	SBT		
Capacity (veh/h)	-	-	498	-		
HCM Lane V/C Ratio	-	-	0.076	-		
HCM Control Delay (s/veh)	-	-	12.8	-		
HCM Lane LOS	-	-	B	-		
HCM 95th %tile Q(veh)	-	-	0.2	-		

Intersection					
Int Delay, s/veh	1.8				
Movement	EBL	EBR	NBL	NBT	SBT
Lane Configurations	↕	↕	↕	↕	↕
Traffic Vol, veh/h	25	25	70	248	277
Future Vol, veh/h	25	25	70	248	277
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0
Mvmt Flow	28	28	78	276	308
Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	786	355	402	0	-
Stage 1	355	-	-	-	-
Stage 2	431	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	364	693	1167	-	-
Stage 1	714	-	-	-	-
Stage 2	660	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	335	693	1167	-	-
Mov Cap-2 Maneuver	335	-	-	-	-
Stage 1	658	-	-	-	-
Stage 2	660	-	-	-	-
Approach	EB	NB	SB		
HCM Control Delay, s/44.08		1.83	0		
HCM LOS	B				
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	396	-	452	-	-
HCM Lane V/C Ratio	0.067	-	0.123	-	-
HCM Control Delay (s/veh)	8.3	0	14.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.4	-	-

Intersection					
Int Delay, s/veh	2.2				
Movement	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↕	↕	↕	↕	↕
Traffic Vol, veh/h	51	38	120	35	8
Future Vol, veh/h	51	38	120	35	8
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None
Storage Length	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0
Grade, %	-	0	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2
Mvmt Flow	57	42	133	39	11
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	172	0	-	0	308
Stage 1	-	-	-	-	153
Stage 2	-	-	-	-	156
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1405	-	-	-	684
Stage 1	-	-	-	-	875
Stage 2	-	-	-	-	873
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1405	-	-	-	656
Mov Cap-2 Maneuver	-	-	-	-	656
Stage 1	-	-	-	-	839
Stage 2	-	-	-	-	873
Approach	EB	WB	SB		
HCM Control Delay, s/v	4.4	0	9.8		
HCM LOS	B		A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1031	-	-	-	769
HCM Lane V/C Ratio	0.04	-	-	-	0.026
HCM Control Delay (s/veh)	7.7	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

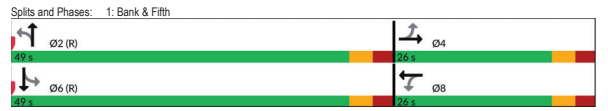
# 2028 Scenario

## Weekday PM Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	46	54	63	38	16	443	29	565
Traffic Volume (vph)	46	54	63	38	16	443	29	565
Future Volume (vph)	0	162	70	81	0	554	0	701
Lane Group Flow (vph)	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	2	8	2	2	6	6	6
Permitted Phases	4	8	2	6	49.0	49.0	49.0	49.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effect Green (s)	20.5	20.5	20.5		43.5		43.5	
Actuated g/C Ratio	0.27	0.27	0.27		0.58		0.58	
v/c Ratio	0.44	0.26	0.20		0.35		0.44	
Control Delay (s/veh)	22.5	24.4	14.1		13.9		9.8	
Queue Delay	0.0	0.0	0.0		0.0		0.0	
Total Delay (s/veh)	22.5	24.4	14.1		13.9		9.8	
LOS	C	C	B		B		A	
Approach Delay (s/veh)	22.5		18.8		13.9		9.8	
Approach LOS	C		B		B		A	
Queue Length 50th (m)	15.1	7.7	4.4		23.5		26.1	
Queue Length 95th (m)	31.7	17.9	14.3		50.1		37.5	
Internal Link Dist (m)	49.7		112.4		195.6		190.0	
Turn Bay Length (m)			45.0					
Base Capacity (vph)	372	274	409		1588		1589	
Starvation Cap Reductn	0	0	0		0		0	
Spillback Cap Reductn	0	0	0		0		0	
Storage Cap Reductn	0	0	0		0		0	
Reduced v/c Ratio	0.44	0.26	0.20		0.35		0.44	

**Intersection Summary**

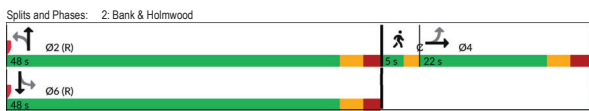
Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 47 (63%), Referenced to phase 2:NBL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.44  
 Intersection Signal Delay (s/veh): 13.4  
 Intersection LOS: B  
 Intersection Capacity Utilization 67.1%  
 ICU Level of Service C  
 Analysis Period (min) 15



Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	46	26	500	28	545	
Traffic Volume (vph)	18	26	500	28	545	
Future Volume (vph)	112	0	641	0	668	
Lane Group Flow (vph)	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	3	
Detector Phase	4	2	2	6	3	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6		5.2		5.2	
Lead/Lag		Lag			Lead	
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effect Green (s)	11.6	56.0	56.0	56.0	56.0	
Actuated g/C Ratio	0.15	0.75	0.75	0.75	0.75	
v/c Ratio	0.55	0.33	0.33	0.33	0.33	
Control Delay (s/veh)	38.8	1.9	1.9	3.4	3.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.8	1.9	1.9	3.4	3.4	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	38.8	1.9	1.9	3.4	3.4	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	14.8	4.0	4.0	6.3	6.3	
Queue Length 95th (m)	27.6	9.1	9.1	14.3	14.3	
Internal Link Dist (m)	39.8		31.5	195.6	195.6	
Turn Bay Length (m)						
Base Capacity (vph)	287	1970	2033			
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.39	0.33	0.33			

**Intersection Summary**

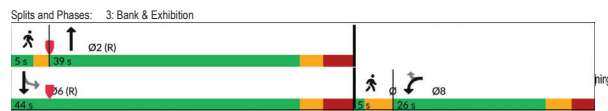
Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 74 (99%), Referenced to phase 2:NBL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.55  
 Intersection Signal Delay (s/veh): 5.5  
 Intersection LOS: A  
 Intersection Capacity Utilization 64.3%  
 ICU Level of Service C  
 Analysis Period (min) 15



Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	114	56	469	97	498		
Traffic Volume (vph)	114	56	469	97	498		
Future Volume (vph)	127	62	645	108	558		
Lane Group Flow (vph)	Prot	Perm	NA	Perm	NA		
Protected Phases	8	2	2	6	1	7	
Permitted Phases	8	2	2	6	1	7	
Detector Phase	8	2	2	6	1	7	
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	58.7%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9		
Lead/Lag		Lag	Lag	Lag		Lead	Lead
Lead-Lag Optimize?						Yes	Yes
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effect Green (s)	12.2	12.2	54.2	54.2	54.2		
Actuated g/C Ratio	0.16	0.16	0.72	0.72	0.72		
v/c Ratio	0.51	0.27	0.32	0.25	0.24		
Control Delay (s/veh)	35.4	10.6	5.5	4.7	3.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	35.4	10.6	5.5	4.7	3.1		
LOS	D	B	A	A	A		
Approach Delay (s/veh)	27.3		5.5	3.4	3.4		
Approach LOS	C	A	A	A	A		
Queue Length 50th (m)	16.8	0.0	15.8	3.1	8.2		
Queue Length 95th (m)	30.2	9.0	29.0	5.8	10.2		
Internal Link Dist (m)	30.6		33.7	44.8	44.8		
Turn Bay Length (m)			40.0				
Base Capacity (vph)	405	335	2031	430	2271		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.31	0.19	0.32	0.25	0.24		

**Intersection Summary**

Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.51  
 Intersection Signal Delay (s/veh): 7.3  
 Intersection LOS: A  
 Intersection Capacity Utilization 59.7%  
 ICU Level of Service B  
 Analysis Period (min) 15





Queues  
6: Bank & Aylmer

07/31/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	56	21	695	747	
Future Volume (vph)	56	21	695	747	
Lane Group Flow (vph)	89	0	784	936	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	3	
Detector Phase	4	2	6	3	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.1	60.2	60.2	60.2	
Actuated g/C Ratio	0.16	0.67	0.67	0.67	
v/c Ratio	0.37	0.41	0.48	0.48	
Control Delay (s/veh)	31.5	4.3	8.0	8.0	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	31.5	4.3	8.0	8.0	
LOS	C	A	A	A	
Approach Delay (s/veh)	31.5	4.3	8.0	8.0	
Approach LOS	C	A	A	A	
Queue Length 50th (m)	10.6	12.9	34.8	34.8	
Queue Length 95th (m)	24.2	m14.2	47.8	47.8	
Internal Link Dist (m)	76.7	28.1	10.1	10.1	
Turn Bay Length (m)					
Base Capacity (vph)	275	1910	1958	1958	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.32	0.41	0.48	0.48	

Splits and Phases: 6: Bank & Aylmer



Queues  
9: Queen Elizabeth Drive & Fifth

07/31/2024

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	35	45	198	527	
Future Volume (vph)	35	45	198	527	
Lane Group Flow (vph)	98	0	270	658	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases		2			
Minimum Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Act Effct Green (s)	15.3	41.2	41.2	41.2	
Actuated g/C Ratio	0.19	0.52	0.52	0.52	
v/c Ratio	0.34	0.44	0.77	0.77	
Control Delay (s/veh)	31.8	15.0	23.2	23.2	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	31.8	15.0	23.2	23.2	
LOS	C	B	C	C	
Approach Delay (s/veh)	31.8	15.0	23.2	23.2	
Approach LOS	C	B	C	C	
Queue Length 50th (m)	13.0	24.2	75.5	75.5	
Queue Length 95th (m)	26.3	42.6	119.7	119.7	
Internal Link Dist (m)	57.2	0.1	5.9	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	290	614	855	855	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.34	0.44	0.77	0.77	

Splits and Phases: 9: Queen Elizabeth Drive & Fifth

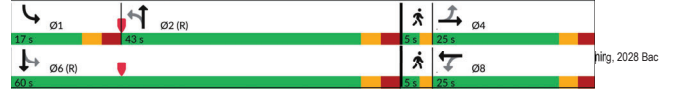


Queues  
7: Bank & Sunnyside

07/31/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	52	80	16	82	14	424	206	744		
Future Volume (vph)	52	80	16	82	14	424	206	744		
Lane Group Flow (vph)	0	180	0	283	0	510	0	1159		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4		8		2	1	6	3	7
Permitted Phases		4		8		2	1	6	3	7
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Act Effct Green (s)	19.4	19.4	19.4	19.4	37.0	37.0	54.0	54.0		
Actuated g/C Ratio	0.22	0.22	0.41	0.41	0.60	0.60	0.91	0.91		
v/c Ratio	1.15	1.10	1.10	1.10	0.45	0.45	0.91	0.91		
Control Delay (s/veh)	154.9	104.0	20.4	20.4	20.6	20.6	20.6	20.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	154.9	104.0	20.4	20.4	20.6	20.6	20.6	20.6		
LOS	F	F	C	C	C	C	C	C		
Approach Delay (s/veh)	154.9	104.0	20.4	20.4	20.6	20.6	20.6	20.6		
Approach LOS	F	F	C	C	C	C	C	C		
Queue Length 50th (m)	-37.1	-57.3	32.2	32.2	22.6	22.6	22.6	22.6		
Queue Length 95th (m)	#76.3	#111.2	45.7	45.7	#99.6	#99.6	79.0	79.0		
Internal Link Dist (m)	75.1	136.0	63.1	63.1	79.0	79.0	79.0	79.0		
Turn Bay Length (m)										
Base Capacity (vph)	156	347	1144	1144	1278	1278	1278	1278		
Starvation Cap Reductn	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	1.15	1.10	0.45	0.45	0.91	0.91	0.91	0.91		

Splits and Phases: 7: Bank & Sunnyside



HCM 7th AWSC  
12: Exhibition & Paul Askin

07/31/2024

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	5	210	174	5	5	5
Future Vol, veh/h	5	210	174	5	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	233	193	6	6	6
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay, s/veh	8.7	8.4	7.7
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	0%	50%
Vol Thru, %	98%	97%	0%
Vol Right, %	0%	3%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	215	179	10
LT Vol	5	0	5
Through Vol	210	174	0
RT Vol	0	5	5
Lane Flow Rate	239	199	11
Geometry Grp	1	1	1
Degree of Util (X)	0.273	0.227	0.014
Departure Headway (Hd)	4.107	4.114	4.667
Convergence, Y/N	Yes	Yes	Yes
Cap	870	855	772
Service Time	2.157	2.174	2.667
HCM Lane v/C Ratio	0.275	0.23	0.014
HCM Control Delay, s/veh	8.7	8.4	7.7
HCM Lane LOS	A	A	A
HCM 95th-ile Q	1.1	0.9	0

Intersection						
Intersection Delay, s/veh	6.9					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	3	5	5	5	5	5
Future Vol, veh/h	3	5	5	5	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	6	6	6	6	6
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left			NB	EB		
Conflicting Lanes Left	0	1		1		
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1		0		1	
HCM Control Delay, s/veh	6.6		7.1		6.8	
HCM LOS	A		A		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	50%
Vol Thru, %	0%	38%	50%
Vol Right, %	50%	63%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	8	10
LT Vol	5	0	5
Through Vol	0	3	5
RT Vol	5	5	0
Lane Flow Rate	11	9	11
Geometry Grp	1	1	1
Degree of Util (X)	0.012	0.009	0.013
Departure Headway (Hd)	3.769	3.587	4.06
Convergence, Y/N	Yes	Yes	Yes
Cap	953	1002	886
Service Time	1.777	1.593	2.065
HCM Lane V/C Ratio	0.012	0.009	0.012
HCM Control Delay, s/veh	6.8	6.6	7.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0

Intersection												
Intersection Delay, s/veh	8											
Intersection LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↔			↔	↔
Traffic Vol, veh/h	74	39	0	0	0	103	40	27	30	0	0	93
Future Vol, veh/h	74	39	0	0	0	103	40	27	30	0	0	93
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	82	43	0	0	0	114	44	30	33	0	0	103
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1
Approach	EB	EB	EB	WB	NB	WB	NB	WB	NB	WB	NB	WB
Opposing Approach	WB	WB		EB		SB		NB		NB		
Opposing Lanes	1	1		1		1		1		1		
Conflicting Approach Left	SB	WB		NB		EB		WB			WB	
Conflicting Lanes Left	1	1		1		1		1			1	
Conflicting Approach Right	NB	WB		SB		WB		EB			EB	
Conflicting Lanes Right	1	1		1		1		1			1	
HCM Control Delay, s/veh	8.6			7.5			8.2			7.5		
HCM LOS	A			A			A			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	41%	65%	0%	0%
Vol Thru, %	28%	35%	0%	0%
Vol Right, %	31%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	113	103	93
LT Vol	40	74	0	0
Through Vol	27	39	0	0
RT Vol	30	0	103	93
Lane Flow Rate	108	126	114	103
Geometry Grp	1	1	1	1
Degree of Util (X)	0.134	0.162	0.125	0.115
Departure Headway (Hd)	4.471	4.641	3.942	3.991
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	803	775	910	899
Service Time	2.491	2.663	1.963	2.01
HCM Lane V/C Ratio	0.134	0.163	0.125	0.115
HCM Control Delay, s/veh	8.2	8.6	7.5	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.6	0.4	0.4

Intersection						
Intersection Delay, s/veh	8.7					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	3	5	140	5	39	210
Future Vol, veh/h	3	5	140	5	39	210
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	6	156	6	43	233
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left			NB	EB		
Conflicting Lanes Left	0	1		1		
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1		0		1	
HCM Control Delay, s/veh	7.4		9		8.5	
HCM LOS	A		A		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	16%	0%	97%
Vol Thru, %	0%	38%	3%
Vol Right, %	84%	63%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	249	8	145
LT Vol	39	0	140
Through Vol	0	3	5
RT Vol	210	5	0
Lane Flow Rate	277	9	161
Geometry Grp	1	1	1
Degree of Util (X)	0.298	0.011	0.212
Departure Headway (Hd)	3.88	4.322	4.727
Convergence, Y/N	Yes	Yes	Yes
Cap	950	628	764
Service Time	1.892	2.347	2.727
HCM Lane V/C Ratio	0.298	0.011	0.211
HCM Control Delay, s/veh	8.5	7.4	9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.3	0	0.8

Intersection										
Int Delay, s/veh	12.9									
Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations		↔	↔	↔	↔	↔				
Traffic Vol, veh/h	3	233	213	558	570	49				
Future Vol, veh/h	3	233	213	558	570	49				
Conflicting Peds, #/hr	0	0	178	0	0	107				
Sign Control	Stop	Stop	Free	Free	Free	Free				
RT Channelized	-	None	-	None	-	None				
Storage Length	-	0	-	0	-	-				
Veh in Median Storage, #	0	-	-	0	0	-				
Grade, %	0	-	-	0	0	-				
Peak Hour Factor	90	90	90	90	90	90				
Heavy Vehicles, %	5	5	5	5	5	5				
Mvmt Flow	3	259	237	620	633	54				
Major/Minor	Minor2	Major1	Major2							
Conflicting Flow All	1622	839	866	0	-	0				
Stage 1	839	-	-	-	-	-				
Stage 2	783	-	-	-	-	-				
Critical Hdwy	6.675	6.275	4.175	-	-	-				
Critical Hdwy Stg 1	5.475	-	-	-	-	-				
Critical Hdwy Stg 2	5.875	-	-	-	-	-				
Follow-up Hdwy	3.54753	3.4752	2.475	-	-	-				
Pot Cap-1 Maneuver	100	359	760	-	-	-				
Stage 1	417	-	-	-	-	-				
Stage 2	406	-	-	-	-	-				
Platoon blocked, %	-	-	-	-	-	-				
Mov Cap-1 Maneuver	36	291	617	-	-	-				
Mov Cap-2 Maneuver	36	-	-	-	-	-				
Stage 1	181	-	-	-	-	-				
Stage 2	329	-	-	-	-	-				
Approach	EB	NB	SB							
HCM Control Delay, s/66.86	6.73		0							
HCM LOS	F									
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR						
Capacity (veh/h)	510	-	291	-						
HCM Lane V/C Ratio	0.384	-	0.888	-						
HCM Control Delay (s/veh)	14.4	3.8	66.9	-						
HCM Lane LOS	B	A	F	-						
HCM 95th %tile Q(veh)	1.8	-	8	-						

Intersection					
Int Delay, s/veh	0.3				
Movement	EBL	EBR	NBL	NBT	SBR
Lane Configurations		↕	↕	↕	↕
Traffic Vol, veh/h	0	24	0	780	812
Future Vol, veh/h	0	24	0	780	812
Conflicting Peds, #/hr	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5
Mvmt Flow	0	27	0	867	902
Major/Minor					
Conflicting Flow All	Minor2	Major1	Major2		
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	- 6.275	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	- 3.3475	-	-	-	-
Pot Cap-1 Maneuver	0	293	0	-	-
Stage 1	0	-	0	-	-
Stage 2	0	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	- 267	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Approach					
	EB	NB	SB		
HCM Control Delay, s/v	20	0	0		
HCM LOS	C				
Minor Lane/Major Mvmt					
	NBL	NBTLn1	SBL	SBR	
Capacity (veh/h)	-	267	-	-	-
HCM Lane V/C Ratio	-	0.1	-	-	-
HCM Control Delay (s/veh)	-	20	-	-	-
HCM Lane LOS	-	C	-	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-	-

Intersection					
Int Delay, s/veh	0.9				
Movement	WBL	WBR	NBT	NBR	SBL
Lane Configurations		↕	↕	↕	↕
Traffic Vol, veh/h	5	74	542	7	1 597
Future Vol, veh/h	5	74	542	7	1 597
Conflicting Peds, #/hr	0	0	0	100	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	0
Grade, %	0	-	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	15	6	0	0
Mvmt Flow	6	82	602	8	1 663
Major/Minor					
Conflicting Flow All	Minor1	Major1	Major2		
Stage 1	1040	405	0	0	710
Stage 2	706	-	-	-	-
Stage 3	334	-	-	-	-
Critical Hdwy	6.8	7.2	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.45	-	-	2.2
Pot Cap-1 Maneuver	229	560	-	-	899
Stage 1	456	-	-	-	-
Stage 2	703	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	205	501	-	-	803
Mov Cap-2 Maneuver	205	-	-	-	-
Stage 1	408	-	-	-	-
Stage 2	702	-	-	-	-
Approach					
	WB	NB	SB		
HCM Control Delay, s/v	13.59	0	0.02		
HCM LOS	B				
Minor Lane/Major Mvmt					
	NBL	NBR/WBLn1	SBL	SBR	
Capacity (veh/h)	-	501	803	-	-
HCM Lane V/C Ratio	-	0.164	0.001	-	-
HCM Control Delay (s/veh)	-	13.6	9.5	-	-
HCM Lane LOS	-	B	A	-	-
HCM 95th %tile Q(veh)	-	0.6	0	-	-

Intersection					
Int Delay, s/veh	3.3				
Movement	EBL	EBR	NBL	NBT	SBR
Lane Configurations		↕	↕	↕	↕
Traffic Vol, veh/h	63	59	56	257	495
Future Vol, veh/h	63	59	56	257	495
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0
Mvmt Flow	70	66	62	286	550
Major/Minor					
Conflicting Flow All	Minor2	Major1	Major2		
Stage 1	1014	604	658	0	0
Stage 2	604	-	-	-	-
Stage 3	410	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	267	502	940	-	-
Stage 1	550	-	-	-	-
Stage 2	674	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	246	502	940	-	-
Mov Cap-2 Maneuver	246	-	-	-	-
Stage 1	506	-	-	-	-
Stage 2	674	-	-	-	-
Approach					
	EB	NB	SB		
HCM Control Delay, s/v	23.65	1.63	0		
HCM LOS	C				
Minor Lane/Major Mvmt					
	NBL	NBTLn1	SBL	SBR	
Capacity (veh/h)	322	-	326	-	-
HCM Lane V/C Ratio	0.066	-	0.415	-	-
HCM Control Delay (s/veh)	9.1	0	23.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2	-	-

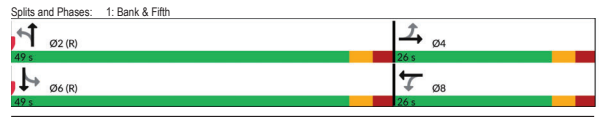
Intersection					
Int Delay, s/veh	4.7				
Movement	EBL	EBT	WBT	WBR	SBL
Lane Configurations		↕	↕	↕	↕
Traffic Vol, veh/h	94	58	24	129	65
Future Vol, veh/h	94	58	24	129	65
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	0
Grade, %	0	-	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2
Mvmt Flow	104	64	27	143	72
Major/Minor					
Conflicting Flow All	Major1	Major2	Minor2		
Stage 1	170	0	0	372	98
Stage 2	-	-	-	98	-
Stage 3	-	-	-	273	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1407	-	-	629	958
Stage 1	-	-	-	926	-
Stage 2	-	-	-	773	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1407	-	-	581	958
Mov Cap-2 Maneuver	-	-	-	581	-
Stage 1	-	-	-	854	-
Stage 2	-	-	-	773	-
Approach					
	EB	WB	SB		
HCM Control Delay, s/v	4.8	0	11.36		
HCM LOS	B				
Minor Lane/Major Mvmt					
	EBL	EBT	WBT	WBR/SBLn1	
Capacity (veh/h)	1113	-	-	681	-
HCM Lane V/C Ratio	0.074	-	-	0.17	-
HCM Control Delay (s/veh)	7.8	0	-	11.4	-
HCM Lane LOS	A	A	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	-

# 2028 Scenario

## Saturday Peak Hour

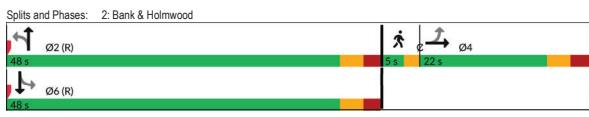
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	45	40	72	44	21	466	20	515
Traffic Volume (vph)	45	40	72	44	21	466	20	515
Future Volume (vph)	0	141	80	105	0	578	0	624
Lane Group Flow (vph)	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	2	8	2	2	6	6	6
Permitted Phases	4	8	2	2	6	6	6	6
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effect Green (s)	20.5	20.5	20.5		43.5		43.5	
Actuated g/C Ratio	0.27	0.27	0.27		0.58		0.58	
v/c Ratio	0.39	0.28	0.25		0.36		0.38	
Control Delay (s/veh)	20.6	24.7	13.2		12.9		9.2	
Queue Delay	0.0	0.0	0.0		0.0		0.0	
Total Delay (s/veh)	20.6	24.7	13.2		12.9		9.2	
LOS	C	C	B		B		A	
Approach Delay (s/veh)	20.6		18.2		12.9		9.2	
Approach LOS	C		B		B		A	
Queue Length 50th (m)	12.1	8.9	5.2		19.9		22.2	
Queue Length 95th (m)	27.0	19.9	16.5		51.0		32.2	
Internal Link Dist (m)	49.7		112.4		195.6		190.0	
Turn Bay Length (m)			45.0					
Base Capacity (vph)	363	287	414		1589		1624	
Starvation Cap Reductn	0	0	0		0		0	
Spillback Cap Reductn	0	0	0		0		0	
Storage Cap Reductn	0	0	0		0		0	
Reduced v/c Ratio	0.39	0.28	0.25		0.36		0.38	

**Intersection Summary**  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 47 (63%), Referenced to phase 2:NBL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.39  
 Intersection Signal Delay (s/veh): 12.7  
 Intersection LOS: B  
 Intersection Capacity Utilization 56.9%  
 ICU Level of Service B  
 Analysis Period (min) 15



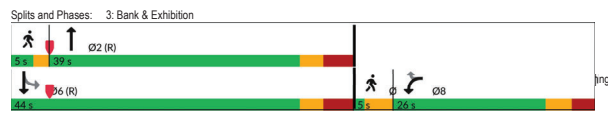
Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	45	40	72	44	21	466
Traffic Volume (vph)	9	28	483	30	533	
Future Volume (vph)	9	28	483	30	533	
Lane Group Flow (vph)	110	0	617	0	651	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	2	6	3
Permitted Phases	4	2	2	2	6	3
Detector Phase	4	2	2	2	6	3
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	0.0
Lead/Lag		Lag				Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effect Green (s)	11.6	56.1	56.1	56.1	56.1	5.6
Actuated g/C Ratio	0.15	0.75	0.75	0.75	0.75	0.75
v/c Ratio	0.55	0.31	0.32	0.32	0.32	0.32
Control Delay (s/veh)	38.8	2.3	2.3	2.3	2.3	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.8	2.3	2.3	2.3	2.3	3.9
LOS	D	A	A	A	A	A
Approach Delay (s/veh)	38.8	2.3	2.3	2.3	2.3	3.9
Approach LOS	D	A	A	A	A	A
Queue Length 50th (m)	14.6	3.8	3.8	3.8	3.8	6.9
Queue Length 95th (m)	27.2	9.0	9.0	9.0	9.0	22.0
Internal Link Dist (m)	39.8	31.5	31.5	31.5	31.5	195.6
Turn Bay Length (m)						
Base Capacity (vph)	284	1968	2031	2031	2031	2031
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.31	0.32	0.32	0.32	0.32

**Intersection Summary**  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 74 (99%), Referenced to phase 2:NBL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.55  
 Intersection Signal Delay (s/veh): 6.0  
 Intersection LOS: A  
 Intersection Capacity Utilization 63.9%  
 ICU Level of Service B  
 Analysis Period (min) 15



Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	75	59	444	104	474		
Traffic Volume (vph)	75	59	444	104	474		
Future Volume (vph)	75	59	444	104	474		
Lane Group Flow (vph)	83	66	603	116	527		
Turn Type	Prot	Perm	NA	Perm	NA		
Protected Phases	8	2	2	6	1	7	
Permitted Phases	8	2	2	6	1	7	
Detector Phase	8	2	2	6	1	7	
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	58.7%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9	0.0	0.0
Lead/Lag		Lag	Lag	Lag		Lead	Lead
Lead-Lag Optimize?							
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effect Green (s)	10.8	10.8	55.6	55.6	55.6	5.6	5.6
Actuated g/C Ratio	0.14	0.14	0.74	0.74	0.74	0.74	0.74
v/c Ratio	0.37	0.31	0.29	0.25	0.23	0.23	0.23
Control Delay (s/veh)	33.9	12.0	4.6	4.1	2.7	2.7	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.9	12.0	4.6	4.1	2.7	2.7	2.7
LOS	C	B	A	A	A	A	A
Approach Delay (s/veh)	24.2		4.6	3.0	3.0	3.0	3.0
Approach LOS	C		A	A	A	A	A
Queue Length 50th (m)	10.9	0.0	13.3	2.7	6.2	6.2	6.2
Queue Length 95th (m)	22.2	9.7	23.3	5.5	9.5	9.5	9.5
Internal Link Dist (m)	30.6		33.7	44.8	44.8	44.8	44.8
Turn Bay Length (m)			40.0				
Base Capacity (vph)	405	338	2092	456	2330	2330	2330
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.20	0.29	0.25	0.23	0.23	0.23

**Intersection Summary**  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.37  
 Intersection Signal Delay (s/veh): 5.9  
 Intersection LOS: A  
 Intersection Capacity Utilization 58.5%  
 ICU Level of Service B  
 Analysis Period (min) 15



Queues  
6: Bank & Aylmer

07/31/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	38	18	667	705	
Future Volume (vph)	38	18	667	705	
Lane Group Flow (vph)	54	0	761	850	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	3	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.0	60.3	60.3	60.3	
Actuated g/C Ratio	0.16	0.67	0.67	0.67	
v/c Ratio	0.23	0.39	0.42	0.42	
Control Delay (s/veh)	30.2	5.8	7.4	7.4	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	30.2	5.8	7.4	7.4	
LOS	C	A	A	A	
Approach Delay (s/veh)	30.2	5.8	7.4	7.4	
Approach LOS	C	A	A	A	
Queue Length 50th (m)	6.4	14.8	30.3	30.3	
Queue Length 95th (m)	16.7	28.2	41.0	41.0	
Internal Link Dist (m)	76.7	28.1	10.1	10.1	
Turn Bay Length (m)					
Base Capacity (vph)	276	1934	2003	2003	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.20	0.39	0.42	0.42	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 87 (9%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay (s/veh): 7.4	Intersection LOS: A
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Bank & Aylmer



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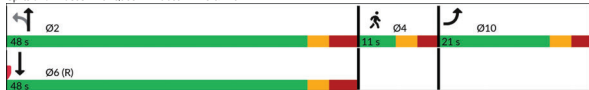
Queues  
9: Queen Elizabeth Drive & Fifth

07/31/2024

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	54	52	248	358	
Future Volume (vph)	54	52	248	358	
Lane Group Flow (vph)	113	0	334	456	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases		2			
Minimum Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Act Effct Green (s)	15.3	41.2	41.2	41.2	
Actuated g/C Ratio	0.19	0.52	0.52	0.52	
v/c Ratio	0.38	0.45	0.53	0.53	
Control Delay (s/veh)	32.7	14.6	15.9	15.9	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	32.7	14.6	15.9	15.9	
LOS	C	B	B	B	
Approach Delay (s/veh)	32.7	14.6	15.9	15.9	
Approach LOS	C	B	B	B	
Queue Length 50th (m)	15.1	30.0	43.6	43.6	
Queue Length 95th (m)	29.7	49.9	69.1	69.1	
Internal Link Dist (m)	57.2	0.1	5.9	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	294	748	853	853	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.38	0.45	0.53	0.53	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay (s/veh): 17.5	Intersection LOS: B
Intersection Capacity Utilization 64.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: Queen Elizabeth Drive & Fifth



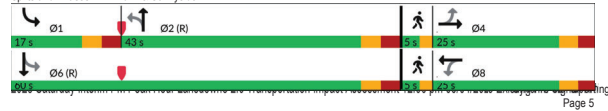
Queues  
7: Bank & Sunnyside

07/31/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	41	37	20	57	29	481	82	537		
Future Volume (vph)	41	37	20	57	29	481	82	537		
Lane Group Flow (vph)	0	135	0	195	0	602	0	749		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4		8		2	1	6	3	7
Permitted Phases		4		8		2	1	6	3	7
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Act Effct Green (s)	19.4	19.4	19.4	19.4	37.0	37.0	37.0	37.0	54.0	54.0
Actuated g/C Ratio	0.22	0.22	0.22	0.22	0.41	0.41	0.41	0.41	0.60	0.60
v/c Ratio	0.59	0.63	0.63	0.63	0.55	0.55	0.53	0.53	0.53	0.53
Control Delay (s/veh)	43.8	31.3	31.3	31.3	22.1	22.1	4.6	4.6	4.6	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.8	31.3	31.3	31.3	22.1	22.1	4.6	4.6	4.6	4.6
LOS	D	C	C	C	C	C	A	A	A	A
Approach Delay (s/veh)	43.8	31.3	31.3	31.3	22.1	22.1	4.6	4.6	4.6	4.6
Approach LOS	D	C	C	C	C	C	A	A	A	A
Queue Length 50th (m)	21.1	20.0	20.0	20.0	39.8	39.8	7.7	7.7	7.7	7.7
Queue Length 95th (m)	#40.4	42.9	42.9	42.9	55.8	55.8	9.7	9.7	9.7	9.7
Internal Link Dist (m)	75.1	136.0	136.0	136.0	63.1	63.1	79.0	79.0	79.0	79.0
Turn Bay Length (m)										
Base Capacity (vph)	228	308	308	308	1103	1103	1425	1425	1425	1425
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.63	0.63	0.63	0.55	0.55	0.53	0.53	0.53	0.53

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 23 (26%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 17.1	Intersection LOS: B
Intersection Capacity Utilization 71.0%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7: Bank & Sunnyside



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HCM 7th AWSC  
11: O' Connor & Fifth

07/31/2024

Intersection												
Intersection Delay, s/veh	8											
Intersection LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	40	48	0	0	0	93	58	39	36	0	0	104
Future Vol, veh/h	40	48	0	0	0	93	58	39	36	0	0	104
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	53	0	0	0	103	64	43	40	0	0	116
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1
Approach	EB	WB	NB	SB								
Opposing Approach	WB	EB	SB	NB								
Opposing Lanes	1	1	1	1								
Conflicting Approach Left	SB	NB	EB	WB								
Conflicting Lanes Left	1	1	1	1								
Conflicting Approach Right	NB	SB	WB	EB								
Conflicting Lanes Right	1	1	1	1								
HCM Control Delay, s/veh	8.4	8.4	7.6	8.4								
HCM LOS	A	A	A	A								

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	45%	0%	0%
Vol Thru, %	29%	55%	0%	0%
Vol Right, %	27%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	88	93	104
LT Vol	58	40	0	0
Through Vol	39	48	0	0
RT Vol	36	0	93	104
Lane Flow Rate	148	98	103	116
Geometry Grp	1	1	1	1
Degree of Util (X)	0.182	0.128	0.115	0.127
Departure Headway (Hd)	4.425	4.704	4.022	3.949
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	911	763	891	908
Service Time	2.446	2.729	2.047	1.97
HCM Lane v/c Ratio	0.182	0.128	0.116	0.128
HCM Control Delay, s/veh	8.4	8.4	7.6	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-ile Q				



Intersection						
Intersection Delay, s/veh	8.4					
Intersection LOS	A					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	5	205	137	5	5	5
Future Vol, veh/h	5	205	137	5	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	228	152	6	6	6
Number of Lanes	0	1	1	0	1	0
Approach	EB	WB	SB			
Opposing Approach	WB	EB				
Opposing Lanes	1	1	0			
Conflicting Approach Left	SB		WB			
Conflicting Lanes Left	1	0	1			
Conflicting Approach Right		SB	EB			
Conflicting Lanes Right	0	1	1			
HCM Control Delay, s/veh	8.6	8.1	7.6			
HCM LOS	A	A	A			

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	0%	50%
Vol Thru, %	98%	96%	0%
Vol Right, %	0%	4%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	210	142	10
LT Vol	5	0	5
Through Vol	205	137	0
RT Vol	0	5	5
Lane Flow Rate	233	158	11
Geometry Grp	1	1	1
Degree of Util (X)	0.264	0.18	0.014
Departure Headway (Hd)	4.076	4.106	4.568
Convergence, Y/N	Yes	Yes	Yes
Cap	877	868	788
Service Time	2.117	2.162	2.568
HCM Lane V/C Ratio	0.266	0.182	0.014
HCM Control Delay, s/veh	8.6	8.1	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.1	0.7	0

Intersection						
Intersection Delay, s/veh	9					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	15	5	86	5	155	106
Future Vol, veh/h	15	5	86	5	155	106
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	6	96	6	172	118
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	SB			
Opposing Approach	WB	EB				
Opposing Lanes	1	1	0			
Conflicting Approach Left		NB	EB			
Conflicting Lanes Left	0	1	1			
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1	0	1			
HCM Control Delay, s/veh	7.7	8.6	9.2			
HCM LOS	A	A	A			

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	59%	0%	95%
Vol Thru, %	0%	75%	5%
Vol Right, %	41%	25%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	261	20	91
LT Vol	155	0	86
Through Vol	0	15	5
RT Vol	106	5	0
Lane Flow Rate	290	22	101
Geometry Grp	1	1	1
Degree of Util (X)	0.332	0.028	0.135
Departure Headway (Hd)	4.125	4.549	4.79
Convergence, Y/N	Yes	Yes	Yes
Cap	876	788	750
Service Time	2.125	2.569	2.807
HCM Lane V/C Ratio	0.331	0.028	0.135
HCM Control Delay, s/veh	9.2	7.7	8.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.5	0.1	0.5

Intersection						
Intersection Delay, s/veh	7.3					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	15	5	5	72	5	5
Future Vol, veh/h	15	5	5	72	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	6	6	80	6	6
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	SB			
Opposing Approach	WB	EB				
Opposing Lanes	1	1	0			
Conflicting Approach Left		NB	EB			
Conflicting Lanes Left	0	1	1			
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1	0	1			
HCM Control Delay, s/veh	7	7.4	7			
HCM LOS	A	A	A			

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	6%
Vol Thru, %	0%	75%	94%
Vol Right, %	50%	25%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	20	77
LT Vol	5	0	5
Through Vol	0	15	72
RT Vol	5	5	0
Lane Flow Rate	11	22	86
Geometry Grp	1	1	1
Degree of Util (X)	0.012	0.024	0.095
Departure Headway (Hd)	3.92	3.867	3.983
Convergence, Y/N	Yes	Yes	Yes
Cap	908	926	903
Service Time	1.965	1.987	1.991
HCM Lane V/C Ratio	0.012	0.024	0.095
HCM Control Delay, s/veh	7	7	7.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.3

Intersection						
Int Delay, s/veh	6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↔	↔	
Traffic Vol, veh/h	3	177	116	557	513	55
Future Vol, veh/h	3	177	116	557	513	55
Conflicting Peds, #/hr	0	0	178	0	0	107
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	0
Grade, %	0	-	-	0	0	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	3	197	129	619	570	61

Major/Minor	Minor2	Major1	Major2	
Conflicting Flow All	1346	779	809	
Stage 1	779	-	-	
Stage 2	567	-	-	
Critical Hdwy	6.675	6.275	4.175	
Critical Hdwy Stg 1	5.475	-	-	
Critical Hdwy Stg 2	5.875	-	-	
Follow-up Hdwy	3.54753	3.4752	2.475	
Pot Cap-1 Maneuver	151	389	798	
Stage 1	445	-	-	
Stage 2	525	-	-	
Platoon blocked, %	-	-	-	
Mov Cap-1 Maneuver	76	316	648	
Mov Cap-2 Maneuver	76	-	-	
Stage 1	274	-	-	
Stage 2	426	-	-	
Approach	EB	NB	SB	
HCM Control Delay, s/veh	4.331	3.73	0	
HCM LOS	D			
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	537	-	316	-
HCM Lane V/C Ratio	0.199	-	0.623	-
HCM Control Delay (s/veh)	11.9	2	33.5	-
HCM Lane LOS	B	A	D	-
HCM 95th-tile Q(veh)	0.7	-	3.9	-

Intersection					
Int Delay, s/veh					
0.4					
Movement	EBL	EBR	NBL	NBT	SBR
Lane Configurations					
Traffic Vol, veh/h	1	32	0	662	682
Future Vol, veh/h	1	32	0	662	682
Conflicting Peds, #/hr	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5
Mvmt Flow	1	36	0	736	758

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1126	758	0
Stage 1	758	-	-
Stage 2	368	-	-
Critical Hdwy	6.675	6.275	-
Critical Hdwy Stg 1	5.475	-	-
Critical Hdwy Stg 2	5.875	-	-
Follow-up Hdwy	3.54753	3.475	-
Pot Cap-1 Maneuver	208	400	0
Stage 1	455	-	-
Stage 2	664	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	208	400	-
Mov Cap-2 Maneuver	208	-	-
Stage 1	455	-	-
Stage 2	664	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v4.88	B	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	SBL	SBT
Capacity (veh/h)	-	400	-	-
HCM Lane V/C Ratio	-	0.089	-	-
HCM Control Delay (s/veh)	-	14.9	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Intersection					
Int Delay, s/veh					
3.8					
Movement	EBL	EBR	NBL	NBT	SBR
Lane Configurations					
Traffic Vol, veh/h	85	61	65	210	252
Future Vol, veh/h	85	61	65	210	252
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0
Mvmt Flow	94	68	72	233	280

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	744	366	452
Stage 1	366	-	-
Stage 2	378	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	385	684	1119
Stage 1	706	-	-
Stage 2	697	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	356	684	1119
Mov Cap-2 Maneuver	356	-	-
Stage 1	654	-	-
Stage 2	697	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v7.63	C	1.99	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	SBL	SBT
Capacity (veh/h)	425	-	446	-
HCM Lane V/C Ratio	0.065	-	0.364	-
HCM Control Delay (s/veh)	8.4	0	17.6	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q(veh)	0.2	-	1.6	-

Intersection					
Int Delay, s/veh					
0.9					
Movement	WBL	WBR	NBT	NBR	SBL
Lane Configurations					
Traffic Vol, veh/h	6	71	494	19	2
Future Vol, veh/h	6	71	494	19	2
Conflicting Peds, #/hr	0	0	0	100	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	0	-	0
Grade, %	0	-	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	15	6	0	0
Mvmt Flow	7	79	549	21	2

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	984	385	0
Stage 1	659	-	-
Stage 2	325	-	-
Critical Hdwy	6.8	7.2	-
Critical Hdwy Stg 1	5.8	-	-
Critical Hdwy Stg 2	5.8	-	-
Follow-up Hdwy	3.5	3.45	-
Pot Cap-1 Maneuver	249	578	-
Stage 1	482	-	-
Stage 2	711	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	222	517	-
Mov Cap-2 Maneuver	222	-	-
Stage 1	431	-	-
Stage 2	708	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v3.22	B	0	0.03
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBR	SBL	SBT
Capacity (veh/h)	-	-	517	831
HCM Lane V/C Ratio	-	-	0.153	0.003
HCM Control Delay (s/veh)	-	-	13.2	9.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0

Intersection					
Int Delay, s/veh					
6.2					
Movement	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Vol, veh/h	91	31	74	146	123
Future Vol, veh/h	91	31	74	146	123
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop
RT Channelized	None	None	None	None	None
Storage Length	-	-	0	-	-
Veh in Median Storage, #	-	0	0	-	0
Grade, %	-	0	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2
Mvmt Flow	101	34	82	162	80

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	244	0	0
Stage 1	-	-	163
Stage 2	-	-	237
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.219	-	-
Pot Cap-1 Maneuver	1322	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1322	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

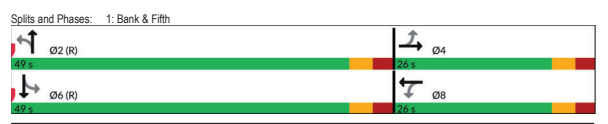
Approach	EB	WB	SB
HCM Control Delay, s/v5.93	B	0	13.36
HCM LOS	B		

Minor Lane/Major Mvmt	EBL	EBT	WBR	SBL
Capacity (veh/h)	1296	-	-	646
HCM Lane V/C Ratio	0.076	-	-	0.335
HCM Control Delay (s/veh)	7.9	0	-	13.4
HCM Lane LOS	A	A	-	B
HCM 95th %tile Q(veh)	0.2	-	-	1.5

# 2028 Scenario

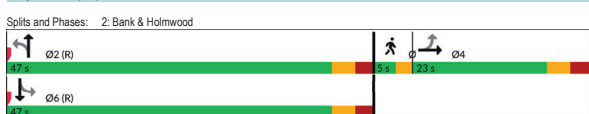
## Sunday Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	53	37	127	65	15	466	22	481
Future Volume (vph)	53	37	127	65	15	466	22	481
Lane Group Flow (vph)	0	129	141	114	0	577	0	604
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	4	8	8	2	2	6	6
Permitted Phases	4	8	2	2	6	6	4	4
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effect Green (s)	20.5	20.5	20.5	20.5	43.5	43.5	43.5	43.5
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.58	0.58	0.58	0.58
v/c Ratio	0.38	0.48	0.27	0.27	0.36	0.38	0.38	0.38
Control Delay (s/veh)	22.6	29.3	16.6	16.6	10.4	9.0	9.0	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.6	29.3	16.6	16.6	10.4	9.0	9.0	9.0
LOS	C	C	B	B	B	A	A	A
Approach Delay (s/veh)	22.6	29.3	23.6	23.6	10.4	9.0	9.0	9.0
Approach LOS	C	C	B	B	B	A	A	A
Queue Length 50th (m)	12.4	16.6	8.1	8.1	31.2	21.1	21.1	21.1
Queue Length 95th (m)	26.8	33.0	20.2	20.2	48.2	30.9	30.9	30.9
Internal Link Dist (m)	49.7		112.4		195.6		190.0	
Turn Bay Length (m)			45.0					
Base Capacity (vph)	341	294	424	424	1606	1594	1594	1594
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.48	0.27	0.27	0.36	0.38	0.38	0.38

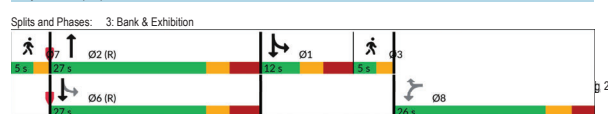


2028 Sunday Interim PM Peak Hour Lansdowne 2.0 Transportation Impact Assessment 2:14 pm 07/15/2024 Existing Signal Timing, 2028 Backgr Page 1

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	17	0	32	304	22	522	
Future Volume (vph)	17	0	32	504	22	522	
Lane Group Flow (vph)	109	2	0	685	0	643	
Turn Type	NA	Perm	NA	Perm	NA	NA	
Protected Phases	4		2	6	6	3	
Permitted Phases	4		2	6	6	3	
Detector Phase	4		2	2	6	6	
Switch Phase							
Minimum Initial (s)	4.4		10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	23.0		47.0	47.0	47.0	47.0	5.0
Total Split (s)	23.0		47.0	47.0	47.0	47.0	5.0
Total Split (%)	30.7%		62.7%	62.7%	62.7%	7%	7%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6		2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6		5.2	5.2	5.2	5.2	
Lead/Lag	Lag						Lead
Lead-Lag Optimize?							
Recall Mode	None		C-Max	C-Max	C-Max	C-Max	None
Act Effect Green (s)	11.5	0.0		56.1	56.1	56.1	
Actuated g/C Ratio	0.15	0.00		0.75	0.75	0.75	
v/c Ratio	0.55	0.01		0.36	0.31	0.31	
Control Delay (s/veh)	38.5	0.0		2.4	9.3	9.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	38.5	0.0		2.4	9.3	9.3	
LOS	D	A		A	A	A	
Approach Delay (s/veh)	38.5			2.4	9.3	9.3	
Approach LOS	D	A		A	A	A	
Queue Length 50th (m)	14.4	0.0		4.9	28.3	28.3	
Queue Length 95th (m)	26.9	0.0		11.1	44.5	44.5	
Internal Link Dist (m)	39.8	116.8		31.5	195.6		
Turn Bay Length (m)							
Base Capacity (vph)	304	143		1895	2052	2052	
Starvation Cap Reductn	0	0		0	0	0	
Spillback Cap Reductn	0	0		0	0	0	
Storage Cap Reductn	0	0		0	0	0	
Reduced v/c Ratio	0.36	0.01		0.36	0.31	0.31	



Lane Group	WBL	WBR	NBT	SBL	SBT	Ø3	Ø6	Ø7
Lane Configurations								
Traffic Volume (vph)	109	51	407	151	440			
Future Volume (vph)	109	51	407	151	440			
Lane Group Flow (vph)	121	57	559	168	489			
Turn Type	Perm	Perm	NA	custom	NA			
Protected Phases	8	8	2	1	16	3	6	7
Permitted Phases	8	8	2	1	16	3	6	7
Detector Phase	8	8	2	1	16	3	6	7
Switch Phase								
Minimum Initial (s)	4.0	4.0	10.0	4.0	1.0	5.1	3.0	3.0
Minimum Split (s)	26.0	26.0	27.0	12.0	5.0	27.0	5.0	5.0
Total Split (s)	26.0	26.0	27.0	12.0	5.0	27.0	5.0	5.0
Total Split (%)	34.7%	34.7%	36.0%	16.0%	7%	36%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	2.0	3.0	2.0	2.0
All-Red Time (s)	3.0	3.0	3.9	3.9	0.0	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.9	6.9				
Lead/Lag			Lead			Lag		
Lead-Lag Optimize?			Yes			Yes		
Recall Mode	None	None	C-Max	None	None	C-Max	None	None
Act Effect Green (s)	11.7	11.7	40.7	45.8	54.1			
Actuated g/C Ratio	0.16	0.16	0.54	0.61	0.72			
v/c Ratio	0.55	0.27	0.36	0.38	0.22			
Control Delay (s/veh)	37.9	11.0	11.5	8.4	4.2			
Queue Delay	0.0	0.0	0.0	0.0	0.0			
Total Delay (s/veh)	37.9	11.0	11.5	8.4	4.2			
LOS	D	B	B	A	A			
Approach Delay (s/veh)	29.3		11.5	5.3	5.3			
Approach LOS	C	B	B	A	A			
Queue Length 50th (m)	16.0	0.0	22.0	5.5	8.3			
Queue Length 95th (m)	29.3	8.5	38.1	11.1	12.3			
Internal Link Dist (m)	30.6		33.7		44.8			
Turn Bay Length (m)				40.0				
Base Capacity (vph)	371	317	1532	445	2266			
Starvation Cap Reductn	0	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0			
Storage Cap Reductn	0	0	0	0	0			
Reduced v/c Ratio	0.33	0.18	0.36	0.38	0.22			



Queues  
6: Bank & Aylmer

07/31/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	53	16	594	643	
Future Volume (vph)	53	16	594	643	
Lane Group Flow (vph)	81	0	667	776	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6		
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		
Total Lost Time (s)	5.5	5.2	5.2		
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.0	72.4	72.4		
Actuated g/C Ratio	0.12	0.80	0.80		
v/c Ratio	0.43	0.29	0.32		
Control Delay (s/veh)	36.0	2.6	3.6		
Queue Delay	0.0	0.0	0.0		
Total Delay (s/veh)	36.0	2.6	3.6		
LOS	D	A	A		
Approach Delay (s/veh)	36.0	2.6	3.6		
Approach LOS	D	A	A		
Queue Length 50th (m)	10.3	11.2	16.5		
Queue Length 95th (m)	23.1	15.0	28.4		
Internal Link Dist (m)	76.7	28.1	10.1		
Turn Bay Length (m)					
Base Capacity (vph)	276	2334	2401		
Starvation Cap Reductn	0	0	0		
Spillback Cap Reductn	0	0	0		
Storage Cap Reductn	0	0	0		
Reduced v/c Ratio	0.29	0.29	0.32		

Intersection Summary				
Cycle Length:	90			
Actuated Cycle Length:	90			
Offset:	87 (9%), Referenced to phase 2:NBL and 6:SBT, Start of Green			
Natural Cycle:	90			
Control Type:	Actuated-Coordinated			
Maximum v/c Ratio:	0.43			
Intersection Signal Delay (s/veh):	4.9	Intersection LOS: A		
Intersection Capacity Utilization:	49.7%	ICU Level of Service A		
Analysis Period (min):	15			

Splits and Phases: 6: Bank & Aylmer



2028 Backgr

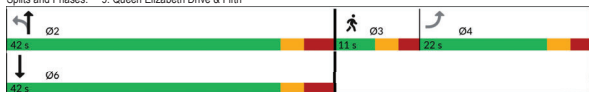
Queues  
9: Queen Elizabeth Drive & Fifth

07/31/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	12	215	19	22	
Future Volume (vph)	12	215	19	22	
Lane Group Flow (vph)	182	0	260	53	
Turn Type	Perm	Perm	NA	NA	
Protected Phases		2	6	3	
Permitted Phases	4	2			
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	42.0	42.0	42.0	9.7
Total Split (s)	22.0	42.0	42.0	42.0	11.0
Total Split (%)	29.3%	56.0%	56.0%	56.0%	15%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0		
Total Lost Time (s)	5.7	6.8	6.8		
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Recall Mode	Min	Max	Max	Max	None
Act Effct Green (s)	12.7	35.3	35.3		
Actuated g/C Ratio	0.21	0.58	0.58		
v/c Ratio	0.59	0.38	0.06		
Control Delay (s/veh)	29.9	9.3	6.4		
Queue Delay	0.0	0.0	0.0		
Total Delay (s/veh)	29.9	9.3	6.4		
LOS	C	A	A		
Approach Delay (s/veh)	29.9	9.3	6.4		
Approach LOS	C	A	A		
Queue Length 50th (m)	18.3	13.4	2.2		
Queue Length 95th (m)	35.1	30.5	6.8		
Internal Link Dist (m)	97.2	0.1	5.9		
Turn Bay Length (m)					
Base Capacity (vph)	396	692	909		
Starvation Cap Reductn	0	0	0		
Spillback Cap Reductn	0	0	0		
Storage Cap Reductn	0	0	0		
Reduced v/c Ratio	0.46	0.38	0.06		

Intersection Summary				
Cycle Length:	75			
Actuated Cycle Length:	60.5			
Natural Cycle:	75			
Control Type:	Semi Act-Uncoord			
Maximum v/c Ratio:	0.59			
Intersection Signal Delay (s/veh):	16.6	Intersection LOS: B		
Intersection Capacity Utilization:	41.3%	ICU Level of Service A		
Analysis Period (min):	15			

Splits and Phases: 9: Queen Elizabeth Drive & Fifth



2028 Backgr

Queues  
7: Bank & Sunnyside

07/31/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø6	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔			
Traffic Volume (vph)	42	33	15	50	18	460	115	497			
Future Volume (vph)	42	33	15	50	18	460	115	497			
Lane Group Flow (vph)	0	117	0	190	0	543	0	771			
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA			
Protected Phases		4	8	2	2	1	1.6	3	6	7	
Permitted Phases	4	8	8	2	2	6					
Detector Phase	4	4	8	8	2	2	1	1.6			
Switch Phase											
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	1.0	17.0	1.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	5.0	43.0	5.0	
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	5.0	43.0	5.0	
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	6%	48%	6%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	2.0	
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	0.0	3.0	0.0	
Lost Time Adjust (s)	0.0	0.0	0.0								
Total Lost Time (s)	5.6	5.6	5.6								
Lead/Lag	Lag	Lag	Lag	Lag					Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes	Yes	
Recall Mode	None	None	None	None	C-Max	C-Max	None	None	C-Max	None	
Act Effct Green (s)	15.2	15.2	15.2	15.2	44.0	44.0	57.4				
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.49	0.49	0.84				
v/c Ratio	0.77	0.77	0.77	0.77	0.39	0.39	0.51				
Control Delay (s/veh)	65.0	34.0	17.0	5.2							
Queue Delay	0.0	0.0	0.0	0.0							
Total Delay (s/veh)	65.0	34.0	17.0	5.2							
LOS	E	C	B	A							
Approach Delay (s/veh)	65.0	34.0	17.0	5.2							
Approach LOS	E	C	B	A							
Queue Length 50th (m)	19.5	17.5	30.4	9.1							
Queue Length 95th (m)	34.8	36.5	48.7	11.8							
Internal Link Dist (m)	75.1	136.0	63.1	79.0							
Turn Bay Length (m)											
Base Capacity (vph)	201	325	1399	1520							
Starvation Cap Reductn	0	0	0	0							
Spillback Cap Reductn	0	0	0	0							
Storage Cap Reductn	0	0	0	0							
Reduced v/c Ratio	0.58	0.58	0.39	0.51							

Intersection Summary											
Cycle Length:	90										
Actuated Cycle Length:	90										
Offset:	23 (26%), Referenced to phase 2:NBL and 6:SBT, Start of Green										
Natural Cycle:	90										
Control Type:	Actuated-Coordinated										
Maximum v/c Ratio:	0.77										
Intersection Signal Delay (s/veh):	16.8	Intersection LOS: B									
Intersection Capacity Utilization:	73.3%	ICU Level of Service D									
Analysis Period (min):	15										

Splits and Phases: 7: Bank & Sunnyside



2028 Backgr

HCM 7th AWSC  
12: Exhibition & Paul Askin

07/31/2024

Intersection											
Intersection Delay, s/veh	8.8										
Intersection LOS	A										
Movement	EBL	EBT	WBT	WBR	SBL	SBR					
Lane Configurations	↔	↔	↔	↔	↔	↔					
Traffic Vol, veh/h	5	250	164	5	5	5					
Future Vol, veh/h	5	250	164	5	5	5					
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90					
Heavy Vehicles, %	2	2	2	2	2	2					
Mvmt Flow	6	278	182	6	6	6					
Number of Lanes	0	1	1	0	1	0					
Approach	EB	WB	SB								
Opposing Approach	WB	EB	SB								
Opposing Lanes	1	1	0								
Conflicting Approach Left	SB		WB								
Conflicting Lanes Left	1	0	1								
Conflicting Approach Right	SB	EB	SB								
Conflicting Lanes Right	0	1	1								
HCM Control Delay, s/veh	9.1	8.4	7.8								
HCM LOS	A	A	A								

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	0%	50%
Vol Thru, %	98%	97%	0%
Vol Right, %	0%	3%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	255	169	10
LT Vol	5	0	5
Through Vol	250	164	0
RT Vol	0	5	5
Lane Flow Rate	283	188	11
Geometry Grp	1	1	1
Degree of Util (X)	0.322	0.216	0.015
Departure Headway (Hd)	4.097	4.147	4.736
Convergence, Y/N	Yes	Yes	Yes
Cap	973	856	760
Service Time	2.149	2.216	2.736
HCM Lane v/c Ratio	0.324	0.22	0.014
HCM Control Delay, s/veh	9.1	8.4	7.8
HCM Lane LOS	A	A	A
HCM 95th-ile Q	1.4	0.8	0

Intersection						
Intersection Delay, s/veh	7.9					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	14	5	5	163	5	5
Future Vol, veh/h	14	5	5	163	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	6	6	181	6	6
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left			NB	EB		
Conflicting Lanes Left	0		1	1		
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1		0		1	
HCM Control Delay, s/veh	7.1		8		7.2	
HCM LOS	A		A		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	3%
Vol Thru, %	0%	74%	97%
Vol Right, %	50%	26%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	19	168
LT Vol	5	0	5
Through Vol	0	14	163
RT Vol	5	5	0
Lane Flow Rate	11	21	187
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.023	0.206
Departure Headway (Hd)	4.093	3.934	3.976
Convergence, Y/N	Yes	Yes	Yes
Cap	862	906	905
Service Time	2.177	1.974	1.985
HCM Lane V/C Ratio	0.013	0.023	0.207
HCM Control Delay, s/veh	7.2	7.1	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.8

Intersection												
Intersection Delay, s/veh	9.9											
Intersection LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↔			↔	↔
Traffic Vol, veh/h	68	81	0	0	0	227	99	66	61	0	0	103
Future Vol, veh/h	68	81	0	0	0	227	99	66	61	0	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	90	0	0	0	252	110	73	68	0	0	114
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1
Approach	EB	EBT	EBR	WB	NB	SB						
Opposing Approach	WB	EB		SB		NB						
Opposing Lanes	1	1		1		1						
Conflicting Approach Left	SB		NB		EB		WB					
Conflicting Lanes Left	1		1		1		1					
Conflicting Approach Right	NB		SB		WB		EB					
Conflicting Lanes Right	1		1		1		1					
HCM Control Delay, s/veh	10		9.6		10.7		8.6					
HCM LOS	A		A		B		A					
Lane	NBLn1	EBLn1	WBLn1	SBLn1								
Vol Left, %	44%	46%	0%	0%								
Vol Thru, %	29%	54%	0%	0%								
Vol Right, %	27%	0%	100%	100%								
Sign Control	Stop	Stop	Stop	Stop								
Traffic Vol by Lane	226	149	227	103								
LT Vol	99	68	0	0								
Through Vol	66	81	0	0								
RT Vol	61	0	227	103								
Lane Flow Rate	251	166	252	114								
Geometry Grp	1	1	1	1								
Degree of Util (X)	0.346	0.24	0.311	0.151								
Departure Headway (Hd)	4.967	5.209	4.442	4.751								
Convergence, Y/N	Yes	Yes	Yes	Yes								
Cap	716	680	800	760								
Service Time	3.06	3.307	2.53	2.751								
HCM Lane V/C Ratio	0.351	0.244	0.315	0.15								
HCM Control Delay, s/veh	10.7	10	9.6	8.6								
HCM Lane LOS	B	A	A	A								
HCM 95th-tile Q	1.5	0.9	1.3	0.5								

Intersection						
Intersection Delay, s/veh	9.3					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	14	5	56	3	188	130
Future Vol, veh/h	14	5	56	3	188	130
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	6	62	3	209	144
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left			NB	EB		
Conflicting Lanes Left	0		1	1		
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1		0		1	
HCM Control Delay, s/veh	7.8		8.4		9.6	
HCM LOS	A		A		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	59%	0%	95%
Vol Thru, %	0%	74%	5%
Vol Right, %	41%	26%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	318	19	59
LT Vol	188	0	56
Through Vol	0	14	3
RT Vol	130	5	0
Lane Flow Rate	353	21	66
Geometry Grp	1	1	1
Degree of Util (X)	0.388	0.027	0.09
Departure Headway (Hd)	3.956	4.627	4.917
Convergence, Y/N	Yes	Yes	Yes
Cap	897	778	733
Service Time	2.034	2.63	2.918
HCM Lane V/C Ratio	0.394	0.027	0.09
HCM Control Delay, s/veh	9.6	7.8	8.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.9	0.1	0.3

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔
Traffic Vol, veh/h	5	152	107	540	491	60
Future Vol, veh/h	5	152	107	540	491	60
Conflicting Peds, #/hr	0	0	178	0	0	107
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	6	169	119	600	546	67

Major/Minor	Minor2	Major1	Major2	
Conflicting Flow All	1295	757	790	
Stage 1	757	-	-	
Stage 2	538	-	-	
Critical Hdwy	6.675	6.275	4.175	
Critical Hdwy Stg 1	5.475	-	-	
Critical Hdwy Stg 2	5.875	-	-	
Follow-up Hdwy	3.54753	3.4752	2.475	
Pot Cap-1 Maneuver	163	400	812	
Stage 1	455	-	-	
Stage 2	544	-	-	
Platoon blocked, %	-	-	-	
Mov Cap-1 Maneuver	84	325	659	
Mov Cap-2 Maneuver	84	-	-	
Stage 1	290	-	-	
Stage 2	441	-	-	
Approach	EB	NB	SB	
HCM Control Delay, s/27.46	3.44		0	
HCM LOS	D			
Minor Lane/Major Mvmt	NBL	NBEBLn1	SBT	SBR
Capacity (veh/h)	549	-	325	-
HCM Lane V/C Ratio	0.18	-	0.52	-
HCM Control Delay (s/veh)	11.7	1.8	27.5	-
HCM Lane LOS	B	A	D	-
HCM 95th-tile Q(veh)	0.7	-	2.8	-



Intersection					
Int Delay, s/veh	1				
Movement	EBL	EBR	NBL	NBT	SBR
Lane Configurations		↕	↕	↕	↕
Traffic Vol, veh/h	2	69	0	621	647
Future Vol, veh/h	2	69	0	621	647
Conflicting Peds, #/hr	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5
Mvmt Flow	2	77	0	690	719
Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	1150	805	-	0	-
Stage 1	805	-	-	-	-
Stage 2	345	-	-	-	-
Critical Hdwy	6.675	6.275	-	-	-
Critical Hdwy Stg 1	5.475	-	-	-	-
Critical Hdwy Stg 2	5.875	-	-	-	-
Follow-up Hdwy	3.54753	3.475	-	-	-
Pot Cap-1 Maneuver	201	375	0	-	-
Stage 1	432	-	0	-	-
Stage 2	682	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	166	341	-	-	-
Mov Cap-2 Maneuver	166	-	-	-	-
Stage 1	393	-	-	-	-
Stage 2	620	-	-	-	-
Approach	EB	NB	SB		
HCM Control Delay, s/48.59		0	0		
HCM LOS	C				
Minor Lane/Major Mvmt	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	-	341	-		
HCM Lane V/C Ratio	-	0.225	-		
HCM Control Delay (s/veh)	-	18.6	-		
HCM Lane LOS	-	C	-		
HCM 95th %tile Q(veh)	-	0.8	-		

Intersection						
Int Delay, s/veh	6.4					
Movement	EBL	EBR	NBL	NBT	SBR	
Lane Configurations	↕	↕	↕	↕	↕	
Traffic Vol, veh/h	106	141	82	128	66	
Future Vol, veh/h	106	141	82	128	66	
Conflicting Peds, #/hr	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	
RT Channelized	None	None	None	None	None	
Storage Length	0	-	-	-	-	
Veh in Median Storage, #	0	-	0	0	-	
Grade, %	0	-	0	0	-	
Peak Hour Factor	90	90	90	90	90	
Heavy Vehicles, %	0	0	0	0	0	
Mvmt Flow	118	157	91	142	73	
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	449	124	176	0	-	
Stage 1	124	-	-	-	-	
Stage 2	324	-	-	-	-	
Critical Hdwy	6.4	6.2	4.1	-	-	
Critical Hdwy Stg 1	5.4	-	-	-	-	
Critical Hdwy Stg 2	5.4	-	-	-	-	
Follow-up Hdwy	3.5	3.3	2.2	-	-	
Pot Cap-1 Maneuver	571	932	1413	-	-	
Stage 1	906	-	-	-	-	
Stage 2	737	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	531	932	1413	-	-	
Mov Cap-2 Maneuver	531	-	-	-	-	
Stage 1	843	-	-	-	-	
Stage 2	737	-	-	-	-	
Approach	EB	NB	SB			
HCM Control Delay, s/43.34		3.02	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	703	-	704	-		
HCM Lane V/C Ratio	0.064	-	0.39	-		
HCM Control Delay (s/veh)	7.7	0	13.3	-		
HCM Lane LOS	A	A	B	-		
HCM 95th %tile Q(veh)	0.2	-	1.9	-		

Intersection					
Int Delay, s/veh	2				
Movement	WBL	WBR	NBT	NBR	SBL
Lane Configurations		↕	↕	↕	↕
Traffic Vol, veh/h	7	159	461	19	0
Future Vol, veh/h	7	159	461	19	0
Conflicting Peds, #/hr	0	0	0	100	0
Sign Control	Free	Free	Free	Free	Stop
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	0	-	0
Grade, %	0	-	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	15	6	0	0
Mvmt Flow	8	177	512	21	0
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	946	367	0	0	-
Stage 1	623	-	-	-	-
Stage 2	323	-	-	-	-
Critical Hdwy	6.8	7.2	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.45	-	-	-
Pot Cap-1 Maneuver	263	594	-	0	-
Stage 1	503	-	-	0	-
Stage 2	712	-	-	0	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	236	531	-	-	-
Mov Cap-2 Maneuver	236	-	-	-	-
Stage 1	450	-	-	-	-
Stage 2	712	-	-	-	-
Approach	WB	NB	SB		
HCM Control Delay, s/45.11		0	0		
HCM LOS	C				
Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBT		
Capacity (veh/h)	-	531	-		
HCM Lane V/C Ratio	-	0.332	-		
HCM Control Delay (s/veh)	-	15.1	-		
HCM Lane LOS	-	C	-		
HCM 95th %tile Q(veh)	-	1.4	-		

Intersection						
Int Delay, s/veh	8.9					
Movement	EBL	EBT	WBT	WBR	SBL	
Lane Configurations	↕	↕	↕	↕	↕	
Traffic Vol, veh/h	110	51	54	121	198	
Future Vol, veh/h	110	51	54	121	198	
Conflicting Peds, #/hr	0	0	0	0	0	
Sign Control	Free	Free	Free	Stop	Stop	
RT Channelized	None	None	None	None	None	
Storage Length	-	-	-	-	-	
Veh in Median Storage, #	-	0	0	-	0	
Grade, %	-	0	0	-	0	
Peak Hour Factor	90	90	90	90	90	
Heavy Vehicles, %	2	2	2	2	2	
Mvmt Flow	122	57	60	134	220	
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	194	0	-	0	428	
Stage 1	-	-	-	127	-	
Stage 2	-	-	-	301	-	
Critical Hdwy	4.12	-	-	6.42	6.22	
Critical Hdwy Stg 1	-	-	-	5.42	-	
Critical Hdwy Stg 2	-	-	-	5.42	-	
Follow-up Hdwy	2.218	-	-	3.518	3.318	
Pot Cap-1 Maneuver	1379	-	-	583	923	
Stage 1	-	-	-	899	-	
Stage 2	-	-	-	751	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	1379	-	-	530	923	
Mov Cap-2 Maneuver	-	-	-	530	-	
Stage 1	-	-	-	816	-	
Stage 2	-	-	-	751	-	
Approach	EB	WB	SB			
HCM Control Delay, s/45.37		0	16.87			
HCM LOS			C			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR/SBLn1		
Capacity (veh/h)	1230	-	-	594		
HCM Lane V/C Ratio	0.089	-	-	0.496		
HCM Control Delay (s/veh)	7.9	0	-	16.9		
HCM Lane LOS	A	A	-	C		
HCM 95th %tile Q(veh)	0.3	-	-	2.7		

# 2028 Scenario

## Minor Event Ingress

### Queues

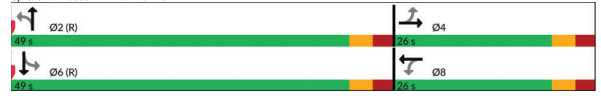
#### 1: Bank & Fifth

07/31/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	52	58	74	46	16	479	26	548
Future Volume (vph)	52	58	74	46	16	479	26	548
Lane Group Flow (vph)	0	159	82	119	0	593	0	655
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	2	8	2	6	2	6	6
Permitted Phases	4	8	2	6	49.0	49.0	49.0	49.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)	20.5	20.5	20.5		43.5		43.5	
Actuated g/C Ratio	0.27	0.27	0.27		0.58		0.58	
v/c Ratio	0.45	0.30	0.28		0.37		0.41	
Control Delay (s/veh)	24.4	25.1	12.7		13.5		9.5	
Queue Delay	0.0	0.0	0.0		0.0		0.0	
Total Delay (s/veh)	24.4	25.1	12.7		13.5		9.5	
LOS	C	C	B		B		A	
Approach Delay (s/veh)	24.4		17.8		13.5		9.5	
Approach LOS	C		B		B		A	
Queue Length 50th (m)	16.0	9.1	5.4		22.8		24.3	
Queue Length 95th (m)	32.8	20.5	17.4		53.4		35.1	
Internal Link Dist (m)	49.7		112.4		195.6		190.0	
Turn Bay Length (m)			45.0					
Base Capacity (vph)	356	277	418		1601		1606	
Starvation Cap Reductn	0	0	0		0		0	
Spillback Cap Reductn	0	0	0		0		0	
Storage Cap Reductn	0	0	0		0		0	
Reduced v/c Ratio	0.45	0.30	0.28		0.37		0.41	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 47 (63%), Referenced to phase 2:NBL and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Pretimed	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay (s/veh): 13.5	Intersection LOS: B
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Bank & Fifth



### Queues

#### 2: Bank & Holmwood

07/31/2024

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations						
Traffic Volume (vph)	26	52	490	24	544	
Future Volume (vph)	26	52	490	24	544	
Lane Group Flow (vph)	117	0	686	0	669	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	3	
Detector Phase	4	2	2	6	3	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	0.0
Lead/Lag						Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.7	56.0	56.0	56.0	56.0	5.0
Actuated g/C Ratio	0.16	0.75	0.75	0.75	0.75	0.16
v/c Ratio	0.56	0.38	0.33	0.33	0.33	0.56
Control Delay (s/veh)	38.5	3.0	3.0	3.6	3.6	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.5	3.0	3.0	3.6	3.6	3.0
LOS	D	A	A	A	A	A
Approach Delay (s/veh)	38.5	3.0	3.0	3.6	3.6	3.0
Approach LOS	D	A	A	A	A	A
Queue Length 50th (m)	15.5	6.0	6.0	6.3	6.3	6.0
Queue Length 95th (m)	28.3	13.0	13.0	9.7	9.7	9.7
Internal Link Dist (m)	39.8	31.5	31.5	195.6	195.6	195.6
Turn Bay Length (m)						
Base Capacity (vph)	296	1787	2036	2036	2036	2036
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.38	0.33	0.33	0.33	0.40

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 74 (99%), Referenced to phase 2:NBL and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay (s/veh): 6.1	Intersection LOS: A
Intersection Capacity Utilization 66.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Bank & Holmwood



### Queues

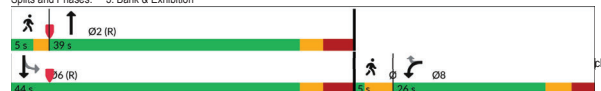
#### 3: Bank & Exhibition

07/31/2024

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations							
Traffic Volume (vph)	104	72	425	145	423		
Future Volume (vph)	104	72	425	145	423		
Lane Group Flow (vph)	116	80	656	161	470		
Turn Type	Prot	Perm	NA	Perm	NA		
Protected Phases	8	2	2	6	1	7	
Permitted Phases	8	8	2	6	6	6	
Detector Phase	8	8	2	6	6	6	
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	58.7%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	2.0	3.5	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9	0.0	0.0
Lead/Lag						Lead	Lead
Lead-Lag Optimize?						Yes	Yes
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	11.8	11.8	54.6	54.6	54.6	5.0	5.0
Actuated g/C Ratio	0.16	0.16	0.73	0.73	0.73	0.16	0.16
v/c Ratio	0.48	0.33	0.33	0.38	0.21	0.48	0.48
Control Delay (s/veh)	35.1	10.9	5.0	6.5	3.0	3.0	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.1	10.9	5.0	6.5	3.0	3.0	3.0
LOS	D	B	A	A	A	A	A
Approach Delay (s/veh)	25.2	5.0	5.0	3.9	3.9	3.0	3.0
Approach LOS	C	A	A	A	A	A	A
Queue Length 50th (m)	15.4	0.0	14.2	4.6	6.4	6.4	6.4
Queue Length 95th (m)	28.2	10.3	27.1	8.1	8.7	8.7	8.7
Internal Link Dist (m)	30.6	33.7	40.0	44.8	44.8	44.8	44.8
Turn Bay Length (m)			40.0				
Base Capacity (vph)	405	348	1972	429	2287	2287	2287
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.23	0.33	0.38	0.21	0.29	0.29

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay (s/veh): 7.2	Intersection LOS: A
Intersection Capacity Utilization 61.1%	ICU Level of Service B
Analysis Period (min) 15	

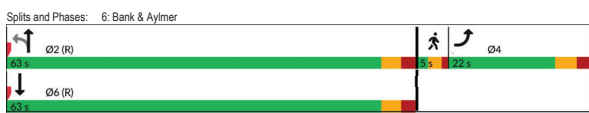
Splits and Phases: 3: Bank & Exhibition



Queues  
6: Bank & Aylmer

07/31/2024

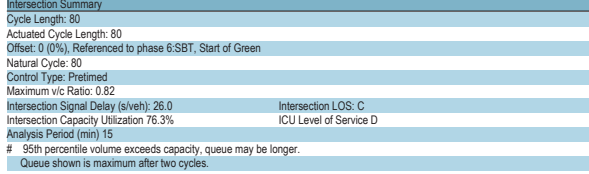
Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	72	19	687	511	
Future Volume (vph)	72	19	687	511	
Lane Group Flow (vph)	88	0	784	651	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	3	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.1	60.2	60.2	60.2	
Actuated g/C Ratio	0.16	0.67	0.67	0.67	
v/c Ratio	0.36	0.40	0.34	0.34	
Control Delay (s/veh)	36.7	5.0	6.5	6.5	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.7	5.0	6.5	6.5	
LOS	D	A	A	A	
Approach Delay (s/veh)	36.7	5.0	6.5	6.5	
Approach LOS	D	A	A	A	
Queue Length 50th (m)	13.0	14.0	20.6	20.6	
Queue Length 95th (m)	26.6	20.7	29.5	29.5	
Internal Link Dist (m)	76.7	28.1	10.1	10.1	
Turn Bay Length (m)					
Base Capacity (vph)	283	1947	1940	1940	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.31	0.40	0.34	0.34	



Queues  
9: Queen Elizabeth Drive & Fifth

07/31/2024

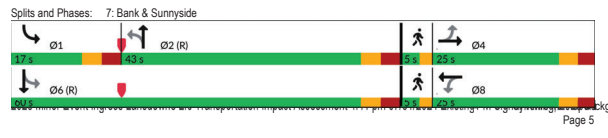
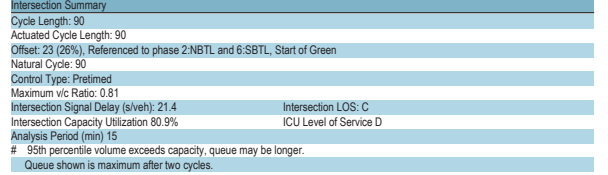
Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	51	66	227	537	
Future Volume (vph)	51	66	227	537	
Lane Group Flow (vph)	120	0	325	694	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases		2			
Minimum Split (s)	21.0	48.0	48.0	11.0	
Total Split (s)	21.0	48.0	48.0	11.0	
Total Split (%)	26.3%	60.0%	60.0%	14%	
Yellow Time (s)	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.7	3.8	3.8	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Act Effct Green (s)	15.3	41.2	41.2	41.2	
Actuated g/C Ratio	0.19	0.52	0.52	0.52	
v/c Ratio	0.41	0.67	0.82	0.82	
Control Delay (s/veh)	33.4	23.0	26.1	26.1	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	33.4	23.0	26.1	26.1	
LOS	C	C	C	C	
Approach Delay (s/veh)	33.4	23.0	26.1	26.1	
Approach LOS	C	C	C	C	
Queue Length 50th (m)	16.2	34.5	82.9	82.9	
Queue Length 95th (m)	31.3	65.8	#148.1	#148.1	
Internal Link Dist (m)	57.2	0.1	5.9	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	292	483	851	851	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.41	0.67	0.82	0.82	



Queues  
7: Bank & Sunnyside

07/31/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	57	52	18	59	20	473	106	540		
Future Volume (vph)	57	52	18	59	20	473	106	540		
Lane Group Flow (vph)	0	151	0	267	0	568	0	791		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm-pt	NA		
Protected Phases		4		8		2	1	6	3	7
Permitted Phases	4		8		2		6			
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Act Effct Green (s)	19.4	19.4	19.4	19.4	37.0	37.0	54.0	54.0		
Actuated g/C Ratio	0.22	0.22	0.41	0.41	0.60	0.60	0.59	0.59		
v/c Ratio	0.78	0.81	0.49	0.49	0.59	0.59	0.59	0.59		
Control Delay (s/veh)	62.2	40.2	21.2	21.2	7.5	7.5	7.5	7.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	62.2	40.2	21.2	21.2	7.5	7.5	7.5	7.5		
LOS	E	D	C	C	A	A	A	A		
Approach Delay (s/veh)	62.2	40.2	21.2	21.2	7.5	7.5	7.5	7.5		
Approach LOS	E	D	C	C	A	A	A	A		
Queue Length 50th (m)	24.8	26.7	36.7	36.7	14.5	14.5	14.5	14.5		
Queue Length 95th (m)	#56.1	#67.2	51.4	51.4	18.1	18.1	18.1	18.1		
Internal Link Dist (m)	75.1	136.0	63.1	63.1	79.0	79.0	79.0	79.0		
Turn Bay Length (m)										
Base Capacity (vph)	193	331	1158	1158	1337	1337	1337	1337		
Starvation Cap Reductn	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.78	0.81	0.49	0.49	0.59	0.59	0.59	0.59		



HCM 7th AWSC  
12: Exhibition & Paul Askin

07/31/2024

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	5	323	185	5	5	5
Future Vol, veh/h	5	323	185	5	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	359	206	6	6	6
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay, s/veh	10.1	8.7	8
HCM LOS	B	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	0%	50%
Vol Thru, %	98%	97%	0%
Vol Right, %	0%	3%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	328	180	10
LT Vol	5	0	5
Through Vol	323	185	0
RT Vol	0	5	5
Lane Flow Rate	364	211	11
Geometry Grp	1	1	1
Degree of Util (X)	0.416	0.247	0.015
Departure Headway (Hd)	4.114	4.209	4.957
Convergence, Y/N	Yes	Yes	Yes
Cap	867	840	726
Service Time	2.174	2.297	2.957
HCM Lane V/C Ratio	0.42	0.251	0.015
HCM Control Delay, s/veh	10.1	8.7	8
HCM Lane LOS	B	A	A
HCM 95th-tile Q	2.1	1	0



Intersection						
Intersection Delay, s/veh	7.2					
Intersection LOS	A					
Movement						
	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	16	5	5	49	5	5
Future Vol, veh/h	16	5	5	49	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	6	6	54	6	6
Number of Lanes	1	0	0	1	1	0
Approach						
	EB	WB		NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left		NB		EB		
Conflicting Lanes Left	0	1		1		
Conflicting Approach Right	NB			WB		
Conflicting Lanes Right	1	0		1		
HCM Control Delay, s/veh	7	7.3		7		
HCM LOS	A	A		A		

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	9%
Vol Thru, %	0%	76%	91%
Vol Right, %	50%	24%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	21	54
LT Vol	5	0	5
Through Vol	0	16	49
RT Vol	5	5	0
Lane Flow Rate	11	23	60
Geometry Grp	1	1	1
Degree of Util (X)	0.012	0.025	0.067
Departure Headway (Hd)	3.878	3.855	3.99
Convergence, Y/N	Yes	Yes	Yes
Cap	920	930	902
Service Time	1.912	1.871	1.997
HCM Lane V/C Ratio	0.012	0.025	0.067
HCM Control Delay, s/veh	7	7	7.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.2

Intersection												
Intersection Delay, s/veh	8.3											
Intersection LOS	A											
Movement												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↔			↔	↔
Traffic Vol, veh/h	61	51	0	0	0	139	61	42	37	0	0	82
Future Vol, veh/h	61	51	0	0	0	139	61	42	37	0	0	82
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	57	0	0	0	154	68	47	41	0	0	91
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1
Approach												
	EB	EB		WB		NB		SB		SB		
Opposing Approach	WB	EB		SB		NB		EB		WB		
Opposing Lanes	1	1		1		1		1		1		
Conflicting Approach Left	SB	NB		EB		WB		EB		WB		
Conflicting Lanes Left	1	1		1		1		1		1		
Conflicting Approach Right	NB	SB		WB		EB		WB		EB		
Conflicting Lanes Right	1	1		1		1		1		1		
HCM Control Delay, s/veh	8.7	7.9		8.7		7.7		7.7		7.7		
HCM LOS	A	A		A		A		A		A		
Lane												
	NBLn1	EBLn1	WBLn1	SBLn1								
Vol Left, %	44%	54%	0%	0%								
Vol Thru, %	30%	46%	0%	0%								
Vol Right, %	26%	0%	100%	100%								
Sign Control	Stop	Stop	Stop	Stop								
Traffic Vol by Lane	140	112	139	82								
LT Vol	61	61	0	0								
Through Vol	42	51	0	0								
RT Vol	37	0	139	82								
Lane Flow Rate	156	124	154	91								
Geometry Grp	1	1	1	1								
Degree of Util (X)	0.198	0.165	0.173	0.105								
Departure Headway (Hd)	4.579	4.762	4.043	4.137								
Convergence, Y/N	Yes	Yes	Yes	Yes								
Cap	752	753	887	865								
Service Time	2.611	2.794	2.072	2.172								
HCM Lane V/C Ratio	0.199	0.165	0.174	0.105								
HCM Control Delay, s/veh	8.7	8.7	7.9	7.7								
HCM Lane LOS	A	A	A	A								
HCM 95th-tile Q	0.7	0.6	0.6	0.4								

Intersection						
Intersection Delay, s/veh	11.7					
Intersection LOS	B					
Movement						
	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	16	5	121	45	282	110
Future Vol, veh/h	16	5	121	45	282	110
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	6	134	50	313	122
Number of Lanes	1	0	0	1	1	0
Approach						
	EB	WB		NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left		NB		EB		
Conflicting Lanes Left	0	1		1		
Conflicting Approach Right	NB			WB		
Conflicting Lanes Right	1	0		1		
HCM Control Delay, s/veh	8.3	10		12.6		
HCM LOS	A	A		B		

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	72%	0%	73%
Vol Thru, %	0%	76%	27%
Vol Right, %	28%	24%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	392	21	166
LT Vol	282	0	121
Through Vol	0	16	45
RT Vol	110	5	0
Lane Flow Rate	436	23	184
Geometry Grp	1	1	1
Degree of Util (X)	0.539	0.033	0.263
Departure Headway (Hd)	4.451	5.07	5.132
Convergence, Y/N	Yes	Yes	Yes
Cap	910	702	697
Service Time	2.482	3.132	3.18
HCM Lane V/C Ratio	0.538	0.033	0.264
HCM Control Delay, s/veh	12.6	8.3	10
HCM Lane LOS	B	A	A
HCM 95th-tile Q	3.3	0.1	1.1

Intersection											
Int Delay, s/veh	12.7										
Movement											
	EBL	EBR	NBL	NBT	SBT	SBR					
Lane Configurations		↔	↔	↔	↔	↔					
Traffic Vol, veh/h	5	268	143	649	477	55					
Future Vol, veh/h	5	268	143	649	477	55					
Conflicting Peds, #/hr	0	0	178	0	0	107					
Sign Control	Stop	Stop	Free	Free	Free	Free					
RT Channelized	-	None	-	None	-	None					
Storage Length	-	0	-	-	-	-					
Veh in Median Storage, #	0	-	-	0	0	0					
Grade, %	0	-	-	0	0	0					
Peak Hour Factor	90	90	90	90	90	90					
Heavy Vehicles, %	5	5	5	5	5	5					
Mvmt Flow	6	298	159	721	530	61					
Major/Minor											
	Minor2	Major1		Major2							
Conflicting Flow All	1417	739	769	0	-	0					
Stage 1	739	-	-	-	-	-					
Stage 2	678	-	-	-	-	-					
Critical Hdwy	6.675	6.275	4.175	-	-	-					
Critical Hdwy Stg 1	5.475	-	-	-	-	-					
Critical Hdwy Stg 2	5.875	-	-	-	-	-					
Follow-up Hdwy	3.54753	3.4752	2.475	-	-	-					
Pot Cap-1 Maneuver	136	410	827	-	-	-					
Stage 1	465	-	-	-	-	-					
Stage 2	460	-	-	-	-	-					
Platoon blocked, %	-	-	-	-	-	-					
Mov Cap-1 Maneuver	63	333	671	-	-	-					
Mov Cap-2 Maneuver	63	-	-	-	-	-					
Stage 1	265	-	-	-	-	-					
Stage 2	373	-	-	-	-	-					
Approach											
	EB	NB		SB							
HCM Control Delay, s/62.12	4.2	0									
HCM LOS	F										
Minor Lane/Major Mvmt											
	NBL	NBTEBLn1	SBT	SBR							
Capacity (veh/h)	537	-	333	-							
HCM Lane V/C Ratio	0.237	-	0.894	-							
HCM Control Delay (s/veh)	12	2.5	62.1	-							
HCM Lane LOS	B	A	F	-							
HCM 95th-tile Q(veh)	0.9	-	8.6	-							

Intersection					
Int Delay, s/veh	0.4				
Movement	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Vol, veh/h	4	37	0	777	753
Future Vol, veh/h	4	37	0	777	753
Conflicting Peds, #/hr	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5
Mvmt Flow	4	41	0	863	837
Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	1268	837	-	0	-
Stage 1	837	-	-	-	-
Stage 2	432	-	-	-	-
Critical Hdwy	6.675	6.275	-	-	-
Critical Hdwy Stg 1	5.475	-	-	-	-
Critical Hdwy Stg 2	5.875	-	-	-	-
Follow-up Hdwy	3.54753	3.475	-	-	-
Pot Cap-1 Maneuver	169	360	0	-	0
Stage 1	417	-	0	-	0
Stage 2	616	-	0	-	0
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	169	360	-	-	-
Mov Cap-2 Maneuver	169	-	-	-	-
Stage 1	417	-	-	-	-
Stage 2	616	-	-	-	-
Approach	EB	NB	SB		
HCM Control Delay, s/veh	6.29	0	0		
HCM LOS	C				
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	
Capacity (veh/h)	-	360	-	-	-
HCM Lane V/C Ratio	-	0.114	-	-	-
HCM Control Delay (s/veh)	-	16.3	-	-	-
HCM Lane LOS	-	C	-	-	-
HCM 95th %ile Q(veh)	-	0.4	-	-	-

Intersection					
Int Delay, s/veh	0.6				
Movement	WBL	WBR	NBT	NBR	SBL
Lane Configurations					
Traffic Vol, veh/h	0	53	508	19	2
Future Vol, veh/h	0	53	508	19	2
Conflicting Peds, #/hr	0	0	0	100	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	0	-	0
Grade, %	0	-	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	15	6	0	0
Mvmt Flow	0	59	564	21	2
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	393	0	0	686
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.2	-	-	4.1
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.45	-	-	2.2
Pot Cap-1 Maneuver	0	571	-	-	917
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	510	-	-	820
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Approach	WB	NB	SB		
HCM Control Delay, s/veh	42.97	0	0.03		
HCM LOS	B				
Minor Lane/Major Mvmt	NBL	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	510	820	-
HCM Lane V/C Ratio	-	-	0.115	0.003	-
HCM Control Delay (s/veh)	-	-	13	9.4	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %ile Q(veh)	-	-	0.4	0	-

Intersection					
Int Delay, s/veh	4.8				
Movement	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Vol, veh/h	79	59	120	217	326
Future Vol, veh/h	79	59	120	217	326
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0
Mvmt Flow	88	66	133	241	362
Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	1023	515	668	0	-
Stage 1	515	-	-	-	-
Stage 2	508	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	263	564	932	-	-
Stage 1	604	-	-	-	-
Stage 2	608	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	220	564	932	-	-
Mov Cap-2 Maneuver	220	-	-	-	-
Stage 1	504	-	-	-	-
Stage 2	608	-	-	-	-
Approach	EB	NB	SB		
HCM Control Delay, s/veh	29.29	3.39	0		
HCM LOS	D				
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	641	-	298	-	-
HCM Lane V/C Ratio	0.143	-	0.515	-	-
HCM Control Delay (s/veh)	9.5	0	29.3	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %ile Q(veh)	0.5	-	2.8	-	-

Intersection					
Int Delay, s/veh	4.8				
Movement	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Vol, veh/h	99	28	161	245	113
Future Vol, veh/h	99	28	161	245	113
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None
Storage Length	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0
Grade, %	-	0	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2
Mvmt Flow	110	31	179	272	126
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	451	0	-	0	566
Stage 1	-	-	-	-	315
Stage 2	-	-	-	-	251
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1109	-	-	-	485
Stage 1	-	-	-	-	740
Stage 2	-	-	-	-	791
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1109	-	-	-	436
Mov Cap-2 Maneuver	-	-	-	-	436
Stage 1	-	-	-	-	665
Stage 2	-	-	-	-	791
Approach	EB	WB	SB		
HCM Control Delay, s/veh	6.71	0	16.29		
HCM LOS	B		C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1090	-	-	-	480
HCM Lane V/C Ratio	0.099	-	-	-	0.338
HCM Control Delay (s/veh)	8.6	0	-	-	16.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %ile Q(veh)	0.3	-	-	-	1.5

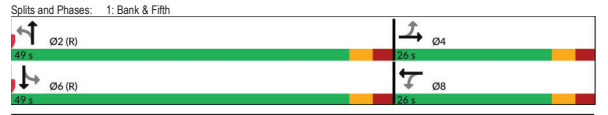


# 2028 Scenario

## Minor Event Egress

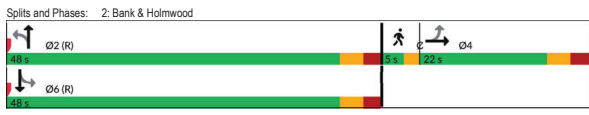
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	42	9	58	25	16	441	21	350
Future Volume (vph)	42	9	58	25	16	441	21	350
Lane Group Flow (vph)	0	86	64	64	0	520	0	436
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	2	8	2	2	6	6	6
Permitted Phases	4	8	8	2	6	6	6	6
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effct Green (s)	20.5	20.5	20.5		43.5	43.5		
Actuated g/C Ratio	0.27	0.27	0.27		0.58	0.58		
v/c Ratio	0.25	0.22	0.16		0.31	0.27		
Control Delay (s/veh)	17.5	23.6	12.7		11.4	8.2		
Queue Delay	0.0	0.0	0.0		0.0	0.0		
Total Delay (s/veh)	17.5	23.6	12.7		11.4	8.2		
LOS	B	C	B		B	A		
Approach Delay (s/veh)	17.5	18.1	11.4		11.4	8.2		
Approach LOS	B	B	B		B	A		
Queue Length 50th (m)	6.1	7.0	2.9		19.1	14.1		
Queue Length 95th (m)	16.9	16.6	11.6		39.7	21.5		
Internal Link Dist (m)	49.7		112.4		195.6	190.0		
Turn Bay Length (m)			45.0					
Base Capacity (vph)	338	289	396		1658	1595		
Starvation Cap Reductn	0	0	0		0	0		
Spillback Cap Reductn	0	0	0		0	0		
Storage Cap Reductn	0	0	0		0	0		
Reduced v/c Ratio	0.25	0.22	0.16		0.31	0.27		

**Intersection Summary**  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 47 (63%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.31  
 Intersection Signal Delay (s/veh): 11.4  
 Intersection LOS: B  
 Intersection Capacity Utilization 53.0%  
 ICU Level of Service A  
 Analysis Period (min) 15



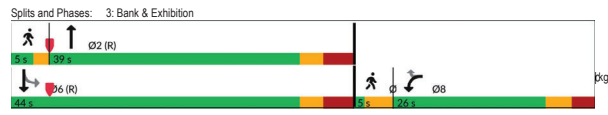
Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations						
Traffic Volume (vph)	7	54	439	22	321	
Future Volume (vph)	7	54	439	22	321	
Lane Group Flow (vph)	85	0	575	0	421	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	2	6	3
Permitted Phases	4	2	2	2	6	3
Detector Phase	4	2	2	2	6	3
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	0.0
Lead/Lag						Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	10.2	57.3	57.3	57.3	57.3	
Actuated g/C Ratio	0.14	0.76	0.76	0.76	0.76	
v/c Ratio	0.48	0.29	0.21	0.21	0.21	
Control Delay (s/veh)	38.1	3.8	3.8	2.6	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.1	3.8	3.8	2.6	2.6	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	38.1	3.8	3.8	2.6	2.6	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	11.4	8.8	3.5	3.5	3.5	
Queue Length 95th (m)	22.9	22.0	7.0	7.0	7.0	
Internal Link Dist (m)	39.8	31.5	195.6	195.6	195.6	
Turn Bay Length (m)						
Base Capacity (vph)	287	1963	2036	2036	2036	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.30	0.29	0.21	0.21	0.21	

**Intersection Summary**  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 74 (99%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.48  
 Intersection Signal Delay (s/veh): 6.1  
 Intersection LOS: A  
 Intersection Capacity Utilization 57.3%  
 ICU Level of Service B  
 Analysis Period (min) 15



Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations							
Traffic Volume (vph)	168	184	191	111	261		
Future Volume (vph)	168	194	191	111	261		
Lane Group Flow (vph)	187	216	301	123	290		
Turn Type	Prot	Perm	NA	Perm	NA		
Protected Phases	8	2	2	6	1	7	
Permitted Phases	8	8	6	6	6	6	
Detector Phase	8	8	2	6	6	6	
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	58.7%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9	0.0	0.0
Lead/Lag						Lead	Lead
Lead-Lag Optimize?						Yes	Yes
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	14.5	14.5	47.3	47.3	47.3		
Actuated g/C Ratio	0.19	0.19	0.63	0.63	0.63		
v/c Ratio	0.63	0.56	0.18	0.26	0.15		
Control Delay (s/veh)	36.7	9.8	4.8	5.8	4.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	36.7	9.8	4.8	5.8	4.1		
LOS	D	A	A	A	A		
Approach Delay (s/veh)	22.3	4.8	4.8	4.6	4.6		
Approach LOS	C	A	A	A	A		
Queue Length 50th (m)	24.6	0.0	5.5	4.0	4.8		
Queue Length 95th (m)	40.2	15.5	12.5	8.7	7.7		
Internal Link Dist (m)	30.6	33.7	40.0	44.8	44.8		
Turn Bay Length (m)			40.0				
Base Capacity (vph)	405	448	1706	480	1980		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.46	0.48	0.18	0.26	0.15		

**Intersection Summary**  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay (s/veh): 11.0  
 Intersection LOS: B  
 Intersection Capacity Utilization 57.6%  
 ICU Level of Service B  
 Analysis Period (min) 15



Queues  
6: Bank & Aylmer

07/31/2024

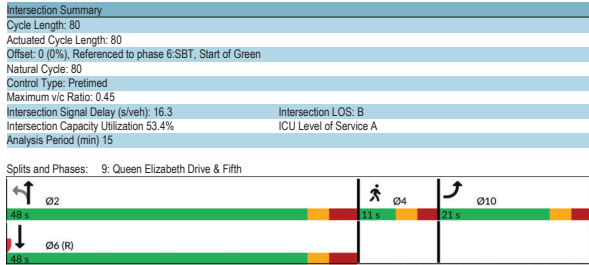
Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	4	1	156	192	
Future Volume (vph)	4	1	156	192	
Lane Group Flow (vph)	7	0	174	220	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	3	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.0	60.3	60.3	60.3	
Actuated g/C Ratio	0.16	0.67	0.67	0.67	
v/c Ratio	0.03	0.09	0.11	0.11	
Control Delay (s/veh)	27.2	4.0	5.3	5.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	27.2	4.0	5.3	5.3	
LOS	C	A	A	A	
Approach Delay (s/veh)	27.2	4.0	5.3	5.3	
Approach LOS	C	A	A	A	
Queue Length 50th (m)	0.6	3.3	6.0	6.0	
Queue Length 95th (m)	4.4	5.0	9.7	9.7	
Internal Link Dist (m)	76.7	28.1	10.1	10.1	
Turn Bay Length (m)					
Base Capacity (vph)	248	2006	2063	2063	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.03	0.09	0.11	0.11	



Queues  
9: Queen Elizabeth Drive & Fifth

07/31/2024

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	64	51	274	155	
Future Volume (vph)	64	51	274	155	
Lane Group Flow (vph)	103	0	361	210	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases		2			
Minimum Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Act Effct Green (s)	15.3	41.2	41.2	41.2	
Actuated g/C Ratio	0.19	0.52	0.52	0.52	
v/c Ratio	0.35	0.45	0.25	0.25	
Control Delay (s/veh)	31.8	14.6	11.8	11.8	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	31.8	14.6	11.8	11.8	
LOS	C	B	B	B	
Approach Delay (s/veh)	31.8	14.6	11.8	11.8	
Approach LOS	C	B	B	B	
Queue Length 50th (m)	13.7	32.6	16.7	16.7	
Queue Length 95th (m)	27.5	53.2	28.9	28.9	
Internal Link Dist (m)	57.2	0.1	5.9	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	298	798	847	847	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.35	0.45	0.25	0.25	



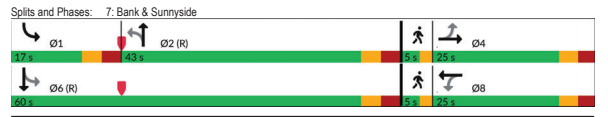
Queues  
7: Bank & Sunnyside

07/31/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	29	7	5	12	12	239	34	418		
Future Volume (vph)	29	7	5	12	12	239	34	418		
Lane Group Flow (vph)	0	62	0	56	0	288	0	550		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases	4	8	8	2	4	1	6	3	7	
Permitted Phases	4	8	8	2	4	1	6	3	7	
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Act Effct Green (s)	19.4	19.4	19.4	19.4	37.0	37.0	37.0	54.0		
Actuated g/C Ratio	0.22	0.22	0.22	0.22	0.41	0.41	0.60	0.60		
v/c Ratio	0.26	0.20	0.20	0.24	0.24	0.33	0.33	0.33		
Control Delay (s/veh)	32.8	16.3	16.3	17.8	17.8	17.8	7.1	7.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	32.8	16.3	16.3	17.8	17.8	17.8	7.1	7.1		
LOS	C	B	B	B	B	B	A	A		
Approach Delay (s/veh)	32.8	16.3	16.3	17.8	17.8	17.8	7.1	7.1		
Approach LOS	C	B	B	B	B	B	A	A		
Queue Length 50th (m)	9.0	2.7	2.7	16.3	16.3	14.3	14.3	14.3		
Queue Length 95th (m)	20.1	12.4	12.4	25.1	25.1	19.4	19.4	19.4		
Internal Link Dist (m)	75.1	136.0	136.0	63.1	63.1	79.0	79.0	79.0		
Turn Bay Length (m)										
Base Capacity (vph)	240	276	276	1189	1189	1664	1664	1664		
Starvation Cap Reductn	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.26	0.20	0.20	0.24	0.24	0.33	0.33	0.33		

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 23 (26%), Referenced to phase 2:NBL and 6:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.33  
 Intersection Signal Delay (s/veh): 12.5  
 Intersection LOS: B  
 Intersection Capacity Utilization 60.8%  
 ICU Level of Service B  
 Analysis Period (min) 15



HCM 7th AWSC  
12: Exhibition & Paul Askin

07/31/2024

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol. veh/h	5	196	371	5	5	5
Future Vol. veh/h	5	196	371	5	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	218	412	6	6	6
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay, s/veh	9	10.9	8.2
HCM LOS	A	B	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	0%	50%
Vol Thru, %	98%	99%	0%
Vol Right, %	0%	1%	50%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	201	376	10
LT Vol	5	0	5
Through Vol	196	371	0
RT Vol	0	5	5
Lane Flow Rate	223	418	11
Geometry Grp	1	1	1
Degree of Util (X)	0.271	0.477	0.016
Departure Headway (Hd)	4.371	4.112	5.095
Convergence, Y/N	Yes	Yes	Yes
Cap	826	865	705
Service Time	2.371	2.186	3.105
HCM Lane V/C Ratio	0.27	0.483	0.016
HCM Control Delay, s/veh	9	10.9	8.2
HCM Lane LOS	A	B	A
HCM 95th-tile Q	1.1	2.6	0

Intersection						
Intersection Delay, s/veh	7.8					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	25	5	5	148	5	5
Future Vol, veh/h	25	5	5	148	5	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	6	6	164	6	6
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left	NB		EB			
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1		0		1	
HCM Control Delay, s/veh	7.2		7.9		7.2	
HCM LOS	A		A		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	3%
Vol Thru, %	0%	83%	97%
Vol Right, %	50%	17%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	30	153
LT Vol	5	0	5
Through Vol	0	25	148
RT Vol	5	5	0
Lane Flow Rate	11	33	170
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.037	0.188
Departure Headway (Hd)	4.084	3.98	3.985
Convergence, Y/N	Yes	Yes	Yes
Cap	864	897	903
Service Time	2.168	2.017	1.997
HCM Lane V/C Ratio	0.013	0.037	0.188
HCM Control Delay, s/veh	7.2	7.2	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.1	0.7

Intersection												
Intersection Delay, s/veh	7.3											
Intersection LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↔				↔
Traffic Vol, veh/h	10	44	0	0	0	0	66	10	10	49	0	0
Future Vol, veh/h	10	44	0	0	0	0	66	10	10	49	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	49	0	0	0	0	73	11	11	54	0	0
Number of Lanes	0	1	0	0	0	0	1	0	1	0	0	0
Approach	EB	EBT	EBR	WB	NB	SB						
Opposing Approach	WB	EB		EB	SB	NB						
Opposing Lanes	1	1		1		1						
Conflicting Approach Left	SB	NB		EB		WB						
Conflicting Lanes Left	1	1		1		1						
Conflicting Approach Right	NB	SB		WB		EB						
Conflicting Lanes Right	1	1		1		1						
HCM Control Delay, s/veh	7.7			7.1			7.3			7.1		
HCM LOS	A			A			A			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	19%	0%	0%
Vol Thru, %	14%	81%	0%	0%
Vol Right, %	71%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	54	66	97
LT Vol	10	10	0	0
Through Vol	10	44	0	0
RT Vol	49	0	66	97
Lane Flow Rate	77	60	73	108
Geometry Grp	1	1	1	1
Degree of Util (X)	0.082	0.072	0.075	0.108
Departure Headway (Hd)	3.85	4.347	3.697	3.622
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	920	818	957	978
Service Time	1.917	2.407	1.765	1.69
HCM Lane V/C Ratio	0.084	0.073	0.076	0.11
HCM Control Delay, s/veh	7.3	7.7	7.1	7.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.2	0.4

Intersection						
Intersection Delay, s/veh	9.4					
Intersection LOS	A					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	25	5	75	5	220	69
Future Vol, veh/h	25	5	75	5	220	69
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	6	83	6	244	77
Number of Lanes	1	0	0	1	1	0
Approach	EB	WB	WB	NB		
Opposing Approach	WB	EB				
Opposing Lanes	1	1		0		
Conflicting Approach Left	NB		EB			
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB		WB			
Conflicting Lanes Right	1		0		1	
HCM Control Delay, s/veh	7.9		8.6		9.8	
HCM LOS	A		A		A	

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	76%	0%	94%
Vol Thru, %	0%	83%	6%
Vol Right, %	24%	17%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	289	30	80
LT Vol	220	0	75
Through Vol	0	25	5
RT Vol	69	5	0
Lane Flow Rate	321	33	89
Geometry Grp	1	1	1
Degree of Util (X)	0.38	0.043	0.121
Departure Headway (Hd)	4.26	4.68	4.896
Convergence, Y/N	Yes	Yes	Yes
Cap	851	766	734
Service Time	2.26	2.703	2.915
HCM Lane V/C Ratio	0.377	0.043	0.121
HCM Control Delay, s/veh	9.8	7.9	8.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.8	0.1	0.4

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔
Traffic Vol, veh/h	2	111	47	280	395	67
Future Vol, veh/h	2	111	47	280	395	67
Conflicting Peds, #/hr	0	0	178	0	0	107
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	2	123	52	311	439	74

Major/Minor	Minor2	Major1	Major2	
Conflicting Flow All	914	654	691	
Stage 1	654	-	-	
Stage 2	260	-	-	
Critical Hdwy	6.675	6.275	4.175	
Critical Hdwy Stg 1	5.475	-	-	
Critical Hdwy Stg 2	5.875	-	-	
Follow-up Hdwy	3.54753	3.4752	2.475	
Pot Cap-1 Maneuver	283	459	885	
Stage 1	509	-	-	
Stage 2	753	-	-	
Platoon blocked, %	-	-	-	
Mov Cap-1 Maneuver	171	373	718	
Stage 1	380	-	-	
Stage 2	611	-	-	
Approach	EB	NB	SB	
HCM Control Delay, s/49.37	2.03		0	
HCM LOS	C			
Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	517	-	373	-
HCM Lane V/C Ratio	0.073	-	0.331	-
HCM Control Delay (s/veh)	10.4	0.6	19.4	-
HCM Lane LOS	B	A	C	-
HCM 95th %tile Q(veh)	0.2	-	1.4	-

Intersection					
Int Delay, s/veh	0.2				
Movement	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Vol, veh/h	2	11	0	360	325
Future Vol, veh/h	2	11	0	360	325
Conflicting Peds, #/hr	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5
Mvmt Flow	2	12	0	400	361
Major/Minor					
Conflicting Flow All	561	361	-	0	-
Stage 1	361	-	-	-	-
Stage 2	200	-	-	-	-
Critical Hdwy	6.675	6.275	-	-	-
Critical Hdwy Stg 1	5.475	-	-	-	-
Critical Hdwy Stg 2	5.875	-	-	-	-
Follow-up Hdwy	3.54753	3.475	-	-	-
Pot Cap-1 Maneuver	467	675	0	-	0
Stage 1	696	-	0	-	0
Stage 2	807	-	0	-	0
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	467	675	-	-	-
Mov Cap-2 Maneuver	467	-	-	-	-
Stage 1	696	-	-	-	-
Stage 2	807	-	-	-	-
Approach					
	EB	NB	SB		
HCM Control Delay, s/10.43		0	0		
HCM LOS	B				
Minor Lane/Major Mvmt					
	NBL	NBT	EBLn1	SBT	
Capacity (veh/h)	-	675	-	-	-
HCM Lane V/C Ratio	-	0.018	-	-	-
HCM Control Delay (s/veh)	-	10.4	-	-	-
HCM Lane LOS	-	B	-	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-	-

Intersection					
Int Delay, s/veh	2.2				
Movement	WBL	WBR	NBT	NBR	SBL
Lane Configurations					
Traffic Vol, veh/h	5	144	396	29	0
Future Vol, veh/h	5	144	396	29	0
Conflicting Peds, #/hr	0	0	0	100	0
Sign Control	Free	Free	Free	Free	Stop
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	0	-	0
Grade, %	0	-	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	15	6	0	0
Mvmt Flow	6	160	440	32	0
Major/Minor					
Conflicting Flow All	763	336	0	0	-
Stage 1	556	-	-	-	-
Stage 2	207	-	-	-	-
Critical Hdwy	6.8	7.2	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.45	-	-	-
Pot Cap-1 Maneuver	345	623	-	-	0
Stage 1	544	-	-	-	0
Stage 2	813	-	-	-	0
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	308	557	-	-	-
Mov Cap-2 Maneuver	308	-	-	-	-
Stage 1	486	-	-	-	-
Stage 2	813	-	-	-	-
Approach					
	WB	NB	SB		
HCM Control Delay, s/44.04		0	0		
HCM LOS	B				
Minor Lane/Major Mvmt					
	NBT	NBR	WBLn1	SBT	
Capacity (veh/h)	-	-	557	-	-
HCM Lane V/C Ratio	-	-	0.287	-	-
HCM Control Delay (s/veh)	-	-	14	-	-
HCM Lane LOS	-	-	B	-	-
HCM 95th %tile Q(veh)	-	-	1.2	-	-

Intersection					
Int Delay, s/veh	11.8				
Movement	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Vol, veh/h	279	175	17	45	125
Future Vol, veh/h	279	175	17	45	125
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0
Mvmt Flow	310	194	19	50	139
Major/Minor					
Conflicting Flow All	261	173	207	0	-
Stage 1	173	-	-	-	-
Stage 2	88	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	733	876	1377	-	-
Stage 1	862	-	-	-	-
Stage 2	941	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	722	876	1377	-	-
Mov Cap-2 Maneuver	722	-	-	-	-
Stage 1	850	-	-	-	-
Stage 2	941	-	-	-	-
Approach					
	EB	NB	SB		
HCM Control Delay, s/47.89		2.1	0		
HCM LOS	C				
Minor Lane/Major Mvmt					
	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	494	-	775	-	-
HCM Lane V/C Ratio	0.014	-	0.651	-	-
HCM Control Delay (s/veh)	7.7	0	17.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	4.9	-	-

Intersection					
Int Delay, s/veh	11.3				
Movement	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Vol, veh/h	2	72	75	5	395
Future Vol, veh/h	2	72	75	5	395
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None
Storage Length	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0
Grade, %	-	0	0	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2
Mvmt Flow	2	80	83	6	439
Major/Minor					
Conflicting Flow All	89	0	-	0	171
Stage 1	-	-	-	-	86
Stage 2	-	-	-	-	84
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1507	-	-	-	820
Stage 1	-	-	-	-	937
Stage 2	-	-	-	-	939
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1507	-	-	-	818
Mov Cap-2 Maneuver	-	-	-	-	818
Stage 1	-	-	-	-	936
Stage 2	-	-	-	-	939
Approach					
	EB	WB	SB		
HCM Control Delay, s/4	0.2	0	15.26		
HCM LOS	C				
Minor Lane/Major Mvmt					
	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	49	-	-	-	831
HCM Lane V/C Ratio	0.001	-	-	-	0.585
HCM Control Delay (s/veh)	7.4	0	-	-	15.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	3.9

**2033**

**Full Buildout  
Conditions**

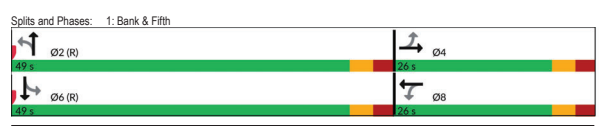


# 2033 Scenario

## Weekday PM Peak Hour

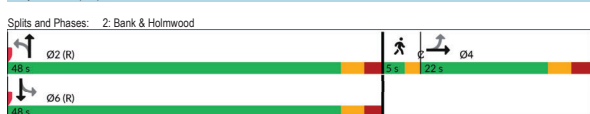
### Future Volumes

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	48	55	61	39	17	476	30	626
Traffic Volume (vph)	48	55	61	39	17	476	30	626
Future Volume (vph)	0	167	68	87	0	584	0	771
Lane Group Flow (vph)	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	2	8	2	6	6	6	6
Permitted Phases	4	2	8	2	6	6	6	6
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effect Green (s)	20.5	20.5	20.5	43.5	43.5	43.5	43.5	43.5
Actuated g/C Ratio	0.27	0.27	0.27	0.58	0.58	0.58	0.58	0.58
v/c Ratio	0.45	0.25	0.21	0.37	0.48	0.48	0.48	0.48
Control Delay (s/veh)	22.8	24.3	13.7	15.1	10.3	10.3	10.3	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	22.8	24.3	13.7	15.1	10.3	10.3	10.3	10.3
LOS	C	C	B	B	B	B	B	B
Approach Delay (s/veh)	22.8	18.3	15.1	10.3	10.3	10.3	10.3	10.3
Approach LOS	C	B	B	B	B	B	B	B
Queue Length 50th (m)	15.6	7.5	4.6	28.5	29.8	29.8	29.8	29.8
Queue Length 95th (m)	32.7	17.5	14.7	53.9	42.4	42.4	42.4	42.4
Internal Link Dist (m)	49.7	112.4	195.6	195.6	195.0	195.0	195.0	195.0
Turn Bay Length (m)		45.0						
Base Capacity (vph)	371	272	409	1598	1592	1592	1592	1592
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.25	0.21	0.37	0.48	0.48	0.48	0.48

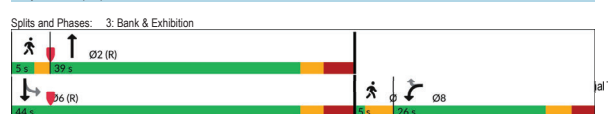


2033 Weekday Full Build-Out PM Peak Hour Lansdowne 2.0 Transportation Impact Assessment 5:20 pm 07/31/2024 Existing Signal Timing, 2021 Page 1

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	48	26	524	34	596	
Traffic Volume (vph)	18	26	524	34	596	
Future Volume (vph)	114	0	675	0	732	
Lane Group Flow (vph)	NA	Perm	NA	Perm	NA	
Turn Type	4	2	6	3	6	3
Protected Phases	4	2	6	6	6	6
Permitted Phases	4	2	6	6	6	6
Detector Phase	4	2	2	6	6	6
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	5.2
Lead/Lag	Lag					Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effect Green (s)	11.7	55.9	55.9	55.9	55.9	55.9
Actuated g/C Ratio	0.16	0.75	0.75	0.75	0.75	0.75
v/c Ratio	0.56	0.35	0.37	0.37	0.37	0.37
Control Delay (s/veh)	38.8	2.1	3.4	3.4	3.4	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.8	2.1	3.4	3.4	3.4	3.4
LOS	D	A	A	A	A	A
Approach Delay (s/veh)	38.8	2.1	3.4	3.4	3.4	3.4
Approach LOS	D	A	A	A	A	A
Queue Length 50th (m)	15.1	4.6	6.4	6.4	6.4	6.4
Queue Length 95th (m)	27.8	10.4	16.1	16.1	16.1	16.1
Internal Link Dist (m)	39.8	31.5	195.6	195.6	195.6	195.6
Turn Bay Length (m)						
Base Capacity (vph)	288	1950	2001	2001	2001	2001
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.35	0.37	0.37	0.37	0.37



Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	139	71	488	141	511		
Traffic Volume (vph)	139	71	488	141	511		
Future Volume (vph)	154	79	714	157	568		
Lane Group Flow (vph)	Prot	Perm	NA	Perm	NA		
Turn Type	8	2	6	1	7		
Protected Phases	8	2	6	6	6		
Permitted Phases	8	2	6	6	6		
Detector Phase	8	2	6	6	6		
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	58.7%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9	6.9	6.9
Lead/Lag	Lag	Lag	Lag			Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effect Green (s)	13.2	13.2	48.6	48.6	48.6	48.6	48.6
Actuated g/C Ratio	0.18	0.18	0.65	0.65	0.65	0.65	0.65
v/c Ratio	0.57	0.31	0.40	0.43	0.28	0.28	0.28
Control Delay (s/veh)	36.1	9.7	6.8	8.0	3.9	3.9	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.1	9.7	6.8	8.0	3.9	3.9	3.9
LOS	D	A	A	A	A	A	A
Approach Delay (s/veh)	27.1	6.8	4.8	4.8	4.8	4.8	4.8
Approach LOS	C	A	A	A	A	A	A
Queue Length 50th (m)	20.3	0.0	18.6	4.5	8.4	8.4	8.4
Queue Length 95th (m)	34.7	9.7	34.8	9.5	11.4	11.4	11.4
Internal Link Dist (m)	30.6	33.7	40.0	44.8	44.8	44.8	44.8
Turn Bay Length (m)							
Base Capacity (vph)	405	347	1790	365	2035	2035	2035
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.23	0.40	0.43	0.28	0.28	0.28



Signal Timing, 2021

Queues  
6: Bank & Aylmer

07/31/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	57	21	730	780	
Future Volume (vph)	57	21	730	780	
Lane Group Flow (vph)	90	0	834	975	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	3	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.1	60.2	60.2	60.2	
Actuated g/C Ratio	0.16	0.67	0.67	0.67	
v/c Ratio	0.38	0.44	0.50	0.50	
Control Delay (s/veh)	31.6	4.7	8.2	8.2	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	31.6	4.7	8.2	8.2	
LOS	C	A	A	A	
Approach Delay (s/veh)	31.6	4.7	8.2	8.2	
Approach LOS	C	A	A	A	
Queue Length 50th (m)	10.7	13.8	37.1	37.1	
Queue Length 95th (m)	24.5	117.4	51.0	51.0	
Internal Link Dist (m)	76.7	28.1	10.1	10.1	
Turn Bay Length (m)					
Base Capacity (vph)	275	1910	1959	1959	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.33	0.44	0.50	0.50	

**Intersection Summary**  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 87 (97%), Referenced to phase 2-NBTL and 6-SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.50  
 Intersection Signal Delay (s/veh): 7.8  
 Intersection Capacity Utilization 57.9%  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.  
 Intersection LOS: A  
 ICU Level of Service B

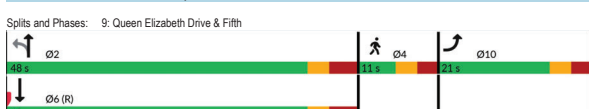


Queues  
9: Queen Elizabeth Drive & Fifth

07/31/2024

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	40	39	207	542	
Future Volume (vph)	40	39	207	542	
Lane Group Flow (vph)	83	0	273	676	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases		2			
Minimum Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Act Effct Green (s)	15.3	41.2	41.2	41.2	
Actuated g/C Ratio	0.19	0.52	0.52	0.52	
v/c Ratio	0.28	0.43	0.79	0.79	
Control Delay (s/veh)	30.7	14.7	24.5	24.5	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	30.7	14.7	24.5	24.5	
LOS	C	B	C	C	
Approach Delay (s/veh)	30.7	14.7	24.5	24.5	
Approach LOS	C	B	C	C	
Queue Length 50th (m)	10.9	24.2	79.0	79.0	
Queue Length 95th (m)	23.1	42.4	#129.4	#129.4	
Internal Link Dist (m)	57.2	0.1	5.9	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	294	641	855	855	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.28	0.43	0.79	0.79	

**Intersection Summary**  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 6-SBT, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay (s/veh): 22.4  
 Intersection Capacity Utilization 65.4%  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

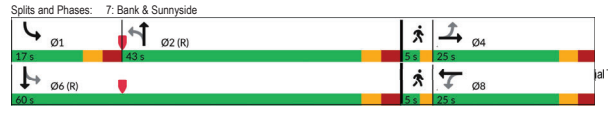


Queues  
7: Bank & Sunnyside

07/31/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	53	82	17	85	15	463	211	777		
Future Volume (vph)	53	82	17	85	15	463	211	777		
Lane Group Flow (vph)	0	184	0	385	0	554	0	1203		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm-pt	NA		
Protected Phases		4		8		2	1	6	3	7
Permitted Phases	4		8		2		6			
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Act Effct Green (s)	19.4	19.4	19.4	37.0	37.0	37.0	54.0	54.0		
Actuated g/C Ratio	0.22	0.22	0.22	0.41	0.41	0.41	0.60	0.60		
v/c Ratio	1.23	1.14	1.14	0.48	0.48	0.48	0.95	0.95		
Control Delay (s/veh)	184.2	116.2	116.2	21.0	21.0	21.0	27.0	27.0		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	184.2	116.2	116.2	21.0	21.0	21.0	27.0	27.0		
LOS	F	F	F	C	C	C	C	C		
Approach Delay (s/veh)	184.2	116.2	116.2	21.0	21.0	21.0	27.0	27.0		
Approach LOS	F	F	F	C	C	C	C	C		
Queue Length 50th (m)	-39.6	-61.9	-61.9	35.6	35.6	35.6	23.3	23.3		
Queue Length 95th (m)	#79.2	#116.6	#116.6	50.2	50.2	50.2	#117.3	#117.3		
Internal Link Dist (m)	75.1	136.0	136.0	63.1	63.1	63.1	79.0	79.0		
Turn Bay Length (m)										
Base Capacity (vph)	149	347	347	1143	1143	1143	1262	1262		
Starvation Cap Reductn	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	1.23	1.14	1.14	0.48	0.48	0.48	0.95	0.95		

**Intersection Summary**  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 23 (26%), Referenced to phase 2-NBTL and 6-SBT, Start of Green  
 Natural Cycle: 100  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.23  
 Intersection Signal Delay (s/veh): 53.0  
 Intersection LOS: D  
 Intersection Capacity Utilization 96.8%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 # Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.



HCM 7th AWSC  
37: O' Connor & Fifth

07/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	76	40	0	0	0	106	45	27	34	0	0	95
Future Vol, veh/h	76	40	0	0	0	106	45	27	34	0	0	95
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	84	44	0	0	0	118	50	30	38	0	0	106
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1
Approach	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Opposing Approach	WB			EB	EB	EB	SB	SB	SB	NB	NB	NB
Opposing Lanes	1			1	1	1	1	1	1	1	1	1
Conflicting Approach Left	SB			NB	EB	EB	WB	WB	WB	SB	SB	SB
Conflicting Lanes Left	1			1	1	1	1	1	1	1	1	1
Conflicting Approach Right	NB			SB	WB	WB	SB	SB	SB	EB	EB	EB
Conflicting Lanes Right	1			1	1	1	1	1	1	1	1	1
HCM Control Delay, s/veh	8.6			7.6	8.3	8.3	7.6	8.3	8.3	7.6	7.6	7.6
HCM LOS	A			A	A	A	A	A	A	A	A	A
Lane	NBLn1	EBLn1	WBLn1	SBLn1								
Vol Left, %	42%	66%	0%	0%								
Vol Thru, %	25%	34%	0%	0%								
Vol Right, %	32%	0%	100%	100%								
Sign Control	Stop	Stop	Stop	Stop								
Traffic Vol by Lane	106	116	106	95								
LT Vol	45	76	0	0								
Through Vol	27	40	0	0								
RT Vol	34	0	106	95								
Lane Flow Rate	118	129	118	106								
Geometry Grp	1	1	1	1								
Degree of Util (X)	0.147	0.167	0.13	0.118								
Departure Headway (Hd)	4.487	4.675	3.976	4.02								
Convergence, Y/N	Yes	Yes	Yes	Yes								
Cap	800	768	902	892								
Service Time	2.509	2.699	1.999	2.042								
HCM Lane V/C Ratio	0.148	0.168	0.131	0.119								
HCM Control Delay, s/veh	8.3	8.										

Intersection						
Int Delay, s/veh	15.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	239	219	600	598	51
Future Vol, veh/h	3	239	219	600	598	51
Conflicting Peds, #/hr	0	0	178	0	0	107
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	3	266	243	667	664	57

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1691	871	899
Stage 1	871	-	-
Stage 2	820	-	-
Critical Hdwy	6.675	6.275	4.175
Critical Hdwy Stg 1	5.475	-	-
Critical Hdwy Stg 2	5.875	-	-
Follow-up Hdwy	3.54753	3.4752	2.475
Pot Cap-1 Maneuver	91	344	738
Stage 1	402	-	-
Stage 2	388	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	30	279	599
Mov Cap-2 Maneuver	30	-	-
Stage 1	164	-	-
Stage 2	315	-	-

Approach	EB	NB	SB
HCM Control Delay, s/20.88		7.21	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	488	-	279	-
HCM Lane V/C Ratio	0.406	-	0.951	-
HCM Control Delay (s/veh)	15.1	4.3	82.1	-
HCM Lane LOS	C	A	F	-
HCM 95th %tile Q(veh)	2	-	9.2	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	0	827	846	2
Future Vol, veh/h	0	24	0	827	846	2
Conflicting Peds, #/hr	0	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	27	0	919	940	2

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	1027	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.275	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	279	0
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	253	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/20.88		0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBTEBLn1	SBT	SBR
Capacity (veh/h)	-	253	-
HCM Lane V/C Ratio	-	0.105	-
HCM Control Delay (s/veh)	-	20.9	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	0.3	-

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	62	65	59	263	507	82
Future Vol, veh/h	62	65	59	263	507	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	69	72	66	292	563	91

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1032	609	654
Stage 1	609	-	-
Stage 2	423	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	260	499	942
Stage 1	547	-	-
Stage 2	665	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	238	499	942
Mov Cap-2 Maneuver	238	-	-
Stage 1	501	-	-
Stage 2	665	-	-

Approach	EB	NB	SB
HCM Control Delay, s/44.27		1.67	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	330	-	325	-
HCM Lane V/C Ratio	0.07	-	0.434	-
HCM Control Delay (s/veh)	9.1	0	24.3	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q(veh)	0.2	-	2.1	-

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBL	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	84	566	9	1	650
Future Vol, veh/h	5	84	566	9	1	650
Conflicting Peds, #/hr	0	0	0	100	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	15	6	0	0	5
Mvmt Flow	6	93	629	10	1	722

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1097	419	0
Stage 1	734	-	-
Stage 2	363	-	-
Critical Hdwy	6.8	7.2	-
Critical Hdwy Stg 1	5.8	-	-
Critical Hdwy Stg 2	5.8	-	-
Follow-up Hdwy	3.5	3.45	-
Pot Cap-1 Maneuver	211	548	-
Stage 1	441	-	-
Stage 2	680	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	188	490	-
Mov Cap-2 Maneuver	188	-	-
Stage 1	394	-	-
Stage 2	679	-	-

Approach	WB	NB	SB
HCM Control Delay, s/44.07		0	0.01
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	-	490	784
HCM Lane V/C Ratio	-	-	0.191	0.001
HCM Control Delay (s/veh)	-	-	14.1	9.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0

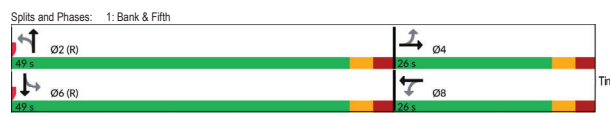
# 2033 Scenario

## Saturday Peak Hour

### Background Volumes

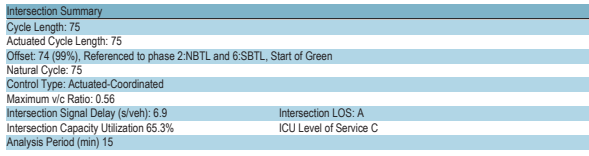
Queues  
1: Bank & Fifth 08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	46	41	69	45	21	489	20	547
Future Volume (vph)	46	41	69	45	21	489	20	547
Lane Group Flow (vph)	0	145	77	108	0	593	0	660
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	4	8	8	2	2	6	6
Permitted Phases	4	4	8	8	2	2	6	6
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	12.2	12.2	12.2	12.2	51.8	51.8	51.8	51.8
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.69	0.69	0.69	0.69
v/c Ratio	0.65	0.48	0.40	0.40	0.31	0.34	0.34	0.34
Control Delay (s/veh)	35.0	37.0	18.0	18.0	9.8	9.8	5.9	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.0	37.0	18.0	18.0	9.8	9.8	5.9	5.9
LOS	C	D	B	B	A	A	A	A
Approach Delay (s/veh)	35.0	37.0	25.9	25.9	9.8	9.8	5.9	5.9
Approach LOS	C	D	C	C	A	A	A	A
Queue Length 50th (m)	14.8	10.0	6.2	6.2	15.3	16.2	16.2	16.2
Queue Length 95th (m)	29.3	20.2	17.3	17.3	51.5	31.8	31.8	31.8
Internal Link Dist (m)	49.7		112.4		195.6		190.0	
Turn Bay Length (m)			45.0					
Base Capacity (vph)	354	269	415	415	1915	1939	1939	1939
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.29	0.26	0.26	0.53	0.34	0.34	0.34



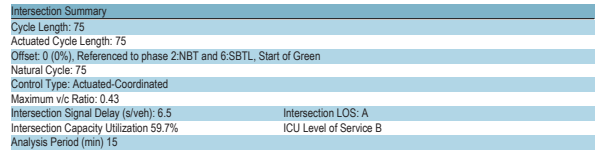
Queues  
2: Bank & Holmwood 08/01/2024

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations						
Traffic Volume (vph)	10	29	497	31	559	
Future Volume (vph)	10	29	497	31	559	
Lane Group Flow (vph)	113	0	634	0	681	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	3	
Detector Phase	4	2	2	6	3	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	
Lead/Lag						Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.7	55.9	55.9	55.9	55.9	
Actuated g/C Ratio	0.16	0.75	0.75	0.75	0.75	
v/c Ratio	0.56	0.32	0.32	0.34	0.34	
Control Delay (s/veh)	38.9	2.3	2.3	5.9	5.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.9	2.3	2.3	5.9	5.9	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	38.9	2.3	2.3	5.9	5.9	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	14.9	4.1	4.1	27.2	27.2	
Queue Length 95th (m)	27.7	9.7	9.7	46.1	46.1	
Internal Link Dist (m)	39.8		31.5	195.6		
Turn Bay Length (m)						
Base Capacity (vph)	285	1958	1958	2023	2023	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.40	0.32	0.32	0.34	0.34	



Queues  
3: Bank & Exhibition 08/01/2024

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations							
Traffic Volume (vph)	88	72	455	126	485		
Future Volume (vph)	88	72	455	126	485		
Lane Group Flow (vph)	98	80	639	140	539		
Turn Type	Prot	Perm	NA	Perm	NA		
Protected Phases	8	2	6	6	1	7	
Permitted Phases	8	2	6	6	1	7	
Detector Phase	8	2	6	6	1	7	
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	58.7%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9		
Lead/Lag						Lead	Lead
Lead-Lag Optimize?						Yes	Yes
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	11.2	11.2	55.2	55.2	55.2		
Actuated g/C Ratio	0.15	0.15	0.74	0.74	0.74		
v/c Ratio	0.43	0.34	0.31	0.32	0.23		
Control Delay (s/veh)	34.6	11.6	4.9	5.1	2.8		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	34.6	11.6	4.9	5.1	2.8		
LOS	C	B	A	A	A		
Approach Delay (s/veh)	24.3	4.9	3.3	3.3	3.3		
Approach LOS	C	A	A	A	A		
Queue Length 50th (m)	13.0	0.0	14.1	3.8	6.4		
Queue Length 95th (m)	25.1	10.5	26.1	6.6	9.6		
Internal Link Dist (m)	30.6		33.7	40.0	44.8		
Turn Bay Length (m)							
Base Capacity (vph)	405	348	2055	440	2314		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.24	0.23	0.31	0.32	0.23		



Queues  
6: Bank & Aylmer

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	39	19	663	722	
Future Volume (vph)	39	19	663	722	
Lane Group Flow (vph)	56	0	780	870	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	3	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effect Green (s)	14.0	60.3	60.3	60.3	
Actuated g/C Ratio	0.16	0.67	0.67	0.67	
v/c Ratio	0.24	0.40	0.43	0.43	
Control Delay (s/veh)	30.0	6.1	7.5	7.5	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	30.0	6.1	7.5	7.5	
LOS	C	A	A	A	
Approach Delay (s/veh)	30.0	6.1	7.5	7.5	
Approach LOS	C	A	A	A	
Queue Length 50th (m)	6.6	15.2	31.5	31.5	
Queue Length 95th (m)	17.3	30.8	42.3	42.3	
Internal Link Dist (m)	76.7	28.1	10.1	10.1	
Turn Bay Length (m)					
Base Capacity (vph)	276	1930	2004	2004	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.20	0.40	0.43	0.43	



Queues  
9: Queen Elizabeth Drive & Fifth

08/01/2024

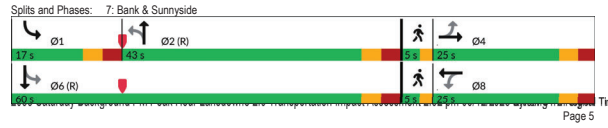
Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	55	42	248	358	
Future Volume (vph)	55	42	248	358	
Lane Group Flow (vph)	95	0	323	457	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases		2			
Detector Phase	10	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	C-Max	None
Act Effect Green (s)	11.3	56.2	56.2	56.2	
Actuated g/C Ratio	0.14	0.70	0.70	0.70	
v/c Ratio	0.43	0.30	0.39	0.39	
Control Delay (s/veh)	37.5	5.7	6.3	6.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.5	5.7	6.3	6.3	
LOS	D	A	A	A	
Approach Delay (s/veh)	37.5	5.7	6.3	6.3	
Approach LOS	D	A	A	A	
Queue Length 50th (m)	13.6	14.5	22.3	22.3	
Queue Length 95th (m)	26.1	29.9	44.1	44.1	
Internal Link Dist (m)	57.2	0.1	5.9	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	297	1060	1165	1165	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.32	0.30	0.39	0.39	



Queues  
7: Bank & Sunnyside

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	42	38	20	58	30	493	85	550		
Future Volume (vph)	42	38	20	58	30	493	85	550		
Lane Group Flow (vph)	0	138	0	198	0	618	0	767		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm-pt	NA		
Protected Phases		4		8		2	1	6	3	7
Permitted Phases		4		8		2	1	6	3	7
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Act Effect Green (s)	19.4	19.4	19.4	37.0	37.0	37.0	54.0	54.0		
Actuated g/C Ratio	0.22	0.22	0.22	0.41	0.41	0.41	0.60	0.60		
v/c Ratio	0.61	0.64	0.64	0.56	0.56	0.54	0.54	0.54		
Control Delay (s/veh)	44.9	32.0	32.0	22.4	22.4	22.4	4.7	4.7		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	44.9	32.0	32.0	22.4	22.4	22.4	4.7	4.7		
LOS	D	D	C	C	C	C	A	A		
Approach Delay (s/veh)	44.9	32.0	32.0	22.4	22.4	22.4	4.7	4.7		
Approach LOS	D	D	C	C	C	C	A	A		
Queue Length 50th (m)	21.7	20.6	20.6	41.3	41.3	41.3	8.0	8.0		
Queue Length 95th (m)	#43.8	#44.2	#44.2	57.8	57.8	57.8	10.0	10.0		
Internal Link Dist (m)	75.1	136.0	136.0	63.1	63.1	63.1	79.0	79.0		
Turn Bay Length (m)										
Base Capacity (vph)	226	308	308	1100	1100	1100	1409	1409		
Starvation Cap Reductn	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.61	0.64	0.64	0.56	0.56	0.54	0.54	0.54		



HCM 7th AWSC  
37: O' Connor & Fifth

08/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↔				↔
Traffic Vol, veh/h	41	49	0	0	0	95	60	40	37	0	0	107
Future Vol, veh/h	41	49	0	0	0	95	60	40	37	0	0	107
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	54	0	0	0	106	67	44	41	0	0	119
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.5	7.6	8.5	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	46%	0%	0%
Vol Thru, %	29%	54%	0%	0%
Vol Right, %	27%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	90	95	107
LT Vol	60	41	0	0
Through Vol	40	49	0	0
RT Vol	37	0	95	107
Lane Flow Rate	152	100	106	119
Geometry Grp	1	1	1	1
Degree of Util (X)	0.188	0.131	0.119	0.131
Departure Headway (Hd)	4.442	4.726	4.044	3.966
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	908	759	887	904
Service Time	2.464	2.753	2.069	1.99
HCM Lane V/C Ratio	0.188	0.132	0.12	0.132
HCM Control Delay, s/veh	8.5	7.6	7.6	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-Hile Q	0.7	0.4	0.4	0.5



Intersection						
Int Delay, s/veh						
Int Delay, s/veh	6.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	182	119	571	526	56
Future Vol, veh/h	3	182	119	571	526	56
Conflicting Peds, #/hr	0	0	178	0	0	107
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0	0	0	0	0
Veh in Median Storage, #	0	0	0	0	0	0
Grade, %	0	0	0	0	0	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	3	202	132	634	584	62

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1375	794	825
Stage 1	794	-	-
Stage 2	582	-	-
Critical Hdwy	6.675	6.275	4.175
Critical Hdwy Stg 1	5.475	-	-
Critical Hdwy Stg 2	5.875	-	-
Follow-up Hdwy	3.54753	3.4752	2.475
Pot Cap-1 Maneuver	145	381	788
Stage 1	438	-	-
Stage 2	516	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	71	309	639
Mov Cap-2 Maneuver	71	-	-
Stage 1	266	-	-
Stage 2	419	-	-

Approach	EB	NB	SB
HCM Control Delay, s/06.13		3.86	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	527	-	309	-
HCM Lane V/C Ratio	0.207	-	0.653	-
HCM Control Delay (s/veh)	12.1	2.1	36.1	-
HCM Lane LOS	B	A	E	-
HCM 95th %tile Q(veh)	0.8	-	4.3	-

Intersection						
Int Delay, s/veh						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	33	0	679	699	0
Future Vol, veh/h	1	33	0	679	699	0
Conflicting Peds, #/hr	0	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0	0	0	0	0
Veh in Median Storage, #	0	0	0	0	0	0
Grade, %	0	0	0	0	0	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	1	37	0	754	777	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1154	777	0
Stage 1	777	-	-
Stage 2	377	-	-
Critical Hdwy	6.675	6.275	-
Critical Hdwy Stg 1	5.475	-	-
Critical Hdwy Stg 2	5.875	-	-
Follow-up Hdwy	3.54753	3.4752	-
Pot Cap-1 Maneuver	200	390	0
Stage 1	446	-	-
Stage 2	657	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	200	390	-
Mov Cap-2 Maneuver	200	-	-
Stage 1	446	-	-
Stage 2	657	-	-

Approach	EB	NB	SB
HCM Control Delay, s/45.19		0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBTEBLn1	SBT
Capacity (veh/h)	-	390
HCM Lane V/C Ratio	-	0.094
HCM Control Delay (s/veh)	-	15.2
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	0.3

Intersection						
Int Delay, s/veh						
Int Delay, s/veh	3.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	71	57	57	216	259	131
Future Vol, veh/h	71	57	57	216	259	131
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0	0	0	0	0
Veh in Median Storage, #	0	0	0	0	0	0
Grade, %	0	0	0	0	0	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	79	63	63	240	288	146

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	727	361	433
Stage 1	361	-	-
Stage 2	367	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	394	689	1137
Stage 1	710	-	-
Stage 2	705	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	368	689	1137
Mov Cap-2 Maneuver	368	-	-
Stage 1	664	-	-
Stage 2	705	-	-

Approach	EB	NB	SB
HCM Control Delay, s/46.13		1.74	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	376	-	465	-
HCM Lane V/C Ratio	0.056	-	0.306	-
HCM Control Delay (s/veh)	8.4	0	16.1	-
HCM Lane LOS	A	A	C	-
HCM 95th %tile Q(veh)	0.2	-	1.3	-

Intersection						
Int Delay, s/veh						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	73	508	19	2	605
Future Vol, veh/h	6	73	508	19	2	605
Conflicting Peds, #/hr	0	0	0	100	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0	0	0	0	0
Veh in Median Storage, #	0	0	0	0	0	0
Grade, %	0	0	0	0	0	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	15	6	0	0	5
Mvmt Flow	7	81	564	21	2	672

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1016	393	0
Stage 1	675	-	-
Stage 2	341	-	-
Critical Hdwy	6.8	7.2	4.1
Critical Hdwy Stg 1	5.8	-	-
Critical Hdwy Stg 2	5.8	-	-
Follow-up Hdwy	3.5	3.45	2.2
Pot Cap-1 Maneuver	238	571	917
Stage 1	473	-	-
Stage 2	698	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	212	510	820
Mov Cap-2 Maneuver	212	-	-
Stage 1	423	-	-
Stage 2	696	-	-

Approach	WB	NB	SB
HCM Control Delay, s/43.38		0	0.03
HCM LOS	B		

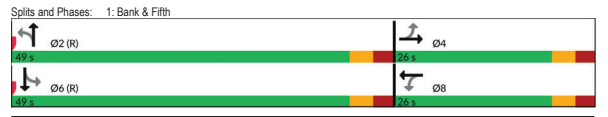
Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	510	820	-
HCM Lane V/C Ratio	-	0.159	0.003	-
HCM Control Delay (s/veh)	-	13.4	9.4	-
HCM Lane LOS	-	B	A	-
HCM 95th %tile Q(veh)	-	0.6	0	-

# 2033 Scenario

## Saturday Peak Hour

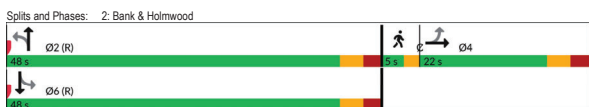
### Future Volumes

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	46	41	69	45	21	513	20	578
Traffic Volume (vph)	46	41	69	45	21	513	20	578
Future Volume (vph)	0	145	77	114	0	620	0	694
Lane Group Flow (vph)	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	2	8	2	6	6	6	6
Permitted Phases	4	8	2	6	49.0	49.0	49.0	49.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effect Green (s)	20.5	20.5	20.5	43.5	43.5	43.5	43.5	43.5
Actuated g/C Ratio	0.27	0.27	0.27	0.58	0.58	0.58	0.58	0.58
v/c Ratio	0.40	0.27	0.27	0.39	0.39	0.43	0.39	0.43
Control Delay (s/veh)	20.9	24.6	12.8	14.3	9.6	9.6	9.6	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.9	24.6	12.8	14.3	9.6	9.6	9.6	9.6
LOS	C	C	B	B	A	A	A	A
Approach Delay (s/veh)	20.9	17.5	14.3	9.6	9.6	9.6	9.6	9.6
Approach LOS	C	B	B	A	A	A	A	A
Queue Length 50th (m)	12.6	8.5	5.3	26.6	25.7	25.7	25.7	25.7
Queue Length 95th (m)	28.0	19.2	17.0	56.9	36.6	36.6	36.6	36.6
Internal Link Dist (m)	49.7	112.4	195.6	195.6	195.6	195.6	195.6	195.6
Turn Bay Length (m)		45.0						
Base Capacity (vph)	362	285	416	1606	1631	1631	1631	1631
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.27	0.27	0.39	0.43	0.43	0.43	0.43

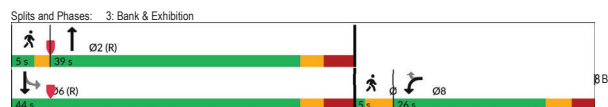


2033 Saturday PM Peak Hour Lansdowne 2.0 Transportation Impact Assessment 5:40 pm 07/31/2024 Existing PM Signal Timing Report Background 1 Page 1

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	46	41	69	45	21	513
Traffic Volume (vph)	10	29	522	37	584	
Future Volume (vph)	10	29	522	37	584	
Lane Group Flow (vph)	113	0	670	0	716	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	3	
Detector Phase	4	2	2	6	3	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	
Lead/Lag						Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effect Green (s)	11.7	55.9	55.9	55.9	55.9	
Actuated g/C Ratio	0.16	0.75	0.75	0.75	0.75	
v/c Ratio	0.56	0.34	0.36	0.36	0.36	
Control Delay (s/veh)	38.9	2.3	3.9	3.9	3.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.9	2.3	3.9	3.9	3.9	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	38.9	2.3	3.9	3.9	3.9	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	14.9	4.8	6.8	6.8	6.8	
Queue Length 95th (m)	27.7	11.2	28.4	28.4	28.4	
Internal Link Dist (m)	39.8	31.5	195.6	195.6	195.6	
Turn Bay Length (m)						
Base Capacity (vph)	285	1946	1991	1991	1991	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.40	0.34	0.36	0.36	0.36	



Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	112	84	463	150	485		
Traffic Volume (vph)	112	84	463	150	485		
Future Volume (vph)	112	84	463	150	485		
Lane Group Flow (vph)	124	93	674	167	539		
Turn Type	Prot	Perm	NA	Perm	NA		
Protected Phases	8	2	6	6	1	7	
Permitted Phases	8	2	6	6	1	7	
Detector Phase	8	2	6	6	1	7	
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	58.7%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9		
Lead/Lag						Lead	Lead
Lead-Lag Optimize?						Yes	Yes
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effect Green (s)	12.1	12.1	54.3	54.3	54.3		
Actuated g/C Ratio	0.16	0.16	0.72	0.72	0.72		
v/c Ratio	0.50	0.36	0.34	0.40	0.24		
Control Delay (s/veh)	35.3	10.6	5.4	7.0	3.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	35.3	10.6	5.4	7.0	3.1		
LOS	D	B	A	A	A		
Approach Delay (s/veh)	24.7	5.4	4.0	4.0	4.0		
Approach LOS	C	A	A	A	A		
Queue Length 50th (m)	16.4	0.0	16.0	4.8	8.0		
Queue Length 95th (m)	29.7	11.0	29.8	9.9	9.9		
Internal Link Dist (m)	30.6	33.7	40.0	44.8	44.8		
Turn Bay Length (m)							
Base Capacity (vph)	405	358	1996	421	2275		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.31	0.26	0.34	0.40	0.24		



Background 1

Background 1

Queues  
6: Bank & Aylmer

07/31/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	39	19	715	747	
Future Volume (vph)	39	19	715	747	
Lane Group Flow (vph)	56	0	815	898	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	3	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.0	60.3	60.3	60.3	
Actuated g/C Ratio	0.16	0.67	0.67	0.67	
v/c Ratio	0.24	0.42	0.45	0.45	
Control Delay (s/veh)	30.0	6.6	7.7	7.7	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	30.0	6.6	7.7	7.7	
LOS	C	A	A	A	
Approach Delay (s/veh)	30.0	6.6	7.7	7.7	
Approach LOS	C	A	A	A	
Queue Length 50th (m)	6.6	16.0	32.9	32.9	
Queue Length 95th (m)	17.3	35.6	44.2	44.2	
Internal Link Dist (m)	76.7	28.1	10.1	10.1	
Turn Bay Length (m)					
Base Capacity (vph)	276	1930	2008	2008	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.20	0.42	0.45	0.45	



Queues  
9: Queen Elizabeth Drive & Fifth

07/31/2024

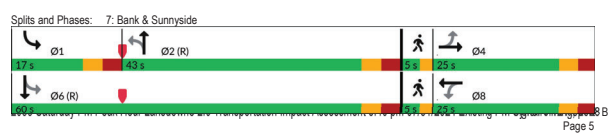
Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	62	42	259	371	
Future Volume (vph)	62	42	259	371	
Lane Group Flow (vph)	103	0	335	471	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases		2			
Minimum Split (s)	21.0	48.0	48.0	11.0	
Total Split (s)	21.0	48.0	48.0	11.0	
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.7	3.8	3.8	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Act Effct Green (s)	15.3	41.2	41.2	41.2	
Actuated g/C Ratio	0.19	0.52	0.52	0.52	
v/c Ratio	0.35	0.43	0.55	0.55	
Control Delay (s/veh)	31.9	14.4	16.3	16.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	31.9	14.4	16.3	16.3	
LOS	C	B	B	B	
Approach Delay (s/veh)	31.9	14.4	16.3	16.3	
Approach LOS	C	B	B	B	
Queue Length 50th (m)	13.7	29.9	45.6	45.6	
Queue Length 95th (m)	27.5	49.4	72.1	72.1	
Internal Link Dist (m)	57.2	0.1	5.9	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	298	771	853	853	
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.35	0.43	0.55	0.55	



Queues  
7: Bank & Sunnyside

07/31/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	42	38	20	58	30	524	85	574		
Future Volume (vph)	42	38	20	58	30	524	85	574		
Lane Group Flow (vph)	0	138	0	198	0	652	0	754		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm-pt	NA		
Protected Phases		4		8		2	1	6	3	7
Permitted Phases		4		8		2	1	6	3	7
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0	6.0	6.0		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Act Effct Green (s)	19.4	19.4	19.4	37.0	37.0	37.0	54.0	54.0		
Actuated g/C Ratio	0.22	0.22	0.22	0.41	0.41	0.41	0.60	0.60		
v/c Ratio	0.61	0.64	0.64	0.59	0.59	0.57	0.57	0.57		
Control Delay (s/veh)	45.0	32.0	32.0	23.1	23.1	23.1	4.9	4.9		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	45.0	32.0	32.0	23.1	23.1	23.1	4.9	4.9		
LOS	D	C	C	C	C	C	A	A		
Queue Length 50th (m)	21.7	20.6	20.6	44.4	44.4	44.4	8.3	8.3		
Queue Length 95th (m)	#43.8	#44.2	#44.2	61.7	61.7	61.7	10.3	10.3		
Internal Link Dist (m)	75.1	136.0	136.0	63.1	63.1	63.1	79.0	79.0		
Turn Bay Length (m)										
Base Capacity (vph)	226	308	308	1103	1103	1103	1399	1399		
Starvation Cap Reductn	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.61	0.64	0.64	0.59	0.59	0.57	0.57	0.57		



HCM 7th AWSC  
11: O' Connor & Fifth

07/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	41	49	0	0	0	95	66	40	43	0	0	107
Future Vol, veh/h	41	49	0	0	0	95	66	40	43	0	0	107
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	54	0	0	0	106	73	44	48	0	0	119
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.5	7.7	8.6	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	46%	0%	0%
Vol Thru, %	27%	54%	0%	0%
Vol Right, %	29%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	149	90	95	107
LT Vol	66	41	0	0
Through Vol	40	49	0	0
RT Vol	43	0	95	107
Lane Flow Rate	166	100	106	119
Geometry Grp	1	1	1	1
Degree of Util (X)	0.204	0.132	0.12	0.132
Departure Headway (Hd)	4.433	4.758	4.076	3.983
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	910	754	879	900
Service Time	2.459	2.787	2.103	2.009
HCM Lane V/C Ratio	0.205	0.133	0.121	0.132
HCM Control Delay, s/veh	8.6	8.5	7.7	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-Hile Q	0.8	0.5	0.4	0.5

Intersection					
Int Delay, s/veh	6.7				
Movement	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Vol, veh/h	3	182	119	602	550
Future Vol, veh/h	3	182	119	602	550
Conflicting Peds, #/hr	0	0	178	0	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0
Grade, %	0	-	-	0	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5
Mvmt Flow	3	202	132	669	611
Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	1419	820	851	0	0
Stage 1	820	-	-	-	-
Stage 2	599	-	-	-	-
Critical Hdwy	6.675	6.275	4.175	-	-
Critical Hdwy Stg 1	5.475	-	-	-	-
Critical Hdwy Stg 2	5.875	-	-	-	-
Follow-up Hdwy	3.54753	3.4752	2.475	-	-
Pot Cap-1 Maneuver	136	368	769	-	-
Stage 1	425	-	-	-	-
Stage 2	506	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	66	299	624	-	-
Mov Cap-2 Maneuver	66	-	-	-	-
Stage 1	255	-	-	-	-
Stage 2	410	-	-	-	-
Approach	EB	NB	SB		
HCM Control Delay, s/45.99		3.95	0		
HCM LOS	E				
Minor Lane/Major Mvmt	NBL	NBEBLn1	SBT	SBR	
Capacity (veh/h)	508	-	299	-	-
HCM Lane V/C Ratio	0.212	-	0.677	-	-
HCM Control Delay (s/veh)	12.3	2.3	39	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0.8	-	4.6	-	-

Intersection					
Int Delay, s/veh	0.4				
Movement	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Vol, veh/h	1	33	0	710	723
Future Vol, veh/h	1	33	0	710	723
Conflicting Peds, #/hr	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0
Grade, %	0	-	-	0	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5
Mvmt Flow	1	37	0	789	803
Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	1198	803	-	0	0
Stage 1	803	-	-	-	-
Stage 2	394	-	-	-	-
Critical Hdwy	6.675	6.275	-	-	-
Critical Hdwy Stg 1	5.475	-	-	-	-
Critical Hdwy Stg 2	5.875	-	-	-	-
Follow-up Hdwy	3.54753	3.475	-	-	-
Pot Cap-1 Maneuver	188	376	0	-	0
Stage 1	433	-	-	-	0
Stage 2	643	-	-	-	0
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	188	376	-	-	-
Mov Cap-2 Maneuver	188	-	-	-	-
Stage 1	433	-	-	-	-
Stage 2	643	-	-	-	-
Approach	EB	NB	SB		
HCM Control Delay, s/45.99		0	0		
HCM LOS	C				
Minor Lane/Major Mvmt	NBEBLn1	SBT			
Capacity (veh/h)	-	376	-		
HCM Lane V/C Ratio	-	0.097	-		
HCM Control Delay (s/veh)	-	15.6	-		
HCM Lane LOS	-	C	-		
HCM 95th %tile Q(veh)	-	0.3	-		

Intersection					
Int Delay, s/veh	3.9				
Movement	EBL	EBR	NBL	NBT	SBT
Lane Configurations					
Traffic Vol, veh/h	81	68	70	216	259
Future Vol, veh/h	81	68	70	216	259
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0
Grade, %	0	-	-	0	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0
Mvmt Flow	90	76	78	240	288
Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	763	368	448	0	0
Stage 1	368	-	-	-	-
Stage 2	396	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	375	682	1123	-	-
Stage 1	705	-	-	-	-
Stage 2	685	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	345	682	1123	-	-
Mov Cap-2 Maneuver	345	-	-	-	-
Stage 1	648	-	-	-	-
Stage 2	685	-	-	-	-
Approach	EB	NB	SB		
HCM Control Delay, s/47.78		2.07	0		
HCM LOS	C				
Minor Lane/Major Mvmt	NBL	NBEBLn1	SBT	SBR	
Capacity (veh/h)	441	-	446	-	-
HCM Lane V/C Ratio	0.069	-	0.372	-	-
HCM Control Delay (s/veh)	8.4	0	17.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	1.7	-	-

Intersection					
Int Delay, s/veh	1				
Movement	WBL	WBR	NBT	NBR	SBL
Lane Configurations					
Traffic Vol, veh/h	6	85	527	20	2
Future Vol, veh/h	6	85	527	20	2
Conflicting Peds, #/hr	0	0	0	100	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	-	-	0
Grade, %	0	-	-	-	0
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	15	6	0	0
Mvmt Flow	7	94	586	22	2
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1051	404	0	0	708
Stage 1	697	-	-	-	-
Stage 2	354	-	-	-	-
Critical Hdwy	6.8	7.2	-	-	4.1
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.45	-	-	2.2
Pot Cap-1 Maneuver	226	561	-	-	900
Stage 1	461	-	-	-	-
Stage 2	687	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	201	502	-	-	805
Mov Cap-2 Maneuver	201	-	-	-	-
Stage 1	412	-	-	-	-
Stage 2	685	-	-	-	-
Approach	WB	NB	SB		
HCM Control Delay, s/43.83		0	0.03		
HCM LOS	B				
Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	502	805	-
HCM Lane V/C Ratio	-	-	0.188	0.003	-
HCM Control Delay (s/veh)	-	-	13.8	9.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.7	0	-

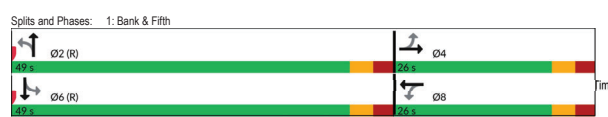
# 2033 Scenario

## Sunday Peak Hour

### Background Volumes

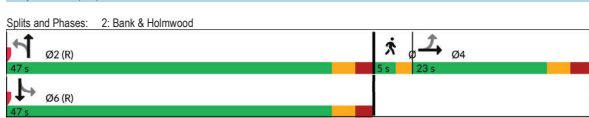
Queues  
1: Bank & Fifth 08/06/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	54	38	123	67	16	491	23	516
Future Volume (vph)	54	38	123	67	16	491	23	516
Lane Group Flow (vph)	0	131	137	117	0	594	0	646
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4		8		2		6	
Permitted Phases	4	4	8	8	2	2	6	6
Detector Phase								
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	14.5	14.5	14.5	14.5	49.5	49.5	49.5	49.5
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.66	0.66	0.66	0.66
v/c Ratio	0.55	0.57	0.38	0.32	0.32	0.36	0.36	0.36
Control Delay (s/veh)	30.6	43.3	20.4	7.3	6.9	6.9	6.9	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.6	43.3	20.4	7.3	6.9	6.9	6.9	6.9
LOS	C	D	C	A	A	A	A	A
Approach Delay (s/veh)	30.6		32.7	7.3	6.9			
Approach LOS	C		C	A	A			
Queue Length 50th (m)	14.2	18.0	9.6	28.2	17.9			
Queue Length 95th (m)	27.4	32.3	20.9	50.0	33.6			
Internal Link Dist (m)	49.7		112.4	195.6	190.0			
Turn Bay Length (m)			45.0					
Base Capacity (vph)	332	288	423	1845	1810			
Starvation Cap Reductn	0	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0			
Storage Cap Reductn	0	0	0	0	0			
Reduced v/c Ratio	0.39	0.48	0.28	0.32	0.36			



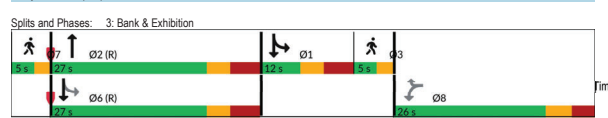
Queues  
2: Bank & Holmwood 08/06/2024

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations						
Traffic Volume (vph)	18	32	519	23	551	
Future Volume (vph)	18	32	519	23	551	
Lane Group Flow (vph)	111	0	704	0	678	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2		6	3	
Permitted Phases	4	2		6	3	
Detector Phase	4	2		6	3	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	23.0	47.0	47.0	47.0	47.0	5.0
Total Split (s)	23.0	47.0	47.0	47.0	47.0	5.0
Total Split (%)	30.7%	62.7%	62.7%	62.7%	62.7%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	
Lead/Lag		Lag				Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.6	56.1	56.1	56.1	56.1	
Actuated g/C Ratio	0.15	0.75	0.75	0.75	0.75	
v/c Ratio	0.55	0.37	0.33	0.33	0.33	
Control Delay (s/veh)	38.6	2.4	8.9	8.9	8.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.6	2.4	8.9	8.9	8.9	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	38.6	2.4	8.9	8.9	8.9	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	14.7	5.3	24.5			
Queue Length 95th (m)	27.3	12.1	48.9			
Internal Link Dist (m)	39.8		31.5	195.6		
Turn Bay Length (m)						
Base Capacity (vph)	304	1890	2043			
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.37	0.37	0.33			



Queues  
3: Bank & Exhibition 08/06/2024

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø3	Ø6	Ø7
Lane Configurations								
Traffic Volume (vph)	126	66	417	178	450			
Future Volume (vph)	126	66	417	178	450			
Lane Group Flow (vph)	140	73	597	198	500			
Turn Type	Perm	Perm	NA	custom	NA			
Protected Phases			2	1	16	3	6	7
Permitted Phases	8	8		6				
Detector Phase	8	8	2	1	16			
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	4.0	1.0	10.0	1.0	
Minimum Split (s)	26.0	26.0	27.0	10.9	5.0	27.0	5.0	
Total Split (s)	26.0	26.0	27.0	12.0	5.0	27.0	5.0	
Total Split (%)	34.7%	34.7%	36.0%	16.0%	7%	36%	7%	
Yellow Time (s)	3.3	3.3	3.0	3.0	2.0	3.0	2.0	
All-Red Time (s)	3.0	3.0	3.9	3.9	0.0	3.9	0.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0				
Total Lost Time (s)	6.3	6.3	6.9	6.9				
Lead/Lag				Lead			Lag	
Lead-Lag Optimize?				Yes			Yes	
Recall Mode	None	None	C-Max	None	None	C-Max	None	
Act Effct Green (s)	13.1	13.1	40.0	45.1	53.4			
Actuated g/C Ratio	0.17	0.17	0.53	0.60	0.71			
v/c Ratio	0.56	0.29	0.40	0.47	0.22			
Control Delay (s/veh)	36.6	9.8	12.2	11.4	4.7			
Queue Delay	0.0	0.0	0.0	0.0	0.0			
Total Delay (s/veh)	36.6	9.8	12.2	11.4	4.7			
LOS	D	A	B	B	A			
Approach Delay (s/veh)	27.4		12.2	6.6				
Approach LOS	C		B	A				
Queue Length 50th (m)	18.5	0.0	24.3	8.7	11.5			
Queue Length 95th (m)	32.4	9.3	42.2	17.2	12.3			
Internal Link Dist (m)	30.6		33.7	44.8				
Turn Bay Length (m)				40.0				
Base Capacity (vph)	377	343	1486	424	2235			
Starvation Cap Reductn	0	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0			
Storage Cap Reductn	0	0	0	0	0			
Reduced v/c Ratio	0.37	0.21	0.40	0.47	0.22			

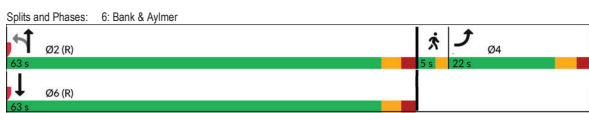




Queues  
6: Bank & Aylmer

08/06/2024

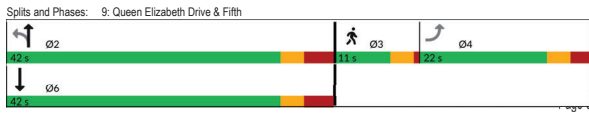
Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	54	17	598	659	
Future Volume (vph)	54	17	598	659	
Lane Group Flow (vph)	83	0	683	795	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6		
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	6%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0		
Total Lost Time (s)	5.5	5.2	5.2		
Lead/Lag	Lag			Lead	
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effect Green (s)	11.1	72.4	72.4		
Actuated g/C Ratio	0.12	0.80	0.80		
v/c Ratio	0.43	0.29	0.33		
Control Delay (s/veh)	35.9	2.7	3.7		
Queue Delay	0.0	0.0	0.0		
Total Delay (s/veh)	35.9	2.7	3.7		
LOS	D	A	A		
Approach Delay (s/veh)	35.9	2.7	3.7		
Approach LOS	D	A	A		
Queue Length 50th (m)	10.5	11.5	17.1		
Queue Length 95th (m)	23.2	16.9	29.5		
Internal Link Dist (m)	76.7	28.1	10.1		
Turn Bay Length (m)					
Base Capacity (vph)	276	2328	2400		
Starvation Cap Reductn	0	0	0		
Spillback Cap Reductn	0	0	0		
Storage Cap Reductn	0	0	0		
Reduced v/c Ratio	0.30	0.29	0.33		



Queues  
9: Queen Elizabeth Drive & Fifth

08/06/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	13	207	13	12	
Future Volume (vph)	13	207	13	12	
Lane Group Flow (vph)	162	0	244	42	
Turn Type	Perm	Perm	NA	NA	
Protected Phases		2	6	3	
Permitted Phases	4	2			
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	42.0	42.0	42.0	8.0
Total Split (s)	22.0	42.0	42.0	42.0	11.0
Total Split (%)	29.3%	56.0%	56.0%	56.0%	15%
Yellow Time (s)	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.7	3.8	3.8	3.8	0.7
Lost Time Adjust (s)	0.0	0.0	0.0		
Total Lost Time (s)	5.7	6.8	6.8		
Lead/Lag	Lag			Lead	
Lead-Lag Optimize?	Yes			Yes	
Recall Mode	Min	None	None	Max	None
Act Effect Green (s)	12.3	35.2	35.2		
Actuated g/C Ratio	0.21	0.59	0.59		
v/c Ratio	0.54	0.35	0.05		
Control Delay (s/veh)	28.4	8.8	6.2		
Queue Delay	0.0	0.0	0.0		
Total Delay (s/veh)	28.4	8.8	6.2		
LOS	C	A	A		
Approach Delay (s/veh)	28.4	8.8	6.2		
Approach LOS	C	A	A		
Queue Length 50th (m)	16.0	11.8	1.7		
Queue Length 95th (m)	31.4	28.3	5.7		
Internal Link Dist (m)	97.2	0.1	5.9		
Turn Bay Length (m)					
Base Capacity (vph)	400	701	897		
Starvation Cap Reductn	0	0	0		
Spillback Cap Reductn	0	0	0		
Storage Cap Reductn	0	0	0		
Reduced v/c Ratio	0.41	0.35	0.05		



Queues  
7: Bank & Sunnyside

08/06/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø6	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔			
Traffic Volume (vph)	43	33	16	51	19	472	118	509			
Future Volume (vph)	43	33	16	51	19	472	118	509			
Lane Group Flow (vph)	0	118	0	195	0	556	0	790			
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA			
Protected Phases		4	8	8	2	1	1	6	3	6	7
Permitted Phases	4		8		2		6				
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0		5.0	43.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0		5.0	43.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%		6%	48%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		2.0	3.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9		0.0	3.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0					
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0						
Lead/Lag	Lag	Lag	Lag	Lag					Lead		Lead
Lead-Lag Optimize?		Yes	Yes								Yes
Act Effect Green (s)	19.4	19.4	37.0	48.2							
Actuated g/C Ratio	0.22	0.22	0.41	0.54							
v/c Ratio	0.53	0.61	0.48	0.65							
Control Delay (s/veh)	41.1	27.5	21.0	10.7							
Queue Delay	0.0	0.0	0.0	0.0							
Total Delay (s/veh)	41.1	27.5	21.0	10.7							
LOS	D	C	C	B							
Approach Delay (s/veh)	41.1	27.5	21.0	10.7							
Approach LOS	D	C	C	B							
Queue Length 50th (m)	18.2	17.2	36.0	35.6							
Queue Length 95th (m)	35.5	39.9	50.5	27.1							
Internal Link Dist (m)	75.1	136.0	63.1	79.0							
Turn Bay Length (m)											
Base Capacity (vph)	223	318	1170	1224							
Starvation Cap Reductn	0	0	0	0							
Spillback Cap Reductn	0	0	0	0							
Storage Cap Reductn	0	0	0	0							
Reduced v/c Ratio	0.53	0.61	0.48	0.65							



HCM 7th AWSC  
37: O' Connor & Fifth

08/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔					↔	↔				↔
Traffic Vol, veh/h	70	83	0	0	0	233	101	67	62	0	0	106
Future Vol, veh/h	70	83	0	0	0	233	101	67	62	0	0	106
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	92	0	0	0	259	112	74	69	0	0	118
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1
Approach	EB			WB	NB							SB
Opposing Approach	WB			EB	SB							NB
Opposing Lanes	1			1	1							1
Conflicting Approach Left	SB			NB	EB							WB
Conflicting Lanes Left	1			1	1							1
Conflicting Approach Right	NB			SB	WB							EB
Conflicting Lanes Right	1			1	1							1
HCM Control Delay, s/veh	10.2			9.7	10.9							8.7
HCM LOS	B			A	B							A
Lane	NBLn1	EBLn1	WBLn1	SBLn1								
Vol Left, %	44%	46%	0%	0%								
Vol Thru, %	29%	54%	0%	0%								
Vol Right, %	27%	0%	100%	100%								
Sign Control	Stop	Stop	Stop	Stop								
Traffic Vol by Lane	230	153	233	106								
LT Vol	101	70	0	0								
Through Vol	67	83	0	0								
RT Vol	62	0	233	106								
Lane Flow Rate	256	170	259	118								
Geometry Grp	1	1	1	1								
Degree of Util (X)	0.355	0.253	0.322	0.157								
Departure Headway (Hd)	5.113	5.349	4.573	4.799								
Convergence, Y/N	Yes	Yes	Yes	Yes								
Cap	708	675	792	750								
Service Time	3.113	3.349	2.573	2.809								
HCM Lane V/C Ratio	0.362	0.252	0.327	0.157								
HCM Control Delay, s/veh	10.9	10.2	9.7	8.7								
HCM Lane LOS	B	B	A	A								
HCM 95th-Hile Q	1.6	1	1.4	0.6								

Intersection  
Int Delay, s/veh 5.1  
Movement EBL EBR NBL NBT SBT SBR  
Lane Configurations  
Traffic Vol, veh/h 5 156 110 553 503 62  
Future Vol, veh/h 5 156 110 553 503 62  
Conflicting Peds, #/hr 0 0 178 0 0 107  
Sign Control Stop Stop Free Free Free Free  
RT Channelized None None None None  
Storage Length 0  
Veh in Median Storage, # 0  
Grade, % 0  
Peak Hour Factor 90 90 90 90 90 90  
Heavy Vehicles, % 5 5 5 5 5 5  
Mvmt Flow 6 173 122 614 559 69

Major/Minor Minor2 Major1 Major2  
Conflicting Flow All 1323 771 806 0 - 0  
Stage 1 771 - - - - -  
Stage 2 552 - - - - -  
Critical Hdwy 6.675 6.275 4.175 - - -  
Critical Hdwy Stg 1 5.475 - - - - -  
Critical Hdwy Stg 2 5.875 - - - - -  
Follow-up Hdwy 3.54753 3.4752 2.475 - - -  
Pot Cap-1 Maneuver 156 393 801 - - -  
Stage 1 448 - - - - -  
Stage 2 535 - - - - -  
Platoon blocked, %  
Mov Cap-1 Maneuver 80 319 650 - - -  
Mov Cap-2 Maneuver 80 - - - - -  
Stage 1 281 - - - - -  
Stage 2 434 - - - - -

Approach EB NB SB  
HCM Control Delay, s/28.97 3.56 0  
HCM LOS D

Minor Lane/Major Mvmt NBL NBTEBLn1 SBT SBR  
Capacity (veh/h) 539 - 319 - -  
HCM Lane V/C Ratio 0.188 - 0.544 - -  
HCM Control Delay (s/veh) 11.8 1.9 29 - -  
HCM Lane LOS B A D - -  
HCM 95th %ile Q(veh) 0.7 - 3.1 - -

Intersection  
Int Delay, s/veh 1  
Movement EBL EBR NBL NBT SBT SBR  
Lane Configurations  
Traffic Vol, veh/h 2 71 0 637 663 1  
Future Vol, veh/h 2 71 0 637 663 1  
Conflicting Peds, #/hr 0 0 0 0 0 86  
Sign Control Stop Stop Free Free Free Free  
RT Channelized None None None None  
Storage Length 0  
Veh in Median Storage, # 0  
Grade, % 0  
Peak Hour Factor 90 90 90 90 90 90  
Heavy Vehicles, % 5 5 5 5 5 5  
Mvmt Flow 2 79 0 708 737 1

Major/Minor Minor2 Major1 Major2  
Conflicting Flow All 1177 823 - 0 - 0  
Stage 1 823 - - - - -  
Stage 2 354 - - - - -  
Critical Hdwy 6.675 6.275 - - - -  
Critical Hdwy Stg 1 5.475 - - - - -  
Critical Hdwy Stg 2 5.875 - - - - -  
Follow-up Hdwy 3.54753 3.475 - - - -  
Pot Cap-1 Maneuver 193 366 0 - - -  
Stage 1 424 - 0 - - - -  
Stage 2 675 - 0 - - - -  
Platoon blocked, %  
Mov Cap-1 Maneuver 160 333 - - - -  
Mov Cap-2 Maneuver 160 - - - - -  
Stage 1 385 - - - - -  
Stage 2 613 - - - - -

Approach EB NB SB  
HCM Control Delay, s/49.13 0 0  
HCM LOS C

Minor Lane/Major Mvmt NBTEBLn1 SBT SBR  
Capacity (veh/h) - 333 - -  
HCM Lane V/C Ratio - 0.237 - -  
HCM Control Delay (s/veh) - 19.1 - -  
HCM Lane LOS - C - - -  
HCM 95th %ile Q(veh) - 0.9 - - -

Intersection  
Int Delay, s/veh 5.9  
Movement EBL EBR NBL NBT SBT SBR  
Lane Configurations  
Traffic Vol, veh/h 88 138 72 131 68 60  
Future Vol, veh/h 88 138 72 131 68 60  
Conflicting Peds, #/hr 0 0 0 0 0 0  
Sign Control Stop Stop Free Free Free Free  
RT Channelized None None None None  
Storage Length 0  
Veh in Median Storage, # 0  
Grade, % 0  
Peak Hour Factor 90 90 90 90 90 90  
Heavy Vehicles, % 0 0 0 0 0 0  
Mvmt Flow 98 153 80 146 76 67

Major/Minor Minor2 Major1 Major2  
Conflicting Flow All 414 109 142 0 - 0  
Stage 1 109 - - - - -  
Stage 2 306 - - - - -  
Critical Hdwy 6.4 6.2 4.1 - - -  
Critical Hdwy Stg 1 5.4 - - - - -  
Critical Hdwy Stg 2 5.4 - - - - -  
Follow-up Hdwy 3.5 3.3 2.2 - - -  
Pot Cap-1 Maneuver 598 950 1453 - - -  
Stage 1 921 - - - - -  
Stage 2 752 - - - - -  
Platoon blocked, %  
Mov Cap-1 Maneuver 562 950 1453 - - -  
Mov Cap-2 Maneuver 562 - - - - -  
Stage 1 865 - - - - -  
Stage 2 752 - - - - -

Approach EB NB SB  
HCM Control Delay, s/42.21 2.7 0  
HCM LOS B

Minor Lane/Major Mvmt NBL NBTEBLn1 SBT SBR  
Capacity (veh/h) 638 - 749 - -  
HCM Lane V/C Ratio 0.055 - 0.335 - -  
HCM Control Delay (s/veh) 7.6 0 12.2 - -  
HCM Lane LOS A A B - -  
HCM 95th %ile Q(veh) 0.2 - 1.5 - -

Intersection  
Int Delay, s/veh 2.1  
Movement WBL WBR NBT NBR SBL SBT  
Lane Configurations  
Traffic Vol, veh/h 7 163 475 20 0 613  
Future Vol, veh/h 7 163 475 20 0 613  
Conflicting Peds, #/hr 0 0 0 100 0 0  
Sign Control Stop Stop Free Free Free Free  
RT Channelized None None None None  
Storage Length 0  
Veh in Median Storage, # 0  
Grade, % 0  
Peak Hour Factor 90 90 90 90 90 90  
Heavy Vehicles, % 0 15 6 0 0 5  
Mvmt Flow 8 181 528 22 0 681

Major/Minor Minor1 Major1 Major2  
Conflicting Flow All 979 375 0 0 - -  
Stage 1 639 - - - - -  
Stage 2 341 - - - - -  
Critical Hdwy 6.8 7.2 - - - -  
Critical Hdwy Stg 1 5.8 - - - - -  
Critical Hdwy Stg 2 5.8 - - - - -  
Follow-up Hdwy 3.5 3.45 - - - -  
Pot Cap-1 Maneuver 251 587 - - 0 -  
Stage 1 493 - - - 0 -  
Stage 2 698 - - - 0 -  
Platoon blocked, %  
Mov Cap-1 Maneuver 224 525 - - - -  
Mov Cap-2 Maneuver 224 - - - - -  
Stage 1 441 - - - - -  
Stage 2 698 - - - - -

Approach WB NB SB  
HCM Control Delay, s/45.44 0 0  
HCM LOS C

Minor Lane/Major Mvmt NBT NBRWBLn1 SBT  
Capacity (veh/h) - - 525 -  
HCM Lane V/C Ratio - - 0.345 -  
HCM Control Delay (s/veh) - - 15.4 -  
HCM Lane LOS - - C -  
HCM 95th %ile Q(veh) - - 1.5 -

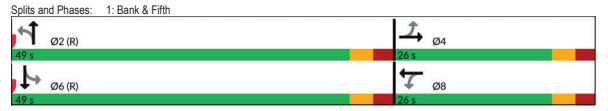
# 2033 Scenario

## Sunday Peak Hour

### Future Volumes

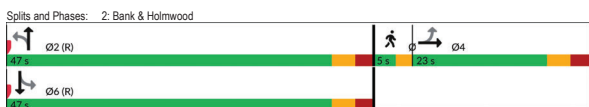
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	54	38	123	67	16	516	23	548
Future Volume (vph)	54	38	123	67	16	516	23	548
Lane Group Flow (vph)	0	131	137	124	0	621	0	682
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	2	8	2	2	6	6	6
Permitted Phases	4	2	8	2	2	6	6	6
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Act Effect Green (s)	20.5	20.5	20.5		43.5		43.5	
Actuated g/C Ratio	0.27	0.27	0.27		0.58		0.58	
v/c Ratio	0.39	0.47	0.29		0.38		0.43	
Control Delay (s/veh)	22.9	29.0	16.4		10.0		9.6	
Queue Delay	0.0	0.0	0.0		0.0		0.0	
Total Delay (s/veh)	22.9	29.0	16.4		10.0		9.6	
LOS	A	C	B		A		A	
Approach Delay (s/veh)	22.9		23.0		10.0		9.6	
Approach LOS	C		C		A		A	
Queue Length 50th (m)	12.7	16.1	8.6		34.3		24.8	
Queue Length 95th (m)	27.3	32.2	21.3		46.6		36.0	
Internal Link Dist (m)	49.7		112.4		195.6		190.0	
Turn Bay Length (m)			45.0					
Base Capacity (vph)	339	293	424		1625		1596	
Starvation Cap Reductn	0	0	0		0		0	
Spillback Cap Reductn	0	0	0		0		0	
Storage Cap Reductn	0	0	0		0		0	
Reduced v/c Ratio	0.39	0.47	0.29		0.38		0.43	

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 42 (56%), Referenced to phase 2:NBL and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Pre-timed	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay (s/veh): 12.8	Intersection LOS: B
Intersection Capacity Utilization 60.8%	ICU Level of Service B
Analysis Period (min) 15	



Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations						
Traffic Volume (vph)	18	32	543	30	576	
Future Volume (vph)	18	32	543	30	576	
Lane Group Flow (vph)	111	0	737	0	713	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	6	3
Permitted Phases	4	2	2	6	6	3
Detector Phase	4	2	2	6	6	3
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	23.0	47.0	47.0	47.0	47.0	5.0
Total Split (s)	23.0	47.0	47.0	47.0	47.0	5.0
Total Split (%)	30.7%	62.7%	62.7%	62.7%	62.7%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	0.0
Lead/Lag		Lag			Lead	
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effect Green (s)	11.6	56.1	56.1	56.1	56.1	5.0
Actuated g/C Ratio	0.15	0.75	0.75	0.75	0.75	0.15
v/c Ratio	0.55	0.39	0.39	0.35	0.35	0.15
Control Delay (s/veh)	38.6	2.4	2.4	10.2	10.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.6	2.4	2.4	10.2	10.2	10.2
LOS	D	A	A	B	B	B
Approach Delay (s/veh)	38.6	2.4	2.4	10.2	10.2	10.2
Approach LOS	D	A	A	B	B	B
Queue Length 50th (m)	14.7	6.1	6.1	34.1	34.1	34.1
Queue Length 95th (m)	27.3	13.4	13.4	53.0	53.0	53.0
Internal Link Dist (m)	39.8	31.5	31.5	195.6	195.6	195.6
Turn Bay Length (m)						
Base Capacity (vph)	304	1883	1883	2010	2010	2010
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.39	0.39	0.35	0.35	0.15

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 16 (21%), Referenced to phase 2:NBL and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay (s/veh): 8.5	Intersection LOS: A
Intersection Capacity Utilization 69.5%	ICU Level of Service C
Analysis Period (min) 15	



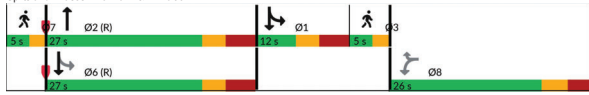
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø3	Ø6	Ø7
Lane Configurations								
Traffic Volume (vph)	150	73	428	203	450			
Future Volume (vph)	150	73	428	203	450			
Lane Group Flow (vph)	167	81	635	226	500			
Turn Type	Perm	Perm	NA	custom	NA			
Protected Phases	8	8	2	1	16	3	6	7
Permitted Phases	8	8	2	1	16	3	6	7
Detector Phase	8	8	2	1	16	3	6	7
Switch Phase								
Minimum Initial (s)	4.0	4.0	10.0	4.0	1.0	5.1	3.0	3.0
Minimum Split (s)	26.0	26.0	27.0	12.0	5.0	27.0	5.0	5.0
Total Split (s)	26.0	26.0	27.0	12.0	5.0	27.0	5.0	5.0
Total Split (%)	34.7%	34.7%	36.0%	16.0%	7%	36%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	2.0	3.0	2.0	2.0
All-Red Time (s)	3.0	3.0	3.9	3.9	0.0	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.3	6.3	6.9	6.9				
Lead/Lag			Lead		Lag			
Lead-Lag Optimize?			Yes		Yes			
Recall Mode	None	None	C-Max	None	None	C-Max	None	None
Act Effect Green (s)	14.0	14.0	35.8	40.9	47.8			
Actuated g/C Ratio	0.19	0.19	0.48	0.55	0.64			
v/c Ratio	0.63	0.31	0.48	0.61	0.25			
Control Delay (s/veh)	38.2	9.4	14.3	17.3	4.6			
Queue Delay	0.0	0.0	0.0	0.0	0.0			
Total Delay (s/veh)	38.2	9.4	14.3	17.3	4.6			
LOS	D	A	B	B	A			
Approach Delay (s/veh)	28.8	14.3	14.3	8.6	8.6			
Approach LOS	C	B	B	A	A			
Queue Length 50th (m)	22.0	0.0	27.2	6.6	7.6			
Queue Length 95th (m)	36.7	9.6	47.5	#25.1	12.7			
Internal Link Dist (m)	30.6	33.7	40.0	44.8				
Turn Bay Length (m)								
Base Capacity (vph)	371	334	1325	372	2002			
Starvation Cap Reductn	0	0	0	0	0			
Spillback Cap Reductn	0	0	0	0	0			
Storage Cap Reductn	0	0	0	0	0			
Reduced v/c Ratio	0.45	0.24	0.48	0.61	0.25			

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 15 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 14.0	Intersection LOS: B
Intersection Capacity Utilization 61.1%	ICU Level of Service B
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Queues  
3: Bank & Exhibition

08/06/2024

Splits and Phases: 3: Bank & Exhibition



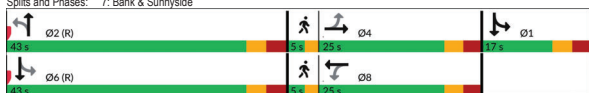
2033 Sunday Full Build-Out PM Peak Hour Lansdowne 2.0 Transportation Impact Assessment 5:53 pm 07/31/2024 **Signal Timing, 2028**  
Page 4

Queues  
7: Bank & Sunnyside

08/06/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø6	Ø7
Lane Configurations											
Traffic Volume (vph)	43	33	16	51	19	504	118	534			
Future Volume (vph)	43	33	16	51	19	504	118	534			
Lane Group Flow (vph)	0	118	0	195	0	594	0	817			
Turn Type	Perm	NA	Perm	NA	Perm	NA	custom	NA			
Protected Phases	4		8		2	1	1	6	3	6	7
Permitted Phases	4		8		2			6			
Detector Phase	4	4	8	8	2	2	1	1	6		
Switch Phase											
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0		1.0	17.0	1.0
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0		5.0	43.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0		5.0	43.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%		6%	48%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		2.0	3.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9		0.0	3.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.6				5.6		6.0				
Lead/Lag	Lag	Lag	Lag	Lag					Lead		Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes		Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None		None	C-Max	None
Act Effect Green (s)	15.5				15.5		43.5		57.1		
Actuated g/C Ratio	0.17				0.17		0.48		0.63		
v/c Ratio	0.77				0.72		0.43		0.55		
Control Delay (s/veh)	64.9				34.8		17.7		5.8		
Queue Delay	0.0				0.0		0.0		0.0		
Total Delay (s/veh)	64.9				34.8		17.7		5.8		
LOS	E				C		B		A		
Approach Delay (s/veh)	64.9				34.8		17.7		5.8		
Approach LOS	E				C		B		A		
Queue Length 50th (m)	19.7				18.4		34.8		9.6		
Queue Length 95th (m)	34.8				37.5		54.1		12.4		
Internal Link Dist (m)	75.1				136.0		63.1		79.0		
Turn Bay Length (m)											
Base Capacity (vph)	200				325		1381		1491		
Starvation Cap Reductn	0				0		0		0		
Spillback Cap Reductn	0				0		0		0		
Storage Cap Reductn	0				0		0		0		
Reduced v/c Ratio	0.59				0.60		0.43		0.55		
<b>Intersection Summary</b>											
Cycle Length: 90											
Actuated Cycle Length: 90											
Offset: 23 (26%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.77											
Intersection Signal Delay (s/veh): 17.2											
Intersection Capacity Utilization 74.5%											
Analysis Period (min) 15											

Splits and Phases: 7: Bank & Sunnyside



Timing, 2028

Queues  
6: Bank & Aylmer

08/06/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations					
Traffic Volume (vph)	54	17	630	683	
Future Volume (vph)	54	17	630	683	
Lane Group Flow (vph)	83	0	719	822	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	3
Permitted Phases	4	2		6	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5		5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effect Green (s)	11.1		72.4	72.4	
Actuated g/C Ratio	0.12		0.80	0.80	
v/c Ratio	0.43		0.31	0.34	
Control Delay (s/veh)	35.9		3.0	3.7	
Queue Delay	0.0		0.0	0.0	
Total Delay (s/veh)	35.9		3.0	3.7	
LOS	D		A	A	
Approach Delay (s/veh)	35.9		3.0	3.7	
Approach LOS	D		A	A	
Queue Length 50th (m)	10.5		12.5	18.0	
Queue Length 95th (m)	23.2		20.4	30.8	
Internal Link Dist (m)	76.7		28.1	10.1	
Turn Bay Length (m)					
Base Capacity (vph)	276		2329	2406	
Starvation Cap Reductn	0		0	0	
Spillback Cap Reductn	0		0	0	
Storage Cap Reductn	0		0	0	
Reduced v/c Ratio	0.30		0.31	0.34	
<b>Intersection Summary</b>					
Cycle Length: 90					
Actuated Cycle Length: 90					
Offset: 87 (97%), Referenced to phase 2:NBTL and 6:SBT, Start of Green					
Natural Cycle: 90					
Control Type: Actuated-Coordinated					
Maximum v/c Ratio: 0.43					
Intersection Signal Delay (s/veh): 5.1					
Intersection Capacity Utilization 51.8%					
Analysis Period (min) 15					

Splits and Phases: 6: Bank & Aylmer



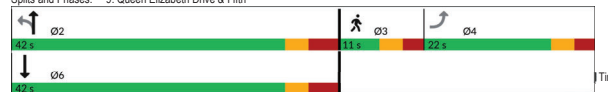
Timing, 2028

Queues  
9: Queen Elizabeth Drive & Fifth

08/06/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations					
Traffic Volume (vph)	19	207	26	25	
Future Volume (vph)	19	207	26	25	
Lane Group Flow (vph)	169	0	259	57	
Turn Type	Perm	Perm	NA	NA	
Protected Phases	4		2	6	3
Permitted Phases	4	2		6	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	42.0	42.0	42.0	9.7
Total Split (s)	22.0	42.0	42.0	42.0	11.0
Total Split (%)	29.3%	50.0%	50.0%	50.0%	15%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7		6.8	6.8	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Recall Mode	Min	Max	Max	Max	None
Act Effect Green (s)	12.4		35.2	35.2	
Actuated g/C Ratio	0.21		0.59	0.59	
v/c Ratio	0.56		0.37	0.06	
Control Delay (s/veh)	28.9		9.1	6.3	
Queue Delay	0.0		0.0	0.0	
Total Delay (s/veh)	28.9		9.1	6.3	
LOS	C		A	A	
Approach Delay (s/veh)	28.9		9.1	6.3	
Approach LOS	C		A	A	
Queue Length 50th (m)	16.8		12.9	2.3	
Queue Length 95th (m)	32.6		30.3	7.1	
Internal Link Dist (m)	57.2		0.1	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	401		701	920	
Starvation Cap Reductn	0		0	0	
Spillback Cap Reductn	0		0	0	
Storage Cap Reductn	0		0	0	
Reduced v/c Ratio	0.42		0.37	0.06	
<b>Intersection Summary</b>					
Cycle Length: 75					
Actuated Cycle Length: 60.1					
Natural Cycle: 75					
Control Type: Semi Act-Uncoord					
Maximum v/c Ratio: 0.56					
Intersection Signal Delay (s/veh): 15.7					
Intersection Capacity Utilization 40.4%					
Analysis Period (min) 15					

Splits and Phases: 9: Queen Elizabeth Drive & Fifth



Timing, 2028

Intersection													
Intersection Delay, s/veh	10.3												
Intersection LOS	B												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕					↕	↕				↕	
Traffic Vol, veh/h	70	83	0	0	0	233	108	67	69	0	0	106	
Future Vol, veh/h	70	83	0	0	0	233	108	67	69	0	0	106	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	78	92	0	0	0	259	120	74	77	0	0	118	
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1	
Approach	EB	WB					NB	SB					
Opposing Approach	WB	EB					SB	NB					
Opposing Lanes	1	1					1	1					
Conflicting Approach Left	SB	NB					EB	WB					
Conflicting Lanes Left	1	1					1	1					
Conflicting Approach Right	NB	SB					WB	EB					
Conflicting Lanes Right	1	1					1	1					
HCM Control Delay, s/veh	10.3						9.9			11.3		8.8	
HCM LOS	B						A			B		A	

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	44%	46%	0%	0%
Vol Thru, %	27%	54%	0%	0%
Vol Right, %	28%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	244	153	233	106
LT Vol	108	70	0	0
Through Vol	67	83	0	0
RT Vol	69	0	233	106
Lane Flow Rate	271	170	259	118
Geometry Grp	1	1	1	1
Degree of Util (X)	0.385	0.255	0.332	0.158
Departure Headway (Hd)	5.116	5.392	4.621	4.835
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	705	666	779	741
Service Time	3.129	3.424	2.637	2.868
HCM Lane V/C Ratio	0.384	0.265	0.332	0.159
HCM Control Delay, s/veh	11.3	10.3	9.9	8.8
HCM Lane LOS	B	B	A	A
HCM 95th %ile Q	1.8	1	1.5	0.6

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Vol, veh/h	2	71	0	669	687	1
Future Vol, veh/h	2	71	0	669	687	1
Conflicting Peds, #/hr	0	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	2	79	0	743	763	1

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1222	850	- 0 - 0
Stage 1	850	-	- - - -
Stage 2	372	-	- - - -
Critical Hdwy	6.675	6.275	- - - -
Critical Hdwy Stg 1	5.475	-	- - - -
Critical Hdwy Stg 2	5.875	-	- - - -
Follow-up Hdwy	3.54753	3.4752	2.475
Pot Cap-1 Maneuver	181	354	0 - - -
Stage 1	411	-	0 - - -
Stage 2	661	-	0 - - -
Platoon blocked, %	-	-	- - - -
Mov Cap-1 Maneuver	150	321	- - - -
Mov Cap-2 Maneuver	150	-	- - - -
Stage 1	374	-	- - - -
Stage 2	601	-	- - - -

Approach	EB	NB	SB
HCM Control Delay, s/19.8	0		
HCM LOS	C		
Minor Lane/Major Mvmt	NBTEBLn1	SBT	SBR
Capacity (veh/h)	- 321	-	-
HCM Lane V/C Ratio	- 0.245	-	-
HCM Control Delay (s/veh)	- 19.8	-	-
HCM Lane LOS	- C	-	-
HCM 95th %ile Q(veh)	- 0.9	-	-

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Vol, veh/h	5	156	110	585	527	62
Future Vol, veh/h	5	156	110	585	527	62
Conflicting Peds, #/hr	0	0	178	0	0	107
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	6	173	122	650	586	69

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1367	798	832 0 - 0
Stage 1	798	-	- - - -
Stage 2	569	-	- - - -
Critical Hdwy	6.675	6.275	4.175
Critical Hdwy Stg 1	5.475	-	- - - -
Critical Hdwy Stg 2	5.875	-	- - - -
Follow-up Hdwy	3.54753	3.4752	2.475
Pot Cap-1 Maneuver	146	379	782
Stage 1	435	-	- - - -
Stage 2	524	-	- - - -
Platoon blocked, %	-	-	- - - -
Mov Cap-1 Maneuver	74	308	635
Mov Cap-2 Maneuver	74	-	- - - -
Stage 1	270	-	- - - -
Stage 2	425	-	- - - -

Approach	EB	NB	SB
HCM Control Delay, s/30.79	3.63		
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	520	- 308	-	-
HCM Lane V/C Ratio	0.193	- 0.563	-	-
HCM Control Delay (s/veh)	12	2.1	30.8	-
HCM Lane LOS	B	A	D	-
HCM 95th %ile Q(veh)	0.7	- 3.2	-	-

Intersection						
Int Delay, s/veh	6.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Vol, veh/h	101	151	86	131	68	73
Future Vol, veh/h	101	151	86	131	68	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	112	168	96	146	76	81

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	453	116	157 0 - 0
Stage 1	116	-	- - - -
Stage 2	337	-	- - - -
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	- - - -
Critical Hdwy Stg 2	5.4	-	- - - -
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	569	942	1436
Stage 1	914	-	- - - -
Stage 2	728	-	- - - -
Platoon blocked, %	-	-	- - - -
Mov Cap-1 Maneuver	527	942	1436
Mov Cap-2 Maneuver	527	-	- - - -
Stage 1	848	-	- - - -
Stage 2	728	-	- - - -

Approach	EB	NB	SB
HCM Control Delay, s/43.22	3.05		
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	713	- 716	-	-
HCM Lane V/C Ratio	0.067	- 0.391	-	-
HCM Control Delay (s/veh)	7.7	0	13.2	-
HCM Lane LOS	A	A	B	-
HCM 95th %ile Q(veh)	0.2	- 1.9	-	-

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↔	↔	↔	↔	↔
Traffic Vol, veh/h	7	181	489	23	0	638
Future Vol, veh/h	7	181	489	23	0	638
Conflicting Peds, #/hr	0	0	0	100	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	15	6	0	0	5
Mvmt Flow	8	201	543	26	0	709

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1011	384	0
Stage 1	656	-	-
Stage 2	354	-	-
Critical Hdwy	6.8	7.2	-
Critical Hdwy Stg 1	5.8	-	-
Critical Hdwy Stg 2	5.8	-	-
Follow-up Hdwy	3.5	3.45	-
Pot Cap-1 Maneuver	239	578	-
Stage 1	483	-	-
Stage 2	687	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	214	517	-
Mov Cap-2 Maneuver	214	-	-
Stage 1	432	-	-
Stage 2	687	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	16.33	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBT
Capacity (veh/h)	-	-	517
HCM Lane V/C Ratio	-	-	0.389
HCM Control Delay (s/veh)	-	-	16.3
HCM Lane LOS	-	-	C
HCM 95th %ile Q(veh)	-	-	1.8

# 2033 Scenario

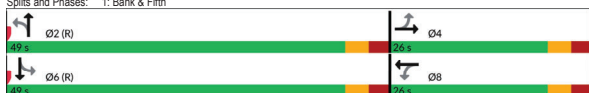
## Minor Event Ingress

### Queues 1: Bank & Fifth

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	53	59	69	48	17	516	26	605
Future Volume (vph)	53	59	69	48	17	516	26	605
Lane Group Flow (vph)	0	163	77	125	0	625	0	728
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	8	8	2	2	6	6	6
Permitted Phases	4	8	8	2	2	6	6	6
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								Lead
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	13.7	13.7	13.7	13.7	50.3	50.3	50.3	50.3
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.67	0.67	0.67	0.67
v/c Ratio	0.67	0.44	0.40	0.40	0.33	0.33	0.38	0.38
Control Delay (s/veh)	37.5	33.2	15.9	11.1	6.9	6.9	6.9	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.5	33.2	15.9	11.1	6.9	6.9	6.9	6.9
LOS	D	C	B	B	B	A	A	A
Approach Delay (s/veh)	37.5	22.5	11.1	6.9	6.9	6.9	6.9	6.9
Approach LOS	D	C	B	B	A	A	A	A
Queue Length 50th (m)	18.9	9.8	6.4	21.2	20.1	20.1	20.1	20.1
Queue Length 95th (m)	33.9	19.6	18.1	56.1	38.3	38.3	38.3	38.3
Internal Link Dist (m)	49.7	45.0	112.4	195.6	190.0	190.0	190.0	190.0
Turn Bay Length (m)								
Base Capacity (vph)	355	265	427	1902	1900	1900	1900	1900
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.29	0.29	0.33	0.33	0.38	0.38	0.38

Splits and Phases: 1: Bank & Fifth



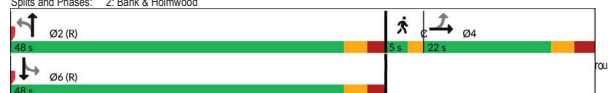
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### Queues 2: Bank & Holmwood

08/01/2024

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	26	53	522	30	586	
Future Volume (vph)	26	53	522	30	586	
Lane Group Flow (vph)	119	0	730	0	723	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	3	
Detector Phase	4	2	2	6	3	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	
Lead/Lag						Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.6	56.0	56.0	56.0	56.0	
Actuated g/C Ratio	0.15	0.75	0.75	0.75	0.75	
v/c Ratio	0.55	0.40	0.40	0.35	0.35	
Control Delay (s/veh)	38.2	3.0	3.0	4.9	4.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.2	3.0	3.0	4.9	4.9	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	38.2	3.0	3.0	4.9	4.9	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	15.8	7.1	7.1	25.0	25.0	
Queue Length 95th (m)	28.8	15.2	15.2	9.3	9.3	
Internal Link Dist (m)	39.8	31.5	31.5	195.6	195.6	
Turn Bay Length (m)						
Base Capacity (vph)	304	1830	1830	2073	2073	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.39	0.40	0.40	0.35	0.35	

Splits and Phases: 2: Bank & Holmwood



Round Scaled L



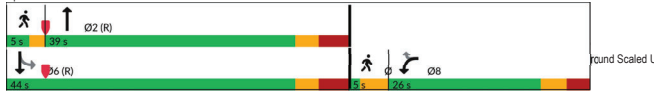
Queues  
3: Bank & Exhibition

08/01/2024

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	↔	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	132	93	440	197	434		
Future Volume (vph)	132	93	440	187	434		
Lane Group Flow (vph)	147	103	719	208	482		
Turn Type	Prot	Perm	NA	Perm	NA		
Protected Phases	8	2				6	1
Permitted Phases	8		6				7
Detector Phase	8	8	2	6	6		
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	58.7%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	12.6	12.6	49.2	49.2	49.2		
Actuated g/C Ratio	0.17	0.17	0.66	0.66	0.66		
v/c Ratio	0.54	0.38	0.39	0.54	0.23		
Control Delay (s/veh)	35.5	10.1	5.8	12.3	3.6		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	35.5	10.1	5.8	12.3	3.6		
LOS	D	B	A	B	A		
Approach Delay (s/veh)	25.0		5.8		6.2		
Approach LOS	C		A		A		
Queue Length 50th (m)	19.4	0.0	16.0	6.0	7.2		
Queue Length 95th (m)	33.6	11.3	30.4	19.0	9.4		
Internal Link Dist (m)	30.6		33.7		44.8		
Turn Bay Length (m)			40.0				
Base Capacity (vph)	429	371	1855	387	2083		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.34	0.28	0.39	0.54	0.23		

Intersection Summary  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.54  
 Intersection Signal Delay (s/veh): 8.9  
 Intersection Capacity Utilization 65.6%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service C

Splits and Phases: 3: Bank & Exhibition



Queues  
7: Bank & Sunnyside

08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↕	↕	↕		
Traffic Volume (vph)	58	53	18	60	20	505	109	955		
Future Volume (vph)	58	53	18	60	20	505	109	955		
Lane Group Flow (vph)	0	153	0	273	0	603	0	825		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases	4	4	8	8	2	2	1	6	3	7
Permitted Phases	4	4	8	8	2	2	1	6		
Detector Phase	4	4	8	8	2	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	17.0	1.0	1.0
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	5.6	5.6			6.0	6.0				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	None	None
Act Effct Green (s)	21.5	21.5	21.5	21.5	56.9	56.9				
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.63	0.63				
v/c Ratio	0.71	0.71	0.27	0.27	0.34	0.34				
Control Delay (s/veh)	48.8	33.3			8.9	8.6				
Queue Delay	0.0	0.0			0.0	0.0				
Total Delay (s/veh)	48.8	33.3			8.9	8.6				
LOS	D	D	C	C	A	A				
Approach Delay (s/veh)	48.8	33.3			8.9	8.6				
Approach LOS	D	D	C	C	A	A				
Queue Length 50th (m)	23.1	15.3			25.3	19.3				
Queue Length 95th (m)	#47.4	#59.8			35.2	24.3				
Internal Link Dist (m)	75.1		136.0		63.1	79.0				
Turn Bay Length (m)										
Base Capacity (vph)	228	369			1786	1392				
Starvation Cap Reductn	0	0			0	0				
Spillback Cap Reductn	0	0			0	0				
Storage Cap Reductn	0	0			0	0				
Reduced v/c Ratio	0.67	0.74			0.34	0.59				

Intersection Summary  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 17 (19%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay (s/veh): 15.6  
 Intersection Capacity Utilization 82.4%  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Queues  
6: Bank & Aylmer

08/01/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↕	↕	
Traffic Volume (vph)	74	19	725	535	
Future Volume (vph)	74	19	725	535	
Lane Group Flow (vph)	90	0	827	680	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	6	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag			Lead	
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.1	60.2	60.2	60.2	
Actuated g/C Ratio	0.16	0.67	0.67	0.67	
v/c Ratio	0.36	0.42	0.34	0.34	
Control Delay (s/veh)	36.7	5.5	6.6	6.6	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.7	5.5	6.6	6.6	
LOS	D	A	A	A	
Approach Delay (s/veh)	36.7	5.5	6.6	6.6	
Approach LOS	D	A	A	A	
Queue Length 50th (m)	13.3	26.6	21.7		
Queue Length 95th (m)	27.1	26.2	31.0		
Internal Link Dist (m)	76.7	28.1	10.1		
Turn Bay Length (m)					
Base Capacity (vph)	289	1983	1978		
Starvation Cap Reductn	0	0	0		
Spillback Cap Reductn	0	0	0		
Storage Cap Reductn	0	0	0		
Reduced v/c Ratio	0.31	0.42	0.34		

Intersection Summary  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 87 (97%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.42  
 Intersection Signal Delay (s/veh): 7.8  
 Intersection Capacity Utilization 56.1%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service B

Splits and Phases: 6: Bank & Aylmer



Queues  
7: Bank & Sunnyside

08/01/2024

Lane Group	Ø1	Ø2 (R)	Ø4	Ø6 (R)	Ø8
Lane Configurations	↕	↕	↕	↕	↕
Traffic Volume (vph)	17	43	25	25	25
Future Volume (vph)	17	43	25	25	25
Lane Group Flow (vph)	17	43	25	25	25
Turn Type	Prot	Perm	Perm	Perm	Perm
Protected Phases	4	4	8	8	8
Permitted Phases	4	4	8	8	8
Detector Phase	4	4	8	8	8
Switch Phase					
Minimum Initial (s)	6.4	6.4	5.3	5.3	5.3
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	27.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.6			
Lead/Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None
Act Effct Green (s)	21.5	21.5	21.5	21.5	21.5
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24
v/c Ratio	0.71	0.71	0.27	0.27	0.27
Control Delay (s/veh)	48.8	33.3			8.6
Queue Delay	0.0	0.0			0.0
Total Delay (s/veh)	48.8	33.3			8.6
LOS	D	D	C	C	A
Approach Delay (s/veh)	48.8	33.3			8.6
Approach LOS	D	D	C	C	A
Queue Length 50th (m)	23.1	15.3			25.3
Queue Length 95th (m)	#47.4	#59.8			35.2
Internal Link Dist (m)	75.1		136.0		63.1
Turn Bay Length (m)					
Base Capacity (vph)	228	369			1786
Starvation Cap Reductn	0	0			0
Spillback Cap Reductn	0	0			0
Storage Cap Reductn	0	0			0
Reduced v/c Ratio	0.67	0.74			0.34

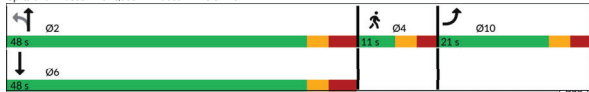
Intersection Summary  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 17 (19%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay (s/veh): 15.6  
 Intersection Capacity Utilization 82.4%  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↕	↕	
Traffic Volume (vph)	56	54	232	546	
Future Volume (vph)	56	54	232	546	
Lane Group Flow (vph)	104	0	318	706	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10		2	6	4
Permitted Phases		2			
Detector Phase	10	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Spilt (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7		6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	Max	None
Act Effct Green (s)	10.9		41.2	41.2	
Actuated g/C Ratio	0.17		0.64	0.64	
v/c Ratio	0.40		0.37	0.67	
Control Delay (s/veh)	29.0		7.2	11.7	
Queue Delay	0.0		0.0	0.0	
Total Delay (s/veh)	29.0		7.2	11.7	
LOS	C		A	B	
Approach Delay (s/veh)	29.0		7.2	11.7	
Approach LOS	C		A	B	
Queue Length 50th (m)	11.2		14.5	43.0	
Queue Length 95th (m)	23.7		31.3	88.0	
Internal Link Dist (m)	57.2		0.1	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	366		868	1055	
Starvation Cap Reductn	0		0	0	
Spillback Cap Reductn	0		0	0	
Storage Cap Reductn	0		0	0	
Reduced v/c Ratio	0.28		0.37	0.67	

Intersection Summary

Cycle Length: 80	
Actuated Cycle Length: 64.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay (s/veh): 12.0	Intersection LOS: B
Intersection Capacity Utilization 76.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: Queen Elizabeth Drive & Fifth



Round Scaled L

HCM 7th TWSC

4: Bank & Wilton

Intersection						
Int Delay, s/veh	14.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↕	↕	↕	↕
Traffic Vol, veh/h	5	275	147	686	500	56
Future Vol, veh/h	5	275	147	686	500	56
Conflicting Peds, #/hr	0	0	178	0	0	107
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	306	163	762	556	62
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1472	765	796	0	0	
Stage 1	765	-	-	-	-	
Stage 2	708	-	-	-	-	
Critical Hdwy	6.645	6.245	4.145	-	-	
Critical Hdwy Stg 1	5.445	-	-	-	-	
Critical Hdwy Stg 2	5.945	-	-	-	-	
Follow-up Hdwy	3.52853	3.2852	2.285	-	-	
Pot Cap-1 Maneuver	127	400	818	-	-	
Stage 1	456	-	-	-	-	
Stage 2	448	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	58	325	664	-	-	
Mov Cap-2 Maneuver	58	-	-	-	-	
Stage 1	255	-	-	-	-	
Stage 2	364	-	-	-	-	
Approach	EB	NB	SB			
HCM Control Delay, s/√2.41		4.34	0			
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBEBLn1	SBT	SBR		
Capacity (veh/h)	524	-	325	-	-	
HCM Lane V/C Ratio	0.246	-	0.94	-	-	
HCM Control Delay (s/veh)	12.2	2.7	72.4	-	-	
HCM Lane LOS	B	A	F	-	-	
HCM 95th %ile Q(veh)	1	-	9.6	-	-	

Intersection												
Intersection Delay, s/veh	8.4											
Intersection LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	62	53	0	0	0	143	65	43	41	0	0	85
Future Vol, veh/h	62	53	0	0	0	143	65	43	41	0	0	85
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	69	59	0	0	0	159	72	48	46	0	0	94
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1
Approach	EB	EBT	EBR	WB	NB	SB						
Opposing Approach	WB			EB	SB							
Opposing Lanes	1			1	1							
Conflicting Approach Left	SB			NB	EB							
Conflicting Lanes Left	1			1	1							
Conflicting Approach Right	NB			SB	WB							
Conflicting Lanes Right	1			1	1							
HCM Control Delay, s/veh	8.8			8	8.9							
HCM LOS	A			A	A							
7												
Lane	NBLn1	EBLn1	WBLn1	SBLn1								
Vol Left, %	44%	54%	0%	0%								
Vol Thru, %	29%	46%	0%	0%								
Vol Right, %	28%	0%	100%	100%								
Sign Control	Stop	Stop	Stop	Stop								
Traffic Vol by Lane	149	115	143	85								
LT Vol	65	62	0	0								
Through Vol	43	53	0	0								
RT Vol	41	0	143	85								
Lane Flow Rate	166	128	159	94								
Geometry Grp	1	1	1	1								
Degree of Util (X)	0.211	0.17	0.18	0.109								
Departure Headway (Hd)	4.598	4.799	4.079	4.171								
Convergence, Y/N	Yes	Yes	Yes	Yes								
Cap	780	746	879	857								
Service Time	2.631	2.833	2.11	2.208								
HCM Lane V/C Ratio	0.213	0.172	0.181	0.111								
HCM Control Delay, s/veh	8.9	8.8	8	7.7								
HCM Lane LOS	A	A	A	A								
HCM 95th %ile Q	0.8	0.6	0.7	0.4								

HCM 7th TWSC

5: Bank & Echo

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↕	↕	↕	↕
Traffic Vol, veh/h	4	38	0	817	783	0
Future Vol, veh/h	4	38	0	817	783	0
Conflicting Peds, #/hr	0	0	0	0	0	86
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	4	42	0	908	870	0
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1324	870	0	0	0	
Stage 1	870	-	-	-	-	
Stage 2	454	-	-	-	-	
Critical Hdwy	6.645	6.245	-	-	-	
Critical Hdwy Stg 1	5.445	-	-	-	-	
Critical Hdwy Stg 2	5.945	-	-	-	-	
Follow-up Hdwy	3.52853	3.285	-	-	-	
Pot Cap-1 Maneuver	158	348	0	-	0	
Stage 1	407	-	-	-	0	
Stage 2	605	-	-	-	0	
Platoon blocked, %	-	-	-	-	-	
Mov Cap-1 Maneuver	158	348	-	-	-	
Mov Cap-2 Maneuver	158	-	-	-	-	
Stage 1	407	-	-	-	-	
Stage 2	605	-	-	-	-	
Approach	EB	NB	SB			
HCM Control Delay, s/√6.77		0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBEBLn1	SBT				
Capacity (veh/h)	-	348	-			
HCM Lane V/C Ratio	-	0.121	-			
HCM Control Delay (s/veh)	-	16.8	-			
HCM Lane LOS	-	C	-			
HCM 95th %ile Q(veh)	-	0.4	-			

Intersection						
Int Delay, s/veh						
	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	66	60	122	223	334	257
Future Vol, veh/h	66	60	122	223	334	257
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-	-
Grade, %	0	-	0	0	-	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	73	67	136	248	371	286

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1033	514	657
Stage 1	514	-	-
Stage 2	519	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	260	565	940
Stage 1	605	-	-
Stage 2	601	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	216	565	940
Mov Cap-2 Maneuver	216	-	-
Stage 1	504	-	-
Stage 2	601	-	-

Approach	EB	NB	SB
HCM Control Delay, s/26.26		3.35	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBTLn1	SBT	SBR
Capacity (veh/h)	637	-	306	-
HCM Lane V/C Ratio	0.144	-	0.457	-
HCM Control Delay (s/veh)	9.5	0	26.3	-
HCM Lane LOS	A	A	D	-
HCM 95th %ile Q(veh)	0.5	-	2.3	-

Intersection						
Int Delay, s/veh						
	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	61	533	20	2	604
Future Vol, veh/h	0	61	533	20	2	604
Conflicting Peds, #/hr	0	0	0	100	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	-
Grade, %	0	-	0	-	-	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	2	2
Mvmt Flow	0	68	592	22	2	671

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	407	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.9	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.3	-
Pot Cap-1 Maneuver	0	599	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	536	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/42.69		0	0.03
HCM LOS	B		

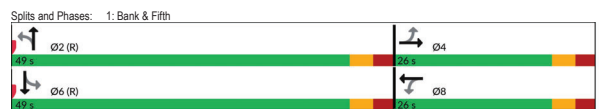
Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	-	536	788
HCM Lane V/C Ratio	-	-	0.127	0.003
HCM Control Delay (s/veh)	-	-	12.7	9.6
HCM Lane LOS	-	-	B	A
HCM 95th %ile Q(veh)	-	-	0.4	0

# 2033 Scenario

## Minor Event Egress

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	43	10	50	25	17	471	21	371
Future Volume (vph)	43	10	50	25	17	471	21	371
Lane Group Flow (vph)	0	88	56	66	0	555	0	459
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	8	8	2	2	6	6	6
Permitted Phases	4	8	8	2	2	6	6	6
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Spirt (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Spitt (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Spitt (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Efect Green (s)	9.5	9.5	9.5	9.5	57.8	57.8	57.8	57.8
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.77	0.77	0.77	0.77
v/c Ratio	0.52	0.36	0.32	0.25	0.25	0.21	0.21	0.21
Control Delay (s/veh)	32.2	35.0	19.2	6.4	3.7	3.7	3.7	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.2	35.0	19.2	6.4	3.7	3.7	3.7	3.7
LOS	C	C	B	A	A	A	A	A
Approach Delay (s/veh)	32.2	35.0	26.4	6.4	3.7	3.7	3.7	3.7
Approach LOS	C	C	C	A	A	A	A	A
Queue Length 50th (m)	7.9	7.4	3.6	14.0	8.4	8.4	8.4	8.4
Queue Length 95th (m)	19.6	16.3	13.1	37.3	17.2	17.2	17.2	17.2
Internal Link Dist (m)	49.7	45.0	112.4	195.6	190.0	190.0	190.0	190.0
Turn Bay Length (m)								
Base Capacity (vph)	330	335	403	2237	2163	2163	2163	2163
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.17	0.16	0.25	0.21	0.21	0.21	0.21

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 47 (63%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay (s/veh): 9.2	Intersection LOS: A
Intersection Capacity Utilization 53.4%	ICU Level of Service A
Analysis Period (min) 15	



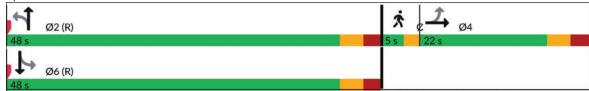
Queues  
2: Bank & Holmwood

08/01/2024

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	↔	
Traffic Volume (vph)	7	55	458	25	349	
Future Volume (vph)	7	55	458	25	349	
Lane Group Flow (vph)	88	0	600	0	457	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	3	
Detector Phase	4	2	2	6	3	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	
Lead/Lag	Lag					Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effect Green (s)	10.2	57.3	57.3	57.3	57.3	
Actuated g/C Ratio	0.14	0.76	0.76	0.76	0.76	
v/c Ratio	0.49	0.30	0.22	0.22	0.15	
Control Delay (s/veh)	37.9	3.8	4.6	4.6	4.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.9	3.8	4.6	4.6	4.4	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	37.9	3.8	4.6	4.6	4.4	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	11.7	9.4	14.1	14.1	14.1	
Queue Length 95th (m)	23.3	23.1	26.8	26.8	26.8	
Internal Link Dist (m)	39.8	31.5	195.6	195.6	195.6	
Turn Bay Length (m)						
Base Capacity (vph)	295	1999	2082	2082	2082	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.30	0.30	0.22	0.22	0.15	

Intersection Summary						
Cycle Length: 75						
Actuated Cycle Length: 75						
Offset: 74 (99%), Referenced to phase 2:NBL and 6:SBT, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.48						
Intersection Signal Delay (s/veh): 6.8	Intersection LOS: A					
Intersection Capacity Utilization 58.1%	ICU Level of Service B					
Analysis Period (min) 15						

Splits and Phases: 2: Bank & Holmwood



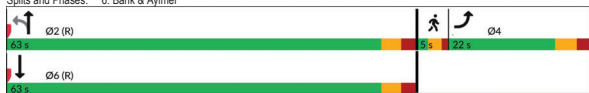
Queues  
6: Bank & Aylmer

08/01/2024

Lane Group	EBL	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	↔	
Traffic Volume (vph)	4	1	172	200	257	35
Future Volume (vph)	4	1	172	200	257	35
Lane Group Flow (vph)	7	0	192	229	306	0
Turn Type	Prot	Perm	NA	NA	pm+pt	NA
Protected Phases	4	2	6	3		
Permitted Phases	4	2	6	3		
Detector Phase	4	2	6	3		
Switch Phase						
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0	
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0	
Total Split (s)	22.0	63.0	63.0	63.0	5.0	
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%	
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.5	5.2	5.2	5.2		
Lead/Lag	Lag				Lead	
Lead-Lag Optimize?						
Recall Mode	Ped	C-Max	C-Max	C-Max	Max	
Act Effect Green (s)	14.0	60.3	60.3	60.3	63.4	
Actuated g/C Ratio	0.16	0.67	0.67	0.67	0.78	
v/c Ratio	0.03	0.09	0.11	0.11	0.27	
Control Delay (s/veh)	27.2	5.4	5.3	5.3	4.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	27.2	5.4	5.3	5.3	4.2	
LOS	C	A	A	A	A	
Approach Delay (s/veh)	27.2	5.4	5.3	5.3	4.2	
Approach LOS	C	A	A	A	A	
Queue Length 50th (m)	0.6	5.4	6.3	6.3	12.3	
Queue Length 95th (m)	4.4	8.8	10.1	10.1	23.0	
Internal Link Dist (m)	76.7	28.1	10.1	10.1	79.0	
Turn Bay Length (m)						
Base Capacity (vph)	253	2044	2105	2105	2089	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.09	0.11	0.11	0.27	

Intersection Summary						
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 87 (97%), Referenced to phase 2:NBL and 6:SBT, Start of Green						
Natural Cycle: 90						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.11						
Intersection Signal Delay (s/veh): 5.7	Intersection LOS: A					
Intersection Capacity Utilization 45.6%	ICU Level of Service A					
Analysis Period (min) 15						

Splits and Phases: 6: Bank & Aylmer



Queues  
3: Bank & Exhibition

08/01/2024

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	↔	↔	↔	↔	↔		
Traffic Volume (vph)	195	217	198	123	267		
Future Volume (vph)	195	217	198	123	267		
Lane Group Flow (vph)	217	241	321	137	297		
Turn Type	Prot	Perm	NA	Perm	NA		
Protected Phases	8	2	6	1	7		
Permitted Phases	8	2	6	1	7		
Detector Phase	8	2	6	1	7		
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	1.0	1.0	
Minimum Split (s)	26.0	26.0	39.0	44.0	4.0	5.0	
Total Split (s)	26.0	26.0	39.0	44.0	4.0	5.0	
Total Split (%)	34.7%	34.7%	52.0%	58.7%	7%	7%	
Yellow Time (s)	3.3	3.3	3.0	3.0	2.0	3.5	
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9		
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effect Green (s)	15.2	15.2	46.6	46.6	46.6		
Actuated g/C Ratio	0.20	0.20	0.62	0.62	0.62		
v/c Ratio	0.66	0.58	0.18	0.28	0.15		
Control Delay (s/veh)	36.6	9.4	5.0	6.3	4.4		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	36.6	9.4	5.0	6.3	4.4		
LOS	D	A	A	A	A		
Approach Delay (s/veh)	22.3	5.0	5.0	5.0	4.4		
Approach LOS	C	A	A	A	A		
Queue Length 50th (m)	28.5	0.0	5.9	4.5	5.1		
Queue Length 95th (m)	45.0	16.1	13.3	10.0	8.1		
Internal Link Dist (m)	30.6	33.7			44.8		
Turn Bay Length (m)			40.0				
Base Capacity (vph)	433	475	1757	490	1971		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.50	0.51	0.18	0.28	0.15		

Intersection Summary							
Cycle Length: 75							
Actuated Cycle Length: 75							
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green							
Natural Cycle: 75							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.66							
Intersection Signal Delay (s/veh): 11.5	Intersection LOS: B						
Intersection Capacity Utilization 57.6%	ICU Level of Service B						
Analysis Period (min) 15							

Splits and Phases: 3: Bank & Exhibition



Queues  
7: Bank & Sunnyside

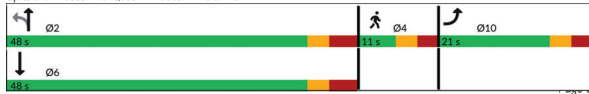
08/01/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	30	7	5	13	13	257	35	431		
Future Volume (vph)	30	7	5	13	13	257	35	431		
Lane Group Flow (vph)	0	63	0	58	0	306	0	567		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases	4	8	2	6	3	7				
Permitted Phases	4	8	2	6	3	7				
Detector Phase	4	8	2	6	3	7				
Switch Phase										
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	17.0	1.0	1.0
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Max	Max	None	Max	None	None
Act Effect Green (s)	10.6	10.4	63.4	63.4	63.4	63.4				
Actuated g/C Ratio	0.13	0.13	0.78	0.78	0.78	0.78				
v/c Ratio	0.50	0.33	0.14	0.14	0.27	0.27				
Control Delay (s/veh)	45.9	19.9	3.7	4.2	4.2	4.2				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay (s/veh)	45.9	19.9	3.7	4.2	4.2	4.2				</

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↕	↕	
Traffic Volume (vph)	67	33	269	164	
Future Volume (vph)	67	33	269	164	
Lane Group Flow (vph)	107	0	336	221	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10		2	6	4
Permitted Phases		2			
Detector Phase	10	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7		6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	Max	None
Act Effct Green (s)	10.9		41.2	41.2	
Actuated g/C Ratio	0.17		0.64	0.64	
v/c Ratio	0.41		0.33	0.21	
Control Delay (s/veh)	29.0		6.7	5.7	
Queue Delay	0.0		0.0	0.0	
Total Delay (s/veh)	29.0		6.7	5.7	
LOS	C		A	A	
Approach Delay (s/veh)	29.0		6.7	5.7	
Approach LOS	C		A	A	
Queue Length 50th (m)	11.6		14.8	8.9	
Queue Length 95th (m)	24.3		30.8	19.4	
Internal Link Dist (m)	57.2		0.1	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	370		1023	1049	
Starvation Cap Reductn	0		0	0	
Spillback Cap Reductn	0		0	0	
Storage Cap Reductn	0		0	0	
Reduced v/c Ratio	0.29		0.33	0.21	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 64.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.41	
Intersection Signal Delay (s/veh): 10.0	Intersection LOS: A
Intersection Capacity Utilization 52.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 9: Queen Elizabeth Drive & Fifth



Intersection	
Int Delay, s/veh	3.2
Movement	EBL EBR NBL NBT SBT SBR
Lane Configurations	↔ ↕ ↕ ↕ ↕ ↕
Traffic Vol, veh/h	2 114 49 299 408 69
Future Vol, veh/h	2 114 49 299 408 69
Conflicting Peds, #/hr	0 0 178 0 0 107
Sign Control	Stop Stop Free Free Free Free
RT Channelized	None None None None
Storage Length	- 0 - - - -
Veh in Median Storage, #	0 - - 0 0 0 -
Grade, %	0 - - 0 0 0 -
Peak Hour Factor	90 90 90 90 90 90
Heavy Vehicles, %	3 3 3 3 3 3
Mvmt Flow	2 127 54 332 453 77
Major/Minor	Minor2 Major1 Major2
Conflicting Flow All	945 670 708 0 - 0
Stage 1	670 - - - - -
Stage 2	275 - - - - -
Critical Hdwy	6.645 6.245 4.145 - - -
Critical Hdwy Stg 1	5.445 - - - - -
Critical Hdwy Stg 2	5.945 - - - - -
Follow-up Hdwy	3.52853 3.2852 2.285 - - -
Pot Cap-1 Maneuver	274 454 883 - - -
Stage 1	505 - - - - -
Stage 2	745 - - - - -
Platoon blocked, %	- - - - -
Mov Cap-1 Maneuver	165 368 717 - - -
Mov Cap-2 Maneuver	165 - - - - -
Stage 1	376 - - - - -
Stage 2	604 - - - - -
Approach	EB NB SB
HCM Control Delay, s/v 19.8	2.03 0
HCM LOS	C
Minor Lane/Major Mvmt	NBL NBTEBLn1 SBT SBR
Capacity (veh/h)	507 - 368 - -
HCM Lane V/C Ratio	0.076 - 0.344 - -
HCM Control Delay (s/veh)	10.4 0.7 19.8 - -
HCM Lane LOS	B A C - -
HCM 95th %tile Q(veh)	0.2 - 1.5 - -

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A
Movement	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR
Lane Configurations	↔ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕
Traffic Vol, veh/h	11 45 0 0 0 68 12 11 51 0 0 99
Future Vol, veh/h	11 45 0 0 0 68 12 11 51 0 0 99
Peak Hour Factor	0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
Heavy Vehicles, %	2 2 2 2 2 2 2 2 2 2 2 2
Mvmt Flow	12 50 0 0 0 76 13 12 57 0 0 110
Number of Lanes	0 1 0 0 0 1 0 1 0 0 0 1
Approach	EB EB WB NB SB
Opposing Approach	WB EB SB
Opposing Lanes	1 1 1
Conflicting Approach Left	SB NB EB
Conflicting Lanes Left	1 1 1
Conflicting Approach Right	NB SB WB
Conflicting Lanes Right	1 1 1
HCM Control Delay, s/veh	7.8 7.1 7.3
HCM LOS	A A A
Lane	NBLn1 EBLn1 WBLn1 SBLn1
Vol Left, %	16% 20% 0% 0%
Vol Thru, %	15% 80% 0% 0%
Vol Right, %	69% 0% 100% 100%
Sign Control	Stop Stop Stop Stop
Traffic Vol by Lane	74 56 68 99
LT Vol	12 11 0 0
Through Vol	11 45 0 0
RT Vol	51 0 68 99
Lane Flow Rate	82 62 76 110
Geometry Grp	1 1 1 1
Degree of Util (X)	0.089 0.075 0.078 0.111
Departure Headway (Hd)	3.876 4.365 3.713 3.634
Convergence, Y/N	Yes Yes Yes Yes
Cap	913 813 952 972
Service Time	1.948 2.431 1.787 1.708
HCM Lane V/C Ratio	0.09 0.076 0.08 0.113
HCM Control Delay, s/veh	7.3 7.8 7.1 7.2
HCM Lane LOS	A A A A
HCM 95th-tile Q	0.3 0.2 0.3 0.4

Intersection	
Int Delay, s/veh	0.2
Movement	EBL EBR NBL NBT SBT SBR
Lane Configurations	↔ ↕ ↕ ↕ ↕ ↕
Traffic Vol, veh/h	2 12 0 381 336 0
Future Vol, veh/h	2 12 0 381 336 0
Conflicting Peds, #/hr	0 0 0 0 0 86
Sign Control	Stop Stop Free Free Free Free
RT Channelized	None None None None
Storage Length	- 0 - - - -
Veh in Median Storage, #	0 - - 0 0 0 -
Grade, %	0 - - 0 0 0 -
Peak Hour Factor	90 90 90 90 90 90
Heavy Vehicles, %	3 3 3 3 3 3
Mvmt Flow	2 13 0 423 373 0
Major/Minor	Minor2 Major1 Major2
Conflicting Flow All	585 373 - 0 - 0
Stage 1	373 - - - - -
Stage 2	212 - - - - -
Critical Hdwy	6.645 6.245 - - - -
Critical Hdwy Stg 1	5.445 - - - - -
Critical Hdwy Stg 2	5.945 - - - - -
Follow-up Hdwy	3.52853 3.2852 - - - -
Pot Cap-1 Maneuver	455 669 0 - - 0
Stage 1	693 - 0 - - 0
Stage 2	801 - 0 - - 0
Platoon blocked, %	- - - - -
Mov Cap-1 Maneuver	455 669 - - - -
Mov Cap-2 Maneuver	455 - - - - -
Stage 1	693 - - - - -
Stage 2	801 - - - - -
Approach	EB NB SB
HCM Control Delay, s/v 40.49	0 0
HCM LOS	B
Minor Lane/Major Mvmt	NBTEBLn1 SBT
Capacity (veh/h)	- 669 -
HCM Lane V/C Ratio	- 0.02 -
HCM Control Delay (s/veh)	- 10.5 -
HCM Lane LOS	- B -
HCM 95th %tile Q(veh)	- 0.1 -

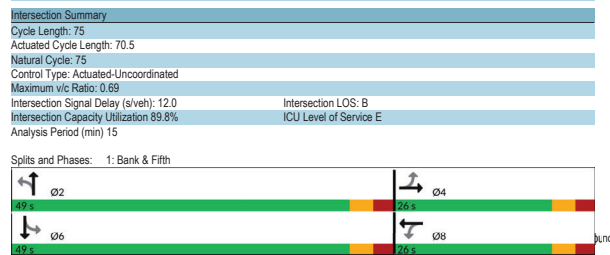
Intersection						
Int Delay, s/veh	10.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	255	170	24	46	128	68
Future Vol, veh/h	255	170	24	46	128	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-	-
Grade, %	0	-	0	0	-	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	283	189	27	51	142	76
Major/Minor						
Conflicting Flow All	284	180	218	0	-	0
Stage 1	180	-	-	-	-	-
Stage 2	104	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	710	868	1364	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	696	868	1364	-	-	-
Mov Cap-2 Maneuver	696	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Approach						
	EB	NB	SB			
HCM Control Delay, s/47.36		2.64	0			
HCM LOS	C					
Minor Lane/Major Mvmt						
	NBL	NBTEBLn1	SBT	SBR		
Capacity (veh/h)	617	-	756	-		
HCM Lane V/C Ratio	0.02	-	0.625	-		
HCM Control Delay (s/veh)	7.7	0	17.4	-		
HCM Lane LOS	A	A	C	-		
HCM 95th %ile Q(veh)	0.1	-	4.4	-		

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	5	148	426	30	0	382
Future Vol, veh/h	5	148	426	30	0	382
Conflicting Peds, #/hr	0	0	0	100	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	-
Grade, %	0	-	0	-	-	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	2	2
Mvmt Flow	6	164	473	33	0	424
Major/Minor						
Conflicting Flow All	802	353	0	0	-	-
Stage 1	590	-	-	-	-	-
Stage 2	212	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	326	649	-	-	0	-
Stage 1	522	-	-	-	0	-
Stage 2	809	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	291	580	-	-	-	-
Mov Cap-2 Maneuver	291	-	-	-	-	-
Stage 1	467	-	-	-	-	-
Stage 2	809	-	-	-	-	-
Approach						
	WB	NB	SB			
HCM Control Delay, s/43.64		0	0			
HCM LOS	B					
Minor Lane/Major Mvmt						
	NBT	NBR/WBLn1	SBT			
Capacity (veh/h)	-	-	580			
HCM Lane V/C Ratio	-	-	0.283			
HCM Control Delay (s/veh)	-	-	13.6			
HCM Lane LOS	-	-	B			
HCM 95th %ile Q(veh)	-	-	1.2			

# 2033 Scenario

## Major Event Ingress

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔		↔		↔		↔	
Traffic Volume (vph)	63	56	75	64	24	491	33	655
Future Volume (vph)	63	56	75	64	24	491	33	655
Lane Group Flow (vph)	0	174	83	139	0	615	0	833
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	8	8	2	2	6	6	6
Permitted Phases	4	8	8	2	2	6	6	6
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead-Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)	13.8	13.8	13.8	13.8	45.6	45.6	45.6	45.6
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.65	0.65	0.65	0.65
v/c Ratio	0.69	0.43	0.42	0.42	0.35	0.47	0.47	0.47
Control Delay (s/veh)	36.5	30.7	17.5	17.5	6.9	8.0	8.0	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.5	30.7	17.5	17.5	6.9	8.0	8.0	8.0
LOS	D	C	B	B	A	A	A	A
Approach Delay (s/veh)	36.5	30.7	17.5	17.5	6.9	8.0	8.0	8.0
Approach LOS	D	C	B	B	A	A	A	A
Queue Length 50th (m)	18.0	9.3	8.2	8.2	16.0	24.1	24.1	24.1
Queue Length 95th (m)	36.3	20.8	21.8	21.8	31.6	46.8	46.8	46.8
Internal Link Dist (m)	49.7	45.0	112.4	112.4	195.6	190.0	190.0	190.0
Turn Bay Length (m)								
Base Capacity (vph)	366	286	457	457	1770	1780	1780	1780
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.29	0.30	0.30	0.35	0.47	0.47	0.47





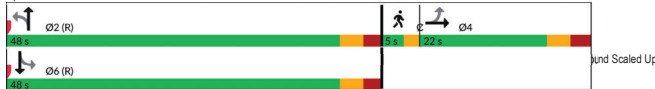
Queues  
2: Bank & Holmwood

08/06/2024

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	↔	
Traffic Volume (vph)	39	71	518	59	605	
Future Volume (vph)	39	71	518	59	605	
Lane Group Flow (vph)	157	0	793	0	796	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	6	
Detector Phase	4	2	2	6	6	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	64.0%	7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.6	2.2	2.2	2.2	2.2	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.6	5.2	5.2	5.2	5.2	
Lead/Lag	Lag					Lead
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	13.5	50.7	50.7	50.7	50.7	
Actuated g/C Ratio	0.18	0.68	0.68	0.68	0.68	
v/c Ratio	0.62	0.52	0.47	0.52	0.47	
Control Delay (s/veh)	38.5	4.2	4.2	7.5	7.5	
Queue Delay (s)	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.5	4.2	4.2	7.5	7.5	
LOS	D	A	A	A	A	
Approach Delay (s/veh)	38.5	4.2	4.2	7.5	7.5	
Approach LOS	D	A	A	A	A	
Queue Length 50th (m)	20.7	1.6	1.6	23.1	23.1	
Queue Length 95th (m)	35.3	47.6	43.7	43.7	43.7	
Internal Link Dist (m)	39.8	31.5	195.6			
Turn Bay Length (m)						
Base Capacity (vph)	316	1512	1695			
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.50	0.52	0.47			

Intersection Summary						
Cycle Length: 75						
Actuated Cycle Length: 75						
Offset: 74 (99%), Referenced to phase 2:NBL and 6:SBT, Start of Green						
Natural Cycle: 75						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.62						
Intersection Signal Delay (s/veh): 8.8						
Intersection Capacity Utilization 75.6%						
Analysis Period (min) 15						

Splits and Phases: 2: Bank & Holmwood



Queues  
6: Bank & Aylmer

08/06/2024

Lane Group	EBL	NBL	NBT	SBT	Ø3
Lane Configurations	↔	↔	↔	↔	
Traffic Volume (vph)	93	14	772	799	
Future Volume (vph)	93	14	772	799	
Lane Group Flow (vph)	131	0	874	946	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4	2	6	3	
Permitted Phases	4	2	6	6	
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (s)	22.0	63.0	63.0	63.0	5.0
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.2	5.2	5.2	
Lead/Lag	Lag				Lead
Lead-Lag Optimize?					
Recall Mode	Ped	C-Max	C-Max	C-Max	Max
Act Effct Green (s)	14.6	59.7	59.7	59.7	
Actuated g/C Ratio	0.16	0.66	0.66	0.66	
v/c Ratio	0.52	0.44	0.46	0.46	
Control Delay (s/veh)	38.8	8.2	8.2	8.2	
Queue Delay (s)	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	38.8	8.2	8.2	8.2	
LOS	D	A	A	A	
Approach Delay (s/veh)	38.8	8.2	8.2	8.2	
Approach LOS	D	A	A	A	
Queue Length 50th (m)	19.0	32.6	35.3		
Queue Length 95th (m)	35.4	48.3	51.7		
Internal Link Dist (m)	76.7	28.1	10.1		
Turn Bay Length (m)					
Base Capacity (vph)	283	1973	2044		
Starvation Cap Reductn	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	
Storage Cap Reductn	0	0	0	0	
Reduced v/c Ratio	0.46	0.44	0.46		

Intersection Summary						
Cycle Length: 90						
Actuated Cycle Length: 90						
Offset: 87 (97%), Referenced to phase 2:NBL and 6:SBT, Start of Green						
Natural Cycle: 90						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.52						
Intersection Signal Delay (s/veh): 10.3						
Intersection Capacity Utilization 53.6%						
Analysis Period (min) 15						

Splits and Phases: 6: Bank & Aylmer



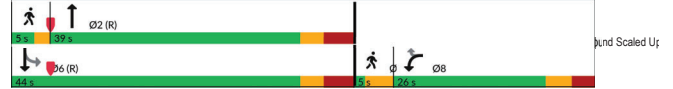
Queues  
3: Bank & Exhibition

08/06/2024

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	↔	↔	↔	↔	↔		
Traffic Volume (vph)	61	44	655	66	595		
Future Volume (vph)	61	44	655	66	595		
Lane Group Flow (vph)	68	49	819	73	661		
Turn Type	Prot	Perm	NA	Perm	NA		
Protected Phases	8	2	6	1	7		
Permitted Phases	8	8	6	6	6		
Detector Phase	8	8	2	6	6		
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	58.7%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9		
Lead/Lag	Lag	Lag	Lag			Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	10.3	10.3	56.1	56.1	56.1		
Actuated g/C Ratio	0.14	0.14	0.75	0.75	0.75		
v/c Ratio	0.30	0.25	0.36	0.18	0.28		
Control Delay (s/veh)	32.9	12.6	4.9	4.8	3.7		
Queue Delay (s)	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	32.9	12.6	4.9	4.8	3.7		
LOS	C	B	A	A	A		
Approach Delay (s/veh)	24.4	4.9	3.8	3.8	3.8		
Approach LOS	C	A	A	A	A		
Queue Length 50th (m)	8.8	0.0	20.6	2.8	13.8		
Queue Length 95th (m)	19.4	8.6	31.8	m6.1	18.1		
Internal Link Dist (m)	30.6	33.7					
Turn Bay Length (m)			40.0				
Base Capacity (vph)	429	331	2284	406	2373		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.16	0.15	0.36	0.18	0.28		

Intersection Summary							
Cycle Length: 75							
Actuated Cycle Length: 75							
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green							
Natural Cycle: 75							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.36							
Intersection Signal Delay (s/veh): 5.8							
Intersection Capacity Utilization 63.6%							
Analysis Period (min) 15							
m Volume for 95th percentile queue is metered by upstream signal.							

Splits and Phases: 3: Bank & Exhibition

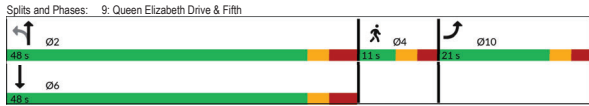


Queues  
7: Bank & Sunnyside

08/06/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	54	80	14	86	27	555	143	651		
Future Volume (vph)	54	80	14	86	27	555	143	651		
Lane Group Flow (vph)	0	191	0	291	0	679	0	978		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases	4	8	8	2	6	6	1	6	3	7
Permitted Phases	4	8	8	2	6	6	6	6		
Detector Phase	4	4	8	8	2	2	1	6		
Switch Phase										
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	17.0	1.0	1.0
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Max	Max	None	Max	None	None
Act Effct Green (s)	19.4	19.4	19.4	19.4	54.0	54.0		54.0		
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.64	0.64		0.64		
v/c Ratio	0.58	0.86	0.86	0.39	0.76	0.76		0.76		
Control Delay (s/veh)	72.0	49.0	8.3	15.4	15.4	15.4		15.4		
Queue Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		
Total Delay (s/veh)	72.0	49.0	8.3	15.4	15.4	15.4		15.4		
LOS	E	D	A	A	B	B		B		
Approach Delay (s/veh)	72.0	49.0	8.3	15.4	15.4	15.4		15.4		
Approach LOS	E	D	A	A	B	B		B		
Queue Length 50th (m)	30.1	33.5	24.8	51.1				51.1		
Queue Length 95th (m)										

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↖	↖	↖	↖	↖
Traffic Volume (vph)	97	73	272	662	
Future Volume (vph)	97	73	272	662	
Lane Group Flow (vph)	210	0	363	880	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases	2				
Detector Phase	10	2	6	4	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.7	10.8	10.8	31.8	9.7
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	Max	None
Act Effct Green (s)	13.6		41.2	41.2	
Actuated g/C Ratio	0.20		0.61	0.61	
v/c Ratio	0.69		0.69	0.87	
Control Delay (s/veh)	36.9		17.9	23.7	
Queue Delay	0.0		0.0	0.0	
Total Delay (s/veh)	36.9		17.9	23.7	
LOS	D		B	C	
Approach Delay (s/veh)	36.9		17.9	23.7	
Approach LOS	D		B	C	
Queue Length 50th (m)	24.6		30.1	85.7	
Queue Length 95th (m)	#45.2		#70.0	#169.4	
Internal Link Dist (m)	57.2		0.1	5.9	
Turn Bay Length (m)					
Base Capacity (vph)	349		554	1010	
Starvation Cap Reductn	0		0	0	
Spillback Cap Reductn	0		0	0	
Storage Cap Reductn	0		0	0	
Reduced v/c Ratio	0.60		0.69	0.87	
<b>Intersection Summary</b>					
Cycle Length: 80					
Actuated Cycle Length: 67.3					
Natural Cycle: 90					
Control Type: Actuated-Uncoordinated					
Maximum v/c Ratio: 0.87					
Intersection Signal Delay (s/veh): 24.1	Intersection LOS: C				
Intersection Capacity Utilization 92.2%	ICU Level of Service F				
Analysis Period (min) 15					
# 95th percentile volume exceeds capacity, queue may be longer.					
Queue shown is maximum after two cycles.					



Intersection						
Int Delay, s/veh	20.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖
Traffic Vol, veh/h	5	281	110	759	559	109
Future Vol, veh/h	5	281	110	759	559	109
Conflicting Peds, #/hr	0	0	178	0	0	107
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	0	0	-
Grade, %	0	-	0	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	312	122	843	621	121
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1526	860	920	0	-	0
Stage 1	860	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.945	-	-	-	-	-
Follow-up Hdwy	3.52853	3.2852	2.285	-	-	-
Plat Cap-1 Maneuver	118	353	734	-	-	-
Stage 1	411	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	57	~286	596	-	-	-
Mov Cap-2 Maneuver	57	-	-	-	-	-
Stage 1	244	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s/veh	18.96	3.88	0			
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBEBLn1	SBT	SBR		
Capacity (veh/h)	456	-	286	-	-	-
HCM Lane V/C Ratio	0.205	-	1.09	-	-	-
HCM Control Delay (s/veh)	12.6	2.6	119	-	-	-
HCM Lane LOS	B	A	F	-	-	-
HCM 95th %ile Q(veh)	0.8	-	12.6	-	-	-
<b>Notes</b>						
--: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon						

Intersection												
Intersection Delay, s/veh	9.5											
Intersection LOS	A											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Vol, veh/h	70	59	0	0	0	203	61	61	97	0	0	134
Future Vol, veh/h	70	59	0	0	0	203	61	61	97	0	0	134
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	66	0	0	0	226	68	68	108	0	0	149
Number of Lanes	0	1	0	0	0	1	0	1	0	0	0	1
Approach	EB	EBT	EBR	WB	NB	SB						
Opposing Approach	WB			EB	SB							
Opposing Lanes	1			1	1							
Conflicting Approach Left	SB			NB	EB							
Conflicting Lanes Left	1			1	1							
Conflicting Approach Right	NB			SB	WB							
Conflicting Lanes Right	1			1	1							
HCM Control Delay, s/veh	9.7			9.2	10.1							
HCM LOS	A			A	B							
Lane	NBLn1	EBLn1	WBLn1	SBLn1								
Vol Left, %	28%	54%	0%	0%								
Vol Thru, %	28%	46%	0%	0%								
Vol Right, %	44%	0%	100%	100%								
Sign Control	Stop	Stop	Stop	Stop								
Traffic Vol by Lane	219	129	203	134								
LT Vol	61	70	0	0								
Through Vol	61	59	0	0								
RT Vol	97	0	203	134								
Lane Flow Rate	243	143	226	149								
Geometry Grp	1	1	1	1								
Degree of Util (X)	0.322	0.208	0.278	0.186								
Departure Headway (Hd)	4.761	5.22	4.436	4.508								
Convergence, Y/N	Yes	Yes	Yes	Yes								
Cap	747	681	801	786								
Service Time	2.839	3.308	2.513	2.594								
HCM Lane V/C Ratio	0.325	0.21	0.282	0.19								
HCM Control Delay, s/veh	10.1	9.7	9.2	8.6								
HCM Lane LOS	B	A	A	A								
HCM 95th-ile Q	1.4	0.8	1.1	0.7								

Intersection							
Int Delay, s/veh	0.9						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	↖	↖	↖	↖	↖	↖	
Traffic Vol, veh/h	1	76	0	846	811	0	
Future Vol, veh/h	1	76	0	846	811	0	
Conflicting Peds, #/hr	0	0	0	0	86		
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	None	None	None	None	None	None	
Storage Length	-	0	-	-	-	-	
Veh in Median Storage, #	0	-	0	0	0	-	
Grade, %	0	-	0	0	0	-	
Peak Hour Factor	90	90	90	90	90	90	
Heavy Vehicles, %	3	3	3	3	3	3	
Mvmt Flow	1	84	0	940	901	0	
Major/Minor	Minor2	Major1	Major2				
Conflicting Flow All	1371	901	0	-	-	0	
Stage 1	901	-	-	-	-	-	
Stage 2	470	-	-	-	-	-	
Critical Hdwy	6.645	6.245	-	-	-	-	
Critical Hdwy Stg 1	5.445	-	-	-	-	-	
Critical Hdwy Stg 2	5.945	-	-	-	-	-	
Follow-up Hdwy	3.52853	3.285	-	-	-	-	
Plat Cap-1 Maneuver	148	334	0	-	-	0	
Stage 1	393	-	0	-	-	0	
Stage 2	594	-	0	-	-	0	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	148	334	-	-	-	-	
Mov Cap-2 Maneuver	148	-	-	-	-	-	
Stage 1	393	-	-	-	-	-	
Stage 2	594	-	-	-	-	-	
Approach	EB	NB	SB				
HCM Control Delay, s/veh	49.39	0	0				
HCM LOS	C						
Minor Lane/Major Mvmt	NBEBLn1	SBT					
Capacity (veh/h)	-	334	-				
HCM Lane V/C Ratio	-	0.253	-				
HCM Control Delay (s/veh)	-	19.4	-				
HCM Lane LOS	-	C	-				
HCM 95th %ile Q(veh)	-	1	-				

Intersection						
Int Delay, s/veh	14					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W	T	T	T	T	T
Traffic Vol, veh/h	102	105	117	245	466	268
Future Vol, veh/h	102	105	117	245	466	268
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-	-
Grade, %	0	-	0	0	-	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	113	117	130	272	518	298

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1199	667	816
Stage 1	667	-	-
Stage 2	532	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	207	463	821
Stage 1	514	-	-
Stage 2	593	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	168	463	821
Mov Cap-2 Maneuver	168	-	-
Stage 1	418	-	-
Stage 2	593	-	-

Approach	EB	NB	SB
HCM Control Delay, s/veh	62.39	3.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	582	-	248	-
HCM Lane V/C Ratio	0.158	-	0.926	-
HCM Control Delay (s/veh)	10.2	0	82.4	-
HCM Lane LOS	B	A	F	-
HCM 95th %ile Q(veh)	0.6	-	8.2	-

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T	T	T	T	T	T
Traffic Vol, veh/h	0	8	698	1	0	662
Future Vol, veh/h	0	8	698	1	0	662
Conflicting Peds, #/hr	0	0	0	100	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	-
Grade, %	0	-	0	-	-	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	2	2
Mvmt Flow	0	9	776	1	0	736

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	488	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.9	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.3	-
Pot Cap-1 Maneuver	0	531	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	475	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/veh	42.73	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBT
Capacity (veh/h)	-	-	475
HCM Lane V/C Ratio	-	-	0.019
HCM Control Delay (s/veh)	-	-	12.7
HCM Lane LOS	-	-	B
HCM 95th %ile Q(veh)	-	-	0.1

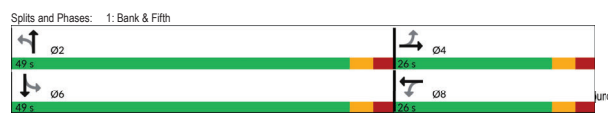
# 2033 Scenario

## Major Event Egress

Queues  
1: Bank & Fifth 08/06/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	78	34	41	72	22	333	20	373
Future Volume (vph)	78	34	41	72	22	333	20	373
Lane Group Flow (vph)	0	155	46	209	0	422	0	480
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	8	8	2	2	6	6	6
Permitted Phases	4	8	8	2	2	6	6	6
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (s)	26.0	26.0	26.0	26.0	49.0	49.0	49.0	49.0
Total Split (%)	34.7%	34.7%	34.7%	34.7%	65.3%	65.3%	65.3%	65.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead-Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	Max	Max
Act Effct Green (s)	14.2	14.2	14.2	14.2	44.4	44.4	44.4	44.4
Adjusted g/C Ratio	0.20	0.20	0.20	0.20	0.64	0.64	0.64	0.64
v/c Ratio	0.76	0.21	0.58	0.24	0.24	0.27	0.27	0.27
Control Delay (s/veh)	46.5	24.3	18.9	6.4	6.5	6.5	6.5	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.5	24.3	18.9	6.4	6.5	6.5	6.5	6.5
LOS	D	C	B	A	A	A	A	A
Approach Delay (s/veh)	46.5	19.9	19.9	6.4	6.5	6.5	6.5	6.5
Approach LOS	D	B	B	A	A	A	A	A
Queue Length 50th (m)	16.8	4.9	11.3	10.4	12.0	12.0	12.0	12.0
Queue Length 95th (m)	35.7	12.7	29.6	20.5	23.3	23.3	23.3	23.3
Internal Link Dist (m)	49.7	45.0	112.4	195.6	190.0	190.0	190.0	190.0
Turn Bay Length (m)								
Base Capacity (vph)	287	312	474	1765	1776	1776	1776	1776
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.15	0.44	0.24	0.27	0.27	0.27	0.27

Intersection Summary  
 Cycle Length: 75  
 Actuated Cycle Length: 69.6  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay (s/veh): 13.8  
 Intersection Capacity Utilization 73.8%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service D



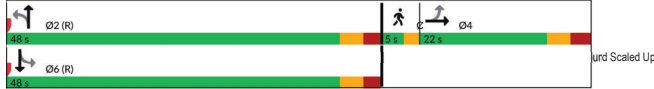
Queues  
2: Bank & Holmwood

08/06/2024

Lane Group	EBT	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	↔		↔		↔	
Traffic Volume (vph)	22	52	281	33	297	
Future Volume (vph)	22	52	281	33	297	
Lane Group Flow (vph)	151	0	437	0	438	
Turn Type	NA	Perm	NA	Perm	NA	
Protected Phases	4	2	2	6	3	
Permitted Phases	4	2	2	6	6	
Detector Phase	4	2	2	6	6	
Switch Phase						
Minimum Initial (s)	4.4	10.0	10.0	4.0	4.0	1.0
Minimum Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (s)	22.0	48.0	48.0	48.0	48.0	5.0
Total Split (%)	29.3%	64.0%	64.0%	64.0%	7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0	
All-Red Time (s)	2.6	2.2	2.2	2.2	0.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.6	5.2	5.2	5.2		
Lead/Lag	Lag				Lead	
Lead-Lag Optimize?						
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	None
Act Effct Green (s)	13.5	50.7	50.7	50.7		
Actuated g/C Ratio	0.18	0.68	0.68	0.68		
v/c Ratio	0.62	0.27	0.25	0.25		
Control Delay (s/veh)	38.9	3.6	5.2	5.2		
Queue Delay	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	38.9	3.6	5.2	5.2		
LOS	D	A	A	A		
Approach Delay (s/veh)	38.9	3.6	5.2	5.2		
Approach LOS	D	A	A	A		
Queue Length 50th (m)	19.9	9.5	9.3	9.3		
Queue Length 95th (m)	34.2	20.1	19.1	19.1		
Internal Link Dist (m)	39.6	31.5	195.6			
Turn Bay Length (m)						
Base Capacity (vph)	306	1620	1755			
Starvation Cap Reductn	0	0	0	0		
Spillback Cap Reductn	0	0	0	0		
Storage Cap Reductn	0	0	0	0		
Reduced v/c Ratio	0.49	0.27	0.25	0.25		

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 74 (99%), Referenced to phase 2:NBL and 6:SBT, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay (s/veh): 9.5	Intersection LOS: A
Intersection Capacity Utilization 59.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Bank & Holmwood



Queues  
6: Bank & Aylmer

08/06/2024

Lane Group	EBL	NBL	NBT	SBL	SBT	Ø3
Lane Configurations	↔		↔		↔	
Traffic Volume (vph)	19	17	353	312		
Future Volume (vph)	19	17	353	312		
Lane Group Flow (vph)	38	0	411	373		
Turn Type	Prot	Perm	NA	NA		
Protected Phases	4	2	6	3		
Permitted Phases	4	2	6	6		
Detector Phase	4	2	2	6		
Switch Phase						
Minimum Initial (s)	10.0	30.0	30.0	30.0	1.0	
Minimum Split (s)	22.0	63.0	63.0	63.0	5.0	
Total Split (s)	22.0	63.0	63.0	63.0	5.0	
Total Split (%)	24.4%	70.0%	70.0%	70.0%	6%	
Yellow Time (s)	3.3	3.0	3.0	3.0	2.0	
All-Red Time (s)	2.2	2.2	2.2	2.2	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.5	5.2	5.2	5.2		
Lead/Lag	Lag				Lead	
Lead-Lag Optimize?						
Recall Mode	Ped	C-Max	C-Max	C-Max	Max	
Act Effct Green (s)	14.0	60.3	60.3	60.3		
Actuated g/C Ratio	0.16	0.67	0.67	0.67		
v/c Ratio	0.17	0.21	0.18	0.18		
Control Delay (s/veh)	23.5	6.0	5.6	5.6		
Queue Delay	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	23.5	6.0	5.6	5.6		
LOS	C	A	A	A		
Approach Delay (s/veh)	23.5	6.0	5.6	5.6		
Approach LOS	C	A	A	A		
Queue Length 50th (m)	3.2	12.5	10.6	10.6		
Queue Length 95th (m)	11.9	18.2	15.7	15.7		
Internal Link Dist (m)	76.7	28.1	10.1			
Turn Bay Length (m)						
Base Capacity (vph)	262	1971	2055			
Starvation Cap Reductn	0	0	0	0		
Spillback Cap Reductn	0	0	0	0		
Storage Cap Reductn	0	0	0	0		
Reduced v/c Ratio	0.15	0.21	0.18	0.18		

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 87 (97%), Referenced to phase 2:NBL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.21	
Intersection Signal Delay (s/veh): 6.6	Intersection LOS: A
Intersection Capacity Utilization 45.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Bank & Aylmer



Queues  
3: Bank & Exhibition

08/06/2024

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø1	Ø7
Lane Configurations	↔		↔		↔		
Traffic Volume (vph)	9	8	370	13	351		
Future Volume (vph)	9	8	370	13	351		
Lane Group Flow (vph)	10	9	423	14	390		
Turn Type	Prot	Perm	NA	Perm	NA		
Protected Phases	8	2	2	6	1	7	
Permitted Phases	8	8	2	6	6		
Detector Phase	8	8	2	6	6		
Switch Phase							
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	1.0	1.0
Minimum Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (s)	26.0	26.0	39.0	44.0	44.0	5.0	5.0
Total Split (%)	34.7%	34.7%	52.0%	58.7%	58.7%	7%	7%
Yellow Time (s)	3.3	3.3	3.0	3.0	3.0	2.0	3.5
All-Red Time (s)	3.0	3.0	3.9	3.9	3.9	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	6.3	6.3	6.9	6.9	6.9		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	10.0	10.0	65.7	65.7	65.7		
Actuated g/C Ratio	0.13	0.13	0.68	0.68	0.68		
v/c Ratio	0.05	0.06	0.15	0.02	0.14		
Control Delay (s/veh)	29.0	17.5	2.4	2.6	1.8		
Queue Delay	0.0	0.0	0.0	0.0	0.0		
Total Delay (s/veh)	29.0	17.5	2.4	2.6	1.8		
LOS	C	B	A	A	A		
Approach Delay (s/veh)	23.6	2.4	1.8	1.8	1.8		
Approach LOS	C	A	A	A	A		
Queue Length 50th (m)	1.3	0.0	0.0	0.0	0.0		
Queue Length 95th (m)	5.3	3.9	13.7	11.5	10.1		
Internal Link Dist (m)	30.6	33.7	44.8				
Turn Bay Length (m)				40.0			
Base Capacity (vph)	429	302	2773	644	2780		
Starvation Cap Reductn	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0		
Reduced v/c Ratio	0.02	0.03	0.15	0.02	0.14		

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.15	
Intersection Signal Delay (s/veh): 2.6	Intersection LOS: A
Intersection Capacity Utilization 43.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Bank & Exhibition



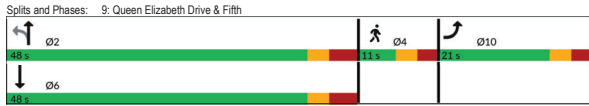
Queues  
7: Bank & Sunnyside

08/06/2024

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø3	Ø7
Lane Configurations	↔		↔		↔		↔			
Traffic Volume (vph)	32	29	17	36	20	290	15	319		
Future Volume (vph)	32	29	17	36	20	290	15	319		
Lane Group Flow (vph)	0	94	0	101	0	352	0	405		
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases	4	4	8	8	2	2	1	6	3	7
Permitted Phases	4	4	8	8	2	2	6	6		
Detector Phase	4	4	8	8	2	2	1	6		
Switch Phase										
Minimum Initial (s)	6.4	6.4	5.3	5.3	17.0	17.0	5.0	17.0	1.0	1.0
Minimum Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (s)	25.0	25.0	25.0	25.0	43.0	43.0	17.0	60.0	5.0	5.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	47.8%	47.8%	18.9%	66.7%	6%	6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
All-Red Time (s)	2.6	2.6	2.6	2.6	3.0	3.0	2.9	3.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	5.6	5.6	5.6	5.6	6.0	6.0				
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	Max	Max	None	Max	None	None
Act Effct Green (s)	11.7	11.5	11.5	11.5	59.8	59.8				
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.75	0.75				
v/c Ratio	0.56	0.48	0.16	0.16	0.19	0.19				
Control Delay (s/veh)	43.6	28.4	4.4	4.3	4.3	4.3				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay (s/veh)	43.6	28.4	4.4	4.3	4.3	4.3				
LOS	D	C	A	A	A	A				
Approach Delay (s/veh)	43.6	28.4	4.4	4.3	4.3	4.3				
Approach LOS	D	C	A	A	A	A				

Lane Group	EBL	NBL	NBT	SBT	Ø4
Lane Configurations	↔	↔	↕	↕	
Traffic Volume (vph)	143	44	306	298	
Future Volume (vph)	143	44	306	298	
Lane Group Flow (vph)	229	0	389	410	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	10	2	6	4	
Permitted Phases	2				
Detector Phase	10	2	6	4	
Switch Phase					
Minimum Initial (s)	10.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.7	10.8	10.8	31.8	9.7
Total Split (s)	21.0	48.0	48.0	48.0	11.0
Total Split (%)	26.3%	60.0%	60.0%	60.0%	14%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.7	3.8	3.8	3.8	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.7	6.8	6.8	6.8	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	Min	None	None	Max	None
Act Effct Green (s)	13.9		41.2		41.2
Actuated g/C Ratio	0.21		0.61		0.61
v/c Ratio	0.72		0.41		0.41
Control Delay (s/veh)	39.0		8.9		8.7
Queue Delay	0.0		0.0		0.0
Total Delay (s/veh)	39.0		8.9		8.7
LOS	D		A		A
Approach Delay (s/veh)	39.0		8.9		8.7
Approach LOS	D		A		A
Queue Length 50th (m)	27.0		24.0		25.2
Queue Length 95th (m)	#53.5		40.7		42.0
Internal Link Dist (m)	57.2		0.1		5.9
Turn Bay Length (m)					
Base Capacity (vph)	353		938		1001
Starvation Cap Reductn	0		0		0
Spillback Cap Reductn	0		0		0
Storage Cap Reductn	0		0		0
Reduced v/c Ratio	0.65		0.41		0.41

Intersection Summary	
Cycle Length:	80
Actuated Cycle Length:	67.6
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay (s/veh):	15.5
Intersection LOS:	B
Intersection Capacity Utilization:	69.2%
ICU Level of Service:	C
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



Intersection	
Int Delay, s/veh	0.1
Movement	EBL EBR NBL NBT SBT SBR
Lane Configurations	↔ ↕ ↕ ↕ ↕ ↕
Traffic Vol, veh/h	0 5 0 374 304 70
Future Vol, veh/h	0 5 0 374 304 70
Conflicting Peds, #/hr	0 0 178 0 0 107
Sign Control	Stop Stop Free Free Free Free
RT Channelized	None None None None
Storage Length	- 0 - - - -
Veh in Median Storage, #	0 - - 0 0 -
Grade, %	0 - - 0 0 -
Peak Hour Factor	90 90 90 90 90 90
Heavy Vehicles, %	3 3 3 3 3 3
Mvmt Flow	0 6 0 416 338 78

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	- 555 594 0 - 0		
Stage 1	- - - - -		
Stage 2	- - - - -		
Critical Hdwy	- 6.245 4.145 - - -		
Critical Hdwy Stg 1	- - - - -		
Critical Hdwy Stg 2	- - - - -		
Follow-up Hdwy	- 3.3285 2.2285 - - -		
Pot Cap-1 Maneuver	0 528 975 - - -		
Stage 1	0 - - - - -		
Stage 2	0 - - - - -		
Platoon blocked, %	- - - - -		
Mov Cap-1 Maneuver	- 429 791 - - -		
Mov Cap-2 Maneuver	- - - - -		
Stage 1	- - - - -		
Stage 2	- - - - -		

Approach	EB	NB	SB
HCM Control Delay, s/40.51		0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	791	- 429 - -		
HCM Lane V/C Ratio	- - 0.013 - -			
HCM Control Delay (s/veh)	0 - 13.5 - -			
HCM Lane LOS	A - B - -			
HCM 95th %tile Q(veh)	0 - 0 - -			

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B
Movement	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR
Lane Configurations	↔ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕
Traffic Vol, veh/h	25 54 0 0 0 115 116 102 143 0 0 96
Future Vol, veh/h	25 54 0 0 0 115 116 102 143 0 0 96
Peak Hour Factor	0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
Heavy Vehicles, %	2 2 2 2 2 2 2 2 2 2 2 2
Mvmt Flow	28 60 0 0 0 128 129 113 159 0 0 62
Number of Lanes	0 1 0 0 0 1 0 1 0 0 0 1
Approach	EB EB WB NB SB
Opposing Approach	WB EB SB NB
Opposing Lanes	1 1 1 1
Conflicting Approach Left	SB NB EB WB
Conflicting Lanes Left	1 1 1 1
Conflicting Approach Right	NB SB WB EB
Conflicting Lanes Right	1 1 1 1
HCM Control Delay, s/veh	9 8.4 11.4 7.7
HCM LOS	A A B A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	32%	32%	0%	0%
Vol Thru, %	28%	68%	0%	0%
Vol Right, %	40%	0%	100%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	361	79	115	56
LT Vol	116	25	0	0
Through Vol	102	54	0	0
RT Vol	143	0	115	56
Lane Flow Rate	401	88	128	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.484	0.127	0.159	0.074
Departure Headway (Hd)	4.342	5.19	4.488	4.294
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	826	688	795	829
Service Time	2.379	3.244	2.538	2.348
HCM Lane V/C Ratio	0.485	0.128	0.161	0.075
HCM Control Delay, s/veh	11.4	9	8.4	7.7
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2.7	0.4	0.6	0.2

Intersection	
Int Delay, s/veh	0.5
Movement	EBL EBR NBL NBT SBT SBR
Lane Configurations	↔ ↕ ↕ ↕ ↕ ↕
Traffic Vol, veh/h	0 34 0 358 314 0
Future Vol, veh/h	0 34 0 358 314 0
Conflicting Peds, #/hr	0 0 0 0 0 86
Sign Control	Stop Stop Free Free Free Free
RT Channelized	None None None None
Storage Length	- 0 - - - -
Veh in Median Storage, #	0 - - 0 0 -
Grade, %	0 - - 0 0 -
Peak Hour Factor	90 90 90 90 90 90
Heavy Vehicles, %	3 3 3 3 3 3
Mvmt Flow	0 38 0 398 349 0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	- 349 - 0 - 0		
Stage 1	- - - - -		
Stage 2	- - - - -		
Critical Hdwy	- 6.245 - - - -		
Critical Hdwy Stg 1	- - - - -		
Critical Hdwy Stg 2	- - - - -		
Follow-up Hdwy	- 3.3285 - - - -		
Pot Cap-1 Maneuver	0 691 0 - - 0		
Stage 1	0 - 0 - - 0		
Stage 2	0 - 0 - - 0		
Platoon blocked, %	- - - - -		
Mov Cap-1 Maneuver	- 691 - - - -		
Mov Cap-2 Maneuver	- - - - -		
Stage 1	- - - - -		
Stage 2	- - - - -		

Approach	EB	NB	SB
HCM Control Delay, s/40.51		0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBTEBLn1	SBT
Capacity (veh/h)	- 691 -	
HCM Lane V/C Ratio	- 0.055 -	
HCM Control Delay (s/veh)	- 10.5 -	
HCM Lane LOS	- B -	
HCM 95th %tile Q(veh)	- 0.2 -	

Intersection					
Int Delay, s/veh	23.5				
Movement	EBL	EBR	NBL	NBT	SBT
Lane Configurations	↔	↔	↔	↔	↔
Traffic Vol, veh/h	242	214	57	115	227
Future Vol, veh/h	242	214	57	115	227
Conflicting Peds, #/hr	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	0	-	-	-	-
Veh in Median Storage, #	0	-	0	0	-
Grade, %	0	-	0	0	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0
Mvmt Flow	269	238	63	128	252
Mvmt Flow	269	238	63	128	252
Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	681	327	401	0	0
Stage 1	327	-	-	-	-
Stage 2	254	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	479	719	1168	-	-
Stage 1	735	-	-	-	-
Stage 2	793	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	451	719	1168	-	-
Mov Cap-2 Maneuver	451	-	-	-	-
Stage 1	693	-	-	-	-
Stage 2	793	-	-	-	-
Approach	EB	NB	SB		
HCM Control Delay, s/veh	49.99	2.74	0		
HCM LOS	E				
Minor Lane/Major Mvmt	NBL	NB	EBLn1	SBT	SBR
Capacity (veh/h)	597	-	547	-	-
HCM Lane V/C Ratio	0.054	-	0.927	-	-
HCM Control Delay (s/veh)	8.3	0	50	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %ile Q(veh)	0.2	-	11.5	-	-

Intersection					
Int Delay, s/veh	0.1				
Movement	WBL	WBR	NBT	NBR	SBL
Lane Configurations	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	4	444	1	0
Future Vol, veh/h	0	4	444	1	0
Conflicting Peds, #/hr	0	0	0	100	0
Sign Control	Stop	Stop	Free	Free	Free
RT Channelized	None	None	None	None	None
Storage Length	-	0	-	-	-
Veh in Median Storage, #	0	-	0	-	-
Grade, %	0	-	0	-	-
Peak Hour Factor	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	2
Mvmt Flow	0	4	493	1	0
Mvmt Flow	0	4	493	1	0
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	347	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.9	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-
Pot Cap-1 Maneuver	0	655	-	0	-
Stage 1	0	-	-	0	-
Stage 2	0	-	-	0	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	585	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Approach	WB	NB	SB		
HCM Control Delay, s/veh	11.2	0	0		
HCM LOS	B				
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT	SBR
Capacity (veh/h)	-	-	585	-	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s/veh)	-	-	11.2	-	-
HCM Lane LOS	-	-	B	-	-
HCM 95th %ile Q(veh)	-	-	0	-	-