TRANSPORTATION IMPACT STUDY

375-417 KINGSTON ROAD
PROPOSED RESIDENTIAL AND RETAIL DEVELOPMENT
CITY OF PICKERING, REGIONAL MUNICIPALITY OF DURHAM

PREPARED FOR:
375 & 401 KINGSTON ROAD CORPORATION

PREPARED BY:

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CROZIER
CONSULTING ENGINEERS

Revision Number	Date	Comments
Rev. 0	November 2021	Internal Review
Rev. 1	December 2021	First Submission
Rev. 2	March 2025	Second Submission

1.0 Executive Summary

Background

CF Crozier & Associates Inc. (Crozier) was retained by 375 & 401 Kingston Road Corporation to undertake a Transportation Impact Study in support of an Official Plan Amendment (OPA), Zoning By-Law Amendment (ZBA) and Site Plan Application (SPA) for a proposed mixed-use residential and retail development located at 375-417 Kingston Road, in the City of Pickering, Regional Municipality of Durham.

According to the most recent Site Plan, the development will consist of Four (4) high-rise mixed-use residential towers with a total of 1,356 residential dwelling units and approximately 2,911.4 m^2 of ground-floor commercial GFA. A total of 1,154 parking spaces with an additional 77 spaces located within 14.0 m of the Ministry of Transportation Ontario's (MTO) setback area are proposed at-grade and underground to facilitate the overall residential subdivision. Three site accesses are also proposed; full-moves accesses at Rougemount Drive and Evelyn Avenue and a right-in-right-out access at Kingston Road.

The project is envisioned to be constructed in two (2) phases. Phase 1 assumes the existing commercial plaza fronting Rougemount Drive will remain in operation, while two (2) 31- and 32-storey towers are constructed. Phase 1 also envisions a private laneway connection to Evelyn Avenue. Phase 2 includes the redevelopment of the existing commercial plaza to support two (2) 33-34-storey towers, connecting to the Phase 1 development

Existing Conditions

The Subject Property is located along the Kingston Road Corridor with a wide range of mixed-use developments, accessible by walking or transit.

The existing Study Area provides sidewalks on all roadways but there are no dedicated cycling facilities provided within the study area. Cyclists are expected to share the right-of-way with motor vehicles.

The study area is served by multiple local Durham Region Transit bus services with connections to Pickering GO station, which provides passengers with local and regional bus connections as well as Regional Rail services to other parts of Durham Region, Toronto and the greater Toronto and Hamilton area.

The signalized intersection of Kingston Road at Rougemount Drive is currently operating at a level of service (LOS) "B" during both weekday a.m. and p.m. peak periods. The intersection's maximum control delay is 15.4 seconds or less, and the theoretical maximum volume-to-capacity ratio is 0.87. The 95th percentile queue lengths for Northbound and Southbound left-turn movements exceed the available storage lengths during the weekday peak periods, however there is additional taper length to accommodate queued vehicles.

The signalized intersection of Kingston Road at Altona Road is currently operating at a LOS "C" or better during the weekday a.m. and p.m. peak periods. The intersection is operating at a moderate control delay of 23.8 seconds or less and a theoretical maximum volume-to-capacity ratio of 1.01 or less. The 95th percentile queue length for the eastbound left-turn movement is expected to exceed the available storage length.

The stop-controlled minor connection of Evelyn Avenue to Kingston Road is operating efficiently at a LOS "B" during both weekday a.m. and p.m. peak hours. Maximum control delays are expected to

be 14.5 s and 14.3 s in the weekday a.m. and p.m. peak hours, respectively and the maximum volume-to-capacity ratios is expected to be 0.31 (WBLT) and 0.43 (EBTR) in the weekday a.m. and p.m. peak hours, respectively.

The existing site accesses are both currently operating at a LOS "B" during the weekday a.m. and p.m. peak periods with a maximum control delay of 14.7 seconds and maximum volume-to-capacity ratio of 0.31. These metrics indicate that the accesses are operating efficiently with acceptable delays and reserve capacity to accommodate future increases in traffic volume.

While the signalized intersections are operating near or above capacity, the intersection delays are still acceptable and are typical for major arterial roadways during commuter peak periods. Additionally, these results are considered conservative as a default peak hour factor (PHF) of 0.92 was used to model existing conditions while the observed PHFs at the signalized intersection are higher, signifying a more uniform distribution of traffic throughout the peak hour (as opposed to a sudden larger wave of traffic).

Future Traffic Operations

- A shift in transportation modes can be expected as there are major transit improvements proposed by the City, Region, and by the province for the study area in the medium to long term future.

- The Durham-Scarborough BRT (herein referred to as Kingston BRT) is proposed. The Kingston BRT will be implemented along the site frontage on Kingston Road in Pickering, with a stop at Altona Road (6-minute walk), just west of the Subject Property, and Rosebank Road (8-minute walk) just east of the Subject Property. With the dedicated right-of-way and proposed 5 minutes headways during the peak hours, the Kingston BRT will improve transit travel times, increase transit frequencies and capacities, and provide additional transit options within the neighbourhood and the rest of the Durham Region. As such, a material shift in vehicle travel mode to transit mode is expected in the near future.

- The all-day, electrified, and frequent GO-Train improvements by Metrolinx as part of the Regional Express Rail (RER) project will also significantly improve regional transit services between Durham Region, downtown Toronto and the Greater Toronto and Hamilton Area. Improvements to the rest of the GO rail network are also proposed as part of Metrolinx RER. Thus, the RER project is expected to significantly improve residents' and visitors' reach to/from Toronto, and the GTHA region with greater flexibility, accessibility, and shorter travel times.

- Furthermore, aside from the transit improvements, bike lanes are also proposed along Kingston Road as part of the Kingston BRT, providing residents and visitors of the development convenient and safe access to the cycling network.

The project is envisioned to be constructed in two (2) phases:

- Phase 1 corresponding to 2027 horizon year: which includes keeping the existing commercial plaza fronting Rougemount Drive in operation while adding two (2) 31- and 32-storey towers including a total of 654 units and 1,141 m^2 of ground floor retail.

- Full buildout of the entire site corresponding to 2029 horizon year: which includes the removal of the existing commercial plaza fronting Rougemount Drive and addition of two (2) 33- and 34-storey towers including a total of 702 units and 1,803 m2 of ground floor retail.

Phase 1 - 2027 Horizon Year:

- The proposed development is projected to generate a total of 149 and 198 two-way trips, during the weekday a.m. and p.m. peak hours of operation, respectively.

- Future traffic operations are similar for future background (i.e., without site) and Total Traffic (i.e., with site).

- The signalized intersection of Kingston Road at Altona Road is expected to continue to operate at an unchanged LOS "B" and "C" during the weekday a.m. and p.m. peak periods, respectively. The intersection is expected to experience an increase in maximum control delay of 0.7 seconds or less, and a minor increase in the maximum theoretical volume-to-capacity ratio of 0.01 and 0.02 in the weekday a.m. and p.m. peak periods, respectively, when compared to 2027 future background conditions. The 95th percentile queue lengths for the eastbound left-turn movement are expected to continue to exceed the available storage length. However, these queue lengths are consistent with future background operations and the addition of the site generated traffic does not materially change the expected queue lengths.

- The signalized intersection of Kingston Road at Rougemount Drive is expected to operate at a LOS "C" during both weekday a.m. and p.m. peak hours. The intersection average control delays of 30.9 s and 31.3 s in the weekday a.m. and p.m. peak hours, respectively, and maximum volume-to-capacity ratios of 0.70 (SBL) and 0.94 (NBL) are expected in the weekday a.m. and p.m. peak hours, respectively. Compared to 2027 future background conditions, the intersection is expected to experience an improvement in operations because of the decrease in westbound left turn volumes as the full moves signalized intersection of Kingston Road at Evelyn Avenue provides an additional access for left turning vehicles on westbound Kingston Road. A decrease in maximum control delay of 0.8 seconds, and a decrease in the maximum theoretical volume-to-capacity ratio of 0.03 and 0.01 in the weekday a.m. and p.m. peak periods, respectively, when compared to 2027 future background conditions. The 95th percentile queue lengths for the northbound and southbound left-turn movements are expected to continue to exceed the available storage length. However, these queue lengths are consistent with future background operations and the addition of the site generated traffic does not materially change the expected queue lengths.

- It is noted that the identified operational issues at both intersections of Kingston Road with Altona Road and Rougemount Drive are background related and consistent with the findings of the Durham-Scarborough BRT EA Traffic Study.

- Signals are proposed at the intersection of Kingston Road with Evelyn Avenue and this signalized intersection is projected to operate at a LOS "D" and "C" during the weekday a.m. and p.m. peak hours, respectively. The intersection average control delays of 40.0s and 27.8s in the weekday a.m. and p.m. peak hours, respectively, and maximum volume-to-capacity ratio of 0.77 (EBTR) is expected in both weekday a.m. and p.m. peak hours.

- The stop-controlled Full-Moves minor connection of Site Access to Rougemount Drive is projected to operate below capacity at a LOS "B" during both weekday a.m. and p.m. peak hours. A maximum control delay of 14.7 seconds, and a maximum individual volume-to-capacity ratio of 0.25 are expected.

- The stop-controlled Right-In/Right-Out minor connection of Laneway C to Kingston Road is projected to operate below capacity at a LOS "A" and "B" during the a.m. and p.m. peak hours, respectively. A maximum control delay of 10.3 seconds, and a maximum individual volume-to-capacity ratio of 0.50 are expected.

Full Buildout - 2029 Horizon Year and Beyond:

- The signalized intersection of Kingston Road at Altona Road is expected to continue to operate at an unchanged LOS "C" during both weekday a.m. and p.m. peak periods. The intersection is expected to experience an increase in maximum control delay of 1.7 seconds or less, and a minor increase in the maximum theoretical volume-to-capacity ratio of 0.01 and 0.04 in the weekday a.m. and p.m. peak periods, respectively, when compared to 2039 future background conditions. The 95th percentile queue lengths for the eastbound left-turn movement are expected to continue to exceed the available storage length. However, these queue lengths are consistent with future background operations and the addition of the site generated traffic does not materially change the expected queue lengths.

- The signalized intersection of Kingston Road at Rougemount Drive is expected to operate at a LOS "C" during both weekday a.m. and p.m. peak hours. The intersection average control delays of 33.2 s and 32.0 s in the weekday a.m. and p.m. peak hours, respectively, and maximum volume-to-capacity ratios of 0.74 (NBL) and 1.01 (NBL) are expected in the weekday a.m. and p.m. peak hours, respectively. Compared to 2039 future background conditions, the intersection is expected to experience an improvement in operations because of the decrease in westbound left turn volumes as the full moves signalized intersection of Kingston Road at Evelyn Avenue provides an additional access for left turning vehicles on westbound Kingston Road. A decrease in maximum control delay of 9.4 seconds, and a decrease in the maximum theoretical volume-to-capacity ratio of 0.07 and 0.34 in the weekday a.m. and p.m. peak periods, respectively, when compared to 2039 future background conditions. The 95th percentile queue lengths for the northbound and southbound left-turn movements are expected to continue to exceed the available storage length. However, these queue lengths are consistent with future background operations and the addition of the site generated traffic does not materially change the expected queue lengths.

- It is noted that the identified operational issues at both intersections of Kingston Road with Altona Road and Rougemount Drive are background related and consistent with the findings of the Durham-Scarborough BRT EA Traffic Study

- The signalized intersection of Kingston Road at Evelyn Avenue is projected to operate at a LOS "D" and "C" during the weekday a.m. and p.m. peak hours, respectively. The intersection average control delays of 37.8s and 27.8s in the weekday a.m. and p.m. peak hours, respectively, and maximum volume-to-capacity ratios of 0.79 (EBTR) and 0.81 (EBTR) are expected in the weekday a.m. and p.m. peak hours, respectively.

- The stop-controlled Full-Moves minor connection of Site Access to Rougemount Drive is projected to operate below capacity at a LOS "B" during both a.m. and p.m. peak hours. A maximum control delay of 14.4 seconds, and a maximum individual volume-to-capacity ratio of 0.28 are expected.

- The stop-controlled Right-In/Right-Out minor connection of Laneway C to Kingston Road is projected to operate below capacity at a LOS "A" and "B" during the a.m. and p.m. peak hours, respectively. A maximum control delay of 10.8 seconds, and a maximum individual volume-to-capacity ratio of 0.55 are expected.

- The boundary road network is expected to operate similarly or better under the 2029 and 2034 horizon years. Based on the analysis herein, the proposed development is not expected to significantly alter the traffic operations of the study intersections. The proposed development can be supported from a traffic operations perspective. In summary the following improvements are recommended at the Kingston Road and Evelyn Avenue intersection:

    - Signalization

- 25m NBL auxiliary turn lane
- 50m WBL auxiliary turn lane

Traffic Safety

- Assessment of sight distance at the proposed site accesses indicate that there is sufficient sight distance for vehicles entering and exiting the Subject Property. Accordingly, the proposed development is not expected to create a safety hazard due to vehicle ingress or egress at the site access on Kingston Road or on Rougemount Drive. The accesses can be supported from a sight distance perspective.

- The development proposes four loading spaces. The loading operations analysis indicates that the proposed site layout accommodates standard Durham Region waste collection vehicles, standard pumper, and aerial fire trucks, as well as delivery vehicles, also known as Medium Single Unit Trucks (MSU). Thus, the proposed loading supply is supportable from an operations and safety perspective.

Parking Review

- Per the City's Zoning By-Law, the existing requirements consistent with the "All Other Zones" classification applicable to the subject site require 1,695 resident, 339 visitor and 118 commercial spaces.

- Due to the proximity to the BRT station, the "City Centre Zones" Zoning By-law minimum parking requirements are considered to be more appropriate than the "All Other Zones" for the future context of the site. Per the current City of Pickering Zoning By-Law parking requirements for "City Centre Zones", the development is required to supply a total of 1,353 vehicle parking spaces. As the development proposes 1,154 vehicle parking spaces, the proposed parking supply is deficient by 199 spaces. Further, with a proposed parking supply of 1,154 spaces, and the 77 additional spaces within the MTO setback, the equivalent deficit of 122 parking spaces is proposed.

To evaluate the adequacy of the reduction in parking supply, the peak parking demand associated with the proposed development was forecasted and reviewed based on the following:

- Recent Parking Approvals, Proposals and Surveys
- Zoning By-Law Comparisons
- Local, Regional and Provincial Policies
- Future Transportation Improvements
- TDM Measures

    - The approved developments within similar transportation contexts in the City of Pickering has average rates of 0.60 and 0.15 for residents and visitor space per unit, respectively. Thus, the proposed parking rates of 0.70 and 0.15 space per unit for residents and visitors, respectively, are supportable when considering the parking rates approved at similar sites.

    - An additional 77 parking spaces within the MTO setback are proposed. Although not considered part of the parking supply from a Zoning By-law perspective, these spaces are proposed and will be visually indistinguishable from all other parking spaces on site. These spaces can therefore be considered as part of the practical, or effective parking supply.

- The proposed residential parking rates for the Subject Site fall within the range of existing Zoning By-Law minimum parking requirements for developments near higher-order transit, mixed-use and intensification areas within the GTHA. On that basis, the reduced parking supply is supportable.

- Several other developments within Durham Region are proposing reduced vehicle parking rates within range of the City Centre Zoning By-law. Additionally, due to the future Kingston BRT, the transportation context of the site is similar to other sites within the GTHA where reduced parking rates have been approved and observed. Based on the recent approvals, current development applications and parking surveys, a residential parking supply rate of 0.70 space per unit, and a visitor supply rate of 0.15 space per unit is considered appropriate given the site's proximity to the future Kingston BRT, which provides direct and quick connections to Pickering GO Station.

- The visitor parking rate of 0.15 visitor space per unit, is proposed to be shared between retail-visitors and residential-visitors. Shared visitor parking is supportable as minimum retail-visitors is expected by car. The proposed commercial retail is small, auxiliary to the residential buildings and is expected to serve residents within the building, as well as pedestrian traffic from the neighbourhood. Those visiting from outside of the neighbourhood are expected to be minimal.

- The reduction in parking supply is also supportable as the Durham-Scarborough BRT is proposed along the site frontage on Kingston Road. The BRT will be implemented along Kingston Road in Pickering, with a stop at Altona Road (6-minute walk), just west of the Subject Property, and Rosebank Road (8-minute walk) just east of the Subject Property. The BRT will improve transit travel times, increase transit frequencies and capacities, provide additional transit options within the neighbourhood and the rest of the City. The BRT is planned to have frequent transit services, with 5-minute or better service during peak hours. As such, a material shift in vehicle travel mode to transit mode are expected in the near future.

- The all-day, electrified, and frequent GO-Train improvements by Metrolinx as part of the Regional Express Rail (RER) project will also significantly improve regional transit services between Durham Region, downtown Toronto and Greater Toronto and Hamilton Area. Specifically, Metrolinx RER plan includes all-day 15 minutes or less electrified services for the existing Lakeshore East GO Line.

- Improvements to the rest of the GO rail network are also proposed as part of Metrolinx RER. Thus, the RER project is expected to significantly improve residents' and visitors' reach to/from Toronto, and the GTHA region with greater flexibility, accessibility, and shorter travel times.

- In conjunction to the BRT, bike lanes are also proposed along Kingston Street, providing residents and visitors of the development a convenient and safe access to the cycling and transit network. Additionally, Durham Region proposed a total of 217 km of new cycling facilities to be constructed between 2021 and 2031.

- The reduction in parking supply is supportable as the existing commercial corridor surrounded by low-density residential properties is being redeveloped into a medium- to high-density mixed-use neighbourhood with high order transit services. Bus Rapid Transit (BRT) with dedicated bus travel lanes and cycling infrastructure improvements are proposed along Kingston Road corridor.

- Urban, pedestrian friendly streetscapes, ground floor commercial retail, restaurants

and other mixed-use attractions are also envisioned for Kingston Road corridor in order to encourage pedestrian and cycling traffic.

- Once again, the reduced parking supply of the proposed development reflects the vision and goals of the Kingston Road Corridor intensification plan and other City and Region policy recommendations and plans. The development provides direct pedestrian, cycling, and transit connections to existing and future infrastructure network. TDM studies show, a reduced parking supply has a direct effect in reducing single-occupancy vehicle trips, and an effect in travel modes, thus, consistent with the City's vision of a multi-modal corridor.

Transportation Demand Management (TDM)

There are several opportunities for the development to promote TDM measures in support of reduced automobile use.

The residential parking spaces are proposed to be unbundled from the condominium unit and controlled by parking pricing. Prospective residents will be made aware of the parking availability and parking space pricing, prior to the purchase of the condominium unit. Those who require a parking space or multiple parking spaces will make other arrangements or consider residency elsewhere. Accordingly, the residential parking demand can be controlled and managed.

Additional Transportation Demand Management (TDM) strategies proposed in support of reduced automobile use include:

- TDM Information Packages for New Residents
- Secure Bicycle Parking
- Bicycle Repair Station
- Unbundled Parking
- Short-Term Visitor Parking Spaces
- Real-Time Transit Information
- Explore Micro-Mobility & E-Mobility Partnerships (E-Scooter & E-Bike Sharing)
- Explore On-Site Bike Share Facility
- Wayfinding Signage
- Support School Travel Plans for Student Residents
- Semi-Private/Communal Amenities to Support Work from Home
- Shared Parking
- Mixed-Use Complete Community

The analysis contained within this report was prepared using the most recent Site Plan. Any minor revisions to the site plan are not expected to affect the conclusions contained with this report.

In conclusion, the proposed mixed-use development at 375-417 Kingston Road can be supported from a transportation operations and safety perspective with the noted recommendations.

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2.0 Introduction

2.1 Background

CF Crozier & Associates Inc. (Crozier) was retained by 375 & 401 Kingston Road Corporation to undertake a Transportation Impact Study in support of an Official Plan Amendment (OPA), Zoning By-Law Amendment (ZBA) and Site Plan Application (SPA) for a proposed mixed-use residential and retail development located at 375-417 Kingston Road, in the City of Pickering, Regional Municipality of Durham.

A Transportation Impact Study was previously prepared in December 2021. The addendum herein, summarizes the changes in the most recent Plan and addresses the First Submission comments.

The purpose of the study is to assess the impacts of the proposed development on the boundary road network and to recommend any required mitigation measures, if warranted.

The study has been completed in general conformance with Durham Region's Transportation Impact Study Guidelines, with the associated analyses and findings outlined herein. Further, the terms of reference were proposed to the City of Pickering and Durham Region staff via email correspondence, consistent with the previous submission. Refer to **Appendix A** for relevant correspondence

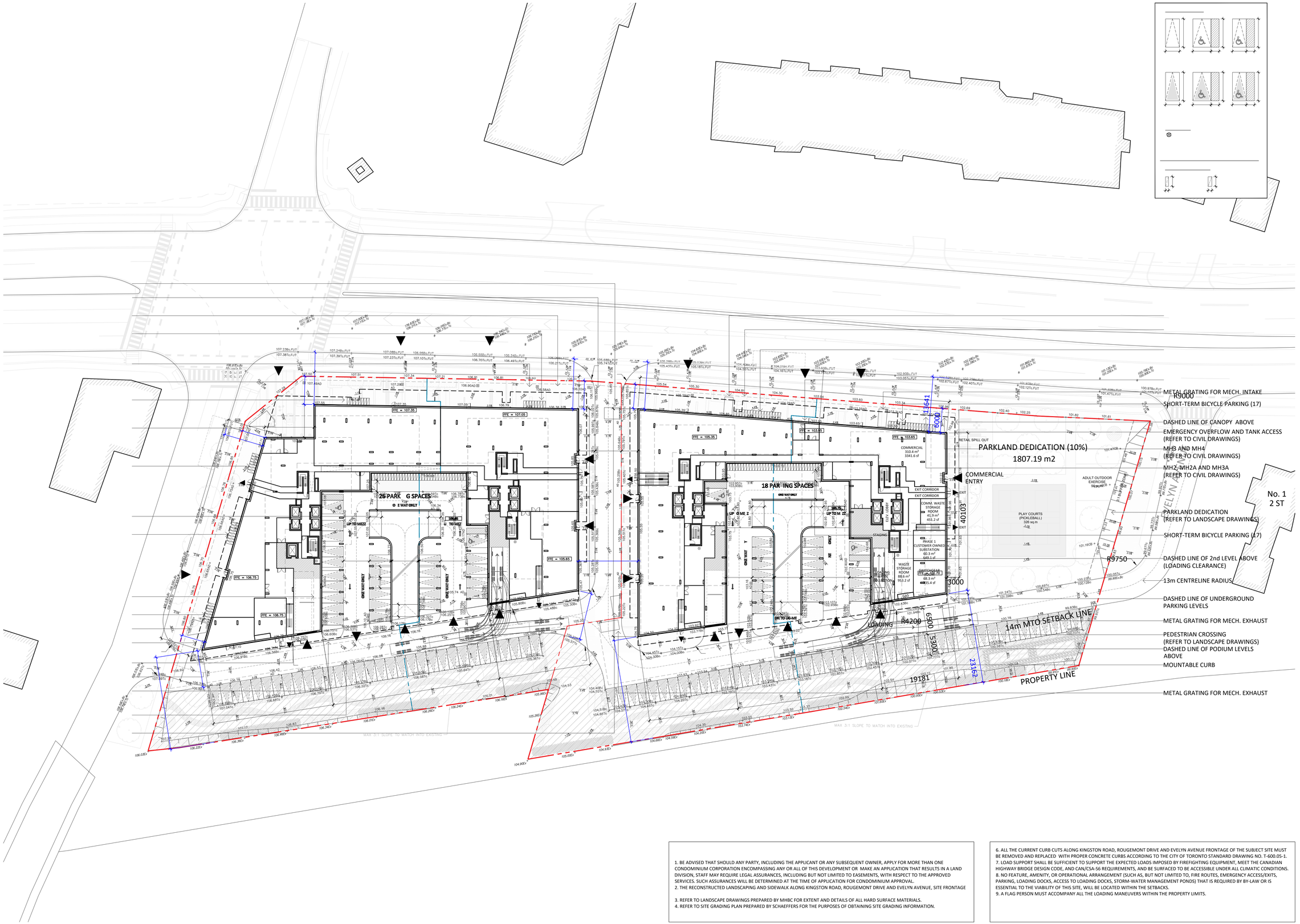
2.2 Development Proposal

According to the most recent Site Plan, the development will consist of Four (4) high-rise mixed-use residential towers with a total of 1,356 residential dwelling units and approximately 2,911.4 m^2 of ground-floor commercial GFA. A total of 1,154 parking spaces with an additional 77 spaces located within 14.0 m of the Ministry of Transportation Ontario's (MTO) setback area are proposed at-grade and underground to facilitate the overall residential subdivision. Three site accesses are also proposed; full-moves accesses at Rougemount Drive and Evelyn Avenue and a right-in-right-out access at Kingston Road.

The project is envisioned to be constructed in two (2) phases. Phase 1 assumes the existing commercial plaza fronting Rougemount Drive will remain in operation, while two (2) 31- and 32-storey towers are constructed. Phase 1 also envisions a private laneway connection to Evelyn Avenue. Phase 2 includes the redevelopment of the existing commercial plaza to support two (2) 33-34-storey towers, connecting to the Phase 1 development.

The full buildout is estimated to occur within five years (2029).

Table 1 summarizes the proposed development statistics. The most recent Site Plan and the site location are illustrated in **Figure 1** and **Figure 2,** respectively.



- METAL GRATING FOR MECH. INTAKE
- SHORT-TERM BICYCLE PARKING (17)
- DASHED LINE OF CANOPY ABOVE
- EMERGENCY OVERFLOW AND TANK ACCESS (REFER TO CIVIL DRAWINGS)
- MH3 AND MH4 (REFER TO CIVIL DRAWINGS)
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- DASHED LINE OF PODIUM LEVELS ABOVE
- MOUNTABLE CURB
- METAL GRATING FOR MECH. EXHAUST

1. BE ADVISED THAT SHOULD ANY PARTY, INCLUDING THE APPLICANT OR ANY SUBSEQUENT OWNER, APPLY FOR MORE THAN ONE CONDOMINIUM CORPORATION ENCOMPASSING ANY OR ALL OF THIS DEVELOPMENT OR MAKE AN APPLICATION THAT RESULTS IN A LAND DIVISION, STAFF MAY REQUIRE LEGAL ASSURANCES, INCLUDING BUT NOT LIMITED TO EASEMENTS, WITH RESPECT TO THE APPROVED SERVICES. SUCH ASSURANCES WILL BE DETERMINED AT THE TIME OF APPLICATION FOR CONDOMINIUM APPROVAL.
2. THE RECONSTRUCTED LANDSCAPING AND SIDEWALK ALONG KINGSTON ROAD, ROUGEMONT DRIVE AND EVELYN AVENUE, SITE FRONTAGE

3. REFER TO LANDSCAPE DRAWINGS PREPARED BY MHBC FOR EXTENT AND DETAILS OF ALL HARD SURFACE MATERIALS.
4. REFER TO SITE GRADING PLAN PREPARED BY SCHAEFFERS FOR THE PURPOSES OF OBTAINING SITE GRADING INFORMATION.

6. ALL THE CURRENT CURB CUTS ALONG KINGSTON ROAD, ROUGEMONT DRIVE AND EVELYN AVENUE FRONTAGE OF THE SUBJECT SITE MUST BE REMOVED AND REPLACED WITH PROPER CONCRETE CURBS ACCORDING TO THE CITY OF TORONTO STANDARD DRAWING NO. T-600.05-1.
7. LOAD SUPPORT SHALL BE SUFFICIENT TO SUPPORT THE EXPECTED LOADS IMPOSED BY FIREFIGHTING EQUIPMENT, MEET THE CANADIAN HIGHWAY BRIDGE DESIGN CODE, AND CAN/CSA-S6 REQUIREMENTS, AND BE SURFACED TO BE ACCESSIBLE UNDER ALL CLIMATIC CONDITIONS.
8. NO FEATURE, AMENITY, OR OPERATIONAL ARRANGEMENT (SUCH AS, BUT NOT LIMITED TO, FIRE ROUTES, EMERGENCY ACCESS/EXITS, PARKING, LOADING DOCKS, ACCESS TO LOADING DOCKS, STORM-WATER MANAGEMENT PONDS) THAT IS REQUIRED BY BY-LAW OR IS ESSENTIAL TO THE VIABILITY OF THIS SITE, WILL BE LOCATED WITHIN THE SETBACKS.
9. A FLAG PERSON MUST ACCOMPANY ALL THE LOADING MANEUVERS WITHIN THE PROPERTY LIMITS.

TRUE NORTH

PROJECT NORTH

Architects:

STUDIO JCI

20 De Boers Drive, Suite 525
Toronto, ON M3J 0H1
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PROPOSED MIXED-USE DEVELOPMENT

375-409 Kingston Rd, Pickering, ON L1V 1A3

BLDNG 1 AND BLDNG 2 GROUND FLOOR SITE PLAN

Project No.: 2423
Scale: 1:400
Date: February 14, 2025
Drawn by:

Drawing No.:

A 1.03B



375–417 KINGSTON ROAD, CITY OF PICKERING

SITE LOCATION

CROZIER CONSULTING ENGINEERS
211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
WWW.CFCROZIER.CA

Drawn	Design	Project No.	
R.L.			2144–7313
Date	Check	Scale	Dwg.
2025/03/20	M.I.	N.T.S	FIG 2

Table 1: Development Statistics

Phase	Residential (Units)	Ground Floor Retail (GFA)
Phase 1	654 Units	1,242.7 m^2
Phase 2	702 Units	1,668.7 m^2
Total	**1,356 Units**	**2,911.4 m^2**
Total Parking & Loading Supply		
Residential		950 spaces
Residential and Retail Visitors		204 spaces + 77 spaces within the MTO setback
Total Vehicle Parking		**1,154 spaces + 77 spaces within the MTO setback**
Loading Space		4 Provided (12 m x 3.5 m x 4.2 m)
Bicycle Parking		734 Long-Term Spaces 137 Short-Term Spaces

3.0 Existing Conditions

3.1 Development Lands

The subject property covers an area of approximately 1.72 ha and currently consists of a two-story retail plaza, a wreck yard, a learning center, multiple commercial buildings along with associated surface parking. The site lies on the southeast corner of Kingston Road and Rougemount Drive within a mixed-use residential and commercial neighbourhood in the City of Pickering. The site is bound by Kingston Road to the north, Rougemount Drive to the west, Highway 401 to the south and residential and Evelyn Avenue to the east.

3.2 Study Area

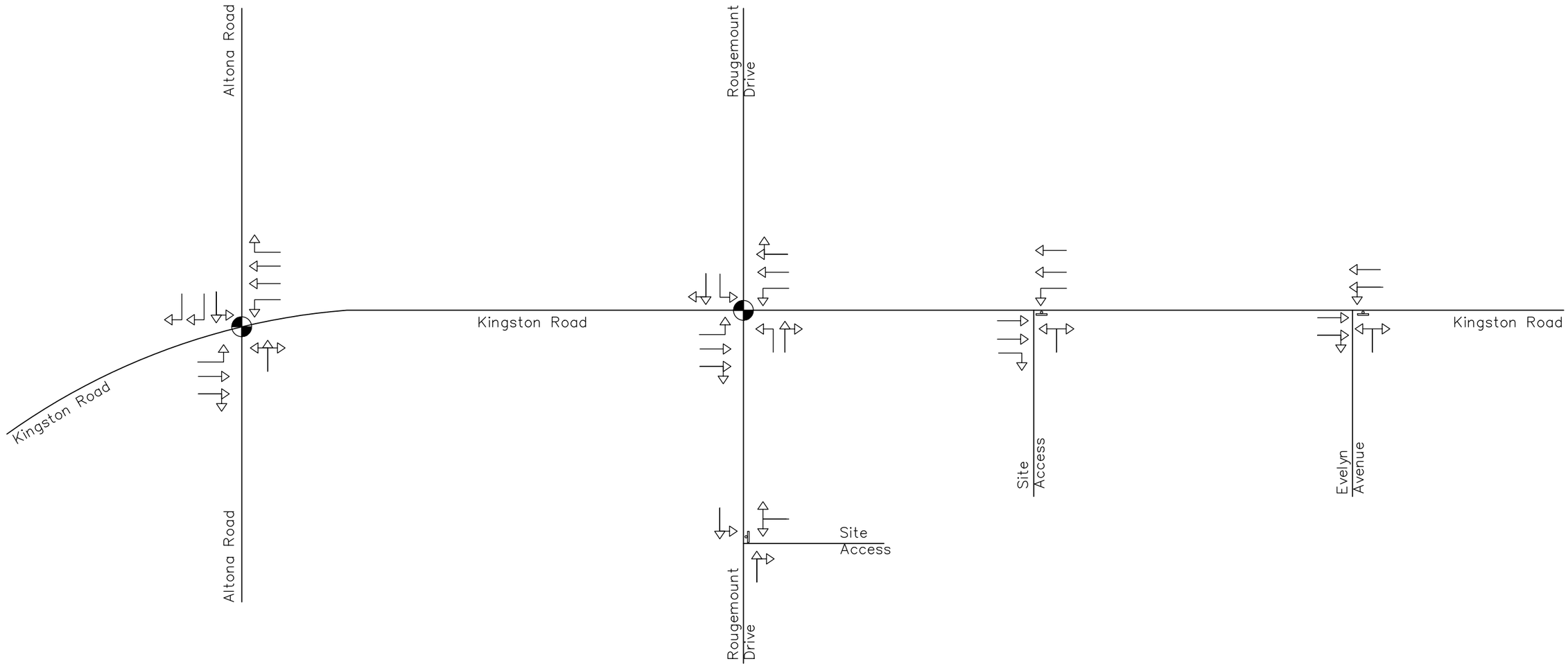
The study area encompasses the boundary road network surrounding the Subject Property as described in **Section 3.3**. The Transportation Impact Study analyzes the following intersections as proposed in the Terms of Reference with the City of Pickering and Durham Region, attached in **Appendix A**.

- Kingston Road at Rougemount Drive
- Kingston Road at Altona Road
- Kingston Site Access
- Rougemount Site Access
- Kingston Road at Evelyn Avenue

3.3 Boundary Road Network

The boundary road network is described in **Table 2** and illustrated in **Figure 3**.

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

375–417 KINGSTON ROAD,
CITY OF PICKERING

Boundary Road Network

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Drawn	Design	Project No.	
I.A.			2144–7313
Date	Check	Scale	Dwg.
2025/03/20	M.I.	N.T.S	FIG 3

Table 2: Boundary Road Network

Feature	Roadway			
	Kingston Road/Regional Highway 2	**Rougemount Drive**	**Altona Road/Regional Road 27**	**Evelyn Avenue**
Direction	Two-Way (East-West)	Two-Way (North-South)	Two-Way (North-South)	Two-Way (North-South)
Classification	Type B Arterial	Local	Type B Arterial	Local
Jurisdiction	Region of Durham	City of Pickering	Region of Durham	City of Pickering
Speed Limit	60 km/h	40 km/h	50 km/h	40 km/h
Span	Rouge River to Notion Road (Pickering Boundaries)	Altona Road to Rosebank Road	Whitevale Road (Regional Road 27) to Kingston Road (Highway 2)	Kingston Road
Number of lanes total	Four travel lanes	Two travel lanes	Four travel lanes	Two travel lanes
Pedestrian Facilities	Yes	Yes	Yes	No
Cycling Facilities	No	No	No	No
On-Street Parking	No	Yes (where posted)	No	Yes

3.4 Existing Pedestrian and Cycling Movements

The Subject Property is located in a residential-commercial neighbourhood within walking and cycling distance to many destinations. Sidewalks are provided on majority of the roadways within the subject area while no dedicated cycling facilities are currently provided. Cyclists are expected to share right-of-way with motor vehicles.

3.5 Existing Transit

Durham Region Transit (DRT) operates local and regional transit services for Durham Region. Specifically, DRT provides transit services to the City of Pickering, City of Oshawa, Municipality of Clarington, Town of Whitby, Town of Ajax, Townships of Brock, Scugog and Uxbridge. GO Transit is a regional transit service offered by Metrolinx (Province of Ontario) connecting passengers across the Golden Horseshoe region of Ontario.

Table 3 below outlines the existing transit routes, direction, days of operation, peak hour headways, and the location of bus stops in the study area.

Table 3: Existing Transit Services

Route	Direction	Span[1]	Days of Operation [1]	Peak Hour Headways (min)[1]	Bus Stops in Study Area[2]
103 Glenanna	East-West	Pine Grove Avenue and Altona Road to Pickering GO	Monday-Friday	30	Kingston Road at Altona Road (300 metres; 4 min walk)
120 Whites	North-South	Whites Road and Sunbird Trail to Pickering GO Station	Monday-Sunday	30	Whites Road at Kingston Road (1.5 km; 7 min bus ride)
900 PULSE Highway 2	East-West	Centennial Circle to King Street/Bond Street at Ritson Road	Monday-Sunday	10-20	Kingston Road and Rougemount Drive (Fronting Subject Property) Kingston Road at Altona Road (300 metres; 4 min walk)
920 McCowan Station	East-West	McCowan Station to Ontario Tech/Durham College North Campus	Monday-Sunday	30	
N1 Blue Night – Simcoe-Highway 2 (Overnight Service)	East-West	Centennial Circle to Harmony Terminal	Monday-Sunday	n/a	
Go Transit 41 Hamilton/ Pickering	East-West	Hamilton GO Centre to Pickering GO	Monday-Friday	25-70	Pickering GO (5-km west, 10-15 min bus ride)
GO Transit 92 Oshawa/ Yorkdale	East-West	Yorkdale Bus Terminal to Oshawa Bus Terminal	Monday-Sunday	30	Kingston Road and Rougemount Drive (Fronting Subject Property)
Lakeshore East GO Rail	East-West	Oshawa GO to Union Station	Monday-Sunday	15	Pickering GO (5-km east, 15-20 min bus ride)

Note 1: Transit routes and schedules are based on available information at the time of this report. Due to the ongoing pandemic and change in travel demands, routes and headways may change.

Note 2: Travel times along Kingston Road and to Pickering GO are expected to improve materially upon the buildout of Kingston Road BRT.

The transit services described above, provide residents and visitors in the City of Pickering frequent, easily accessible, and direct transit services throughout the City and Region. In addition, major employment, commercial and tourist attractions such as Downtown Toronto, Oshawa, or greater Toronto areas can be accessed using GO Transit, via direct bus connection at Pickering GO station.

As such, transit is a convenient mode of transport for both residents and visitors of the proposed development. **Appendix B** contains relevant transit information.

3.6 Existing Site Volumes

As mentioned, the site currently consists of a one to two-storey commercial plaza with a Gross Floor Area (GFA) of approximately 27,500 ft^2.

To estimate the volumes at the existing site accesses, new counts were undertaken. According to turning movement counts (TMC) conducted on Thursday, November 28, 2024, the existing trips are tabulated in **Table 4**.

Table 4: Existing Trip Generation

Use	Peak Hour	Number of Trips		
		Inbound	Outbound	Total
Commercial plaza	Weekday A.M.	77	51	128
	Weekday P.M.	129	142	271

3.7 Traffic Data

Existing turning movement counts (TMC) were collected at the study intersections from 6:00 to 10:00 a.m. and 3:00 to 7:00 p.m. on Thursday, November 28, 2024, by Spectrum. Further, Signal Timing Plans were provided by the Region. **Table 5** below outlines the observed peak hour factors (PHF) at each intersection.

Table 5: Peak Hour Factors

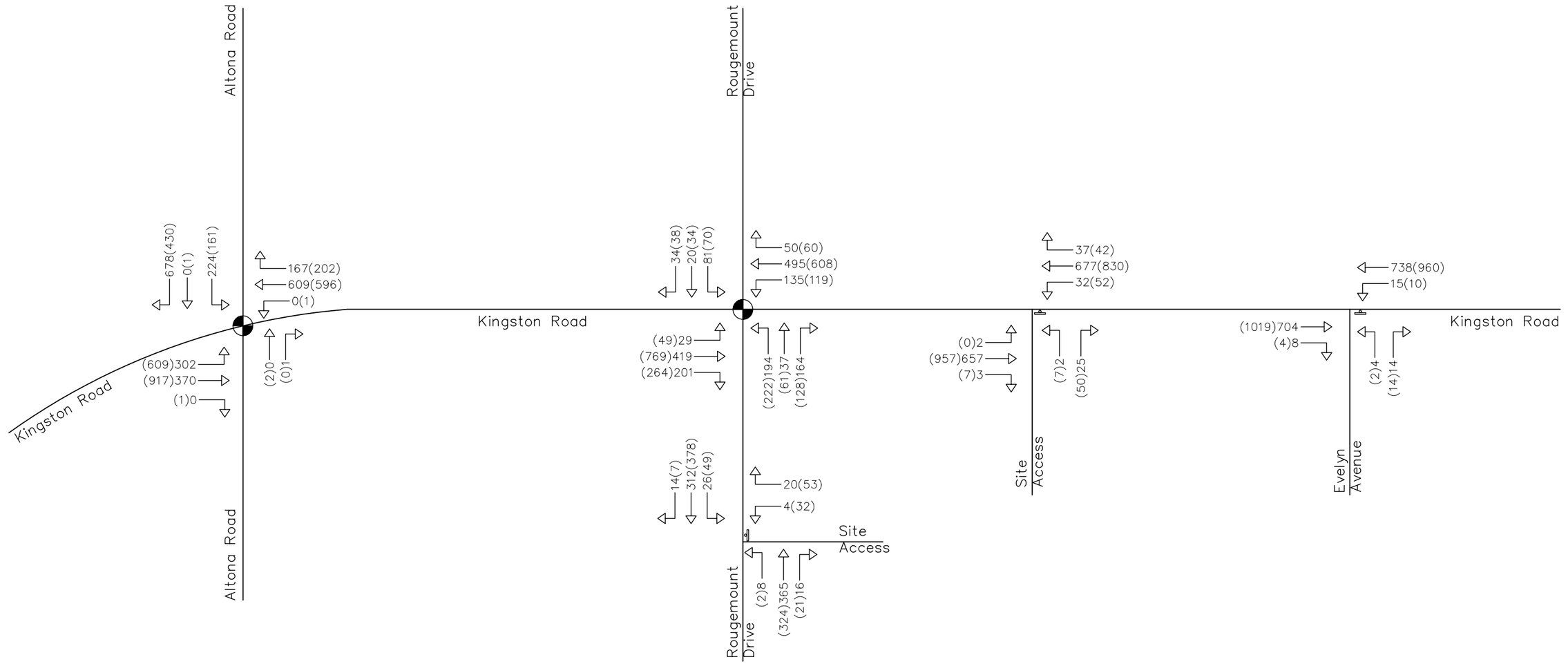
Intersection	Peak Hour	Intersection Peak Hour Factor
Kingston Road at Rougemount Drive	Weekday A.M. 8:30 a.m. – 9:30 a.m.	0.85
	Weekday P.M. 3:45 p.m. – 4:45 p.m.	0.95
Kingston Road at Altona Road	Weekday A.M. 8:00 a.m. – 9:00 a.m.	0.98
	Weekday P.M. 4:30 p.m. – 5:30 p.m.	0.99
Kingston Road at Evelyn Avenue	Weekday A.M. 8:30 a.m. – 9:30 a.m.	0.96
	Weekday P.M. 3:30 p.m. – 4:30 p.m.	0.98

The PHFs outlined above represent uniform pattern of traffic flow on the boundary road network and are reflective of typical urban commuter travel patterns.

Nevertheless, per Region of Durham guidelines, all existing and future analyses were conducted using a PHF of 0.92 for all intersections for comparison purposes. As such, the analysis can be considered conservative as the observed PHFs listed above are higher than the default PHF of 0.92, signifying a more uniform distribution of traffic throughout the peak hour (as opposed to a sudden large wave of traffic).

The traffic count data is provided in **Appendix C**. **Figure 4** illustrates the 2024 existing traffic volumes.

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

375–417 KINGSTON ROAD, CITY OF PICKERING

2024 Existing Traffic Volumes

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Drawn	Design	Project No.
I.A.		2144–7313
Date	Check	Scale	Dwg.
2025/03/20	M.I.	N.T.S	FIG 4

3.8 Intersection Modelling

The intersection operations are modelled based on default parameters provided by Synchro 11, as well as in general conformance with Durham Region's and MTO's Transportation Impact Study Guidelines. Analysis of all intersections were based on existing signal timings as provided by Durham Region. Signal timing plans have been included in **Appendix C**.

3.9 Intersection Operations

The operations of the critical intersections were analyzed based on the 2024 existing traffic volumes illustrated in **Figure 4.** Level of Service definitions are included in **Appendix D.**

Table 6 outlines 2024 existing traffic level of service for the study intersections under existing conditions and geometric configurations. It is noted that a default PHF of 0.92 is assumed for weekday a.m. and p.m. peak hours for all intersections for comparison purposes. Detailed capacity analyses are included in **Appendix E.**

Table 6: 2024 Existing Level of Service

Intersection	Control	Peak Hour	Level of Service[1]	Control Delay	Maximum V/C Ratios[2]	95th Percentile Queue > Storage Length
Kingston Road at Rougemount Drive	Signalized	A.M.	B	13.5 s	0.72 (NBL)	51.5 m > 35.0 m (NBL) 30.0 m > 19.0 m (SBL)
		P.M.	B	15.4 s	0.87 (NBL)	63.2 m > 35.0 m (NBL) 26.9 m > 19.0 m (SBL)
Kingston Road at Altona Road	Signalized	A.M.	B	17.2 s	0.79 (SBLT)	44.6 m > 16.0 m (EBL)
		P.M.	C	23.8 s	**1.01 (EBL)**	182.9 m > 16.0 m (EBL)
Kingston Road at Evelyn Avenue	Stop Minor (Full-moves)	A.M.	B	14.5 s	0.31 (WLBT)	None
		P.M.	B	14.3 s	0.43 (EBTR)	None
Kingston Site Access	Stop Minor (Full-moves)	A.M.	B	11.1 s	0.22 (WBLT)	None
		P.M.	B	14.5 s	0.31 (EBT)	None
Rougemount Site Access	Stop Minor (Full-moves)	A.M.	B	11.6 s	0.24 (NBTR)	None
		P.M.	B	14.7 s	0.22 (NBTR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The level of Service of a stop-controlled intersection is based on the minor (stopped) approach control delay per vehicle.

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio at the intersection. All v/c ratios greater than 0.90 are outlined and highlighted.

The signalized intersection of Kingston Road at Rougemount Drive is currently operating at a level of service (LOS) "B" during both weekday a.m. and p.m. peak periods. The intersection's maximum control delay is 15.4 seconds or less, and the theoretical maximum volume-to-capacity ratio is 0.87. The 95th percentile queue lengths for Northbound and Southbound left-turn movements exceed the available storage lengths during the weekday peak periods, however there is additional taper length to accommodate queued vehicles.

The signalized intersection of Kingston Road at Altona Road is currently operating at a LOS "C" or better during the weekday a.m. and p.m. peak periods. The intersection is operating at a moderate control delay of 23.8 seconds or less and a theoretical maximum volume-to-capacity ratio of 1.01 or less. The 95th percentile queue length for the eastbound left-turn movement is expected to exceed

the available storage length.

the stop-controlled minor connection of Evelyn Avenue to Kingston Road is operating efficiently at a LOS "B" during both weekday a.m. and p.m. peak hours. Maximum control delays are expected to be 14.5 s and 14.3 s in the weekday a.m. and p.m. peak hours, respectively and the maximum volume-to-capacity ratios is expected to be 0.31 (WBLT) and 0.43 (EBTR) in the weekday a.m. and p.m. peak hours, respectively.

The existing site accesses are both currently operating at a LOS "B" during the weekday a.m. and p.m. peak periods with a maximum control delay of 14.7 seconds and maximum volume-to-capacity ratio of 0.31. These metrics indicate that the accesses are operating efficiently with acceptable delays and reserve capacity to accommodate future increases in traffic volume.

While the signalized intersections are operating at or above theoretical volume-to-capacity ratios, the intersection delays are still acceptable and are typical for major arterial roadways in an urban environment during commuter peak periods. Additionally, the above results are considered conservative as the default PHF of 0.92 was used to model existing traffic conditions (as requested by the Region), while the observed PHFs at the signalized intersection are actually higher as outlined in **Table 5**. Additionally, no lost-time adjustments were applied, as per Region guidelines. Thus, the results above may be considered conservative.

4.0 Future Transportation Context

4.1 Durham-Scarborough Bus Rapid Transit Corridor

Metrolinx has proposed the Durham-Scarborough BRT project as a part of the 2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area.

The Durham-Scarborough BRT, also referred to as Kingston BRT herein, is planned to span 36-kilometres from Grangeway Avenue and Ellesmere Road near the Scarborough Town Centre in the west through Durham Region to Simcoe Street and King Street in downtown Oshawa to the east. The Kingston BRT is proposed to include 49 stops and provide two-way service every five minutes during peak periods. The BRT will be implemented along Kingston Road in Pickering, with a stop proposed at Kingston Road and Altona Road (450 metres, 6-minute walk), just west of the Subject Property, and at Kingston Road and Rosebank Road (650 metres, 8-minute walk) just east of the Subject Property. The proposed BRT design is illustrated in **Figure 5.**

Per Metrolinx Initial Business Case Report prepared by IBI in 2018, the plan proposes more frequent buses, at 5 minutes or less during peak hours, and reliable transit services to and from Durham Region. To ensure reliability and faster travel times, the BRT will utilize existing and new bus dedicated lanes, queue jumping at intersections, Intelligent Transportation System (ITS) technologies (i.e., green light progression, and transit priority) and more.

In conjunction to the BRT construction, separated bike lanes and pedestrian friendly urban streetscapes are also proposed along the site frontage of Kingston Road, providing residents and visitors of the development convenient and safe access to the pedestrian, cycling and transit network. As such, the Kingston Road BRT is expected to materially decrease vehicle usage within the City and Durham Region, and increase transit, pedestrian, and cyclist usage. Within the study area, a cycle track is proposed along Kingston Road from Altona Road to Bainbridge Drive, where a multi-use path will begin. With direct access to the cycle track fronting the Subject Property, residents may access large commercial

attractions to the east, the City Centre area, as well as employment areas safely via walking or cycling. Further, per IBI Group's Durham-Scarborough Bus Rapid Transit Study, a significant shift towards Transit is expected due to the implementation of this BRT, with 30% transit mode share expected along this segment. An excerpt of the expected transit mode share estimates is shown in **Figure 6.**

4.2 Kingston Road Intensification Corridor

The Kingston Road Corridor and Specialty Retailing Node Intensification Study reviewed intensification opportunities along the Kingston Road corridor. The areas surrounding the Subject Site is identified as the Rougemount Precinct, extending from the Rouge Valley in the west to Rosebank Road in the east.

In the Rougemount Precinct, the Intensification Study recommends greater densities around the intersections of Kingston Road and Rougemount Drive and Kingston Road and Altona Road. The greatest levels of density are located to the south of Kingston Road, away from the stable residential neighborhoods to the north of the Study Area. The Intensification Study states that an increase in density within this precinct can result in a total of 1,991 residents and 236 jobs.

The Intensification Study recommends the addition of two rear private service streets/laneways on properties south of Kingston Road to minimize and consolidate the multiple accesses off Kingston Road and to increase the permeability of the precinct. The first of these service streets runs from the southern end of Altona Road, east across the southern limit of properties with frontage on Kingston Road and then turns back up to Kingston Road two properties west of Rougemount Drive. The second commences at Evelyn Avenue, running west to reconnect with Kingston Road closer to Rougemount Drive. Further, The Intensification Study recommends that provision of a controlled intersection be explored at Evelyn Avenue.

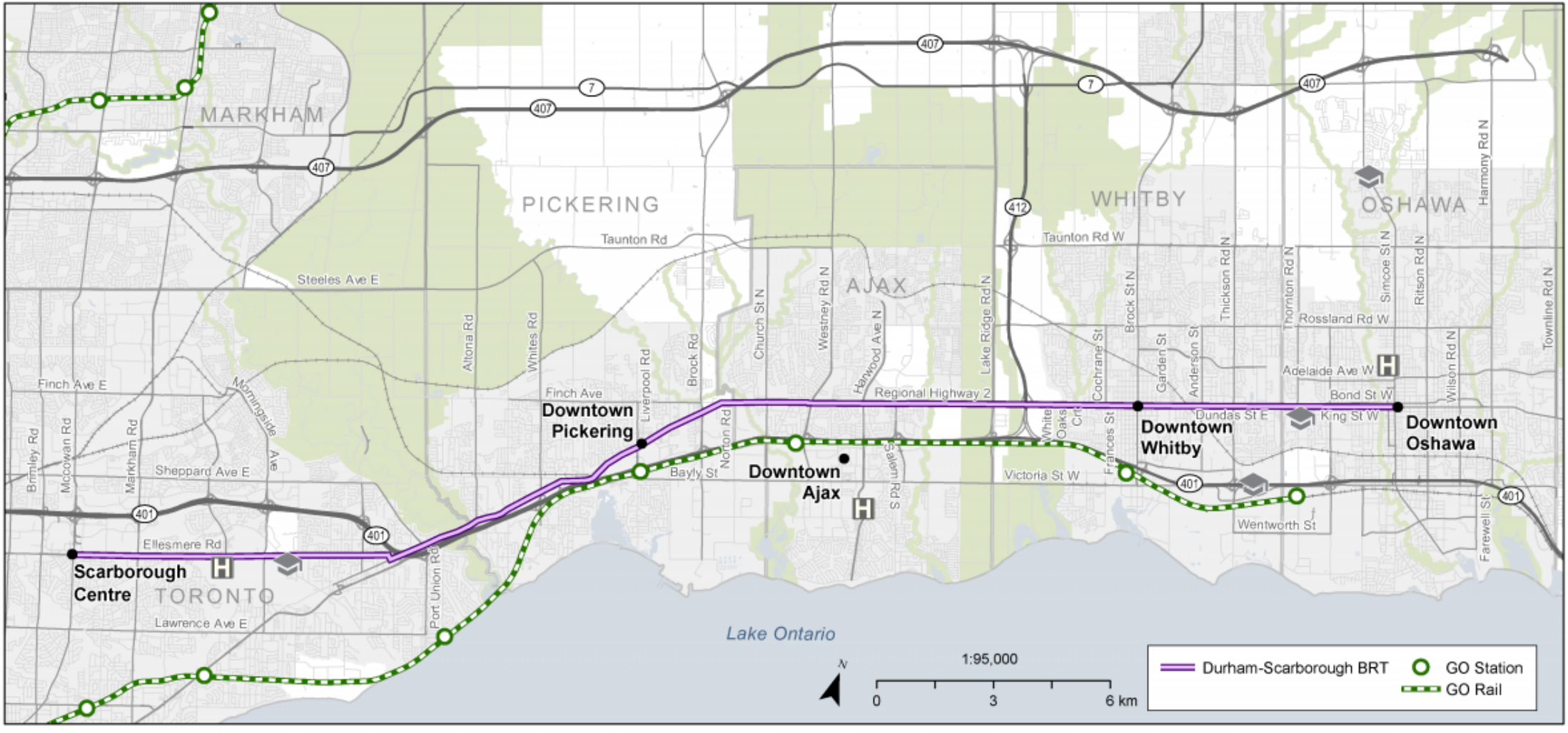
Moreover, as mentioned in previous section, the Kingston Road corridor is proposed to be served by Durham-Scarborough BRT's frequent buses with headways at 5 minutes or less during peak hours.

The recommended intensification scenario for the Rougemount Precinct is illustrated in **Figure 7**.

4.3 Lakeshore East GO Expansion – Future Potential Whites Road Station

In light of the Regional Express Rail (RER) and Smart Track Program, Metrolinx examined a number of potential new stations locations across the seven existing GO Transit rail corridors. The Initial Business Case approach analyzed each potential station based on a strategic and financial case. The Initial Business Case assessed a potential station at Whites Road and Granite Court, approximately 2km from the Subject Site. The location of the potential Whites Road GO Station is illustrated in **Figure 8.** The report concluded that the Whites Road station did not meet the strategic and financial case criteria to be considered for implementation.

Since the release of the Initial Business Case study, the City of Pickering published the Kingston Road Intensification Study. Given the mixes of uses and densities proposed by the intensification study, the potential Whites Road station is expected to satisfy the strategic and financial case criteria and its implementation should be reconsidered.


MARKHAM
PICKERING
AJAX
WHITBY
OSHAWA
TORONTO
Lake Ontario
Taunton Rd
Taunton Rd W
Steeles Ave E
Finch Ave E
Finch Ave
Sheppard Ave E
Ellesmere Rd
Lawrence Ave E
Bayly St
Victoria St W
Dundas St E
King St W
Bond St W
Adelaide Ave W
Rossland Rd W
Wentworth St
Regional Highway 2
Downtown Pickering
Downtown Ajax
Downtown Whitby
Downtown Oshawa
Scarborough Centre
Durham-Scarborough BRT
GO Station
GO Rail
1:95,000
0
3
6 km
N

In additional to these operating benefits, implementing rapid transit improves society's perception of transit and improves the view of transit as an efficient and convenient way to travel. Incremental improvements to BRT infrastructure along the corridor, and service improvements has resulted in a significant ridership increase over the last 5 years.

5.1.3 Mobility Choice

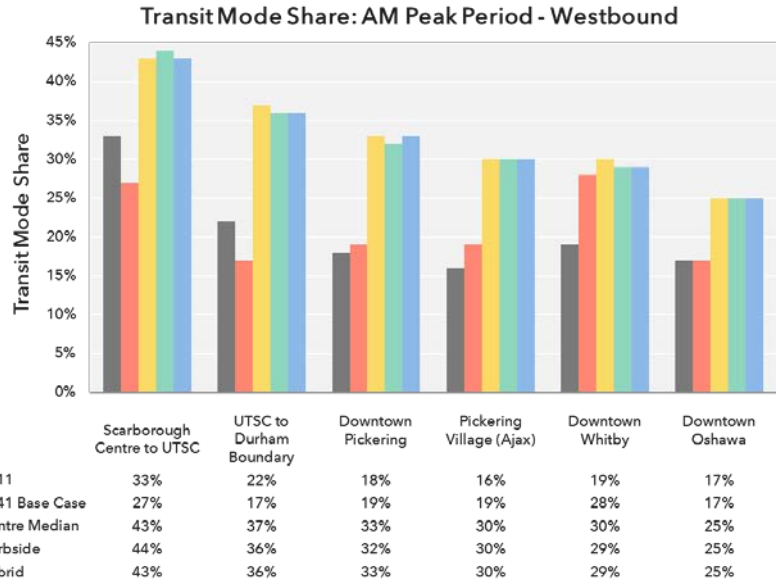
Rapid transit service is a key element to effectively encouraging reliance on automobiles and a shift toward transit use. Once rapid transit is in place to provide the backbone of a multi-modal system, other alternative modes, such as cycling, walking, car share and bike share can be supported to encourage even greater mobility choice.

In the context of the Durham-Scarborough BRT Corridor, the demand for travel will need to be satisfied through a high-capacity form of transit that is connected to the region's broader network and provide seamless mobility across the region.

A mode shift from auto-based travel to transit is the best indicator for improved mobility choice and can be used to determine the effectiveness that rapid transit has on facilitating this mode shift. Transit mode shares at six different areas along the BRT corridor were derived from the GGHM v4 and are presented in Exhibit 5.6.

Transit mode share for each of the three alternatives is significantly higher than 2011 and the 2041 Base Case. All three alternatives show significant, however the Centre Median alternative performs slightly better in 3 of 5 corridor segments. The largest change in mode share along the corridor occurs crossing the Toronto-Durham boundary, as well as in Downtown Pickering with an approximate 20% difference between the 2041 Base Case and BRT.

Exhibit 5.6: Transit Mode Shares (2 hour AM Peak Period – Westbound)



	Scarborough Centre to UTSC	UTSC to Durham Boundary	Downtown Pickering	Pickering Village (Ajax)	Downtown Whitby	Downtown Oshawa
2011	33%	22%	18%	16%	19%	17%
2041 Base Case	27%	17%	19%	19%	28%	17%
Centre Median	43%	37%	33%	30%	30%	25%
Curbside	44%	36%	32%	30%	29%	25%
Hybrid	43%	36%	33%	30%	29%	25%

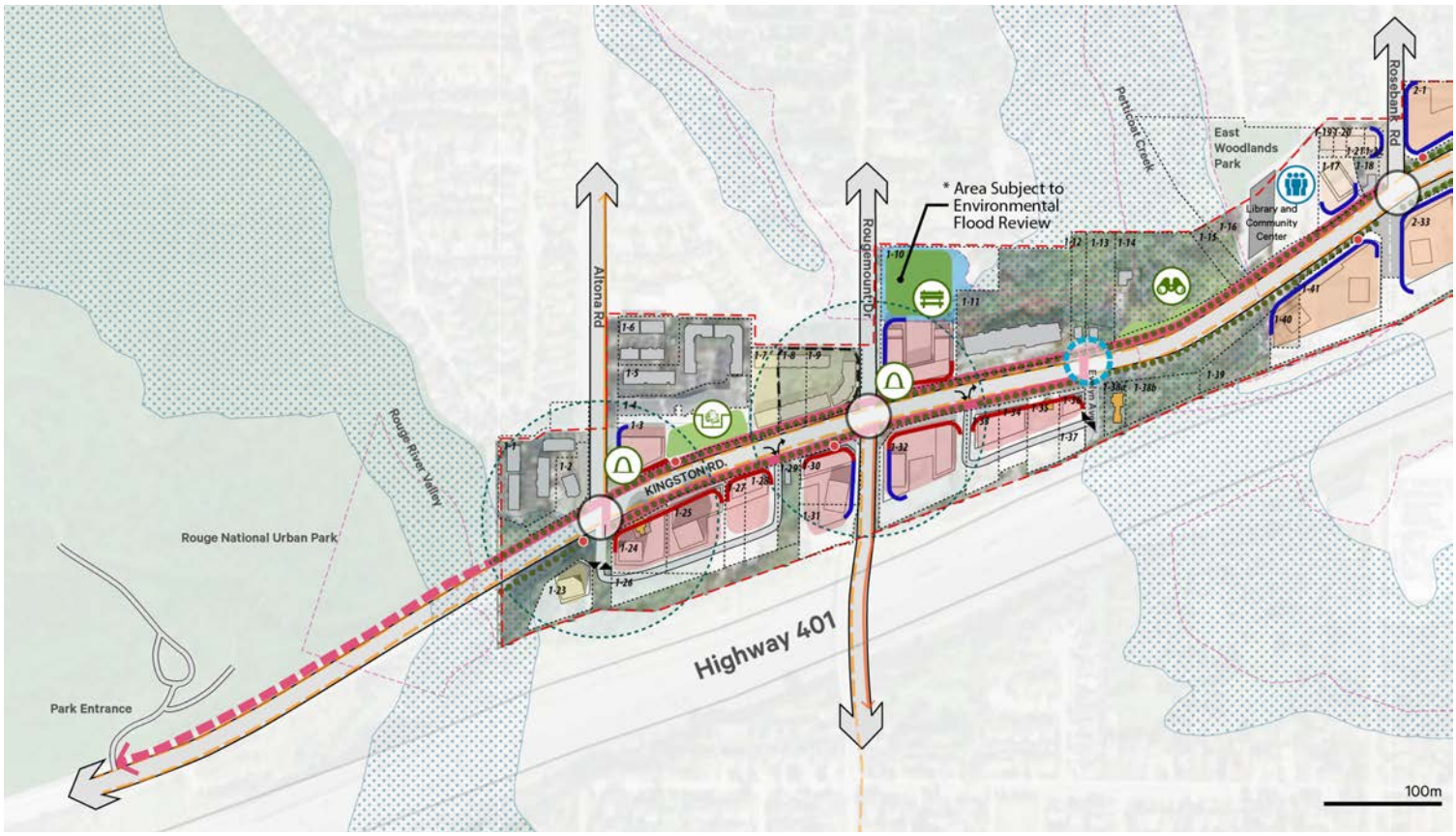


Figure 60. Rougemount Precinct Intensification Plan

EXISTING

- Study Area Boundary
- Valleylands and Stream Corridors
- Regional Stormwater Flood Plain
- Existing Park
- Buildings To Remain
- Properties of Heritage Significance
- Existing Main Road
- Existing Road / Laneways
- Existing Cycling Network
- Planned Cycling Network
- GO Railway
- Future & Planned Connection Subject to EA
- Lot Lines
- Developable Lots
- #-# Lot Identifier
- Area Subject to Further Assessment
- Existing Controlled Intersection
- Bus Stops

PROPOSED

LAND USE / BUILT FORM

- Gateway
- Mixed Use A - Residential/ Retail/ Office
- Preferred Office Location
- Mixed Use B - Residential/ Retail
- Mixed Use C - Residential/ Retail
- Residential
- Primary Frontage
- Secondary Frontage
- Existing Development Application
- Buildings and Shadows - Illustrative Only (March 21st at 1:00 pm)

PLACE MAKING

- Gateway Plaza
- Public Green Space
- Public Park
- POPS
- Public Lookout
- Heritage Path
- Potential Community Facility

CONNECTIVITY

- Pedestrian Path
- Multi-Use Path
- Proposed Public Streets
- Proposed Private Streets
- Proposed Cycling Facility
- Potential Controlled Intersection and Pedestrian Crossing - Location Subject to Further Review
- Indicative Enhanced Boulevard
- Right-In , Right-out
- Access



375–417 KINGSTON ROAD, CITY OF PICKERING

POTENTIAL WHITES ROAD GO STATION PRECINCT

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2025/03/20	M.I.	N.T.S	FIG 8

5.0 Future Background Conditions

5.1 Horizon Years

To evaluate future traffic operations at the study intersections, the following future scenarios were considered for the analysis:

- Estimated Buildout year of the Phase 1 – 2027
- Full-buildout year – 2029
- Five-year horizon beyond full-buildout – 2034

In addition, the horizon year of 2039 has been analyzed per the Ministry of Transportation (MTO) General Guidelines for the Preparation of Traffic Impact Studies, as the Subject Property falls with the MTO Permit Control Area.

5.2 Growth Rate

A review of Durham-Scarborough Bus Rapt Transit's EA Volume Forecasts for intersections along Kingston Road resulted in a 1% Annual Traffic Growth for all movements at both intersections of Kingston Road with Altona Road and Rougemount Drive. Consequently, a conservative 1% annual compounded growth rate is assumed for all traffic movements in the future traffic analysis. This is consistent with background development Traffic Impact Studies in the area.

5.3 Proposed Infrastructure Improvements

Metrolinx has proposed the Durham-Scarborough BRT project as a part of the 2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area.

The Durham-Scarborough BRT, also referred to as Kingston BRT herein, is planned to span 36-kilometres from Grangeway Avenue and Ellesmere Road near the Scarborough Town Centre in the west through Durham Region to Simcoe Street and King Street in downtown Oshawa to the east. The Kingston BRT is proposed to include 49 stops and provide two-way service every five minutes during peak periods. The BRT will be implemented along Kingston Road in Pickering, with a stop proposed at Kingston Road and Altona Road (450 metres, 6-minute walk), just west of the Subject Property, and at Kingston Road and Rosebank Road (650 metres, 8-minute walk) just east of the Subject Property.

Furthermore, due to the proposed centre median for the future BRT, all existing site accesses along Kingston Road will be restricted to a right-in-right-out access.

Per the Metrolinx Draft Implementation Strategy, construction of the Pickering segment of the BRT is currently forecasted to occur between 2024 and 2027. As such, it is assumed that construction along Kingston Road will be underway by the 2027 horizon year and the Kingston Road site access will be restricted to right-in-right-out (RIRO) access for all horizon years in the future background and future total analyses.

Accordingly, the existing retail trips were redistributed at the site accesses based on the most convenient route, to account for the Kingston Site Access becoming a right-in-right-out access. The redistributions are as follows:

- It was assumed that trips that currently turn left into the Kingston Site Access (i.e., Westbound

Left on Kingston Road) would instead utilize the signalized intersection of Kingston Road and Rougemount Drive, and then Rougemount site access.

- Similarly, it was assumed that trips that currently exit left onto Kingston Road would instead exit via Rougemount site access and make a left turn at the signalized intersection of Kingston Road and Rougemount Drive.

Further, based on the 2016 TTS data, currently about 88% of the person trips in the study area are auto trips. However, according to IBI Group's Durham-Scarborough Bus Rapid Transit Study, under the Centre Median alternative, Transit Mode Share is expected to be a minimum of 30%. Further, according to Durham Region Transportation Master Plan, for Rapid Transit Corridors, Walk and Cycle Mode Share is targeted to be 10%. Therefore, the Vehicle Mode Share of 60% is concluded.

To account for the expected shift in mode split between auto and transit due to implementation of Durham-Scarborough Bus Rapid Transit along Kingston Road, the existing commercial plaza's trips were adjusted.

Table 7 below outlines the forecasted vehicle trip generation for the existing commercial plaza under 2024 and future horizon years.

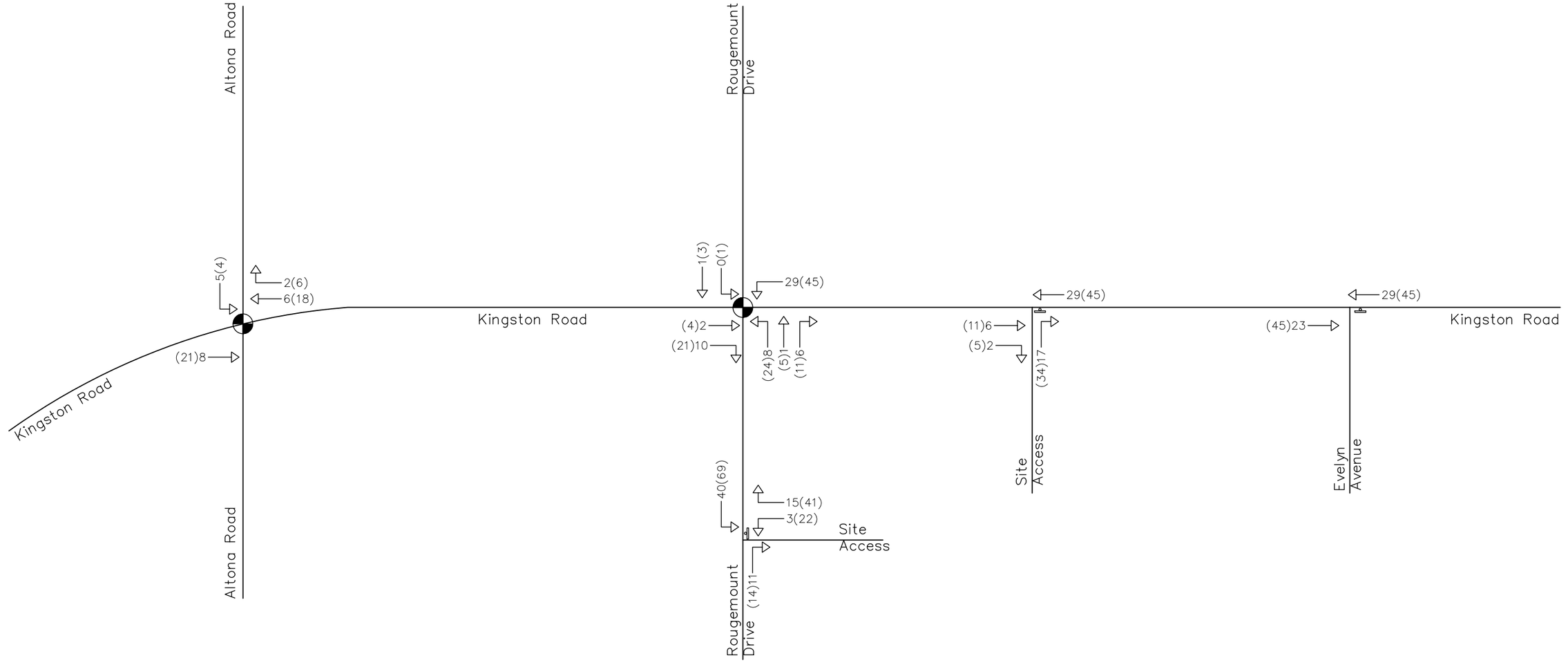
Table 7: Trip Generation of Existing Commercial Plaza

Use	Year	Peak Hour	Number of Vehicle Trips		
			Inbound	Outbound	Total
commercial plaza	2024 (88% Vehicle Mode Share)	Weekday A.M.	77	51	128
		Weekday P.M.	129	142	271
	Future Horizon Years (60% Vehicle Mode Share)	Weekday A.M.	53	35	87
		Weekday P.M.	88	97	185

Accordingly, under future horizon years the existing commercial plaza is forecasted to generate 87 and 185 two-way vehicle trips in the weekday a.m. and p.m. peak hours, respectively.

Figure 9 illustrate the assignment for the vehicle trips associated with the existing commercial plaza under future horizon years. Information on the Durham-Scarborough BRT is included in **Appendix B**.

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

375–417 KINGSTON ROAD,
CITY OF PICKERING

Existing Commercial Plaza Trip Distributions for 2027 Horizon Year

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2025/03/20	M.I.	N.T.S	FIG 9

5.4 Background Developments

In addition to the annual compounded growth rate, background site generated traffic from 603-643 and 645-699 Kingston Road, 770 Kingston Road and 346-364 Kingston Road was also separately applied to the future background traffic volumes, as discussed in the Terms of Reference with City and Region staff.

- 603-643 and 645-699 Kingston Road: Located east of the subject property, proposes a mixed-use community in ten towers. A total of 3,460 residential units, 2,474 m2 of ground floor retail, 3,475 m2 of office space, and 3,093 m2 of parklands is proposed. It is expected to generate a total of 805 and 570 two-way trips during the a.m. and p.m. peak periods, respectively.

- 770 Kingston Road: Located east of the subject property, proposes a residential development with 82 three-storey stacked townhouse units. It is expected to generate a total of 30 and 37 two-way trips during the a.m. and p.m. peak periods, respectively.

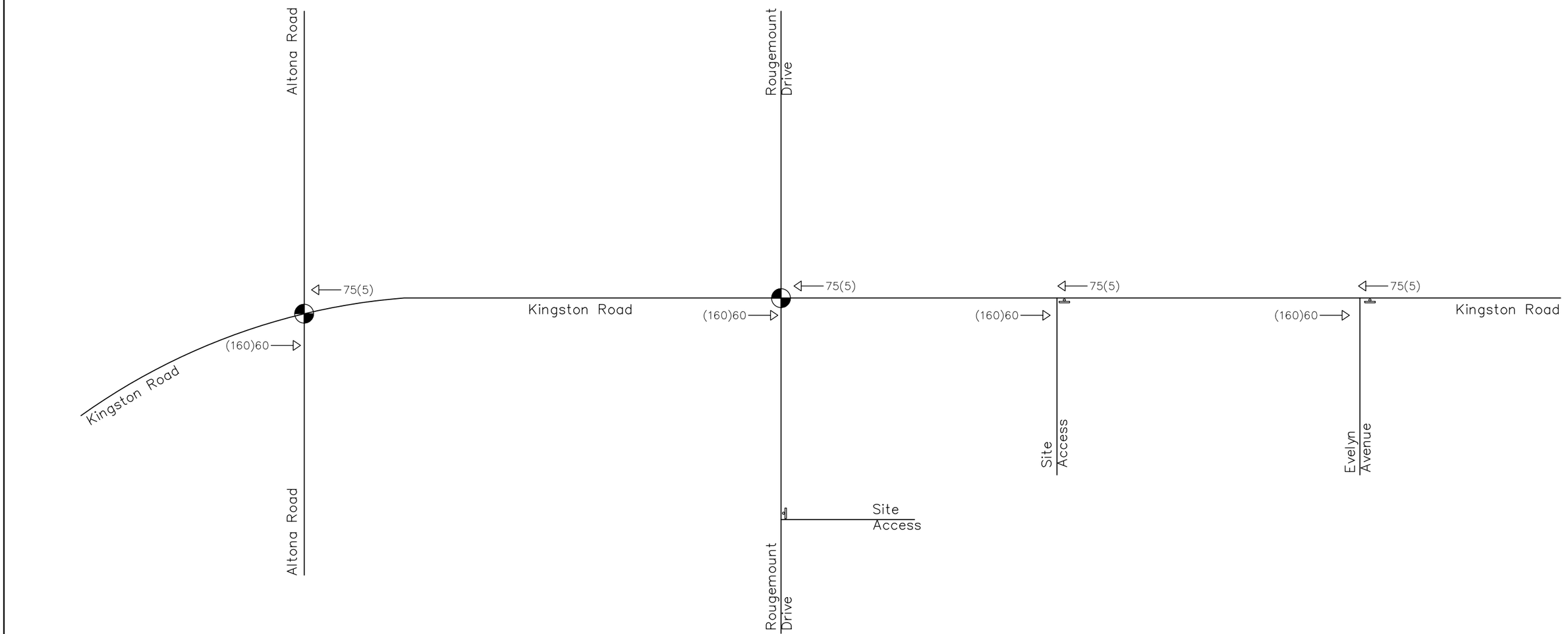
- 346-364 Kingston Road: Located directly across from the subject property on the northwest corner of Kingston Road and Rougemount Drive, Metropolitan Towns by Grand Communities is currently in the preconstruction phase for 28 townhouse units. It is expected to generate a total of 32 and 33 two-way trips during the a.m. and p.m. peak periods, respectively.

The background site generated traffic and trip assignments for 603—643 and 645-699 Kingston Road and 770 Kingston were applied to the future background volumes based on the respective Traffic Impact Studies.

As a Traffic Impact Study is not provided for 346-364 Kingston Road, the trip generation of the site was forecasted using Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, under the Land Use Category 220 "Multifamily Housing (Low-Rise)," based on the proposed 28 townhouse units. It was assumed that the development will have a site access on Rougemount Drive and no site access on Kingston Road, based on the Metropolitan Towns promotional images available. The trip distribution of the site was assumed to be consistent with the trip distribution for the residential portion of the Subject Property (see **Section 5.5**).

Relevant excerpts of the background Traffic Impact Study and trip generation calculations for 346-364 Kingston Road are included in **Appendix F**. **Figures 10**, **11** and **12** illustrate the trip assignments of the background site generated traffic.

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

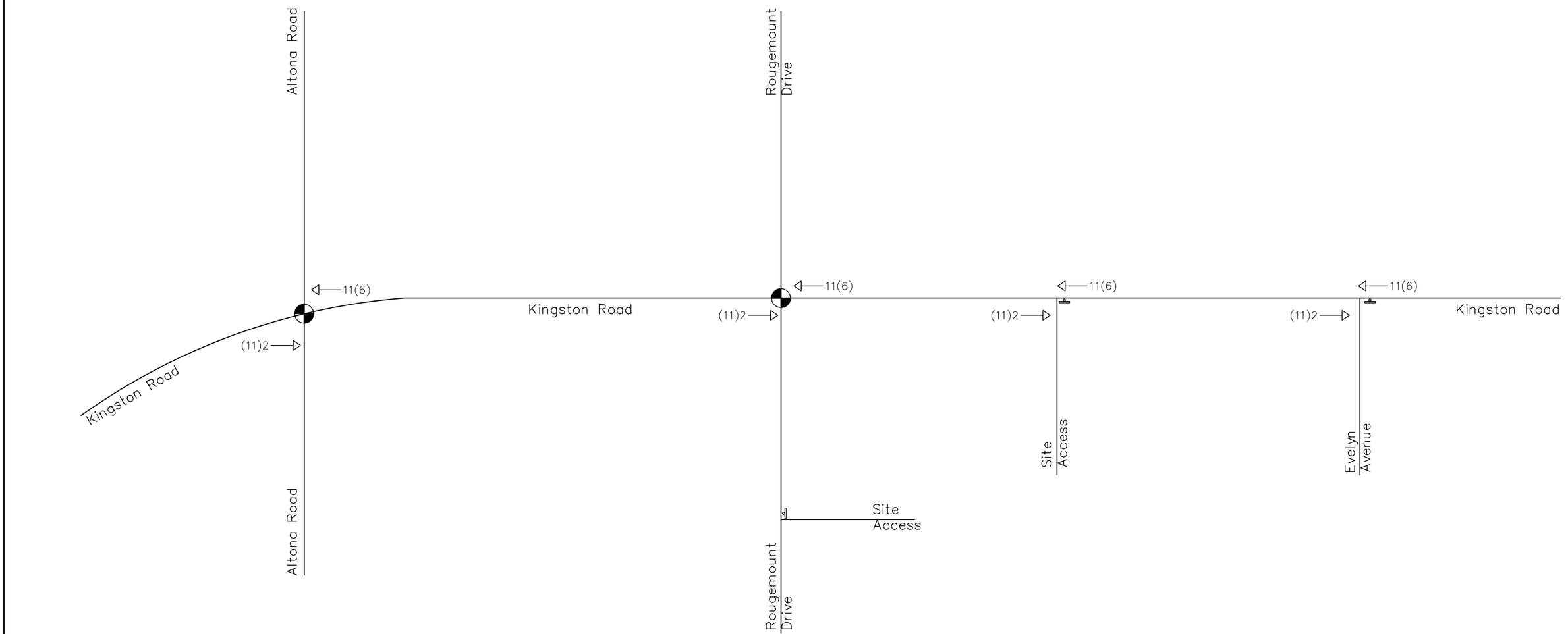
375–417 KINGSTON ROAD,
CITY OF PICKERING

Background Development: 699 Kingston Road

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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

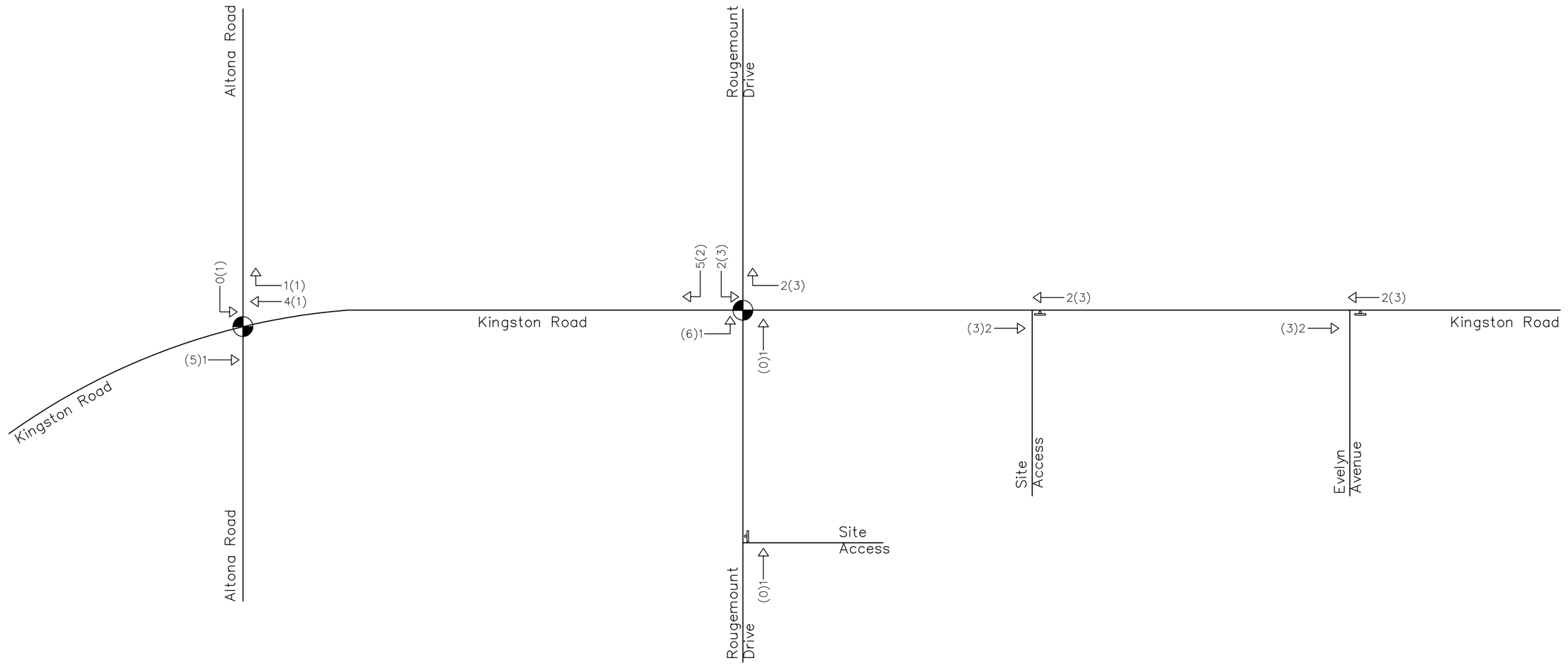
375–417 KINGSTON ROAD,
CITY OF PICKERING

Background Development: 770 Kingston Road

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NOTE:
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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

375–417 KINGSTON ROAD,
CITY OF PICKERING

Background Development: 346–364 Kingston Road

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5.5 Intersection Modelling

To maintain consistency, the future lane configuration and signal timing plans of the boundary road network including the Kingston Road's intersections with Altona Road and Rougemount Drive were assumed based on the Durham-Scarborough BRT EA's recommendations as well as approved studies.

It is noted that a default PHF of 0.92 is assumed for weekday a.m. and p.m. peak hours for all future traffic analysis. Additionally, it was conservatively assumed no auxiliary southbound left-turn lane at Rougemount Site Access is implemented. Information on the Durham-Scarborough BRT and Kingston Road Conceptual Design drawings are included in **Appendix B**.

5.6 Intersection Operations

Tables 8, 9 10 and **11** outline 2027, 2029, 2034 and 2039 future background operations associated with the boundary road network based on the future background traffic volumes illustrated in **Figures 13** through **Figure 16**, with detailed capacity analyses included in **Appendix E**.

Table 8: 2027 Future Background Level of Service

Intersection	Control	Peak Hour	Level of Service[1]	Control Delay	Maximum V/C Ratios[2]	95th Percentile Queue > Storage Length
Kingston Road at Altona Road	Optimized Signal	A.M.	B	17.3 s	0.79 (SBT)	53.9 m > 16.0 m (EBL)
		P.M.	C	23.8 s	0.86 (EBL)	166.2 m > 16.0 m (EBL)
Kingston Road at Rougemount Drive	Optimized Signal	A.M.	C	26.7 s	0.73 (WBL)	63.8 m > 35.0 m (NBL) 39.0 m > 19.0 m (SBL)
		P.M.	C	32.1 s	**0.95 (NBL)** **0.91 (WBL)**	89.9 m > 35.0 m (NBL) 35.6 m > 19.0 m (SBL)
Rougemount Site Access	Stop Minor (Full-Moves)	A.M.	B	11.8 s	0.25 (NBTR)	None
		P.M.	B	14.5 s	0.22 (NBTR)	None
Kingston Site Access	Stop Minor (RIRO)	A.M.	A	9.0 s	0.32 (EBTR)	None
		P.M.	A	10.0 s	0.50 (EBTR)	None
Kingston Road at Evelyn Avenue	Stop Minor (RIRO)	A.M.	A	9.5 s	0.33 (EBTR)	None
		P.M.	A	9.7 s	0.51 (EBTR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The level of Service of a stop-controlled intersection is based on the minor (stopped) approach control delay per vehicle.

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio at the intersection. All v/c ratios greater than 0.90 are outlined and highlighted.

Table 9: 2029 Future Background Level of Service

Intersection	Control	Peak Hour	Level of Service[1]	Control Delay	Maximum V/C Ratios[2]	95th Percentile Queue > Storage Length
Kingston Road at Altona Road	Optimized Signal	A.M.	B	17.9 s	0.80 (SBT)	54.0 m > 16.0 m (EBL)
		P.M.	C	24.9 s	0.88 (EBL)	191.9 m > 16.0 m (EBL)
Kingston Road at Rougemount Drive	Optimized Signal	A.M.	C	27.5 s	0.81 (WBL)	64.3 m > 35.0 m (NBL) 39.7 m > 19.0 m (SBL)
		P.M.	D	38.4 s	**1.27 (WBL)** **0.99 (NBL)**	95.0 m > 35.0 m (NBL) 36.1 m > 19.0 m (SBL)
Rougemount Site Access	Stop Minor (Full-Moves)	A.M.	B	11.9 s	0.25 (NBTR)	None
		P.M.	B	14.7 s	0.23 (NBTR)	None
Kingston Site Access	Stop Minor (RIRO)	A.M.	A	9.0 s	0.33 (EBTR)	None
		P.M.	A	9.9 s	0.50 (EBTR)	None
Kingston Road at Evelyn Avenue	Stop Minor (RIRO)	A.M.	A	9.5 s	0.34 (EBTR)	None
		P.M.	A	9.6 s	0.52 (EBTR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The level of Service of a stop-controlled intersection is based on the minor (stopped) approach control delay per vehicle.

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio at the intersection. All v/c ratios greater than 0.90 are outlined and highlighted.

Table 10: 2034 Future Background Level of Service

Intersection	Control	Peak Hour	Level of Service[1]	Control Delay	Maximum V/C Ratios[2]	95th Percentile Queue > Storage Length
Kingston Road at Altona Road	Optimized Signal	A.M.	B	19.3 s	0.81 (SBT)	63.6 m > 16.0 m (EBL)
		P.M.	C	27.9 s	**0.91 (EBL)**	226.1 m > 16.0 m (EBL)
Kingston Road at Rougemount Drive	Optimized Signal	A.M.	C	28.2 s	0.83 (WBL)	66.0 m > 35.0 m (NBL) 41.2 m > 19.0 m (SBL)
		P.M.	D	40.4 s	**1.30 (WBL)** **1.03 (NBL)**	100.8 m > 35.0 m (NBL) 37.3 m > 19.0 m (SBL)
Rougemount Site Access	Stop Minor (Full-Moves)	A.M.	B	12.1 s	0.27 (NBTR)	None
		P.M.	C	15.2 s	0.24 (NBTR)	None
Kingston Site Access	Stop Minor (RIRO)	A.M.	A	9.1 s	0.34 (EBTR)	None
		P.M.	B	10.1 s	0.53 (EBTR)	None
Kingston Road at Evelyn Avenue	Stop Minor (RIRO)	A.M.	A	9.4 s	0.35 (EBTR)	None
		P.M.	A	9.8 s	0.54 (EBTR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The level of Service of a stop-controlled intersection is based on the minor (stopped) approach control delay per vehicle.

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio at the intersection. All v/c ratios greater than 0.90 are outlined and highlighted.

Table 11: 2039 Future Background Level of Service

Intersection	Control	Peak Hour	Level of Service[1]	Control Delay	Maximum V/C Ratios[2]	95th Percentile Queue > Storage Length
Kingston Road at Altona Road	Optimized Signal	A.M.	C	20.6 s	0.84 (SBT)	73.7 m > 16.0 m (EBL)
		P.M.	C	32.0 s	**0.95 (EBL)**	264.2 m > 16.0 m (EBL)
Kingston Road at Rougemount Drive	Optimized Signal	A.M.	C	28.9 s	0.81 (WBL)	69.0 m > 35.0 m (NBL) 42.7 m > 19.0 m (SBL)
		P.M.	D	42.6 s	**1.35 (WBL)** **1.05 (NBL)**	105.7 m > 35.0 m (NBL) 38.8 m > 19.0 m (SBL)
Rougemount Site Access	Stop Minor (Full-Moves)	A.M.	B	12.4 s	0.28 (NBTR)	None
		P.M.	C	15.8 s	0.25 (NBTR)	None
Kingston Site Access	Stop Minor (RIRO)	A.M.	A	9.1 s	0.36 (EBTR)	None
		P.M.	B	10.3 s	0.55 (EBTR)	None
Kingston Road at Evelyn Avenue	Stop Minor (RIRO)	A.M.	A	9.4 s	0.37 (EBTR)	None
		P.M.	B	10.0 s	0.56 (EBTR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The level of Service of a stop-controlled intersection is based on the minor (stopped) approach control delay per vehicle.

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio at the intersection. All v/c ratios greater than 0.90 are outlined and highlighted.

As shown in **Table 11**, under 2039 future background conditions, the signalized intersection of Kingston Road at Altona Road is projected to operate at a Level of Service (LOS) "C" during both weekday a.m. and p.m. peak hours. The intersection average control delays of 20.6 s and 32.0 s in the weekday a.m. and p.m. peak hours, respectively, and maximum theoretical volume-to-capacity ratios of 0.84 (SBT) and 0.95 (EBL) are expected in the weekday a.m. and p.m. peak hours, respectively. The 95th percentile queue lengths for eastbound left-turn movement are expected to exceed available storage length.

The signalized intersection of Kingston Road at Rougemount Drive is expected to operate at a LOS "C" during the weekday a.m. peak hour and a LOS "D" during the weekday p.m. peak hour. The intersection is expected to operate at a maximum control delay of 42.6 seconds and a maximum theoretical volume-to-capacity ratio of 1.35. The 95th percentile queue lengths for northbound and southbound left-turn movements are expected to exceed available storage length.

It is noted that the identified operational issues at both intersections of Kingston Road with Altona Road and Rougemount Drive are consistent with the findings of the Durham-Scarborough BRT EA Traffic Study (excerpts included in **Appendix G**).

The existing site accesses are expected to continue operating acceptably at a level of service "C" or better during the weekday a.m. and p.m. peak periods with a maximum control delay of 15.8 seconds and maximum volume-to-capacity ratio of 0.55. These metrics indicate that the accesses are expected to operate efficiently with acceptable delays and with reserve capacity to accommodate future increases in traffic volume.

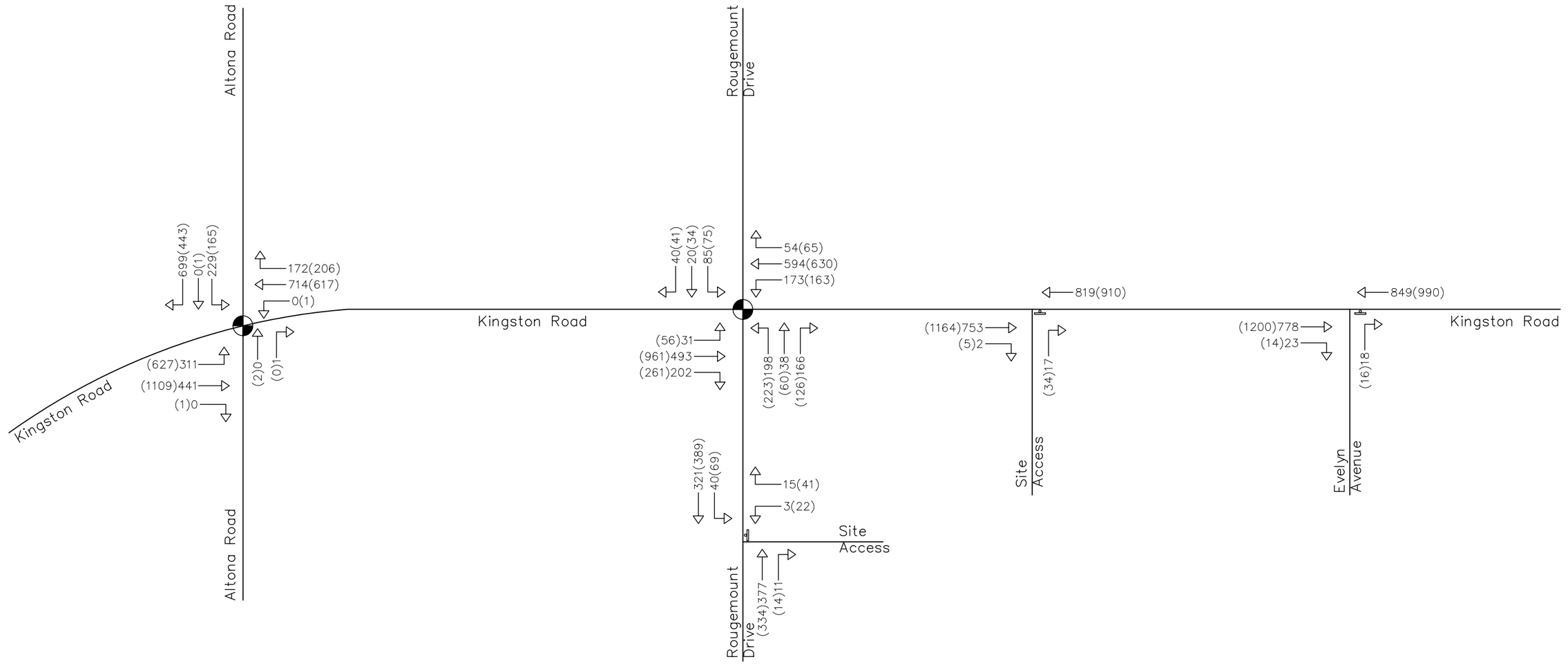
The stop-controlled Right-In/Right-Out minor connection of Evelyn Avenue to Kingston Road is expected to operate efficiently at a LOS "B" during both weekday a.m. and p.m. peak hours.

Maximum control delays are expected to be 9.4 s and 10.0 s in the weekday a.m. and p.m. peak hours, respectively and the maximum volume-to-capacity ratios is expected to be 0.37 (EBTR) and 0.56 (EBTR) in the weekday a.m. and p.m. peak hours, respectively.

The study intersections are forecast to operate similarly or better under the 2027, 2029 and 2034 future background compared to the 2039 future background.

Once again, these results are considered conservative as the default PHF of 0.92 was used to model the boundary road network while higher PHFs were observed at the signalized intersections as outlined in **Table 5.**

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

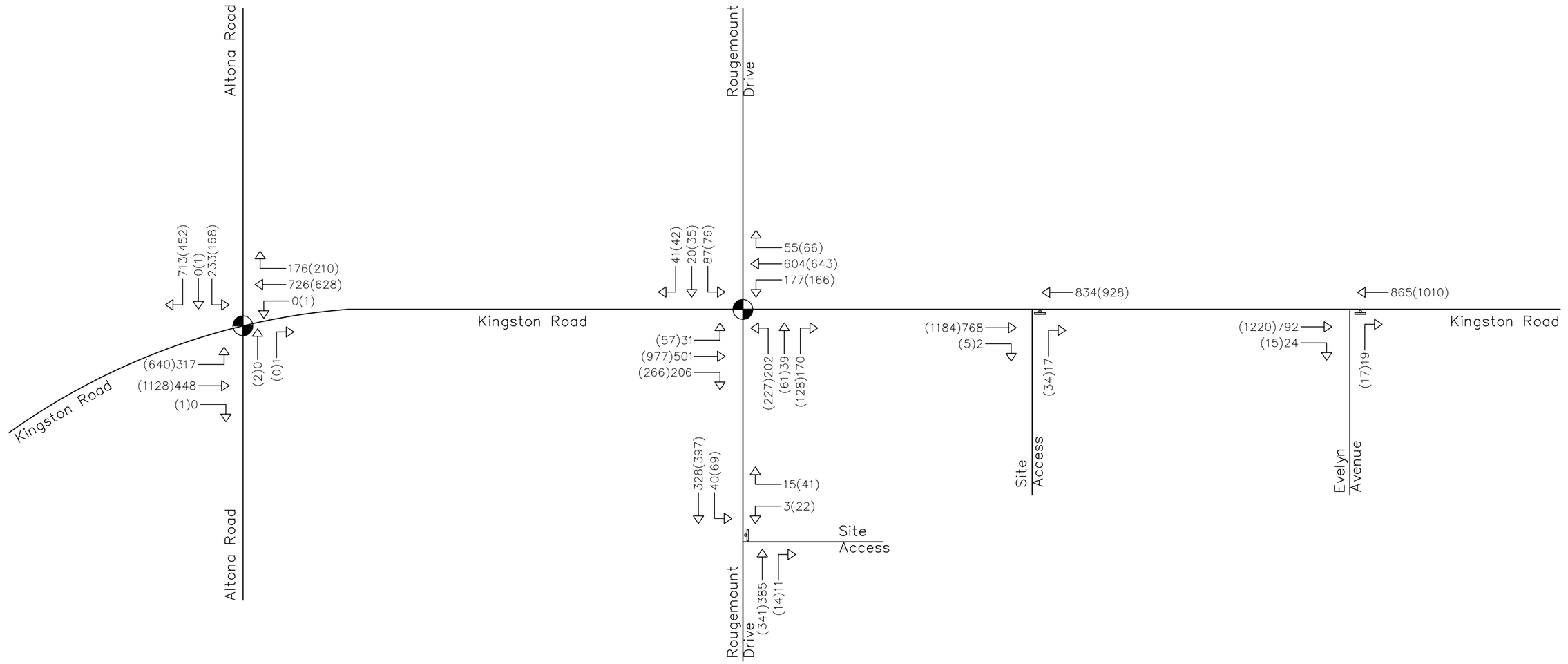
375–417 KINGSTON ROAD, CITY OF PICKERING

2027 Future Background Traffic Volumes

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NOTE:
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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

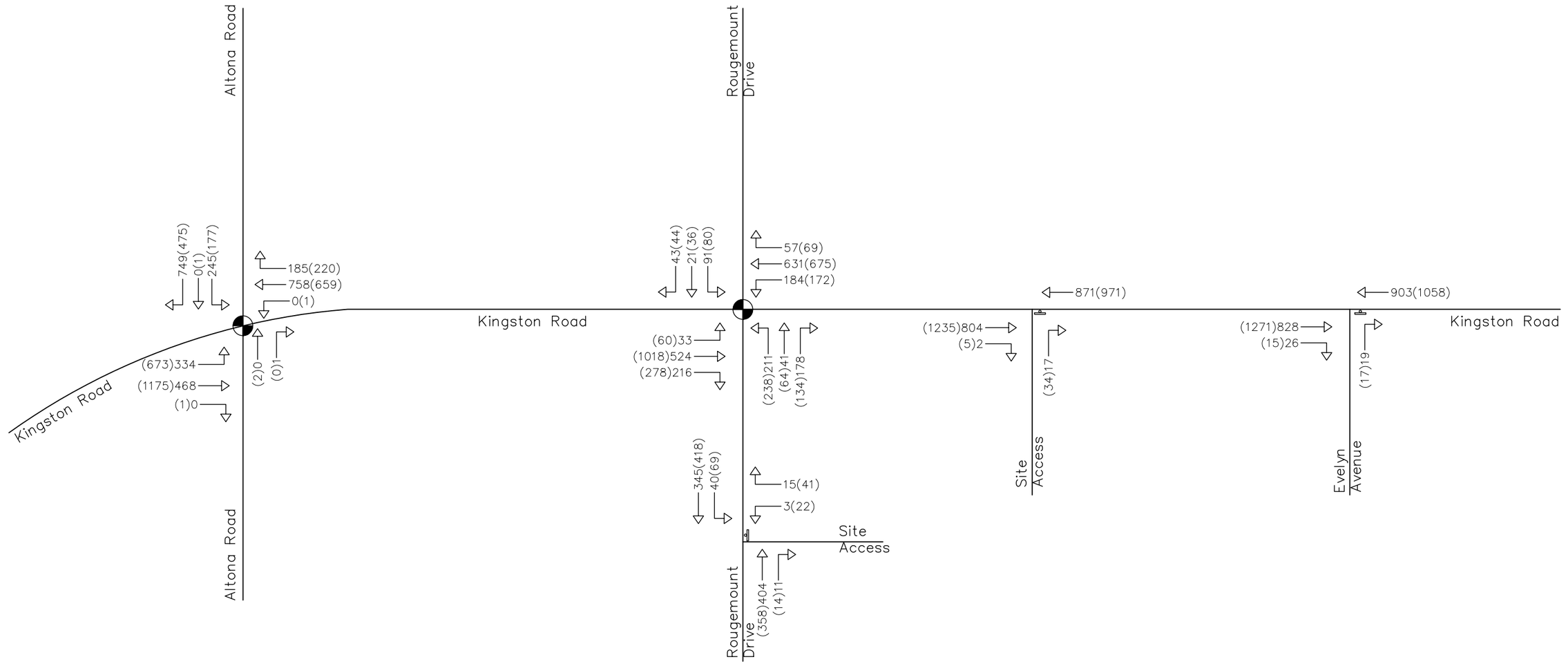
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2029 Future Background Traffic Volumes

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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

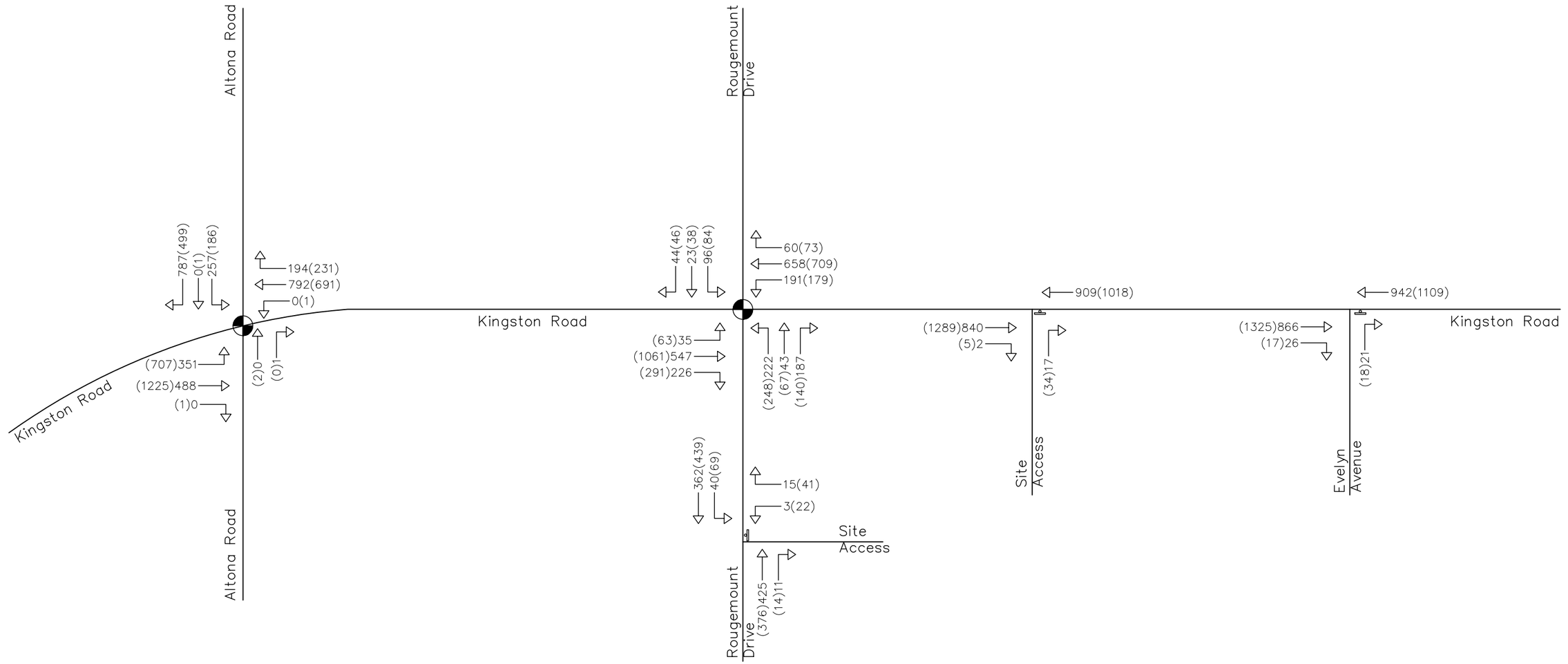
375–417 KINGSTON ROAD,
CITY OF PICKERING

2034 Future Background Traffic Volumes

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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

375–417 KINGSTON ROAD, CITY OF PICKERING

2039 Future Background Traffic Volumes

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6.0 Site Generated Traffic

6.1 Trip Generation

The proposed mixed-use development will result in additional vehicles on the boundary road network that previously did not exist. The proposed development will also create additional turning movements at the study intersections.

The trip generation of the high-rise residential tower and retail space was forecasted using Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, under the Land Use Category 222 "Multi-family Housing (High-Rise)" and Land Use Category 822 "Strip Retail Plaza (<40k)".

Given that the project is envisioned to be constructed in two (2) phases, the Trip Generation was calculated for two scenarios:

- **Phase 1 corresponding to 2027 horizon year**: which includes keeping the existing commercial plaza fronting Rougemount Drive in operation while adding two (2) 31- and 32-storey towers including a total of 654 units and 1,141 m^2 of ground floor retail
- **Full buildout of the entire site corresponding to 2029 horizon year**: which includes the removal of the existing commercial plaza fronting Rougemount Drive and addition of two (2) 33- and 34-storey towers including a total of 702 units and 1,803 m^2 of ground floor retail

5.1.1 Phase 1

-High-Rise Residential

Table 12 below outlines the forecasted person and vehicle trip generation for the site.

Table 12: Trip Generation

Land Use	Units	Trip Type	Peak Hour	Trips Generation		
				Inbound	Outbound	Total
LUC 222 Multifamily Housing (High-Rise)	654 units	Person (ITE)	A.M.	56	166	222
			P.M.	199	102	301
		Vehicle (Mode Split)	A.M.	34	100	134
			P.M.	119	61	180

It's noted that a shift in mode split between auto and transit is expected as a result of the significant transit investment brought upon by the future implementation of the Durham-Scarborough Bus Rapid Transit along Kingston Road. According to IBI Group's Durham-Scarborough Bus Rapid Transit Study, under the Centre Median alternative, Transit Mode Share is expected to be a minimum of 30%. Further, according to Durham Region Transportation Master Plan, for Rapid Transit Corridors, Walk and Cycle Mode Share is targeted to be 10% by 2031. Therefore, the Vehicle Mode Share of 60% is concluded and considered herein to derive vehicle trip generation of the proposed development.

Accordingly, based on targeted mode split (Vehicle Mode Share of 60%), the residential element of the proposed development is forecasted to generate 134 and 180 two-way vehicle trips during the weekday a.m. and p.m. peak hours, respectively.

-Ground Floor Retail

The forecasted trips are tabulated in **Table 13** and is referred to as "unadjusted" Vehicle Trip Generation as it represents trip generation for a General Urban and Suburban Setting with 95% vehicle trips overall per ITE Manual. It is noted that the trip generation is based on an older site plan which had 1,141.3 m^2 of Retail for Phaser 1. This was conservatively maintained as no material change in traffic operations or recommendations is expected.

Table 13: Unadjusted Vehicle Trip Generation (General Urban and Suburban Setting)

Land Use	GFA	Peak Hour	Vehicle Trips Generation		
			Inbound	Outbound	Total
LUC 822 "Strip Retail Plaza (<40k)"	1,141.3 m^2	A.M.	17	12	29
		P.M.	40	41	81

As mentioned above, for General Urban and Suburban Setting, it's noted that the ITE Manual assumes the percentage mode share of person trips made by vehicle is 95 percent. As the study area is going to be significantly transformed upon the implementation of Durham-Scarborough Bus Rapid Transit along Kingston Road, the vehicle trip generation was adjusted using the targeted modal split in the study area, which estimates 60% of the person trips in the study area are auto trips. Adjusted vehicle trips are outlined in **Table 14.**

Table14: Adjusted Vehicle Trip Generation (Rapid Transit Corridor-60% Vehicle Mode Split)

Land Use	GFA	Peak Hour	Vehicle Trips Generation		
			Inbound	Outbound	Total
LUC 822 "Strip Retail Plaza (<40k)"	1,141.3 m^2	A.M.	11	8	19
		P.M.	25	26	51

Accordingly, the ground floor commercial element of the proposed development is forecasted to generate 19 and 51 two-way vehicle trips in the weekday a.m. and p.m. peak hours, respectively.

-Summary

The trips generated by the proposed development are presented in **Table 15**.

Table 15: Trip Generation

Use	Units	Roadway Peak Hour	Number of Vehicle Trips		
			Inbound	Outbound	Total
LUC 222 "Multifamily Housing (High-Rise)"	654 units	A.M.	34	100	134
		P.M.	119	61	180
LUC 822 "Strip Retail Plaza (<40k)"	1,141.3 m2	A.M.	11	8	19
		P.M.	25	26	51
Total		**A.M.**	**45**	**108**	**153**
		P.M.	**144**	**87**	**231**

According to the ITE Trip Generation Manual, the mixed-use development is forecasted to generate an upper bound of 153 and 231 two-way vehicle trips in the weekday a.m. and p.m. peak hours, respectively. However, this trip generation includes trips that will not impact the boundary road network due to internal trip capture and trips that may already be on the roadway (pass-by trips).

Therefore, the site will generate fewer new trips on the boundary road network compared to the overall trips forecasted in **Table 15.**

-Internal Trip Capture

As with many multi-use integrated sites, internal interaction between uses is expected to occur. In this regard, internal trips are expected to occur between the residential and retail land uses on the subject property without using the external boundary road network. Internal trips which circulate between the residential and commercial land uses on the subject site were calculated per ITE data.

Table 6.1 of the ITE Trip Generation Handbook (3rd Edition) outlines the trip capture rates for trip origins within a mixed-use development, while Table 6.2 outlines the trip capture rates for destinations within a mixed-use development.

Table 16 below outlines the forecasted internal and external trips for the proposed development.

Table 16: Internal and External Trips

Use	Trip Type	Roadway Peak Hour (Weekday)	Number of Trips		
			Inbound	Outbound	Total
Residential	Internal	A.M.	1	1	2
		P.M.	7	3	10
	External	**A.M.**	**33**	**99**	**132**
		P.M.	**112**	**58**	**170**
Retail	Internal	A.M.	1	1	2
		P.M.	3	7	10
	External	**A.M.**	**10**	**7**	**17**
		P.M.	**22**	**19**	**41**
Total	Internal	A.M.	2	2	4
		P.M.	10	10	20
	External	**A.M.**	**43**	**106**	**149**
		P.M.	**134**	**77**	**211**

With internal trip captures accounted for, the proposed development is forecasted to generate an upper bound of 149 and 211 two-way external trips in the weekday a.m. and p.m. peak hours, respectively.

-Pass-By Trips

Similarly, as defined by the ITE Trip Generation Handbook, 3rd Edition, primary trips are external trips made for the specific purpose of visiting the site generator and pass-by trips are intermediate stops on the way from an origin to a primary trip destination without a route diversion. Accordingly, pass-by trips are existing background trips that access the site on the way to the ultimate destination, and thus, have already been accounted for in the external road network and do not further increase the vehicle volumes on the external roadway.

While there is no available pass-by rate for the Land Use Category 822 "Strip Retail Plaza (<40k), a 34% pass-by trip rate during the weekday p.m. peak period was applied; typical for commercial developments (i.e., Land Use Category 820). No pass-by rate was applied to the weekday a.m. peak period trips.

The forecasted primary and pass-by trips for the site are tabulated in **Table 17**

Table 17: Primary and Pass-By Trips

Use	Trip Type	Roadway Peak Hour (Weekday)	Number of Trips		
			Inbound	Outbound	Total
Residential	Primary	A.M.	33	99	132
		P.M.	112	58	170
	Pass-By	A.M.	0	0	0
		P.M.	0	0	0
Retail	Primary	A.M.	10	7	17
		P.M.	15	13	28
	Pass-By	A.M.	0	0	0
		P.M.	7	6	13
Total	**Primary**	**A.M.**	**43**	**106**	**149**
		P.M.	**127**	**71**	**198**
	Pass-By	A.M.	0	0	0
		P.M.	7	6	13

Accordingly, accounting for internal and pass-by trip captures, the proposed development is forecasted to generate an upper bound of 149 and 198 two-way primary trips in the weekday a.m. and p.m. peak hours, respectively.

5.1.2 Full Buildout

-High-Rise Residential

Table 18 below outlines the forecasted person and vehicle trip generation for the site.

Table 18: Trip Generation

Land Use	Units	Trip Type	Peak Hour	Trips Generation		
				Inbound	Outbound	Total
LUC 222 Multifamily Housing (High-Rise)	1356 units	Person (ITE)	A.M.	115	346	461
			P.M.	412	212	624
		Vehicle (Mode Split)	A.M.	69	208	277
			P.M.	247	127	374

It's noted that a shift in mode split between auto and transit is expected as a result of the significant transit investment brought upon by the future implementation of the Durham-Scarborough Bus Rapid Transit along Kingston Road. According to IBI Group's Durham-Scarborough Bus Rapid Transit Study, under the Centre Median alternative, Transit Mode Share is expected to be a minimum of 30%. Further, according to Durham Region Transportation Master Plan, for Rapid Transit Corridors, Walk and Cycle Mode Share is targeted to be 10% by 2031. Therefore, the Vehicle Mode Share of 60% is concluded and considered herein to derive vehicle trip generation of the proposed development.

Accordingly, based on targeted mode split (Vehicle Mode Share of 60%), the Subject Development is forecasted to generate 277 and 374 two-way vehicle trips during the weekday a.m. and p.m. peak hours, respectively.

-Ground Floor Retail

The forecasted trips are tabulated in **Table 19** and is referred to as "unadjusted" Vehicle Trip Generation as it represents trip generation for a General Urban and Suburban Setting with 95% vehicle trips overall per ITE Manual. It is noted that the trip generation is based on an older site plan which had 2,944.4 m^2 of Retail for the entire development. This was conservatively maintained as no material change in traffic operations or recommendations is expected.

Table 19: Unadjusted Vehicle Trip Generation (General Urban and Suburban Setting)

Land Use	GFA	Peak Hour	Vehicle Trips Generation		
			Inbound	Outbound	Total
LUC 822 "Strip Retail Plaza (<40k)"	2,944.4 m^2	A.M.	46	30	76
		P.M.	106	106	212

As mentioned above, for General Urban and Suburban Setting, it's noted that the ITE Manual assumes the percentage mode share of person trips made by vehicle is 95 percent. As the study area is going to be significantly transformed upon the implementation of Durham-Scarborough Bus Rapid Transit along Kingston Road, the vehicle trip generation was adjusted using the targeted modal split in the study area, which estimates 60% of the person trips in the study area are auto trips. Adjusted vehicle trips are outlined in **Table 20.**

Table 20: Adjusted Vehicle Trip Generation (Rapid Transit Corridor-60% Vehicle Mode Split)

Land Use	GFA	Peak Hour	Vehicle Trips Generation		
			Inbound	Outbound	Total
LUC 822 "Strip Retail Plaza (<40k)"	2,944.4 m^2	A.M.	29	19	48
		P.M.	67	67	134

Accordingly, the ground floor commercial element of the proposed development is forecasted to generate 48 and 134 two-way vehicle trips in the weekday a.m. and p.m. peak hours, respectively.

-Summary

The trips generated by the proposed development are presented in **Table 21**.

Table 21: Trip Generation

Use	Units	Roadway Peak Hour	Number of Vehicle Trips		
			Inbound	Outbound	Total
LUC 222 "Multifamily Housing (High-Rise)"	1356 units	A.M.	69	208	277
		P.M.	247	127	374
LUC 822 "Strip Retail Plaza (<40k)"	2,944.4 m^2	A.M.	29	19	48
		P.M.	67	67	134
Total		**A.M.**	**98**	**227**	**325**
		P.M.	**314**	**194**	**508**

According to the ITE Trip Generation Manual, the mixed-use development is forecasted to generate an upper bound of 325 and 508 two-way vehicle trips in the weekday a.m. and p.m. peak hours, respectively. However, this trip generation includes trips that will not impact the boundary road network due to internal trip capture and trips that may already be on the roadway (pass-by trips).

Therefore, the site will generate fewer new trips on the boundary road network compared to the overall trips forecasted in **Table 21.**

-Internal Trip Capture

As with many multi-use integrated sites, internal interaction between uses is expected to occur. In this regard, internal trips are expected to occur between the residential and retail land uses on the subject property without using the external boundary road network. Internal trips which circulate between the residential and commercial land uses on the subject site were calculated per ITE data.

Table 6.1 of the ITE Trip Generation Handbook (3rd Edition) outlines the trip capture rates for trip origins within a mixed-use development, while Table 6.2 outlines the trip capture rates for destinations within a mixed-use development.

Table 22 below outlines the forecasted internal and external trips for the proposed development.

Table 22: Internal and External Trips

Use	Trip Type	Roadway Peak Hour (Weekday)	Number of Trips		
			Inbound	Outbound	Total
Residential	Internal	A.M.	1	2	3
		P.M.	17	7	24
	External	**A.M.**	**68**	**206**	**274**
		P.M.	**230**	**120**	**350**
Retail	Internal	A.M.	2	1	3
		P.M.	7	17	24
	External	**A.M.**	**27**	**18**	**45**
		P.M.	**60**	**50**	**110**
Total	Internal	A.M.	3	3	6
		P.M.	24	24	48
	External	**A.M.**	**95**	**224**	**319**
		P.M.	**290**	**170**	**460**

With internal trip captures accounted for, the proposed development is forecasted to generate an upper bound of 319 and 460 two-way external trips in the weekday a.m. and p.m. peak hours, respectively.

-Pass-By Trips

Similarly, as defined by the ITE Trip Generation Handbook, 3rd Edition, primary trips are external trips made for the specific purpose of visiting the site generator and pass-by trips are intermediate stops on the way from an origin to a primary trip destination without a route diversion. Accordingly, pass-by trips are existing background trips that access the site on the way to the ultimate destination, and thus, have already been accounted for in the external road network and do not further increase the vehicle volumes on the external roadway.

While there is no available pass-by rate for the Land Use Category 822 "Strip Retail Plaza (<40k), a 34% pass-by trip rate during the weekday p.m. peak period was applied; typical for commercial developments (i.e., Land Use Category 820). No pass-by rate was applied to the weekday a.m. peak period trips.

The forecasted primary and pass-by trips for the site are tabulated in **Table 23.**

Table 23: Primary and Pass-By Trips

Use	Trip Type	Roadway Peak Hour (Weekday)	Number of Trips		
			Inbound	Outbound	Total
Residential	Primary	A.M.	68	206	274
		P.M.	230	120	350
	Pass-By	A.M.	0	0	0
		P.M.	0	0	0
Retail	Primary	A.M.	27	18	45
		P.M.	40	33	73
	Pass-By	A.M.	0	0	0
		P.M.	20	17	37
Total	**Primary**	**A.M.**	**95**	**224**	**319**
		P.M.	**270**	**153**	**423**
	Pass-By	A.M.	0	0	0
		P.M.	20	17	37

Accordingly, accounting for internal and pass-by trip captures, the proposed development is forecasted to generate an upper bound of 319 and 423 two-way primary trips in the weekday a.m. and p.m. peak hours, respectively.

-Net Site Trip Generation

Under full buildout condition of the site, as the existing commercial plaza will no longer be in operation, the existing trips were removed from the boundary road network. The net forecasted two-way site generated vehicle trips are tabulated in **Table 24**.

Table 24: Net Site Trip Generation

Mode	Use	Roadway Peak Hour (Weekday)	Number of Trips		
			Inbound	Outbound	Total
Vehicle (Primary Trips)	**Existing Commercial**	A.M.	-77	-51	-128
		P.M.	-129	-142	-271
	Proposed Development	A.M.	95	224	319
		P.M.	270	153	423
	Net	**A.M.**	**18**	**173**	**191**
		P.M.	**141**	**11**	**152**

As shown, the proposed development is expected to generate a net 191 and 152 two-way primary vehicle trips during the weekday a.m. and p.m. peak hours, respectively.

6.2 Trip Distribution

Residential Trip Distribution

The residential trips generated by the proposed development were assigned to the boundary road network based on Transportation Tomorrow Survey (TTS) data. TTS is a comprehensive survey of transportation characteristics of households in the Golden Horseshoe, Simcoe County and

surrounding areas.

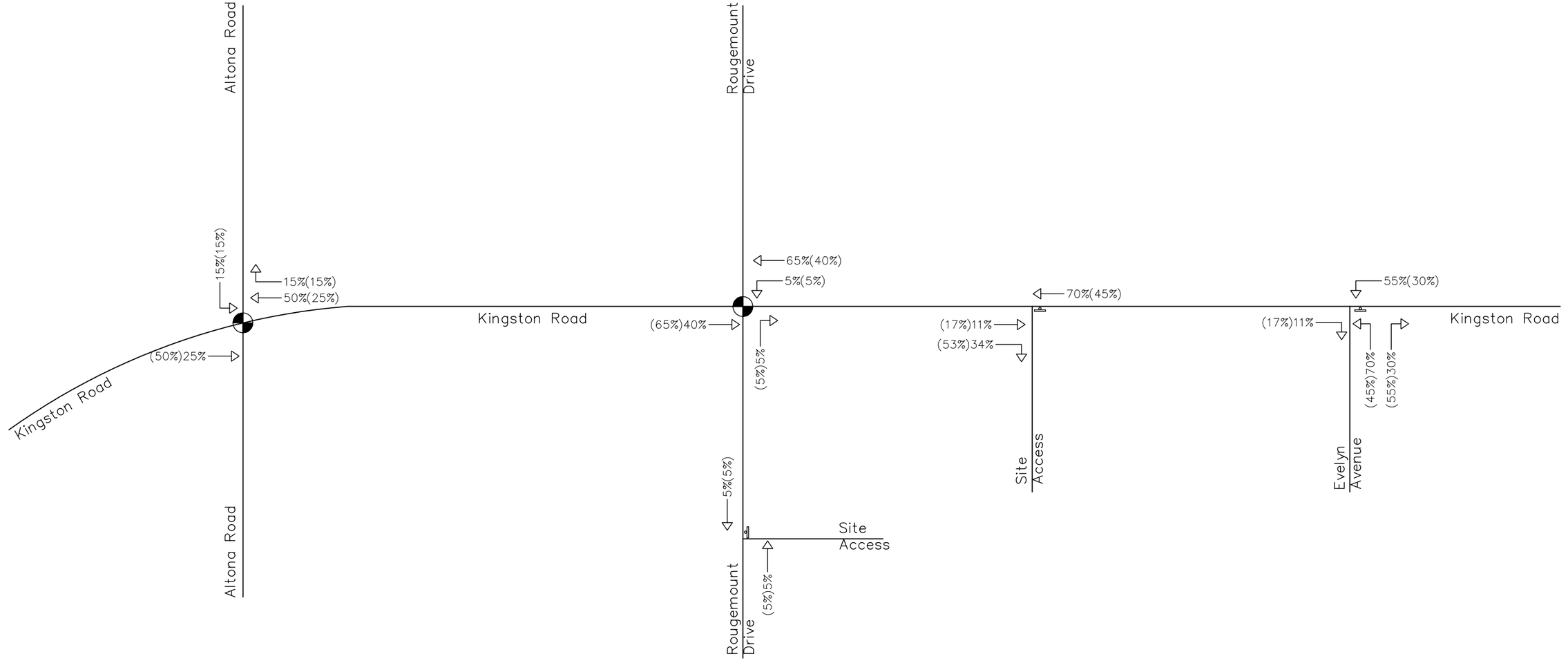
For the proposed development, TTS results were filtered to auto trips exiting 2006 GTA Zone 1046, the zone in which the subject property is located in. Trips were filtered to the weekday a.m. peak period. From this query, trip destinations were determined, and percentage of trips assigned to each destination was accounted for. Trips were assumed to travel to and from their destination based on the most convenient route possible. Based on the existing traffic volumes, the assumed trip distribution per TTS results is in general conformance with commuter travel patterns.

The trip distribution that was applied for the weekday a.m. peak period was inversely applied to the weekday p.m. peak period. **Table 25** below outlines the assumed trip distribution for the residential element of the proposed development. The residential trip distribution for phase 1 and full buildout, are illustrated in Figures **17** and **18**, respectively. **Appendix C** outlines the TTS 2016 results.

Table 25: Trip Distributions (Residential)

Departing To/Arriving From	Peak Period	Percentage	
		IN	OUT
East: Kingston Road	A.M.	55%	30%
	P.M.	30%	55%
West: Kingston Road	A.M.	25%	50%
	P.M.	50%	25%
North: Altona Road	A.M.	15%	15%
	P.M.	15%	15%
South: Rougemount Drive	A.M.	5%	5%
	P.M.	5%	5%
Total	**A.M.**	**100%**	**100%**
	P.M.	**100%**	**100%**

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

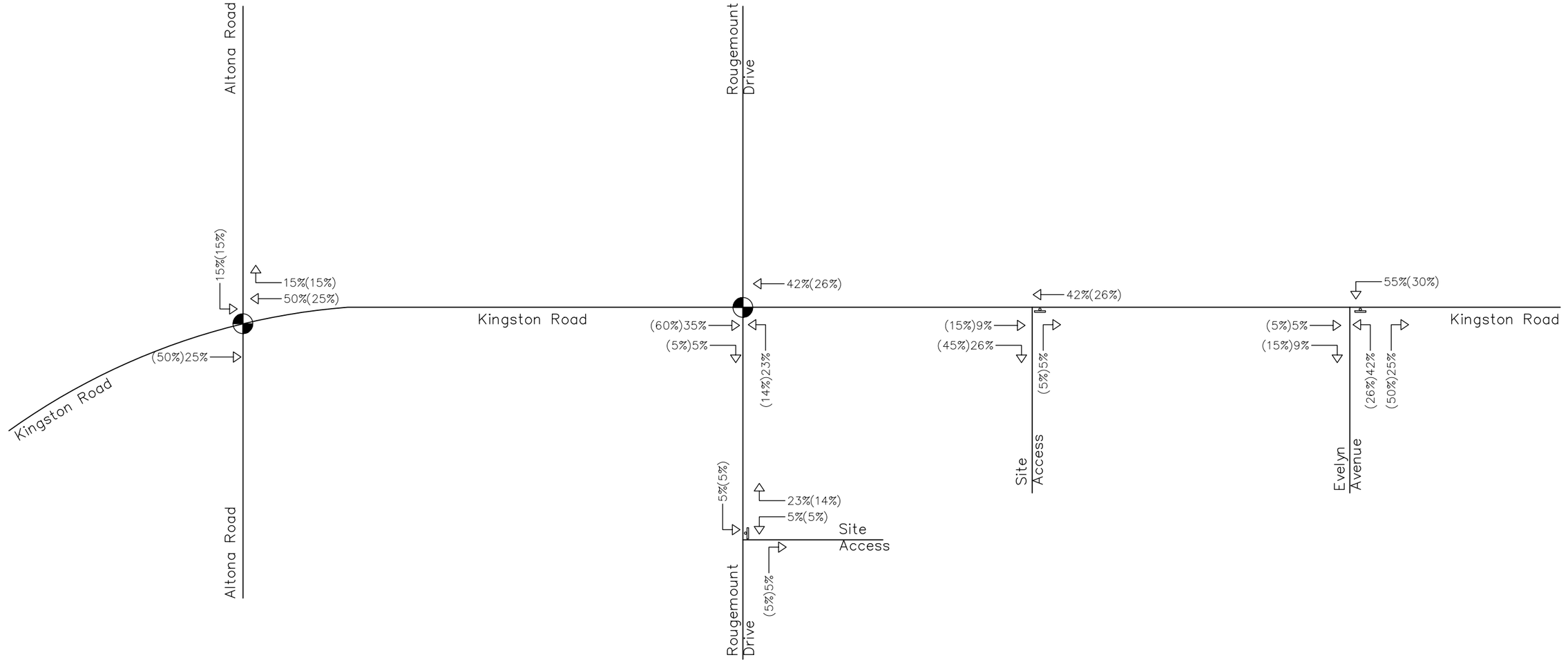
375–417 KINGSTON ROAD, CITY OF PICKERING

Residential Trip Distribution (Phase 1)

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2025/03/20	M.I.	N.T.S	FIG 17

NOTE:
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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

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Residential Trip Distribution (Full Buildout)

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Commercial Trip Distribution

The proposed retail use is located on the ground floor of the residential building and is not expected to generate a large number of external trips, nor attract a large number of visitors from outside of the neighbourhood or region. The primary customers of the ground floor retail of this size, are expected to be residents from the proposed residential towers, residents from within the neighbourhood, from the nearby neighbourhoods, and those who are already visiting the area (pass-by trips).

The trips generated by the retail portion of the proposed development were distributed to the boundary road network using the same distributions applied to the existing site trips which was based on existing travel patterns. Further, the TTS results are in general conformance with the existing commuter travel patterns.

For Phase 1, the primary and pass-by retail trip distributions are illustrated in **Figure 19** and **Figure 20**, respectively. For full buildout, the primary and pass-by retail trip distributions are illustrated in **Figure 21** and **Figure 22**, respectively

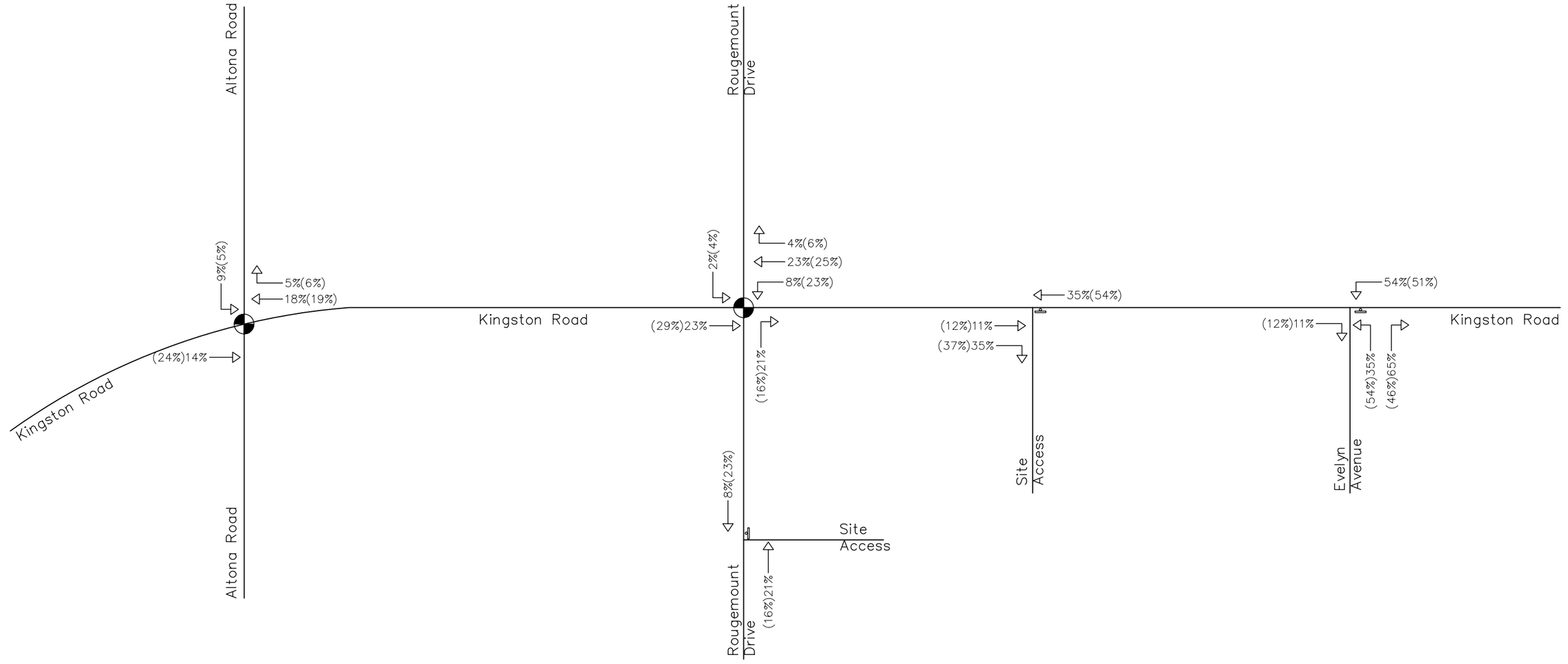
Table 26 below outlines the assumed trip distribution for the commercial element of the proposed development.

Table 26: Trip Distributions (Retail)

Departing To/Arriving From	Peak Period	Percentage	
		IN	OUT
East: Kingston Road	A.M.	54%	65%
	P.M.	51%	46%
West: Kingston Road	A.M.	14%	18%
	P.M.	24%	19%
North: Altona Road	A.M.	9%	5%
	P.M.	5%	6%
South: Rougemount Drive	A.M.	21%	8%
	P.M.	16%	23%
North: Rougemount Drive	A.M.	2%	4%
	P.M.	4%	6%
Total	**A.M.**	**100%**	**100%**
	P.M.	**100%**	**100%**

For Phase 1, the residential, primary retail and pass-by retail trip assignments are illustrated in **Figures 23, 24** and **25,** respectively**.** For Full buildout, the residential, primary retail and pass-by retail trip assignments are illustrated in **Figures 27, 28** and **29,** respectively**.**

NOTE:
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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

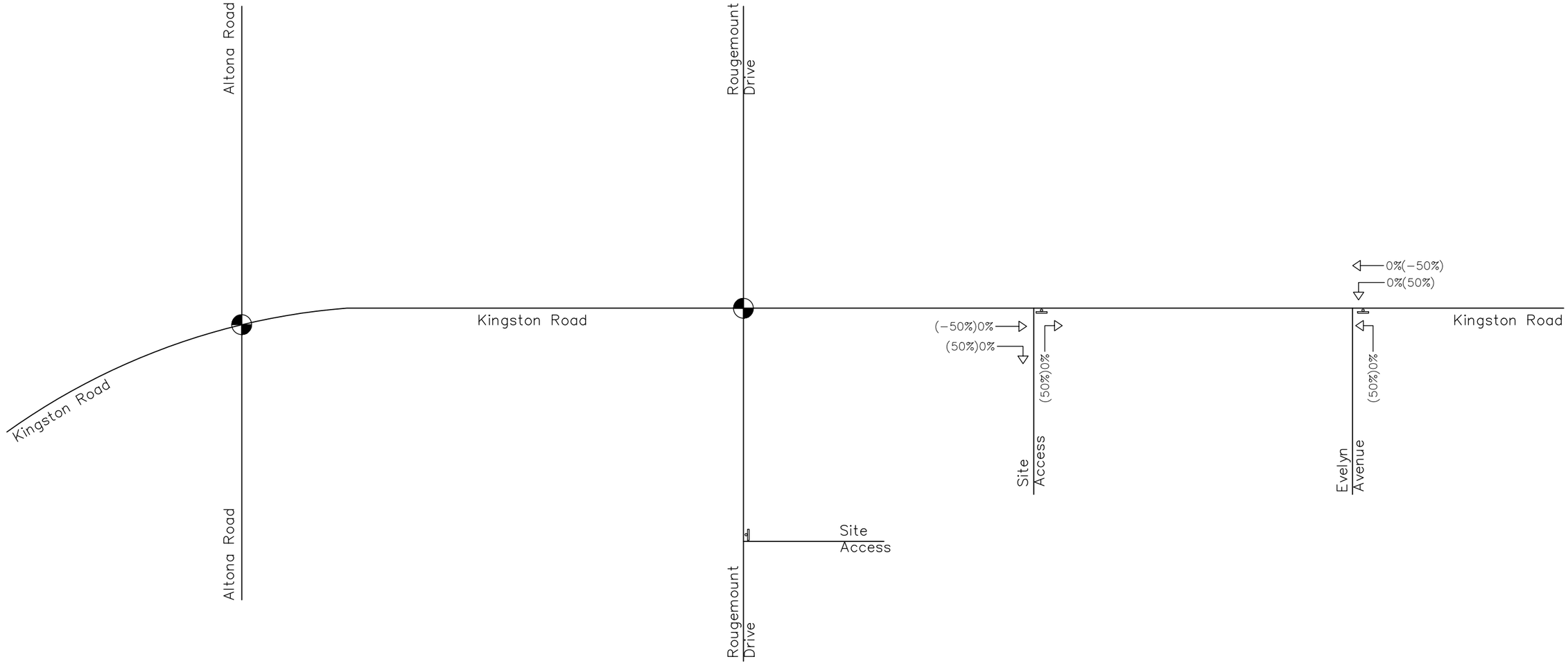
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Retail Trip Distribution (Phase 1)

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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

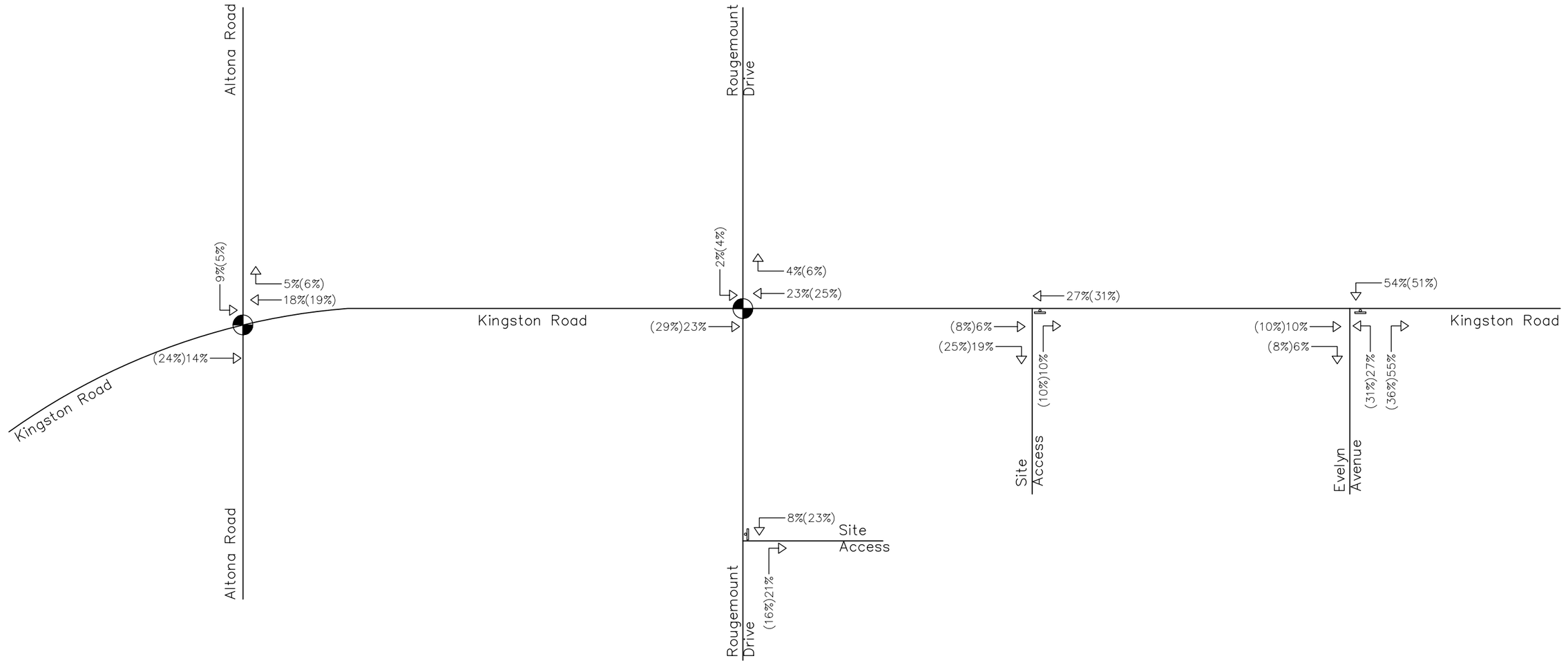
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Retail Pass−By Trip Distribution (Phase 1)

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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

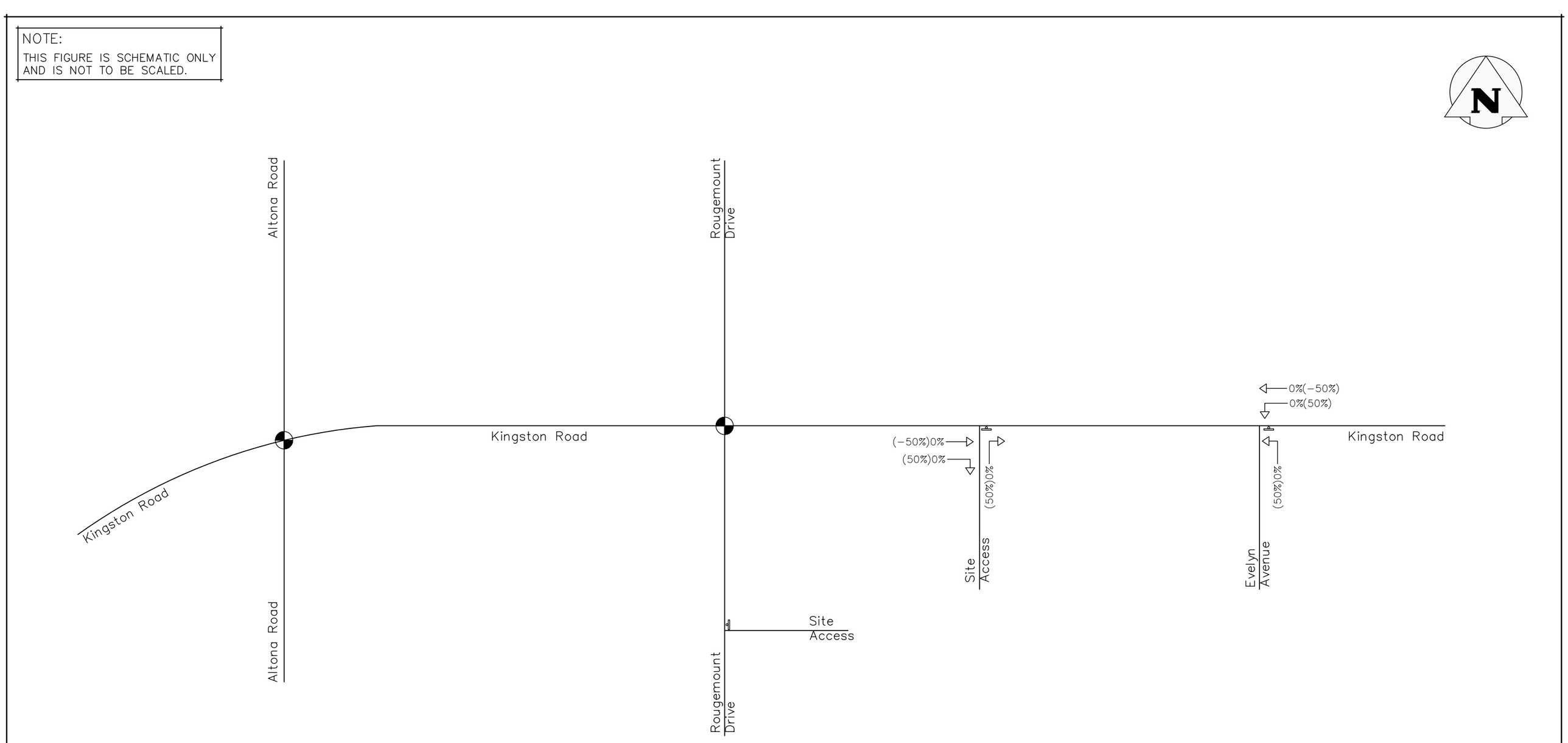
375–417 KINGSTON ROAD, CITY OF PICKERING

Retail Trip Distribution (Full Buildout)

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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

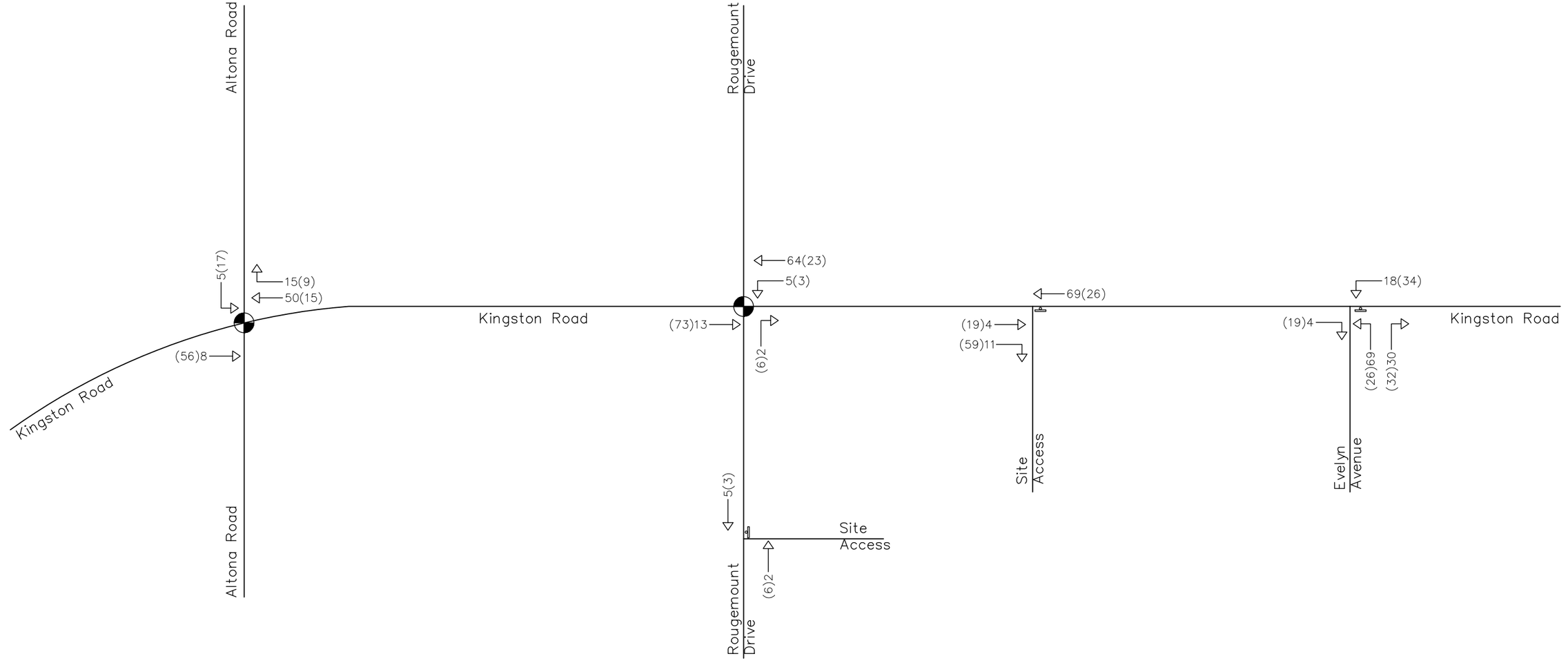
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Retail Pass–By Trip Distribution (Full Buildout)

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2025/03/20	M.I.	N.T.S	FIG 22

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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

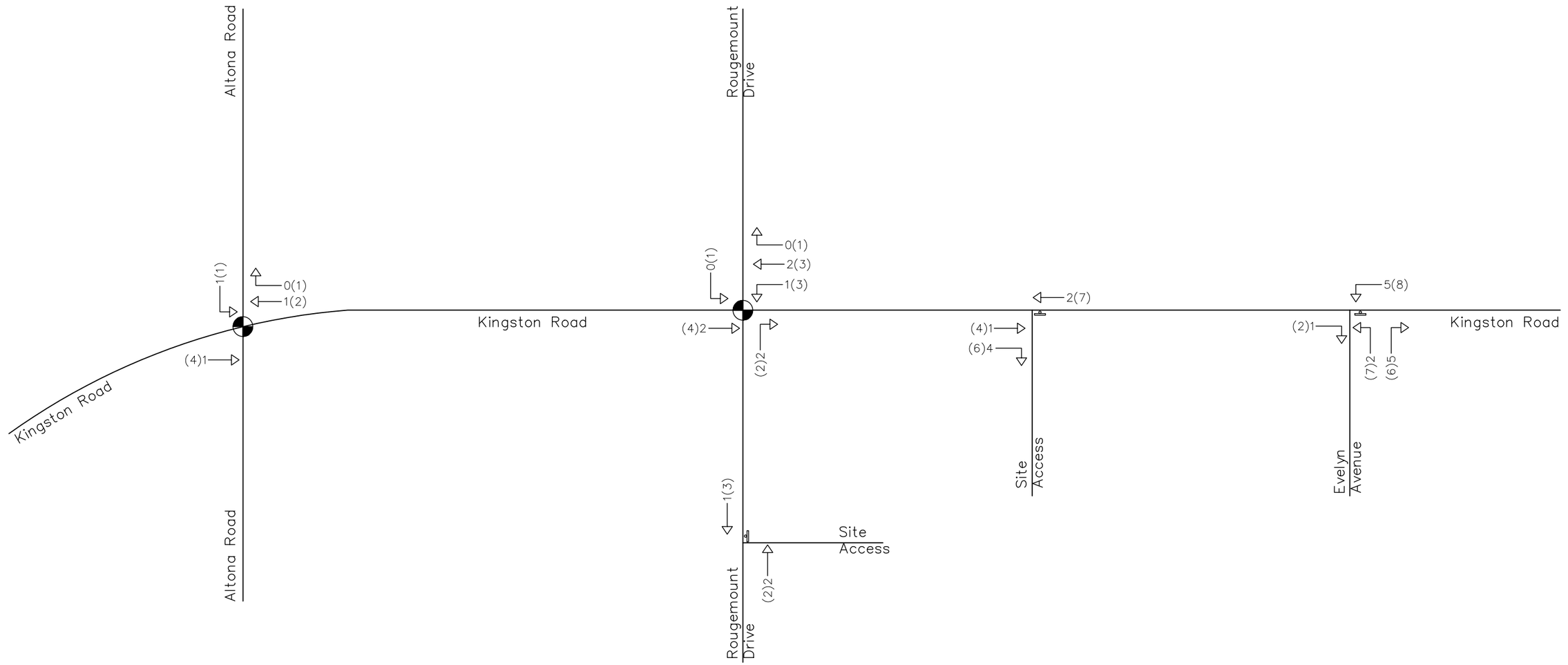
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Residential Trip Assignment (Phase 1)

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2025/03/20	M.I.	N.T.S	FIG 23

NOTE:
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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

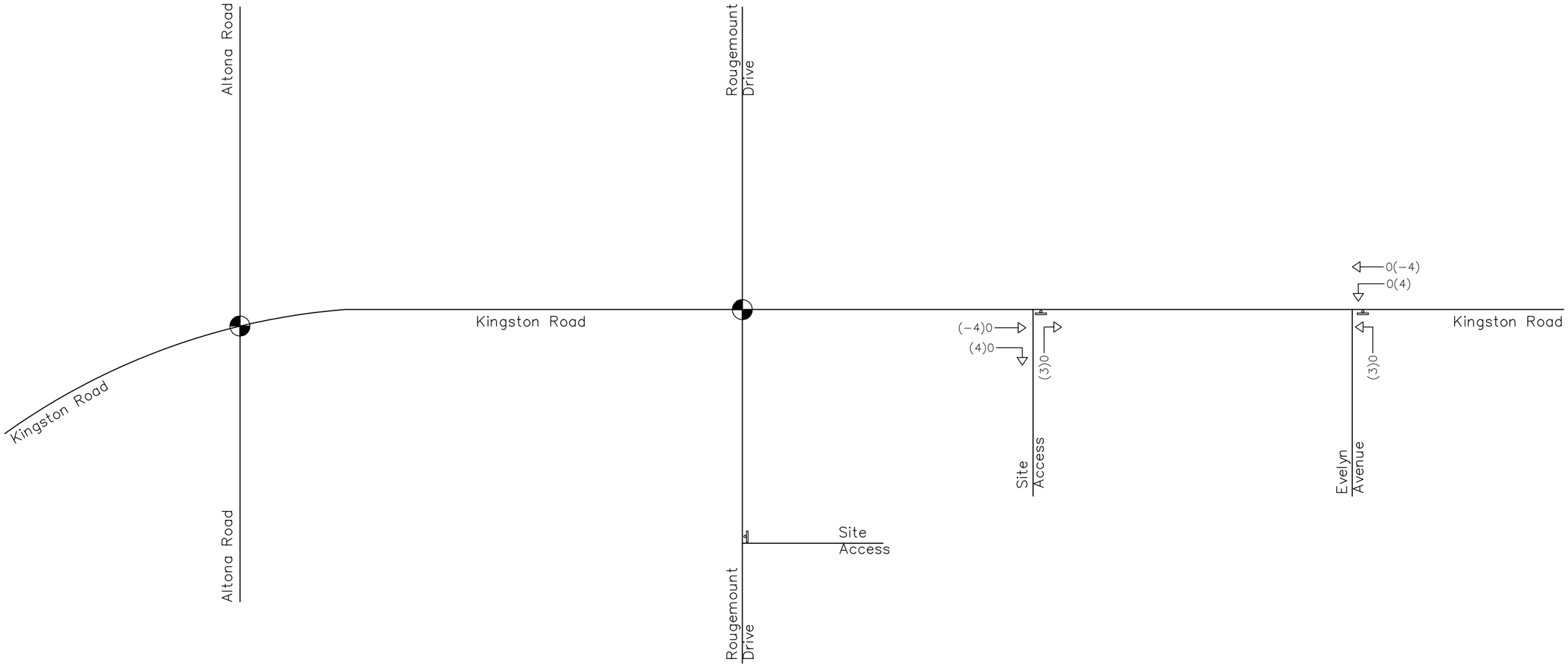
375–417 KINGSTON ROAD,
CITY OF PICKERING

Retail Trip Assignment (Phase 1)

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2025/03/20	M.I.	N.T.S	FIG 24

NOTE:
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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

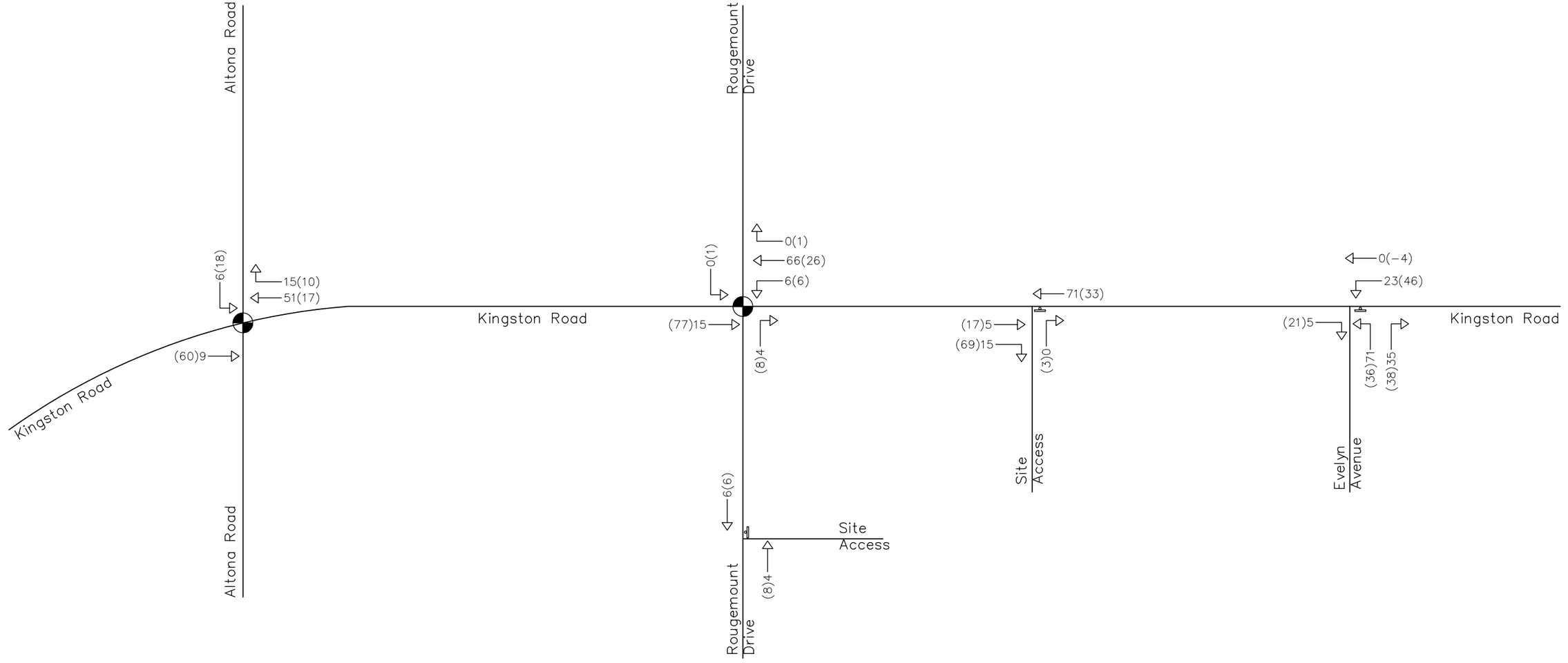
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Retail Pass–By Trip Assignment (Phase 1)

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NOTE:
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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

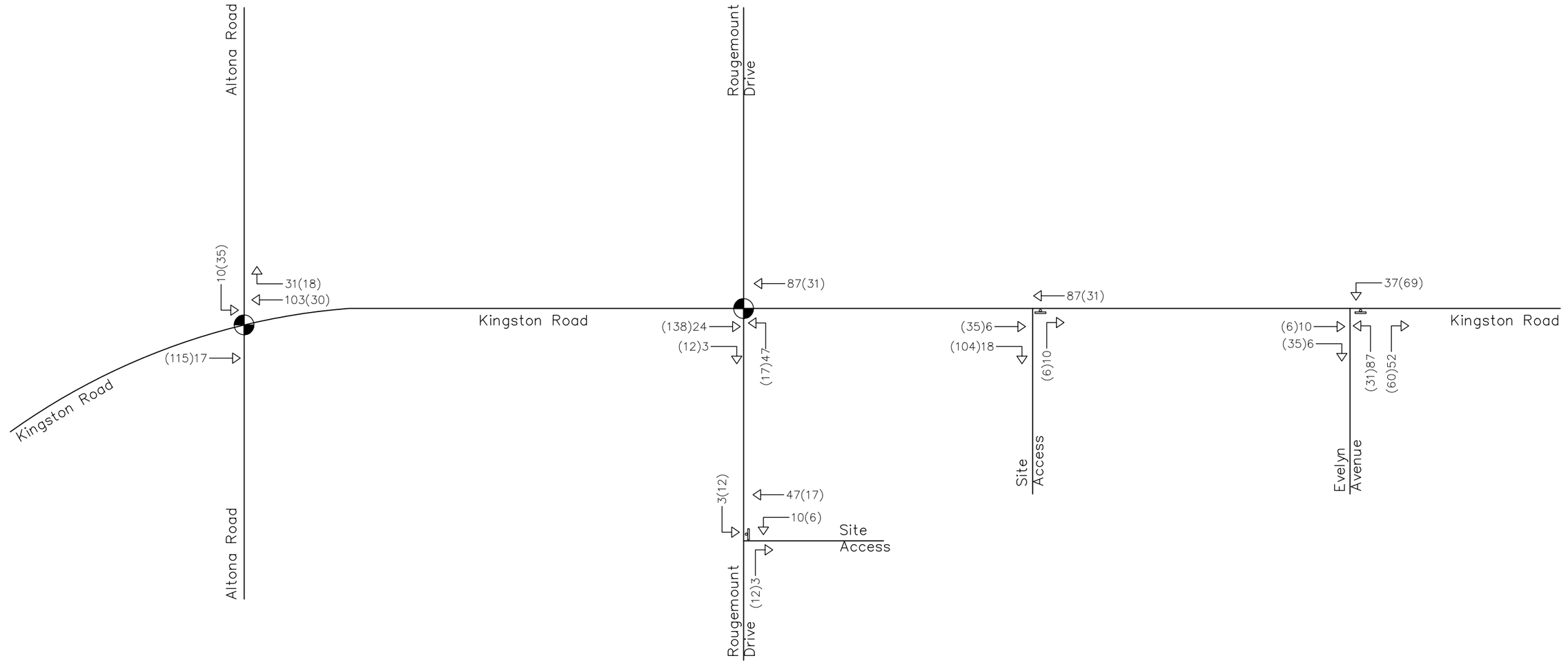
375–417 KINGSTON ROAD,
CITY OF PICKERING

Total Trip Assignment (Phase 1)

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Date	Check	Scale	Dwg.
2025/03/20	M.I.	N.T.S	FIG 26

NOTE:
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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

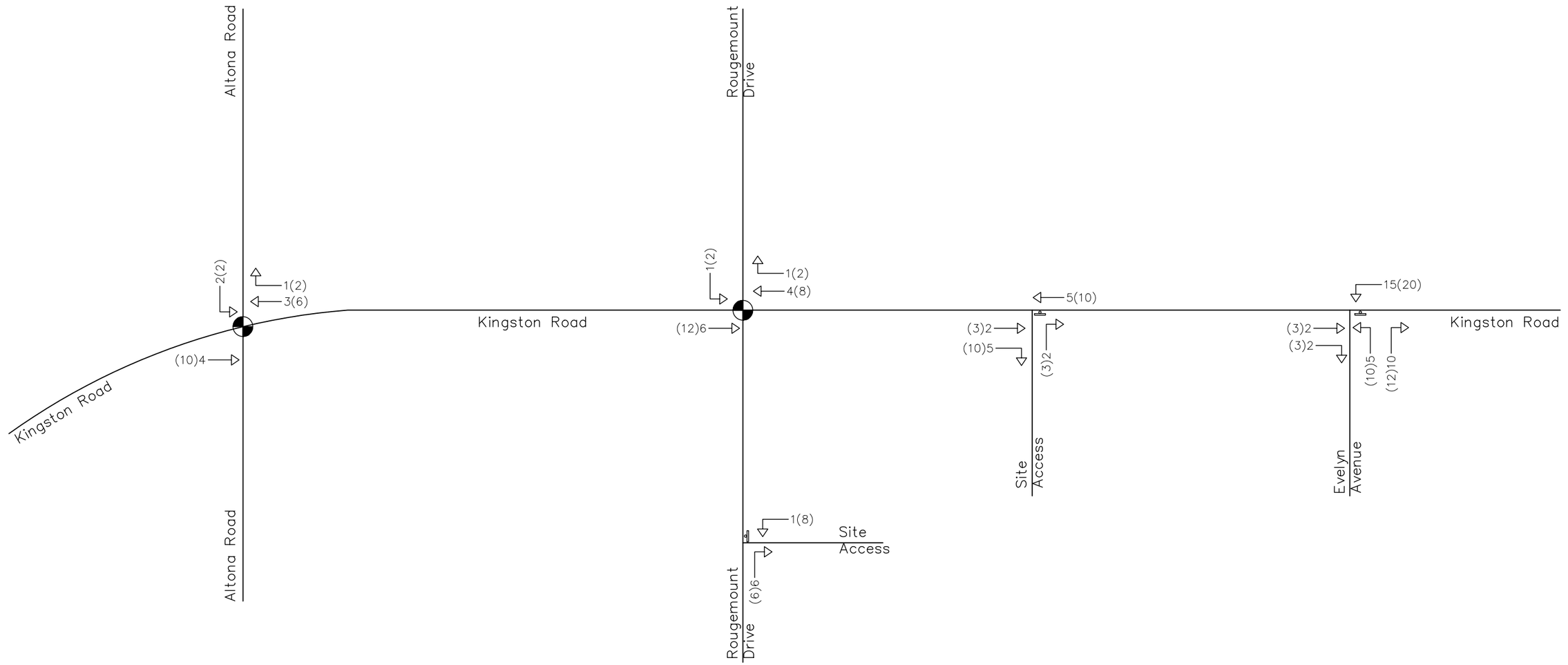
375–417 KINGSTON ROAD,
CITY OF PICKERING

Residential Trip Assignment (Full Buildout)

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Date	Check	Scale	Dwg.
2025/03/20	M.I.	N.T.S	FIG 27

NOTE:
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LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

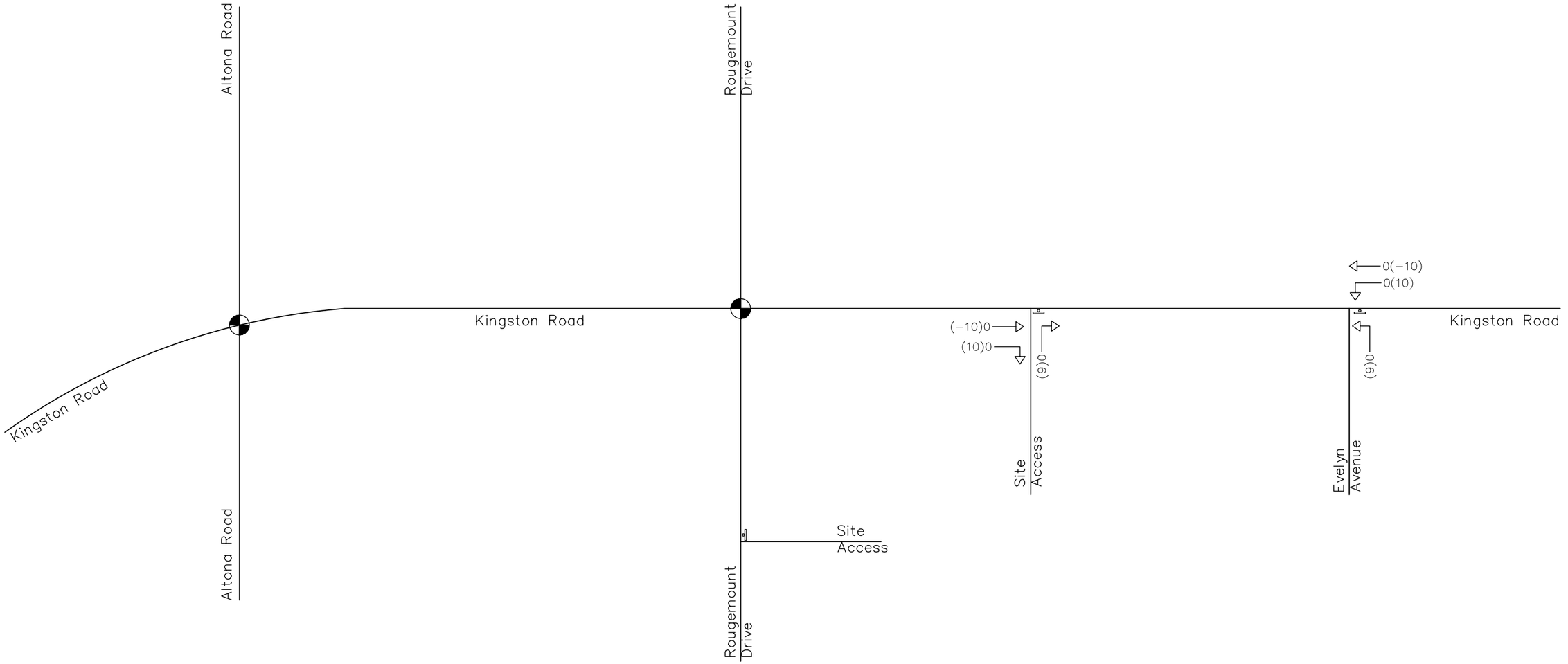
375–417 KINGSTON ROAD,
CITY OF PICKERING

Retail Trip Assignment (Full Buildout)

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211 YONGE STREET
SUITE 600
TORONTO, ON M5B 1M4
416-477-3392 T
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Drawn	Design	Project No.	
I.A.			2144–7313
Date	Check	Scale	Dwg.
2025/03/20	M.I.	N.T.S	FIG 28

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

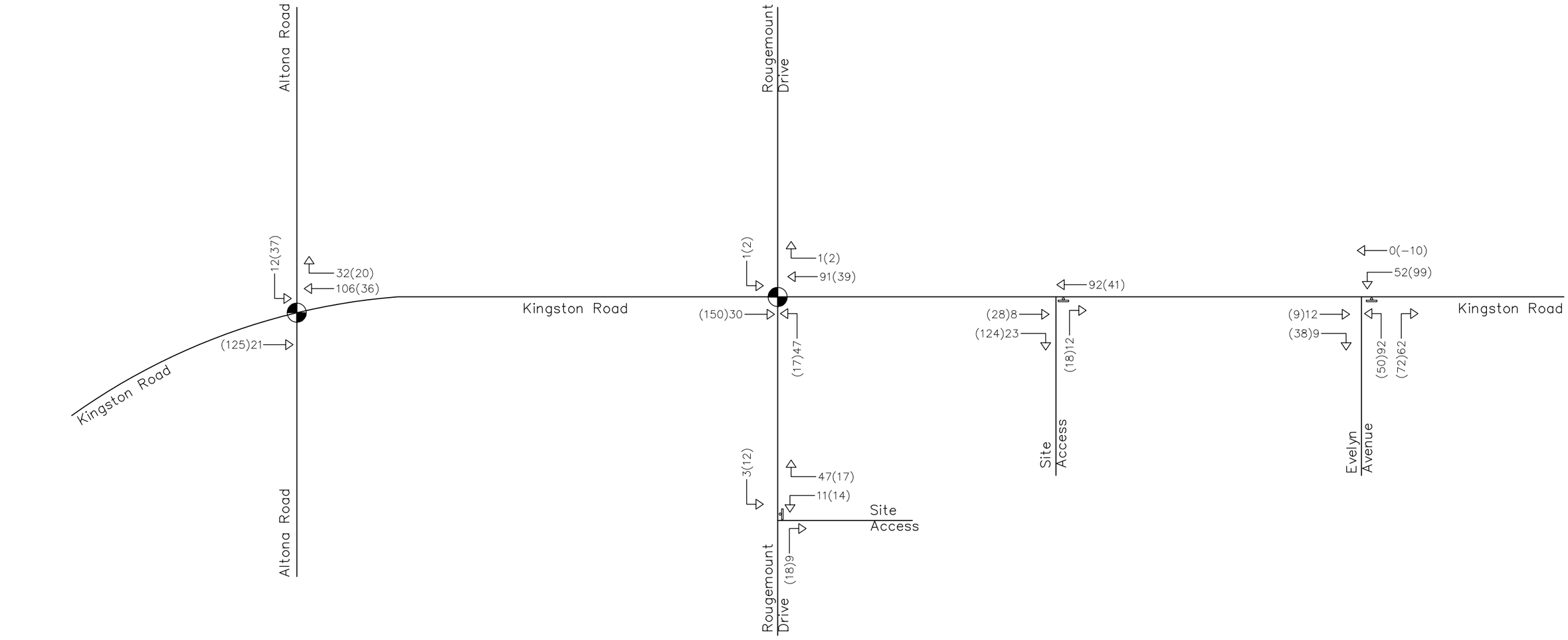
375–417 KINGSTON ROAD,
CITY OF PICKERING

Retail Pass–By Trip Assignment (Full Buildout)

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Drawn	Design	Project No.	
I.A.			2144–7313
Date	Check	Scale	Dwg.
2025/03/20	M.I.	N.T.S	FIG 29

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

375–417 KINGSTON ROAD,
CITY OF PICKERING

Total Trip Assignment (Full Buildout)

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Drawn	Design	Project No.	
I.A.			2144–7313
Date	Check	Scale	Dwg.
2025/03/20	M.I.	N.T.S	FIG 30

7.0 Future Total Conditions

7.1 Kingston Road at Evelyn Avenue Signalization

As previously stated, the Intensification Study recommends that provision of a controlled intersection be explored at Evelyn Avenue. Accordingly, to facilitate access to the proposed development as well as to improve operations at adjacent intersection of Rougemount Drive and Kingston Road, signalization of the Evelyn Avenue was contemplated.

7.1.1 Signal Warrant Assessment

As stated above, the intersection of Evelyn Avenue and Kingston Road is proposed to be signalized to facilitate access to the site. Signal warrants were conducted for this intersection.

The analysis followed the procedures specified in Chapter 4 of the "Ontario Traffic Manual – Book 12", March 2012. Justifications 1 (Minimum Vehicular Volume), 2 (Delay to Cross Traffic), 3 (Combination of Justifications 1 and 2), and 4 (4-Hour Volume) were selected as the most appropriate warrants with which to assess the two study intersections.

The average hour volume was determined using the following formula from OTM Book 12:

AHV = (amPHV + pmPHV) / 4

Where;
AHV = average hour volume
PHV = peak hour volume

An "urban" operating environment was applied to the signal warrant analysis to reflect the urbanization of the corridor.

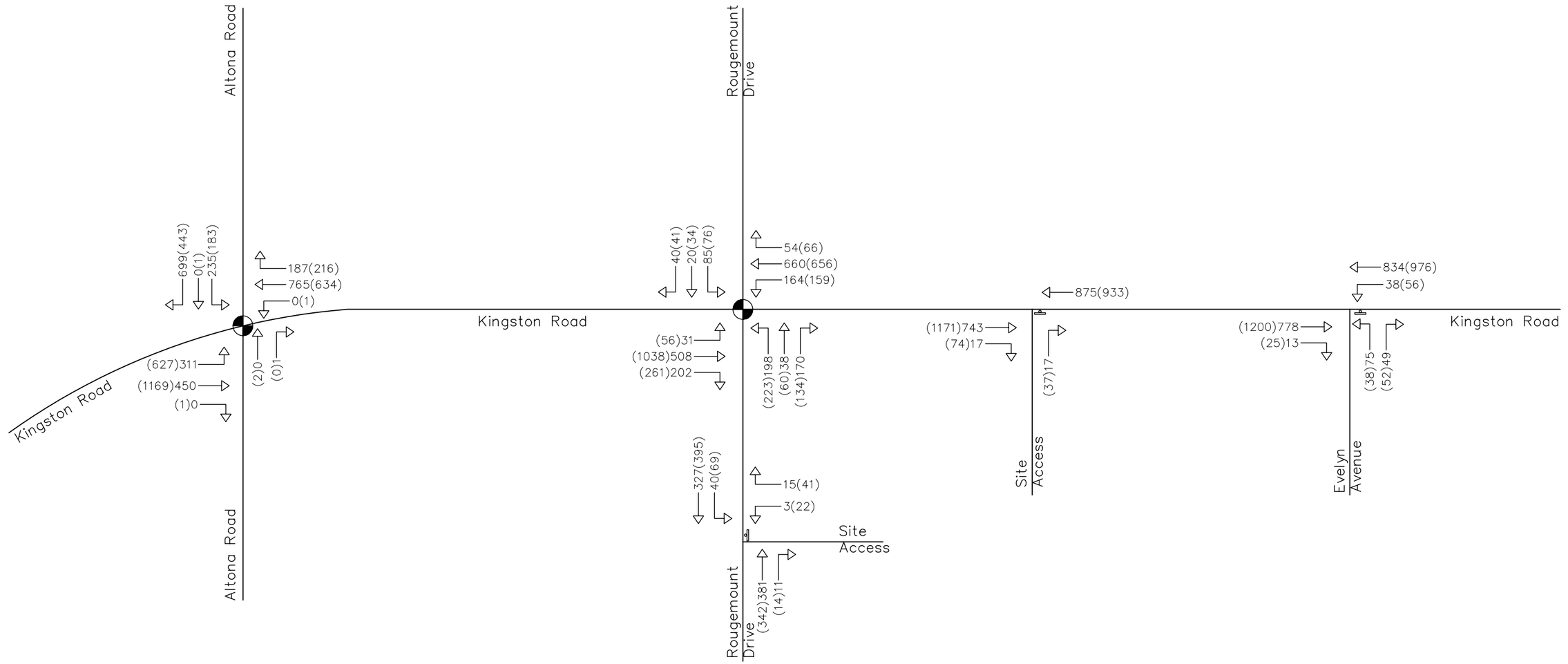
Under the ultimate horizon year (2039) future total conditions, signals are not warranted at the study intersection of Evelyn Avenue and Kingston Road. **Appendix H** contains the signal warrant sheets.

Despite the results of the warrant assessment, given the signalized intersection of Evelyn Avenue and Kingston Road will facilitate a full moves access to the proposed development and improve operations at the adjacent intersection of Rougemount Drive and Kingston Road, it's recommended that the subject intersection be signalized for the buildout year of phase1 (2027).

7.2 Basis of Assessment

The traffic impacts arising from the proposed development were assessed on the basis of the site generated traffic illustrated in **Figures 26** and **30**, superimposed on the future background traffic volumes in **Figures 13, 14, 15** and **16** using the same optimized signal timing plans as mentioned in future background conditions. The resulting future total traffic volumes for the weekday a.m. and p.m. peak hours are illustrated in **Figure 31, 32, 33** and **34** for the 2027, 2029, 2034 and 2039 horizon years, respectively.

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

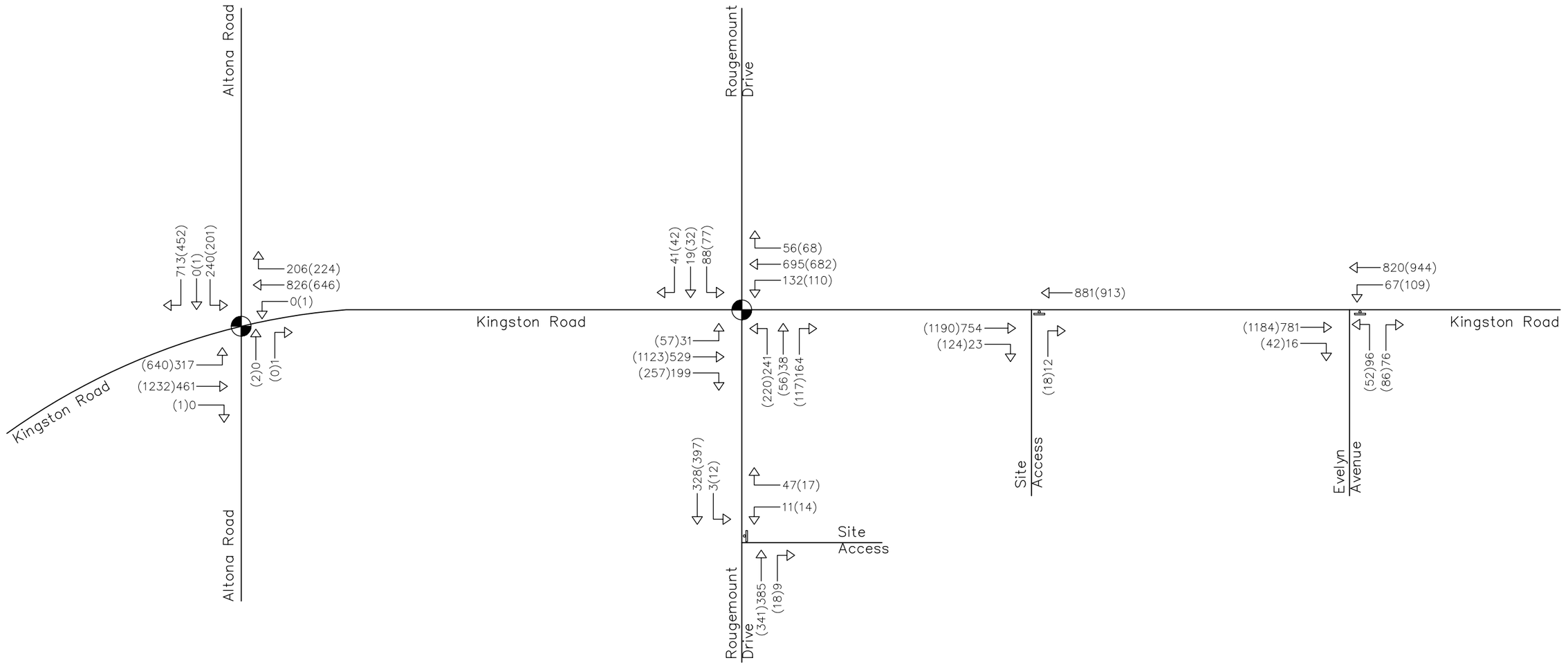
375–417 KINGSTON ROAD, CITY OF PICKERING

2027 Future Total Traffic Volumes

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Date	Check	Scale	Dwg.
2025/03/20	M.I.	N.T.S	FIG 31

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

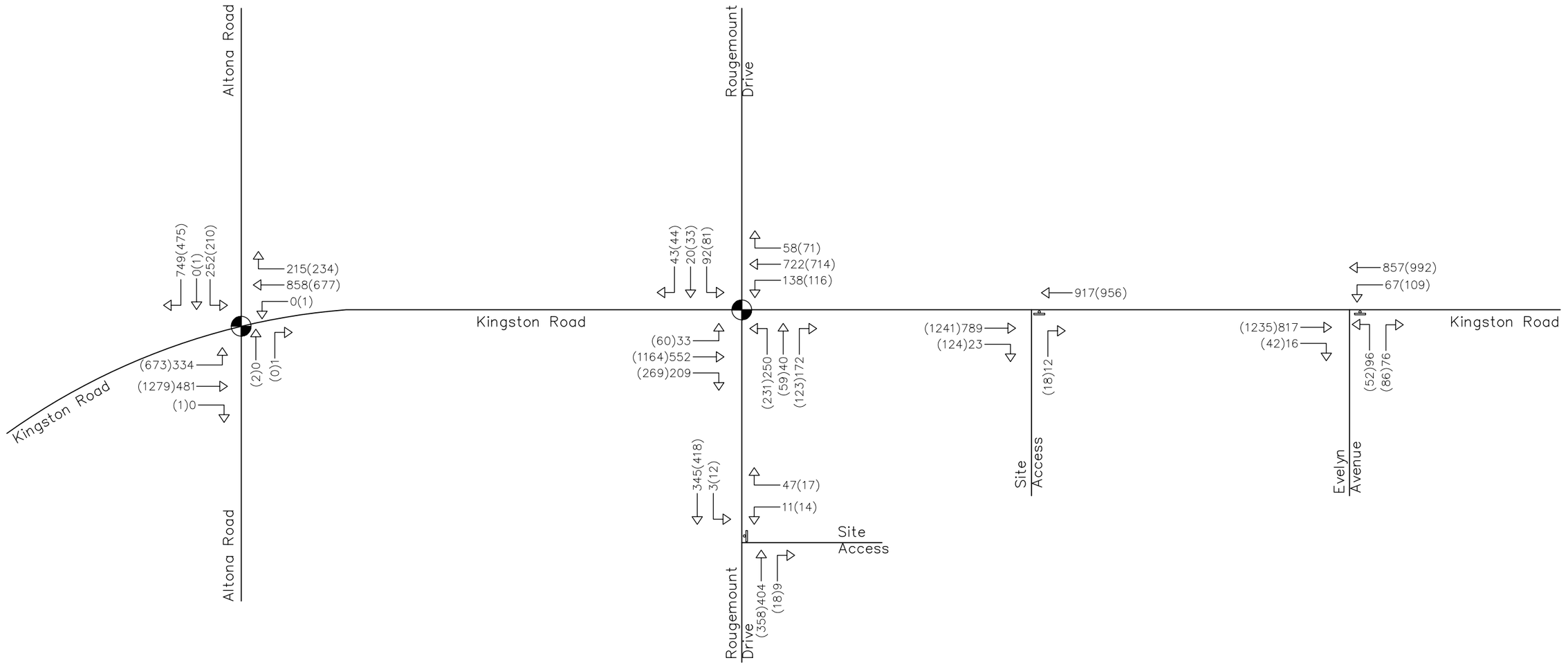
375–417 KINGSTON ROAD,
CITY OF PICKERING

2029 Future Total Traffic Volumes

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Drawn	Design	Project No.	
I.A.			2144–7313
Date	Check	Scale	Dwg.
2025/03/20	M.I.	N.T.S	FIG 32

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

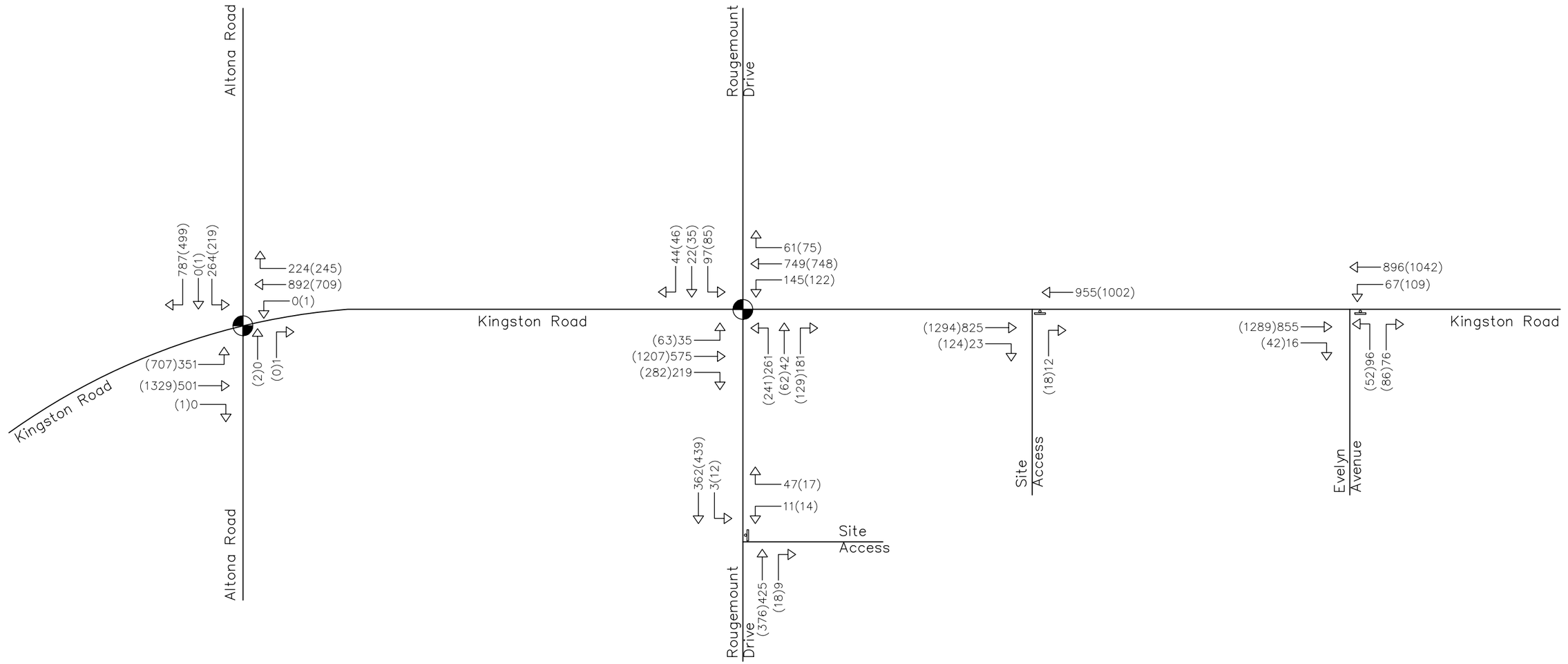
375–417 KINGSTON ROAD, CITY OF PICKERING

2034 Future Total Traffic Volumes

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Drawn	Design	Project No.	
I.A.			2144–7313
Date	Check	Scale	Dwg.
2025/03/20	M.I.	N.T.S	FIG 33

NOTE:
THIS FIGURE IS SCHEMATIC ONLY AND IS NOT TO BE SCALED.



LEGEND:

- SIGNAL CONTROL
- STOP CONTROL
- YEILD CONTROL
- ROUND ABOUT
- AM(PM) WEEKDAY AM(PM) TRAFFIC VOLUMES

375–417 KINGSTON ROAD, CITY OF PICKERING

2039 Future Total Traffic Volumes

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Drawn	Design	Project No.
I.A.		2144–7313
Date	Check	Scale / Dwg.
2025/03/20	M.I.	N.T.S / FIG 34

7.3 Intersection Operations

Tables 28, 29,30 and **31** outline the 2027, 2029, 2034 and 2039 future total traffic conditions associated with the boundary road network, respectively. Detailed capacity analyses are included in **Appendix E**.

Table 28: 2027 Future Total Level of Service (Phase 1)

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Maximum V/C Ratios[2]	95th Percentile Queue > Storage Length
Kingston Road at Altona Road	Optimized Signal	A.M.	B	18.0 s	0.80 (SBT)	53.9 m > 16.0 m (EBL)
		P.M.	C	24.0 s	0.88 (EBL)	173.8 m > 16.0 m (EBL)
Kingston Road at Rougemount Drive	Optimized Signal	A.M.	C	30.9 s	0.70 (WBL)	63.8 m > 35.0 m (NBL) 39.1 m > 19.0 m (SBL)
		P.M.	C	31.3 s	**0.94 (NBL)** **0.90 (WBL)**	88.8 m > 35.0 m (NBL) 36.1 m > 19.0 m (SBL)
Rougemount Site Access	Stop Minor (Full-Moves)	A.M.	B	11.8 s	0.25 (NBTR)	None
		P.M.	B	14.7 s	0.23 (NBTR)	None
Laneway C at Kingston Road	Stop Minor (RIRO)	A.M.	A	9.0 s	0.32 (EBTR)	None
		P.M.	B	10.3 s	0.50 (EBTR)	None
Kingston Road at Evelyn Avenue	Optimized Signal	A.M.	D	40.0 s	0.77 (EBTR)	None
		P.M.	C	27.8 s	0.77 (EBTR)	28.9 m > 25.0 m (WBL)

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The level of Service of a stop-controlled intersection is based on the minor (stopped)approach control delay per vehicle.

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio at the intersection. All v/c ratios greater than 0.90 are outlined and highlighted.

As shown in **Table 28**, under 2027 future total conditions, the signalized intersection of Kingston Road at Altona Road is expected to continue to operate at an unchanged LOS "B" and "C" during the weekday a.m. and p.m. peak periods, respectively. The intersection is expected to experience an increase in maximum control delay of 0.7 seconds or less, and a minor increase in the maximum theoretical volume-to-capacity ratio of 0.01 and 0.02 in the weekday a.m. and p.m. peak periods, respectively, when compared to 2027 future background conditions. The 95th percentile queue lengths for the eastbound left-turn movement are expected to continue to exceed the available storage length. However, these queue lengths are consistent with future background operations and the addition of the site generated traffic does not materially change the expected queue lengths.

The signalized intersection of Kingston Road at Rougemount Drive is expected to operate at a LOS "C" during both weekday a.m. and p.m. peak hours. The intersection average control delays of 30.9 s and 31.3 s in the weekday a.m. and p.m. peak hours, respectively, and maximum volume-to-capacity ratios of 0.70 (SBL) and 0.94 (NBL) are expected in the weekday a.m. and p.m. peak hours, respectively. Compared to 2027 future background conditions, the intersection is expected to experience an improvement in operations because of the decrease in westbound left turn volumes as the full moves signalized intersection of Kingston Road at Evelyn Avenue provides an additional access for left turning vehicles on westbound Kingston Road. A decrease in maximum control delay of 0.8 seconds, and a decrease in the maximum theoretical volume-to-capacity ratio of 0.03 and 0.01

in the weekday a.m. and p.m. peak periods, respectively, when compared to 2027 future background conditions. The 95th percentile queue lengths for the northbound and southbound left-turn movements are expected to continue to exceed the available storage length. However, these queue lengths are consistent with future background operations and the addition of the site generated traffic does not materially change the expected queue lengths.

It is noted that the identified operational issues at both intersections of Kingston Road with Altona Road and Rougemount Drive are background related and consistent with the findings of the Durham-Scarborough BRT EA Traffic Study (excerpts included in **Appendix G**).

The signalized intersection of Kingston Road at Evelyn Avenue is projected to operate at a LOS "D" and "C" during the weekday a.m. and p.m. peak hours, respectively. The intersection average control delays of 40.0s and 27.8s in the weekday a.m. and p.m. peak hours, respectively, and maximum volume-to-capacity ratio of 0.77 (EBTR) is expected in both weekday a.m. and p.m. peak hours.

The stop-controlled Full-Moves minor connection of Site Access to Rougemount Drive is projected to operate below capacity at a LOS "B" during both weekday a.m. and p.m. peak hours. A maximum control delay of 14.7 seconds, and a maximum individual volume-to-capacity ratio of 0.25 are expected.

The stop-controlled Right-In/Right-Out minor connection of Laneway C to Kingston Road is projected to operate below capacity at a LOS "A" and "B" during the a.m. and p.m. peak hours, respectively. A maximum control delay of 10.3 seconds, and a maximum individual volume-to-capacity ratio of 0.50 are expected.

Table 29: 2029 Future Total Level of Service

Intersection	Control	Peak Hour	Level of Service[1]	Control Delay	Maximum V/C Ratios[2]	95th Percentile Queue > Storage Length
Kingston Road at Altona Road	Optimized Signal	A.M.	B	19.5 s	0.81 (SBT)	63.4 m > 16.0 m (EBL)
		P.M.	C	25.8 s	**0.90 (EBL)**	199.0 m > 16.0 m (EBL)
Kingston Road at Rougemount Drive	Optimized Signal	A.M.	C	31.0 s	0.69 (NBL)	77.1 m > 35.0 m (NBL) 40.2 m > 19.0 m (SBL)
		P.M.	C	28.5 s	**0.96 (NBL)**	89.3 m > 35.0 m (NBL) 36.3 m > 19.0 m (SBL)
Rougemount Site Access	Stop Minor (Full-Moves)	A.M.	B	12.4 s	0.25 (NBTR)	None
		P.M.	B	13.5 s	0.23 (NBTR)	None
Laneway C at Kingston Road	Stop Minor (RIRO)	A.M.	A	9.0 s	0.32 (EBTR)	None
		P.M.	B	10.2 s	0.51 (EBTR)	None
Kingston Road at Evelyn Avenue	Optimized Signal	A.M.	D	39.5 s	0.79 (EBTR)	32.9 m > 25.0 m (WBL) 29.5 m > 25.0 m (NBL)
		P.M.	C	29.7 s	0.80 (EBTR)	47.4 m > 25.0 m (WBL)

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The level of Service of a stop-controlled intersection is based on the minor (stopped)approach control delay per vehicle.

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio at the intersection. All v/c ratios greater than 0.90 are outlined and highlighted.

Table 30: 2034 Future Total Level of Service

Intersection	Control	Peak Hour	Level of Service[1]	Control Delay	Maximum V/C Ratios[2]	95th Percentile Queue > Storage Length
Kingston Road at Altona Road	Optimized Signal	A.M.	C	21.3 s	0.83 (SBT)	76.4 m > 16.0 m (EBL)
		P.M.	C	29.3 s	**0.95 (EBL)**	233.9 m > 16.0 m (EBL)
Kingston Road at Rougemount Drive	Optimized Signal	A.M.	C	31.6 s	0.70 (NBL)	79.1 m > 35.0 m (NBL) 41.5 m > 19.0 m (SBL)
		P.M.	C	30.4 s	**1.00 (NBL)**	95.8 m > 35.0 m (NBL) 37.6 m > 19.0 m (SBL)
Rougemount Site Access	Stop Minor (Full-Moves)	A.M.	B	12.7 s	0.26 (NBTR)	None
		P.M.	B	13.9 s	0.24 (NBTR)	None
Laneway C at Kingston Road	Stop Minor (RIRO)	A.M.	A	9.1 s	0.34 (EBTR)	None
		P.M.	B	10.5 s	0.53 (EBTR)	None
Kingston Road at Evelyn Avenue	Optimized Signal	A.M.	D	38.5 s	0.79 (EBTR)	32.9 m > 25.0 m (WBL) 30.3 m > 25.0 m (NBL)
		P.M.	C	28.8 s	0.80 (EBTR)	47.5 m > 25.0 m (WBL)

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The level of Service of a stop-controlled intersection is based on the minor (stopped)approach control delay per vehicle.
Note 2: The critical v/c ratio is considered to be the maximum v/c ratio at the intersection. All v/c ratios greater than 0.90 are outlined and highlighted.

Table 31: 2039 Future Total Level of Service

Intersection	Control	Peak Hour	Level of Service[1]	Control Delay	Maximum V/C Ratios[2]	95th Percentile Queue > Storage Length
Kingston Road at Altona Road	Optimized Signal	A.M.	C	23.6 s	0.85 (SBT)	89.7 m > 16.0 m (EBL)
		P.M.	C	33.7 s	**0.99 (EBL)** **0.90 (WBT)**	268.9 m > 16.0 m (EBL)
Kingston Road at Rougemount Drive	Optimized Signal	A.M.	C	33.2 s	0.74 (NBL)	81.9 m > 35.0 m (NBL) 43.1 m > 19.0 m (SBL)
		P.M.	C	32.0 s	**1.01 (NBL)** **0.92 (WBL)**	99.9 m > 35.0 m (NBL) 39.0 m > 19.0 m (SBL)
Rougemount Site Access	Stop Minor (Full-Moves)	A.M.	B	13.0 s	0.28 (NBTR)	None
		P.M.	B	14.4 s	0.25 (NBTR)	None
Laneway C at Kingston Road	Stop Minor (RIRO)	A.M.	A	9.1 s	0.35 (EBTR)	None
		P.M.	B	10.8 s	0.55 (EBTR)	None
Kingston Road at Evelyn Avenue	Optimized Signal	A.M.	D	37.8 s	0.79 (EBTR)	32.9 m > 25.0 m (WBL) 31.1 m > 25.0 m (NBL)
		P.M.	C	27.8 s	0.81 (EBTR)	47.5 m > 25.0 m (WBL) 25.4 m > 25.0 m (NBL)

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle. The level of Service of a stop-controlled intersection is based on the minor (stopped)approach control delay per vehicle.
Note 2: The critical v/c ratio is considered to be the maximum v/c ratio at the intersection. All v/c ratios greater than 0.90 are outlined and highlighted.

As shown in **Table 31**, under 2039 future total conditions, the signalized intersection of Kingston Road at Altona Road is expected to continue to operate at an unchanged LOS "C" during both weekday a.m. and p.m. peak periods. The intersection is expected to experience an increase in maximum control delay of 1.7 seconds or less, and a minor increase in the maximum theoretical volume-to-capacity ratio of 0.01 and 0.04 in the weekday a.m. and p.m. peak periods, respectively, when compared to 2039 future background conditions. The 95th percentile queue lengths for the eastbound left-turn movement are expected to continue to exceed the available storage length. However, these queue lengths are consistent with future background operations and the addition of the site generated traffic does not materially change the expected queue lengths.

The signalized intersection of Kingston Road at Rougemount Drive is expected to operate at a LOS "C" during both weekday a.m. and p.m. peak hours. The intersection average control delays of 33.2 s and 32.0 s in the weekday a.m. and p.m. peak hours, respectively, and maximum volume-to-capacity ratios of 0.74 (NBL) and 1.01 (NBL) are expected in the weekday a.m. and p.m. peak hours, respectively. Compared to 2039 future background conditions, the intersection is expected to experience an improvement in operations because of the decrease in westbound left turn volumes as the full moves signalized intersection of Kingston Road at Evelyn Avenue provides an additional access for left turning vehicles on westbound Kingston Road. A decrease in maximum control delay of 9.4 seconds, and a decrease in the maximum theoretical volume-to-capacity ratio of 0.07 and 0.34 in the weekday a.m. and p.m. peak periods, respectively, when compared to 2039 future background conditions. The 95th percentile queue lengths for the northbound and southbound left-turn movements are expected to continue to exceed the available storage length. However, these queue lengths are consistent with future background operations and the addition of the site generated traffic does not materially change the expected queue lengths.

It is noted that the identified operational issues at both intersections of Kingston Road with Altona Road and Rougemount Drive are background related and consistent with the findings of the Durham-Scarborough BRT EA Traffic Study (excerpts included in **Appendix G**).

The signalized intersection of Kingston Road at Evelyn Avenue is projected to operate at a LOS "D" and "C" during the weekday a.m. and p.m. peak hours, respectively. The intersection average control delays of 37.8s and 27.8s in the weekday a.m. and p.m. peak hours, respectively, and maximum volume-to-capacity ratios of 0.79 (EBTR) and 0.81 (EBTR) are expected in the weekday a.m. and p.m. peak hours, respectively.

The stop-controlled Full-Moves minor connection of Site Access to Rougemount Drive is projected to operate below capacity at a LOS "B" during both a.m. and p.m. peak hours. A maximum control delay of 14.4 seconds, and a maximum individual volume-to-capacity ratio of 0.28 are expected.

The stop-controlled Right-In/Right-Out minor connection of Laneway C to Kingston Road is projected to operate below capacity at a LOS "A" and "B" during the a.m. and p.m. peak hours, respectively. A maximum control delay of 10.8 seconds, and a maximum individual volume-to-capacity ratio of 0.55 are expected.

The boundary road network is expected to operate similarly or better under the 2029 and 2034 horizon years.

Based on the analysis herein, the proposed development is not expected to significantly alter the traffic operations of the study intersections. The proposed development can be supported from a traffic operations perspective.

8.0 Summary of Recommended Improvements

Based on the boundary road network analysis and intersection operations reviewed above, **Table 32** below summarizes the required and recommended improvements.

Table 32: Summary of Required Improvements

Improvements	Intersection	Horizon
• Signalization • Provide 25 m long Auxiliary Left Turn Lanes for Northbound Left Turn Movement • Provide 50 m long Auxiliary Left Turn Lane for Westbound Left Turn Movement	Kingston Road at Evelyn Avenue	2027 Future Total

9.0 Sight Distance Assessment

The available sightlines at the proposed site accesses on Kingston Road and Rougemount Drive were measured and compared to the standards set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR). Sight distances were measured from the proposed site access using the following assumptions:

- A standard drive eye height of 1.08 metres for a passenger car
- A 4.4 metre setback from the approximate extension of the outer curb to represent a vehicle waiting to exit the site

Intersection sight distance is calculated using equation 9.9.1 from the GDGCR as outlined below:

$$ISD = 0.278 * V\ major * tg$$

Where:

ISD = Intersection Sight Distance
V major = design speed of roadway (km/h)
tg = assumed time gap for vehicles to turn from stop onto roadway (s)

The design speed of a roadway in an urban environment is typically 10 km/h greater for roadways with posted speed limits of 50 km/h or lower, and 20 km/h greater for roadways with posted speed limits above 50 km/h. As 40 km/h is the posted speed limit along Rougemount Drive, a design speed of 50 km/h was assumed for the purposes of sight distance analysis. Similarly, as Kingston Road has a posted speed limit of 60 km/h. a design speed of 80 km/h was assumed for the sight distance assessment.

Table 33 below outlines the sight distance analysis for the proposed site accesses.

Table 33: Sight Distance Analysis

Parameter	Rougemount Drive Site Access	Kingston Road Site Access
Access Type	Full Moves	Right-In-Right-Out
Posted Speed Limit of Roadway	40 km/h	60 km/h
Assumed Design Speed	50 km/h	80 km/h
Base Time Gap (Passenger Cars)	Left Turn: 7.5 s Right Turn: 6.5 s	Right Turn: 6.5 s
Additional Time Gap	n/a	n/a
Grade of Roadway	Less than 3%	Less than 3%
Sight Stopping Distance (TAC GDGCR Table 2.5.2)	65 m	130 m
Sight Distance Required (TAC GDGCR Eqn. 9.9.1)	Left Turn: 105 m Right Turn: 95 m	Right Turn: 145 m
Measured Sight Distance	North: 250 m + South: 100 m	West: 170 m +
Minimum Sight Distance Satisfied	Yes	Yes

As outlined in **Table 33,** the available sight distance exceeds the required sight distances for each of the site accesses.

Although Rougemount Drive has a slight incline and bend south of the site access, adequate sight distance is achieved as the roadway is entirely visible up until the highest point of the bridge spanning Highway 401. This represents approximately 100 metres of sight distance, exceeding the required sight distance of 95m for right turn egressing vehicles. **Appendix I** contains sight distance analysis excerpts, including sight distance drawings.

10.0 Parking and Loading Review

10.1 Existing City of Pickering Zoning By-Law Requirements

The current parking requirements for the subject site are included in the Consolidated Zoning By-Law (December 2024). The minimum parking rates associated with the Zoning By-Laws are summarized in **Table 34** below.

Table 34: City of Pickering Consolidated Zoning By-Law Minimum Parking Requirements (All Other Zones)

Land Use	Number of Units / GFA	Minimum Parking Rate	Parking Required	Parking Supply Proposed
Dwelling (Residential)	1,356 Units	1.25 spaces per dwelling unit for residents	1,695	950 resident spaces *(0.70 resident spaces per unit)* 204 visitor spaces[1] *(0.15 spaces per unit)*
Dwelling (Visitor)		0.25 spaces per dwelling unit for visitors	339	
Retail	2,911.4 m^2	4.05 spaces[2] per 100 m^2	118	
Total			**2,152**	**1,154 spaces** *(0.85 spaces per unit)*
Surplus/Deficit				**- 998 spaces**

Note 1: Visitor parking spaces are proposed to be shared between residential visitors and retail visitors.
Note 2: Using the City of Pickering's Consolidated Zoning By-Law's shared parking formula, the peak occurs in the evening where it's 100% residential visitor + 90% retail visitor

Per the City of Pickering Zoning By-Law parking requirements for "All Other Zones", the development is required to supply a total of 2,152 vehicle parking spaces, comprising 1,695 resident, 339 visitor and 118 commercial spaces.

The development proposes 1,154 vehicle parking spaces on site, with an additional 77 spaces located within the MTO 14m setback. As the 77 spaces within the MTO setback are not considered part of the parking supply from a Zoning By-law perspective, the proposed parking supply is technically deficient by 921 spaces. However, the appropriateness of the proposed parking supply is discussed in further detail per **Section 11**.

10.2 Accessible Parking Requirements

The minimum accessible parking requirements associated with the development are outlined below in **Table 35**.

Table 35: City of Pickering Consolidated Zoning By-Law Minimum Accessible Parking Space Requirements

Total Number of Provided Parking Spaces	Minimum Number of Parking Spaces to be designated as Accessible	Minimum Number of Accessible Parking Required
1,154	11 Plus 1% of the total number of Parking Spaces provided in the Parking Area (For 1,001 and over parking spaces)	23
Accessible Parking Spaces Proposed		29
Surplus (Deficit)		**+6**

Per the City of Pickering's Consolidated Zoning By-Law, if the number of parking spaces provided is 1001 and over, a minimum of 11 spaces plus 1% of the total number of spaces is required. Given a total of 1,154 parking spaces are proposed, 23 parking spaces, including 11 Type 'A' spaces and 12 Type 'B' spaces, must comply with all regulations of an accessible parking space. Where a Type 'A' space has a minimum width of 3.4 metres and a Type 'B' space has a minimum width of 2.4 metres.

As 29 barrier free parking spaces are provided at-grade and below ground, the proposed barrier free parking spaces satisfy the City of Pickering's Consolidated Zoning By-Law.

10.3 Bicycle Parking Requirements

The City of Pickering's Consolidated Zoning By-Law's requirements were assessed to determine the adequacy of the proposed bicycle parking supply. The minimum bicycle parking requirements per Consolidated Zoning By-Law are outlined below in **Table 36.**

Table 36: City of Pickering Minimum Bicycle Parking Requirements

Land Use	GFA/ Units	Type	Minimum Parking Rate	Bicycle Parking Spaces Required	Total Bicycle Spaces Proposed (Surplus/Deficit)
Residential	1,356 units	Short-Term	0.1 spaces/unit	136 spaces	137 short-term spaces 734 long-term spaces
		Long-Term	0.5 spaces/unit	678 spaces	
Retail	2,911.4 m^2	Short-Term	1 bicycle parking rack	1 bicycle parking rack	
		Long-Term	The greater of 2.0 total bicycle parking spaces or 1.0 bicycle parking spaces for each 1,000 m^2 of GFA or portion thereof	3 spaces	
Total Short-Term Spaces				**136 spaces**	**137 spaces (+1)**
Total Long-Term Spaces				**681 spaces**	**734 spaces (+53)**
Total Spaces				**817 spaces**	**871 Spaces (+54)**

The Site Plan proposes long-term bicycle parking spaces to be underground and short-term bicycle parking spaces to be located at-grade, accessible by visitors.

As the most recent Site Plan proposes 137 and 734 short-term and long-term bicycle parking spaces respectively, the development proposes a surplus of bicycle parking spaces when compared to Zoning By-Law requirements.

10.4 Loading Requirements

The City of Pickering Consolidated Zoning By-law was reviewed to determine the loading requirements of the proposed development.

Table 37: City of Pickering Consolidated Zoning By-Law Loading Requirements

Land Use	Minimum Loading Requirement	Minimum Loading Required
For every building or structure	1 Loading Space required per building	2
Proposed Loading Supply		4

According to City's Zoning By-Law, "For every building or structure to be erected for, altered for, or its use converted to a commercial or industrial use, involving the frequent shipping, loading or unloading of persons, animals, goods, wares or merchandise, off street loading spaces shall be provided and maintained upon the same lot on which the principal use is located" and it needs to provide for the temporary parking of one (1) commercial vehicle. To satisfy this requirement, a total of 4 loading spaces (2 for each building/phase) have been provided.

Further, the City of Pickering's Consolidated Zoning By-Law states that a loading space must have a minimum length of 12 metres, minimum width of 3.5 metres and a minimum of 4.2 metres vertical clearance. Per the most recent Site Plan, the proposed loading space satisfies the City's minimum geometric requirement (12m x 3.5m x 4.2m), thus the proposed loading space satisfies these minimum loading space sizes.

11.0 Parking Justification

As noted previously within Section 10.0, the proposed auto parking at the development is deficient per the City's Consolidated Zoning By-Law requirements; however, this does not mean that the proposed parking supply is inadequate. To evaluate the adequacy of the reduction in parking supply, the proposed resident and visitor parking supply was evaluated from multiple perspectives including:

- City of Pickering Zoning By-Law Exceptions and Recent Parking Approvals
- Proximity to Higher-Order Transit
- Parking Standards in Similar Transportation Contexts
- Zoning By-Law Comparisons
- TDM Strategies
- Excess Parking within MTO Setback

11.1 City of Pickering Zoning By-Law Requirement (City Centre)

While the subject site is technically located in "All other Zones" per the City's recent Zoning By-Law, this designation does not recognize the changing transportation context underpinned by the planned implementation of frequent BRT service along the Kingston Road corridor. This designation technically does not differentiate between a site located fronting the Kingston Road BRT corridor, and another site which may be located in north Pickering with limited access to transit. Moreover, as the Kingston Road BRT is expected to operate with a peak hour 5-minute headways, which technically provides higher frequency compared to the Lakeshore East GO Line's 15min peak hour headways, the City Centre's requirements are considered a more appropriate baseline evaluation of parking requirements. Accordingly, the Zoning By-Law's City Centre parking requirements are summarized in **Table 38** below:

Table 38: City of Pickering Consolidated Zoning By-Law Minimum Parking Requirements (City Centre Zones)

Land Use	Number of Units / GFA	Minimum Parking Rate	Parking Required	Parking Supply Proposed
Dwelling (Residential)	1,356 Units	0.80 spaces per dwelling unit for residents	1084	950 resident spaces *(0.70 resident spaces per unit)*
Dwelling (Visitor)		0.15 spaces per dwelling unit for visitors	203	
Retail	2,911.4 m²	2.25 spaces[2] per 100 m²	66	204 visitor spaces[1] *(0.15 spaces per unit)*
Total			**1,353**	**1,154 spaces[3]** *(0.85 spaces per unit)*
Surplus/Deficit				**- 199 spaces**

Note 1: Visitor parking spaces are proposed to be shared between residential visitors and retail visitors.

Note 2: Using the City of Pickering's Consolidated Zoning By-Law's shared parking formula, the peak occurs in the evening where it's 100% residential visitor + 90% retail visitor

Note 3: An additional 77 spaces located within the MTO 14m setback are proposed as well. As the 77 spaces within the MTO setback are not considered part of the parking supply from a Zoning By-law perspective, they were not included in the total supply referenced.

Per the current City of Pickering Zoning By-Law parking requirements for "City Centre Zones", the development is required to supply a total of 1,353 vehicle parking spaces. As development proposes 1,154 vehicle parking spaces, the proposed parking supply is deficient by 199 spaces. However, as

the 77 additional spaces within the MTO setback are not considered part of the parking supply from a Zoning By-law perspective, the proposed parking supply is technically deficient by only 122 spaces.

While the shared visitor and commercial parking is technically 24% lower than the City Centre ZBL requirements, it should be noted that this does not account for the additional 77 Spaces located within the MTO setback. While we recognize that for the purposes of evaluating Zoning By-Law requirements these spaces may not be recognized as part of the supply, these spaces are proposed and will be visually indistinguishable from all other parking spaces on site. These spaces can therefore be considered as part of the practical, or effective parking supply.

From this perspective, the City Centre Zoning By-Law requirements for shared visitor/commercial parking are 269 spaces, while the effective shared visitor/commercial parking supply is proposed to be 281 spaces, including the 77 Spaces located within the MTO setback area. As a result, the proposed visitor and commercial parking supply are appropriate and considered adequate.

11.2 City of Pickering Zoning By-Law Exceptions (Recent Approvals)

To further support the reduced parking supply, recent approvals and current development proposals of mixed-use developments within City of Pickering were also reviewed. **Table 39** below outline various developments with approved reduced parking supplies and proposed reduced parking supplies. While some of the sites listed below are within or near the City Centre, they have a similar transportation context to the site due to the future Kingston Road BRT.

Table 39: Resident Parking Proposal and Approval Trends in the Area

Location	ZBL Exception	Resident Parking Rate	Visitor Parking Rate	Proximity to Transit Station
1990 Whites Road	Exception Zone 257 (By-law 2911-88, as amended by By-law 3506-90)	0.5 space per unit	0.15 space per unit	2 km to Kingston BRT Station at Whites Rd and Kingston Rd Intersection
1496 Bayly Street	Exception Zone 395 (E14 of By-law 7553-17, as amended by By-law 7810-21)	0.71 space per unit	0.15 space per unit	550 m to Pickering Go Station
1474 Bayly Street	Exception Zone 398 (E17 of By-law 7553-17, as amended by By-law 7936-22)	0.65 space per unit	0.15 space per unit	500 m to Pickering Go Station
1355 Kingston Road	Exception Zone 400 (E19 of By-law of 7553-17, as amended by By-law 7981-23)	0.65 space per unit	0.15 space per unit	900 m to Pickering Go Station
1770c Sandy Beach Rd	Exception Zone 401 (E20 of By-law 7553-17, as amended by By-law 7924-22)	0.65 space per unit	0.15 space per unit	850 m to Pickering Go Station
1790 Liverpool Road	Exception Zone 402 (E21 of By-law 7553-17, as amended by By-law 8023-23)	0.55 space per unit	0.15 space per unit	700 m to Pickering Go Station
1515 Pickering Parkway	Exception Zone 434 (E22 & H11 of By-law 7553-17, as amended by By-law 8099-24)	0.55 space per unit	0.15 space per unit	1.2 km to Pickering Go Station
Average		**0.60 space per unit**	**0.15 space per unit**	
375 - 417 Kingston Road		**0.70 space per unit**	**0.15 space per unit**	

As outlined in **Table 39,** the approved developments within similar transportation contexts in the City of Pickering has average rates of 0.60 and 0.15 for residents and visitor space per unit, respectively. These approvals were located within 550 m – 2 km distance from higher-order transit station, which is similar to the subject site being located within a 450 m distance from the planned BRT station at Kingston Road and Altona Road.

Thus, the proposed parking rates of 0.70 and 0.15 space per unit for residents and visitors, respectively, are supportable when considering the parking rates approved at similar sites. It can also be concluded that the City's existing Zoning By-Law parking rates would likely be an overestimation of expected parking demand at the proposed site, especially considering the site is situated by the future Durham-Scarborough BRT Corridor that provides direct access to frequent transit.

11.3 Zoning By-Law Comparisons in Similar Transportation Contexts

As mentioned in **Section 11.1**, the Zoning By-Law requirements currently applicable to the site do not appropriately contextualize the site's transportation context. Across the GTA, Zoning By-law requirements in close proximity to higher-order transit stops and abutting high frequency transit corridors are significantly lower in comparison. The By-law requirements in these jurisdictions recognize the role and impact of higher-order transit in reduced vehicle ownership and changing transportation habits to a more sustainable approach.

Accordingly, **Table 40** below compares municipal Zoning By-law parking requirements associated with locations in similar transportation contexts across the GTA:

Table 40: Residential Minimum Parking Rate Comparisons

Category	Municipality	Rapid Transit Corridor	Minimum Parking Rate Required/Proposed		Source
			Residential Tenant	Residential Visitor	
Existing Zoning By-Laws	City of Mississauga (Precinct 1)	Lake Shore BRT, Dundas BRT	0.8 space/unit	0.2 space/unit	Zoning By-Law 0225-2007
			No minimum	No minimum	Per the Housing Recommendation Report/Bill 185 for MTSA
	City of Vaughan (MMU, HMU, CMU, GMU, and EMU)	Queen Street/Highway 7 BRT	0.8 space/unit	0.2 space/unit	Zoning By-Law 001-2021
			No minimum	No minimum	Per the Housing Recommendation Report/Bill 185 for MTSA
	City of Toronto (City-Wide)	(City-Wide)	No minimum Maximum: 0.95 space/unit[1]	Minimum: 2.0 space + 0.01 space/unit Maximum: 1.0 space/unit for first 5 units + 0.1 space/unit thereafter	Zoning By-law 569-2013
	City of Brampton (Parking Regulation Area 1)	Queen Street/Highway 7 BRT	No minimum[3]	No minimum[3]	2nd Draft City of Brampton Zoning By-law (December 2024)
			No minimum	No minimum	Per the Housing Recommendation Report/Bill 185 for MTSA
Subject Site	**375 -417 Kingston Road, City of Pickering**	**Durham-Scarborough BRT**	**0.70 space/unit**	**0.15 space/unit[2]**	**Site Plan**

Note 1: Per Bill 185, minimum parking requirements were removed within PMTSA and MTSAs across Ontario.
Note 2: Visitor parking spaces are proposed to be shared between residential visitors and retail visitors.
Note 3: Applicable to Parking Regulation Area 1 or PRA 1 which includes areas along Queen Street BRT corridor within 800m of a BRT station.

The proposed residential parking rates for the Subject Site fall within the range of existing Zoning By-

Law minimum parking requirements for developments near higher-order transit, mixed-use and intensification areas within the GTHA. On that basis, the reduced parking supply is supportable.

While in the City of Pickering, the only Major Transit Station Area (MTSA) is located within approximately 800m from the Pickering GO station, it should also be recognized that in the Cities of Vaughan, Brampton, Mississauga, Town of New Market, and others, MTSAs have been designated within 800m of existing or planned BRT stations. Per the Province's Bill 185, these MTSAs require no minimum vehicle parking spaces, with the exception of accessible parking. Therefore, in comparison to the subject site, while not designated as an MTSA, within the similar transportation context (within 800m of a BRT station), the parking requirements are significantly lower. Accordingly, the proposed resident and visitor supply are considered adequate.

11.4 Local, Regional and Provincial Policy Review

There are several policy reports and plans to support the proposed development's reduction in automobile use and increase sustainable mode share. The following sections provide an overview of these policies and plans

11.4.1 Kingston Road Corridor and Specialty Retailing Node Intensification Plan

The City of Pickering has released a Kingston Road Corridor and Specialty Retailing Node Intensification Plan (City of Pickering, November 2019). The vision statement for the intensification plan includes the following,

"Kingston Road Corridor and Specialty Retailing Node will be":

- A walkable place in all four precincts, with sage, comfortable and green sidewalks, and pedestrian connections on both sides of Kingston Road

- An urban, livable, transit-supportive community with a higher density mix of uses, located in buildings that are pedestrian oriented

- A regional and local multi-modal connector, with regional gateways at Altona Road and Brock Road, and with gateways to the neighbourhoods north and south of the corridor at Rougemount Drive, Whites Road and Fairport Road.

In addition, the plan highlights the following goal:

- Design all public road and private connections to be complete streets and emphasize transit and pedestrian oriented development

    - Ensure that all users of public roads and private connections have distinct and delineated spaces to separate modes of travel moving at different speeds

    - Ensure that buildings are located in close proximity to and oriented towards the public realm and provide active edges to create an environment that

The plan also specifically mentions policy recommendations related to parking. The following recommendations are made:

- Reduced minimum parking standards are encouraged to reflect the area's compact, high-density urban form and shift towards a pedestrian and transit-oriented environment.

- Shared parking will be encouraged and implemented in order to reduce the total number of parking spaces required.

The ground floor retail, TDM measures and the reduced parking supply of the proposed development support the vision and goals of the Kingston Road Corridor intensification plan. The development provides direct pedestrian, cyclist, and transit connections, and the reduced parking supply is in line with the vision of a multimodal corridor and the parking policy recommendations.

11.4.2 City of Pickering Integrated Transportation Master Plan (ITMP)

In recognizing that the current trend of relying on automobile usage cannot continue as the City grows and intensifies, the ITMP recommended the following considerations and recommended actions:

- Update parking space requirements to identify a reduced parking rate for developments in proximity to higher-order transit and requiring minimum bike parking standards

- Expand shared parking concept city-wide wherever an appropriate mix of land uses can share parking resources

- Parking requirements reductions for developments that provide long-term bicycle parking

Accordingly, the City of Pickering is supportive of reducing minimum parking requirements in order to achieve the city-wide goals of reducing automobile use and developing a multi-modal pedestrian and transit-oriented city. Further, given the development proposes reduced parking rates recognizing its proximity to higher order transit, uses the shared parking concept between residential and commercial visitors, provides 734 long-term bicycle parking spaces, and based on the above, the proposed parking reduction is considered appropriate and is in line with the ITMP recommendations and vision.

11.4.3 Durham Transportation Master Plan

The Regional Transportation Master Plan (Region of Durham, 2017) outlines mode split targets for several areas of the Region to meet by 2031. The Rapid Transit Corridors mode share target is chosen as the most appropriate for the Subject Area due to the future Kingston Road Corridor BRT. The mode share targets for the Rapid Transit Corridors category are outlined in **Table 41** below.

Table 41: Region of Durham Mode Share Targets

Land Use Category	Mode	2011 Mode Share	Target 2031 Mode Share	Modified 2031 mode share target per Kingston Road BRT study
Rapid Transit Corridors	Auto (driver)	67%	58%	48%
	Auto (passenger)	14%	12%	12%
	Transit (DRT and GO)	11%	20%	30%
	Walk and Cycle	8%	10%	10%
	Sustainable Modes	**33%**	**42%**	**52%**

As illustrated in **Table 41**, an approximate 20% reduction in auto driver mode share is expected following the implementation of the Scarborough-Durham BRT. It's noted that the expected 20% reduction in auto driver mode share could be seen a reasonable estimate of reduced vehicle ownership to an extent. And therefore, the proposed 10% reduction in residential parking supply compared to the By-Law Requirement of City Center is considered appropriate and applicable.

The above-mentioned share targets reflect a commitment to reducing automobile use and increasing sustainable mode share choices within the Region of Durham.

The Transportation Master Plan also outlines the following goal:

- Create guidelines that support a regional parking strategy for strategic nodes and corridors, in partnership with the area municipalities. Actions could include amendments to Zoning By-Laws (e.g., to reduce parking minimums, set maximums and allow shared parking), identifying parking supply caps for key districts, and studying the feasibility and benefits of public parking authorities.

The reduced parking supply proposed is therefore supportive of the Region's mode share targets and goals to manage parking to support sustainable travel choices.

11.5 Future Transit Improvements

There are many significant transit expansion and transit improvement projects proposed by the Government of Ontario (Metrolinx/GO-transit) that will improve transit services within the study area, the City of Pickering, as well as in the Greater Toronto Hamilton Area (GTHA).

Specifically, the following projects have been proposed:

Durham-Scarborough Bus Rapid Transit (BRT)

As mentioned above, the Subject Property is located along the future Durham-Scarborough Bus Rapid Transit (BRT) corridor, providing residents and visitors of the proposed development direct rapid, frequent and high-capacity transit access.

The Durham-Scarborough BRT project is part of Metrolinx's 2041 Regional Transportation Plan for the Greater Toronto and Hamilton Area. Similar to the Light Rail Transit (LRT), the BRT consists of dedicated exclusive transit (bus) channels, planned to span 36-kilometres from Grangeway Avenue and Ellesmere Road near the Scarborough Town Centre in the west through Durham Region to Simcoe Street and King Street in downtown Oshawa to the east. The BRT is proposed to include 49 stops and be operational by 2031 with expectations that the system will attract 1,000 to 1,500 new transit riders during the peak hour (IBI Group, 2018).

Per Metrolinx Initial Business Case Report (IBI, 2018), the plan proposes more frequent buses, at 5 minutes or less during peak hours, and reliable transit services to and from Durham Region. To ensure reliability and faster travel times, the BRT will utilize existing and new bus dedicated lanes, queue jumping at intersections, Intelligent Transportation System (ITS) technologies (i.e., green light progression, and transit priority) and more.

Based on the conceptual design, the BRT will be implemented along Kingston Road in Pickering, with a stop proposed at Kingston Road and Altona Road (450 metres, 6-minute walk), just west of the

Subject Property, and at Kingston Road and Rosebank Road (650 metres, 8-minute walk) just east of the Subject Property. As a result, the BRT will improve transit reliability, increase transit capacity, provide additional transit options within the neighbourhood and the Durham Region, provide faster travel times, increased transit coverage, and more convenient transit service for those travelling within the City and beyond.

In conjunction to the BRT construction, separated bike lanes and pedestrian friendly urban streetscapes are also proposed along the site frontage of Kingston Street, providing residents and visitors of the development convenient and safe access to the pedestrian, cycling and transit network. As such, the Kingston Road BRT is expected to materially decrease vehicle usage within the area, and increase transit, pedestrian, and cyclist usage.

The details of the future BRT are included in the **Appendix B.**

Metrolinx: Regional Express Rail

Metrolinx proposes a Regional Express Rail service (RER) throughout the City of Toronto and Greater Toronto Hamilton Area by 2025.

Specifically, within the Study Area, Metrolinx has already completed several upgrades and improvements to the Pickering GO station with upgraded staircases, upgraded rail platforms and a secure bike storage room.

Concurrently, as part of RER and GO Expansion program for Lakeshore East train services, Metrolinx proposes daily, all day two-way frequent electrified train services for the route with headways 15 minutes or less, significantly improving transit connections between Durham Region, Downtown Toronto and the Greater Toronto and Hamilton Area. Metrolinx expects a 20% faster travel time along the Lakeshore East rail line. Similar improvements are also proposed for other GO rail lines such as Lakeshore West, Kitchener GO, Milton GO and more. These Metrolinx projects will significantly improve higher order transit connections, transit accessibility, and travel time as commuters and visitors have greater flexibility and transit options to and from downtown, and the Greater Toronto Hamilton Areas.

Based on the Durham-Scarborough BRT and Metrolinx's RER and GO Expansion programs, local and regional transit services are expected to improve materially in the future. Residents and visitors are expected to benefit significantly by the Durham-Scarborough BRT, RER, electrification of the GO Train lines and the 15 minutes or better two-way services. These service improvements will reduce commute time, and improve transit capacity and reliability, while considerably increasing commuter accessibility within the GTHA. Accordingly, reduced vehicle ownership, and reduced auto-vehicle trips are expected.

Appendix B contains relevant transit information.

11.6 Complete Community

The proposed parking reduction is also supportable as the subject site is located in a mixed-use neighbourhood that offers essential services and transit connectivity that supports reduced vehicle ownership. Within a short walk, bicycle or short bus ride, a multitude of services, commercial, employment and institutional uses are available to support residents' daily needs including:

- Supermarkets - (e.g., FreshCo Kingston and Whites, M&M Food Market, Dave & Charlotte's No

Frills, etc.)
- Banks - (e.g., RBC Royal Bank, CIBC Branch, BMO Bank of Montreal, etc.)
- Restaurants - (Numerous sit-down and fast-food restaurants available along Kingston Road)
- Schools - (e.g., Montessori Learning Centre of Pickering, Montessori Blaisdale School – Rougemount Campus, Elizabeth B. Phin Public School, Rosebank Road Public School, etc.)
- Medical/Dental Clinics - (e.g., The Gates Medical Centre, The Gates Dental Centre, Dr. E Salmon, Steeple Hill Dental Office, etc.)
- Community/Recreation Centres – (George Ashe Library and Community Centre, Tall Pines Community Centre, Dunbarton Indoor Pool, etc.)
- Parks - (e.g., Rouge Valley Park, Glen Rouge Campground, Rich Hull Memorial Park, Rosebank Park, Steeple Hill Park, etc.)
- Places of Worship - (e.g., The Bridge – Church for All Nations, Altona Road Community Church, Revivaltime Tabernacle Worldwide Ministries Durham, etc.)
- Shopping Centres/Commercial Plazas - (e.g., Steeple Hill Shopping Centre, Whites Road Shopping Centre, Pickering Town Centre, etc.)
- Car Rental - (e.g., Enterprise Rent-A-Car, Dollar Rent a Car, etc.)

The Subject Property is also located along the existing express bus route (PULSE), as well as along the future Durham-Scarborough BRT corridor, providing quick and direct access to the Pickering Town Centre and Pickering GO-station. Pickering Town Centre offers access to additional large retail stores, department stores, restaurants, grocery stores, banks and more.

With the multitude of uses contributing to a more complete community within a short walking or cycling or transit ride, future residents and visitors will not have to rely on a vehicle for their daily and recreational needs; thereby supporting the reduced parking supply as proposed.

11.7 Transportation Demand Management (TDM) Measures

The development proposes several TDM measures to support a reduced parking supply. The site-specific TDM measures proposed include:

- TDM Information Packages for New Residents
- Secure Bicycle Parking
- Bicycle Repair Station
- Unbundled Parking
- Short-Term Visitor Parking Spaces
- Real-Time Transit Information
- Explore Micro-Mobility & E-Mobility Partnerships (E-Scooter & E-Bike Sharing)
- Explore On-Site Bike Share Facility
- Wayfinding Signage
- Support School Travel Plans for Student Residents
- Semi-Private/Communal Amenities to Support Work from Home
- Shared Parking
- Mixed-Use Complete Community

The reduction in parking supply in addition to robust TDM implementation are considered two main contributing factors in reduced automobile use, which is a consistent policy goal noted by the City's Official Plan, Integrated Transportation Master Plan (IBI, August 2021) and supporting policy directions and documents.

The details of the TDM measures are further described in **Section 12** below.

11.8 Proposed Vehicle Parking Supply Summary

In summary, the reduced parking supply proposed, 0.85 space per unit, is supportable due to the following:

- The Subject Site is located along the proposed Durham-Scarborough BRT corridor and within walking distance of the proposed station at the intersection of Altona Road and Kingston Road.

- An additional 77 parking spaces within the MTO setback are proposed. Although not considered part of the parking supply from a Zoning By-law perspective, these spaces are proposed and will be visually indistinguishable from all other parking spaces on site. These spaces can therefore be considered as part of the practical, or effective parking supply.

- The proposed parking supply is consistent with other development proposals and approvals as well as observed at surrogate sites within the surrounding area as well as other areas of the City in similar transportation contexts.

- The proposed residential parking rates for the Subject Site fall within the range of existing Zoning By-Law minimum parking requirements for developments near higher-order transit, mixed-use and intensification areas within the GTHA.

- A myriad of TDM measures, as outlined in Section 11.7, are also proposed to support the reduced parking supply and limit the vehicle demand for the Subject Development.

Given the above, the City Centre parking standards are more applicable to the site. The proposed reduced parking supply is reflective of the City's and province's goal to reduce automobile use and shift toward pedestrian and transit-oriented development. Given the future BRT corridor, TDM measures and mixed uses proposed on-site, Zoning By-Laws of other multi-use neighbourhoods with higher order transit in the GTA, the reduced parking supply is supportable. The proposed parking supply is summarized in **Table 42**.

Table 42: Vehicle Parking Supply Summary

	Residential	Residential and Retail Visitor	Total
Proposed Parking Supply	950 resident spaces	204 visitor spaces (shared)	1,154 spaces
	0.70 spaces per unit	*0.15 space/unit*	*0.85 spaces per unit*

The visitor parking is recommended to be shared between retail and residential visitors while the residential tenant spaces is recommended to be unbundled from the proposed residential units with residents being made aware of the parking pricing and availability prior to purchase.

The proposed ground floor retail is also small and auxiliary to the residential towers. The proposed retail use is intended to serve residents within the Subject Lands, as well as local residents from around the neighbourhood via walking or cycling. As such, minimal parking demand for retail visitors is expected.

12.0 Vehicle Turning Assessment

The vehicle turning diagrams has been included in **Appendix J**. The Vehicle Turning Assessment

indicates that the proposed site layout can accommodate standard Durham Region waste collection vehicles, standard pumper, and aerial fire trucks, as well as delivery vehicles, also known as Medium Single Unit Trucks (MSU).

13.0 Transportation Demand Management (TDM)

A number of TDM opportunities currently exist for the proposed development. The existing TDM opportunities, as well as future TDM opportunities proposed by the City of Pickering, Durham Region

13.1 Site Specific TDM Recommendations

There are several opportunities for the development to promote TDM measures in support of reduced automobile use.

Table 43: Site Specific TDM Recommendations

Recommended/Provided TDM Measure	Implementation Summary
TDM Information Package for New Residents	Upon and prior to occupancy, a TDM information package should be provided to new and prospective residents and owners. Promotional materials should also be readily available (and continuously updated) in the building lobby to increase awareness of available alternate travel modes and reduce the barriers to adopting more sustainable travel behaviour. Such marketing allows prospective residents to be aware of sustainable travel options, as well as updates in the transit and cycling infrastructures improvements of the area. TDM Information Packages can comprise of: • Active transportation network maps • Transit maps and schedules • Car rental and carshare locations Neighbourhood commercial, retail, and institutional facilities should also be included in the marketing package to promote local businesses and to promote a walkable mixed-use community. Information on the future transit projects could be provided to prospective buyers to make them aware of pending mass transit opportunities, which can encourage measures such as reduced vehicle ownership. Periodic Transit and TDM information updates, can also be provided to residents via mailbox.

Recommended/Provided TDM Measure	Implementation Summary
Secure Bike Storage Facilities, Excess Bicycle Parking Spaces	Safe and secure bicycle parking is proposed for the development. The development proposes 718 and 136 Long-Term and Short-Term bicycle parking spaces in excess of the City's Zoning By-Law requirements. Access to safe and secure bicycle parking will increase confidence and reliability for prospective cyclists to cycle as their primary mode of transportation. The provision of cycling maps, short term bicycle parking spaces, and secure long-term spaces encourages bicycle use and provides residents and visitors convenient and safe storage for frequent bicycle use.
Bicycle Repair Station	A small, compact bicycle repair station with a toolkit and pump are also recommended – one per phase. These stations can be provided near the bicycle parking spaces to promote cycling use. These stations also increase confidence and reliability for prospective cyclists to cycle as a viable mode of transportation.
Real-Time Transit Information Screens	The provision of Real-time transit information screens is recommended and would ideally be displayed in the lobby or elevators via wall mounted screens or kiosks. This provides residents information on transit schedules and real time service delays, increasing reliability for residents to use transit as their primary mode of transportation. Additionally, this transit information will educate residents and visitors on the range of routes available by Durham Region Transit and connecting GO Transit services. This increased consciousness of convenient transit options has been historically shown to increase transit mode share in similar developments and may provide similar benefit to the subject development. Overall, this measure is expected to increase transit reliability and perception for residents to use transit as their primary mode of transportation.

Recommended/Provided TDM Measure	Implementation Summary
Unbundled Parking	Parking is to be leased or purchased separately from the condominium sale. The parking spaces will be purchased or leased on a first-come, first-serve basis. Additionally, it is recommended that parking be variably priced according to demand and supply available. Prospective residents should be advised in advance of the parking availability and cost of buying or leasing a parking space, if available. Potential residents will also be warned of the limited on-street parking in the area. As such, the residential parking demand can be significantly reduced, managed, and controlled. By advising the parking availability to potential residents prior to the condominium sale, the ambiguity of the parking demand and parking availability can be managed. This strategy allows for prospective residents to choose whether they wish to incur the added cost of leasing a parking space, particularly if parking is not desired due to vehicle ownership choices. Additionally, this strategy ensures that once resident spaces are no longer available (due to first come first-serve basis), prospective residents requiring the use of a parking space would seek alternate modes of transit or make alternate arrangements to secure monthly parking in a proximal lot.
Short-term Visitor Parking Spaces	Short-term at-grade visitor vehicle parking spaces are proposed. These at-grade spaces will be limited to short-term parking of 30 minute or less for retail customers, food deliveries, as well as an additional pick-up and drop-off area.
Explore Micro-Mobility & E-Mobility Partnerships (E-Scooter & E-Bike Sharing)	Micro-mobility and e-mobility partnerships, such as e-scooter and e-bike sharing programs, are increasingly being recognized as effective Transportation Demand Management (TDM) strategies. These partnerships aim to reduce reliance on single-occupancy vehicles, alleviate traffic congestion, and promote sustainable transportation options. The following implementation strategies are recommended: • **Integration with Public Transit:** E-scooter and e-bike sharing stations can be strategically placed near public transit hubs to facilitate seamless multimodal travel. • **Infrastructure Development:** Developing dedicated bike lanes and safe parking areas for e-scooters and e-bikes can enhance user safety and encourage adoption. • **Partnerships with Private Operators:** Collaborating with private companies that operate e-scooter and e-bike sharing services (such as Kite Mobility) can help cities expand their micro-mobility offerings without significant public investment.

Recommended/Provided TDM Measure	Implementation Summary
	• **Incentives and Promotions:** Offering incentives such as discounted rides or membership programs can attract more users to these services. Overall, micro-mobility and e-mobility partnerships represent a promising approach to managing transportation demand and promoting sustainable urban mobility.
Explore On-Site Bike Share Facility	An on-site bike share facility is an effective Transportation Demand Management (TDM) strategy aimed at promoting cycling as a convenient and sustainable mode of transportation. By providing easy access to shared bicycles, these facilities encourage more people to choose cycling for their daily commutes and other trips, thereby reducing reliance on single-occupancy vehicles. The following implementation strategies are recommended: • **Strategic Placement:** Bike share stations should be strategically located near building entrances, public transit hubs, and other high-traffic areas to maximize convenience and usage. • **Integration with Other TDM Measures:** On-site bike share facilities can be part of a broader TDM strategy that includes infrastructure improvements, such as bike lanes and secure parking, as well as policies that support active transportation. • **Partnerships with Bike Share Operators:** Collaborating with established bike share operators can help to ensure the successful implementation and management of the facility. • **Incentives and Promotions:** Offering incentives, such as free or discounted memberships, can attract more users to the bike share program.
Wayfinding Signage	Wayfinding signage is an effective Transportation Demand Management (TDM) strategy aimed at improving navigation and accessibility within urban environments. By providing clear and informative signage, cities can encourage the use of alternative transportation modes, reduce traffic congestion, and enhance the overall travel experience for residents and visitors. The following implementation strategies are recommended: • **Strategic Placement:** Wayfinding signage should be strategically placed at key decision points, such as intersections, transit stations, and major landmarks, to guide users effectively. • **Consistency and Clarity:** Signage should have a consistent design and use clear, easily understandable symbols and

Recommended/Provided TDM Measure	Implementation Summary
	text to ensure that it is accessible to all users, including those with limited language proficiency or visual impairments. • **Integration with Technology:** Incorporating digital wayfinding solutions, such as interactive maps and mobile apps, can enhance the effectiveness of physical signage and provide users with real-time information. • **Community Engagement:** Involving the community in the design and placement of wayfinding signage can ensure that it meets the needs of local residents and reflects the unique character of the area.
Support School Travel Plans for Student Residents	Supporting school travel plans for student residents is an effective Transportation Demand Management (TDM) strategy aimed at promoting safe, sustainable, and active transportation options for students. These plans are designed to encourage walking, cycling, and the use of public transit for school commutes, thereby reducing reliance on single-occupancy vehicles and alleviating traffic congestion around local schools. The following implementation strategies are recommended: • **Education and Awareness Campaigns:** The building can organize workshops, assemblies, and events to educate students and parents about the benefits of active transportation and safe travel practices. • **Infrastructure Improvements:** Investing in infrastructure such as sidewalks, bike lanes, and secure bike parking can make walking and cycling to school safer and more attractive. • **Partnerships with Local Authorities:** Collaborating with local government and transportation agencies can help to implement traffic calming measures, improve public transit services, and ensure the safety of school travel routes. • **Incentive Programs:** Schools can offer incentives such as rewards, recognition, or competitions to encourage students to walk, cycle, or use public transit. • **Monitoring and Evaluation:** Regularly monitoring travel patterns and evaluating the effectiveness of school travel plans can help to identify areas for improvement and ensure the sustainability of the program.
Semi-Private/Communal Amenities to Support Work from Home	Semi-private and communal amenities to support work from home are an innovative Transportation Demand Management (TDM) strategy aimed at reducing the need for daily commuting by providing residents with convenient and comfortable spaces to work within their residential communities. This approach not only alleviates traffic congestion but also promotes a better work-life balance and enhances the overall quality of life for residents.

Recommended/Provided TDM Measure	Implementation Summary
	The following implementation strategies are recommended: • **Designated Workspaces:** Develop semi-private and communal workspaces within residential buildings, such as co-working lounges, meeting rooms, and private offices. • **High-Speed Internet:** Ensure that these workspaces are equipped with high-speed internet and other necessary office amenities, such as printers, scanners, and ergonomic furniture. • **Booking Systems:** Implement a booking system to manage the use of communal workspaces and ensure fair access for all residents. • **Community Events:** Organize events and workshops to promote the use of communal workspaces and encourage collaboration among residents.
Shared Parking	Shared parking is an effective Transportation Demand Management (TDM) strategy aimed at optimizing the use of parking spaces by allowing multiple users or groups to share the same parking facilities. This approach can significantly reduce the overall demand for parking spaces, promote more efficient land use, and support sustainable transportation goals. It's noted that the visitor parking rate of 0.15 visitor space per unit, is proposed to be shared between retail-visitors and residential-visitors.
Mixed-Use Complete Community	The subject site is located in, and proposed to be a mixed-use neighbourhood that offers essential services and transit connectivity that supports reduced vehicle ownership. Within a short walk, bicycle or short bus ride, a multitude of services, commercial, employment and institutional uses are available to support residents' daily needs

The above site-specific TDM measures are expected to increase sustainable mode share and reduce single occupancy vehicle trips.

13.2 Responsibilities of Stakeholders

For the TDM measures to function effectively, the implementation must be supported by local and regional governments, existing neighbouring property owners, as well as future developers. Continuous monitoring efforts must be made by all stakeholders to ensure the TDM strategies are operating as planned, and to advise should improvements or repairs be required.

13.3 Projected Trip Generation Reductions

The proposed active transportation and TDM measures are expected to reduce single occupant vehicle (SOV) trips during the peak hour. **Table 44** below summarizes the proposed TDM measures and their expected impacts on reducing vehicle trips based on previous research conducted by Victoria

Transport Policy Institute.

Table 44: Estimated Trip Reductions for TDM Measures

TDM Measure	Expected Reductions	Reference
Unbundled Parking	10% - 30%	"Parking Management Comprehensive Implementation Guide" by Victoria Transport Policy Institute
Promotions, Marketing	5% - 15%	
Secure Bicycle Parking	5% - 15%	
Proximity to future BRT	10-25%	

13.4 Performance Monitoring

Performance of the TDM measures can be monitored via questionnaire surveys as well as periodic field observations (i.e., parking utilization surveys, traffic movement counts to and from the proposed site access).

Surveys are an effective performance measurement tool as it provides direct feedback from residents living in the proposed development. Their feedback may indicate challenges and constraints that are specific to the property, experienced only by the residents in the area.

Durham Regional Transit can also monitor transit ridership in the area over the years to determine the effectiveness of the TDM strategies. Periodic traffic movement counts can indicate traffic volume changes over the years, as well as bicycle and pedestrian volumes and usage along the corridor.

It is important to note that TDM performance can vary significantly due to a variety of factors (i.e., gas price, cost of vehicle ownership, etc.). It is equally important to note that external changes may influence the internal TDM performance.

14.0 Conclusions & Recommendations

375 & 401 Kingston Road Corporation propose a new mixed-use development at 375 - 417 Kingston Road in the City of Pickering, Durham Region. The analysis contained within this report has resulted in the following key findings:

Existing Conditions

- The Subject Property is located along the Kingston Road Corridor with a wide range of mixed-use developments, accessible by walking or transit.

- The existing Study Area provides sidewalks on all roadways but there are no dedicated cycling facilities provided within the study area. Cyclists are expected to share the right-of-way with motor vehicles.

- The study area is served by multiple local Durham Region Transit bus services with connections to Pickering GO station, which provides passengers with local and regional bus connections as well as Regional Rail services to other parts of Durham Region, Toronto and the greater Toronto and Hamilton area.

- The signalized intersection of Kingston Road at Rougemount Drive is currently operating at a level of service (LOS) "B" during both weekday a.m. and p.m. peak periods. The intersection's maximum control delay is 15.4 seconds or less, and the theoretical maximum volume-to-capacity ratio is 0.87. The 95th percentile queue lengths for Northbound and Southbound left-turn movements exceed the available storage lengths during the weekday peak periods, however there is additional taper length to accommodate queued vehicles.

- The signalized intersection of Kingston Road at Altona Road is currently operating at a LOS "C" or better during the weekday a.m. and p.m. peak periods. The intersection is operating at a moderate control delay of 23.8 seconds or less and a theoretical maximum volume-to-capacity ratio of 1.01 or less. The 95th percentile queue length for the eastbound left-turn movement is expected to exceed the available storage length.

- The stop-controlled minor connection of Evelyn Avenue to Kingston Road is operating efficiently at a LOS "B" during both weekday a.m. and p.m. peak hours. Maximum control delays are expected to be 14.5 s and 14.3 s in the weekday a.m. and p.m. peak hours, respectively and the maximum volume-to-capacity ratios is expected to be 0.31 (WBLT) and 0.43 (EBTR) in the weekday a.m. and p.m. peak hours, respectively.

- The existing site accesses are both currently operating at a LOS "B" during the weekday a.m. and p.m. peak periods with a maximum control delay of 14.7 seconds and maximum volume-to-capacity ratio of 0.31. These metrics indicate that the accesses are operating efficiently with acceptable delays and reserve capacity to accommodate future increases in traffic volume.

- While the signalized intersections are operating near or above capacity, the intersection delays are still acceptable and are typical for major arterial roadways during commuter peak periods. Additionally, these results are considered conservative as a default peak hour factor (PHF) of 0.92 was used to model existing conditions while the observed PHFs at the signalized intersection are higher, signifying a more uniform distribution of traffic throughout the peak

hour (as opposed to a sudden larger wave of traffic).

Future Traffic Operations

- A shift in transportation modes can be expected as there are major transit improvements proposed by the City, Region, and by the province for the study area in the medium to long term future.

- The Durham-Scarborough BRT (herein referred to as Kingston BRT) is proposed. The Kingston BRT will be implemented along the site frontage on Kingston Road in Pickering, with a stop at Altona Road (6-minute walk), just west of the Subject Property, and Rosebank Road (8-minute walk) just east of the Subject Property. With the dedicated right-of-way and proposed 5 minutes headways during the peak hours, the Kingston BRT will improve transit travel times, increase transit frequencies and capacities, and provide additional transit options within the neighbourhood and the rest of the Durham Region. As such, a material shift in vehicle travel mode to transit mode is expected in the near future.

- The all-day, electrified, and frequent GO-Train improvements by Metrolinx as part of the Regional Express Rail (RER) project will also significantly improve regional transit services between Durham Region, downtown Toronto and the Greater Toronto and Hamilton Area. Improvements to the rest of the GO rail network are also proposed as part of Metrolinx RER. Thus, the RER project is expected to significantly improve residents' and visitors' reach to/from Toronto, and the GTHA region with greater flexibility, accessibility, and shorter travel times.

- Furthermore, aside from the transit improvements, bike lanes are also proposed along Kingston Road as part of the Kingston BRT, providing residents and visitors of the development convenient and safe access to the cycling network.

The project is envisioned to be constructed in two (2) phases:

- Phase 1 corresponding to 2027 horizon year: which maintains the existing commercial plaza fronting Rougemount Drive in operation while adding two (2) 31- and 32-storey towers including a total of 654 units and 1,141 m^2 of ground floor retail.

- Full buildout of the entire site corresponding to 2029 horizon year: which includes the removal of the existing commercial plaza fronting Rougemount Drive and addition of two (2) 33- and 34-storey towers including a total of 702 units and 1,803 m2 of ground floor retail.

Phase 1 - 2027 Horizon Year:

- The proposed development is projected to generate a total of 149 and 198 two-way trips, during the weekday a.m. and p.m. peak hours of operation, respectively.

- Future traffic operations are similar for future background (i.e., without site) and Total Traffic (i.e., with site).

- The signalized intersection of Kingston Road at Altona Road is expected to continue to operate at an unchanged LOS "B" and "C" during the weekday a.m. and p.m. peak periods, respectively. The intersection is expected to experience an increase in maximum control delay of 0.7 seconds or less, and a minor increase in the maximum theoretical volume-to-capacity

ratio of 0.01 and 0.02 in the weekday a.m. and p.m. peak periods, respectively, when compared to 2027 future background conditions. The 95th percentile queue lengths for the eastbound left-turn movement are expected to continue to exceed the available storage length. However, these queue lengths are consistent with future background operations and the addition of the site generated traffic does not materially change the expected queue lengths.

- The signalized intersection of Kingston Road at Rougemount Drive is expected to operate at a LOS "C" during both weekday a.m. and p.m. peak hours. The intersection average control delays of 30.9 s and 31.3 s in the weekday a.m. and p.m. peak hours, respectively, and maximum volume-to-capacity ratios of 0.70 (SBL) and 0.94 (NBL) are expected in the weekday a.m. and p.m. peak hours, respectively. Compared to 2027 future background conditions, the intersection is expected to experience an improvement in operations because of the decrease in westbound left turn volumes as the full moves signalized intersection of Kingston Road at Evelyn Avenue provides an additional access for left turning vehicles on westbound Kingston Road. A decrease in maximum control delay of 0.8 seconds, and a decrease in the maximum theoretical volume-to-capacity ratio of 0.03 and 0.01 in the weekday a.m. and p.m. peak periods, respectively, when compared to 2027 future background conditions. The 95th percentile queue lengths for the northbound and southbound left-turn movements are expected to continue to exceed the available storage length. However, these queue lengths are consistent with future background operations and the addition of the site generated traffic does not materially change the expected queue lengths.

- It is noted that the identified operations at both intersections of Kingston Road with Altona Road and Rougemount Drive are background related and consistent with the findings of the Durham-Scarborough BRT EA Traffic Study.

- Signals are proposed at the intersection of Kingston Road with Evelyn Avenue and this signalized intersection is projected to operate at a LOS "D" and "C" during the weekday a.m. and p.m. peak hours, respectively. The intersection average control delays of 40.0s and 27.8s in the weekday a.m. and p.m. peak hours, respectively, and maximum volume-to-capacity ratio of 0.77 (EBTR) is expected in both weekday a.m. and p.m. peak hours.

- The stop-controlled Full-Moves minor connection of Site Access to Rougemount Drive is projected to operate below capacity at a LOS "B" during both weekday a.m. and p.m. peak hours. A maximum control delay of 14.7 seconds, and a maximum individual volume-to-capacity ratio of 0.25 are expected.

- The stop-controlled Right-In/Right-Out minor connection of Laneway C to Kingston Road is projected to operate below capacity at a LOS "A" and "B" during the a.m. and p.m. peak hours, respectively. A maximum control delay of 10.3 seconds, and a maximum individual volume-to-capacity ratio of 0.50 are expected.

Full Buildout - 2029 Horizon Year and Beyond:

- The signalized intersection of Kingston Road at Altona Road is expected to continue to operate at an unchanged LOS "C" during both weekday a.m. and p.m. peak periods. The intersection is expected to experience an increase in maximum control delay of 1.7 seconds or less, and a minor increase in the maximum theoretical volume-to-capacity ratio of 0.01 and 0.04 in the weekday a.m. and p.m. peak periods, respectively, when compared to 2039 future

background conditions. The 95th percentile queue lengths for the eastbound left-turn movement are expected to continue to exceed the available storage length. However, these queue lengths are consistent with future background operations and the addition of the site generated traffic does not materially change the expected queue lengths.

- The signalized intersection of Kingston Road at Rougemount Drive is expected to operate at a LOS "C" during both weekday a.m. and p.m. peak hours. The intersection average control delays of 33.2 s and 32.0 s in the weekday a.m. and p.m. peak hours, respectively, and maximum volume-to-capacity ratios of 0.74 (NBL) and 1.01 (NBL) are expected in the weekday a.m. and p.m. peak hours, respectively. Compared to 2039 future background conditions, the intersection is expected to experience an improvement in operations due to the decrease in westbound left turn volumes as the full moves signalized intersection of Kingston Road at Evelyn Avenue provides an additional access for left turning vehicles on westbound Kingston Road. A decrease in maximum control delay of 9.4 seconds, and a decrease in the maximum theoretical volume-to-capacity ratio of 0.07 and 0.34 in the weekday a.m. and p.m. peak periods, respectively, when compared to 2039 future background conditions. The 95th percentile queue lengths for the northbound and southbound left-turn movements are expected to continue to exceed the available storage length. However, these queue lengths are consistent with future background operations and the addition of the site generated traffic does not materially change the expected queue lengths.

- It is noted that the operations at both intersections of Kingston Road with Altona Road and Rougemount Drive are background related and consistent with the findings of the Durham-Scarborough BRT EA Traffic Study

- The signalized intersection of Kingston Road at Evelyn Avenue is projected to operate at a LOS "D" and "C" during the weekday a.m. and p.m. peak hours, respectively. The intersection average control delays of 37.8s and 27.8s in the weekday a.m. and p.m. peak hours, respectively, and maximum volume-to-capacity ratios of 0.79 (EBTR) and 0.81 (EBTR) are expected in the weekday a.m. and p.m. peak hours, respectively.

- The stop-controlled Full-Moves minor connection of Site Access to Rougemount Drive is projected to operate below capacity at a LOS "B" during both a.m. and p.m. peak hours. A maximum control delay of 14.4 seconds, and a maximum individual volume-to-capacity ratio of 0.28 are expected.

- The stop-controlled Right-In/Right-Out minor connection of Laneway C to Kingston Road is projected to operate below capacity at a LOS "A" and "B" during the a.m. and p.m. peak hours, respectively. A maximum control delay of 10.8 seconds, and a maximum individual volume-to-capacity ratio of 0.55 are expected.

- The boundary road network is expected to operate similarly or better under the 2029 and 2034 horizon years. Based on the analysis herein, the proposed development is not expected to significantly alter the traffic operations of the study intersections. The proposed development can be supported from a traffic operations perspective. In summary the following improvements are recommended at the Kingston Road and Evelyn Avenue intersection:

    - Signalization
    - 25m NBL auxiliary turn lane
    - 50m WBL auxiliary turn lane

Traffic Safety

- Assessment of sight distance at the proposed site accesses indicate that there is sufficient sight distance for vehicles entering and exiting the Subject Property. Accordingly, the proposed development is not expected to create a safety hazard due to vehicle ingress or egress at the site access on Kingston Road or on Rougemount Drive. The accesses can be supported from a sight distance perspective.

- The development proposes four loading spaces. The loading operations analysis indicates that the proposed site layout accommodates standard Durham Region waste collection vehicles, standard pumper, and aerial fire trucks, as well as delivery vehicles, also known as Medium Single Unit Trucks (MSU). Thus, the proposed loading supply is supportable from an operations and safety perspective.

Parking Review

- Per the City's Zoning By-Law, the existing requirements consistent with the "All Other Zones" classification applicable to the subject site require 1,695 resident, 339 visitor and 118 commercial spaces.

- Due to the proximity to the BRT station, the "City Centre Zones" Zoning By-law minimum parking requirements are considered to be more appropriate than the "All Other Zones" for the future context of the site. Per the current City of Pickering Zoning By-Law parking requirements for "City Centre Zones", the development is required to supply a total of 1,353 vehicle parking spaces. As the development proposes 1,154 vehicle parking spaces, the proposed parking supply is deficient by 199 spaces. Further, with a proposed parking supply of 1,154 spaces, and the 77 additional spaces within the MTO setback, the equivalent deficit of 122 parking spaces is proposed.

To evaluate the adequacy of the reduction in parking supply, the peak parking demand associated with the proposed development was forecasted and reviewed based on the following:

- Recent Parking Approvals, Proposals and Surveys
- Zoning By-Law Comparisons
- Local, Regional and Provincial Policies
- Future Transportation Improvements
- TDM Measures

It was concluded that:

  - Approved developments within similar transportation contexts in the City of Pickering has average rates of 0.60 and 0.15 for residents and visitor space per unit, respectively. Thus, the proposed parking rates of 0.70 and 0.15 space per unit for residents and visitors, respectively, are supportable when considering the parking rates approved at similar sites.

  - An additional 77 parking spaces within the MTO setback are proposed. Although not considered part of the parking supply from a Zoning By-law perspective, these spaces are proposed and will be visually indistinguishable from all other parking spaces on site. These spaces can therefore be considered as part of the practical, or effective parking

supply for use by commercial visitors.

- The proposed residential parking rates for the Subject Site fall within the range of existing Zoning By-Law minimum parking requirements for developments near higher-order transit, mixed-use and intensification areas within the GTHA. On that basis, the reduced parking supply is supportable. Moreover, in several jurisdictions due to MTSA designations for sites within 800m from a BRT station, the minimum parking requirements are zero (0) spaces per the Province's Bill 185. The proposed parking supply well exceeds such requirements given the similar transportation context.

- The visitor parking rate of 0.15 visitor space per unit, is proposed to be shared between retail-visitors and residential-visitors. Shared visitor parking is supportable as minimum retail-visitors is expected by car given the proposed residential community and ground floor nature of the proposed retail. The proposed commercial retail is small, auxiliary to the residential buildings and is expected to serve residents within the building, as well as pedestrian traffic from the surrounding neighbourhood.

- The reduction in parking supply is also supportable as the Durham-Scarborough BRT is proposed along the site frontage on Kingston Road. The BRT will be implemented along Kingston Road in Pickering, with a stop at Altona Road (6-minute walk), just west of the Subject Property, and Rosebank Road (8-minute walk) just east of the Subject Property. The BRT will improve transit travel times, increase transit frequencies and capacities, provide additional transit options within the neighbourhood and the rest of the City. The BRT is planned to have frequent transit services, with 5-minute or better service during peak hours. As such, a material shift in vehicle travel mode to transit mode are expected in the near future.

- Once again, the reduced parking supply of the proposed development reflects the vision and goals of the Kingston Road Corridor intensification plan and other City and Region policy recommendations and plans. The development provides direct pedestrian, cycling, and transit connections to existing and future infrastructure network. TDM studies show, a reduced parking supply has a direct effect in reducing single-occupancy vehicle trips, and an effect in travel modes, thus, consistent with the City's vision of a multi-modal corridor.

Transportation Demand Management (TDM)

There are several opportunities for the development to promote TDM measures in support of reduced automobile use.

The residential parking spaces are proposed to be unbundled from the condominium unit and controlled by parking pricing. Prospective residents will be made aware of the parking availability and parking space pricing, prior to the purchase of the condominium unit. Those who require a parking space or multiple parking spaces will make other arrangements or consider residency elsewhere. Accordingly, the residential parking demand can be controlled and managed.

Additional Transportation Demand Management (TDM) strategies proposed in support of reduced automobile use include:

- TDM Information Packages for New Residents

- Secure Bicycle Parking
- Bicycle Repair Station
- Unbundled Parking
- Short-Term Visitor Parking Spaces
- Real-Time Transit Information
- Explore Micro-Mobility & E-Mobility Partnerships (E-Scooter & E-Bike Sharing)
- Explore On-Site Bike Share Facility
- Wayfinding Signage
- Support School Travel Plans for Student Residents
- Semi-Private/Communal Amenities to Support Work from Home
- Shared Parking
- Mixed-Use Complete Community

The analysis contained within this report was prepared using the most recent Site Plan. Any minor revisions to the site plan are not expected to affect the conclusions contained with this report.

In conclusion, the proposed mixed-use development at 375 - 417 Kingston Road can be supported from a transportation operations and safety perspective with the noted recommendations.

Respectfully submitted by,

C.F. CROZIER & ASSOCIATES INC.

Masoud Imaniboossejin,
Engineering Intern, Transportation

C.F. CROZIER & ASSOCIATES INC.

Michael Linton, MASc., P.Eng., Associate
Senior Project Manager, Transportation

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APPENDIX A

Correspondence

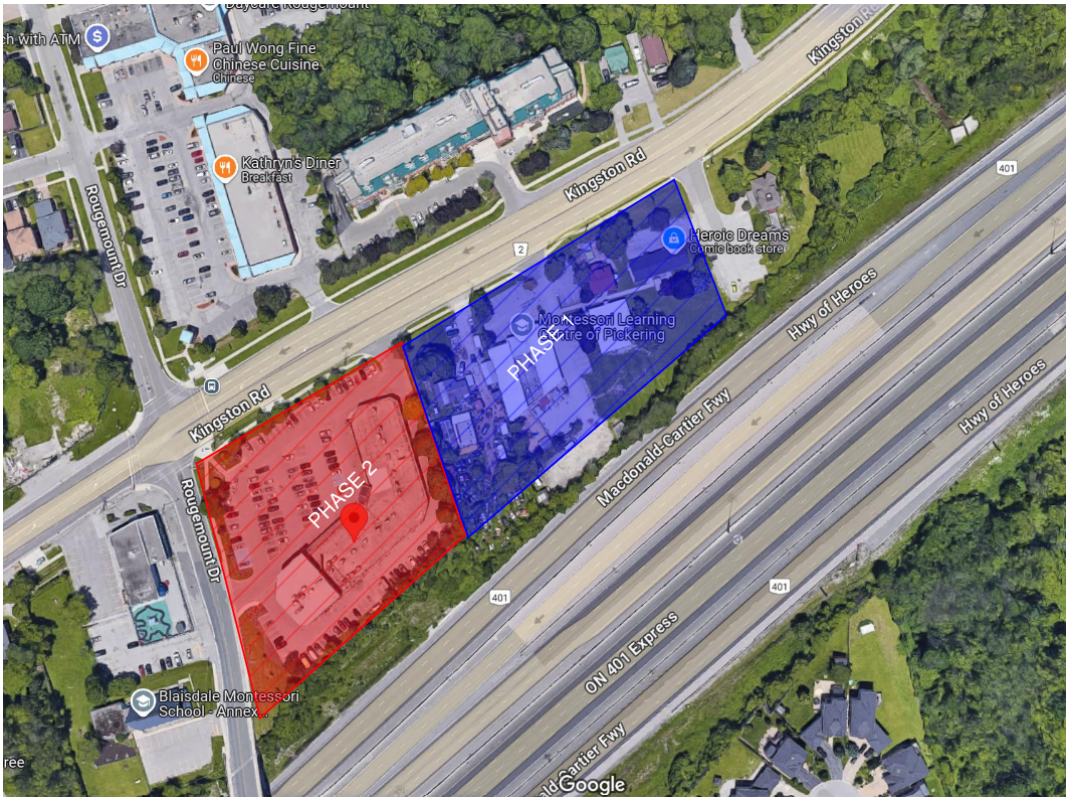
Masoud Imaniboossejin

From: Michael Linton
Sent: November 8, 2024 9:40 AM
To: Doug.Robertson@Durham.ca; nzahoor@pickering.ca
Cc: Kierra Harper
Subject: RE: 375 Kingston Road, Pickering, Durham Region

Good Morning Doug and Nadeem,

Hope you both have been doing well. We're resuming work on this previously submitted file, and in addition to addressing first submission comments, as you're aware the applicant has assembled the easterly parcels between the existing plaza and Evelyn Ave.

From a phasing perspective, it is currently anticipated that in Phase 1 the existing plaza would remain, and the easterly parcels would redevelop. In Phase 2, the plaza would redevelop similar to the previous submission. For some context please find below some aerial imagery.



As this will be a resubmission that incorporates the additional parcel, we wanted to reconnect on the previous Terms of Reference, with some updates given that the Kingston Road BRT EA has since been finalized. Most items are consistent with your previous comments but we wanted to highlight a few updates that our study will incorporate. For convenience, anything different to the original terms we have provided commentary via parenthesis in red text.

Study Intersections:

- Kingston Road at Rougemount Drive
- Kingston Road at Altona Road
- Proposed site accesses

- Kingston Road at Evelyn Ave (New). Please also note that we will be reviewing the opportunity of future signalization of Evelyn Ave at Kingston Road, given the BRT centre median would otherwise restrict Kingston Road accesses to RIRO only. We note that this intersection is contemplated for potential signalization in the City's Kingston Road Corridor Intensification Plan and would support pedestrian crossing and future post-BRT access for property east of Evelyn and north of Kingson Rd)

Study Periods

- Weekday a.m. and p.m. peak hours

1. **Existing Conditions**
    - Revised "Existing Counts" will be analyzed, reflecting 2024 conditions. (Previous existing TMCs were forecasted due to Covid-19 conditions at the time)
    - The assessment will be based on Synchro 10th Edition, as well as Sim Traffic modelling. LOS (based on control delays), maximum v/c ratios and queue length will be evaluated based on HCM 2000 and CCG (2008 or newer) standards.
    - Standard PHF will be assumed per the Region's guidelines. However, for sensitivity analysis to reflect observed conditions, observed PHFs may be included.

2. **Future Conditions**

Study Horizons: 2027 (Assumed Phase 1), 2029 (Full Buildout) 2034(5 Years Beyond Full Buildout).
Please note that there may be tweaks to these study horizons once additional phasing information is available, However even if the horizon years change, full buildout +5 years beyond full buildout will be analyzed in addition to Phase 1 buildout horizons.

- Forecast the future background traffic volumes based on Kingston Road BRT volume forecasts data and AADT if available. Corridor growth rates will be applied to through movements only (The BRT volumes were not available at the time of the previous submission, and some movements are forecasted to have less conservative growth than initially assumed e.g. 0.7% instead of 1% previously analyzed.)
    - Background Developments of 699 Kingston Road, and 770 Kingston Road are assumed consistent with the previous submission. Please confirm if this will suffice
- Forecast and analyze the future background and future total traffic conditions based on the same method described above.
    - Trip Distribution of the site generated traffic will be based on TTS and/or existing travel patterns.
    - Trip Generation will be based on ITE Trip Generation Manual.
    - Trip Generation will also account for mode split targets associated with Kingston Road BRT per the Business Case Study for this area (33%-37% transit mode for the centre median BRT option)
    - Existing site generated trips from the commercial plaza will be removed from the boundary road network

3. **Other**

- Review the proposed site accesses from a safety perspective; such as driver sight lines, access configuration, and corner clearance. The safety assessment will be based on the standards set out by the Transportation Association of Canada (TAC) Geometric Design Guide for Canadians Roads (GDGCR).

- Vehicle Turning Diagrams will also be provided

- Assess existing and future Transportation Demand Management (TDM) opportunities, as well as recommend site specific measures for the development to reduce single-occupancy vehicle (SOV) trips and promote sustainable transportation.

- Review the minimum vehicle and bicycle parking requirements for the proposed development per the City of Pickering Zoning By-law.
    - Should a shortfall of vehicle parking spaces be proposed, we will provide parking justification analysis within the report.

Thanks,

Mike

Michael Linton, M.A.Sc., P.Eng. | Associate
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From: Doug Robertson <Doug.Robertson@Durham.ca>
Sent: October 19, 2021 3:39 PM
To: Martin Chan <mchan@cfcrozier.ca>; Zahoor, Nadeem <nzahoor@pickering.ca>
Cc: Kierra Harper <kharper@cfcrozier.ca>
Subject: RE: 375 Kingston Road, Pickering, Durham Region

Hi Martin,

It is supportable for site traffic assignments on the surrounding road network, although the commercial traffic would still need to be assigned to the site accesses. However you decide to proceed, please ensure that your assumptions and rationale are clearly documented in your report.

Regards,
Doug

Doug Robertson, M.A.Sc., P.Eng., PTOE | Project Manager
Works Department | Transportation Infrastructure Division
The Regional Municipality of Durham
Doug.Robertson@durham.ca | 905-668-7711 extension 3733 | durham.ca
My pronouns are he/him.

From: Martin Chan <mchan@cfcrozier.ca>
Sent: October 19, 2021 12:20 PM
To: Doug Robertson <Doug.Robertson@Durham.ca>; Zahoor, Nadeem <nzahoor@pickering.ca>

Cc: Kierra Harper <kharper@cfcrozier.ca>
Subject: FW: 375 Kingston Road, Pickering, Durham Region

Good afternoon Doug, Nadeem,

Hope you are all doing well.

We are just thinking out loud right now, we noticed the existing commercial trips generated would be larger than the future commercial trips. As such, would it be supportable to only add the new residential site generated trips in the boundary road network? As the site access at Kingston will become Right-in Right-out, some form of redistributions of the commercial trips will occur as well.

Thanks,
Martin

Martin Chan, P.Eng. | Project Engineer
211 Yonge Street, Suite 301 | Toronto, ON M5B 1M4
T: 416.477.3392



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From: Doug Robertson <Doug.Robertson@Durham.ca>
Sent: September 29, 2021 10:25 PM
To: Zahoor, Nadeem <nzahoor@pickering.ca>; Kierra Harper <kharper@cfcrozier.ca>
Cc: Martin Chan <mchan@cfcrozier.ca>; Lynda Motschenbacher <Lynda.Motschenbacher@Durham.ca>; Peter Castellan <peter.castellan@durham.ca>
Subject: RE: 375 Kingston Road, Pickering, Durham Region

Hi Kierra and Martin,

I have reviewed the proposed Terms of Reference, and my comments are as follows:

1. Your study must comply with the Region's Traffic Impact Study Guidelines (attached), including the requirements for Synchro analysis and SimTraffic modelling (Chapter 9 in the Design Specifications for Traffic Control Devices, Pavement Marking, Signage and Roadside Protection).
2. The most current intersection turning movement counts, ATR counts and AADT data available from the Region can be downloaded from our web site through the interactive traffic counts map. Other traffic data, including signal timings and historical counts, are available for purchase from our Traffic Engineering & Operations Division (traffic@durham.ca 905-666-8116).

3. The proposed Kingston Road access must be restricted to right-in/right-out turns only, and the restriction will need to be enforced through construction of a raised median on Kingston Road and/or channelization island in the access throat. The study is to include a functional design drawing showing the proposed access configuration.
4. The proposed Rougemont access may also need to be restricted to right-in/right-out only, as it appears to be located within the functional area of the Kingston/Rougemont intersection. The interaction between this access and the adjacent intersection will need to be thoroughly assessed in your study, including consideration of safety, traffic operations, and queuing effects. A functional design plan should also be provided to show the proposed configuration of this access.
5. Turning movement counts collected after the first round of pandemic restrictions was imposed in March 2020 should not be used without adjustment to account for traffic volume reductions during the pandemic. Adjustments can be derived by comparison with pre-COVID counts from the same intersection or nearby locations. Alternatively, pre-COVID counts can be used if they are relatively recent, i.e., 2018-19.
6. The study must include observations of existing conditions, including infrastructure, operations issues, and safety concerns for all modes.
7. Information on developments to be assumed as background for your study should be obtained from the City, since they have the most complete and up to date information on development applications.
8. Median bus rapid transit will be implemented on Kingston Road as part of the Durham-Scarborough BRT project. The study area is in a transition zone between full median BRT east of Rougemont and mixed traffic operation west of Altona. The TPAP for the project is currently in progress. Construction is expected to be complete prior to the study's 2031 horizon year. You can access draft preliminary design plans through the Metrolinx project web site here: https://www.metrolinxengage.com/sites/default/files/pickering_2020-11-12.pdf
9. The TDM recommendations should identify who is responsible for the initial implementation and on-going operation (as applicable) of each infrastructure measure and program.

Sorry for the slow response, and please contact me if you have any questions on the above.

Regards,
Doug

Doug Robertson, M.A.Sc., P.Eng., PTOE | Project Manager
Works Department | Transportation Infrastructure Division
The Regional Municipality of Durham
Doug.Robertson@durham.ca | 905-668-7711 extension 3733 | durham.ca
My pronouns are he/him.

From: Zahoor, Nadeem <nzahoor@pickering.ca>
Sent: September 21, 2021 3:07 PM
To: Kierra Harper <kharper@cfcrozier.ca>; Doug Robertson <Doug.Robertson@Durham.ca>
Cc: Martin Chan <mchan@cfcrozier.ca>
Subject: RE: 375 Kingston Road, Pickering, Durham Region

Hi Kierra,

I will request Doug to comment on this as this development is located on Kingston Road which is under the jurisdiction of the Region of Durham.
For the copy of the parking requirements, please contact Deborah Wylie. Her email address is deborahwylie@pickering.ca

thanks Nadeem

From: Kierra Harper <kharper@cfcrozier.ca>
Sent: Tuesday, September 21, 2021 1:14 PM
To: Zahoor, Nadeem <nzahoor@pickering.ca>; Doug Robertson <Doug.Robertson@Durham.ca>
Cc: Martin Chan <mchan@cfcrozier.ca>
Subject: RE: 375 Kingston Road, Pickering, Durham Region

Good afternoon Doug, Nadeem,

I am working with Martin on this project and just wanted to follow up on the Terms of Reference below. Are the City and Region in support of the scope of work?

Additionally, for the parking requirements, I believe we are part of the City of Pickering ZBL 3036, (Urban Mixed Use and Residential areas), would you have a copy of this ZBL in PDF?

Thank you,
Kierra

Kierra Harper | Engineering Intern
211 Yonge Street, Suite 301 | Toronto, ON M5B 1M4
T: 416.477.3392



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From: Martin Chan <mchan@cfcrozier.ca>
Sent: Wednesday, September 8, 2021 2:18 PM
To: Zahoor, Nadeem <nzahoor@pickering.ca>; Doug Robertson <Doug.Robertson@Durham.ca>
Cc: Kierra Harper <kharper@cfcrozier.ca>
Subject: 375 Kingston Road, Pickering, Durham Region

Good afternoon Doug, Nadeem,

Hope everyone enjoyed the summer and the long weekend. We are reaching out for a Terms of Reference for a development located at 375 Kingston Road in the City of Pickering, Regional Municipality of Durham.

The subject property is approximately 0.85 ha and is located at the SE corner of the Kingston Road and Rougemount Drive intersection. Currently, the property consists of a one to two storey commercial plaza (approximately 27,500 sq.ft GFA) with approximately 120 at-grade parking spaces.

Based on the Conceptual Plan, the development proposes two-high rise towers of 35 and 29 stories, with:

- A total of 620 residential dwelling units
- G/F retail with a total GFA of 1410 m^2

To facilitate the development, a parking supply of 651 spaces and two full-moves site accesses, at Kingston Road, at Rougemont Drive, are proposed.

Based on ITE net Trip Generation estimates, approximately 180 and 149 new two-way peak hour trips are generated by the development. On that basis, we propose the following Terms of Reference.

1. **Intro/Background**

   Study Intersections:

- Kingston Road at Rougemount Drive
- Kingston Road at Altona Road
- Proposed site accesses

  Study Periods:

- Weekday a.m. and p.m. peak hours

2. **Existing Conditions**
   - We have obtained Turning Movements Count (TMC) data for the above noted study intersections from Region of Durham (2019, 2020 TMCs)
   - Older traffic counts will be forecasted to "2021 existing traffic volumes" based on the same approach used to forecast future background traffic (see below; 1% growth rate)
   - The assessment will be based on Synchro 10th Edition, as well as Sim Traffic modelling. LOS (based on control delays), maximum v/c ratios and queue length will be evaluated based on HCM 2000 and CCG (2008 or newer) standards.
   - Please confirm if there is a standard adjustment to account for Covid-19 pandemic lockdown effects (re: 2020 counts for one of the intersection).

3. **Future Conditions**

   Study Horizons: 2026, 2031

- Forecast the future background traffic volumes based on AADT data if available.
  - Based on a review of Durham Region AADT data for Kingston Road, east and west of Altona Road, a minor traffic volume decrease has been observed between 2017 and 2019. As such, we have proposed a conservative, annual compounded growth rate of 1% (similar to 699 Kingston Road TIS, and 770 Kingston Road TIS).
  - Aside from 699 Kingston Road, and 770 Kingston Road, a review of the City's development applications website yielded no other background developments in the area. Please confirm if additional background developments should be considered.

- Forecast and analyze the future background and future total traffic conditions based on the same method described above.

- Trip Distribution of the site generated traffic will be based on TTS and/or existing travel patterns.
- Trip Generation will be based on ITE Trip Generation Manual; 10th edition
- Existing site generated trips will be removed from the boundary road network

4. **Other**

- Review the proposed site accesses from a safety perspective; such as driver sight lines, access configuration, and corner clearance. The safety assessment will be based on the standards set out by the Transportation Associates of Canada (TAC) Geometric Design Guide for Canadians Roads (GDGCR).

- Vehicle Turning Diagrams will also be provided

- Assess existing and future Transportation Demand Management (TDM) opportunities, as well as recommend site specific measures for the development to reduce single-occupancy vehicle (SOV) trips and promote sustainable transportation.

- Review the minimum vehicle and bicycle parking requirements for the proposed development per the City of Pickering Zoning By-law.
  - Should a shortfall of vehicle parking spaces are proposed, we will reach out to the City for a separate Terms of Reference.

Thanks,
Martin

Martin Chan, EIT | Engineering Intern
211 Yonge Street, Suite 301 | Toronto, ON M5B 1M4
T: 416.477.3392



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APPENDIX B

Transit Information

Weekday			West
Pickering Parkway Terminal **Stop #93112**	Whites Southbound @ Strouds (South side stop) **Stop #94100**	Kingston Westbound @ Rosebank **Stop #1616**	Pine Grove Westbound @ Altona **Stop #93232**
06:38	06:48	06:51	06:56
07:38	07:48	07:51	07:56
08:38	08:48	08:51	08:56
09:38	09:48	09:51	09:56
10:38	10:48	10:51	10:56
11:38	11:48	11:51	11:56
12:38	12:48	12:51	12:56

Weekday			West
Pickering Parkway Terminal **Stop #93112**	Whites Southbound @ Strouds (South side stop) **Stop #94100**	Kingston Westbound @ Rosebank **Stop #1616**	Pine Grove Westbound @ Altona **Stop #93232**
13:38	13:48	13:51	13:56
14:38	14:48	14:51	14:56
15:38	15:48	15:51	15:56
16:38	16:48	16:51	16:56
17:38	17:48	17:51	17:56
18:38	18:48	18:51	18:56

Weekday			East
Pine Grove Westbound @ Altona **Stop #93232**	Waterford Eastbound @ Forestview **Stop #3004**	Whites Northbound @ Strouds **Stop #1746**	Pickering Parkway Terminal **Stop #93112**
06:26	06:33	06:41	06:51
07:26	07:33	07:41	07:51
08:26	08:33	08:41	08:51
09:26	09:33	09:41	09:51
10:26	10:33	10:41	10:51
11:26	11:33	11:41	11:51
12:26	12:33	12:41	12:51

Weekday			East
Pine Grove Westbound @ Altona **Stop #93232**	Waterford Eastbound @ Forestview **Stop #3004**	Whites Northbound @ Strouds **Stop #1746**	Pickering Parkway Terminal **Stop #93112**
13:26	13:33	13:41	13:51
14:26	14:33	14:41	14:51
15:26	15:33	15:41	15:51
16:26	16:33	16:41	16:51
17:26	17:33	17:41	17:51
18:26	18:33	18:41	18:51
19:26	19:33	-	-

On Demand service is available at stops on this route when scheduled bus service is not operating.

See **DurhamRegionTransit.com** for more information.

Trip notes are indicated by a letter or symbol and explained at the bottom of each timetable. Schedule times are shown in 24-hour clock. If you require this information in an accessible format, please contact Customer Service at 1-866-247-0055. See **durhamregiontransit.com** for more information.

103 bus time schedule & line map

103 Pickering Parkway Terminal

View In Website Mode

The 103 bus line (Pickering Parkway Terminal) has 3 routes. For regular weekdays, their operation hours are:
(1) Pickering Parkway Terminal: 5:56 AM - 6:56 PM (2) Pine Grove Avenue: 6:08 AM - 7:08 PM (3) S - Waterford Gate & Forestview: 7:26 PM
Use the Moovit App to find the closest 103 bus station near you and find out when is the next 103 bus arriving.

Direction: Pickering Parkway Terminal

40 stops

VIEW LINE SCHEDULE

Pine Grove Westbound @ Altona
1987 Pine Grove Avenue, Pickering

Pine Grove Southbound @ Sandhurst
1402 Sandhurst Crescent, Pickering

Pine Grove Westbound @ Nordane
1918 Pine Grove Avenue, Pickering

Pine Grove Westbound @ Rockwood
1892 Pine Grove Avenue, Pickering

Pine Grove Southbound @ Valley Ridge
1838 Pine Grove Avenue, Pickering

Valley Ridge Southbound @ Copley
1656 Valley Ridge Crescent, Pickering

Valley Ridge Southbound @ Thicket
100 Thicket Cres, Pickering

Valley Ridge Southbound @ White Pine
96 White Pine Crescent, Pickering

Hogarth Eastbound @ Pine Grove
1598 Valley Rdige Cres, Pickering

Hogarth Eastbound @ Rockwood
389 Hogarth Street, Pickering

Waterford Eastbound @ Senator
259 Waterford Gate, Pickering

Waterford Eastbound @ Forestview
1826 Forestview Drive, Pickering

Altona Southbound @ Twyn Rivers
1499 Altona Road, Pickering

103 bus Time Schedule

Pickering Parkway Terminal Route Timetable:

Sunday	Not Operational
Monday	5:56 AM - 6:56 PM
Tuesday	5:56 AM - 6:56 PM
Wednesday	5:56 AM - 6:56 PM
Thursday	5:56 AM - 6:56 PM
Friday	5:56 AM - 6:56 PM
Saturday	Not Operational

103 bus Info

Direction: Pickering Parkway Terminal
Stops: 40
Trip Duration: 25 min
Line Summary: Pine Grove Westbound @ Altona, Pine Grove Southbound @ Sandhurst, Pine Grove Westbound @ Nordane, Pine Grove Westbound @ Rockwood, Pine Grove Southbound @ Valley Ridge, Valley Ridge Southbound @ Copley, Valley Ridge Southbound @ Thicket, Valley Ridge Southbound @ White Pine, Hogarth Eastbound @ Pine Grove, Hogarth Eastbound @ Rockwood, Waterford Eastbound @ Senator, Waterford Eastbound @ Forestview, Altona Southbound @ Twyn Rivers, Altona Southbound @ Littleford, Altona Southbound @ Fiddlers, Altona Southbound @ Valley Gate, Altona Southbound @ Kingston, Kingston Rd. @ Rougemount Dr., Kingston Eastbound @ Rosebank, Kingston Eastbound @ Steeple Hill, Whites Northbound @ Sheppard, Northbound @ 1675 Whites, Whites Northbound @ Briar Wood, Whites Northbound @ Strouds, Strouds Lane Eastbound @ Shadybrook, Strouds Lane Eastbound @ Spruce Hill, Strouds Lane Eastbound @ Fairport, Fairport Northbound @ Bonita, Glenanna Eastbound @ Eagleview, Glenanna Eastbound @ Brookshire,

Altona Southbound @ Littleford
308 Littleford St, Pickering

Altona Southbound @ Fiddlers
306 Tomlinson Court, Pickering

Altona Southbound @ Valley Gate
1372 Altona Road, Pickering

Altona Southbound @ Kingston
1318 Altona Road, Pickering

Kingston Rd. @ Rougemount Dr.
357 Kingston Rd, Pickering

Kingston Eastbound @ Rosebank
499 Kingston Road, Pickering

Kingston Eastbound @ Steeple Hill
645 Kingston Road, Pickering

Whites Northbound @ Sheppard
1499 Whites Road, Pickering

Northbound @ 1675 Whites
1820 Shadybrook Drive, Pickering

Whites Northbound @ Briar Wood
1735 Whites Road, Pickering

Whites Northbound @ Strouds
719 Stroud's Lane, Pickering

Strouds Lane Eastbound @ Shadybrook
1928 Shadybrook Drive, Pickering

Strouds Lane Eastbound @ Spruce Hill
811 Stroud's Lane, Pickering

Strouds Lane Eastbound @ Fairport
883 Stroud's Lane, Pickering

Fairport Northbound @ Bonita
1883 Fairport Road, Pickering

Glenanna Eastbound @ Eagleview
907 Glenanna Road, Pickering

Glenanna Eastbound @ Brookshire
1850 Brookshire Square, Pickering

Glenanna Southbound @ Heathside
1048 Glenanna Road, Pickering

Glenanna Eastbound @ Rawlings
1611 Rawlings Drive, Pickering

Glenanna Eastbound @ Dixie
1099 Glenanna Road, Pickering

Glenanna Eastbound @ Listowell
1177 Glenanna Road, Pickering

Glenanna Southbound @ Heathside, Glenanna Eastbound @ Rawlings, Glenanna Eastbound @ Dixie, Glenanna Eastbound @ Listowell, Glenanna Eastbound @ Bowler, Glenanna Eastbound @ Glendale, Glenanna Eastbound @ Fieldlight, Glenanna Southbound @ Kingston, Glenanna Southbound @ the Esplanade (South Side Stop), Pickering Parkway Terminal



Glenanna Eastbound @ Bowler
1243 Glenanna Road, Pickering

Glenanna Eastbound @ Glendale
1271 Glenanna Road, Pickering

Glenanna Eastbound @ Fieldlight
1333 Glenanna Road, Pickering

Glenanna Southbound @ Kingston
1356 Glenanna Road, Pickering

Glenanna Southbound @ the Esplanade (South Side Stop)
1 The Esplanade North, Pickering

Pickering Parkway Terminal
1305 Pickering Parkway, Pickering

Direction: Pine Grove Avenue

33 stops

VIEW LINE SCHEDULE

Pickering Parkway Terminal
1305 Pickering Parkway, Pickering

Pickering Parkway Westbound @ Liverpool
1355 Pickering Parkway, Pickering

Liverpool Northbound @ Kingston
1815 Liverpool Road, Pickering

Northbound @ 1851 Liverpool
1331 Glenanna Rd, Pickering

Glenanna Westbound @ Glendale
1885 Glendale Drive, Pickering

Glenanna Westbound @ Bronte
1265 Glenanna Road, Pickering

Glenanna Westbound @ Listowell
1177 Glenanna Road, Pickering

Glenanna Westbound @ Dixie
1911 Dixie Road, Pickering

Glenanna Westbound @ Echo Point
1701 Echo Point Court, Pickering

Glenanna Westbound @ Heathside
1046 Glenanna Road, Pickering

Glenanna Westbound @ Huntsmill
Glenanna Road, Pickering

Glenanna Westbound @ Fairport
1500 Eagleview Drive, Pickering

Fairport Southbound @ Voyager
1896 Fairport Road, Pickering

Fairport Southbound @ Strouds
898 Stroud's Lane, Pickering

Strouds Westbound @ Spruce Hill
806 Stroud's Lane, Pickering

Strouds Lane Westbound @ Cricket Lane
790 Stroud's Lane, Pickering

Whites Southbound @ Strouds (South Side Stop)
1820 Whites Rd, Pickering

Whites Southbound @ Bayfield
1818 Whites Road, Pickering

103 bus Time Schedule

Pine Grove Avenue Route Timetable:

Sunday	Not Operational
Monday	6:08 AM - 7:08 PM
Tuesday	6:08 AM - 7:08 PM
Wednesday	6:08 AM - 7:08 PM
Thursday	6:08 AM - 7:08 PM
Friday	6:08 AM - 7:08 PM
Saturday	Not Operational

103 bus Info

Direction: Pine Grove Avenue
Stops: 33
Trip Duration: 18 min
Line Summary: Pickering Parkway Terminal, Pickering Parkway Westbound @ Liverpool, Liverpool Northbound @ Kingston, Northbound @ 1851 Liverpool, Glenanna Westbound @ Glendale, Glenanna Westbound @ Bronte, Glenanna Westbound @ Listowell, Glenanna Westbound @ Dixie, Glenanna Westbound @ Echo Point, Glenanna Westbound @ Heathside, Glenanna Westbound @ Huntsmill, Glenanna Westbound @ Fairport, Fairport Southbound @ Voyager, Fairport Southbound @ Strouds, Strouds Westbound @ Spruce Hill, Strouds Lane Westbound @ Cricket Lane, Whites Southbound @ Strouds (South Side Stop), Whites Southbound @ Bayfield, Southbound @ 1690 Whites, Whites Southbound @ Sheppard, Whites Southbound @ Kingston, Kingston Westbound @ Steeple Hill, Kingston Westbound @ Rosebank, Kingston Westbound @ Rougemount, Kingston Westbound @ Altona, Altona Northbound @ Kingston, Altona Northbound @ Brookridge, Altona Northbound @ Fiddlers, Altona Northbound @ Rougemount, Altona Northbound @ Sheppard, Altona Northbound @ Granby, Altona Northbound @ Strouds, Pine Grove Westbound @ Altona

Southbound @ 1690 Whites
623 Weyburn Square, Pickering

Whites Southbound @ Sheppard
Whites Road, Pickering

Whites Southbound @ Kingston
1469 Whites Road, Pickering

Kingston Westbound @ Steeple Hill
646 Kingston Road, Pickering

Kingston Westbound @ Rosebank
510 Kingston Road, Pickering

Kingston Westbound @ Rougemount
370 Kingston Road, Pickering

Kingston Westbound @ Altona
Kingston Road, Pickering

Altona Northbound @ Kingston
1339 Altona Road, Pickering

Altona Northbound @ Brookridge
385 Brookridge Gt, Pickering

Altona Northbound @ Fiddlers
1451 Altona Road, Pickering

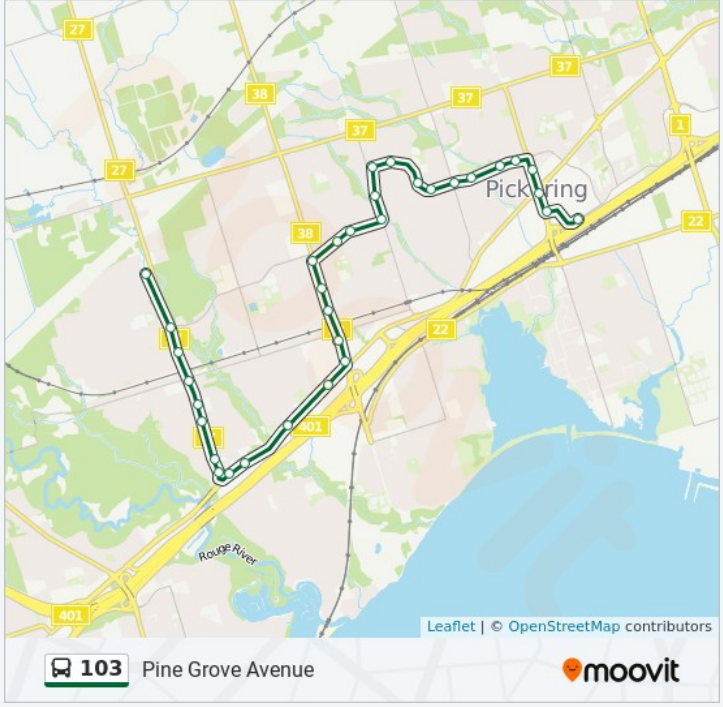
Altona Northbound @ Rougemount
1492 Rougemount Drive, Pickering

Altona Northbound @ Sheppard
1499 Altona Road, Pickering

Altona Northbound @ Granby
1709 Altona Road, Pickering

Altona Northbound @ Strouds
1789 Altona Road, Pickering

Pine Grove Westbound @ Altona
1987 Pine Grove Avenue, Pickering



Direction: S - Waterford Gate & Forestview

12 stops

VIEW LINE SCHEDULE

Pine Grove Westbound @ Altona
1987 Pine Grove Avenue, Pickering

Pine Grove Southbound @ Sandhurst
1402 Sandhurst Crescent, Pickering

Pine Grove Westbound @ Nordane
1918 Pine Grove Avenue, Pickering

Pine Grove Westbound @ Rockwood
1892 Pine Grove Avenue, Pickering

Pine Grove Southbound @ Valley Ridge
1838 Pine Grove Avenue, Pickering

Valley Ridge Southbound @ Copley
1656 Valley Ridge Crescent, Pickering

Valley Ridge Southbound @ Thicket
100 Thicket Cres, Pickering

Valley Ridge Southbound @ White Pine
96 White Pine Crescent, Pickering

Hogarth Eastbound @ Pine Grove
1598 Valley Rdige Cres, Pickering

Hogarth Eastbound @ Rockwood
389 Hogarth Street, Pickering

Waterford Eastbound @ Senator
259 Waterford Gate, Pickering

Waterford Eastbound @ Forestview
1826 Forestview Drive, Pickering

103 bus Time Schedule

S - Waterford Gate & Forestview Route Timetable:

Sunday	Not Operational
Monday	7:26 PM
Tuesday	7:26 PM
Wednesday	7:26 PM
Thursday	7:26 PM
Friday	7:26 PM
Saturday	Not Operational

103 bus Info

Direction: S - Waterford Gate & Forestview
Stops: 12
Trip Duration: 7 min
Line Summary: Pine Grove Westbound @ Altona, Pine Grove Southbound @ Sandhurst, Pine Grove Westbound @ Nordane, Pine Grove Westbound @ Rockwood, Pine Grove Southbound @ Valley Ridge, Valley Ridge Southbound @ Copley, Valley Ridge Southbound @ Thicket, Valley Ridge Southbound @ White Pine, Hogarth Eastbound @ Pine Grove, Hogarth Eastbound @ Rockwood, Waterford Eastbound @ Senator, Waterford Eastbound @ Forestview



103 bus time schedules and route maps are available in an offline PDF at moovitapp.com. Use the Moovit App to see live bus times, train schedule or subway schedule, and step-by-step directions for all public transit in Toronto.

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Check Live Arrival Times

120 Whites

Effective September 7, 2021

Web **durhamregiontransit.com**
Phone **1-866-247-0055**

Sunday				South
Whites Southbound @ Sunbird Trail **Stop #1751**	Whites Southbound @ Kingston **Stop #93216**	Oklahoma Eastbound @ Whites **Stop #93218**	Bayly Eastbound @ West Shore **Stop #1689**	Pickering Station **Stop #2549**
6:59	7:04	7:06	7:09	7:15
7:29	7:34	7:36	7:39	7:45
7:59	8:04	8:06	8:09	8:15
8:29	8:34	8:36	8:39	8:45
8:59	9:04	9:06	9:09	9:15
9:29	9:34	9:36	9:39	9:45
9:59	10:04	10:06	10:09	10:17
10:29	10:34	10:36	10:39	10:47
10:59	11:04	11:06	11:09	11:17
11:29	11:34	11:36	11:39	11:47
11:59	12:04	12:06	12:09	12:17
12:29	12:34	12:36	12:39	12:47
12:59	13:04	13:06	13:09	13:17

Sunday				South
Whites Southbound @ Sunbird Trail **Stop #1751**	Whites Southbound @ Kingston **Stop #93216**	Oklahoma Eastbound @ Whites **Stop #93218**	Bayly Eastbound @ West Shore **Stop #1689**	Pickering Station **Stop #2549**
13:29	13:34	13:36	13:39	13:47
13:59	14:04	14:06	14:09	14:17
14:29	14:34	14:36	14:39	14:47
14:59	15:04	15:06	15:09	15:17
15:29	15:34	15:36	15:39	15:47
15:59	16:04	16:06	16:09	16:17
16:29	16:34	16:36	16:39	16:47
16:59	17:04	17:06	17:09	17:17
17:29	17:34	17:36	17:39	17:47
17:59	18:04	18:06	18:09	18:17
18:29	18:34	18:36	18:39	18:47
18:59	19:04	19:06	19:09	19:17

Dashes indicate the stop is not served by a trip. Trip notes are indicated by a letter or symbol and explained at the bottom of each timetable. Schedule times are shown in 24-hour clock. If you require this information in an accessible format, please contact Customer Service at 1-866-247-0055. See **durhamregiontransit.com** for more information.



120 Whites
Effective September 7, 2021

Weekday				North
Pickering Station **Stop #2549**	West Shore Southbound @ Vistula **Stop #1645**	Oklahoma Westbound @ Whites **Stop #93219**	Whites Northbound @ Kingston **Stop #93217**	Whites Southbound @ Sunbird Trail **Stop #1751**
6:23	6:28	6:30	6:33	6:38
6:53	6:58	7:00	7:03	7:08
7:23	7:28	7:30	7:33	7:38
7:53	7:58	8:00	8:03	8:08
8:23	8:28	8:30	8:33	8:38
8:53	8:58	9:00	9:03	9:08
9:23	9:28	9:30	9:33	9:39
9:53	9:58	10:00	10:03	10:09
10:23	10:28	10:30	10:33	10:39
10:53	10:58	11:00	11:03	11:09
11:23	11:28	11:30	11:33	11:39
11:53	11:58	12:00	12:03	12:09
12:23	12:28	12:31	12:34	12:40
12:53	12:58	13:01	13:04	13:10
13:23	13:28	13:31	13:34	13:40
13:53	13:58	14:01	14:04	14:10
14:23	14:28	14:31	14:34	14:40
14:53	14:58	15:01	15:04	15:10
15:23	15:29	15:32	15:35	15:42
15:53	15:59	16:02	16:05	16:12
16:23	16:29	16:32	16:35	16:42
16:53	16:59	17:02	17:05	17:12
17:23	17:29	17:32	17:35	17:42
17:53	17:59	18:02	18:05	18:12
18:23	18:29	18:32	18:35	18:42
18:53	18:59	19:02	19:05	19:12
19:23	19:29	19:32	19:35	19:42
19:53	19:59	20:02	20:05	20:12
20:23	20:28	20:30	20:33	20:38
20:53	20:58	21:00	21:03	21:08
21:23	21:28	21:30	21:33	21:38
21:53	21:58	22:00	22:03	22:08

Weekday				South
Whites Southbound @ Sunbird Trail **Stop #1751**	Whites Southbound @ Kingston **Stop #93216**	Oklahoma Eastbound @ Whites **Stop #93218**	Bayly Eastbound @ West Shore **Stop #1689**	Pickering Station **Stop #2549**
5:59	6:05	6:08	6:12	6:20
6:29	6:35	6:38	6:42	6:50
6:59	7:05	7:08	7:12	7:20
7:29	7:35	7:38	7:42	7:50
7:59	8:05	8:08	8:12	8:20
8:29	8:35	8:38	8:42	8:50
8:59	9:05	9:08	9:12	9:20
9:29	9:35	9:37	9:40	9:48
9:59	10:05	10:07	10:10	10:18
10:29	10:35	10:37	10:40	10:48
10:59	11:05	11:07	11:10	11:18
11:29	11:35	11:37	11:40	11:48
11:59	12:05	12:07	12:10	12:18
12:29	12:35	12:37	12:40	12:48
12:59	13:05	13:07	13:10	13:18
13:29	13:35	13:37	13:40	13:48
13:59	14:05	14:07	14:10	14:18
14:29	14:35	14:37	14:40	14:48
14:59	15:05	15:07	15:10	15:18
15:29	15:35	15:37	15:40	15:48
15:59	16:05	16:07	16:10	16:18
16:29	16:35	16:37	16:40	16:48
16:59	17:05	17:07	17:10	17:18
17:29	17:35	17:37	17:40	17:48
17:59	18:05	18:07	18:10	18:18
18:29	18:35	18:37	18:40	18:48
18:59	19:05	19:07	19:10	19:18
19:29	19:34	19:36	19:39	19:46
19:59	20:04	20:06	20:09	20:16
20:29	20:34	20:36	20:39	20:46
20:59	21:04	21:06	21:09	21:16
21:29	21:34	21:36	21:39	21:46

120 Whites

Effective September 7, 2021

Web **durhamregiontransit.com**
Phone **1-866-247-0055**

Saturday — North

Pickering Station **Stop #2549**	West Shore Southbound @ Vistula **Stop #1645**	Oklahoma Westbound @ Whites **Stop #93219**	Whites Northbound @ Kingston **Stop #93217**	Whites Southbound @ Sunbird Trail **Stop #1751**
6:53	6:58	7:01	7:03	7:08
7:23	7:28	7:31	7:33	7:38
7:53	7:58	8:01	8:03	8:08
8:23	8:28	8:31	8:33	8:38
8:53	8:58	9:01	9:03	9:08
9:23	9:28	9:31	9:33	9:38
9:53	9:58	10:01	10:03	10:08
10:23	10:28	10:31	10:33	10:38
10:53	10:58	11:01	11:04	11:11
11:23	11:28	11:31	11:34	11:41
11:53	11:58	12:01	12:04	12:11
12:23	12:28	12:31	12:34	12:41
12:53	12:58	13:01	13:04	13:11
13:23	13:28	13:31	13:34	13:41
13:53	13:58	14:01	14:04	14:11
14:23	14:28	14:31	14:34	14:41
14:53	14:58	15:01	15:04	15:11
15:23	15:28	15:31	15:34	15:41
15:53	15:58	16:01	16:04	16:11
16:23	16:28	16:31	16:34	16:41
16:53	16:58	17:01	17:04	17:11
17:23	17:28	17:31	17:34	17:41
17:53	17:58	18:01	18:04	18:11
18:23	18:28	18:31	18:34	18:41
18:53	18:58	19:01	19:04	19:11

Saturday — South

Whites Southbound @ Sunbird Trail **Stop #1751**	Whites Southbound @ Kingston **Stop #93216**	Oklahoma Eastbound @ Whites **Stop #93218**	Bayly Eastbound @ West Shore **Stop #1689**	Pickering Station **Stop #2549**
6:59	7:04	7:06	7:09	7:15
7:29	7:34	7:36	7:39	7:45
7:59	8:04	8:06	8:09	8:15
8:29	8:34	8:36	8:39	8:45
8:59	9:04	9:06	9:09	9:15
9:29	9:34	9:36	9:39	9:45
9:59	10:04	10:06	10:09	10:15
10:29	10:35	10:37	10:40	10:48
10:59	11:05	11:07	11:10	11:18
11:29	11:35	11:37	11:40	11:48
11:59	12:05	12:07	12:10	12:18
12:29	12:35	12:37	12:40	12:48
12:59	13:05	13:07	13:10	13:18
13:29	13:35	13:37	13:40	13:48
13:59	14:05	14:07	14:10	14:18
14:29	14:35	14:37	14:40	14:48
14:59	15:05	15:07	15:10	15:18
15:29	15:35	15:37	15:40	15:48
15:59	16:05	16:07	16:10	16:18
16:29	16:35	16:37	16:40	16:48
16:59	17:05	17:07	17:10	17:18
17:29	17:35	17:37	17:40	17:48
17:59	18:05	18:07	18:10	18:18
18:29	18:35	18:37	18:40	18:48
18:59	19:04	19:06	19:09	19:17

Sunday				North
Pickering Station **Stop #2549**	West Shore Southbound @ Vistula **Stop #1645**	Oklahoma Westbound @ Whites **Stop #93219**	Whites Northbound @ Kingston **Stop #93217**	Whites Southbound @ Sunbird Trail **Stop #1751**
6:53	6:58	7:01	7:03	7:08
7:23	7:28	7:31	7:33	7:38
7:53	7:58	8:01	8:03	8:08
8:23	8:28	8:31	8:33	8:38
8:53	8:58	9:01	9:03	9:09
9:23	9:28	9:31	9:33	9:39
9:53	9:58	10:01	10:03	10:09
10:23	10:28	10:31	10:33	10:39
10:53	10:58	11:01	11:03	11:09
11:23	11:28	11:31	11:33	11:39
11:53	11:58	12:01	12:03	12:09
12:23	12:28	12:31	12:33	12:39
12:53	12:58	13:01	13:03	13:09
13:23	13:28	13:31	13:33	13:39
13:53	13:58	14:01	14:03	14:09
14:23	14:28	14:31	14:33	14:39
14:53	14:58	15:01	15:03	15:09
15:23	15:28	15:31	15:33	15:39
15:53	15:58	16:01	16:03	16:09
16:23	16:28	16:31	16:33	16:39
16:53	16:58	17:01	17:03	17:09
17:23	17:28	17:31	17:33	17:39
17:53	17:58	18:01	18:03	18:09
18:23	18:28	18:31	18:33	18:39
18:53	18:58	19:01	19:03	19:09

120 bus time schedule & line map

120 Pickering Station

View In Website Mode

The 120 bus line (Pickering Station) has 2 routes. For regular weekdays, their operation hours are:
(1) Pickering Station: 5:59 AM - 9:29 PM (2) Sunbird Trail: 6:23 AM - 9:53 PM
Use the Moovit App to find the closest 120 bus station near you and find out when is the next 120 bus arriving.

Direction: Pickering Station

26 stops

VIEW LINE SCHEDULE

Whites Southbound @ Sunbird Trail
Whites Road, Pickering

Whites Southbound @ Amaretto
2050 Whites Road, Pickering

Whites Southbound @ Finch

Southbound @ 1956 Whites
683 Graceland Crt, Pickering

Whites Southbound @ Highview
1918 Whites Road N unit 9, Pickering

Southbound @ 1852 Whites

Whites Southbound @ Strouds
1822 Whites Road, Pickering

Whites Southbound @ Bayfield
1818 Whites Road, Pickering

Southbound @ 1690 Whites
623 Weyburn Square, Pickering

Whites Southbound @ Sheppard
Whites Road, Pickering

Whites Southbound @ Kingston
1469 Whites Road, Pickering

Oklahoma Eastbound @ Whites
728 Abingdon Crt, Pickering

Oklahoma Eastbound @ Eyer
765 Oklahoma Drive, Pickering

Oklahoma Eastbound @ Hillcrest
728 Hillcrest Road, Pickering

120 bus Time Schedule

Pickering Station Route Timetable:

Sunday	6:59 AM - 6:59 PM
Monday	5:59 AM - 9:29 PM
Tuesday	5:59 AM - 9:29 PM
Wednesday	5:59 AM - 9:29 PM
Thursday	5:59 AM - 9:29 PM
Friday	5:59 AM - 9:29 PM
Saturday	6:59 AM - 6:59 PM

120 bus Info

Direction: Pickering Station
Stops: 26
Trip Duration: 19 min
Line Summary: Whites Southbound @ Sunbird Trail, Whites Southbound @ Amaretto, Whites Southbound @ Finch, Southbound @ 1956 Whites, Whites Southbound @ Highview, Southbound @ 1852 Whites, Whites Southbound @ Strouds, Whites Southbound @ Bayfield, Southbound @ 1690 Whites, Whites Southbound @ Sheppard, Whites Southbound @ Kingston, Oklahoma Eastbound @ Whites, Oklahoma Eastbound @ Eyer, Oklahoma Eastbound @ Hillcrest, Oklahoma Eastbound @ Victory, Oklahoma Eastbound @ West Shore, West Shore Northbound @ Breezy, West Shore Northbound @ Samford, West Shore Northbound @ Cecylia, Bayly Eastbound @ West Shore, Eastbound @ 957 Bayly, Eastbound @ 1001 Bayly, Bayly Eastbound @ Begley, Bayly Eastbound @ St Martins, Bayly Eastbound @ Liverpool, Pickering Station

Oklahoma Eastbound @ Victory
724 Victory Drive, Pickering

Oklahoma Eastbound @ West Shore
700 West Shore Boulevard, Pickering

West Shore Northbound @ Breezy
762 Breezy Drive, Pickering

West Shore Northbound @ Samford
809 West Shore Boulevard, Pickering

West Shore Northbound @ Cecylia
853 West Shore Boulevard, Pickering

Bayly Eastbound @ West Shore
905 Bayly Street, Pickering

Eastbound @ 957 Bayly
925 Bayly St, Pickering

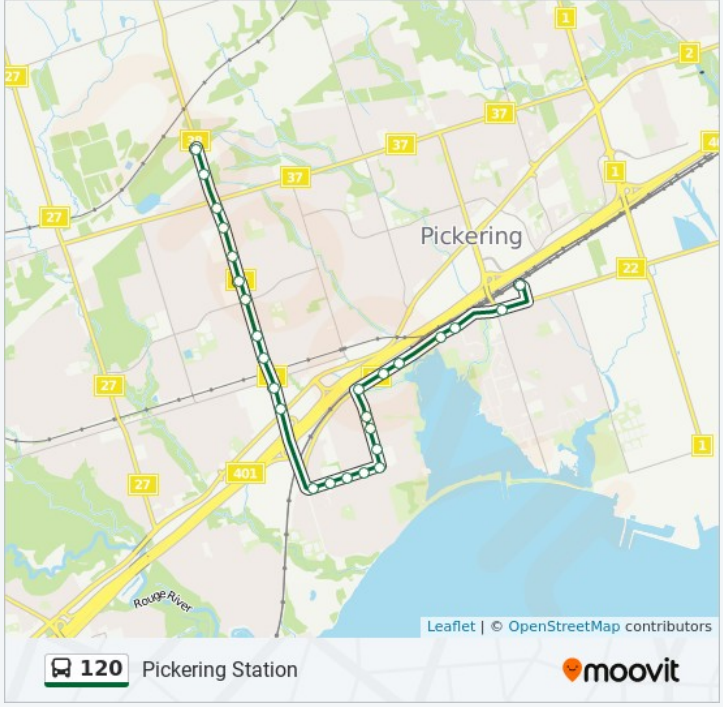
Eastbound @ 1001 Bayly

Bayly Eastbound @ Begley
1127 Bayly Street, Pickering

Bayly Eastbound @ St Martins
1136 Tanzer Crt, Pickering

Bayly Eastbound @ Liverpool
1273 Bayly Street, Pickering

Pickering Station



Direction: Sunbird Trail

23 stops

VIEW LINE SCHEDULE

Pickering Station

Bayly Westbound @ St Martins
1215 Bayly Street, Pickering

Bayly Westbound @ Begley
1127 Bayly Street, Pickering

Westbound @ 950 Bayly
925 Bayly St, Pickering

West Shore Southbound @ Vistula
925 West Shore Boulevard, Pickering

West Shore Southbound @ Cecylia
855 West Shore Boulevard, Pickering

West Shore Southbound @ Samford
813 West Shore Boulevard, Pickering

West Shore Southbound @ Breezy
770 West Shore Boulevard, Pickering

Oklahoma Westbound @ West Shore
728 West Shore Blvd, Pickering

Westbound @ 838 Oklahoma
728 Victory Dr, Pickering

Oklahoma Westbound @ Hillcrest
756 Oklahoma Drive, Pickering

Oklahoma Westbound @ Eyer
765 Oklahoma Drive, Pickering

Oklahoma Westbound @ Whites
750 Oklahoma Drive, Pickering

Whites Northbound @ Kingston
Whites Road, Pickering

Whites Northbound @ Sheppard
1499 Whites Road, Pickering

Northbound @ 1675 Whites
1820 Shadybrook Drive, Pickering

Whites Northbound @ Briar Wood
1735 Whites Road, Pickering

Whites Northbound @ Strouds
719 Stroud's Lane, Pickering

Whites Northbound @ New

120 bus Time Schedule

Sunbird Trail Route Timetable:

Sunday	6:53 AM - 6:53 PM
Monday	6:23 AM - 9:53 PM
Tuesday	6:23 AM - 9:53 PM
Wednesday	6:23 AM - 9:53 PM
Thursday	6:23 AM - 9:53 PM
Friday	6:23 AM - 9:53 PM
Saturday	6:53 AM - 6:53 PM

120 bus Info

Direction: Sunbird Trail
Stops: 23
Trip Duration: 16 min
Line Summary: Pickering Station, Bayly Westbound @ St Martins, Bayly Westbound @ Begley, Westbound @ 950 Bayly, West Shore Southbound @ Vistula, West Shore Southbound @ Cecylia, West Shore Southbound @ Samford, West Shore Southbound @ Breezy, Oklahoma Westbound @ West Shore, Westbound @ 838 Oklahoma, Oklahoma Westbound @ Hillcrest, Oklahoma Westbound @ Eyer, Oklahoma Westbound @ Whites, Whites Northbound @ Kingston, Whites Northbound @ Sheppard, Northbound @ 1675 Whites, Whites Northbound @ Briar Wood, Whites Northbound @ Strouds, Whites Northbound @ New, Northbound @ 1953 Whites, Whites Northbound @ Finch, Whites Northbound @ Amaretto, Whites Southbound @ Sunbird Trail

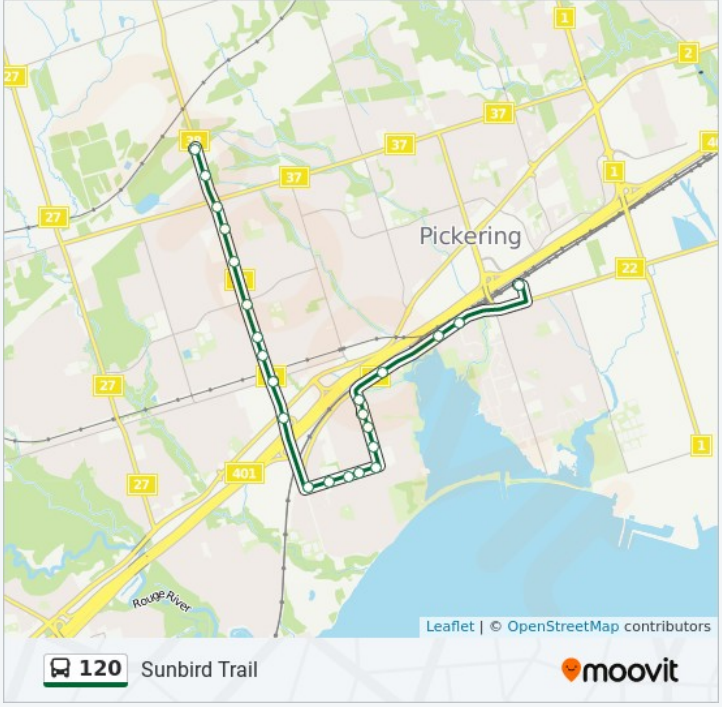
1899 Whites Road, Pickering

Northbound @ 1953 Whites
724 Aspen Rd, Pickering

Whites Northbound @ Finch
1945 Whites Road, Pickering

Whites Northbound @ Amaretto
2051 Whites Road, Pickering

Whites Southbound @ Sunbird Trail
Whites Road, Pickering



120 bus time schedules and route maps are available in an offline PDF at moovitapp.com. Use the Moovit App to see live bus times, train schedule or subway schedule, and step-by-step directions for all public transit in Toronto.

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Check Live Arrival Times



moovit 900 bus time schedule & line map

900 PULSE - Highway 2

View In Website Mode

The 900 bus line (PULSE - Highway 2) has 3 routes. For regular weekdays, their operation hours are:
(1) B - Pickering Town Centre: 6:30 AM - 8:20 PM (2) Oshawa: 4:45 AM - 11:45 PM (3) Scarborough: 5:00 AM - 11:35 PM
Use the Moovit App to find the closest 900 bus station near you and find out when is the next 900 bus arriving.

Direction: B - Pickering Town Centre

45 stops

VIEW LINE SCHEDULE

Bond Westbound @ Ritson

Bond St. E. @ Mary St. N.
77 Bond Street East, Oshawa

Bond St. E. @ Simcoe St. N.
31 Simcoe Street North, Oshawa

Bond St. W. @ Centre St. N.
44 Bond Street West, Oshawa

Bond Westbound @ Arena
176 Bond Street West, Oshawa

Bond St. W. @ Park Rd. N.
30 Park Road North, Whitby

Bond Westbound @ Gibbons
383 Buena Vista Avenue, Whitby

Bond Westbound @ Stevenson
540 Bond Street West, Whitby

King Westbound @ Waverly
664 King Street West, Whitby

King Westbound @ Thornton

Dundas Westbound @ Garrard
1904 Dundas Street East, Whitby

Dundas Westbound @ Kathleen
1652 Dundas Street East, Whitby

Dundas Westbound @ Thickson
1540 Dundas Street East, Whitby

Dundas Westbound @ Bowman
1488 Dundas Street East, Whitby

900 bus Time Schedule

B - Pickering Town Centre Route Timetable:

Sunday	6:35 AM - 8:35 PM
Monday	6:30 AM - 8:20 PM
Tuesday	6:30 AM - 8:20 PM
Wednesday	6:30 AM - 8:20 PM
Thursday	6:30 AM - 8:20 PM
Friday	6:30 AM - 8:20 PM
Saturday	6:35 AM - 8:35 PM

900 bus Info

Direction: B - Pickering Town Centre
Stops: 45
Trip Duration: 48 min
Line Summary: Bond Westbound @ Ritson, Bond St. E. @ Mary St. N., Bond St. E. @ Simcoe St. N., Bond St. W. @ Centre St. N., Bond Westbound @ Arena, Bond St. W. @ Park Rd. N., Bond Westbound @ Gibbons, Bond Westbound @ Stevenson, King Westbound @ Waverly, King Westbound @ Thornton, Dundas Westbound @ Garrard, Dundas Westbound @ Kathleen, Dundas Westbound @ Thickson, Dundas Westbound @ Bowman, Dundas Westbound @ Anderson, Dundas Westbound @ Craydon, Dundas Westbound @ Garden, Dundas Westbound @ Pine, Dundas St. @ Brock St., Dundas Westbound @ Euclid, Dundas Westbound @ Cochrane, Dundas Westbound @ Wellington, Dundas Westbound @ Mcquay, Dundas Westbound @ White Oaks, Dundas Westbound @ Des Newman, Dundas Westbound @ Halls, Kingston Westbound @ Lake Ridge, Kingston Westbound @ Audley, Kingston Westbound @ Alexanders Crossing, Kingston Westbound @ Wicks, Kingston Westbound @ Salem, Westbound @ 84 Kingston, Kingston Westbound @ Harwood, Westbound @ 132 Kingston, Kingston Westbound @ Chapman, Kingston Rd. @ Westney Rd., Kingston

Dundas Westbound @ Anderson
1210 Dundas Street East, Whitby

Dundas Westbound @ Craydon
900 Dundas Street East, Whitby

Dundas Westbound @ Garden
704 Dundas Street East, Whitby

Dundas Westbound @ Pine
416 Dundas Street East, Whitby

Dundas St. @ Brock St.
104 Dundas Street East, Whitby

Dundas Westbound @ Euclid
408 Dundas Street West, Whitby

Dundas Westbound @ Cochrane
684 Dundas Street West, Whitby

Dundas Westbound @ Wellington
752 Dundas Street West, Whitby

Dundas Westbound @ Mcquay
Dundas Street West, Whitby

Dundas Westbound @ White Oaks
Dundas Street West, Whitby

Dundas Westbound @ Des Newman
1180 Dundas Street West, Whitby

Dundas Westbound @ Halls
1550 Dundas Street West, Whitby

Kingston Westbound @ Lake Ridge
786 Kingston Road East, Whitby

Kingston Westbound @ Audley

Kingston Westbound @ Alexanders Crossing

Kingston Westbound @ Wicks
270 Kingston Road East, Ajax

Kingston Westbound @ Salem
168 Kingston Road East, Ajax

Westbound @ 84 Kingston
46 Gilmour Drive, Ajax

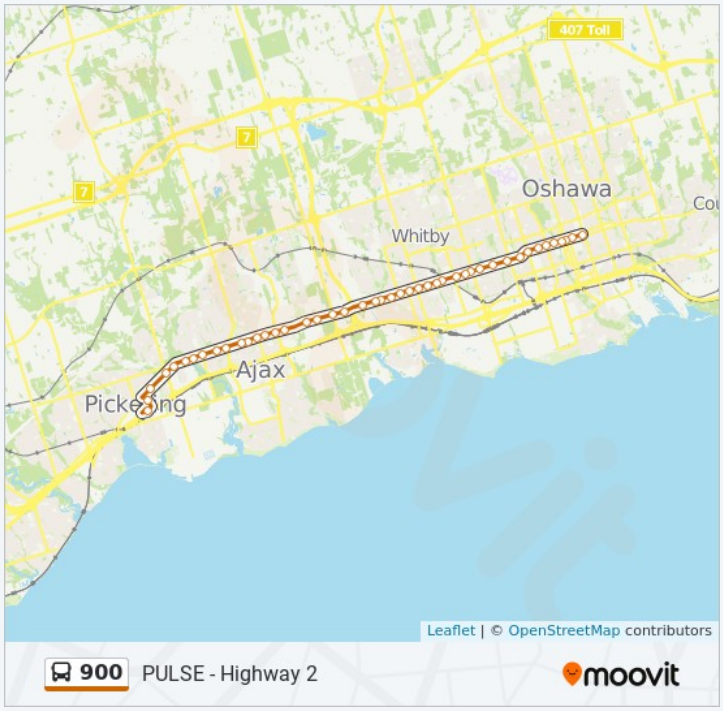
Kingston Westbound @ Harwood
10 Kingston Road West, Ajax

Westbound @ 132 Kingston
28 Arnold Estate Lane, Ajax

Kingston Westbound @ Chapman
300 Kingston Road West, Ajax

Kingston Rd. @ Westney Rd.

Westbound @ Mill, Kingston Westbound @ Church, Kingston Westbound @ Elizabeth, Kingston Westbound @ Notion, Kingston Westbound @ Bainbridge, Kingston Westbound @ Brock Road, Kingston Westbound @ Valley Farm, Glenanna Southbound @ the Esplanade (South Side Stop), Pickering Town Centre



364 Kingston Road West, Ajax

Kingston Westbound @ Mill
446 Kingston Road West, Ajax

Kingston Westbound @ Church
Church Street North, Ajax

Kingston Westbound @ Elizabeth
714 Kingston Road West, Pickering

Kingston Westbound @ Notion
768 Kingston Road West, Pickering

Kingston Westbound @ Bainbridge
Kingston Road, Pickering

Kingston Westbound @ Brock Road
1668 Kingston Road, Pickering

Kingston Westbound @ Valley Farm
1440 Kingston Road, Pickering

Glenanna Southbound @ the Esplanade (South Side Stop)
1 The Esplanade North, Pickering

Pickering Town Centre

Direction: Oshawa

60 stops

VIEW LINE SCHEDULE

Centennial Circle
1065 Military Trl, Toronto

Ellesmere Eastbound @ Military Trail
3295 Ellesmere Rd, Toronto

Ellesmere Rd at Meadowvale Rd
3811 Ellesmere Road, Toronto

Kingston Eastbound @ Port Union
7331 Kingston Road, Toronto

Kingston Eastbound @ Altona
Kingston Road, Pickering

Kingston Rd. @ Rougemount Dr.
357 Kingston Rd, Pickering

Kingston Eastbound @ Rosebank
499 Kingston Road, Pickering

Kingston Eastbound @ Steeple Hill
645 Kingston Road, Pickering

Kingston Eastbound @ Whites
711 Kingston Road, Pickering

Eastbound @ 817 Kingston
819 Kingston Road, Pickering

Kingston Eastbound @ Fairport
897 Kingston Road, Pickering

Kingston Eastbound @ Dixie
1099 Kingston Road, Pickering

Kingston Rd. @ Walnut Ln.
1155 Kingston Road, Pickering

Kingston Eastbound @ Liverpool
1355 Kingston Road, Pickering

Kingston Eastbound @ Glenanna
1431 Kingston Road, Pickering

Kingston Eastbound @ Valley Farm
1511 Kingston Road, Pickering

Kingston Eastbound @ Brock Road
1754 Kingston Road, Pickering

Kingston Eastbound @ Bainbridge
1778 Bainbridge Dr, Pickering

900 bus Time Schedule

Oshawa Route Timetable:

Sunday	4:45 AM - 11:30 PM
Monday	4:45 AM - 11:45 PM
Tuesday	4:45 AM - 11:45 PM
Wednesday	4:45 AM - 11:45 PM
Thursday	4:45 AM - 11:45 PM
Friday	4:45 AM - 11:45 PM
Saturday	4:45 AM - 11:30 PM

900 bus Info

Direction: Oshawa
Stops: 60
Trip Duration: 58 min
Line Summary: Centennial Circle, Ellesmere Eastbound @ Military Trail, Ellesmere Rd at Meadowvale Rd, Kingston Eastbound @ Port Union, Kingston Eastbound @ Altona, Kingston Rd. @ Rougemount Dr., Kingston Eastbound @ Rosebank, Kingston Eastbound @ Steeple Hill, Kingston Eastbound @ Whites, Eastbound @ 817 Kingston, Kingston Eastbound @ Fairport, Kingston Eastbound @ Dixie, Kingston Rd. @ Walnut Ln., Kingston Eastbound @ Liverpool, Kingston Eastbound @ Glenanna, Kingston Eastbound @ Valley Farm, Kingston Eastbound @ Brock Road, Kingston Eastbound @ Bainbridge, Kingston Eastbound @ Notion, Kingston Eastbound @ Elizabeth, Eastbound @ 625 Kingston, Kingston Eastbound @ Mill, Kingston Eastbound @ Westney, Kingston Eastbound @ Ritchie, Eastbound @ 113 Kingston, Kingston Eastbound @ Harwood, Eastbound @ 69 Kingston, Kingston Eastbound @ Salem, Eastbound @ 257 Kingston Road East, Kingston Eastbound @ Wicks, Kingston Eastbound @ Alexanders Crossing, Kingston Eastbound @ Audley, Kingston Eastbound @ Lake Ridge, Dundas Eastbound @ Halls, Dundas Eastbound @ Des Newman, Dundas Eastbound @ White Oaks, Dundas Eastbound @ Jeffery, Dundas Eastbound @ Wellington, Dundas Eastbound @ Annes, Dundas Eastbound @ King, Dundas Eastbound @ Brock Street, Dundas Eastbound @ Hickory, Dundas St. @ Garden St., Dundas Eastbound @ Craydon, Dundas Eastbound @ Hopkins, Dundas Eastbound @ Glen Hill, Dundas Eastbound @ Thickson, Dundas Eastbound @ Kathleen, Dundas Eastbound @ Kendalwood, King Eastbound @ Thornton, King Eastbound @ Waverly, King St. W. @ Stevenson Rd., King Eastbound @ Gibbons, King Eastbound @ Warren, King Eastbound @ Midtown, King @ Centre,

Kingston Eastbound @ Notion
775 Kingston Road West, Pickering

Kingston Eastbound @ Elizabeth
703 Kingston Road West, Ajax

Eastbound @ 625 Kingston
601 Kingston Road West, Ajax

Kingston Eastbound @ Mill
441 Kingston Road West, Ajax

Kingston Eastbound @ Westney
Kingston Road West, Ajax

Kingston Eastbound @ Ritchie
301 Kingston Road West, Ajax

Eastbound @ 113 Kingston
51 Chalmers Crescent, Ajax

Kingston Eastbound @ Harwood
1 Harwood Avenue South, Ajax

Eastbound @ 69 Kingston
71 Kingston Road East, Ajax

Kingston Eastbound @ Salem
207 Kingston Road East, Ajax

Eastbound @ 257 Kingston Road East
259 Kingston Road, Ajax

Kingston Eastbound @ Wicks
34 Clarepark Court, Ajax

Kingston Eastbound @ Alexanders Crossing
Alexanders Crossing, Ajax

Kingston Eastbound @ Audley
599 Kingston Road East, Ajax

Kingston Eastbound @ Lake Ridge
787 Kingston Road East, Whitby

Dundas Eastbound @ Halls
1611 Dundas Street West, Whitby

Dundas Eastbound @ Des Newman

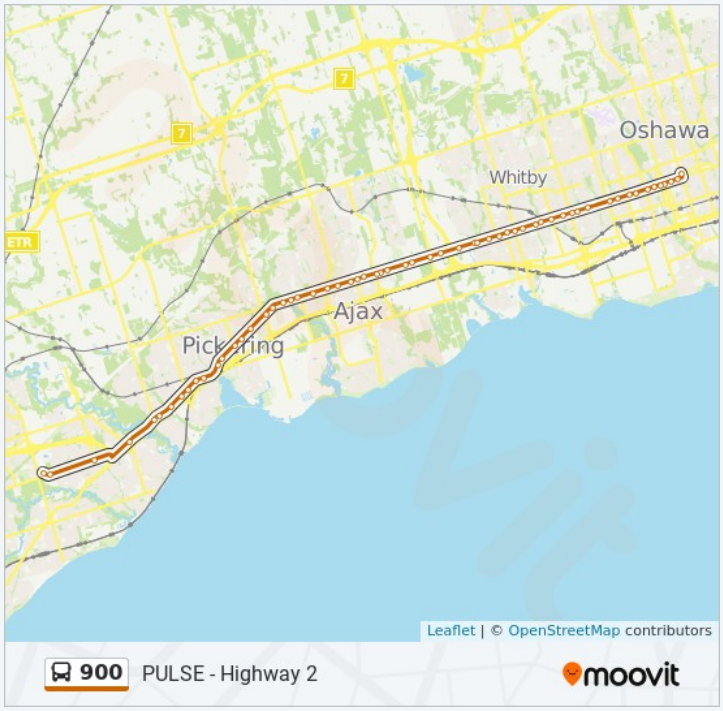
Dundas Eastbound @ White Oaks
1045 Dundas Street West, Whitby

Dundas Eastbound @ Jeffery
1027 Dundas Street West, Whitby

Dundas Eastbound @ Wellington
Dundas Street West, Whitby

Dundas Eastbound @ Annes
711 Dundas Street West, Whitby

King @ Simcoe, King St. E. @ Mary St. N., King Eastbound @ Drew, Ritson Northbound @ Richmond



Dundas Eastbound @ King
405 Dundas Street West, Whitby

Dundas Eastbound @ Brock Street
101 Dundas Street West, Whitby

Dundas Eastbound @ Hickory
399 Dundas Street East, Whitby

Dundas St. @ Garden St.
751 Dundas Street East, Whitby

Dundas Eastbound @ Craydon
101 Craydon Road, Whitby

Dundas Eastbound @ Hopkins
1199 Dundas Street East, Whitby

Dundas Eastbound @ Glen Hill
1489 Dundas Street East, Whitby

Dundas Eastbound @ Thickson
Dundas Street East, Whitby

Dundas Eastbound @ Kathleen
1635 Dundas Street East, Whitby

Dundas Eastbound @ Kendalwood
1871 Dundas Street East, Whitby

King Eastbound @ Thornton
773 King Street West, Whitby

King Eastbound @ Waverly
665 King Street West, Whitby

King St. W. @ Stevenson Rd.
512 King Street West, Whitby

King Eastbound @ Gibbons
408 King Street West, Whitby

King Eastbound @ Warren
245 King Street West, Whitby

King Eastbound @ Midtown
King Street West, Oshawa

King @ Centre
40 King Street West, Oshawa

King @ Simcoe
7 King Street East, Oshawa

King St. E. @ Mary St. N.
97 King Street East, Oshawa

King Eastbound @ Drew
193 King Street East, Oshawa

Ritson Northbound @ Richmond
55 Ritson Road North, Oshawa

Direction: Scarborough

59 stops

VIEW LINE SCHEDULE

Bond Westbound @ Ritson

Bond St. E. @ Mary St. N.
77 Bond Street East, Oshawa

Bond St. E. @ Simcoe St. N.
31 Simcoe Street North, Oshawa

Bond St. W. @ Centre St. N.
44 Bond Street West, Oshawa

Bond Westbound @ Arena
176 Bond Street West, Oshawa

Bond St. W. @ Park Rd. N.
30 Park Road North, Whitby

Bond Westbound @ Gibbons
383 Buena Vista Avenue, Whitby

Bond Westbound @ Stevenson
540 Bond Street West, Whitby

King Westbound @ Waverly
664 King Street West, Whitby

King Westbound @ Thornton

Dundas Westbound @ Garrard
1904 Dundas Street East, Whitby

Dundas Westbound @ Kathleen
1652 Dundas Street East, Whitby

Dundas Westbound @ Thickson
1540 Dundas Street East, Whitby

Dundas Westbound @ Bowman
1488 Dundas Street East, Whitby

Dundas Westbound @ Anderson
1210 Dundas Street East, Whitby

Dundas Westbound @ Craydon
900 Dundas Street East, Whitby

Dundas Westbound @ Garden
704 Dundas Street East, Whitby

Dundas Westbound @ Pine
416 Dundas Street East, Whitby

Dundas St. @ Brock St.
104 Dundas Street East, Whitby

900 bus Time Schedule

Scarborough Route Timetable:

Sunday	5:20 AM - 11:50 PM
Monday	5:00 AM - 11:35 PM
Tuesday	5:00 AM - 11:35 PM
Wednesday	5:00 AM - 11:35 PM
Thursday	5:00 AM - 11:35 PM
Friday	5:00 AM - 11:35 PM
Saturday	5:20 AM - 11:50 PM

900 bus Info

Direction: Scarborough
Stops: 59
Trip Duration: 65 min
Line Summary: Bond Westbound @ Ritson, Bond St. E. @ Mary St. N., Bond St. E. @ Simcoe St. N., Bond St. W. @ Centre St. N., Bond Westbound @ Arena, Bond St. W. @ Park Rd. N., Bond Westbound @ Gibbons, Bond Westbound @ Stevenson, King Westbound @ Waverly, King Westbound @ Thornton, Dundas Westbound @ Garrard, Dundas Westbound @ Kathleen, Dundas Westbound @ Thickson, Dundas Westbound @ Bowman, Dundas Westbound @ Anderson, Dundas Westbound @ Craydon, Dundas Westbound @ Garden, Dundas Westbound @ Pine, Dundas St. @ Brock St., Dundas Westbound @ Euclid, Dundas Westbound @ Cochrane, Dundas Westbound @ Wellington, Dundas Westbound @ Mcquay, Dundas Westbound @ White Oaks, Dundas Westbound @ Des Newman, Dundas Westbound @ Halls, Kingston Westbound @ Lake Ridge, Kingston Westbound @ Audley, Kingston Westbound @ Alexanders Crossing, Kingston Westbound @ Wicks, Kingston Westbound @ Salem, Westbound @ 84 Kingston, Kingston Westbound @ Harwood, Westbound @ 132 Kingston, Kingston Westbound @ Chapman, Kingston Rd. @ Westney Rd., Kingston Westbound @ Mill, Kingston Westbound @ Church, Kingston Westbound @ Elizabeth, Kingston Westbound @ Notion, Kingston Westbound @ Bainbridge, Kingston Westbound @ Brock Road, Kingston Westbound @ Valley Farm, Kingston Westbound @ Glenanna, Kingston Westbound @ Liverpool, Kingston Westbound @ Walnut, Kingston Westbound @ Dixie, Kingston Westbound @ Fairport, Westbound @ 804 Kingston, Kingston Westbound @ Delta, Kingston Westbound @ Whites, Kingston Westbound @ Steeple Hill, Kingston Westbound @ Rosebank, Kingston Westbound @ Rougemount, Kingston Westbound @ Altona, Kingston Westbound

Dundas Westbound @ Euclid
408 Dundas Street West, Whitby

Dundas Westbound @ Cochrane
684 Dundas Street West, Whitby

Dundas Westbound @ Wellington
752 Dundas Street West, Whitby

Dundas Westbound @ Mcquay
Dundas Street West, Whitby

Dundas Westbound @ White Oaks
Dundas Street West, Whitby

Dundas Westbound @ Des Newman
1180 Dundas Street West, Whitby

Dundas Westbound @ Halls
1550 Dundas Street West, Whitby

Kingston Westbound @ Lake Ridge
786 Kingston Road East, Whitby

Kingston Westbound @ Audley

Kingston Westbound @ Alexanders Crossing

Kingston Westbound @ Wicks
270 Kingston Road East, Ajax

Kingston Westbound @ Salem
168 Kingston Road East, Ajax

Westbound @ 84 Kingston
46 Gilmour Drive, Ajax

Kingston Westbound @ Harwood
10 Kingston Road West, Ajax

Westbound @ 132 Kingston
28 Arnold Estate Lane, Ajax

Kingston Westbound @ Chapman
300 Kingston Road West, Ajax

Kingston Rd. @ Westney Rd.
364 Kingston Road West, Ajax

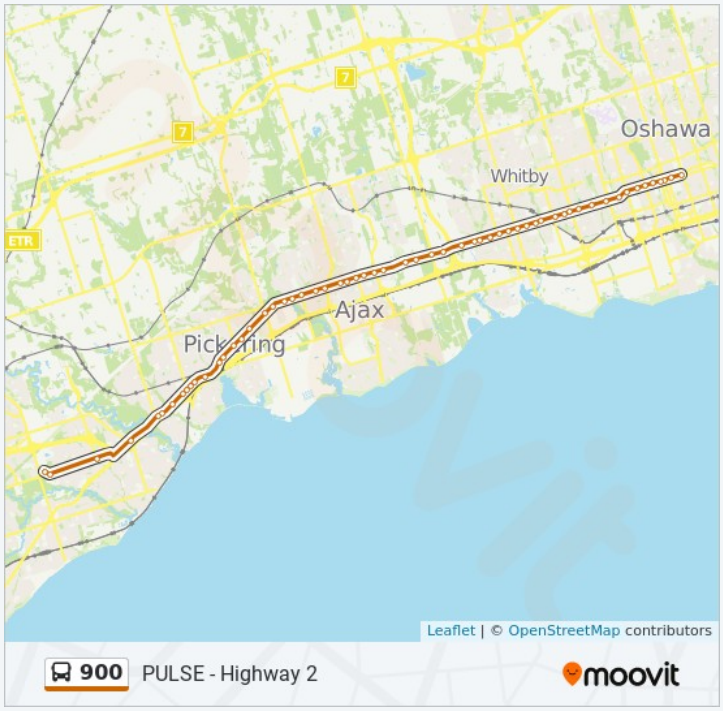
Kingston Westbound @ Mill
446 Kingston Road West, Ajax

Kingston Westbound @ Church
Church Street North, Ajax

Kingston Westbound @ Elizabeth
714 Kingston Road West, Pickering

Kingston Westbound @ Notion
768 Kingston Road West, Pickering

@ Sheppard, Ellesmere Rd at Meadowvale Rd, Ellesmere Rd at Military Trail (East), Centennial Circle



Kingston Westbound @ Bainbridge
Kingston Road, Pickering

Kingston Westbound @ Brock Road
1668 Kingston Road, Pickering

Kingston Westbound @ Valley Farm
1440 Kingston Road, Pickering

Kingston Westbound @ Glenanna
1376 Kingston Road, Pickering

Kingston Westbound @ Liverpool
1273 Kingston Road, Pickering

Kingston Westbound @ Walnut
1154 Kingston Road, Pickering

Kingston Westbound @ Dixie
1108 Kingston Road, Pickering

Kingston Westbound @ Fairport
900 Kingston Road, Pickering

Westbound @ 804 Kingston
794 Kingston Road, Pickering

Kingston Westbound @ Delta
736 Kingston Road, Pickering

Kingston Westbound @ Whites
698 Kingston Road, Pickering

Kingston Westbound @ Steeple Hill
646 Kingston Road, Pickering

Kingston Westbound @ Rosebank
510 Kingston Road, Pickering

Kingston Westbound @ Rougemount
370 Kingston Road, Pickering

Kingston Westbound @ Altona
Kingston Road, Pickering

Kingston Westbound @ Sheppard
80 Nature Ptwy, Toronto

Ellesmere Rd at Meadowvale Rd
3978 Ellesmere Road, Toronto

Ellesmere Rd at Military Trail (East)
1050 Military Trail, Toronto

Centennial Circle
1065 Military Trl, Toronto

900 bus time schedules and route maps are available in an offline PDF at moovitapp.com. Use the Moovit App to see live bus times, train schedule or subway schedule, and step-by-step directions for all public transit in Toronto.

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Check Live Arrival Times

Dashes indicate the stop is not served by a trip. Trip notes are indicated by a letter or symbol and explained at the bottom of each timetable. Schedule times are shown in 24-hour clock. If you require this information in an accessible format, please contact Customer Service at 1-866-247-0055. See **durhamregiontransit.com** for more information.

Weekday — East

Centennial Circle **Stop #3589**	Kingston Eastbound @ Whites **Stop #1779**	Kingston Eastbound @ Glenanna **Stop #1786**	Kingston Eastbound @ Westney **Stop #2236**	Kingston Eastbound @ Salem **Stop #93254**	Dundas Eastbound @ Brock Street **Stop #425**	Dundas Eastbound @ Thickson **Stop #451**	Ritson Northbound @ Richmond **Stop #3118**
4:45	5:00	5:06	5:15	5:20	5:32	5:37	5:50
5:15	5:30	5:36	5:45	5:50	6:02	6:07	6:20
—	—	5:51	6:00	6:05	6:17	6:22	6:35
—	—	6:11	6:20	6:25	6:37	6:42	6:55
5:50	6:05	6:11	6:20	6:25	6:37	6:42	6:55
—	—	6:32	6:41	6:47	6:59	7:05	7:19
6:20	6:35	6:42	6:51	6:57	7:09	7:15	7:29
—	—	6:52	7:01	7:07	7:19	7:25	7:39
6:40	6:55	7:02	7:11	7:17	7:29	7:35	7:49
—	—	7:12	7:21	7:27	7:39	7:45	7:59
7:00	7:15	7:22	7:31	7:37	7:49	7:55	8:09
—	—	7:32	7:41	7:47	7:59	8:05	8:19
7:20	7:35	7:42	7:51	7:57	8:09	8:15	8:29
—	—	7:52	8:01	8:07	8:19	8:25	8:39
7:40	7:55	8:02	8:11	8:17	8:29	8:35	8:49
—	—	8:12	8:21	8:27	8:39	8:45	8:59
8:00	8:15	8:22	8:31	8:37	8:49	8:55	9:09
—	—	8:32	8:41	8:47	8:59	9:05	9:19
8:20	8:35	8:42	8:51	8:57	9:09	9:15	9:29
—	—	8:52	9:01	9:07	9:19	9:25	9:39
8:40	8:55	9:02	9:11	9:17	9:29	9:35	9:49
—	—	9:12	9:21	9:27	9:39	9:45	9:59
9:00	9:15	9:22	9:31	9:37	9:49	9:55	10:09
—	—	9:32	9:41	9:47	9:59	10:05	10:19
9:20	9:35	9:42	9:51	9:57	10:09	10:15	10:29
—	—	9:52	10:01	10:07	10:19	10:25	10:39
9:40	9:55	10:02	10:11	10:17	10:29	10:35	10:49
—	—	10:12	10:21	10:27	10:39	10:45	10:59
10:00	10:15	10:22	10:31	10:37	10:49	10:55	11:09
—	—	10:33	10:42	10:48	11:00	11:06	11:20
10:20	10:35	10:43	10:52	10:58	11:10	11:16	11:30
—	—	10:53	11:02	11:08	11:20	11:26	11:40
10:40	10:55	11:03	11:12	11:18	11:30	11:36	11:50
—	—	11:13	11:22	11:28	11:40	11:46	12:00
11:00	11:15	11:23	11:32	11:38	11:50	11:56	12:10
—	—	11:33	11:42	11:48	12:00	12:06	12:20
11:20	11:35	11:43	11:52	11:58	12:10	12:16	12:30
—	—	11:53	12:02	12:08	12:20	12:26	12:40
11:40	11:55	12:03	12:12	12:18	12:30	12:36	12:50
—	—	12:13	12:22	12:28	12:40	12:46	13:00
12:00	12:15	12:23	12:32	12:38	12:50	12:56	13:10
—	—	12:33	12:42	12:48	13:00	13:06	13:20
12:20	12:35	12:43	12:52	12:58	13:10	13:16	13:30
—	—	12:53	13:02	13:08	13:20	13:26	13:40
12:40	12:55	13:03	13:12	13:18	13:30	13:36	13:50
—	—	13:13	13:22	13:28	13:40	13:46	14:00
13:00	13:15	13:23	13:32	13:38	13:50	13:56	14:10

Weekday — East

Centennial Circle **Stop #3589**	Kingston Eastbound @ Whites **Stop #1779**	Kingston Eastbound @ Glenanna **Stop #1786**	Kingston Eastbound @ Westney **Stop #2236**	Kingston Eastbound @ Salem **Stop #93254**	Dundas Eastbound @ Brock Street **Stop #425**	Dundas Eastbound @ Thickson **Stop #451**	Ritson Northbound @ Richmond **Stop #3118**
—	—	13:33	13:42	13:48	14:00	14:06	14:20
13:20	13:35	13:43	13:52	13:58	14:10	14:16	14:30
—	—	13:53	14:02	14:08	14:20	14:26	14:40
13:40	13:55	14:03	14:12	14:18	14:30	14:36	14:50
—	—	14:13	14:22	14:28	14:40	14:46	15:00
14:00	14:15	14:23	14:32	14:38	14:50	14:56	15:10
—	—	14:33	14:42	14:48	15:00	15:06	15:20
14:20	14:35	14:43	14:52	14:58	15:10	15:16	15:30
—	—	14:53	15:02	15:08	15:20	15:26	15:40
14:40	14:55	15:03	15:12	15:18	15:30	15:36	15:50
—	—	15:13	15:22	15:28	15:40	15:46	16:00
15:00	15:15	15:23	15:32	15:38	15:50	15:56	16:10
—	—	15:34	15:43	15:49	16:01	16:07	16:22
15:20	15:35	15:43	15:52	15:58	16:10	16:16	16:30
—	—	15:54	16:03	16:09	16:21	16:27	16:42
15:40	15:56	16:04	16:13	16:19	16:31	16:37	16:52
—	—	16:14	16:23	16:29	16:41	16:47	17:02
16:00	16:16	16:24	16:33	16:39	16:51	16:57	17:12
—	—	16:34	16:43	16:49	17:01	17:07	17:22
16:20	16:36	16:44	16:53	16:59	17:11	17:17	17:32
—	—	16:54	17:03	17:09	17:21	17:27	17:42
16:40	16:56	17:04	17:13	17:19	17:31	17:37	17:52
—	—	17:14	17:23	17:29	17:41	17:47	18:02
17:00	17:16	17:24	17:33	17:39	17:51	17:57	18:12
—	—	17:34	17:43	17:49	18:01	18:07	18:22
17:20	17:36	17:44	17:53	17:59	18:11	18:17	18:32
—	—	17:54	18:03	18:09	18:21	18:27	18:42
17:40	17:56	18:04	18:13	18:19	18:31	18:37	18:52
—	—	18:14	18:23	18:29	18:41	18:47	19:02
18:00	18:16	18:24	18:33	18:39	18:51	18:57	19:12
—	—	18:31	18:40	18:46	18:58	19:04	19:17
18:20	18:35	18:41	18:50	18:56	19:08	19:14	19:27
—	—	18:51	19:00	19:06	19:18	19:24	19:37
18:40	18:55	19:01	19:10	19:16	19:28	19:34	19:47
—	—	19:11	19:20	19:26	19:38	19:44	19:57
19:00	19:15	19:21	19:30	19:36	19:48	19:54	20:07
—	—	19:31	19:40	19:46	19:58	20:04	20:17
19:20	19:35	19:41	19:50	19:56	20:08	20:14	20:27
19:40	19:55	20:01	20:10	20:16	20:28	20:34	20:47
20:15	20:30	20:36	20:45	20:51	21:03	21:09	21:22
20:45	21:00	21:06	21:15	21:21	21:33	21:39	21:52
21:15	21:30	21:36	21:45	21:51	22:03	22:09	22:22
21:45	22:00	22:06	22:15	22:21	22:33	22:39	22:52
22:15	22:30	22:36	22:45	22:51	23:03	23:09	23:22
22:45	23:00	23:06	23:15	23:21	23:33	23:39	23:52
23:15	23:30	23:36	23:45	23:51	0:03	0:09	0:22
23:45	23:59	0:04	0:12	0:17	0:28	0:33	0:45

900 PULSE - Highway 2

Effective September 7, 2021

Web **durhamregiontransit.com**
Phone **1-866-247-0055**

Weekday — West

Bond Westbound @ Ritson **Stop #1163**	Dundas Westbound @ Thickson **Stop #388**	Dundas Westbound @ Brock Street **Stop #398**	Kingston Westbound @ Salem **Stop #1591**	Kingston Westbound @ Brock Road **Stop #1604**	Pickering Town Centre **Stop #1909**	Kingston Westbound @ Whites **Stop #1742**	Centennial Circle **Stop #3589**
5:00	5:13	5:19	5:31	5:42	—	5:52	6:05
5:20	5:33	5:39	5:51	6:02	—	6:12	6:25
5:40	5:53	5:59	6:11	6:22	—	6:32	6:45
6:00	6:13	6:19	6:31	6:42	—	6:52	7:05
6:20	6:33	6:39	6:51	7:02	—	7:12	7:25
B 6:30	6:43	6:49	7:01	7:12	7:17	—	—
6:40	6:53	6:59	7:11	7:22	—	7:32	7:45
B 6:50	7:03	7:09	7:21	7:32	7:37	—	—
7:00	7:13	7:19	7:31	7:42	—	7:52	8:05
B 7:10	7:23	7:29	7:41	7:52	7:57	—	—
7:20	7:33	7:39	7:51	8:02	—	8:12	8:25
B 7:30	7:44	7:50	8:02	8:14	8:19	—	—
7:40	7:54	8:00	8:12	8:24	—	8:34	8:47
B 7:50	8:04	8:10	8:22	8:34	8:39	—	—
8:00	8:14	8:20	8:32	8:44	—	8:54	9:07
B 8:10	8:24	8:30	8:42	8:54	8:59	—	—
8:20	8:34	8:40	8:52	9:04	—	9:14	9:27
B 8:30	8:44	8:50	9:02	9:14	9:19	—	—
8:40	8:54	9:00	9:12	9:24	—	9:34	9:47
B 8:50	9:04	9:10	9:22	9:34	9:39	—	—
9:00	9:14	9:20	9:32	9:44	—	9:54	10:07
B 9:10	9:24	9:30	9:42	9:54	9:59	—	—
9:20	9:34	9:40	9:52	10:04	—	10:14	10:27
B 9:30	9:44	9:50	10:02	10:14	10:19	—	—
9:40	9:54	10:00	10:12	10:24	—	10:34	10:47
B 9:50	10:04	10:10	10:22	10:34	10:39	—	—
10:00	10:14	10:20	10:32	10:44	—	10:54	11:07
B 10:10	10:24	10:30	10:42	10:54	10:59	—	—
10:20	10:34	10:40	10:52	11:04	—	11:14	11:27
B 10:30	10:44	10:50	11:02	11:14	11:19	—	—
10:40	10:54	11:00	11:12	11:24	—	11:34	11:47
B 10:50	11:04	11:10	11:22	11:34	11:39	—	—
11:00	11:14	11:20	11:32	11:44	—	11:54	12:07
B 11:10	11:24	11:30	11:42	11:54	11:59	—	—
11:20	11:34	11:40	11:52	12:04	—	12:14	12:27
B 11:30	11:44	11:50	12:01	12:14	12:19	—	—
11:40	11:54	12:00	12:11	12:24	—	12:35	12:48
B 11:50	12:04	12:10	12:21	12:34	12:39	—	—
12:00	12:14	12:20	12:31	12:44	—	12:55	13:08
B 12:10	12:24	12:30	12:41	12:54	12:59	—	—
12:20	12:34	12:40	12:51	13:04	—	13:15	13:28
B 12:30	12:44	12:50	13:01	13:14	13:19	—	—
12:40	12:54	13:00	13:11	13:24	—	13:35	13:48
B 12:50	13:04	13:10	13:21	13:34	13:39	—	—
13:00	13:14	13:20	13:31	13:44	—	13:55	14:08
B 13:10	13:24	13:30	13:41	13:54	13:59	—	—
13:20	13:34	13:40	13:51	14:04	—	14:15	14:28

B To Pickering Town Centre

Weekday — West

Bond Westbound @ Ritson **Stop #1163**	Dundas Westbound @ Thickson **Stop #388**	Dundas Westbound @ Brock Street **Stop #398**	Kingston Westbound @ Salem **Stop #1591**	Kingston Westbound @ Brock Road **Stop #1604**	Pickering Town Centre **Stop #1909**	Kingston Westbound @ Whites **Stop #1742**	Centennial Circle **Stop #3589**
B 13:30	13:44	13:50	14:01	14:14	14:19	—	—
13:40	13:54	14:00	14:11	14:24	—	14:35	14:48
B 13:50	14:04	14:10	14:21	14:34	14:39	—	—
14:00	14:14	14:20	14:31	14:44	—	14:55	15:08
B 14:10	14:24	14:30	14:41	14:54	14:59	—	—
14:20	14:34	14:40	14:51	15:04	—	15:15	15:28
B 14:30	14:44	14:50	15:01	15:14	15:19	—	—
14:40	14:54	15:00	15:11	15:24	—	15:35	15:48
B 14:50	15:04	15:10	15:21	15:34	15:39	—	—
15:00	15:14	15:20	15:31	15:44	—	15:55	16:08
B 15:10	15:24	15:30	15:41	15:54	15:59	—	—
15:20	15:34	15:40	15:51	16:04	—	16:15	16:28
B 15:30	15:44	15:50	16:01	16:14	16:19	—	—
15:40	15:54	16:00	16:11	16:24	—	16:35	16:48
B 15:50	16:04	16:10	16:22	16:35	16:40	—	—
16:00	16:14	16:20	16:32	16:45	—	16:56	17:09
B 16:10	16:24	16:30	16:42	16:55	17:00	—	—
16:20	16:34	16:40	16:52	17:05	—	17:16	17:29
B 16:30	16:44	16:50	17:02	17:15	17:20	—	—
16:40	16:54	17:00	17:12	17:25	—	17:36	17:49
B 16:50	17:04	17:10	17:22	17:35	17:40	—	—
17:00	17:14	17:20	17:32	17:45	—	17:56	18:09
B 17:10	17:24	17:30	17:42	17:55	18:00	—	—
17:20	17:34	17:40	17:52	18:05	—	18:16	18:29
B 17:30	17:44	17:50	18:02	18:15	18:20	—	—
17:40	17:54	18:00	18:12	18:25	—	18:36	18:49
B 17:50	18:04	18:09	18:21	18:33	18:38	—	—
18:00	18:14	18:19	18:31	18:43	—	18:53	19:06
B 18:10	18:24	18:29	18:41	18:53	18:58	—	—
18:20	18:34	18:39	18:51	19:03	—	19:13	19:26
B 18:30	18:44	18:49	19:01	19:13	19:18	—	—
18:40	18:54	18:59	19:11	19:23	—	19:33	19:46
B 18:50	19:04	19:09	19:21	19:33	19:38	—	—
19:05	19:19	19:24	19:36	19:48	—	19:58	20:11
B 19:15	19:29	19:34	19:46	19:58	20:03	—	—
B 19:25	19:39	19:44	19:56	20:08	20:13	—	—
19:35	19:49	19:54	20:06	20:18	—	20:28	20:41
B 19:50	20:04	20:09	20:21	20:33	20:38	—	—
20:05	20:19	20:24	20:36	20:48	—	20:58	21:11
B 20:20	20:34	20:39	20:51	21:03	21:08	—	—
20:35	20:49	20:54	21:06	21:18	—	21:28	21:41
21:05	21:19	21:24	21:36	21:48	—	21:58	22:11
21:35	21:49	21:54	22:06	22:18	—	22:28	22:41
22:05	22:18	22:23	22:33	22:45	—	22:55	23:07
22:35	22:48	22:53	23:03	23:15	—	23:25	23:37
23:05	23:16	23:21	23:31	23:43	—	23:53	0:05
23:35	23:46	23:51	0:01	0:13	—	0:23	0:35

B To Pickering Town Centre

900 PULSE - Highway 2

Effective September 7, 2021

Web **durhamregiontransit.com**
Phone **1-866-247-0055**

Saturday — West

Bond Westbound @ Ritson **Stop #1163**	Dundas Westbound @ Thickson **Stop #388**	Dundas Westbound @ Brock Street **Stop #398**	Kingston Westbound @ Salem **Stop #1591**	Kingston Westbound @ Brock Road **Stop #1604**	Pickering Town Centre **Stop #1909**	Kingston Westbound @ Whites **Stop #1742**	Centennial Circle **Stop #3589**
5:20	5:32	5:36	5:47	5:56	—	6:03	6:15
5:50	6:02	6:06	6:17	6:26	—	6:33	6:45
6:20	6:32	6:36	6:47	6:56	—	7:03	7:15
B 6:35	6:47	6:51	7:02	7:11	7:15	—	—
6:50	7:02	7:06	7:17	7:26	—	7:33	7:45
B 7:05	7:17	7:21	7:32	7:41	7:45	—	—
7:20	7:32	7:36	7:47	7:56	—	8:03	8:15
B 7:35	7:47	7:51	8:02	8:11	8:15	—	—
7:50	8:03	8:08	8:19	8:30	—	8:38	8:50
B 8:05	8:18	8:23	8:34	8:45	8:49	—	—
8:20	8:33	8:38	8:49	9:00	—	9:08	9:20
B 8:35	8:48	8:53	9:04	9:15	9:19	—	—
8:50	9:03	9:08	9:19	9:30	—	9:38	9:50
B 9:05	9:18	9:23	9:34	9:45	9:49	—	—
9:20	9:33	9:38	9:49	10:00	—	10:08	10:20
B 9:35	9:48	9:53	10:04	10:15	10:19	—	—
9:50	10:04	10:10	10:22	10:35	—	10:46	10:58
B 10:05	10:19	10:25	10:37	10:50	10:55	—	—
10:20	10:34	10:40	10:52	11:05	—	11:16	11:28
B 10:35	10:49	10:55	11:07	11:20	11:25	—	—
10:50	11:04	11:10	11:22	11:35	—	11:46	11:58
B 11:05	11:19	11:25	11:37	11:50	11:55	—	—
11:20	11:34	11:40	11:52	12:05	—	12:16	12:28
B 11:35	11:49	11:55	12:07	12:20	12:25	—	—
11:50	12:04	12:10	12:22	12:35	—	12:46	12:58
B 12:05	12:19	12:25	12:37	12:50	12:55	—	—
12:20	12:34	12:40	12:52	13:05	—	13:16	13:28
B 12:35	12:49	12:55	13:07	13:20	13:25	—	—
12:50	13:04	13:10	13:22	13:35	—	13:46	13:58
B 13:05	13:19	13:25	13:37	13:50	13:55	—	—
13:20	13:34	13:40	13:52	14:05	—	14:16	14:28
B 13:35	13:49	13:55	14:07	14:20	14:25	—	—
13:50	14:04	14:10	14:22	14:35	—	14:46	14:58
B 14:05	14:19	14:25	14:37	14:50	14:55	—	—
14:20	14:34	14:40	14:52	15:05	—	15:16	15:28
B 14:35	14:49	14:55	15:07	15:20	15:25	—	—
14:50	15:04	15:10	15:22	15:35	—	15:46	15:58
B 15:05	15:19	15:25	15:37	15:50	15:55	—	—
15:20	15:34	15:40	15:52	16:05	—	16:16	16:28
B 15:35	15:49	15:55	16:07	16:20	16:25	—	—
15:50	16:04	16:09	16:21	16:33	—	16:43	16:55
B 16:05	16:19	16:24	16:36	16:48	16:53	—	—
16:20	16:34	16:39	16:51	17:03	—	17:13	17:25
B 16:35	16:49	16:54	17:06	17:18	17:23	—	—
16:50	17:04	17:09	17:21	17:33	—	17:43	17:55
B 17:05	17:19	17:24	17:36	17:48	17:53	—	—
17:20	17:34	17:39	17:51	18:03	—	18:13	18:25

B To Pickering Town Centre

Saturday — West

Bond Westbound @ Ritson **Stop #1163**	Dundas Westbound @ Thickson **Stop #388**	Dundas Westbound @ Brock Street **Stop #398**	Kingston Westbound @ Salem **Stop #1591**	Kingston Westbound @ Brock Road **Stop #1604**	Pickering Town Centre **Stop #1909**	Kingston Westbound @ Whites **Stop #1742**	Centennial Circle **Stop #3589**
B 17:35	17:49	17:54	18:06	18:18	18:23	—	—
17:50	18:04	18:09	18:21	18:33	—	18:43	18:55
B 18:05	18:19	18:24	18:36	18:48	18:53	—	—
18:20	18:32	18:37	18:47	18:58	—	19:07	19:18
B 18:35	18:47	18:52	19:02	19:13	19:17	—	—
18:50	19:02	19:07	19:17	19:28	—	19:37	19:48
B 19:05	19:17	19:22	19:32	19:43	19:47	—	—
19:20	19:32	19:37	19:47	19:58	—	20:07	20:18
B 19:35	19:47	19:52	20:02	20:13	20:17	—	—
19:50	20:02	20:07	20:17	20:28	—	20:37	20:48
B 20:05	20:17	20:22	20:32	20:43	20:47	—	—
20:20	20:32	20:37	20:47	20:58	—	21:07	21:18
B 20:35	20:47	20:52	21:02	21:13	21:17	—	—
20:50	21:02	21:07	21:17	21:28	—	21:37	21:48
21:20	21:32	21:37	21:47	21:58	—	22:07	22:18
21:50	22:02	22:07	22:17	22:28	—	22:37	22:48
22:20	22:31	22:36	22:45	22:53	—	23:00	23:11
22:50	23:01	23:06	23:15	23:23	—	23:30	23:41
23:20	23:30	23:35	23:44	23:52	—	23:58	0:09
23:50	0:00	0:05	0:14	0:22	—	0:28	0:39

B To Pickering Town Centre

Saturday — East

Centennial Circle **Stop #3589**	Kingston Eastbound @ Whites **Stop #1779**	Kingston Eastbound @ Glenanna **Stop #1786**	Kingston Eastbound @ Westney **Stop #2236**	Kingston Eastbound @ Salem **Stop #93254**	Dundas Eastbound @ Brock Street **Stop #425**	Dundas Eastbound @ Thickson **Stop #451**	Ritson Northbound @ Richmond **Stop #3118**
4:45	4:59	5:05	5:12	5:16	5:27	5:32	5:43
5:20	5:34	5:40	5:47	5:51	6:02	6:07	6:18
5:55	6:09	6:15	6:22	6:26	6:37	6:42	6:53
—	—	6:35	6:42	6:46	6:57	7:02	7:13
6:30	6:44	6:50	6:57	7:01	7:12	7:17	7:28
—	—	7:05	7:12	7:16	7:27	7:32	7:43
7:00	7:14	7:20	7:27	7:31	7:42	7:47	7:58
—	—	7:35	7:42	7:46	7:57	8:02	8:13
7:30	7:44	7:50	7:57	8:01	8:12	8:17	8:28
—	—	8:05	8:12	8:16	8:27	8:32	8:43
8:00	8:14	8:20	8:27	8:31	8:42	8:47	8:58
—	—	8:35	8:42	8:46	8:57	9:02	9:13
8:30	8:44	8:50	8:57	9:01	9:12	9:17	9:28
—	—	9:07	9:15	9:21	9:32	9:38	9:50
9:00	9:15	9:22	9:30	9:36	9:47	9:53	10:05
—	—	9:37	9:45	9:51	10:02	10:08	10:20
9:30	9:45	9:52	10:00	10:06	10:17	10:23	10:35
—	—	10:07	10:15	10:21	10:32	10:38	10:50
10:00	10:15	10:22	10:30	10:36	10:47	10:53	11:05
—	—	10:37	10:45	10:51	11:02	11:08	11:20
10:30	10:45	10:52	11:00	11:06	11:17	11:23	11:35
—	—	11:07	11:15	11:21	11:32	11:38	11:50
11:00	11:15	11:22	11:30	11:36	11:47	11:53	12:05
—	—	11:37	11:45	11:51	12:02	12:08	12:20
11:30	11:45	11:52	12:00	12:06	12:17	12:23	12:35
—	—	12:07	12:15	12:21	12:32	12:38	12:50
12:00	12:15	12:22	12:30	12:36	12:47	12:53	13:05
—	—	12:39	12:47	12:53	13:04	13:11	13:25
12:30	12:46	12:54	13:02	13:08	13:19	13:26	13:40
—	—	13:09	13:17	13:23	13:34	13:41	13:55
13:00	13:16	13:24	13:32	13:38	13:49	13:56	14:10
—	—	13:39	13:47	13:53	14:04	14:11	14:25
13:30	13:46	13:54	14:02	14:08	14:19	14:26	14:40
—	—	14:09	14:17	14:23	14:34	14:41	14:55
14:00	14:16	14:24	14:32	14:38	14:49	14:56	15:10
—	—	14:39	14:47	14:53	15:04	15:11	15:25
14:30	14:46	14:54	15:02	15:08	15:19	15:26	15:40
—	—	15:09	15:17	15:23	15:34	15:41	15:55
15:00	15:16	15:24	15:32	15:38	15:49	15:56	16:10
—	—	15:39	15:47	15:53	16:04	16:11	16:25
15:30	15:46	15:54	16:02	16:08	16:19	16:26	16:40
—	—	16:09	16:17	16:23	16:34	16:41	16:55
16:00	16:16	16:24	16:32	16:38	16:49	16:56	17:10
—	—	16:39	16:47	16:53	17:04	17:11	17:25
16:30	16:46	16:54	17:02	17:08	17:19	17:26	17:40
—	—	17:07	17:15	17:21	17:31	17:37	17:49
17:00	17:15	17:22	17:30	17:36	17:46	17:52	18:04

Saturday — East

Centennial Circle **Stop #3589**	Kingston Eastbound @ Whites **Stop #1779**	Kingston Eastbound @ Glenanna **Stop #1786**	Kingston Eastbound @ Westney **Stop #2236**	Kingston Eastbound @ Salem **Stop #93254**	Dundas Eastbound @ Brock Street **Stop #425**	Dundas Eastbound @ Thickson **Stop #451**	Ritson Northbound @ Richmond **Stop #3118**
—	—	17:37	17:45	17:51	18:01	18:07	18:19
17:30	17:45	17:52	18:00	18:06	18:16	18:22	18:34
—	—	18:07	18:15	18:21	18:31	18:37	18:49
18:00	18:15	18:22	18:30	18:36	18:46	18:52	19:04
—	—	18:37	18:45	18:51	19:01	19:07	19:19
18:30	18:45	18:52	19:00	19:06	19:16	19:22	19:34
—	—	19:05	19:12	19:17	19:26	19:31	19:43
19:00	19:14	19:20	19:27	19:32	19:41	19:46	19:58
—	—	19:35	19:42	19:47	19:56	20:01	20:13
19:30	19:44	19:50	19:57	20:02	20:11	20:16	20:28
—	—	20:05	20:12	20:17	20:26	20:31	20:43
20:00	20:14	20:20	20:27	20:32	20:41	20:46	20:58
—	—	20:35	20:42	20:47	20:56	21:01	21:13
20:30	20:44	20:50	20:57	21:02	21:11	21:16	21:28
21:00	21:14	21:20	21:27	21:32	21:41	21:46	21:58
21:30	21:44	21:50	21:57	22:02	22:11	22:16	22:28
22:00	22:14	22:20	22:27	22:32	22:41	22:46	22:58
22:30	22:44	22:50	22:57	23:02	23:11	23:16	23:28
23:00	23:14	23:20	23:27	23:32	23:41	23:46	23:58
23:30	23:42	23:47	23:54	23:59	0:08	0:12	0:23

Sunday — West

Bond Westbound @ Ritson **Stop #1163**	Dundas Westbound @ Thickson **Stop #388**	Dundas Westbound @ Brock Street **Stop #398**	Kingston Westbound @ Salem **Stop #1591**	Kingston Westbound @ Brock Road **Stop #1604**	Pickering Town Centre **Stop #1909**	Kingston Westbound @ Whites **Stop #1742**	Centennial Circle **Stop #3589**
5:20	5:31	5:36	5:46	5:55	—	6:03	6:14
5:50	6:01	6:06	6:16	6:25	—	6:33	6:44
6:20	6:31	6:36	6:46	6:55	—	7:03	7:14
B 6:35	6:46	6:51	7:01	7:10	7:14	—	—
6:50	7:01	7:06	7:16	7:25	—	7:33	7:44
B 7:05	7:16	7:21	7:31	7:40	7:44	—	—
7:20	7:32	7:37	7:48	7:58	—	8:07	8:19
B 7:35	7:47	7:52	8:03	8:13	8:17	—	—
7:50	8:02	8:07	8:18	8:28	—	8:37	8:49
B 8:05	8:17	8:22	8:33	8:43	8:47	—	—
8:20	8:32	8:37	8:48	8:58	—	9:07	9:19
B 8:35	8:47	8:52	9:03	9:13	9:17	—	—
8:50	9:02	9:07	9:18	9:28	—	9:37	9:49
B 9:05	9:17	9:22	9:33	9:43	9:47	—	—
9:20	9:32	9:37	9:48	9:58	—	10:07	10:19
B 9:35	9:47	9:52	10:03	10:13	10:17	—	—
9:50	10:03	10:08	10:19	10:32	—	10:41	10:53
B 10:05	10:18	10:23	10:34	10:47	10:51	—	—
10:20	10:33	10:38	10:49	11:02	—	11:11	11:23
B 10:35	10:48	10:53	11:04	11:17	11:21	—	—
10:50	11:03	11:08	11:19	11:32	—	11:41	11:53
B 11:05	11:18	11:23	11:34	11:47	11:51	—	—
11:20	11:33	11:38	11:49	12:02	—	12:11	12:23
B 11:35	11:48	11:53	12:04	12:17	12:21	—	—
11:50	12:03	12:08	12:19	12:32	—	12:41	12:53
B 12:05	12:18	12:23	12:34	12:47	12:51	—	—
12:20	12:34	12:39	12:52	13:05	—	13:16	13:28
B 12:35	12:49	12:54	13:07	13:20	13:25	—	—
12:50	13:04	13:09	13:22	13:35	—	13:46	13:58
B 13:05	13:19	13:24	13:37	13:50	13:55	—	—
13:20	13:34	13:39	13:52	14:05	—	14:16	14:28
B 13:35	13:49	13:54	14:07	14:20	14:25	—	—
13:50	14:04	14:09	14:22	14:35	—	14:46	14:58
B 14:05	14:19	14:24	14:37	14:50	14:55	—	—
14:20	14:34	14:39	14:52	15:05	—	15:16	15:28
B 14:35	14:49	14:54	15:07	15:20	15:25	—	—
14:50	15:04	15:09	15:22	15:35	—	15:46	15:58
B 15:05	15:19	15:24	15:37	15:50	15:55	—	—
15:20	15:34	15:39	15:52	16:05	—	16:16	16:28
B 15:35	15:49	15:54	16:07	16:20	16:25	—	—
15:50	16:03	16:08	16:19	16:32	—	16:41	16:53
B 16:05	16:18	16:23	16:34	16:47	16:51	—	—
16:20	16:33	16:38	16:49	17:02	—	17:11	17:23
B 16:35	16:48	16:53	17:04	17:17	17:21	—	—
16:50	17:03	17:08	17:19	17:32	—	17:41	17:53
B 17:05	17:18	17:23	17:34	17:47	17:51	—	—
17:20	17:33	17:38	17:49	18:02	—	18:11	18:23

B To Pickering Town Centre

Sunday — West

Bond Westbound @ Ritson **Stop #1163**	Dundas Westbound @ Thickson **Stop #388**	Dundas Westbound @ Brock Street **Stop #398**	Kingston Westbound @ Salem **Stop #1591**	Kingston Westbound @ Brock Road **Stop #1604**	Pickering Town Centre **Stop #1909**	Kingston Westbound @ Whites **Stop #1742**	Centennial Circle **Stop #3589**
B 17:35	17:48	17:53	18:04	18:17	18:21	—	—
17:50	18:03	18:08	18:19	18:32	—	18:41	18:53
B 18:05	18:18	18:23	18:34	18:47	18:51	—	—
18:20	18:33	18:38	18:49	19:02	—	19:11	19:23
B 18:35	18:48	18:53	19:04	19:17	19:21	—	—
18:50	19:02	19:06	19:17	19:26	—	19:34	19:46
B 19:05	19:17	19:21	19:32	19:41	19:45	—	—
19:20	19:32	19:36	19:47	19:56	—	20:04	20:16
B 19:35	19:47	19:51	20:02	20:11	20:15	—	—
19:50	20:02	20:06	20:17	20:26	—	20:34	20:46
B 20:05	20:17	20:21	20:32	20:41	20:45	—	—
20:20	20:32	20:36	20:47	20:56	—	21:04	21:16
B 20:35	20:47	20:51	21:02	21:11	21:15	—	—
20:50	21:02	21:06	21:17	21:26	—	21:34	21:46
21:20	21:32	21:36	21:47	21:56	—	22:04	22:16
21:50	22:02	22:06	22:17	22:26	—	22:34	22:46
22:20	22:31	22:35	22:44	22:53	—	23:00	23:11
22:50	23:01	23:05	23:14	23:23	—	23:30	23:41
23:20	23:31	23:35	23:44	23:53	—	0:00	0:11
23:50	0:00	0:05	0:14	0:22	—	0:28	0:39

B To Pickering Town Centre

900 PULSE - Highway 2

Effective September 7, 2021

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Phone **1-866-247-0055**

Sunday — East

Centennial Circle **Stop #3589**	Kingston Eastbound @ Whites **Stop #1779**	Kingston Eastbound @ Glenanna **Stop #1786**	Kingston Eastbound @ Westney **Stop #2236**	Kingston Eastbound @ Salem **Stop #93254**	Dundas Eastbound @ Brock Street **Stop #425**	Dundas Eastbound @ Thickson **Stop #451**	Ritson Northbound @ Richmond **Stop #3118**
4:45	4:59	5:04	5:11	5:16	5:27	5:32	5:43
5:20	5:34	5:39	5:46	5:51	6:02	6:07	6:18
5:55	6:09	6:14	6:21	6:26	6:37	6:42	6:53
—	—	6:34	6:41	6:46	6:57	7:02	7:13
6:30	6:44	6:49	6:56	7:01	7:12	7:17	7:28
—	—	7:04	7:11	7:16	7:27	7:32	7:43
7:00	7:14	7:19	7:26	7:31	7:42	7:47	7:58
—	—	7:34	7:41	7:46	7:57	8:02	8:13
7:30	7:44	7:49	7:56	8:01	8:12	8:17	8:28
—	—	8:04	8:11	8:16	8:27	8:32	8:43
8:00	8:14	8:19	8:26	8:31	8:42	8:47	8:58
—	—	8:34	8:41	8:46	8:57	9:02	9:13
8:30	8:44	8:49	8:56	9:01	9:12	9:17	9:28
—	—	9:06	9:14	9:20	9:31	9:37	9:50
9:00	9:15	9:21	9:29	9:35	9:46	9:52	10:05
—	—	9:36	9:44	9:50	10:01	10:07	10:20
9:30	9:45	9:51	9:59	10:05	10:16	10:22	10:35
—	—	10:06	10:14	10:20	10:31	10:37	10:50
10:00	10:15	10:21	10:29	10:35	10:46	10:52	11:05
—	—	10:36	10:44	10:50	11:01	11:07	11:20
10:30	10:45	10:51	10:59	11:05	11:16	11:22	11:35
—	—	11:06	11:14	11:20	11:31	11:37	11:50
11:00	11:15	11:21	11:29	11:35	11:46	11:52	12:05
—	—	11:36	11:44	11:50	12:01	12:07	12:20
11:30	11:45	11:51	11:59	12:05	12:16	12:22	12:35
—	—	12:06	12:14	12:20	12:31	12:37	12:50
12:00	12:15	12:21	12:29	12:35	12:46	12:52	13:05
—	—	12:36	12:44	12:50	13:01	13:07	13:20
12:30	12:45	12:51	12:59	13:05	13:16	13:22	13:35
—	—	13:08	13:17	13:23	13:34	13:39	13:52
13:00	13:16	13:23	13:32	13:38	13:49	13:54	14:07
—	—	13:38	13:47	13:53	14:04	14:09	14:22
13:30	13:46	13:53	14:02	14:08	14:19	14:24	14:37
—	—	14:08	14:17	14:23	14:34	14:39	14:52
14:00	14:16	14:23	14:32	14:38	14:49	14:54	15:07
—	—	14:38	14:47	14:53	15:04	15:09	15:22
14:30	14:46	14:53	15:02	15:08	15:19	15:24	15:37
—	—	15:08	15:17	15:23	15:34	15:39	15:52
15:00	15:16	15:23	15:32	15:38	15:49	15:54	16:07
—	—	15:38	15:47	15:53	16:04	16:09	16:22
15:30	15:46	15:53	16:02	16:08	16:19	16:24	16:37
—	—	16:08	16:17	16:23	16:34	16:39	16:52
16:00	16:16	16:23	16:32	16:38	16:49	16:54	17:07
—	—	16:38	16:47	16:53	17:04	17:09	17:22
16:30	16:46	16:53	17:02	17:08	17:19	17:24	17:37
—	—	17:05	17:13	17:18	17:29	17:34	17:46
17:00	17:15	17:20	17:28	17:33	17:44	17:49	18:01

Sunday — East

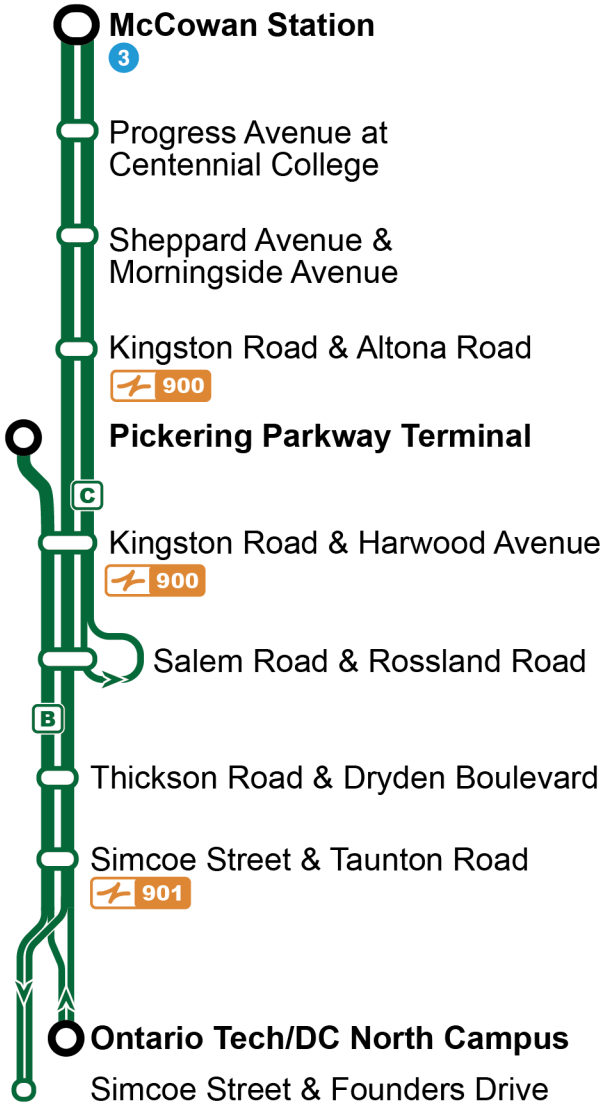
Centennial Circle **Stop #3589**	Kingston Eastbound @ Whites **Stop #1779**	Kingston Eastbound @ Glenanna **Stop #1786**	Kingston Eastbound @ Westney **Stop #2236**	Kingston Eastbound @ Salem **Stop #93254**	Dundas Eastbound @ Brock Street **Stop #425**	Dundas Eastbound @ Thickson **Stop #451**	Ritson Northbound @ Richmond **Stop #3118**
—	—	17:35	17:43	17:48	17:59	18:04	18:16
17:30	17:45	17:50	17:58	18:03	18:14	18:19	18:31
—	—	18:05	18:13	18:18	18:29	18:34	18:46
18:00	18:15	18:20	18:28	18:33	18:44	18:49	19:01
—	—	18:35	18:43	18:48	18:59	19:04	19:16
18:30	18:45	18:50	18:58	19:03	19:14	19:19	19:31
—	—	19:05	19:13	19:18	19:29	19:34	19:46
19:00	19:15	19:20	19:28	19:33	19:44	19:49	20:01
—	—	19:35	19:43	19:48	19:59	20:04	20:16
19:30	19:45	19:50	19:58	20:03	20:14	20:19	20:31
—	—	20:05	20:13	20:18	20:29	20:34	20:46
20:00	20:15	20:20	20:28	20:33	20:44	20:49	21:01
—	—	20:35	20:43	20:48	20:59	21:04	21:16
20:30	20:45	20:50	20:58	21:03	21:14	21:19	21:31
21:00	21:15	21:20	21:28	21:33	21:44	21:49	22:01
21:30	21:45	21:50	21:58	22:03	22:14	22:19	22:31
22:00	22:13	22:18	22:26	22:31	22:41	22:46	22:58
22:30	22:43	22:48	22:56	23:01	23:11	23:16	23:28
23:00	23:13	23:18	23:26	23:31	23:41	23:46	23:58
23:30	23:42	23:47	23:54	23:59	0:08	0:12	0:23

Dashes indicate the stop is not served by a trip. Trip notes are indicated by a letter or symbol and explained at the bottom of each timetable. Schedule times are shown in 24-hour clock. If you require this information in an accessible format, please contact Customer Service at 1-866-247-0055. See **durhamregiontransit.com** for more information.

Durham Region Transit

Route 920

Effective September 7, 2021



Weekday — West

Ontario Tech / Durham College North Campus **Stop #698**	Garrard Southbound @ Dryden **Stop #295**	Rossland Westbound @ Brock Street **Stop #465**	Southbound @ 964 Salem **Stop #93145**	Pickering Parkway Terminal **Stop #93112**	Kingston Westbound @ Glenanna **Stop #1608**	Kingston Westbound @ Sheppard **Stop #93240**	Progress Southbound @ Centennial College **Stop #93993**	McCowan Station **Stop #93998**
—	—	—	4:45	—	5:01	5:13	5:27	5:32
—	—	—	5:15	—	5:31	5:43	5:57	6:02
5:12	5:21	5:28	5:38	—	5:59	6:12	6:27	6:32
5:42	5:51	5:58	6:08	—	6:29	6:42	6:57	7:02
6:12	6:21	6:28	6:38	—	6:59	7:12	7:27	7:32
6:42	6:51	6:58	7:08	—	7:29	7:42	7:57	8:02
7:12	7:21	7:28	7:38	—	7:59	8:12	8:27	8:32
B 7:42	7:51	7:58	8:08	8:30	—	—	—	—
B 8:12	8:21	8:28	8:38	9:00	—	—	—	—
B 8:42	8:51	8:58	9:08	9:30	—	—	—	—
B 9:12	9:21	9:28	9:38	10:00	—	—	—	—
B 9:42	9:51	9:58	10:08	10:30	—	—	—	—
B 10:12	10:21	10:28	10:38	11:00	—	—	—	—
B 10:42	10:51	10:58	11:08	11:30	—	—	—	—
B 11:12	11:21	11:28	11:38	12:00	—	—	—	—
B 11:42	11:51	11:58	12:08	12:30	—	—	—	—
B 12:12	12:21	12:28	12:38	13:00	—	—	—	—
B 12:42	12:51	12:58	13:08	13:30	—	—	—	—
B 13:12	13:21	13:28	13:38	14:00	—	—	—	—
13:42	13:51	13:58	14:08	—	14:29	14:42	14:57	15:02
14:12	14:21	14:28	14:38	—	14:59	15:12	15:27	15:32
B* 14:27	* 14:36	* 14:43	* 14:53	* 15:15	—	—	—	—
14:42	14:51	14:58	15:08	—	15:29	15:42	15:57	16:02
B* 14:57	* 15:06	* 15:13	* 15:23	* 15:45	—	—	—	—
15:12	15:21	15:28	15:38	—	15:59	16:12	16:27	16:32
B* 15:27	* 15:36	* 15:43	* 15:53	* 16:15	—	—	—	—
15:42	15:51	15:58	16:08	—	16:29	16:42	16:57	17:02
B* 15:57	* 16:06	* 16:13	* 16:23	* 16:45	—	—	—	—
16:12	16:21	16:28	16:38	—	16:59	17:12	17:27	17:32
B* 16:27	* 16:36	* 16:43	* 16:53	* 17:15	—	—	—	—
16:42	16:51	16:58	17:08	—	17:29	17:42	17:57	18:02
B* 16:57	* 17:06	* 17:13	* 17:23	* 17:45	—	—	—	—
17:12	17:21	17:28	17:38	—	17:59	18:12	18:27	18:32
B* 17:27	* 17:36	* 17:43	* 17:53	* 18:15	—	—	—	—
17:42	17:51	17:58	18:08	—	18:29	18:42	18:57	19:02
B 17:57	18:06	18:13	18:23	18:45	—	—	—	—
B* 18:12	* 18:21	* 18:28	* 18:38	* 19:00	—	—	—	—
B 18:42	18:51	18:58	19:08	19:30	—	—	—	—
B 19:12	19:21	19:28	19:38	20:00	—	—	—	—
B 19:42	19:51	19:58	20:08	20:30	—	—	—	—
B 20:12	20:21	20:28	20:38	21:00	—	—	—	—
B 20:42	20:51	20:58	21:08	21:30	—	—	—	—
B 21:12	21:21	21:28	21:38	22:00	—	—	—	—
B 21:42	21:51	21:58	22:08	22:30	—	—	—	—
B 22:12	22:21	22:28	22:38	23:00	—	—	—	—

***** Trip does not operate Dec. 6, 2021-Jan. 2, 2022.
B To Pickering Parkway Terminal

Weekday								East
McCowan Station **Stop #93998**	Progress Northbound @ Centennial College **Stop #94007**	Kingston Eastbound @ Port Union **Stop #93227**	Pickering Parkway Terminal **Stop #93112**	Kingston Eastbound @ Glenanna **Stop #1786**	Salem Northbound @ Rossland **Stop #3043**	Rossland Eastbound @ Brock Street **Stop #476**	Garrard Northbound @ Dryden **Stop #93737**	Simcoe Northbound @ Founders **Stop #3608**
—	—	—	4:41	4:43	5:03	5:12	5:19	5:29
4:37	4:43	4:59	—	5:12	5:33	5:42	5:49	5:59
5:07	5:13	5:29	—	5:42	6:03	6:12	6:19	6:29
5:37	5:43	5:59	—	6:12	6:33	6:42	6:49	6:59
6:07	6:13	6:29	—	6:42	7:03	7:12	7:19	7:29
—	—	—	* 6:56	* 6:58	* 7:18	* 7:27	* 7:34	* 7:44
6:37	6:43	6:59	—	7:12	7:33	7:42	7:49	7:59
—	—	—	* 7:26	* 7:28	* 7:48	* 7:57	* 8:04	* 8:14
7:07	7:13	7:29	—	7:42	8:03	8:12	8:19	8:29
—	—	—	* 7:56	* 7:58	* 8:18	* 8:27	* 8:34	* 8:44
—	—	—	8:11	8:13	8:33	8:42	8:49	8:59
—	—	—	* 8:26	* 8:28	* 8:48	* 8:57	* 9:04	* 9:14
—	—	—	8:41	8:43	9:03	9:12	9:19	9:29
—	—	—	* 8:56	* 8:58	* 9:18	* 9:27	* 9:34	* 9:44
—	—	—	9:11	9:13	9:33	9:42	9:49	9:59
—	—	—	* 9:26	* 9:28	* 9:48	* 9:57	* 10:04	* 10:14
—	—	—	9:41	9:43	10:03	10:12	10:19	10:29
—	—	—	10:11	10:13	10:33	10:42	10:49	10:59
—	—	—	10:41	10:43	11:03	11:12	11:19	11:29
—	—	—	11:11	11:13	11:33	11:42	11:49	11:59
—	—	—	11:41	11:43	12:03	12:12	12:19	12:29
—	—	—	12:11	12:13	12:33	12:42	12:49	12:59
—	—	—	12:41	12:43	13:03	13:12	13:19	13:29
—	—	—	13:11	13:13	13:33	13:42	13:49	13:59
—	—	—	13:41	13:43	14:03	14:12	14:19	14:29
—	—	—	14:11	14:13	14:33	14:42	14:49	14:59
14:07	14:13	14:29	—	14:42	15:03	15:12	15:19	15:29
14:37	14:43	14:59	—	15:12	15:33	15:42	15:49	15:59
15:07	15:13	15:29	—	15:42	16:03	16:12	16:19	16:29
15:37	15:43	15:59	—	16:12	16:33	16:42	16:49	16:59
16:07	16:13	16:29	—	16:42	17:03	17:12	17:19	17:29
16:37	16:43	16:59	—	17:12	17:33	17:42	17:49	17:59
17:07	17:13	17:29	—	17:42	18:03	18:12	18:19	18:29
17:37	17:43	17:59	—	18:12	18:33	18:42	18:49	18:59
18:07	18:13	18:29	—	18:42	19:03	19:12	19:19	19:29
18:37	18:43	18:59	—	19:12	19:33	19:42	19:49	19:59
—	—	—	19:41	19:43	20:03	20:12	20:19	20:29
—	—	—	20:11	20:13	20:33	20:42	20:49	20:59
—	—	—	20:41	20:43	21:03	21:12	21:19	21:29
—	—	—	21:11	21:13	21:33	21:42	21:49	21:59

* Trip does not operate Dec. 6, 2021-Jan. 2, 2022.

Saturday — East

McCowan Station **Stop #93998**	Progress Northbound @ Centennial College **Stop #94007**	Kingston Eastbound @ Port Union **Stop #93227**	Kingston Eastbound @ Glenanna **Stop #1786**	Rossland Westbound @ Salem **Stop #2244**
C 4:45	4:51	5:07	5:20	5:42
C 5:15	5:21	5:37	5:50	6:12
C 5:45	5:51	6:07	6:20	6:42
C 6:15	6:21	6:37	6:50	7:12
C 16:20	16:26	16:42	16:55	17:17
C 16:50	16:56	17:12	17:25	17:47
C 17:20	17:26	17:42	17:55	18:17

C To Salem Road and Rossland Road

Saturday — West

Rossland Westbound @ Salem **Stop #2244**	Kingston Westbound @ Glenanna **Stop #1608**	Kingston Westbound @ Sheppard **Stop #93240**	Progress Southbound @ Centennial College **Stop #93993**	McCowan Station **Stop #93998**
*4:45	5:07	5:20	5:35	5:40
5:15	5:37	5:50	6:05	6:10
17:20	17:42	17:55	18:10	18:15
17:50	18:12	18:25	18:40	18:45
18:20	18:42	18:55	19:10	19:15

* Trip begins at Kingston Northbound @ Salem at 04:40

Sunday — East

McCowan Station **Stop #93998**	Progress Northbound @ Centennial College **Stop #94007**	Kingston Eastbound @ Port Union **Stop #93227**	Kingston Eastbound @ Glenanna **Stop #1786**	Rossland Westbound @ Salem **Stop #2244**
C 4:45	4:51	5:07	5:20	5:42
C 5:15	5:21	5:37	5:50	6:12
C 5:45	5:51	6:07	6:20	6:42
C 6:15	6:21	6:37	6:50	7:12
C 16:20	16:26	16:42	16:55	17:17
C 16:50	16:56	17:12	17:25	17:47
C 17:20	17:26	17:42	17:55	18:17

C To Salem Road and Rossland Road

Sunday — West

Rossland Westbound @ Salem **Stop #2244**	Kingston Westbound @ Glenanna **Stop #1608**	Kingston Westbound @ Sheppard **Stop #93240**	Progress Southbound @ Centennial College **Stop #93993**	McCowan Station **Stop #93998**
*4:45	5:07	5:20	5:35	5:40
5:15	5:37	5:50	6:05	6:10
17:20	17:42	17:55	18:10	18:15
17:50	18:12	18:25	18:40	18:45
18:20	18:42	18:55	19:10	19:15

* Trip begins at Kingston Northbound @ Salem at 04:40

moovit 920 bus time schedule & line map

920 Mccowan Station

View In Website Mode

The 920 bus line (Mccowan Station) has 4 routes. For regular weekdays, their operation hours are:
(1) Mccowan Station: 4:45 AM - 5:42 PM (2) Pickering Parkway Terminal: 7:42 AM - 10:12 PM (3) Salem & Rossland: 4:45 AM - 5:20 PM (4) Simcoe & Founders: 4:37 AM - 9:11 PM
Use the Moovit App to find the closest 920 bus station near you and find out when is the next 920 bus arriving.

Direction: Mccowan Station

77 stops

VIEW LINE SCHEDULE

Ontario Tech / Durham College North Campus

Simcoe Southbound @ Niagara (North Stop)
1806 Simcoe Street North, Oshawa

Simcoe Southbound @ Niagara (South Stop)
1704 Simcoe Street North, Oshawa

Simcoe Southbound @ Cayuga
1438 Simcoe Street North, Oshawa

Taunton Westbound @ Simcoe
14 Taunton Road West, Oshawa

Taunton Westbound @ Somerville
1349 Somerville Street, Oshawa

Taunton Westbound @ Patton
247 Taunton Road West, Oshawa

Westbound @ 418 Taunton
416 Taunton Road West, Whitby

Taunton Westbound @ Stevenson
Taunton Road West, Whitby

Taunton Westbound @ Keith Ross
670 Taunton Road West, Whitby

Garrard Southbound @ Griffen
3838 Garrard Road, Whitby

Garrard Southbound @ Shore
3540 Garrard Road, Whitby

Garrard Southbound @ Dryden
3440 Garrard Road, Whitby

Dryden Westbound @ Bakerville

920 bus Time Schedule

Mccowan Station Route Timetable:

Sunday	4:40 AM - 6:20 PM
Monday	4:45 AM - 5:42 PM
Tuesday	4:45 AM - 5:42 PM
Wednesday	4:45 AM - 5:42 PM
Thursday	4:45 AM - 5:42 PM
Friday	4:45 AM - 5:42 PM
Saturday	4:40 AM - 6:20 PM

920 bus Info

Direction: Mccowan Station
Stops: 77
Trip Duration: 80 min
Line Summary: Ontario Tech / Durham College North Campus, Simcoe Southbound @ Niagara (North Stop), Simcoe Southbound @ Niagara (South Stop), Simcoe Southbound @ Cayuga, Taunton Westbound @ Simcoe, Taunton Westbound @ Somerville, Taunton Westbound @ Patton, Westbound @ 418 Taunton, Taunton Westbound @ Stevenson, Taunton Westbound @ Keith Ross, Garrard Southbound @ Griffen, Garrard Southbound @ Shore, Garrard Southbound @ Dryden, Dryden Westbound @ Bakerville, Dryden Westbound @ Waller, Dryden Westbound @ Thickson, Thickson Southbound @ Winterberry, Rossland Westbound @ Doulton, Rossland Westbound @ Anderson, Rossland Westbound @ Bassett, Rossland Westbound @ Garden (Durham Region Headquarters), Rossland Westbound @ Civic Centre Drive, Rossland Westbound @ Brock Street, Rossland Westbound @ Harvest, Rossland Westbound @ Whitburn, Rossland Westbound @ Cochrane, Rossland Westbound @ Country Lane, Rossland Westbound @ Coronation, Rossland Westbound @ Mcquay, Rossland

3 Creekwood Crescent, Whitby

Dryden Westbound @ Waller
101 Waller Street, Whitby

Dryden Westbound @ Thickson
116 Waller Street, Whitby

Thickson Southbound @ Winterberry
190 Thickson Road North, Whitby

Rossland Westbound @ Doulton
26 Chatsworth Crescent, Whitby

Rossland Westbound @ Anderson
1300 Rossland Road East, Whitby

Rossland Westbound @ Bassett
710 Rossland Road East, Whitby

Rossland Westbound @ Garden (Durham Region Headquarters)
700 Rossland Road East, Whitby

Rossland Westbound @ Civic Centre Drive
656 Rossland Road East, Whitby

Rossland Westbound @ Brock Street
594 Rossland Road East, Whitby

Rossland Westbound @ Harvest
300 Rossland Road West, Whitby

Rossland Westbound @ Whitburn
11 Bancroft Crescent, Whitby

Rossland Westbound @ Cochrane
484 Rossland Road West, Whitby

Rossland Westbound @ Country Lane

Rossland Westbound @ Coronation
838 Rossland Road West, Whitby

Rossland Westbound @ Mcquay
899 Rossland Road West, Whitby

Rossland Westbound @ Des Newman

Rossland Westbound @ Lake Ridge
1260 Rossland Road West, Whitby

Rossland Westbound @ Audley
600 Rossland Road East, Ajax

Rossland Westbound @ Hilton
531 Rossland Road East, Ajax

Rossland Westbound @ Rushworth
Rossland Road East, Ajax

Southbound @ 964 Salem

Westbound @ Des Newman, Rossland Westbound @ Lake Ridge, Rossland Westbound @ Audley, Rossland Westbound @ Hilton, Rossland Westbound @ Rushworth, Southbound @ 964 Salem, Salem Southbound @ Kerrison, Salem Southbound @ Ringer, Salem Southbound @ Kingston, Kingston Westbound @ Salem, Westbound @ 84 Kingston, Kingston Westbound @ Harwood, Westbound @ 132 Kingston, Kingston Westbound @ Chapman, Kingston Westbound @ Westney Heights Plaza, Kingston Rd. @ Westney Rd., Kingston Westbound @ Mill, Kingston Westbound @ Church, Kingston Westbound @ Elizabeth, Kingston Westbound @ Notion, Kingston Westbound @ Bainbridge, Kingston Westbound @ Brock Road, Kingston Westbound @ Valley Farm, Kingston Westbound @ Glenanna, Kingston Westbound @ Liverpool, Kingston Westbound @ Walnut, Kingston Westbound @ Dixie, Kingston Westbound @ Fairport, Westbound @ 804 Kingston, Kingston Westbound @ Delta, Kingston Westbound @ Whites, Kingston Westbound @ Steeple Hill, Kingston Westbound @ Rosebank, Kingston Westbound @ Rougemount, Kingston Westbound @ Altona, Kingston Westbound @ Sheppard, Meadowvale Road 1365, Sheppard Avenue East 7598, Brenyon Way 1099, Sheppard Avenue East 1147, Sheppard Avenue East 1122, Progress Avenue 1149, Progress Avenue 901, Progress Avenue 1132, Progress Avenue 1075, Progress Westbound @ Corporate Drive, Grangeway Avenue 175, Mccowan Road 1148



Salem Southbound @ Kerrison

Salem Southbound @ Ringer

Salem Southbound @ Kingston
184 Kingston Road East, Ajax

Kingston Westbound @ Salem
168 Kingston Road East, Ajax

Westbound @ 84 Kingston
46 Gilmour Drive, Ajax

Kingston Westbound @ Harwood
10 Kingston Road West, Ajax

Westbound @ 132 Kingston
28 Arnold Estate Lane, Ajax

Kingston Westbound @ Chapman
300 Kingston Road West, Ajax

Kingston Westbound @ Westney Heights Plaza
354 Kingston Road West, Ajax

Kingston Rd. @ Westney Rd.
364 Kingston Road West, Ajax

Kingston Westbound @ Mill
446 Kingston Road West, Ajax

Kingston Westbound @ Church
Church Street North, Ajax

Kingston Westbound @ Elizabeth
714 Kingston Road West, Pickering

Kingston Westbound @ Notion
768 Kingston Road West, Pickering

Kingston Westbound @ Bainbridge
Kingston Road, Pickering

Kingston Westbound @ Brock Road
1668 Kingston Road, Pickering

Kingston Westbound @ Valley Farm
1440 Kingston Road, Pickering

Kingston Westbound @ Glenanna
1376 Kingston Road, Pickering

Kingston Westbound @ Liverpool
1273 Kingston Road, Pickering

Kingston Westbound @ Walnut
1154 Kingston Road, Pickering

Kingston Westbound @ Dixie
1108 Kingston Road, Pickering

Kingston Westbound @ Fairport
900 Kingston Road, Pickering

Westbound @ 804 Kingston
794 Kingston Road, Pickering

Kingston Westbound @ Delta
736 Kingston Road, Pickering

Kingston Westbound @ Whites
698 Kingston Road, Pickering

Kingston Westbound @ Steeple Hill
646 Kingston Road, Pickering

Kingston Westbound @ Rosebank
510 Kingston Road, Pickering

Kingston Westbound @ Rougemount
370 Kingston Road, Pickering

Kingston Westbound @ Altona
Kingston Road, Pickering

Kingston Westbound @ Sheppard
80 Nature Ptwy, Toronto

Meadowvale Road 1365
9940 Sheppard Avenue East, Toronto

Sheppard Avenue East 7598
7600 Sheppard Ave E, Toronto

Brenyon Way 1099
47 Winstanly Cres, Toronto

Sheppard Avenue East 1147
6705 Sheppard Avenue East, Toronto

Sheppard Avenue East 1122
49 Lapsley Road, Toronto

Progress Avenue 1149
1088 Progress Ave, Toronto

Progress Avenue 901
1051 Progress Avenue, Toronto

Progress Avenue 1132
930 Progress Avenue, Toronto

Progress Avenue 1075
900 Progress Avenue, Toronto

Progress Westbound @ Corporate Drive
740 Progress Avenue, Toronto

Grangeway Avenue 175
Grangeway Avenue, Toronto

Mccowan Road 1148
1275 McCowan Road, Toronto

Direction: Pickering Parkway Terminal

54 stops

VIEW LINE SCHEDULE

Ontario Tech / Durham College North Campus

Simcoe Southbound @ Niagara (North Stop)
1806 Simcoe Street North, Oshawa

Simcoe Southbound @ Niagara (South Stop)
1704 Simcoe Street North, Oshawa

Simcoe Southbound @ Cayuga
1438 Simcoe Street North, Oshawa

Taunton Westbound @ Simcoe
14 Taunton Road West, Oshawa

Taunton Westbound @ Somerville
1349 Somerville Street, Oshawa

Taunton Westbound @ Patton
247 Taunton Road West, Oshawa

Westbound @ 418 Taunton
416 Taunton Road West, Whitby

Taunton Westbound @ Stevenson
Taunton Road West, Whitby

Taunton Westbound @ Keith Ross
670 Taunton Road West, Whitby

Garrard Southbound @ Griffen
3838 Garrard Road, Whitby

Garrard Southbound @ Shore
3540 Garrard Road, Whitby

Garrard Southbound @ Dryden
3440 Garrard Road, Whitby

Dryden Westbound @ Bakerville
3 Creekwood Crescent, Whitby

Dryden Westbound @ Waller
101 Waller Street, Whitby

Dryden Westbound @ Thickson
116 Waller Street, Whitby

Thickson Southbound @ Winterberry
190 Thickson Road North, Whitby

Rossland Westbound @ Doulton
26 Chatsworth Crescent, Whitby

Rossland Westbound @ Anderson

920 bus Time Schedule

Pickering Parkway Terminal Route Timetable:

Sunday	Not Operational
Monday	7:42 AM - 10:12 PM
Tuesday	7:42 AM - 10:12 PM
Wednesday	7:42 AM - 10:12 PM
Thursday	7:42 AM - 10:12 PM
Friday	7:42 AM - 10:12 PM
Saturday	Not Operational

920 bus Info

Direction: Pickering Parkway Terminal
Stops: 54
Trip Duration: 48 min
Line Summary: Ontario Tech / Durham College North Campus, Simcoe Southbound @ Niagara (North Stop), Simcoe Southbound @ Niagara (South Stop), Simcoe Southbound @ Cayuga, Taunton Westbound @ Simcoe, Taunton Westbound @ Somerville, Taunton Westbound @ Patton, Westbound @ 418 Taunton, Taunton Westbound @ Stevenson, Taunton Westbound @ Keith Ross, Garrard Southbound @ Griffen, Garrard Southbound @ Shore, Garrard Southbound @ Dryden, Dryden Westbound @ Bakerville, Dryden Westbound @ Waller, Dryden Westbound @ Thickson, Thickson Southbound @ Winterberry, Rossland Westbound @ Doulton, Rossland Westbound @ Anderson, Rossland Westbound @ Bassett, Rossland Westbound @ Garden (Durham Region Headquarters), Rossland Westbound @ Civic Centre Drive, Rossland Westbound @ Brock Street, Rossland Westbound @ Harvest, Rossland Westbound @ Whitburn, Rossland Westbound @ Cochrane, Rossland Westbound @ Country Lane, Rossland Westbound @ Coronation, Rossland Westbound @ Mcquay, Rossland Westbound @ Des Newman, Rossland Westbound @ Lake Ridge, Rossland Westbound @ Audley, Rossland Westbound @ Hilton, Rossland Westbound @ Rushworth, Southbound @ 964 Salem, Salem Southbound @ Kerrison, Salem Southbound @ Ringer, Salem Southbound @ Kingston, Kingston Westbound @ Salem, Westbound @ 84 Kingston, Kingston Westbound @ Harwood, Westbound @ 132 Kingston, Kingston Westbound @ Chapman, Kingston Westbound @ Westney Heights Plaza, Kingston Rd. @ Westney Rd., Kingston Westbound @ Mill, Kingston Westbound @ Church, Kingston Westbound @ Elizabeth, Kingston Westbound @ Notion, Kingston Westbound @ Bainbridge, Kingston Westbound @ Brock Road, Kingston Westbound @

1300 Rossland Road East, Whitby

Rossland Westbound @ Bassett
710 Rossland Road East, Whitby

Rossland Westbound @ Garden (Durham Region Headquarters)
700 Rossland Road East, Whitby

Rossland Westbound @ Civic Centre Drive
656 Rossland Road East, Whitby

Rossland Westbound @ Brock Street
594 Rossland Road East, Whitby

Rossland Westbound @ Harvest
300 Rossland Road West, Whitby

Rossland Westbound @ Whitburn
11 Bancroft Crescent, Whitby

Rossland Westbound @ Cochrane
484 Rossland Road West, Whitby

Rossland Westbound @ Country Lane

Rossland Westbound @ Coronation
838 Rossland Road West, Whitby

Rossland Westbound @ Mcquay
899 Rossland Road West, Whitby

Rossland Westbound @ Des Newman

Rossland Westbound @ Lake Ridge
1260 Rossland Road West, Whitby

Rossland Westbound @ Audley
600 Rossland Road East, Ajax

Rossland Westbound @ Hilton
531 Rossland Road East, Ajax

Rossland Westbound @ Rushworth
Rossland Road East, Ajax

Southbound @ 964 Salem

Salem Southbound @ Kerrison

Salem Southbound @ Ringer

Salem Southbound @ Kingston
184 Kingston Road East, Ajax

Kingston Westbound @ Salem
168 Kingston Road East, Ajax

Westbound @ 84 Kingston
46 Gilmour Drive, Ajax

Kingston Westbound @ Harwood

Valley Farm, Glenanna Southbound @ the Esplanade (South Side Stop), Pickering Parkway Terminal



10 Kingston Road West, Ajax

Westbound @ 132 Kingston
28 Arnold Estate Lane, Ajax

Kingston Westbound @ Chapman
300 Kingston Road West, Ajax

Kingston Westbound @ Westney Heights Plaza
354 Kingston Road West, Ajax

Kingston Rd. @ Westney Rd.
364 Kingston Road West, Ajax

Kingston Westbound @ Mill
446 Kingston Road West, Ajax

Kingston Westbound @ Church
Church Street North, Ajax

Kingston Westbound @ Elizabeth
714 Kingston Road West, Pickering

Kingston Westbound @ Notion
768 Kingston Road West, Pickering

Kingston Westbound @ Bainbridge
Kingston Road, Pickering

Kingston Westbound @ Brock Road
1668 Kingston Road, Pickering

Kingston Westbound @ Valley Farm
1440 Kingston Road, Pickering

Glenanna Southbound @ the Esplanade (South Side Stop)
1 The Esplanade North, Pickering

Pickering Parkway Terminal
1305 Pickering Parkway, Pickering

Direction: Salem & Rossland

42 stops

VIEW LINE SCHEDULE

Mccowan Road 1148
1275 McCowan Road, Toronto

Mccowan Rd at Progress Ave North Side
McCowan Road, Toronto

Progress Eastbound @ Bellamy
801 Progress Avenue, Toronto

Progress Avenue 922
921 Progress Avenue, Toronto

Progress Avenue 1132
931 Progress Avenue, Toronto

Milner Avenue 1132
Progress Avenue, Toronto

Progress Avenue 1149
5183 Sheppard Avenue East, Toronto

Sheppard Avenue East 1131
Sheppard Avenue East, Toronto

Neilson Road 1740
71X McClure Cres, Toronto

120 Murison Boulevard 20
120 Murison Boulevard, Toronto

Morningside Avenue 1176
7601 Sheppard Avenue East, Toronto

Sheppard Avenue East 1081
28 Lionhead Trl, Toronto

Kingston Eastbound @ Port Union
7331 Kingston Road, Toronto

Kingston Eastbound @ Altona
Kingston Road, Pickering

Kingston Rd. @ Rougemount Dr.
357 Kingston Rd, Pickering

Kingston Eastbound @ Rosebank
499 Kingston Road, Pickering

Kingston Eastbound @ Steeple Hill
645 Kingston Road, Pickering

Kingston Eastbound @ Whites
711 Kingston Road, Pickering

920 bus Time Schedule

Salem & Rossland Route Timetable:

Sunday	4:45 AM - 5:20 PM
Monday	Not Operational
Tuesday	Not Operational
Wednesday	Not Operational
Thursday	Not Operational
Friday	Not Operational
Saturday	4:45 AM - 5:20 PM

920 bus Info

Direction: Salem & Rossland
Stops: 42
Trip Duration: 57 min
Line Summary: Mccowan Road 1148, Mccowan Rd at Progress Ave North Side, Progress Eastbound @ Bellamy, Progress Avenue 922, Progress Avenue 1132, Milner Avenue 1132, Progress Avenue 1149, Sheppard Avenue East 1131, Neilson Road 1740, 120 Murison Boulevard 20, Morningside Avenue 1176, Sheppard Avenue East 1081, Kingston Eastbound @ Port Union, Kingston Eastbound @ Altona, Kingston Rd. @ Rougemount Dr., Kingston Eastbound @ Rosebank, Kingston Eastbound @ Steeple Hill, Kingston Eastbound @ Whites, Eastbound @ 817 Kingston, Kingston Eastbound @ Fairport, Kingston Eastbound @ Dixie, Kingston Rd. @ Walnut Ln., Kingston Eastbound @ Liverpool, Kingston Eastbound @ Glenanna, Kingston Eastbound @ Valley Farm, Kingston Eastbound @ Brock Road, Kingston Eastbound @ Bainbridge, Kingston Eastbound @ Notion, Kingston Eastbound @ Elizabeth, Eastbound @ 625 Kingston, Kingston Eastbound @ Mill, Kingston Eastbound @ Westney, Kingston Eastbound @ Ritchie, Eastbound @ 113 Kingston, Kingston Eastbound @ Harwood, Eastbound @ 69 Kingston, Salem Northbound @ Kingston, Salem Northbound @ Ringer, Salem Northbound @ Kerrison, Northbound @ 967 Salem, Salem Northbound @ Rossland, Rossland Westbound @ Salem

Eastbound @ 817 Kingston
819 Kingston Road, Pickering

Kingston Eastbound @ Fairport
897 Kingston Road, Pickering

Kingston Eastbound @ Dixie
1099 Kingston Road, Pickering

Kingston Rd. @ Walnut Ln.
1155 Kingston Road, Pickering

Kingston Eastbound @ Liverpool
1355 Kingston Road, Pickering

Kingston Eastbound @ Glenanna
1431 Kingston Road, Pickering

Kingston Eastbound @ Valley Farm
1511 Kingston Road, Pickering

Kingston Eastbound @ Brock Road
1754 Kingston Road, Pickering

Kingston Eastbound @ Bainbridge
1778 Bainbridge Dr, Pickering

Kingston Eastbound @ Notion
775 Kingston Road West, Pickering

Kingston Eastbound @ Elizabeth
703 Kingston Road West, Ajax

Eastbound @ 625 Kingston
601 Kingston Road West, Ajax

Kingston Eastbound @ Mill
441 Kingston Road West, Ajax

Kingston Eastbound @ Westney
Kingston Road West, Ajax

Kingston Eastbound @ Ritchie
301 Kingston Road West, Ajax

Eastbound @ 113 Kingston
51 Chalmers Crescent, Ajax

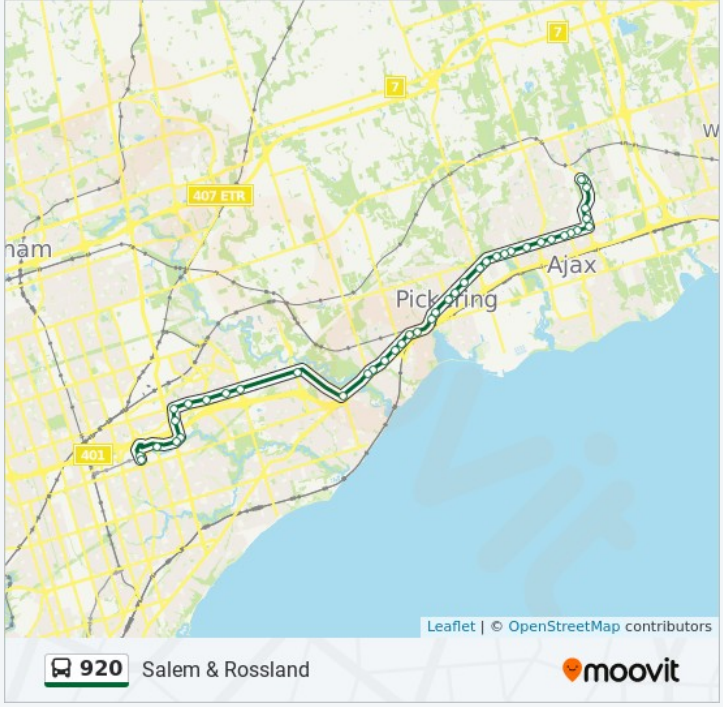
Kingston Eastbound @ Harwood
1 Harwood Avenue South, Ajax

Eastbound @ 69 Kingston
71 Kingston Road East, Ajax

Salem Northbound @ Kingston
186 Kingston Road East, Ajax

Salem Northbound @ Ringer
248 Kingston Road East, Ajax

Salem Northbound @ Kerrison



Northbound @ 967 Salem

Salem Northbound @ Rossland

Rossland Westbound @ Salem

Direction: Simcoe & Founders

79 stops

VIEW LINE SCHEDULE

Mccowan Road 1148
1275 McCowan Road, Toronto

Mccowan Rd at Progress Ave North Side
McCowan Road, Toronto

Progress Eastbound @ Bellamy
801 Progress Avenue, Toronto

Progress Avenue 922
921 Progress Avenue, Toronto

Progress Avenue 1132
931 Progress Avenue, Toronto

Milner Avenue 1132
Progress Avenue, Toronto

Progress Avenue 1149
5183 Sheppard Avenue East, Toronto

Sheppard Avenue East 1131
Sheppard Avenue East, Toronto

Neilson Road 1740
71X McClure Cres, Toronto

120 Murison Boulevard 20
120 Murison Boulevard, Toronto

Morningside Avenue 1176
7601 Sheppard Avenue East, Toronto

Sheppard Avenue East 1081
28 Lionhead Trl, Toronto

Kingston Eastbound @ Port Union
7331 Kingston Road, Toronto

Kingston Eastbound @ Altona
Kingston Road, Pickering

Kingston Rd. @ Rougemount Dr.
357 Kingston Rd, Pickering

Kingston Eastbound @ Rosebank
499 Kingston Road, Pickering

Kingston Eastbound @ Steeple Hill
645 Kingston Road, Pickering

Kingston Eastbound @ Whites
711 Kingston Road, Pickering

920 bus Time Schedule

Simcoe & Founders Route Timetable:

Sunday	Not Operational
Monday	4:37 AM - 9:11 PM
Tuesday	4:37 AM - 9:11 PM
Wednesday	4:37 AM - 9:11 PM
Thursday	4:37 AM - 9:11 PM
Friday	4:37 AM - 9:11 PM
Saturday	Not Operational

920 bus Info

Direction: Simcoe & Founders
Stops: 79
Trip Duration: 48 min
Line Summary: Mccowan Road 1148, Mccowan Rd at Progress Ave North Side, Progress Eastbound @ Bellamy, Progress Avenue 922, Progress Avenue 1132, Milner Avenue 1132, Progress Avenue 1149, Sheppard Avenue East 1131, Neilson Road 1740, 120 Murison Boulevard 20, Morningside Avenue 1176, Sheppard Avenue East 1081, Kingston Eastbound @ Port Union, Kingston Eastbound @ Altona, Kingston Rd. @ Rougemount Dr., Kingston Eastbound @ Rosebank, Kingston Eastbound @ Steeple Hill, Kingston Eastbound @ Whites, Eastbound @ 817 Kingston, Kingston Eastbound @ Fairport, Kingston Eastbound @ Dixie, Kingston Rd. @ Walnut Ln., Kingston Eastbound @ Liverpool, Kingston Eastbound @ Glenanna, Kingston Eastbound @ Valley Farm, Kingston Eastbound @ Brock Road, Kingston Eastbound @ Bainbridge, Kingston Eastbound @ Notion, Kingston Eastbound @ Elizabeth, Eastbound @ 625 Kingston, Kingston Eastbound @ Mill, Kingston Eastbound @ Westney, Kingston Eastbound @ Ritchie, Eastbound @ 113 Kingston, Kingston Eastbound @ Harwood, Eastbound @ 69 Kingston, Salem Northbound @ Kingston, Salem Northbound @ Ringer, Salem Northbound @ Kerrison, Northbound @ 967 Salem, Salem Northbound @ Rossland, Rossland Eastbound @ Rushworth, Rossland Eastbound @ Hilton, Rossland Eastbound @ Audley, Rossland Eastbound @ Lake Ridge, Rossland Eastbound @ Des Newman, Rossland Eastbound @ Mcquay, Rossland Eastbound @ Coronation, Rossland Eastbound @ Country Lane, Rossland Eastbound @ Cochrane, Rossland Eastbound @ Redoak, Rossland Eastbound @ Centre, Rossland Eastbound @ Brock Street, Rossland Eastbound @ Civic Centre Drive, Rossland Eastbound @ Garden (Durham Region Headquarters), Rossland Eastbound @ Bassett,

Eastbound @ 817 Kingston
819 Kingston Road, Pickering

Kingston Eastbound @ Fairport
897 Kingston Road, Pickering

Kingston Eastbound @ Dixie
1099 Kingston Road, Pickering

Kingston Rd. @ Walnut Ln.
1155 Kingston Road, Pickering

Kingston Eastbound @ Liverpool
1355 Kingston Road, Pickering

Kingston Eastbound @ Glenanna
1431 Kingston Road, Pickering

Kingston Eastbound @ Valley Farm
1511 Kingston Road, Pickering

Kingston Eastbound @ Brock Road
1754 Kingston Road, Pickering

Kingston Eastbound @ Bainbridge
1778 Bainbridge Dr, Pickering

Kingston Eastbound @ Notion
775 Kingston Road West, Pickering

Kingston Eastbound @ Elizabeth
703 Kingston Road West, Ajax

Eastbound @ 625 Kingston
601 Kingston Road West, Ajax

Kingston Eastbound @ Mill
441 Kingston Road West, Ajax

Kingston Eastbound @ Westney
Kingston Road West, Ajax

Kingston Eastbound @ Ritchie
301 Kingston Road West, Ajax

Eastbound @ 113 Kingston
51 Chalmers Crescent, Ajax

Kingston Eastbound @ Harwood
1 Harwood Avenue South, Ajax

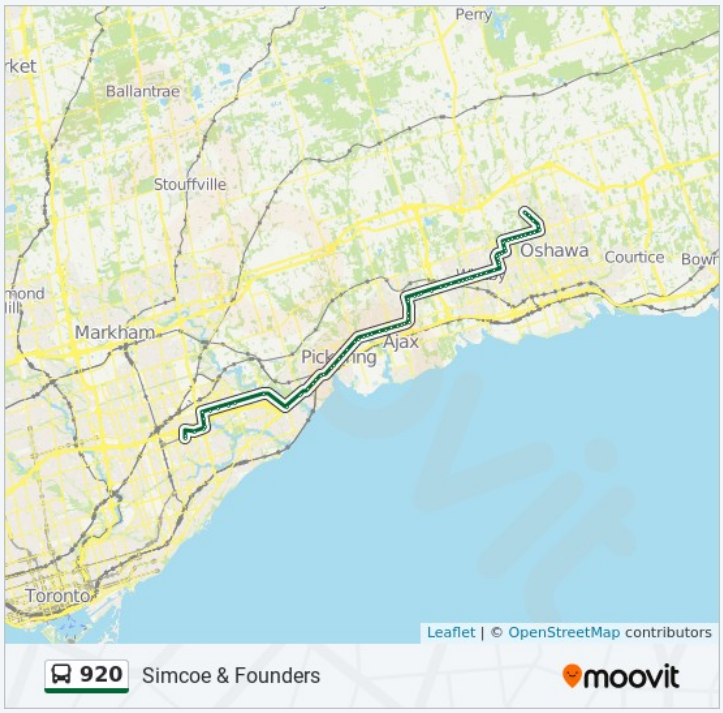
Eastbound @ 69 Kingston
71 Kingston Road East, Ajax

Salem Northbound @ Kingston
186 Kingston Road East, Ajax

Salem Northbound @ Ringer
248 Kingston Road East, Ajax

Salem Northbound @ Kerrison

Rossland Eastbound @ Overlord, Northbound @ 3193 Thickson, Thickson Northbound @ Winterberry, Thickson Northbound @ Fieldnest, Thickson Northbound @ Dryden, Dryden Eastbound @ Waller, Dryden Eastbound @ Steele Valley, Garrard Northbound @ Dryden, Garrard Northbound @ Gagnon, Garrard Northbound @ Griffen, Taunton Eastbound @ Sebastian, Eastbound @ 899 Taunton, Taunton Eastbound @ Thornton, Taunton Eastbound @ Keith Ross, Taunton Eastbound @ Airport, Eastbound @ 389 Taunton, Taunton Eastbound @ Northbrook, Taunton Eastbound @ Somerville, Simcoe Northbound @ Taunton (North Side Stop), Simcoe Northbound @ Glovers, Simcoe Northbound @ Selleck, Simcoe Northbound @ Taylorwood, Simcoe Northbound @ Founders



Northbound @ 967 Salem

Salem Northbound @ Rossland

Rossland Eastbound @ Rushworth
Rossland Road East, Ajax

Rossland Eastbound @ Hilton
529 Rossland Road East, Ajax

Rossland Eastbound @ Audley
599 Rossland Road East, Ajax

Rossland Eastbound @ Lake Ridge
1261 Rossland Road West, Whitby

Rossland Eastbound @ Des Newman

Rossland Eastbound @ Mcquay
899 Rossland Road West, Whitby

Rossland Eastbound @ Coronation
844 Rossland Road West, Whitby

Rossland Eastbound @ Country Lane

Rossland Eastbound @ Cochrane
501 Rossland Road West, Whitby

Rossland Eastbound @ Redoak
884 White Ash Drive, Whitby

Rossland Eastbound @ Centre
303 Rossland Road West, Whitby

Rossland Eastbound @ Brock Street
101 Rossland Road West, Whitby

Rossland Eastbound @ Civic Centre Drive
655 Rossland Road East, Whitby

Rossland Eastbound @ Garden (Durham Region Headquarters)
693 Rossland Road East, Whitby

Rossland Eastbound @ Bassett
152 Bassett Boulevard, Whitby

Rossland Eastbound @ Overlord
1499 Rossland Road East, Whitby

Northbound @ 3193 Thickson
191 Thickson Road North, Whitby

Thickson Northbound @ Winterberry
49 Winterberry Drive, Whitby

Thickson Northbound @ Fieldnest
70 Fieldnest Crescent, Whitby

Thickson Northbound @ Dryden

3555 Thickson Road North, Whitby

Dryden Eastbound @ Waller
101 Waller Street, Whitby

Dryden Eastbound @ Steele Valley
1 Steele Valley Court, Whitby

Garrard Northbound @ Dryden
25 Treen Crescent, Whitby

Garrard Northbound @ Gagnon
3499 Garrard Road, Whitby

Garrard Northbound @ Griffen
4000 Garrard Road, Whitby

Taunton Eastbound @ Sebastian
945 Taunton Road East, Whitby

Eastbound @ 899 Taunton
875 Taunton Road West, Whitby

Taunton Eastbound @ Thornton
799 Taunton Road West, Whitby

Taunton Eastbound @ Keith Ross
1290 Keith Ross Court, Whitby

Taunton Eastbound @ Airport
541 Taunton Road West, Whitby

Eastbound @ 389 Taunton
421 Taunton Road West, Whitby

Taunton Eastbound @ Northbrook
247 Taunton Road West, Oshawa

Taunton Eastbound @ Somerville
141 Taunton Road West, Oshawa

Simcoe Northbound @ Taunton (North Side Stop)
1363 Simcoe Street North, Oshawa

Simcoe Northbound @ Glovers
1477 Simcoe Street North, Oshawa

Simcoe Northbound @ Selleck
1671 Simcoe Street North, Oshawa

Simcoe Northbound @ Taylorwood
1915 Simcoe Street North, Oshawa

Simcoe Northbound @ Founders
Founders Gate, Oshawa

920 bus time schedules and route maps are available in an offline PDF at moovitapp.com. Use the Moovit App to see live bus times, train schedule or subway schedule, and step-by-step directions for all public transit in Toronto.

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Check Live Arrival Times

Dashes indicate the stop is not served by a trip. Trip notes are indicated by a letter or symbol and explained at the bottom of each timetable. Schedule times are shown in 24-hour clock. If you require this information in an accessible format, please contact Customer Service at 1-866-247-0055. See **durhamregiontransit.com** for more information.

Blue Night N1

Weekday								East
Centennial Circle **Stop #3589**	Kingston Eastbound @ Whites **Stop #1779**	Kingston Eastbound @ Brock Road **Stop #1789**	Kingston Eastbound @ Salem **Stop #93254**	Dundas Eastbound @ Brock Street **Stop #425**	Dundas Eastbound @ Thickson **Stop #451**	Simcoe Northbound @ Bond **Stop #677**	Simcoe Northbound @ Rossland **Stop #605**	Harmony Terminal **Stop #812**
2:45	3:00	3:07	3:17	3:26	3:30	3:40	3:44	3:54
3:15	3:30	3:37	3:47	3:56	4:00	4:10	4:14	4:24
3:45	4:00	4:07	4:17	4:26	4:30	4:40	4:44	4:54
4:15	4:30	4:37	4:47	4:56	5:00	5:10	5:14	5:24
See PULSE 900, PULSE 901, and Route 915 schedules for daytime service								
0:15	0:30	0:37	0:47	0:56	1:00	1:10	1:14	1:24
0:45	1:00	1:07	1:17	1:26	1:30	1:40	1:44	1:54
1:15	1:30	1:37	1:47	1:56	2:00	2:10	2:14	2:24
1:45	2:00	2:07	2:17	2:26	2:30	2:40	2:44	2:54
2:15	2:30	2:37	2:47	2:56	3:00	3:10	3:14	3:24

Weekday								West
Harmony Terminal **Stop #812**	Simcoe Southbound @ Rossland **Stop #650**	Bond Westbound @ Simcoe **Stop #1165**	Dundas Westbound @ Thickson **Stop #388**	Dundas Westbound @ Brock Street **Stop #398**	Kingston Westbound @ Salem **Stop #1591**	Kingston Westbound @ Brock Road **Stop #1604**	Kingston Westbound @ Whites **Stop #1742**	Centennial Circle **Stop #3589**
3:00	3:10	3:17	3:27	3:32	3:41	3:49	3:58	4:12
3:30	3:40	3:47	3:57	4:02	4:11	4:19	4:28	4:42
4:00	4:10	4:17	4:27	4:32	4:41	4:49	4:58	5:12
4:30	4:40	4:47	4:57	5:02	5:11	5:19	5:28	5:42
See PULSE 900, PULSE 901, and Route 915 schedules for daytime service								
0:00	0:10	0:17	0:27	0:32	0:41	0:49	0:58	1:12
0:30	0:40	0:47	0:57	1:02	1:11	1:19	1:28	1:42
1:00	1:10	1:17	1:27	1:32	1:41	1:49	1:58	2:12
1:30	1:40	1:47	1:57	2:02	2:11	2:19	2:28	2:42
2:00	2:10	2:17	2:27	2:32	2:41	2:49	2:58	3:12
2:30	2:40	2:47	2:57	3:02	3:11	3:19	3:28	3:42

Blue Night N2

Weekday						North
Simcoe Northbound @ Wentworth **Stop #1096**	Simcoe Northbound @ Bloor **Stop #668**	Simcoe Northbound @ Bond **Stop #677**	Simcoe Northbound @ Rossland **Stop #605**	Simcoe Northbound @ Taunton (North side stop) **Stop #691**	Ontario Tech / Durham College North Campus **Stop #698**
0:18	0:21	0:26	0:31	0:36	0:40
0:48	0:51	0:56	1:01	1:06	1:10
1:18	1:21	1:26	1:31	1:36	1:40
1:43	1:46	1:51	1:56	2:01	2:05

Weekday					South
Ontario Tech / Durham College North Campus **Stop #698**	Simcoe Southbound @ Taunton **Stop #711**	Simcoe Southbound @ Rossland **Stop #650**	Centre Southbound @ King **Stop #659**	Simcoe Southbound @ Wentworth **Stop #3570**
23:55	0:00	0:04	0:10	0:15
0:25	0:30	0:34	0:40	0:45
0:55	1:00	1:04	1:10	1:15
1:20	1:25	1:29	1:35	1:40
1:40	1:45	1:49	1:55	2:00
2:10	2:15	2:19	2:25	2:30

Blue Night N1 & N2

Effective September 7, 2021

Web **durhamregiontransit.com**
Phone **1-866-247-0055**

Blue Night N1

Saturday — East

Centennial Circle **Stop #3589**	Kingston Eastbound @ Whites **Stop #1779**	Kingston Eastbound @ Brock Road **Stop #1789**	Kingston Eastbound @ Salem **Stop #93254**	Dundas Eastbound @ Brock Street **Stop #425**	Dundas Eastbound @ Thickson **Stop #451**	Simcoe Northbound @ Bond **Stop #677**	Simcoe Northbound @ Rossland **Stop #605**	Harmony Terminal **Stop #812**
2:45	2:57	3:04	3:14	3:23	3:27	3:38	3:42	3:52
3:15	3:27	3:34	3:44	3:53	3:57	4:08	4:12	4:22
3:45	3:57	4:04	4:14	4:23	4:27	4:38	4:42	4:52
4:15	4:27	4:34	4:44	4:53	4:57	5:08	5:12	5:22
See PULSE 900, PULSE 901, and Route 915 schedules for daytime service								
0:15	0:27	0:34	0:44	0:53	0:57	1:08	1:12	1:22
0:45	0:57	1:04	1:14	1:23	1:27	1:38	1:42	1:52
1:15	1:27	1:34	1:44	1:53	1:57	2:08	2:12	2:22
1:45	1:57	2:04	2:14	2:23	2:27	2:38	2:42	2:52
2:15	2:27	2:34	2:44	2:53	2:57	3:08	3:12	3:22

Saturday — West

Harmony Terminal **Stop #812**	Simcoe Southbound @ Rossland **Stop #650**	Bond Westbound @ Simcoe **Stop #1165**	Dundas Westbound @ Thickson **Stop #388**	Dundas Westbound @ Brock Street **Stop #398**	Kingston Westbound @ Salem **Stop #1591**	Kingston Westbound @ Brock Road **Stop #1604**	Kingston Westbound @ Whites **Stop #1742**	Centennial Circle **Stop #3589**
3:00	3:10	3:17	3:27	3:32	3:41	3:49	3:55	4:09
3:30	3:40	3:47	3:57	4:02	4:11	4:19	4:25	4:39
4:00	4:10	4:17	4:27	4:32	4:41	4:49	4:55	5:09
4:30	4:40	4:47	4:57	5:02	5:11	5:19	5:25	5:39
See PULSE 900, PULSE 901, and Route 915 schedules for daytime service								
0:00	0:10	0:17	0:27	0:32	0:41	0:49	0:55	1:09
0:30	0:40	0:47	0:57	1:02	1:11	1:19	1:25	1:39
1:00	1:10	1:17	1:27	1:32	1:41	1:49	1:55	2:09
1:30	1:40	1:47	1:57	2:02	2:11	2:19	2:25	2:39
2:00	2:10	2:17	2:27	2:32	2:41	2:49	2:55	3:09
2:30	2:40	2:47	2:57	3:02	3:11	3:19	3:25	3:39

Blue Night N2

Saturday — North

Simcoe Northbound @ Wentworth **Stop #1096**	Simcoe Northbound @ Bloor **Stop #668**	Simcoe Northbound @ Bond **Stop #677**	Simcoe Northbound @ Rossland **Stop #605**	Simcoe Northbound @ Taunton (North side stop) **Stop #691**	Ontario Tech / Durham College North Campus **Stop #698**
0:18	0:21	0:26	0:31	0:36	0:40
0:48	0:51	0:56	1:01	1:06	1:10
1:18	1:21	1:26	1:31	1:36	1:40
1:43	1:46	1:51	1:56	2:01	2:05

Saturday — South

Ontario Tech / Durham College North Campus **Stop #698**	Simcoe Southbound @ Taunton **Stop #711**	Simcoe Southbound @ Rossland **Stop #650**	Centre Southbound @ King **Stop #659**	Simcoe Southbound @ Wentworth **Stop #3570**
23:55	0:00	0:04	0:10	0:15
0:25	0:30	0:34	0:40	0:45
0:55	1:00	1:04	1:10	1:15
1:20	1:25	1:29	1:35	1:40
1:40	1:45	1:49	1:55	2:00
2:10	2:15	2:19	2:25	2:30

Blue Night N1 & N2

Effective September 7, 2021

Web **durhamregiontransit.com**
Phone **1-866-247-0055**

Blue Night N1

Sunday — East

Centennial Circle **Stop #3589**	Kingston Eastbound @ Whites **Stop #1779**	Kingston Eastbound @ Brock Road **Stop #1789**	Kingston Eastbound @ Salem **Stop #93254**	Dundas Eastbound @ Brock Street **Stop #425**	Dundas Eastbound @ Thickson **Stop #451**	Simcoe Northbound @ Bond **Stop #677**	Simcoe Northbound @ Rossland **Stop #605**	Harmony Terminal **Stop #812**
2:45	2:57	3:04	3:14	3:23	3:27	3:38	3:42	3:52
3:15	3:27	3:34	3:44	3:53	3:57	4:08	4:12	4:22
3:45	3:57	4:04	4:14	4:23	4:27	4:38	4:42	4:52
4:15	4:27	4:34	4:44	4:53	4:57	5:08	5:12	5:22
See PULSE 900, PULSE 901, and Route 915 schedules for daytime service								
0:15	0:27	0:34	0:44	0:53	0:57	1:08	1:12	1:22
0:45	0:57	1:04	1:14	1:23	1:27	1:38	1:42	1:52
1:15	1:27	1:34	1:44	1:53	1:57	2:08	2:12	2:22
1:45	1:57	2:04	2:14	2:23	2:27	2:38	2:42	2:52
2:15	2:27	2:34	2:44	2:53	2:57	3:08	3:12	3:22

Sunday — West

Harmony Terminal **Stop #812**	Simcoe Southbound @ Rossland **Stop #650**	Bond Westbound @ Simcoe **Stop #1165**	Dundas Westbound @ Thickson **Stop #388**	Dundas Westbound @ Brock Street **Stop #398**	Kingston Westbound @ Salem **Stop #1591**	Kingston Westbound @ Brock Road **Stop #1604**	Kingston Westbound @ Whites **Stop #1742**	Centennial Circle **Stop #3589**
3:00	3:10	3:17	3:27	3:32	3:41	3:49	3:55	4:09
3:30	3:40	3:47	3:57	4:02	4:11	4:19	4:25	4:39
4:00	4:10	4:17	4:27	4:32	4:41	4:49	4:55	5:09
4:30	4:40	4:47	4:57	5:02	5:11	5:19	5:25	5:39
See PULSE 900, PULSE 901, and Route 915 schedules for daytime service								
0:00	0:10	0:17	0:27	0:32	0:41	0:49	0:55	1:09
0:30	0:40	0:47	0:57	1:02	1:11	1:19	1:25	1:39
1:00	1:10	1:17	1:27	1:32	1:41	1:49	1:55	2:09
1:30	1:40	1:47	1:57	2:02	2:11	2:19	2:25	2:39
2:00	2:10	2:17	2:27	2:32	2:41	2:49	2:55	3:09
2:30	2:40	2:47	2:57	3:02	3:11	3:19	3:25	3:39

Blue Night N2

Sunday — North

Simcoe Northbound @ Wentworth **Stop #1096**	Simcoe Northbound @ Bloor **Stop #668**	Simcoe Northbound @ Bond **Stop #677**	Simcoe Northbound @ Rossland **Stop #605**	Simcoe Northbound @ Taunton (North side stop) **Stop #691**	Ontario Tech / Durham College North Campus **Stop #698**
0:18	0:21	0:26	0:31	0:36	0:40
0:48	0:51	0:56	1:01	1:06	1:10

Sunday — South

Ontario Tech / Durham College North Campus **Stop #698**	Simcoe Southbound @ Taunton **Stop #711**	Simcoe Southbound @ Rossland **Stop #650**	Centre Southbound @ King **Stop #659**	Simcoe Southbound @ Wentworth **Stop #3570**
23:55	0:00	0:04	0:10	0:15
0:25	0:30	0:34	0:40	0:45
0:55	1:00	1:04	1:10	1:15
1:20	1:25	1:29	1:35	1:40

N1 bus time schedule & line map

N1 Blue Night - Simcoe-Highway 2

View In Website Mode

The N1 bus line (Blue Night - Simcoe-Highway 2) has 2 routes. For regular weekdays, their operation hours are:
(1) Centennial Circle: 12:00 AM - 4:30 AM (2) Harmony Terminal: 12:15 AM - 4:15 AM
Use the Moovit App to find the closest N1 bus station near you and find out when is the next N1 bus arriving.

Direction: Centennial Circle

79 stops

VIEW LINE SCHEDULE

Harmony Terminal
1417 Harmony Road North, Durham

Harmony Terminal Southbound @ Taunton
1365 Harmony Road North, Durham

Taunton Westbound @ Harmony
812 Taunton Road East, Durham

Taunton Westbound @ Clearbrook
1348 Livesey Court, Durham

Taunton Westbound @ Wilson (East Side Stop)
646 Taunton Road East, Durham

Taunton Westbound @ Wilson (West Side Stop)
496 Taunton Road East, Durham

Taunton Westbound @ Naples
362 Taunton Road East, Oshawa

Taunton Westbound @ Ritson
276 Taunton Road East, Oshawa

Taunton Westbound @ Mary
1346 Orlando Court, Oshawa

Simcoe Southbound @ Taunton
1322 Simcoe Street North, Oshawa

Simcoe Southbound @ Orchard View
1202 Simcoe Street North, Oshawa

Simcoe Southbound @ Beatrice
1080 Simcoe Street North, Oshawa

Simcoe Southbound @ Switzer
894 Simcoe Street North, Oshawa

Simcoe Southbound @ Rossland

N1 bus Time Schedule

Centennial Circle Route Timetable:

Sunday	12:00 AM - 12:30 AM
Monday	12:00 AM - 4:30 AM
Tuesday	12:00 AM - 4:30 AM
Wednesday	12:00 AM - 4:30 AM
Thursday	12:00 AM - 4:30 AM
Friday	12:00 AM - 4:30 AM
Saturday	12:00 AM - 4:30 AM

N1 bus Info

Direction: Centennial Circle
Stops: 79
Trip Duration: 69 min
Line Summary: Harmony Terminal, Harmony Terminal Southbound @ Taunton, Taunton Westbound @ Harmony, Taunton Westbound @ Clearbrook, Taunton Westbound @ Wilson (East Side Stop), Taunton Westbound @ Wilson (West Side Stop), Taunton Westbound @ Naples, Taunton Westbound @ Ritson, Taunton Westbound @ Mary, Simcoe Southbound @ Taunton, Simcoe Southbound @ Orchard View, Simcoe Southbound @ Beatrice, Simcoe Southbound @ Switzer, Simcoe Southbound @ Rossland, Simcoe Southbound @ Buckingham, Simcoe Southbound @ Parkwood (Lakeridge Health Oshawa), Simcoe Southbound @ Adelaide, Centre Southbound @ William, King @ Centre, King @ Simcoe, Bond St. E. @ Simcoe St. N., Bond St. W. @ Centre St. N., Bond Westbound @ Arena, Bond St. W. @ Park Rd. N., Bond Westbound @ Gibbons, Bond Westbound @ Stevenson, King Westbound @ Waverly, King Westbound @ Thornton, Dundas Westbound @ Garrard, Dundas Westbound @ Kathleen, Dundas Westbound @ Thickson, Dundas Westbound @ Bowman, Dundas Westbound @ Anderson, Dundas Westbound @ Craydon, Dundas

658 Simcoe Street North, Oshawa

Simcoe Southbound @ Buckingham
496 Simcoe Street North, Oshawa

Simcoe Southbound @ Parkwood (Lakeridge Health Oshawa)
300 Simcoe Street North, Oshawa

Simcoe Southbound @ Adelaide
230 Simcoe Street North, Oshawa

Centre Southbound @ William
110 Centre Street North, Oshawa

King @ Centre
40 King Street West, Oshawa

King @ Simcoe
7 King Street East, Oshawa

Bond St. E. @ Simcoe St. N.
31 Simcoe Street North, Oshawa

Bond St. W. @ Centre St. N.
44 Bond Street West, Oshawa

Bond Westbound @ Arena
176 Bond Street West, Oshawa

Bond St. W. @ Park Rd. N.
30 Park Road North, Whitby

Bond Westbound @ Gibbons
383 Buena Vista Avenue, Whitby

Bond Westbound @ Stevenson
540 Bond Street West, Whitby

King Westbound @ Waverly
664 King Street West, Whitby

King Westbound @ Thornton

Dundas Westbound @ Garrard
1904 Dundas Street East, Whitby

Dundas Westbound @ Kathleen
1652 Dundas Street East, Whitby

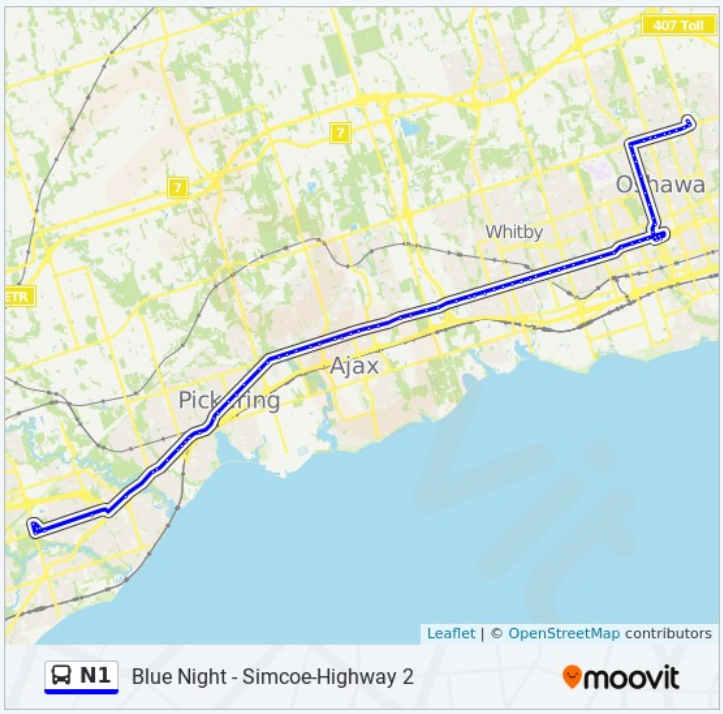
Dundas Westbound @ Thickson
1540 Dundas Street East, Whitby

Dundas Westbound @ Bowman
1488 Dundas Street East, Whitby

Dundas Westbound @ Anderson
1210 Dundas Street East, Whitby

Dundas Westbound @ Craydon
900 Dundas Street East, Whitby

Westbound @ Garden, Dundas Westbound @ Pine, Dundas St. @ Brock St., Dundas Westbound @ Euclid, Dundas Westbound @ Cochrane, Dundas Westbound @ Wellington, Dundas Westbound @ Mcquay, Dundas Westbound @ White Oaks, Dundas Westbound @ Des Newman, Dundas Westbound @ Halls, Kingston Westbound @ Lake Ridge, Kingston Westbound @ Audley, Kingston Westbound @ Alexanders Crossing, Kingston Westbound @ Wicks, Kingston Westbound @ Salem, Westbound @ 84 Kingston, Kingston Westbound @ Harwood, Westbound @ 132 Kingston, Kingston Westbound @ Chapman, Kingston Rd. @ Westney Rd., Kingston Westbound @ Mill, Kingston Westbound @ Church, Kingston Westbound @ Elizabeth, Kingston Westbound @ Notion, Kingston Westbound @ Bainbridge, Kingston Westbound @ Brock Road, Kingston Westbound @ Valley Farm, Kingston Westbound @ Glenanna, Kingston Westbound @ Liverpool, Kingston Westbound @ Walnut, Kingston Westbound @ Dixie, Kingston Westbound @ Fairport, Westbound @ 804 Kingston, Kingston Westbound @ Delta, Kingston Westbound @ Whites, Kingston Westbound @ Steeple Hill, Kingston Westbound @ Rosebank, Kingston Westbound @ Rougemount, Kingston Westbound @ Altona, Kingston Westbound @ Sheppard, Ellesmere Rd at Meadowvale Rd, Ellesmere Rd at Military Trail (East), Ellesmere Rd at Morningside Ave, Morningside Northbound @ Military Trail, Centennial Circle



Dundas Westbound @ Garden
704 Dundas Street East, Whitby

Dundas Westbound @ Pine
416 Dundas Street East, Whitby

Dundas St. @ Brock St.
104 Dundas Street East, Whitby

Dundas Westbound @ Euclid
408 Dundas Street West, Whitby

Dundas Westbound @ Cochrane
684 Dundas Street West, Whitby

Dundas Westbound @ Wellington
752 Dundas Street West, Whitby

Dundas Westbound @ Mcquay
Dundas Street West, Whitby

Dundas Westbound @ White Oaks
Dundas Street West, Whitby

Dundas Westbound @ Des Newman
1180 Dundas Street West, Whitby

Dundas Westbound @ Halls
1550 Dundas Street West, Whitby

Kingston Westbound @ Lake Ridge
786 Kingston Road East, Whitby

Kingston Westbound @ Audley

Kingston Westbound @ Alexanders Crossing

Kingston Westbound @ Wicks
270 Kingston Road East, Ajax

Kingston Westbound @ Salem
168 Kingston Road East, Ajax

Westbound @ 84 Kingston
46 Gilmour Drive, Ajax

Kingston Westbound @ Harwood
10 Kingston Road West, Ajax

Westbound @ 132 Kingston
28 Arnold Estate Lane, Ajax

Kingston Westbound @ Chapman
300 Kingston Road West, Ajax

Kingston Rd. @ Westney Rd.
364 Kingston Road West, Ajax

Kingston Westbound @ Mill
446 Kingston Road West, Ajax

Kingston Westbound @ Church

Church Street North, Ajax

Kingston Westbound @ Elizabeth
714 Kingston Road West, Pickering

Kingston Westbound @ Notion
768 Kingston Road West, Pickering

Kingston Westbound @ Bainbridge
Kingston Road, Pickering

Kingston Westbound @ Brock Road
1668 Kingston Road, Pickering

Kingston Westbound @ Valley Farm
1440 Kingston Road, Pickering

Kingston Westbound @ Glenanna
1376 Kingston Road, Pickering

Kingston Westbound @ Liverpool
1273 Kingston Road, Pickering

Kingston Westbound @ Walnut
1154 Kingston Road, Pickering

Kingston Westbound @ Dixie
1108 Kingston Road, Pickering

Kingston Westbound @ Fairport
900 Kingston Road, Pickering

Westbound @ 804 Kingston
794 Kingston Road, Pickering

Kingston Westbound @ Delta
736 Kingston Road, Pickering

Kingston Westbound @ Whites
698 Kingston Road, Pickering

Kingston Westbound @ Steeple Hill
646 Kingston Road, Pickering

Kingston Westbound @ Rosebank
510 Kingston Road, Pickering

Kingston Westbound @ Rougemount
370 Kingston Road, Pickering

Kingston Westbound @ Altona
Kingston Road, Pickering

Kingston Westbound @ Sheppard
80 Nature Ptwy, Toronto

Ellesmere Rd at Meadowvale Rd
3978 Ellesmere Road, Toronto

Ellesmere Rd at Military Trail (East)
1050 Military Trail, Toronto

Ellesmere Rd at Morningside Ave
755 Morningside Avenue, Toronto

Morningside Northbound @ Military Trail
755 Morningside Avenue, Toronto

Centennial Circle
1065 Military Trl, Toronto

Direction: Harmony Terminal

77 stops

VIEW LINE SCHEDULE

Centennial Circle
1065 Military Trl, Toronto

Ellesmere Rd at Morningside Ave
755 Morningside Avenue, Toronto

Morningside Northbound @ Military Trail
755 Morningside Avenue, Toronto

Ellesmere Eastbound @ Military Trail
3295 Ellesmere Rd, Toronto

Ellesmere Rd at Meadowvale Rd
3811 Ellesmere Road, Toronto

Kingston Eastbound @ Port Union
7331 Kingston Road, Toronto

Kingston Eastbound @ Altona
Kingston Road, Pickering

Kingston Rd. @ Rougemount Dr.
357 Kingston Rd, Pickering

Kingston Eastbound @ Rosebank
499 Kingston Road, Pickering

Kingston Eastbound @ Steeple Hill
645 Kingston Road, Pickering

Kingston Eastbound @ Whites
711 Kingston Road, Pickering

Eastbound @ 817 Kingston
819 Kingston Road, Pickering

Kingston Eastbound @ Fairport
897 Kingston Road, Pickering

Kingston Eastbound @ Dixie
1099 Kingston Road, Pickering

Kingston Rd. @ Walnut Ln.
1155 Kingston Road, Pickering

Kingston Eastbound @ Liverpool
1355 Kingston Road, Pickering

Kingston Eastbound @ Glenanna
1431 Kingston Road, Pickering

Kingston Eastbound @ Valley Farm
1511 Kingston Road, Pickering

N1 bus Time Schedule

Harmony Terminal Route Timetable:

Sunday	12:15 AM - 12:45 AM
Monday	12:15 AM - 4:15 AM
Tuesday	12:15 AM - 4:15 AM
Wednesday	12:15 AM - 4:15 AM
Thursday	12:15 AM - 4:15 AM
Friday	12:15 AM - 4:15 AM
Saturday	12:15 AM - 4:15 AM

N1 bus Info

Direction: Harmony Terminal
Stops: 77
Trip Duration: 67 min
Line Summary: Centennial Circle, Ellesmere Rd at Morningside Ave, Morningside Northbound @ Military Trail, Ellesmere Eastbound @ Military Trail, Ellesmere Rd at Meadowvale Rd, Kingston Eastbound @ Port Union, Kingston Eastbound @ Altona, Kingston Rd. @ Rougemount Dr., Kingston Eastbound @ Rosebank, Kingston Eastbound @ Steeple Hill, Kingston Eastbound @ Whites, Eastbound @ 817 Kingston, Kingston Eastbound @ Fairport, Kingston Eastbound @ Dixie, Kingston Rd. @ Walnut Ln., Kingston Eastbound @ Liverpool, Kingston Eastbound @ Glenanna, Kingston Eastbound @ Valley Farm, Kingston Eastbound @ Brock Road, Kingston Eastbound @ Bainbridge, Kingston Eastbound @ Notion, Kingston Eastbound @ Elizabeth, Eastbound @ 625 Kingston, Kingston Eastbound @ Mill, Kingston Eastbound @ Westney, Kingston Eastbound @ Ritchie, Eastbound @ 113 Kingston, Kingston Eastbound @ Harwood, Eastbound @ 69 Kingston, Kingston Eastbound @ Salem, Eastbound @ 257 Kingston Road East, Kingston Eastbound @ Wicks, Kingston Eastbound @ Alexanders Crossing, Kingston Eastbound @ Audley, Kingston Eastbound @ Lake Ridge, Dundas Eastbound @ Halls, Dundas Eastbound @ Des Newman, Dundas Eastbound @ White Oaks, Dundas Eastbound @ Jeffery, Dundas Eastbound @ Wellington, Dundas Eastbound @ Annes, Dundas Eastbound @ King, Dundas Eastbound @ Brock Street, Dundas Eastbound @ Hickory, Dundas St. @ Garden St., Dundas Eastbound @ Craydon, Dundas Eastbound @ Hopkins, Dundas Eastbound @ Glen Hill, Dundas Eastbound @ Thickson, Dundas Eastbound @ Kathleen, Dundas Eastbound @ Kendalwood, King Eastbound @ Thornton, King Eastbound @ Waverly, King St. W. @ Stevenson Rd., King Eastbound @ Gibbons, King Eastbound @

Kingston Eastbound @ Brock Road
1754 Kingston Road, Pickering

Kingston Eastbound @ Bainbridge
1778 Bainbridge Dr, Pickering

Kingston Eastbound @ Notion
775 Kingston Road West, Pickering

Kingston Eastbound @ Elizabeth
703 Kingston Road West, Ajax

Eastbound @ 625 Kingston
601 Kingston Road West, Ajax

Kingston Eastbound @ Mill
441 Kingston Road West, Ajax

Kingston Eastbound @ Westney
Kingston Road West, Ajax

Kingston Eastbound @ Ritchie
301 Kingston Road West, Ajax

Eastbound @ 113 Kingston
51 Chalmers Crescent, Ajax

Kingston Eastbound @ Harwood
1 Harwood Avenue South, Ajax

Eastbound @ 69 Kingston
71 Kingston Road East, Ajax

Kingston Eastbound @ Salem
207 Kingston Road East, Ajax

Eastbound @ 257 Kingston Road East
259 Kingston Road, Ajax

Kingston Eastbound @ Wicks
34 Clarepark Court, Ajax

Kingston Eastbound @ Alexanders Crossing
Alexanders Crossing, Ajax

Kingston Eastbound @ Audley
599 Kingston Road East, Ajax

Kingston Eastbound @ Lake Ridge
787 Kingston Road East, Whitby

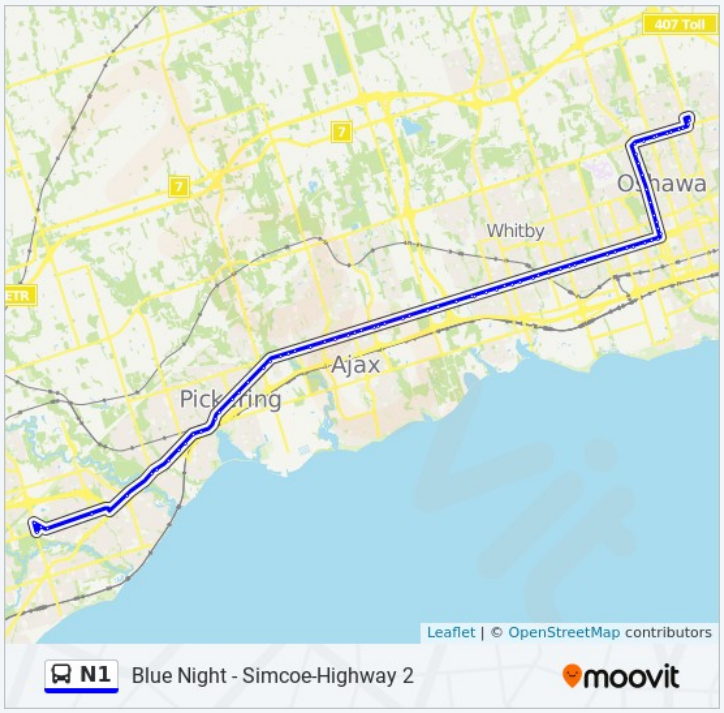
Dundas Eastbound @ Halls
1611 Dundas Street West, Whitby

Dundas Eastbound @ Des Newman

Dundas Eastbound @ White Oaks
1045 Dundas Street West, Whitby

Dundas Eastbound @ Jeffery
1027 Dundas Street West, Whitby

Warren, King Eastbound @ Midtown, King @ Centre, Simcoe Northbound @ Bond, Simcoe Northbound @ Colborne, Simcoe Northbound @ Adelaide, Simcoe St. N. @ Parkwood Crt., Simcoe Northbound @ Hillcroft, Simcoe Northbound @ Rossland, Simcoe Northbound @ Switzer, Simcoe Northbound @ Beatrice, Simcoe Northbound @ Orchard View, Taunton Eastbound @ Simcoe, Taunton Eastbound @ Mary, Taunton Eastbound @ Ritson, Taunton Eastbound @ Naples, Taunton Eastbound @ Wilson (West Side Stop), Taunton Eastbound @ Wilson (East Side Stop), Taunton Eastbound @ Clearbrook, Taunton Eastbound @ Harmony, Harmony Northbound @ Taunton (North Side Stop), Harmony Terminal



Dundas Eastbound @ Wellington
Dundas Street West, Whitby

Dundas Eastbound @ Annes
711 Dundas Street West, Whitby

Dundas Eastbound @ King
405 Dundas Street West, Whitby

Dundas Eastbound @ Brock Street
101 Dundas Street West, Whitby

Dundas Eastbound @ Hickory
399 Dundas Street East, Whitby

Dundas St. @ Garden St.
751 Dundas Street East, Whitby

Dundas Eastbound @ Craydon
101 Craydon Road, Whitby

Dundas Eastbound @ Hopkins
1199 Dundas Street East, Whitby

Dundas Eastbound @ Glen Hill
1489 Dundas Street East, Whitby

Dundas Eastbound @ Thickson
Dundas Street East, Whitby

Dundas Eastbound @ Kathleen
1635 Dundas Street East, Whitby

Dundas Eastbound @ Kendalwood
1871 Dundas Street East, Whitby

King Eastbound @ Thornton
773 King Street West, Whitby

King Eastbound @ Waverly
665 King Street West, Whitby

King St. W. @ Stevenson Rd.
512 King Street West, Whitby

King Eastbound @ Gibbons
408 King Street West, Whitby

King Eastbound @ Warren
245 King Street West, Whitby

King Eastbound @ Midtown
King Street West, Oshawa

King @ Centre
40 King Street West, Oshawa

Simcoe Northbound @ Bond
45 Simcoe Street North, Oshawa

Simcoe Northbound @ Colborne
121 Simcoe Street North, Oshawa

Simcoe Northbound @ Adelaide
230 Simcoe Street North, Oshawa

Simcoe St. N. @ Parkwood Crt.
301 Simcoe Street North, Oshawa

Simcoe Northbound @ Hillcroft
499 Simcoe Street North, Oshawa

Simcoe Northbound @ Rossland
675 Simcoe Street North, Oshawa

Simcoe Northbound @ Switzer
895 Simcoe Street North, Oshawa

Simcoe Northbound @ Beatrice
1051 Simcoe Street North, Oshawa

Simcoe Northbound @ Orchard View
1205 Simcoe Street North, Oshawa

Taunton Eastbound @ Simcoe
25 Taunton Road East, Oshawa

Taunton Eastbound @ Mary
141 Taunton Road East, Oshawa

Taunton Eastbound @ Ritson
315 Taunton Road East, Oshawa

Taunton Eastbound @ Naples
363 Taunton Road East, Oshawa

Taunton Eastbound @ Wilson (West Side Stop)
515 Taunton Road East, Durham

Taunton Eastbound @ Wilson (East Side Stop)
603 Taunton Road East, Durham

Taunton Eastbound @ Clearbrook
679 Taunton Road East, Durham

Taunton Eastbound @ Harmony
741 Taunton Road East, Durham

Harmony Northbound @ Taunton (North Side Stop)
1231 Harmony Road North, Durham

Harmony Terminal
1417 Harmony Road North, Durham

N1 bus time schedules and route maps are available in an offline PDF at moovitapp.com. Use the Moovit App to see live bus times, train schedule or subway schedule, and step-by-step directions for all public transit in Toronto.

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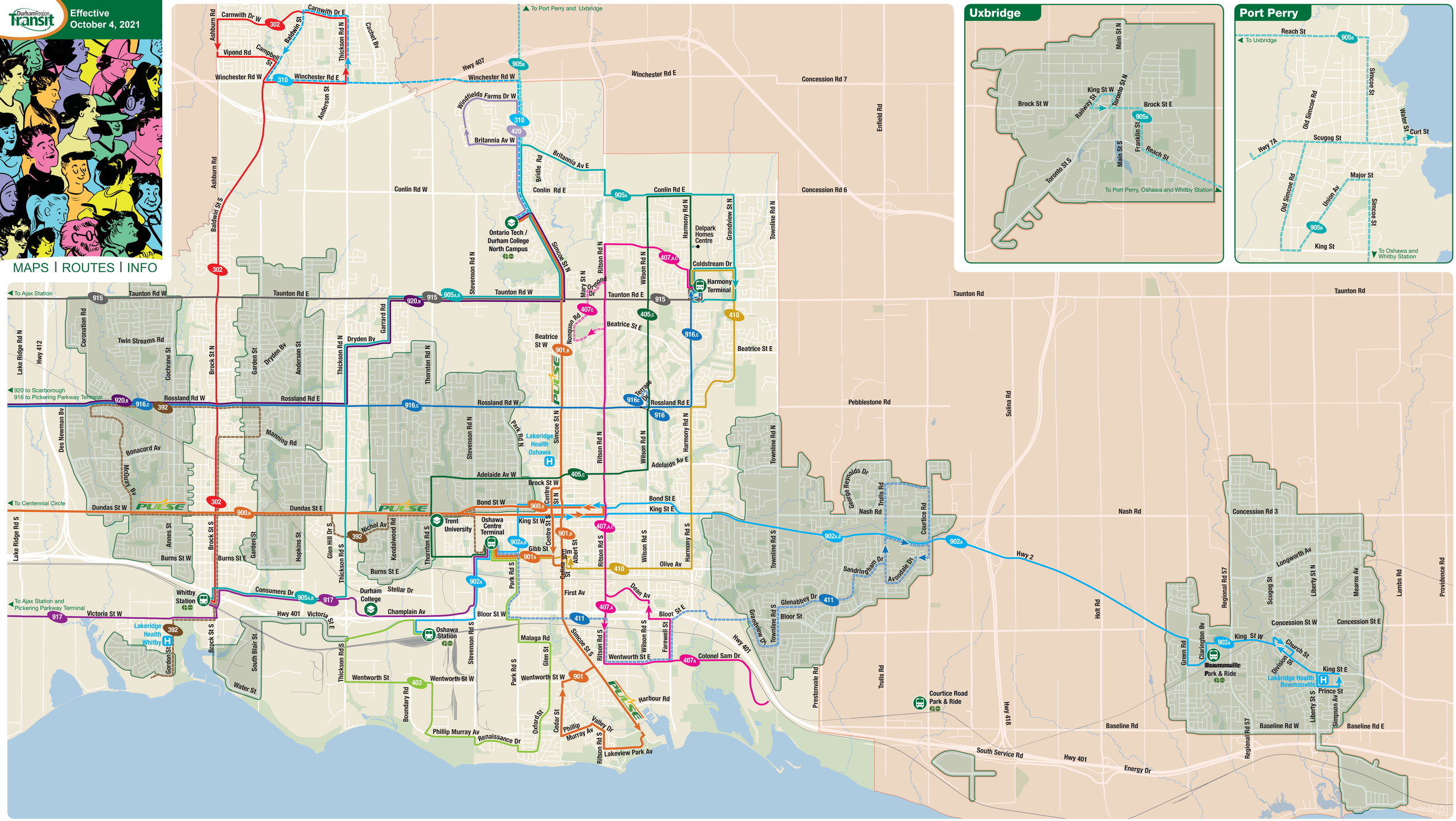
Durham Region Transit

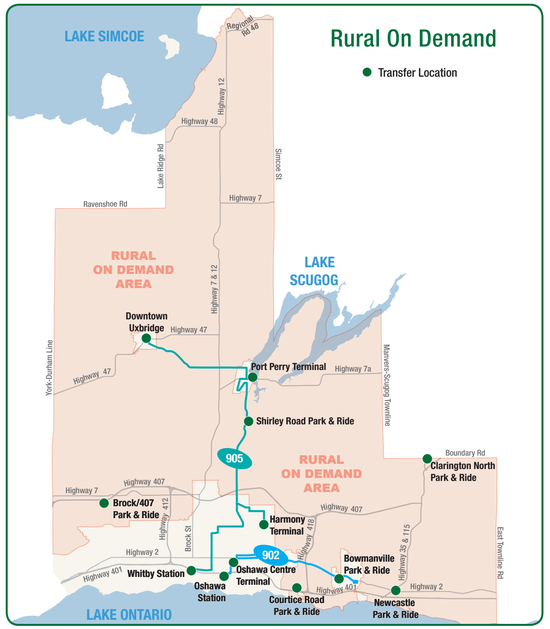
Effective October 4, 2021

MAPS | ROUTES | INFO

Uxbridge

Port Perry





Legend

- **Regular route** — Service operates Monday to Sunday.
- **Peak route** — Service operates Monday to Friday during the a.m. / p.m. peak periods.
- **Limited route** — Service operates only part of the day or does not operate 7 days/week.
- **Urban On Demand area** — Areas shown are illustrative.
- **Rural On Demand area** — Areas shown are illustrative.
- **Pedestrian bridge**
- **Hospital**
- **Train station**
- **Terminal**
- **College / University**

Route number
Branch
Direction of travel
Service type
407c

On Demand

What is On Demand?

On Demand is a flexible and convenient option in areas of our network that are not served by scheduled service. Customers can travel stop-to-stop within a zone, facilitate connecting to frequent and grid routes, or to the local GO station or bus terminal. Regular fares apply.

Urban On Demand

- Access On Demand service at designated On Demand bus stops
- Travel stop-to-stop within the On Demand area (minimum 800 metres), to connecting DRT and GO Transit bus service, and to nearby transit terminals and train stations

Rural On Demand

- Access On Demand service from designated On Demand bus stops in smaller communities, or from the end of your driveway in rural areas
- Travel within the On Demand area and to connecting DRT and GO Transit bus service.

Booking On Demand

You can book a trip by downloading the On Demand app or by calling 1-866-247-0055. Visit durhamregiontransit.com for more information.

Contact us

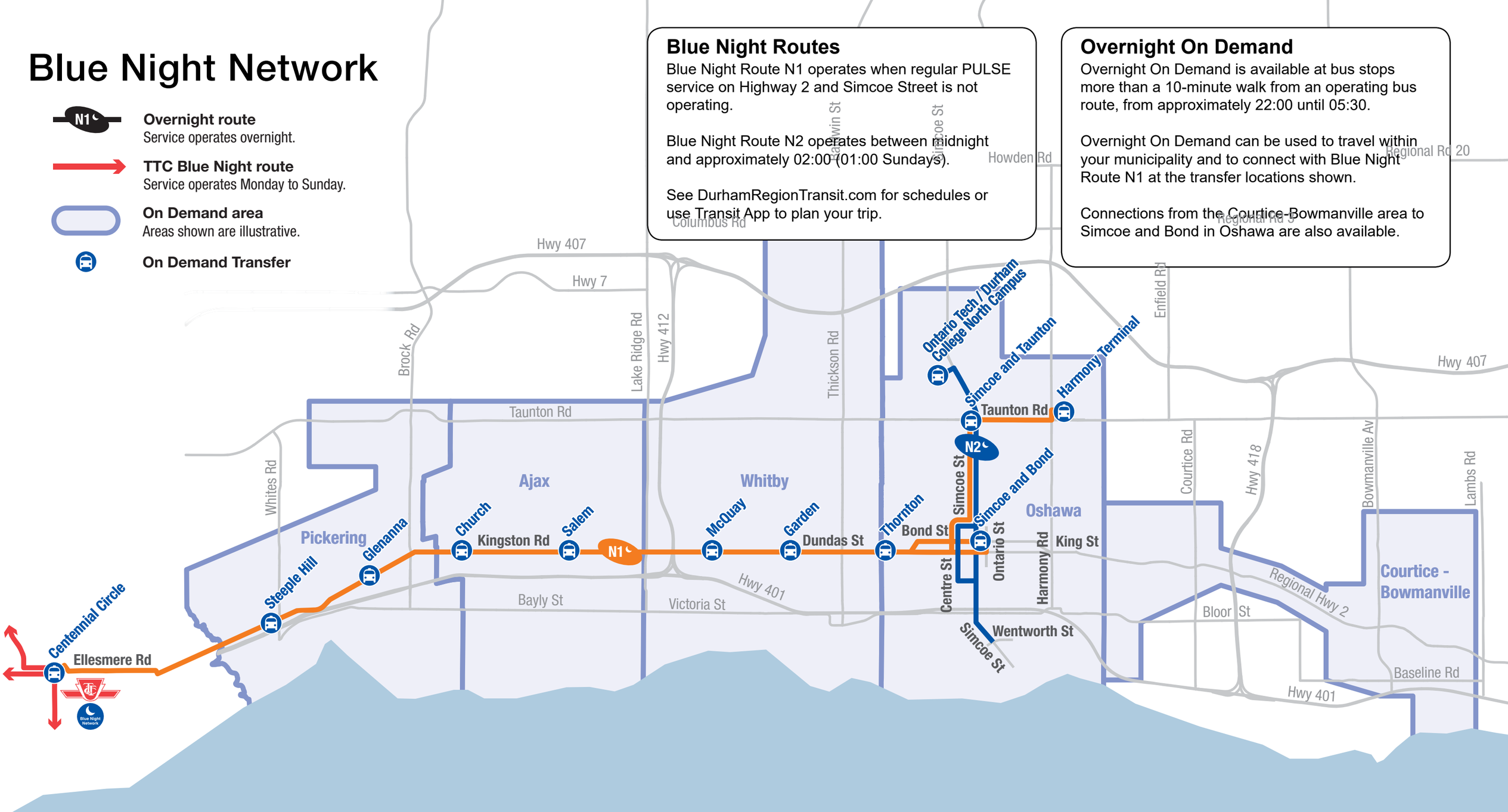
durhamregiontransit.com

Customer Service Centre
1-866-247-0055

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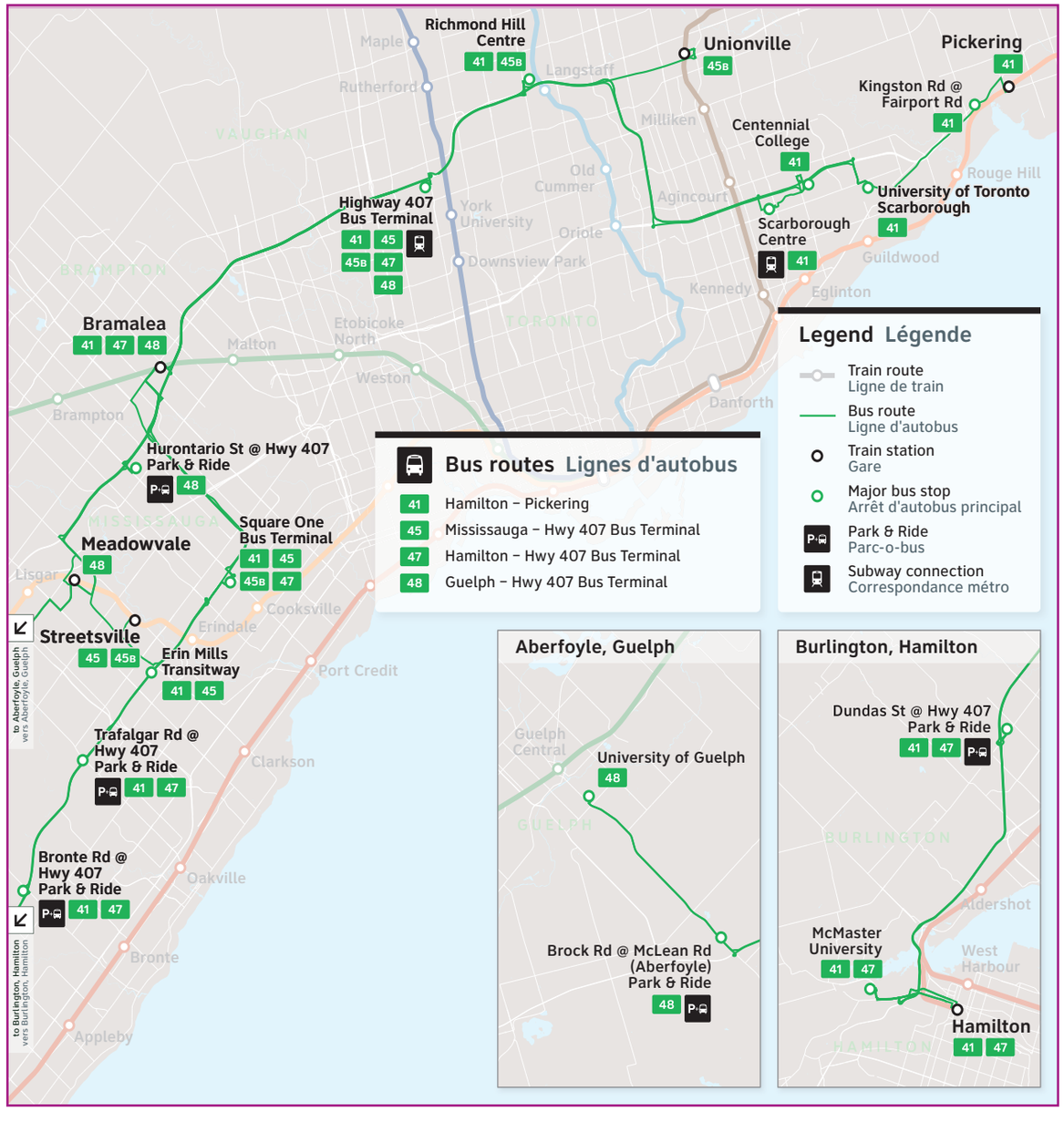
Blue Night Network



41-45-47-48

Route number
Numéro du trajet

Hamilton/Pickering



CONTACT US

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gotransit.com/OnTheGO

25-01-2021

Hamilton/ Pickering

GO Bus Schedule/
Horaire des autobus GO

METROLINX

41 45 47 48

- Hamilton
- Burlington
- Oakville
- Mississauga
- Brampton
- Vaughan
- Richmond Hill
- Markham
- Scarborough
- Pickering

Daily / Quotidiennement
Includes GO Bus routes 41, 45, 47, 48 / Inclut les trajets 41, 45, 47, 48 d'autobus GO

Effective / À partir de:
13 FEBRUARY FÉVRIER 2021

How to read our schedules

Step 1
Find the station or terminal you are departing from. Stops are listed across the top in the order they are served.

Step 2
The upper left corner tells you what day the schedule is for and the direction of travel.

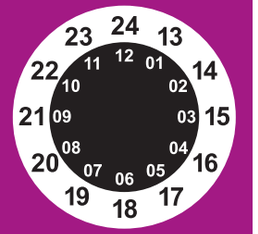
Step 3
Look across the rows for available departure times.

Step 4
Not all trains or buses stop at every station. If you see → the train or bus will not stop at that station.

Schedule times shown in 24-hour clock

Midnight to noon
00 01 - 12 00

Noon to midnight
12 01 - 24 00



Legend

Bus trips

→ Trip does not serve this location.

GO Bus service is accessible to passengers using mobility devices at this location.

Parking available.

Notes

Bicycles

1. Bicycles are not allowed in Union Station or on-board trains during morning rush hour (6:30-9:30) and evening rush hour (15:30-18:30), Monday to Friday.

2. Foldable bicycles are allowed on-board trains at all times.

For the latest schedule information and updates, please visit gotransit.com/schedules.

Comment lire nos horaires

Étape 1
Trouvez votre gare ou terminus de départ. La liste des arrêts est donnée en haut dans l'ordre dans lequel ils sont desservis.

Étape 2
Le coin supérieur gauche vous indique le jour pour lequel l'horaire est donné et la direction de circulation.

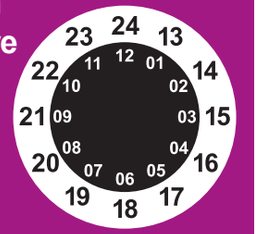
Étape 3
Regardez dans les rangées pour obtenir les heures de départ offertes.

Étape 4
Les trains ou les autobus ne s'arrêtent pas tous à chaque gare. Si vous voyez le symbole → le train ou l'autobus ne s'arrêtera pas à cette gare.

Indications selon un système horaire de 24 heures

De minuit à midi:
00 01 - 12 00

De midi à minuit:
12 01 - 24 00



Légende

Horaire des autobus

→ Trajet ne sert pas cette station.

Service d'autobus GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.

Stationnement disponible.

Notes

Vélos

1. Les vélos ne sont pas autorisés dans la gare Union ou à bord des trains du lundi au vendredi, pendant l'heure de pointe (6:30-9:30) et pendant l'heure de pointe du soir (15:30-18:30).

2. Les vélos pliables sont permis à bord des trains en tout temps.

Pour consulter les horaires les plus récents et les mises à jour, veuillez visiter gotransit.com/schedules.

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Guelph 39 Dp	Puslinch 39	Hamilton 18 Dp	Hamilton 18 Dp	Burlington 16	Oakville 14	Oakville 13	Mississauga 22 Dp	Brampton 22 Dp	Mississauga 21 Dp	Mississauga 21	Mississauga 20	Brampton 32	Vaughan 19 Ar	Vaughan 19 Dp	Richmond Hill 60	Markham 71 Ar	Scarborough 7	Scarborough 89	Scarborough 89	Scarborough 89	Pickering 91	Pickering 91 Ar
			University of Guelph	**Brock Rd. @ McLean Rd. (Aberfoyle)**	**Hamilton GO Centre**	**McMaster University**	**Dundas St. @ Hwy. 407**	**Bronte Rd. @ Hwy. 407**	**Trafalgar Rd. @ Hwy. 407**	**Meadowvale GO**	**Hurontario St. @ Hwy. 407**	**Streetsville GO**	**Erin Mills Transitway Station**	**Square One**	**Bramalea GO**	**Hwy. 407 Bus Terminal**	**Hwy. 407 Bus Terminal**	**Richmond Hill Centre**	**Unionville GO**	**Scarborough Centre Bus Terminal**	**Centennial College**	**University of Toronto Scarborough**	**Kingston Rd. @ Fairport Rd.**	**Pickering GO**	
41	41020				04 40	04 52	05 09	05 16	05 24	→	→	→	05 32	05 45	06 02	06 20	06 25	06 35	→	06 55	07 02	07 12	07 23	07 30	
48	48100	05 00	05 15	→	→	→	→	→	05 45	05 59	→	→	→	06 07	06 25										
45B	45100										05 35	05 45	06 00	→	→	06 25	06 35	06 50							
41	41030			05 05	05 17	05 37	05 44	05 52	→	→	→	06 00	06 15	06 32	06 50	06 55	07 05	→	07 35	07 42	07 57	08 08	08 15	
45B	45130										06 05	06 15	06 30	→	→	06 55	07 05	07 20							
47	47150			05 30	05 42	06 02	06 10	06 19	→	→	→	06 27	06 45	07 02	07 20										
48	48160	05 55	06 10	→	→	→	→	→	06 45	06 59	→	→	→	07 07	07 25										
45B	45190										06 55	07 07	07 25	→	→	07 55	08 05	08 20							
41	41060			05 55	06 07	06 27	06 35	06 44	→	→	→	06 52	07 10	07 30	07 50	07 55	08 05	→	08 40	08 47	09 02	09 13	09 20	
47	47210			06 25	06 37	07 00	07 08	07 17	→	→	→	07 27	07 45	08 05	08 25										
48	48220	06 35	06 50	→	→	→	→	→	07 35	07 54	→	→	→	08 05	08 25										
41	41120			06 50	07 02	07 25	07 33	07 42	→	→	→	07 52	08 10	08 30	08 50	08 55	09 05	→	09 40	09 47	09 57	10 08	10 15	
45B	45240										07 50	08 07	08 25	→	→	08 55	09 05	09 20							
47	47250			07 15	07 32	07 55	08 03	08 12	→	→	→	08 22	08 40	09 00	09 20										
48	48260	07 20	07 35	→	→	→	→	→	08 35	08 54	→	→	→	09 05	09 25										
41	41170			07 45	08 02	08 25	08 33	08 42	→	→	→	08 52	09 10	09 30	09 50	09 55	10 05	→	10 35	10 42	10 52	11 03	11 10	
45B	45280										08 55	09 07	09 25	→	→	09 55	10 05	10 20							
48	48300	08 30	08 45	→	→	→	→	→	09 35	09 54	→	→	→	10 05	10 25										
41	41230			08 55	09 12	09 35	09 42	09 50	→	→	→	10 00	10 15	10 32	10 50	10 55	11 05	→	11 30	11 37	11 47	11 58	12 05	
45B	45320										10 05	10 15	10 30	→	→	10 55	11 05	11 20							
48	48340	09 45	10 00	→	→	→	→	→	10 45	10 59	→	→	→	11 07	11 25										
41	41280			10 00	10 17	10 37	10 44	10 52	→	→	→	11 00	11 15	11 32	11 50	11 55	12 05	→	12 30	12 37	12 47	12 58	13 05	
45B	45360										11 05	11 15	11 30	→	→	11 55	12 05	12 20							
48	48380	10 50	11 05	→	→	→	→	→	11 45	11 59	→	→	→	12 07	12 25										
41	41320			11 00	11 17	11 37	11 44	11 52	→	→	→	12 00	12 15	12 32	12 50	12 55	13 05	→	13 30	13 37	13 47	13 58	14 05	
45B	45400										12 05	12 15	12 30	→	→	12 55	13 05	13 20							
48	48420	11 50	12 05	→	→	→	→	→	12 45	12 59	→	→	→	13 07	13 25										
41	41360			12 00	12 17	12 37	12 44	12 52	→	→	→	13 00	13 15	13 32	13 50	13 55	14 05	→	14 35	14 42	14 57	15 08	15 15	
45B	45440										13 05	13 15	13 30	→	→	13 55	14 05	14 20							
48	48460	12 50	13 05	→	→	→	→	→	13 45	13 59	→	→	→	14 07	14 25										
41	41400			13 00	13 17	13 37	13 44	13 52	→	→	→	14 00	14 15	14 32	14 50	14 55	15 05	→	15 35	15 42	15 57	16 08	16 15	

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Guelph 39 Dp	Puslinch 39	Hamilton 18 Dp	Hamilton 18 Dp	Burlington 16	Oakville 14	Oakville 13	Mississauga 22 Dp	Brampton 22 Dp	Mississauga 21 Dp	Mississauga 21	Mississauga 20	Brampton 32	Vaughan 19 Ar	Vaughan 19 Dp	Richmond Hill 60	Markham 71 Ar	Scarborough 7	Scarborough 89	Scarborough 89	Scarborough 89	Pickering 91	Pickering 91 Ar
			University of Guelph	**Brock Rd. @ McLean Rd. (Aberfoyle)**	**Hamilton GO Centre**	**McMaster University**	**Dundas St. @ Hwy. 407**	**Bronte Rd. @ Hwy. 407**	**Trafalgar Rd. @ Hwy. 407**	**Meadowvale GO**	**Hurontario St. @ Hwy. 407**	**Streetsville GO**	**Erin Mills Transitway Station**	**Square One**	**Bramalea GO**	**Hwy. 407 Bus Terminal**	**Hwy. 407 Bus Terminal**	**Richmond Hill Centre**	**Unionville GO**	**Scarborough Centre Bus Terminal**	**Centennial College**	**University of Toronto Scarborough**	**Kingston Rd. @ Fairport Rd.**	**Pickering GO**	
45B	45480											14 05	14 15	14 30	→	→	14 55	15 05	15 20						
48	48460	13 50	14 05	→	→	→	→	→	14 45	14 59	→	→	→	15 07	15 25										
41	41430			13 55	14 12	14 32	14 39	14 47	→	→	→	14 55	15 10	15 30	15 50	15 55	16 05	→	16 40	16 47	17 02	17 15	17 25	
45B	45540											15 00	15 10	15 25	→	→	15 55	16 05	16 20						
47	47560			14 25	14 42	15 02	15 09	15 17	→	→	→	15 25	15 40	16 00	16 20										
48	48570	14 40	14 55	→	→	→	→	→	15 35	15 54	→	→	→	16 05	16 25										
41	41470			14 50	15 07	15 27	15 34	15 42	→	→	→	15 50	16 05	16 30	16 50	16 55	17 05	→	17 40	17 47	18 02	18 15	18 25	
45B	45600											15 55	16 05	16 20	→	→	16 55	17 05	17 20						
47	47620			15 10	15 27	15 47	15 54	16 02	→	→	→	16 10	16 25	16 50	17 10										
48	48630	15 35	15 50	→	→	→	→	→	16 30	16 54	→	→	→	17 05	17 25										
41	41530			15 50	16 07	16 27	16 34	16 42	→	→	→	16 50	17 05	17 30	17 50	17 55	18 05	→	18 40	18 47	19 02	19 15	19 25	
45B	45660											16 55	17 05	17 20	→	→	17 55	18 05	18 20						
47	47670			16 15	16 37	17 00	17 07	17 15	→	→	→	17 25	17 40	18 00	18 20										
48	48680	16 35	16 50	→	→	→	→	→	17 35	17 54	→	→	→	18 05	18 25										
41	41580			16 50	17 12	17 35	17 42	17 50	→	→	→	18 00	18 15	18 35	18 55	19 00	19 10	→	19 40	19 47	20 02	20 13	20 20	
45B	45700											18 00	18 10	18 25	→	→	18 55	19 05	19 20						
47	47710			17 20	17 42	18 05	18 12	18 20	→	→	→	18 30	18 45	19 02	19 20										
48	48720	17 40	17 55	→	→	→	→	→	18 40	18 59	→	→	→	19 07	19 25										
41	41650			18 00	18 22	18 42	18 49	18 57	→	→	→	19 05	19 20	19 37	19 55	20 00	20 10	→	20 35	20 42	20 52	21 03	21 10	
47	47750			18 30	18 47	19 07	19 14	19 22	→	→	→	19 30	19 45	20 02	20 20										
48	48760	18 50	19 05	→	→	→	→	→	19 45	19 59	→	→	→	20 07	20 25										
41	41700			19 00	19 17	19 37	19 44	19 52	→	→	→	20 00	20 15	20 32	20 50	20 55	21 05	→	21 30	21 37	21 47	21 58	22 05	
45	45720											20 00	20 10	20 25	→	20 55									
48	48800	19 50	20 05	→	→	→	→	→	20 45	20 59	→	→	→	21 07	21 25										
41	41740			20 00	20 17	20 37	20 44	20 52	→	→	→	21 00	21 15	21 32	21 50	21 55	22 05	→	22 25	22 32	22 42	22 53	23 00	
48	48830	20 50	21 05	→	→	→	→	→	21 45	21 59	→	→	→	22 07	22 25										
45	45800											21 30	21 40	21 55	→	22 25									
41	41780			21 00	21 17	21 37	21 44	21 52	→	→	→	22 00	22 15	22 32	22 50	22 55	23 05	→	23 25	23 31	23 40	23 50	23 55	
48	48860	21 55	22 10	→	→	→	→	→	22 45	22 59	→	→	→	23 07	23 25										
41	41820			22 00	22 17	22 37	22 44	22 52	→	→	→	23 00	23 15	23 32	23 50	23 55	00 05	→	00 25	00 31	00 40	00 50	00 55	
48	48890	22 55	23 10	→	→	→	→	→	23 45	23 59	→	→	→	00 07	00 25										
47	47910			23 05	23 17	23 37	23 44	23 52	→	→	→	00 00	00 15	00 32	00 50										

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Pickering 91 Dp	Pickering 91	Scarborough 89	Scarborough 89	Scarborough 7	Markham 71 Dp	Richmond Hill 60	Vaughan 19 Ar	Vaughan 19 Dp	Brampton 32	Mississauga 20	Mississauga 21	Mississauga 21 Dp	Brampton 22 Dp	Mississauga 22 Dp	Oakville 13	Oakville 14	Burlington 16	Hamilton 18	Hamilton 18 Ar	Puslinch 39	Guelph 39 Ar
		Ⓟ ♿	Pickering GO	Kingston Rd. @ Fairport Rd.	University of Toronto Scarborough	Centennial College	Scarborough Centre Bus Terminal	Unionville GO	Richmond Hill Centre	Hwy. 407 Bus Terminal	Hwy. 407 Bus Terminal	Bramalea GO	Square One	Erin Mills Transitway Station	Streetsville GO	Hurontario St. @ Hwy. 407	Meadowvale GO	Trafalgar Rd. @ Hwy. 407	Bronte Rd. @ Hwy. 407	Dundas St. @ Hwy. 407	McMaster University	Hamilton GO Centre	Brock Rd. @ McLean Rd. (Aberfoyle)	University of Guelph
47	47021										04 40	04 55	05 20	05 28	→	→	→	05 35	05 43	05 51	06 10	06 25		
47	47041										05 10	05 25	05 50	05 58	→	→	→	06 05	06 13	06 21	06 40	06 55		
47	47061										05 40	05 55	06 20	06 28	→	→	→	06 38	06 46	06 56	07 15	07 30		
48	48061										05 45	06 00	→	→	→	06 12	06 35	→	→	→	→	→	07 05	07 25
41	41041	05 05	05 10	05 20	05 30	05 40	→	05 57	06 10		06 15	06 30	06 55	07 03	→	→	→	07 13	07 21	07 31	07 50	08 05		
47	47111										06 40	06 57	07 25	07 33	→	→	→	07 43	07 51	08 01	08 20	08 35		
48	48121										06 45	07 02	→	→	→	07 17	07 40	→	→	→	→	→	08 15	08 35
41	41091	05 45	05 55	06 05	06 15	06 25	→	06 47	07 00		07 05	07 22	07 50	07 58	→	→	→	08 08	08 16	08 26	08 50	09 05		
45B	45141						06 45	06 57	→		07 10	→	07 40	07 48	08 00									
45B	45171						07 15	07 27	→		07 40	→	08 10	08 18	08 30									
47	47171										07 40	07 57	08 25	08 33	→	→	→	08 43	08 51	09 01	09 25	09 40		
48	48181										07 45	08 02	→	→	→	08 17	08 40	→	→	→	→	→	09 15	09 35
45B	45231						07 30	07 42	→		07 55	→	08 25	08 33	08 45									
41	41111	06 45	06 50	07 00	07 12	07 25	→	07 47	08 00		08 05	08 22	08 50	08 58	→	→	→	09 08	09 16	09 26	09 45	10 00		
41	41141	07 10	07 15	07 27	07 41	07 55	→	08 22	08 35		08 40	08 57	09 25	09 33	→	→	→	09 43	09 51	10 01	10 20	10 35		
48	48231										08 45	09 02	→	→	→	09 17	09 40	→	→	→	→	→	10 15	10 35
45B	45271						08 30	08 42	→		08 55	→	09 25	09 33	09 45									
47	47251										09 05	09 20	09 45	09 53	→	→	→	10 03	10 11	10 21	10 40	10 55		
48	48271										09 45	10 00	→	→	→	10 12	10 35	→	→	→	→	→	11 10	11 30
41	41211	08 20	08 25	08 37	08 51	09 05	→	09 32	09 45		09 50	10 05	10 30	10 38	→	→	→	10 48	10 56	11 06	11 25	11 40		
45B	45311						09 30	09 42	→		09 55	→	10 25	10 33	10 45									
41	41241	09 05	09 10	09 20	09 32	09 45	→	10 07	10 20		10 25	10 40	11 05	11 13	→	→	→	11 23	11 31	11 41	12 00	12 15		
48	48311										10 45	11 00	→	→	→	11 12	11 35	→	→	→	→	→	12 10	12 30
45B	45351						10 30	10 42	→		10 55	→	11 25	11 33	11 45									
41	41281	10 10	10 15	10 25	10 37	10 50	→	11 12	11 25		11 30	11 45	12 10	12 18	→	→	→	12 28	12 36	12 46	13 05	13 20		
48	48351										11 45	12 00	→	→	→	12 12	12 35	→	→	→	→	→	13 10	13 30
45B	45391						11 30	11 42	→		11 55	→	12 25	12 33	12 45									
41	41321	11 05	11 10	11 20	11 32	11 45	→	12 07	12 20		12 25	12 40	13 05	13 13	→	→	→	13 23	13 31	13 41	14 00	14 15		
48	48391										12 45	13 00	→	→	→	13 12	13 35	→	→	→	→	→	14 10	14 30
45B	45431						12 30	12 42	→		12 55	→	13 25	13 33	13 45									
41	41361	12 00	12 05	12 15	12 27	12 40	→	13 02	13 15		13 20	13 35	14 00	14 08	→	→	→	14 18	14 26	14 36	14 55	15 10		
48	48431										13 45	14 00	→	→	→	14 12	14 35	→	→	→	→	→	15 10	15 30

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→	Pickering 91 Dp	Pickering 91	Scarborough 89	Scarborough 89	Scarborough 7	Markham 71 Dp	Richmond Hill 60	Vaughan 19 Ar	Vaughan 19 Dp	Brampton 32	Mississauga 20	Mississauga 21	Mississauga 21 Dp	Brampton 22 Dp	Mississauga 22 Dp	Oakville 13	Oakville 14	Burlington 16	Hamilton 18	Hamilton 18 Ar	Puslinch 39	Guelph 39 Ar
		Ⓟ ♿	Pickering GO	Kingston Rd. @ Fairport Rd.	University of Toronto Scarborough	Centennial College	Scarborough Centre Bus Terminal	Unionville GO	Richmond Hill Centre	Hwy. 407 Bus Terminal	Hwy. 407 Bus Terminal	Bramalea GO	Square One	Erin Mills Transitway Station	Streetsville GO	Hurontario St. @ Hwy. 407	Meadowvale GO	Trafalgar Rd. @ Hwy. 407	Bronte Rd. @ Hwy. 407	Dundas St. @ Hwy. 407	McMaster University	Hamilton GO Centre	Brock Rd. @ McLean Rd. (Aberfoyle)	University of Guelph
45B	45471							13 30	13 42	→	13 55	→	14 25	14 33	14 45									
41	41391	12 55	13 00	13 10	13 22	13 35	→	13 57	14 10		14 15	14 30	14 55	15 03	→	→	→	15 13	15 21	15 31	15 55	16 10		
48	48471										14 45	15 00	→	→	→	15 12	15 35	→	→	→	→	→	16 15	16 35
45B	45521							14 30	14 42	→	14 55	→	15 25	15 33	15 45									
41	41431	13 50	13 55	14 07	14 21	14 35	→	14 57	15 10		15 15	15 30	16 00	16 08	→	→	→	16 18	16 26	16 36	17 05	17 20		
48	48531										15 45	16 05	→	→	→	16 17	16 40	→	→	→	→	→	17 20	17 40
45B	45581							15 30	15 42	→	15 55	→	16 25	16 33	16 45									
41	41471	14 55	15 00	15 12	15 26	15 40	→	16 07	16 20		16 25	16 45	17 20	17 28	→	→	→	17 38	17 46	17 56	18 25	18 40		
48	48591										16 45	17 10	→	→	→	17 22	17 45	→	→	→	→	→	18 25	18 45
45B	45641							16 30	16 42	→	16 55	→	17 25	17 33	17 45									
47	47581										16 55	17 20	17 55	18 03	→	→	→	18 13	18 21	18 31	18 55	19 10		
47	47611										17 25	17 50	18 25	18 33	→	→	→	18 43	18 51	19 01	19 20	19 35		
48	48651										17 45	18 05	→	→	→	18 17	18 40	→	→	→	→	→	19 15	19 35
41	41641	16 05	16 10	16 25	16 40	16 55	→	17 27	17 40		17 45	18 05	18 35	18 43	→	→	→	18 53	19 01	19 11	19 30	19 45		
45B	45691							17 30	17 42	→	17 55	→	18 25	18 33	18 45									
41	41601	17 05	17 10	17 25	17 40	17 55	18 17	→	18 30		18 35	18 50	19 15	19 23	→	→	→	19 33	19 41	19 51	20 10	20 25		
48	48691										18 45	19 00	→	→	→	19 12	19 35	→	→	→	→	→	20 10	20 30
45B	45731							18 30	18 42	→	18 55	→	19 25	19 33	19 45									
47	47711										19 05	19 20	19 45	19 53	→	→	→	20 03	20 11	20 21	20 40	20 55		
41	41671	18 15	18 20	18 30	18 42	18 55	→	19 17	19 30		19 35	19 50	20 15	20 23	→	→	→	20 33	20 41	20 51	21 10	21 25		
48	48731										19 45	20 00	→	→	→	20 12	20 35	→	→	→	→	→	21 05	21 25
45B	45771							19 30	19 42	→	19 55	→	20 25	20 33	20 45									
41	41711	19 15	19 20	19 30	19 42	19 55	→	20 17	20 30		20 35	20 50	21 15	21 23	→	→	→	21 33	21 41	21 51	22 10	22 25		
48	48771										20 45	21 00	→	→	→	21 12	21 35	→	→	→	→	→	22 05	22 25
45	45811										21 10	→	21 35	21 43	21 55									
41	41751	20 15	20 20	20 30	20 42	20 55	→	21 17	21 30		21 35	21 50	22 15	22 23				22 33	22 41	22 51	23 10	23 25		
48	48811										21 45	22 00	→	→	→	22 12	22 30	→	→	→	→	→	23 00	23 20
41	41781	21 05	21 10	21 20	21 30	21 40	→	21 57	22 10		22 15	22 30	22 55	23 03	→	→	→	23 10	23 18	23 26	23 45	00 00		
45	45841										22 40	→	23 05	23 13	23 25									
48	48841										22 45	23 00	→	→	→	23 12	23 30	→	→	→	→	→	00 00	00 20
41	41811	22 05	22 10	22 20	22 30	22 40	→	22 57	23 10		23 15	23 30	23 55	00 03	→	→	→	00 10	00 18	00 26	00 45	01 00		
48	48871										23 45	00 00	→	→	→	00 12	00 30	→	→	→	→	→	01 00	01 20
47	47881										00 10	00 25	00 50	00 58	→	→	→	01 05	01 13	01 21	01 40	01 55		
48	48901										00 45	01 00	→	→	→	01 12	01 30	→	→	→	→	→	02 00	02 20
47	47921										01 10	01 25	01 50	01 58	→	→	→	02 05	02 13	02 21	02 40	02 55		

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Exception 1	Exception 2	Hamilton 18 — Hamilton GO Centre	Hamilton 18 — McMaster University	Burlington 16 — Dundas St. @ Hwy. 407	Oakville 14 — Bronte Rd. @ Hwy. 407	Oakville 13 — Trafalgar Rd. @ Hwy. 407	Mississauga 21 — Erin Mills Transitway Station	Mississauga 20 Dp — Square One	Brampton 32 Dp — Bramalea GO	Vaughan 19 Ar — Hwy. 407 Bus Terminal
Zone→				18	18	16	14	13	21	20	32	19
47	47090			04 40	04 52	05 09	05 16	05 24	05 32	05 45	06 02	06 20
47	47120			05 10	05 22	05 39	05 46	05 54	06 02	06 15	06 32	06 50
47	47180			06 10	06 22	06 39	06 46	06 54	07 02	07 15	07 32	07 50
47	47230			07 10	07 22	07 39	07 46	07 54	08 02	08 15	08 32	08 50
47	47270			08 05	08 22	08 39	08 46	08 54	09 02	09 15	09 32	09 50
47	47310			09 00	09 17	09 37	09 44	09 52	10 00	10 15	10 32	10 50
47	47350			10 00	10 17	10 37	10 44	10 52	11 00	11 15	11 32	11 50
47	47390			11 00	11 17	11 37	11 44	11 52	12 00	12 15	12 32	12 50
47	47430			12 00	12 17	12 37	12 44	12 52	13 00	13 15	13 32	13 50
47	47470			13 00	13 17	13 37	13 44	13 52	14 00	14 15	14 32	14 50
47	47530			14 00	14 17	14 37	14 44	14 52	15 00	15 15	15 32	15 50
47	47590			15 00	15 17	15 37	15 44	15 52	16 00	16 15	16 32	16 50
47	47650			16 00	16 17	16 37	16 44	16 52	17 00	17 15	17 32	17 50
47	47690			17 00	17 17	17 37	17 44	17 52	18 00	18 15	18 32	18 50
47	47730			18 00	18 17	18 37	18 44	18 52	19 00	19 15	19 32	19 50
47	47770			19 00	19 17	19 37	19 44	19 52	20 00	20 15	20 32	20 50
47	47810			20 00	20 17	20 37	20 44	20 52	21 00	21 15	21 32	21 50
47	47840			21 00	21 17	21 37	21 44	21 52	22 00	22 15	22 32	22 50
47	47880			22 00	22 17	22 37	22 44	22 52	23 00	23 15	23 32	23 50
47	47910			23 05	23 17	23 37	23 44	23 52	00 00	00 15	00 32	00 50

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Exception 1	Exception 2	Vaughan 19 — Hwy. 407 Bus Terminal	Brampton 32 Ar — Bramalea GO	Mississauga 20 Dp — Square One	Mississauga 21 — Erin Mills Transitway Station	Oakville 13 — Trafalgar Rd. @ Hwy. 407	Oakville 14 — Bronte Rd. @ Hwy. 407	Burlington 16 — Dundas St. @ Hwy. 407	Hamilton 18 — McMaster University	Hamilton 18 Ar — Hamilton GO Centre
Zone→				19	32	20	21	13	14	16	18	18
47	47111			06 40	06 55	07 20	07 28	07 35	07 43	07 51	08 10	08 25
47	47141			07 10	07 25	07 50	07 58	08 05	08 13	08 21	08 40	08 55
47	47201			08 10	08 25	08 50	08 58	09 05	09 13	09 21	09 40	09 55
47	47251			09 10	09 25	09 50	09 58	10 05	10 13	10 21	10 40	10 55
47	47291			10 10	10 25	10 50	10 58	11 05	11 13	11 21	11 40	11 55
47	47331			11 10	11 25	11 50	11 58	12 05	12 13	12 23	12 45	13 00
47	47371			12 10	12 25	12 50	12 58	13 05	13 13	13 23	13 45	14 00
47	47411			13 10	13 25	13 55	14 03	14 10	14 18	14 28	14 50	15 05
47	47451			14 10	14 25	14 55	15 03	15 10	15 18	15 28	15 50	16 05
47	47491			15 10	15 25	15 55	16 03	16 10	16 18	16 28	16 50	17 05
47	47551			16 10	16 25	16 55	17 03	17 10	17 18	17 28	17 50	18 05
47	47611			17 10	17 25	17 55	18 03	18 10	18 18	18 28	18 50	19 05
47	47671			18 10	18 25	18 55	19 03	19 10	19 18	19 28	19 50	20 05
47	47711			19 10	19 25	19 50	19 58	20 05	20 13	20 23	20 45	21 00
47	47751			20 10	20 25	20 50	20 58	21 05	21 13	21 23	21 45	22 00
47	47791			21 10	21 25	21 50	21 58	22 05	22 13	22 23	22 45	23 00
47	47831			22 10	22 25	22 50	22 58	23 05	23 13	23 21	23 40	23 55
47	47851			23 10	23 25	23 50	23 58	00 05	00 13	00 21	00 40	00 55
47	47881			00 10	00 25	00 50	00 58	01 05	01 13	01 21	01 40	01 55
47	47911			01 10	01 25	01 50	01 58	02 05	02 13	02 21	02 40	02 55

moovit 41 bus time schedule & line map

41 - Hamilton Go

View In Website Mode

The 41 bus line (41 - Hamilton Go) has 2 routes. For regular weekdays, their operation hours are:
(1) 41 - Hamilton Go: 5:00 AM - 10:00 PM (2) 41 - Pickering Go: 4:40 AM - 10:00 PM
Use the Moovit App to find the closest 41 bus station near you and find out when is the next 41 bus arriving.

Direction: 41 - Hamilton Go

32 stops
VIEW LINE SCHEDULE

Pickering Station Go Rail
1322 Bayly St, Pickering

Liverpool Northbound @ Pickering Parkway
1785 Liverpool Road, Pickering

Kingston Westbound @ Walnut
1154 Kingston Road, Pickering

Kingston Rd. @ Fairport Rd.
900 Kingston Road, Pickering

University Of Toronto Scarborough
UTSC bus loop, Toronto

Military Trail @ Pan AM
1050 Military Trl, Toronto

Morningside Ave at Tams Rd
891 Morningside Avenue, Toronto

Centennial College

Scarborough Centre Bus Terminal
200 Town Centre Court, Toronto

Consumers Road 1200-251
280 Consumers Road, Toronto

Yonge Street
8479 Yonge Street, York

Richmond Hill Centre
8675 Yonge Street, York

Yonge St. @ Garden Ave.
8640 Yonge Street, York

Hwy 407 Bus Terminal

41 bus Time Schedule

41 - Hamilton Go Route Timetable:

Sunday	Not Operational
Monday	5:00 AM - 10:00 PM
Tuesday	5:00 AM - 10:00 PM
Wednesday	5:00 AM - 10:00 PM
Thursday	5:00 AM - 10:00 PM
Friday	5:00 AM - 10:00 PM
Saturday	Not Operational

41 bus Info

Direction: 41 - Hamilton Go
Stops: 32
Trip Duration: 200 min
Line Summary: Pickering Station Go Rail, Liverpool Northbound @ Pickering Parkway, Kingston Westbound @ Walnut, Kingston Rd. @ Fairport Rd., University Of Toronto Scarborough, Military Trail @ Pan AM, Morningside Ave at Tams Rd, Centennial College, Scarborough Centre Bus Terminal, Consumers Road 1200-251, Yonge Street, Richmond Hill Centre, Yonge St. @ Garden Ave., Hwy 407 Bus Terminal, Bramalea Go Bus, Square One, Erin Mills Transitway Station, Trafalgar Rd. @ Hwy. 407 Park & Ride, Bronte Rd. @ Hwy. 407 Park & Ride, Dundas St. @ Hwy. 407 Park & Ride, Main at Haddon, Mcmaster University, Main St. W. @ Paisley Ave. S., Main St. W. @ Longwood Rd. S., Main St. W. @ Macklin St. S., Main St. W. @ Dundurn St. S., Main St. W. @ Poulette St., Main at Pearl, Main St. W. @ Ray St. S., Main St. W. @ Caroline St. S., Main St. W. @ Summers Ln. (Hamilton City Hall), Hamilton Go Centre

Bramalea Go Bus

Square One
189 Rathburn Road West, Mississauga

Erin Mills Transitway Station
4380 Erin Mills Pky, Peel

Trafalgar Rd. @ Hwy. 407 Park & Ride
4180 Trafalgar Road, Oakville

Bronte Rd. @ Hwy. 407 Park & Ride
3390 Regional Road 25, Oakville

Dundas St. @ Hwy. 407 Park & Ride
3405 Dundas St., Burlington

Main at Haddon
1144 Main Street, Hamilton

Mcmaster University
1280 Main Street West, Hamilton

Main St. W. @ Paisley Ave. S.
1003 Main Street West, Hamilton

Main St. W. @ Longwood Rd. S.
875 Main Street West, Hamilton

Main St. W. @ Macklin St. S.
690 Main Street, Hamilton

Main St. W. @ Dundurn St. S.
475 Main Street, Hamilton

Main St. W. @ Poulette St.
405 Main Street West, Hamilton

Main at Pearl
315 Main Street West, Hamilton

Main St. W. @ Ray St. S.
271 Main Street West, Hamilton

Main St. W. @ Caroline St. S.
Main Street West, Hamilton

Main St. W. @ Summers Ln. (Hamilton City Hall)
71 Main Street West, Hamilton

Hamilton Go Centre
36 Hunter Street East, Hamilton



Direction: 41 - Pickering Go

33 stops

VIEW LINE SCHEDULE

Hamilton Go Centre
36 Hunter Street East, Hamilton

King St. E. @ Hughson St. N.
59 King Street, Hamilton

King St. W. @ Summers Ln. (Hamilton Place)
114 King Street West, Hamilton

King St. W. @ Caroline St. N.
196 King Street, Hamilton

King St. W. @ Queen St. N.
14 Queen Street North, Hamilton

King at Pearl
420 King Street, Hamilton

King St. W. @ Strathcona Ave. N.
516 King Street West, Hamilton

King St. W. @ Dundurn St. N.
8 Dundurn Street North, Hamilton

Main at Haddon
1144 Main Street, Hamilton

Mcmaster University
1280 Main Street West, Hamilton

Dundas St. @ Hwy. 407 Park & Ride
3405 Dundas St., Burlington

Bronte Rd. @ Hwy. 407 Park & Ride
3390 Regional Road 25, Oakville

Trafalgar Rd. @ Hwy. 407 Park & Ride
4180 Trafalgar Road, Oakville

Erin Mills Transitway Station
4380 Erin Mills Pky, Peel

Square One
189 Rathburn Road West, Mississauga

Bramalea Go Bus

Hwy 407 Bus Terminal
7332 Jane Street, Vaughan

Yonge Street
8479 Yonge Street, York

Richmond Hill Centre

41 bus Time Schedule

41 - Pickering Go Route Timetable:

Sunday	Not Operational
Monday	4:40 AM - 10:00 PM
Tuesday	4:40 AM - 10:00 PM
Wednesday	4:40 AM - 10:00 PM
Thursday	4:40 AM - 10:00 PM
Friday	4:40 AM - 10:00 PM
Saturday	Not Operational

41 bus Info

Direction: 41 - Pickering Go
Stops: 33
Trip Duration: 200 min
Line Summary: Hamilton Go Centre, King St. E. @ Hughson St. N., King St. W. @ Summers Ln. (Hamilton Place), King St. W. @ Caroline St. N., King St. W. @ Queen St. N., King at Pearl, King St. W. @ Strathcona Ave. N., King St. W. @ Dundurn St. N., Main at Haddon, Mcmaster University, Dundas St. @ Hwy. 407 Park & Ride, Bronte Rd. @ Hwy. 407 Park & Ride, Trafalgar Rd. @ Hwy. 407 Park & Ride, Erin Mills Transitway Station, Square One, Bramalea Go Bus, Hwy 407 Bus Terminal, Yonge Street, Richmond Hill Centre, Yonge St. @ Garden Ave., Consumers Road 1200-251, Scarborough Centre Bus Terminal, Centennial College, Morningside Ave at Tams Rd, Military Trail. @ Pan AM Dr., University Of Toronto Scarborough, Military Trail @ Pan AM, Morningside Ave at Tams Rd, Kingston Eastbound @ Whites, Kingston Rd. @ Fairport Rd., Kingston Rd. @ Walnut Ln., Liverpool Rd. @ Pickering Pkwy., Pickering Station Go Rail

8675 Yonge Street, York

Yonge St. @ Garden Ave.
8640 Yonge Street, York

Consumers Road 1200-251
243 Consumers Road, Toronto

Scarborough Centre Bus Terminal
300 Borough Drive, Toronto

Centennial College

Morningside Ave at Tams Rd
158 Bonspiel Dr, Toronto

Military Trail. @ Pan AM Dr.
1049 Military Trl, Toronto

University Of Toronto Scarborough
UTSC bus loop, Toronto

Military Trail @ Pan AM
1050 Military Trl, Toronto

Morningside Ave at Tams Rd
891 Morningside Avenue, Toronto

Kingston Eastbound @ Whites
711 Kingston Road, Pickering

Kingston Rd. @ Fairport Rd.
897 Kingston Road, Pickering

Kingston Rd. @ Walnut Ln.
1155 Kingston Road, Pickering

Liverpool Rd. @ Pickering Pkwy.
1786 Liverpool Road, Pickering

Pickering Station Go Rail
1322 Bayly St, Pickering



41 bus time schedules and route maps are available in an offline PDF at moovitapp.com. Use the Moovit App to see live bus times, train schedule or subway schedule, and step-by-step directions for all public transit in Toronto.

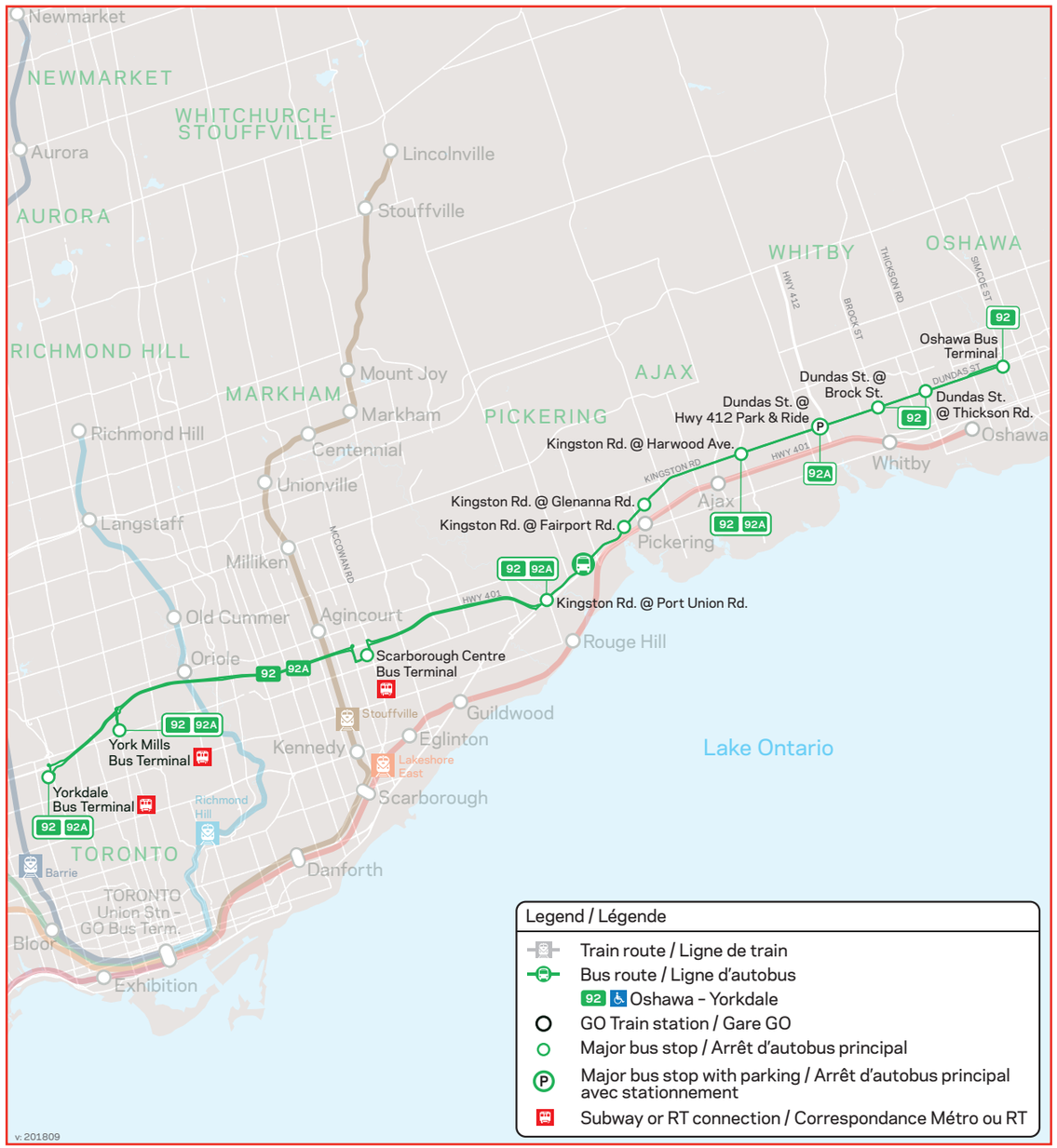
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Check Live Arrival Times

92 Route number / Nombre d'itinéraire

Oshawa/Yorkdale



CONTACT US

1-888-438-6646
416-869-3200
TTY/ATS:
1-800-387-3652

gotransit.com/schedules

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See Something?
Say Something.

24/7 Transit Safety Dispatch:
1-877-297-0642

prestocard.ca

Sign-up for email or text alerts/ Inscrivez-vous pour recevoir des alertes par courriel ou message texte.
gotransit.com/OnTheGO

05-03-2019

Oshawa/ Yorkdale

GO Bus Schedule/
Horaire des autobus GO

METROLINX

92

- Oshawa
- Whitby
- Ajax
- Pickering
- Scarborough
- Toronto

Daily / Quotidiennement
Includes GO Bus routes 92/ Inclut les routes 92 d'autobus GO

Effective / À partir de:
6 APRIL AVRIL 2019

How to read our schedules

Step 1
Find the station or terminal you are departing from. Stops are listed across the top in the order they are served.

Step 2
The upper left corner tells you what day the schedule is for and the direction of travel.

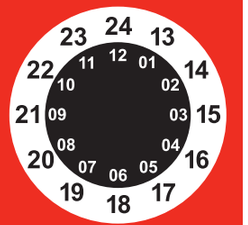
Step 3
Look across the rows for available departure times.

Step 4
Not all trains or buses stop at every station. If you see → the train or bus will not stop at that station.

Schedule times shown in 24-hour clock

Midnight to noon
00 01 - 12 00

Noon to midnight
12 01 - 24 00



Legend

Bus trips

→ Trip does not serve this location.

GO Bus service is accessible to passengers using mobility devices at this location.

Notes

For the latest schedule information and updates, please visit gotransit.com.

Bicycles

1. Bicycles are not allowed in Union Station or on-board trains during morning rush hour (6:30-9:30) and evening rush hour (15:30-18:30), Monday to Friday.

2. Foldable bicycles are allowed on-board trains at all times.

Comment lire nos horaires

Étape 1
Trouvez votre gare ou terminus de départ. La liste des arrêts est donnée en haut dans l'ordre dans lequel ils sont desservis.

Étape 2
Le coin supérieur gauche vous indique le jour pour lequel l'horaire est donné et la direction de circulation.

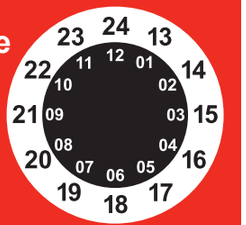
Étape 3
Regardez dans les rangées pour obtenir les heures de départ offertes.

Étape 4
Les trains ou les autobus ne s'arrêtent pas tous à chaque gare. Si vous voyez le symbole → le train ou l'autobus ne s'arrêtera pas à cette gare.

Indications selon un système horaire de 24 heures

De minuit à midi:
00 01 - 12 00

De midi à minuit:
12 01 - 24 00



Légende

Horaire des autobus

→ Trajet ne sert pas cette station.

Service d'autobus GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.

Notes

Pour consulter les horaires les plus récents et les mises à jour, veuillez visiter gotransit.com.

Vélos

1. Les vélos ne sont pas autorisés dans la gare Union ou à bord des trains du lundi au vendredi, pendant l'heure de pointe (6:30-9:30) et pendant l'heure de pointe du soir (15:30-18:30).

2. Les vélos pliables sont permis à bord des trains en tout temps.

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

WESTBOUND / EN DIRECTION OUEST

Route Number / Nombre d'itinéraire	Trip Number / N° du trajet	Zone→	Oshawa 94 Dp. **Oshawa Bus Terminal**	Whitby 93 **Dundas St. @ Thickson Rd.**	Whitby 93 **Dundas St. @ Brock St.**	Whitby 93 **Dundas St. @ Hwy. 412**	Ajax 92 **Kingston Rd. @ Harwood Ave.**	Pickering 91 **Kingston Rd. @ Glenanna Rd.**	Pickering 91 **Kingston Rd. @ Fairport Rd.**	Scarborough 90 **Kingston Rd. @ Sheppard Ave. E**	Scarborough 7 Ar. **Scarborough Centre Bus Terminal**	North York 5 Ar. **York Mills Bus Terminal**	North York 5 Ar. **Yorkdale Bus Terminal**
92	92010		04 10	04 18	04 22	→	04 30	04 38	04 41	04 46	04 55	05 10	05 20
92	92030		04 40	04 48	04 52	→	05 00	05 08	05 11	05 16	05 25	05 40	05 50
92	92040		05 05	05 13	05 17	→	05 25	05 33	05 36	05 42	05 55	06 10	06 20
92A	92052					05 35	05 40	05 48	05 51	05 57	06 10	06 30	06 40
92	92050		05 30	05 38	05 42	→	05 50	05 59	06 02	06 09	06 25	06 45	06 55
92A	92062					06 00	06 05	06 14	06 17	06 24	06 40	07 05	07 15
92	92070		06 00	06 08	06 12	→	06 20	06 29	06 32	06 39	06 55	07 20	07 30
92A	92072					06 30	06 35	06 44	06 47	06 54	07 10	07 40	07 50
92	92090		06 25	06 33	06 37	→	06 45	06 54	06 57	07 04	07 25	07 55	08 05
92A	92112					06 54	06 59	07 09	07 12	07 19	07 40	07 10	08 20
92	92130		06 50	06 58	07 03	→	07 14	07 24	07 27	07 34	07 55	08 25	08 35
92A	92152					07 24	07 29	07 39	07 42	07 49	08 10	08 40	08 50
92	92150		07 20	07 28	07 33	→	07 44	07 54	07 57	08 04	08 25	08 55	09 05
92A	92172					07 54	07 59	08 09	08 12	08 19	08 40	09 05	09 15
92	92170		07 50	07 58	08 03	→	08 14	08 24	08 27	08 34	08 55	09 20	09 30
92	92220		08 25	08 33	08 38	→	08 49	08 59	09 02	09 09	09 25	09 50	10 00
92	92230		08 55	09 03	09 08	→	09 19	09 29	09 32	09 39	09 55	10 15	10 25
92	92250		09 25	09 33	09 38	→	09 49	09 59	10 02	10 09	10 25	10 40	10 50
92	92270		09 55	10 03	10 08	→	10 19	10 29	10 32	10 39	10 55	11 10	11 20
92	92290		10 25	10 33	10 38	→	10 49	10 59	11 02	11 09	11 25	11 40	11 50
92	92310		10 55	11 03	11 08	→	11 19	11 29	11 32	11 39	11 55	12 10	12 20
92	92330		11 25	11 33	11 38	→	11 49	11 59	12 02	12 09	12 25	12 40	12 50
92	92350		11 55	12 03	12 08	→	12 19	12 29	12 32	12 39	12 55	13 10	13 20

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

WESTBOUND / EN DIRECTION OUEST

Route Number / Nombre d'itinéraire	Trip Number / N° du trajet	Zone→	Oshawa 94 Dp. **Oshawa Bus Terminal**	Whitby 93 **Dundas St. @ Thickson Rd.**	Whitby 93 **Dundas St. @ Brock St.**	Whitby 93 **Dundas St. @ Hwy. 412**	Ajax 92 **Kingston Rd. @ Harwood Ave.**	Pickering 91 **Kingston Rd. @ Glenanna Rd.**	Pickering 91 **Kingston Rd. @ Fairport Rd.**	Scarborough 90 **Kingston Rd. @ Sheppard Ave. E**	Scarborough 7 Ar. **Scarborough Centre Bus Terminal**	North York 5 Ar. **York Mills Bus Terminal**	North York 5 Ar. **Yorkdale Bus Terminal**
92	92370		12 25	12 33	12 38	→	12 49	12 59	13 02	13 09	13 25	13 45	13 55
92	92390		12 55	13 03	13 08	→	13 19	13 29	13 32	13 39	13 55	14 15	14 25
92	92410		13 25	13 33	13 38	→	13 49	13 59	14 02	14 09	14 25	14 45	14 55
92	92430		13 55	14 03	14 08	→	14 19	14 29	14 32	14 39	14 55	15 15	15 30
92	92450		14 25	14 33	14 38	→	14 49	14 59	15 02	15 09	15 25	15 45	16 00
92	92470		14 55	15 03	15 08	→	15 19	15 29	15 32	15 39	15 55	16 15	16 30
92	92500		15 25	15 33	15 38	→	15 49	15 59	16 02	16 09	16 25	16 45	17 00
92	92530		15 55	16 03	16 08	→	16 19	16 29	16 32	16 39	16 55	17 15	17 30
92	92560		16 25	16 33	16 38	→	16 49	16 59	17 02	17 09	17 25	17 45	18 00
92	92590		16 55	17 03	17 08	→	17 19	17 29	17 32	17 39	17 55	18 15	18 25
92	92620		17 25	17 33	17 38	→	17 49	17 59	18 02	18 09	18 25	18 45	18 55
92	92650		18 00	18 08	18 12	→	18 20	18 29	18 32	18 39	18 55	19 15	19 25
92	92670		18 30	18 38	18 42	→	18 50	18 59	19 02	19 09	19 25	19 40	19 50
92	92700		19 00	19 08	19 12	→	19 20	19 29	19 32	19 39	19 55	20 10	20 20
92	92720		19 35	19 43	19 47	→	19 55	20 04	20 07	20 12	20 25	20 40	20 50
92	92740		20 05	20 13	20 17	→	20 25	20 34	20 37	20 42	20 55	21 10	21 20
92	92760		20 35	20 43	20 47	→	20 55	21 04	21 07	21 12	21 25	21 40	21 50
92	92780		21 05	21 13	21 17	→	21 25	21 34	21 37	21 42	21 55	22 10	22 20
92	92800		21 40	21 46	21 49	→	21 57	22 05	22 08	22 13	22 25	22 40	22 50
92	92820		22 10	22 16	22 19	→	22 27	22 35	22 38	22 43	22 55	23 10	23 20
92	92830		22 40	22 46	22 49	→	22 57	23 05	23 08	23 13	23 25	23 40	23 50
92	92860		23 40	23 46	23 49	→	23 57	00 05	00 08	00 13	00 25	00 40	00 50
92	92890		00 40	00 46	00 49	→	00 57	01 05	01 08	01 13	01 25	01 40	01 50

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

EASTBOUND / EN DIRECTION EST

Route Number / Nombre d'itinéraire	Trip Number / N° du trajet	Zone →	North York 5 Dp.	North York 5	Scarborough 7	Scarborough 90	Pickering 91	Pickering 91	Ajax 92	Whitby 93	Whitby 93	Whitby 93	Oshawa 94 Ar.
		♿	**Yorkdale Bus Terminal**	**York Mills Bus Terminal**	**Scarborough Centre Bus Terminal**	**Kingston Rd. @ Port Union Rd.**	**Kingston Rd. @ Fairport Rd.**	**Kingston Rd. @ Glenanna Rd.**	**Kingston Rd. @ Harwood Ave.**	**Dundas St. @ Hwy. 412**	**Dundas St. @ Brock St.**	**Dundas St. @ Thickson Rd.**	**Oshawa Bus Terminal**
92	92021		04 50	05 00	05 15	05 24	05 29	05 32	05 40	→	05 48	05 52	06 00
92	92041		05 20	05 30	05 45	05 54	05 59	06 02	06 10	→	06 18	06 22	06 30
92	92061		05 50	06 00	06 15	06 25	06 30	06 33	06 41	→	06 49	06 53	07 05
92	92091		06 20	06 30	06 45	06 55	07 00	07 03	07 11	→	07 19	07 23	07 35
92	92121		06 50	07 00	07 15	07 25	07 30	07 35	07 44	→	07 54	07 58	08 10
92	92151		07 20	07 30	07 45	07 55	08 00	08 05	08 14	→	08 24	08 28	08 40
92	92171		07 45	07 55	08 15	08 25	08 30	08 35	08 44	→	08 54	08 58	09 10
92	92201		08 15	08 25	08 45	08 55	09 00	09 05	09 14	→	09 24	09 28	09 40
92	92231		08 45	08 55	09 15	09 25	09 30	09 35	09 44	→	09 54	09 58	10 10
92	92251		09 20	09 30	09 45	09 55	10 00	10 05	10 14	→	10 24	10 28	10 40
92	92271		09 50	10 00	10 15	10 25	10 30	10 35	10 44	→	10 54	10 58	11 10
92	92291		10 20	10 30	10 45	10 55	11 00	11 05	11 14	→	11 24	11 28	11 40
92	92311		10 50	11 00	11 15	11 25	11 30	11 35	11 44	→	11 54	11 58	12 10
92	92331		11 20	11 30	11 45	11 55	12 00	12 05	12 14	→	12 24	12 28	12 40
92	92351		11 50	12 00	12 15	12 25	12 30	12 35	12 44	→	12 54	12 58	13 10
92	92371		12 20	12 30	12 45	12 55	13 00	13 05	13 14	→	13 24	13 28	13 40
92	92391		12 50	13 00	13 15	13 25	13 30	13 35	13 44	→	13 54	13 58	14 10
92	92401		13 20	13 30	13 45	13 55	14 00	14 05	14 14	→	14 24	14 28	14 40
92	92431		13 50	14 00	14 15	14 25	14 30	14 35	14 44	→	14 54	14 58	15 10
92	92441		14 20	14 30	14 45	14 55	15 01	15 06	15 16	→	15 28	15 30	15 45
92	92471		14 45	14 55	15 15	15 25	15 31	15 36	15 46	→	15 56	16 00	16 15
92A	92483		15 00	15 10	15 30	15 40	15 46	15 51	16 01	16 11			
92	92481		15 15	15 25	15 45	15 55	16 01	16 06	16 17	→	16 28	16 34	16 50

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

EASTBOUND / EN DIRECTION EST

Route Number / Nombre d'itinéraire	Trip Number / N° du trajet	Zone →	North York 5 Dp.	North York 5	Scarborough 7	Scarborough 90	Pickering 91	Pickering 91	Ajax 92	Whitby 93	Whitby 93	Whitby 93	Oshawa 94 Ar.
		♿	**Yorkdale Bus Terminal**	**York Mills Bus Terminal**	**Scarborough Centre Bus Terminal**	**Kingston Rd. @ Port Union Rd.**	**Kingston Rd. @ Fairport Rd.**	**Kingston Rd. @ Glenanna Rd.**	**Kingston Rd. @ Harwood Ave.**	**Dundas St. @ Hwy. 412**	**Dundas St. @ Brock St.**	**Dundas St. @ Thickson Rd.**	**Oshawa Bus Terminal**
92A	92523		15 30	15 40	16 00	16 10	16 16	16 21	16 32	16 49			
92	92521		15 40	15 50	16 15	16 25	16 31	16 36	16 47	→	16 58	17 04	17 20
92A	92543		15 55	16 05	16 30	16 40	16 46	16 51	17 02	17 19			
92	92561		16 05	16 15	16 45	16 55	17 01	17 06	17 17	→	17 28	17 34	17 50
92A	92573		16 20	16 30	17 00	17 12	17 19	17 24	17 35	17 49			
92	92571		16 35	16 45	17 15	17 27	17 34	17 39	17 50	→	18 01	18 07	18 25
92A	92593		16 50	17 00	17 30	17 42	17 49	17 54	18 05	18 19			
92	92591		17 05	17 15	17 45	17 55	18 01	18 06	18 17	→	18 28	18 34	18 50
92A	92613		17 20	17 30	18 00	18 10	18 16	18 21	18 32	18 44			
92	92631		17 40	17 50	18 15	18 25	18 31	18 36	18 47	→	18 58	19 04	19 20
92A	92633		17 55	18 05	18 30	18 40	18 46	18 49	18 59	19 09			
92	92651		18 10	18 20	18 45	18 55	19 01	19 04	19 14	→	19 23	19 29	19 45
92A	92653		18 30	18 40	19 00	19 10	19 16	19 19	19 29	19 39			
92	92681		18 45	18 55	19 15	19 25	19 31	19 34	19 43	→	19 52	19 56	20 10
92	92701		19 15	19 25	19 45	19 55	20 01	20 04	20 13	→	20 22	20 26	20 40
92	92731		19 50	20 00	20 15	20 25	20 31	20 34	20 43	→	20 52	20 56	21 10
92	92751		20 20	20 30	20 45	20 55	21 00	21 03	21 11	→	21 19	21 23	21 35
92	92771		20 50	21 00	21 15	21 25	21 30	21 33	21 41	→	21 49	21 53	22 05
92	92791		21 20	21 30	21 45	21 55	22 00	22 03	22 11	→	22 19	22 23	22 35
92	92811		21 50	22 00	22 15	22 25	22 30	22 33	22 41	→	22 49	22 53	23 05
92	92831		22 20	22 30	22 45	22 55	23 00	23 03	23 11	→	23 19	23 23	23 35
92	92841		22 50	23 00	23 15	23 25	23 30	23 33	23 41	→	23 49	23 53	00 05
92	92871		23 50	24 00	00 15	00 24	00 29	00 32	00 40	→	00 48	00 52	01 00
92	92901		00 50	01 00	01 15	01 24	01 29	01 32	01 40	→	01 48	01 52	02 00

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number Nombre d'itinéraire	Trip Number N° du trajet	Zone→	Oshawa 94 Dp. **Oshawa Bus Terminal**	Whitby 93 **Dundas St. @ Thickson Rd.**	Whitby 93 **Dundas St. @ Brock St.**	Ajax 92 **Kingston Rd. @ Harwood Ave.**	Pickering 91 **Kingston Rd. @ Glenanna Rd.**	Pickering 91 **Kingston Rd. @ Fairport Rd.**	Scarborough 90 **Kingston Rd. @ Sheppard Ave. E**	Scarborough 7 Ar. **Scarborough Centre Bus Terminal**	North York 5 Ar. **York Mills Bus Terminal**	North York 5 Ar. **Yorkdale Bus Terminal**
92	92050		05 35	05 43	05 47	05 55	06 04	06 07	06 12	06 25	06 40	06 50
92	92070		06 05	06 13	06 17	06 25	06 34	06 37	06 42	06 55	07 10	07 20
92	92100		06 35	06 43	06 47	06 55	07 04	07 07	07 12	07 25	07 40	07 50
92	92130		07 05	07 13	07 17	07 25	07 34	07 37	07 42	07 55	08 10	08 20
92	92160		07 35	07 43	07 47	07 55	08 04	08 07	08 12	08 25	08 40	08 50
92	92190		08 05	08 13	08 17	08 25	08 34	08 37	08 42	08 55	09 10	09 20
92	92220		08 35	08 43	08 47	08 55	09 04	09 07	09 12	09 25	09 40	09 50
92	92240		09 00	09 08	09 12	09 20	09 29	09 32	09 39	09 55	10 10	10 20
92	92260		09 30	09 38	09 42	09 50	09 59	10 02	10 09	10 25	10 40	10 55
92	92280		10 00	10 08	10 12	10 20	10 29	10 32	10 39	10 55	11 10	11 25
92	92300		10 30	10 38	10 42	10 50	11 00	11 03	11 10	11 25	11 40	11 55
92	92310		11 00	11 08	11 12	11 20	11 30	11 33	11 40	11 55	12 10	12 25
92	92330		11 30	11 38	11 42	11 50	12 00	12 03	12 10	12 25	12 40	12 55
92	92350		12 00	12 08	12 12	12 20	12 30	12 33	12 40	12 55	13 10	13 25
92	92370		12 25	12 33	12 37	12 45	12 55	13 00	13 10	13 25	13 40	13 55
92	92390		12 55	13 03	13 07	13 15	13 25	13 30	13 40	13 55	14 12	14 30
92	92410		13 25	13 33	13 37	13 45	13 55	14 00	14 10	14 25	14 42	15 00

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number Nombre d'itinéraire	Trip Number N° du trajet	Zone→	Oshawa 94 Dp. **Oshawa Bus Terminal**	Whitby 93 **Dundas St. @ Thickson Rd.**	Whitby 93 **Dundas St. @ Brock St.**	Ajax 92 **Kingston Rd. @ Harwood Ave.**	Pickering 91 **Kingston Rd. @ Glenanna Rd.**	Pickering 91 **Kingston Rd. @ Fairport Rd.**	Scarborough 90 **Kingston Rd. @ Sheppard Ave. E**	Scarborough 7 Ar. **Scarborough Centre Bus Terminal**	North York 5 Ar. **York Mills Bus Terminal**	North York 5 Ar. **Yorkdale Bus Terminal**
92	92430		13 55	14 03	14 07	14 15	14 25	14 30	14 40	14 55	15 12	15 30
92	92450		14 25	14 33	14 37	14 45	14 55	15 00	15 10	15 25	15 42	16 00
92	92470		14 55	15 03	15 07	15 15	15 25	15 30	15 40	15 55	16 12	16 30
92	92510		15 25	15 33	15 37	15 45	15 55	16 00	16 10	16 25	16 42	17 00
92	92530		16 00	16 08	16 12	16 20	16 30	16 33	16 40	16 55	17 12	17 30
92	92560		16 30	16 38	16 42	16 50	17 00	17 03	17 10	17 25	17 42	18 00
92	92590		17 00	17 08	17 12	17 20	17 30	17 33	17 40	17 55	18 12	18 30
92	92620		17 30	17 38	17 42	17 50	18 00	18 03	18 10	18 25	18 40	18 55
92	92660		18 00	18 08	18 12	18 20	18 30	18 33	18 40	18 55	19 10	19 25
92	92680		18 35	18 43	18 47	18 55	19 05	19 08	19 13	19 25	19 40	19 55
92	92700		19 05	19 13	19 17	19 25	19 35	19 38	19 43	19 55	20 10	20 25
92	92720		19 35	19 43	19 47	19 55	20 05	20 08	20 13	20 25	20 40	20 50
92	92740		20 05	20 13	20 17	20 25	20 35	20 38	20 43	20 55	21 10	21 20
92	92760		20 35	20 43	20 47	20 55	21 05	21 08	21 13	21 25	21 40	21 50
92	92800		21 35	21 43	21 47	21 55	22 05	22 08	22 13	22 25	22 40	22 50
92	92830		22 35	22 43	22 47	22 55	23 05	23 08	23 13	23 25	23 40	23 50
92	92860		23 35	23 43	23 47	23 55	00 05	00 08	00 13	00 25	00 40	00 50

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number Nombre d'itinéraire	Zone→	North York 5 Dp.	North York 5	Scarborough 7	Scarborough 90	Pickering 91	Pickering 91	Ajax 92	Whitby 93	Whitby 93	Oshawa 94 Ar.
	Trip Number N° du trajet	**Yorkdale Bus Terminal**	**York Mills Bus Terminal**	**Scarborough Centre Bus Terminal**	**Kingston Rd. @ Port Union Rd.**	**Kingston Rd. @ Fairport Rd.**	**Kingston Rd. @ Glenanna Rd.**	**Kingston Rd. @ Harwood Ave.**	**Dundas St. @ Brock St.**	**Dundas St. @ Thickson Rd.**	**Oshawa Bus Terminal**
92	92121	06 50	07 00	07 15	07 24	07 29	07 32	07 40	07 48	07 52	08 00
92	92151	07 20	07 30	07 45	07 55	08 00	08 03	08 11	08 19	08 23	08 35
92	92181	07 50	08 00	08 15	08 25	08 30	08 33	08 41	08 49	08 53	09 05
92	92211	08 20	08 30	08 45	08 55	09 00	09 03	09 11	09 19	09 23	09 35
92	92231	08 50	09 00	09 15	09 25	09 30	09 33	09 41	09 49	09 53	10 05
92	92251	09 20	09 30	09 45	09 55	10 00	10 03	10 11	10 19	10 23	10 35
92	92271	09 50	10 00	10 15	10 25	10 30	10 33	10 41	10 49	10 53	11 05
92	92291	10 20	10 30	10 45	10 55	11 00	11 03	11 11	11 19	11 23	11 35
92	92311	10 50	11 00	11 15	11 25	11 30	11 33	11 42	11 52	11 56	12 10
92	92331	11 20	11 30	11 45	11 55	12 00	12 03	12 12	12 22	12 26	12 40
92	92351	11 50	12 00	12 15	12 25	12 30	12 33	12 42	12 52	12 56	13 10
92	92371	12 20	12 30	12 45	12 55	13 00	13 03	13 12	13 22	13 26	13 40
92	92391	12 50	13 00	13 15	13 25	13 30	13 33	13 42	13 52	13 56	14 10
92	92411	13 20	13 30	13 45	13 55	14 00	14 03	14 12	14 22	14 26	14 40
92	92431	13 50	14 00	14 15	14 25	14 30	14 33	14 42	14 52	14 56	15 10
92	92451	14 20	14 30	14 45	14 55	15 00	15 03	15 12	15 22	15 26	15 40
92	92471	14 50	15 00	15 15	15 25	15 30	15 33	15 42	15 52	15 56	16 10

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number Nombre d'itinéraire	Zone→	North York 5 Dp.	North York 5	Scarborough 7	Scarborough 90	Pickering 91	Pickering 91	Ajax 92	Whitby 93	Whitby 93	Oshawa 94 Ar.
	Trip Number N° du trajet	**Yorkdale Bus Terminal**	**York Mills Bus Terminal**	**Scarborough Centre Bus Terminal**	**Kingston Rd. @ Port Union Rd.**	**Kingston Rd. @ Fairport Rd.**	**Kingston Rd. @ Glenanna Rd.**	**Kingston Rd. @ Harwood Ave.**	**Dundas St. @ Brock St.**	**Dundas St. @ Thickson Rd.**	**Oshawa Bus Terminal**
92	92491	15 20	15 30	15 45	15 55	16 00	16 03	16 12	16 22	16 26	16 40
92	92521	15 50	16 00	16 15	16 25	16 30	16 33	16 42	16 52	16 56	17 10
92	92551	16 20	16 30	16 45	16 57	17 03	17 07	17 16	17 26	17 31	17 45
92	92581	16 50	17 00	17 15	17 27	17 33	17 37	17 45	17 56	18 01	18 15
92	92611	17 20	17 30	17 45	17 55	18 00	18 03	18 12	18 22	18 26	18 40
92	92641	17 50	18 00	18 15	18 25	18 30	18 33	18 42	18 52	18 56	19 10
92	92671	18 20	18 30	18 45	18 55	19 00	19 03	19 12	19 22	19 26	19 40
92	92691	18 50	19 00	19 15	19 25	19 30	19 33	19 42	19 52	19 56	20 10
92	92711	19 20	19 30	19 45	19 55	20 00	20 03	20 12	20 22	20 26	20 40
92	92731	19 50	20 00	20 15	20 25	20 30	20 33	20 41	20 49	20 53	21 05
92	92751	20 20	20 30	20 45	20 55	21 00	21 03	21 11	21 19	21 23	21 35
92	92771	20 50	21 00	21 15	21 25	21 30	21 33	21 41	21 49	21 53	22 05
92	92791	21 20	21 30	21 45	21 55	22 00	22 03	22 11	22 19	22 23	22 35
92	92811	21 50	22 00	22 15	22 25	22 30	22 33	22 41	22 48	22 53	23 05
92	92841	22 50	23 00	23 15	23 24	23 29	23 32	23 40	23 48	23 52	24 00
92	92871	23 50	24 00	00 15	00 24	00 29	00 32	00 40	00 48	00 52	01 00
92	92901	00 50	01 00	01 15	01 24	01 29	01 32	01 40	01 48	01 52	02 00

92 Oshawa / Yorkdale

View In Website Mode

The 92 bus line (Oshawa / Yorkdale) has 4 routes. For regular weekdays, their operation hours are:
(1) 92 - Oshawa Go: 12:50 AM - 11:50 PM (2) 92 - Yorkdale Term: 12:30 AM - 11:30 PM (3) 92a - Dundas/Hwy 412 P+R: 3:00 PM - 6:25 PM (4) 92a - Yorkdale Term: 5:35 AM - 7:54 AM
Use the Moovit App to find the closest 92 bus station near you and find out when is the next 92 bus arriving.

Direction: 92 - Oshawa Go

26 stops
VIEW LINE SCHEDULE

Yorkdale Bus Terminal
Yorkdale Bus Terminal, Toronto

York Mills Bus Terminal
4025 Yonge St, Toronto

Yonge St. @ William Carson Cr.
4155 Yonge Street, Toronto

Scarborough Centre Bus Terminal
300 Borough Drive, Toronto

Mccowan Rd At Progress Ave North Side
McCowan Road, Toronto

Kingston Eb @ Port Union
7331 Kingston Road, Toronto

Kingston Rd. @ Rougemount Dr.
357 Kingston Rd, Pickering

Kingston Eastbound @ Whites
711 Kingston Road, Pickering

Kingston Rd. @ Fairport Rd.
897 Kingston Road, Pickering

Kingston Rd. @ Walnut Ln.
1155 Kingston Road, Pickering

Kingston Rd. @ Glenanna Rd.
1431 Kingston Road, Pickering

Kingston Rd. @ Brock Rd.
1709 Kingston Rd, Pickering

Kingston Rd. @ Church St.
Kingston Road, Ajax

92 bus Time Schedule

92 - Oshawa Go Route Timetable:

Sunday	12:50 AM - 11:50 PM
Monday	12:50 AM - 11:50 PM
Tuesday	12:50 AM - 11:50 PM
Wednesday	12:50 AM - 11:50 PM
Thursday	12:50 AM - 11:50 PM
Friday	12:50 AM - 11:50 PM
Saturday	12:50 AM - 11:50 PM

92 bus Info

Direction: 92 - Oshawa Go
Stops: 26
Trip Duration: 90 min
Line Summary: Yorkdale Bus Terminal, York Mills Bus Terminal, Yonge St. @ William Carson Cr., Scarborough Centre Bus Terminal, Mccowan Rd At Progress Ave North Side, Kingston Eb @ Port Union, Kingston Rd. @ Rougemount Dr., Kingston Eastbound @ Whites, Kingston Rd. @ Fairport Rd., Kingston Rd. @ Walnut Ln., Kingston Rd. @ Glenanna Rd., Kingston Rd. @ Brock Rd., Kingston Rd. @ Church St., Kingston Eastbound @ Westney, Kingston Rd. @ Harwood Ave., Kingston Eastbound @ Salem, Dundas Eastbound @ Halls, Dundas St. @ White Oaks Crt., Dundas St. @ Brock St., Dundas St. @ Garden St., Dundas Eb @ Hopkins, Dundas Eb @ Thickson, King St. W. @ Stevenson Rd., King @ Warren/Park, Centre St. S. @ Athol St. W., Oshawa Go

Kingston Eastbound @ Westney
Kingston Road West, Ajax

Kingston Rd. @ Harwood Ave.
1 Harwood Avenue South, Ajax

Kingston Eastbound @ Salem
207 Kingston Road East, Ajax

Dundas Eastbound @ Halls
1611 Dundas Street West, Whitby

Dundas St. @ White Oaks Crt.
1027 Dundas Street West, Whitby

Dundas St. @ Brock St.
105 Dundas Street West, Whitby

Dundas St. @ Garden St.
751 Dundas Street East, Whitby

Dundas Eb @ Hopkins
1199 Dundas Street East, Whitby

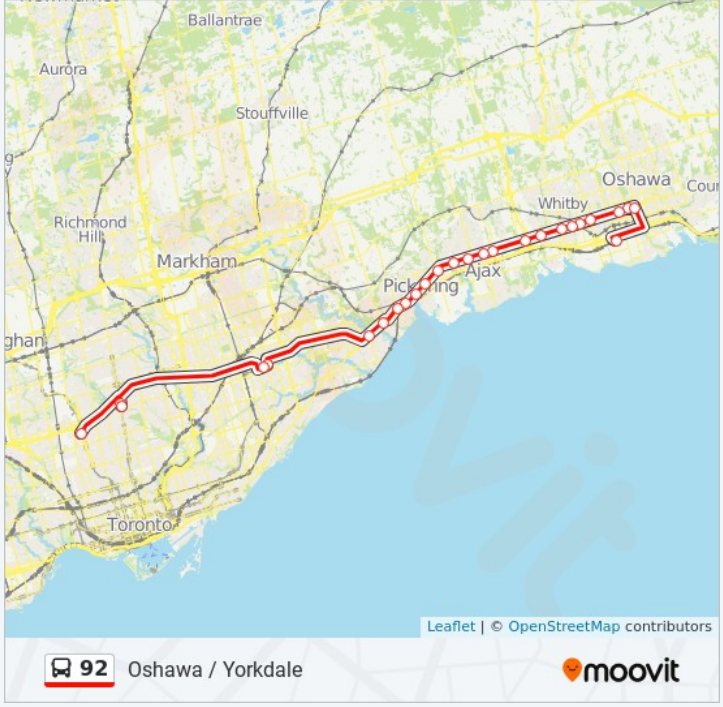
Dundas Eb @ Thickson
Dundas Street East, Whitby

King St. W. @ Stevenson Rd.
512 King Street West, Whitby

King @ Warren/Park
245 King Street West, Whitby

Centre St. S. @ Athol St. W.
35 Centre Street South, Oshawa

Oshawa Go
767 Thornton Road South, Whitby



Direction: 92 - Yorkdale Term

27 stops

VIEW LINE SCHEDULE

Oshawa Go
767 Thornton Road South, Whitby

Simcoe St. S. @ Athol St. E.
47 Simcoe Street South, Oshawa

Bond St. W. @ Centre St. N.
44 Bond Street West, Oshawa

Bond St. W. @ Park Rd. N.
30 Park Road North, Whitby

Bond @ Stevenson
540 Bond Street West, Whitby

Dundas Wb @ Thickson
1540 Dundas Street East, Whitby

Dundas Wb @ Anderson
1210 Dundas Street East, Whitby

Dundas Wb @ Garden
704 Dundas Street East, Whitby

Dundas St. @ Brock St.
104 Dundas Street East, Whitby

Dundas St. @ White Oaks Crt.
Dundas Street West, Whitby

Dundas St. @ Halls Rd.
1550 Dundas Street West, Whitby

Kingston Rd. @ Salem Rd.
168 Kingston Road East, Ajax

Kingston Rd. @ Harwood Ave.
2 Kingston Road West, Ajax

Kingston Rd. @ Westney Rd.
364 Kingston Road West, Ajax

Kingston Rd. @ Church St.
583 Kingston Road West, Ajax

Kingston Rd. @ Brock Rd.
1698 Kingston Road, Pickering

Kingston Rd. @ Glenanna Rd.
1376 Kingston Road, Pickering

Kingston Westbound @ Walnut
1154 Kingston Road, Pickering

92 bus Time Schedule

92 - Yorkdale Term Route Timetable:

Sunday	5:25 AM - 11:25 PM
Monday	4:00 AM - 11:30 PM
Tuesday	12:30 AM - 11:30 PM
Wednesday	12:30 AM - 11:30 PM
Thursday	12:30 AM - 11:30 PM
Friday	12:30 AM - 11:30 PM
Saturday	12:30 AM - 11:25 PM

92 bus Info

Direction: 92 - Yorkdale Term
Stops: 27
Trip Duration: 100 min
Line Summary: Oshawa Go, Simcoe St. S. @ Athol St. E., Bond St. W. @ Centre St. N., Bond St. W. @ Park Rd. N., Bond @ Stevenson, Dundas Wb @ Thickson, Dundas Wb @ Anderson, Dundas Wb @ Garden, Dundas St. @ Brock St., Dundas St. @ White Oaks Crt., Dundas St. @ Halls Rd., Kingston Rd. @ Salem Rd., Kingston Rd. @ Harwood Ave., Kingston Rd. @ Westney Rd., Kingston Rd. @ Church St., Kingston Rd. @ Brock Rd., Kingston Rd. @ Glenanna Rd., Kingston Westbound @ Walnut, Kingston Rd. @ Fairport Rd., Kingston Rd. @ Whites Rd., Kingston Wb @ Rougemount, Kingston Wb @ Sheppard, Mccowan Rd at Triton Rd, Scarborough Centre Bus Terminal, York Mills Bus Terminal, Yonge St. @ William Carson Cr., Yorkdale Bus Terminal

Kingston Rd. @ Fairport Rd.
900 Kingston Road, Pickering

Kingston Rd. @ Whites Rd.
698 Kingston Road, Pickering

Kingston Wb @ Rougemount
370 Kingston Road, Pickering

Kingston Wb @ Sheppard
80 Nature Pathway, Toronto

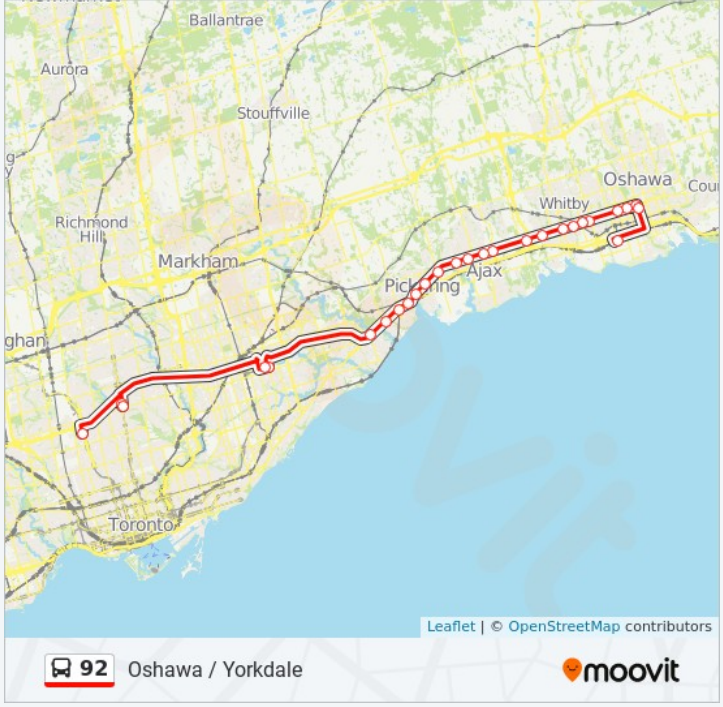
Mccowan Rd at Triton Rd
McCowan Road, Toronto

Scarborough Centre Bus Terminal
200 Town Centre Court, Toronto

York Mills Bus Terminal
4025 Yonge St, Toronto

Yonge St. @ William Carson Cr.
4155 Yonge Street, Toronto

Yorkdale Bus Terminal
Yorkdale Bus Terminal, Toronto



Direction: 92a - Dundas/Hwy 412 P+R

17 stops

VIEW LINE SCHEDULE

Yorkdale Bus Terminal
Yorkdale Bus Terminal, Toronto

York Mills Bus Terminal
4025 Yonge St, Toronto

Yonge St. @ William Carson Cr.
4155 Yonge Street, Toronto

Scarborough Centre Bus Terminal
300 Borough Drive, Toronto

Mccowan Rd At Progress Ave North Side
McCowan Road, Toronto

Kingston Eb @ Port Union
7331 Kingston Road, Toronto

Kingston Rd. @ Rougemount Dr.
357 Kingston Rd, Pickering

Kingston Eastbound @ Whites
711 Kingston Road, Pickering

Kingston Rd. @ Fairport Rd.
897 Kingston Road, Pickering

Kingston Rd. @ Walnut Ln.
1155 Kingston Road, Pickering

Kingston Rd. @ Glenanna Rd.
1431 Kingston Road, Pickering

Kingston Rd. @ Brock Rd.
1709 Kingston Rd, Pickering

Kingston Rd. @ Church St.
Kingston Road, Ajax

Kingston Eastbound @ Westney
Kingston Road West, Ajax

Kingston Rd. @ Harwood Ave.
1 Harwood Avenue South, Ajax

Kingston Eastbound @ Salem
207 Kingston Road East, Ajax

Dundas St. @ Hwy. 412 Park & Ride

92 bus Time Schedule

92a - Dundas/Hwy 412 P+R Route Timetable:

Sunday	Not Operational
Monday	3:00 PM - 6:25 PM
Tuesday	3:00 PM - 6:25 PM
Wednesday	3:00 PM - 6:25 PM
Thursday	3:00 PM - 6:25 PM
Friday	3:00 PM - 6:25 PM
Saturday	Not Operational

92 bus Info

Direction: 92a - Dundas/Hwy 412 P+R
Stops: 17
Trip Duration: 84 min
Line Summary: Yorkdale Bus Terminal, York Mills Bus Terminal, Yonge St. @ William Carson Cr., Scarborough Centre Bus Terminal, Mccowan Rd At Progress Ave North Side, Kingston Eb @ Port Union, Kingston Rd. @ Rougemount Dr., Kingston Eastbound @ Whites, Kingston Rd. @ Fairport Rd., Kingston Rd. @ Walnut Ln., Kingston Rd. @ Glenanna Rd., Kingston Rd. @ Brock Rd., Kingston Rd. @ Church St., Kingston Eastbound @ Westney, Kingston Rd. @ Harwood Ave., Kingston Eastbound @ Salem, Dundas St. @ Hwy. 412 Park & Ride



Direction: 92a - Yorkdale Term

17 stops

VIEW LINE SCHEDULE

Dundas St. @ Hwy. 412 Park & Ride

Kingston Rd. @ Salem Rd.
168 Kingston Road East, Ajax

Kingston Rd. @ Harwood Ave.
2 Kingston Road West, Ajax

Kingston Rd. @ Westney Rd.
364 Kingston Road West, Ajax

Kingston Rd. @ Church St.
583 Kingston Road West, Ajax

Kingston Rd. @ Brock Rd.
1698 Kingston Road, Pickering

Kingston Rd. @ Glenanna Rd.
1376 Kingston Road, Pickering

Kingston Westbound @ Walnut
1154 Kingston Road, Pickering

Kingston Rd. @ Fairport Rd.
900 Kingston Road, Pickering

Kingston Rd. @ Whites Rd.
698 Kingston Road, Pickering

Kingston Wb @ Rougemount
370 Kingston Road, Pickering

Kingston Wb @ Sheppard
80 Nature Pathway, Toronto

Mccowan Rd at Triton Rd
McCowan Road, Toronto

Scarborough Centre Bus Terminal
200 Town Centre Court, Toronto

York Mills Bus Terminal
4025 Yonge St, Toronto

Yonge St. @ William Carson Cr.
4155 Yonge Street, Toronto

Yorkdale Bus Terminal
Yorkdale Bus Terminal, Toronto

92 bus Time Schedule

92a - Yorkdale Term Route Timetable:

Sunday	Not Operational
Monday	5:35 AM - 7:54 AM
Tuesday	5:35 AM - 7:54 AM
Wednesday	5:35 AM - 7:54 AM
Thursday	5:35 AM - 7:54 AM
Friday	5:35 AM - 7:54 AM
Saturday	Not Operational

92 bus Info

Direction: 92a - Yorkdale Term
Stops: 17
Trip Duration: 80 min
Line Summary: Dundas St. @ Hwy. 412 Park & Ride, Kingston Rd. @ Salem Rd., Kingston Rd. @ Harwood Ave., Kingston Rd. @ Westney Rd., Kingston Rd. @ Church St., Kingston Rd. @ Brock Rd., Kingston Rd. @ Glenanna Rd., Kingston Westbound @ Walnut, Kingston Rd. @ Fairport Rd., Kingston Rd. @ Whites Rd., Kingston Wb @ Rougemount, Kingston Wb @ Sheppard, Mccowan Rd at Triton Rd, Scarborough Centre Bus Terminal, York Mills Bus Terminal, Yonge St. @ William Carson Cr., Yorkdale Bus Terminal



92 bus time schedules and route maps are available in an offline PDF at moovitapp.com. Use the Moovit App to see live bus times, train schedule or subway schedule, and step-by-step directions for all public transit in Toronto.

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Check Live Arrival Times

90B

Route numbers
Numéros des trajets

Lakeshore East



CONTACT US

1-888-438-6646
416-869-3200
TTY/ATS:
1-800-387-3652

gotransit.com/schedules

@GOtransitLE

See Something?
Say Something.

24/7 Transit Safety Dispatch:
1-877-297-0642

prestocard.ca

Sign-up for email or text alerts/ Inscrivez-vous pour recevoir des alertes par courriel ou message texte.
gotransit.com/OnTheGO

Face coverings are mandatory on GO Transit. Let's keep each other safe.

Le port d'un masque est obligatoire lors de vos trajets sur GO Transit. Protégeons notre santé les uns les autres.

19-08-2021

Lakeshore East

GO Train and Bus Schedule/
Horaire des trains et des autobus GO

METROLINX

LE 90B

- Oshawa GO
- Whitby GO
- Ajax GO
- Pickering GO
- Rouge Hill GO
- Guildwood GO
- Eglinton GO
- Scarborough GO
- Danforth GO
- Union Station

Daily / Quotidiennement
Includes GO Bus route 90B / Inclut le trajet 90B d'autobus GO

Effective / À partir de:
4 SEPTEMBER SEPTEMBRE **2021**

How to read our schedules

Step 1
Find the station or terminal you are departing from. Stops are listed across the top in the order they are served.

Step 2
The upper left corner tells you what day the schedule is for and the direction of travel.

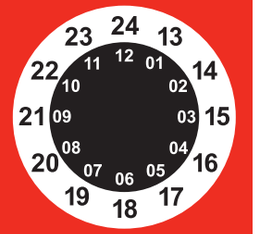
Step 3
Look across the rows for available departure times.

Step 4
Not all trains or buses stop at every station. If you see → the train or bus will not stop at that station.

Schedule times shown in 24-hour clock

Midnight to noon
00 01 - 12 00

Noon to midnight
12 01 - 24 00



Legend

Train trips

Bus trips

→ Trip does not serve this location.

↓ Check below for connecting trips.

GO Train service is accessible to passengers using mobility devices at this location.

GO Train & GO Bus service is accessible to passengers using mobility devices at this location.

Parking available.

For the latest schedule information and updates, please visit gotransit.com/schedules.

Notes

h Trip holds for connection from bus.

Bicycles

1. Bicycles are not allowed in Union Station or on-board trains during morning rush hour (6:30-9:30) and evening rush hour (15:30-18:30), Monday to Friday.

2. Foldable bicycles are allowed on-board trains at all times.

Comment lire nos horaires

Étape 1
Trouvez votre gare ou terminus de départ. La liste des arrêts est donnée en haut dans l'ordre dans lequel ils sont desservis.

Étape 2
Le coin supérieur gauche vous indique le jour pour lequel l'horaire est donné et la direction de circulation.

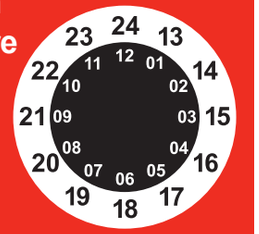
Étape 3
Regardez dans les rangées pour obtenir les heures de départ offertes.

Étape 4
Les trains ou les autobus ne s'arrêtent pas tous à chaque gare. Si vous voyez le symbole → le train ou l'autobus ne s'arrêtera pas à cette gare.

Indications selon un système horaire de 24 heures

De minuit à midi:
00 01 - 12 00

De midi à minuit:
12 01 - 24 00



Légende

Horaire des trains

Horaire des autobus

→ Trajet ne sert pas cette station.

↓ Vérifiez les trajets de correspondance cidessous.

Service de trains GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.

Les services de trains et d'autobus GO sont accessibles aux utilisateurs d'un appareil d'aide à la mobilité à cet endroit.

Stationnement disponible.

Pour consulter les horaires les plus récents et les mises à jour, veuillez visiter gotransit.com/schedules.

Notes

h Attentes des trajets pour les connexions d'autobus.

Vélos

1. Les vélos ne sont pas autorisés dans la gare Union ou à bord des trains du lundi au vendredi, pendant l'heure de pointe (6:30-9:30) et pendant l'heure de pointe du soir (15:30-18:30).

2. Les vélos pliables sont permis à bord des trains en tout temps.

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Oshawa 94 Dp — Oshawa GO	Whitby 93 — Whitby GO	Ajax 92 — Ajax GO	Pickering 91 Dp — Pickering GO	Scarborough 9 — Rouge Hill GO	Scarborough 8 — Guildwood GO	Scarborough 8 — Eglinton GO	Scarborough 6 — Scarborough GO	Toronto 6 — Danforth GO	Toronto 2 Ar — Union Station
90B	90001	04 00	04 08	04 18	04 26	→	→	→	→	→	05 00
	9005	05 10	05 15	05 22	05 27	05 34	05 41	05 46	05 51	05 56	06 10
	9105	05 25	05 30	05 37	05 42	05 49	05 56	06 01	06 06	06 11	06 25
	9205	05 40	05 45	05 52	05 57	06 04	06 11	06 16	06 21	06 26	06 40
	9305	05 55	06 00	06 07	06 12	06 19	06 26	06 31	06 36	06 41	06 55
	9007	06 10	06 15	06 22	06 27	06 34	06 41	06 46	06 51	06 56	07 10
	9107	06 25	06 30	06 37	06 42	06 49	06 56	07 01	07 06	07 11	07 25
	9207	06 40	06 45	06 52	06 57	07 04	07 11	07 16	07 21	07 26	07 40
	9307	06 55	07 00	07 07	07 12	07 19	07 26	07 31	07 36	07 41	07 55
	9009	07 10	07 15	07 22	07 27	07 34	07 41	07 46	07 51	07 56	08 10
	9109	07 25	07 30	07 37	07 40	07 48	07 55	08 00	08 06	08 11	08 25
	9209	07 40	07 45	07 52	07 57	08 04	08 11	08 16	08 21	08 26	08 40
	9309	07 55	08 00	08 07	08 10	08 18	08 25	08 30	08 36	08 41	08 55
	9011	08 10	08 15	08 22	08 27	08 34	08 41	08 46	08 51	08 56	09 10
	9111	08 25	08 30	08 37	08 40	08 48	08 55	09 00	09 06	09 11	09 25
	9211	08 40	08 45	08 52	08 57	09 04	09 11	09 16	09 21	09 26	09 40
	9311	08 55	09 00	09 07	09 12	09 19	09 26	09 31	09 36	09 41	09 55
	9013	09 10	09 15	09 22	09 27	09 34	09 41	09 46	09 51	09 56	10 10
	9113	09 25	09 30	09 37	09 42	09 49	09 56	10 01	10 06	10 11	10 25
	9213	09 40	09 45	09 52	09 57	10 04	10 11	10 16	10 21	10 26	10 40
	9313	09 55	10 00	10 07	10 12	10 19	10 26	10 31	10 36	10 41	10 55
	9015	10 10	10 15	10 22	10 27	10 34	10 41	10 46	10 51	10 56	11 10
	9115	10 25	10 30	10 37	10 42	10 49	10 56	11 01	11 06	11 11	11 25
	9215	10 40	10 45	10 52	10 57	11 04	11 11	11 16	11 21	11 26	11 40
	9315	10 55	11 00	11 07	11 12	11 19	11 26	11 31	11 36	11 41	11 55
	9017	11 10	11 15	11 22	11 27	11 34	11 41	11 46	11 51	11 56	12 10
	9117	11 25	11 30	11 37	11 42	11 49	11 56	12 01	12 06	12 11	12 25
	9217	11 40	11 45	11 52	11 57	12 04	12 11	12 16	12 21	12 26	12 40
	9317	11 55	12 00	12 07	12 12	12 19	12 26	12 31	12 36	12 41	12 55
	9019	12 10	12 15	12 22	12 27	12 34	12 41	12 46	12 51	12 56	13 10
	9119	12 25	12 30	12 37	12 42	12 49	12 56	13 01	13 06	13 11	13 25
	9219	12 40	12 45	12 52	12 57	13 04	13 11	13 16	13 21	13 26	13 40
	9319	12 55	13 00	13 07	13 12	13 19	13 26	13 31	13 36	13 41	13 55
	9021	13 10	13 15	13 22	13 27	13 34	13 41	13 46	13 51	13 56	14 10
	9121	13 25	13 30	13 37	13 42	13 49	13 56	14 01	14 06	14 11	14 25
	9221	13 40	13 45	13 52	13 57	14 04	14 11	14 16	14 21	14 26	14 40

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Oshawa 94 Dp — Oshawa GO	Whitby 93 — Whitby GO	Ajax 92 — Ajax GO	Pickering 91 Dp — Pickering GO	Scarborough 9 — Rouge Hill GO	Scarborough 8 — Guildwood GO	Scarborough 8 — Eglinton GO	Scarborough 6 — Scarborough GO	Toronto 6 — Danforth GO	Toronto 2 Ar — Union Station
	9321	13 55	14 00	14 07	14 12	14 19	14 26	14 31	14 36	14 41	14 55
	9023	14 10	14 15	14 22	14 27	14 34	14 41	14 46	14 51	14 56	15 10
	9123	14 25	14 30	14 37	14 42	14 49	14 56	15 01	15 06	15 11	15 25
	9223	14 40	14 45	14 52	14 57	15 04	15 11	15 16	15 21	15 26	15 40
	9323	14 55	15 00	15 07	15 12	15 19	15 26	15 31	15 36	15 41	15 55
	9025	15 10	15 15	15 22	15 27	15 34	15 41	15 46	15 51	15 56	16 10
	9125	15 25	15 30	15 37	15 42	15 49	15 56	16 01	16 06	16 11	16 25
	9225	15 40	15 45	15 52	15 57	16 04	16 11	16 16	16 21	16 26	16 40
	9325	15 55	16 00	16 07	16 12	16 19	16 26	16 31	16 36	16 41	16 55
	9027	16 10	16 15	16 22	16 27	16 34	16 41	16 46	16 51	16 56	17 10
	9127	16 25	16 30	16 37	16 42	16 49	16 56	17 01	17 06	17 11	17 25
	9227	16 40	16 45	16 52	16 57	17 04	17 11	17 16	17 21	17 26	17 40
	9327	16 55	17 00	17 07	17 12	17 19	17 26	17 31	17 36	17 41	17 55
	9029	17 10	17 15	17 22	17 27	17 34	17 41	17 46	17 51	17 56	18 10
	9129	17 25	17 30	17 37	17 42	17 49	17 56	18 01	18 06	18 11	18 25
	9229	17 40	17 45	17 52	17 57	18 04	18 11	18 16	18 21	18 26	18 40
	9031	18 10	18 15	18 22	18 27	18 34	18 41	18 46	18 51	18 56	19 10
	9231	18 40	18 45	18 52	18 57	19 04	19 11	19 16	19 21	19 26	19 40
	9033	19 10	19 15	19 22	19 27	19 34	19 41	19 46	19 51	19 56	20 10
	9233	19 40	19 45	19 52	19 57	20 04	20 11	20 16	20 21	20 26	20 40
	9333	19 50	19 55	20 02	20 07	20 14	20 21	20 26	20 31	20 36	20 50
	9135	20 20	20 25	20 32	20 37	20 44	20 51	20 56	21 01	21 06	21 20
	9335	20 50	20 55	21 02	21 07	21 14	21 21	21 26	21 31	21 36	21 50
	9137	21 20	21 25	21 32	21 37	21 44	21 51	21 56	22 01	22 06	22 20
	9337	21 50	21 55	22 02	22 07	22 14	22 21	22 26	22 31	22 36	22 50
	9139	22 20	22 25	22 32	22 37	22 44	22 51	22 56	23 01	23 06	23 20
	9339	22 50	22 25	23 02	23 07	23 14	23 21	23 26	23 31	23 36	23 50
	9341	23 45	23 50	23 57	00 02	00 09	00 16	00 21	00 26	00 31	00 45

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Toronto 2 Dp	Toronto 6	Scarborough 6	Scarborough 8	Scarborough 8	Scarborough 9	Pickering 91	Ajax 92	Whitby 93	Oshawa 94 Ar
			Union Station	Danforth GO	Scarborough GO	Eglinton GO	Guildwood GO	Rouge Hill GO	Pickering GO	Ajax GO	Whitby GO	Oshawa GO
90B	90052		05 30	→	→	→	→	→	06 00	06 07	06 15	06 25
	9004		06 05	06 16	06 22	06 27	06 32	06 38	06 46	06 51	06 58	07 05
	9104		06 20	06 31	06 37	06 42	06 47	06 53	07 01	07 06	07 13	07 20
	9204		06 35	06 46	06 52	06 57	07 02	07 08	07 16	07 21	07 28	07 35
	9304		06 50	07 01	07 07	07 12	07 17	07 23	07 31	07 36	07 43	07 50
	9006		07 05	07 16	07 22	07 27	07 32	07 38	07 46	07 51	07 58	08 05
	9106		07 20	07 31	07 37	07 42	07 47	07 53	08 01	08 06	08 13	08 20
	9206		07 35	07 46	07 52	07 57	08 02	08 08	08 16	08 21	08 28	08 35
	9306		07 50	08 01	08 07	08 12	08 17	08 23	08 31	08 36	08 43	08 50
	9008		08 05	08 16	08 22	08 27	08 32	08 38	08 46	08 51	08 58	09 05
	9108		08 20	08 31	08 37	08 42	08 47	08 53	09 01	09 06	09 13	09 20
	9208		08 35	08 46	08 52	08 57	09 02	09 08	09 16	09 21	09 28	09 35
	9308		08 50	09 01	09 07	09 12	09 17	09 23	09 31	09 36	09 43	09 50
	9010		09 05	09 16	09 22	09 27	09 32	09 38	09 46	09 51	09 58	10 05
	9110		09 20	09 31	09 37	09 42	09 47	09 53	10 01	10 06	10 13	10 20
	9210		09 35	09 46	09 52	09 57	10 02	10 08	10 16	10 21	10 28	10 35
	9310		09 50	10 01	10 07	10 12	10 17	10 23	10 31	10 36	10 43	10 50
	9012		10 05	10 16	10 22	10 27	10 32	10 38	10 46	10 51	10 58	11 05
	9112		10 20	10 31	10 37	10 42	10 47	10 53	11 01	11 06	11 13	11 20
	9212		10 35	10 46	10 52	10 57	11 02	11 08	11 16	11 21	11 28	11 35
	9312		10 50	11 01	11 07	11 12	11 17	11 23	11 31	11 36	11 43	11 50
	9014		11 05	11 16	11 22	11 27	11 32	11 38	11 46	11 51	11 58	12 05
	9114		11 20	11 31	11 37	11 42	11 47	11 53	12 01	12 06	12 13	12 20
	9214		11 35	11 46	11 52	11 57	12 02	12 08	12 16	12 21	12 28	12 35
	9314		11 50	12 01	12 07	12 12	12 17	12 23	12 31	12 36	12 43	12 50
	9016		12 05	12 16	12 22	12 27	12 32	12 38	12 46	12 51	12 58	13 05
	9116		12 20	12 31	12 37	12 42	12 47	12 53	13 01	13 06	13 13	13 20
	9216		12 35	12 46	12 52	12 57	13 02	13 08	13 16	13 21	13 28	13 35
	9316		12 50	13 01	13 07	13 12	13 17	13 23	13 31	13 36	13 43	13 50
	9018		13 05	13 16	13 22	13 27	13 32	13 38	13 46	13 51	13 58	14 05
	9118		13 20	13 31	13 37	13 42	13 47	13 53	14 01	14 06	14 13	14 20
	9218		13 35	13 46	13 52	13 57	14 02	14 08	14 16	14 21	14 28	14 35
	9318		13 50	14 01	14 07	14 12	14 17	14 23	14 31	14 36	14 43	14 50
	9020		14 05	14 16	14 22	14 27	14 32	14 38	14 46	14 51	14 58	15 05

Monday to Friday (except holidays)
Du lundi au vendredi (sauf les jours fériés)

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone →	Toronto 2 Dp	Toronto 6	Scarborough 6	Scarborough 8	Scarborough 8	Scarborough 9	Pickering 91	Ajax 92	Whitby 93	Oshawa 94 Ar
			Union Station	Danforth GO	Scarborough GO	Eglinton GO	Guildwood GO	Rouge Hill GO	Pickering GO	Ajax GO	Whitby GO	Oshawa GO
	9120		14 20	14 31	14 37	14 42	14 47	14 53	15 01	15 06	15 13	15 20
	9220		14 35	14 46	14 52	14 57	15 02	15 08	15 16	15 21	15 28	15 35
	9320		14 50	15 01	15 07	15 12	15 17	15 23	15 31	15 36	15 43	15 50
	9022		15 05	15 16	15 22	15 27	15 32	15 38	15 46	15 51	15 58	16 05
	9122		15 20	15 31	15 37	15 42	15 47	15 53	16 01	16 06	16 13	16 20
	9222		15 35	15 46	15 52	15 57	16 02	16 08	16 16	16 21	16 28	16 35
	9322		15 50	16 01	16 07	16 12	16 17	16 23	16 31	16 36	16 43	16 50
	9024		16 05	16 16	16 22	16 27	16 32	16 38	16 46	16 51	16 58	17 05
	9124		16 20	16 31	16 37	16 42	16 47	16 53	17 01	17 06	17 13	17 20
	9224		16 35	16 46	16 52	16 57	17 02	17 08	17 16	17 21	17 28	17 35
	9324		16 50	17 01	17 07	17 12	17 17	17 23	17 31	17 36	17 43	17 50
	9026		17 05	17 16	17 22	17 27	17 32	17 38	17 46	17 51	17 58	18 05
	9126		17 20	17 31	17 37	17 42	17 47	17 53	18 01	18 06	18 13	18 20
	9226		17 35	17 46	17 52	17 57	18 02	18 08	18 16	18 21	18 28	18 35
	9326		17 50	18 01	18 07	18 12	18 17	18 23	18 31	18 36	18 43	18 50
	9028		18 05	18 16	18 22	18 27	18 32	18 38	18 46	18 51	18 58	19 05
	9128		18 20	18 31	18 37	18 42	18 47	18 53	19 01	19 06	19 13	19 20
	9228		18 35	18 46	18 52	18 57	19 02	19 08	19 16	19 21	19 28	19 35
	9328		18 50	19 01	19 07	19 12	19 17	19 23	19 31	19 36	19 43	19 50
	9030		19 05	19 16	19 22	19 27	19 32	19 38	19 46	19 51	19 58	20 05
	9230		19 35	19 46	19 52	19 57	20 02	20 08	20 16	20 21	20 28	20 35
	9032		20 05	20 16	20 22	20 27	20 32	20 38	20 46	20 51	20 58	21 05
	9232		20 35	20 46	20 52	20 57	21 02	21 08	21 16	21 21	21 28	21 35
	9034		21 05	21 16	21 22	21 27	21 32	21 38	21 46	21 51	21 58	22 05
	9234		21 35	21 46	21 52	21 57	22 02	22 08	22 16	22 21	22 28	22 35
	9036		22 05	22 16	22 22	22 27	22 32	22 38	22 46	22 51	22 58	23 05
	9236		22 35	22 46	22 52	22 57	23 02	23 08	23 16	23 21	23 28	23 35
	9038		23 05	23 16	23 22	23 27	23 32	23 38	23 46	23 51	23 58	00 05
	9238		23 35	23 46	23 52	23 57	00 02	00 08	00 16	00 21	00 28	00 35
	9040		00 05	00 16	00 22	00 27	00 32	00 38	00 46	00 51	00 58	01 05
	9340		00 45	00 56	01 02	01 07	01 12	01 18	01 26	01 31	01 38	01 45
90B	90980		01 30	→	→	→	→	→	D02 00	D0207	D02 15	D02 25
90B	90990		02 19	→	→	→	→	→	D02 49	D02 56	D03 04	D03 14

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Oshawa 94 Dp Ⓟ ♿ Oshawa GO	Whitby 93 Ⓟ ♿ Whitby GO	Ajax 92 Ⓟ ♿ Ajax GO	Pickering 91 Ⓟ ♿ Pickering GO	Scarborough 9 Ⓟ Rouge Hill GO	Scarborough 8 Ⓟ Guildwood GO	Scarborough 8 Ⓟ Eglinton GO	Scarborough 6 Ⓟ Scarborough GO	Toronto 6 ♿ Danforth GO	Toronto 2 Ar ♿ Union Station
90B	90001	04 45	04 52	05 01	05 08	→	→	→	→	→	05 40
	9205	05 40	05 45	05 52	05 57	06 04	06 11	06 16	06 21	06 26	06 40
	9007	06 10	06 15	06 22	06 27	06 34	06 41	06 46	06 51	06 56	07 10
	9207	06 40	06 45	06 52	06 57	07 04	07 11	07 16	07 21	07 26	07 40
	9009	07 10	07 15	07 22	07 27	07 34	07 41	07 46	07 51	07 56	08 10
	9209	07 40	07 45	07 52	07 57	08 04	08 11	08 16	08 21	08 26	08 40
	9011	08 10	08 15	08 22	08 27	08 34	08 41	08 46	08 51	08 56	09 10
	9211	08 40	08 45	08 52	08 57	09 04	09 11	09 16	09 21	09 26	09 40
	9013	09 10	09 15	09 22	09 27	09 34	09 41	09 46	09 51	09 56	10 10
	9213	09 40	09 45	09 52	09 57	10 04	10 11	10 16	10 21	10 26	10 40
	9015	10 10	10 15	10 22	10 27	10 34	10 41	10 46	10 51	10 56	11 10
	9215	10 40	10 45	10 52	10 57	11 04	11 11	11 16	11 21	11 26	11 40
	9017	11 10	11 15	11 22	11 27	11 34	11 41	11 46	11 51	11 56	12 10
	9217	11 40	11 45	11 52	11 57	12 04	12 11	12 16	12 21	12 26	12 40
	9019	12 10	12 15	12 22	12 27	12 34	12 41	12 46	12 51	12 56	13 10
	9219	12 40	12 45	12 52	12 57	13 04	13 11	13 16	13 21	13 26	13 40
	9021	13 10	13 15	13 22	13 27	13 34	13 41	13 46	13 51	13 56	14 10
	9221	13 40	13 45	13 52	13 57	14 04	14 11	14 16	14 21	14 26	14 40
	9023	14 10	14 15	14 22	14 27	14 34	14 41	14 46	14 51	14 56	15 10
	9223	14 40	14 45	14 52	14 57	15 04	15 11	15 16	15 21	15 26	15 40
	9025	15 10	15 15	15 22	15 27	15 34	15 41	15 46	15 51	15 56	16 10
	9225	15 40	15 45	15 52	15 57	16 04	16 11	16 16	16 21	16 26	16 40
	9027	16 10	16 15	16 22	16 27	16 34	16 41	16 46	16 51	16 56	17 10
	9227	16 40	16 45	16 52	16 57	17 04	17 11	17 16	17 21	17 26	17 40
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	9229	17 40	17 45	17 52	17 57	18 04	18 11	18 16	18 21	18 26	18 40
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	9231	18 40	18 45	18 52	18 57	19 04	19 11	19 16	19 21	19 26	19 40
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	9041	23 10	23 15	23 22	23 27	23 34	23 41	23 46	23 51	23 56	00 10
	9241	23 40	23 45	23 52	23 57	00 04	00 11	00 16	00 21	00 26	00 40

Saturday and Sunday
Samedi et dimanche

EASTBOUND / EN DIRECTION EST

Route Number / Numéro du trajet	Trip Number / Numéro du parcours	Zone→ Toronto 2 Dp ♿ Union Station	Toronto 6 ♿ Danforth GO	Scarborough 6 Ⓟ ♿ Scarborough GO	Scarborough 8 Ⓟ Eglinton GO	Scarborough 8 Ⓟ Guildwood GO	Scarborough 9 Ⓟ Rouge Hill GO	Pickering 91 Ⓟ ♿ Pickering GO	Ajax 92 Ⓟ ♿ Ajax GO	Whitby 93 Ⓟ ♿ Whitby GO	Oshawa 94 Ar Ⓟ ♿ Oshawa GO
90B	90210	05 50	→	→	→	→	→	06 20	06 27	06 35	06 45
	9204	06 35	06 46	06 52	06 57	07 02	07 08	07 16	07 21	07 28	07 35
	9006	07 05	07 16	07 22	07 27	07 32	07 38	07 46	07 51	07 58	08 05
	9206	07 35	07 46	07 52	07 57	08 02	08 08	08 16	08 21	08 28	08 35
	9008	08 05	08 16	08 22	08 27	08 32	08 38	08 46	08 51	08 58	09 05
	9208	08 35	08 46	08 52	08 57	09 02	09 08	09 16	09 21	09 28	09 35
	9010	09 05	09 16	09 22	09 27	09 32	09 38	09 46	09 51	09 58	10 05
	9210	09 35	09 46	09 52	09 57	10 02	10 08	10 16	10 21	10 28	10 35
	9012	10 05	10 16	10 22	10 27	10 32	10 38	10 46	10 51	10 58	11 05
	9212	10 35	10 46	10 52	10 57	11 02	11 08	11 16	11 21	11 28	11 35
	9014	11 05	11 16	11 22	11 27	11 32	11 38	11 46	11 51	11 58	12 05
	9214	11 35	11 46	11 52	11 57	12 02	12 08	12 16	12 21	12 28	12 35
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	9018	13 05	13 16	13 22	13 27	13 32	13 38	13 46	13 51	13 58	14 05
	9218	13 35	13 46	13 52	13 57	14 02	14 08	14 16	14 21	14 28	14 35
	9020	14 05	14 16	14 22	14 27	14 32	14 38	14 46	14 51	14 58	15 05
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	9224	16 35	16 46	16 52	16 57	17 02	17 08	17 16	17 21	17 28	17 35
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	9234	21 35	21 46	21 52	21 57	22 02	22 08	22 16	22 21	22 28	22 35
	9036	22 05	22 16	22 22	22 27	22 32	22 38	22 46	22 51	22 58	23 05
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	9038	23 05	23 16	23 22	23 27	23 32	23 38	23 46	23 51	23 58	00 05
	9238	23 35	23 46	23 52	23 57	00 02	00 08	00 16	00 21	00 28	00 35
	9040	00 05	00 16	00 22	00 27	00 32	00 38	00 46	00 51	00 58	01 05
	9340	00 45	00 56	01 02	01 07	01 12	01 18	01 26	01 31	01 38	01 45
90B	90980	01 30	→	→	→	→	→	D02 00	D02 07	D02 15	D02 25
90B	90990	02 19	→	→	→	→	→	D02 49	D02 56	D03 04	D03 14

Future Transit Information



Durham-Scarborough Bus Rapid Transit

Welcome

Welcome to our online engagement platform for the Durham-Scarborough Bus Rapid Transit (DSBRT) project.

The proposed Durham-Scarborough BRT line consists of 36 kilometres of bus rapid transit that would serve Oshawa, Whitby, Ajax, Pickering and Scarborough. Improved transit along Highway 2 across the Toronto and Durham boundary would link communities, employment, schools and other major destinations in the Region.

The proposed project aims to create seamless connections with local transit networks, providing the residents of Durham Region and the City of Toronto more flexibility and choice to get where they need to go, faster and more reliably.

Public Information Centre #4 is now closed – we thank you for your comments and feedback. The Environmental Project Report (EPR) will be available on Metrolinx engage in Winter 2022 as part of the thirty (30) day public review period per the Transit Project Assessment Process (TPAP).



Project Overview

With rapid growth in this Region over the past decade, and an expectation for this growth to continue in the future – with approximately 215,000 residents and 66,000 jobs anticipated by 2041 – travel demand along the corridor will continue to increase.

As the population grows, so will traffic and congestion. Bus rapid transit provides an alternative to car use, reducing traffic congestion, as well as greenhouse gas emissions.

Bus Rapid Transit was identified as the preferred transit technology to link Durham Region and the City of Toronto through the Durham-Scarborough Bus Rapid Transit Initial Business Case (IBC), and was identified in the 2041 Regional Transportation Plan.

Metrolinx is working with Durham Region, Durham Region Transit (DRT), City of Toronto and the Toronto Transit Commission (TTC) on the planning and design of this rapid transit corridor.





What is Bus Rapid Transit?

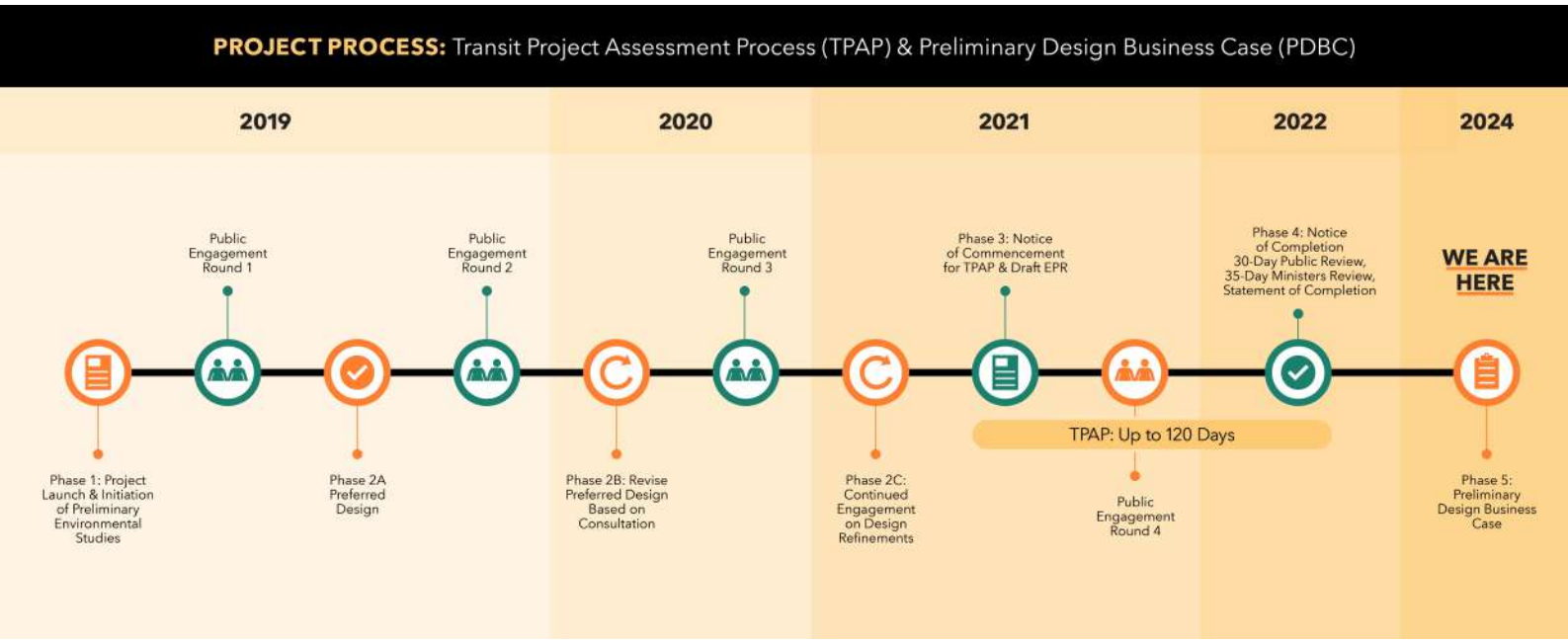
Dedicated Lanes for buses, where feasible, resulting in shorter travel times and more reliable transit service.

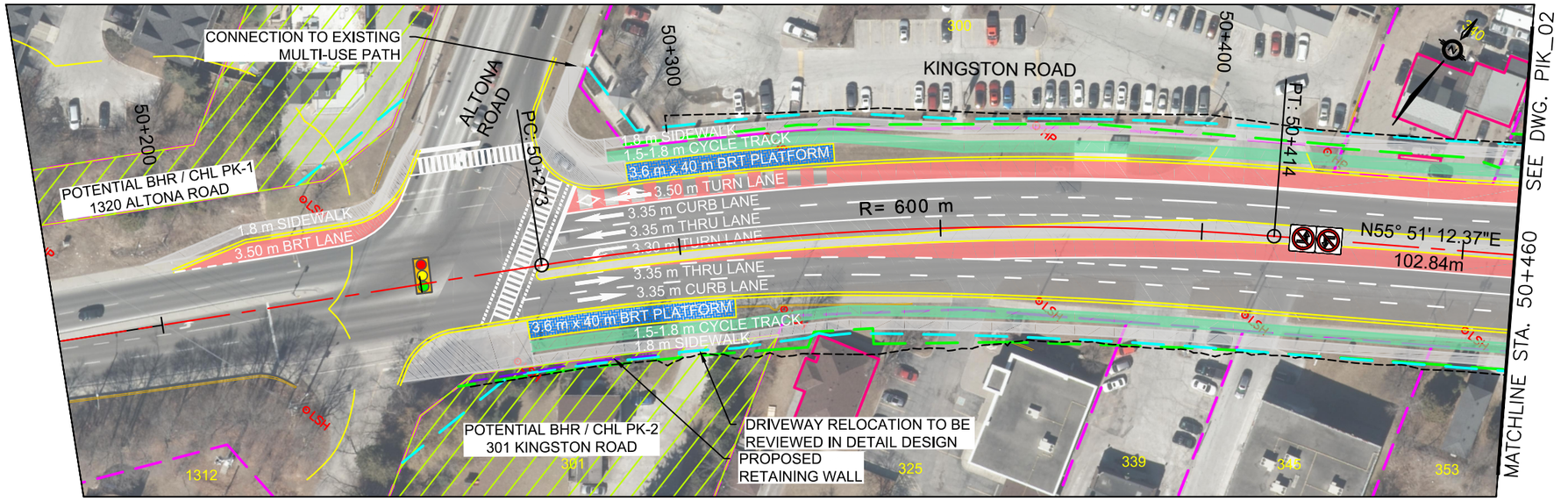
Frequent Service with a bus every 5 minutes or less during peak hours.

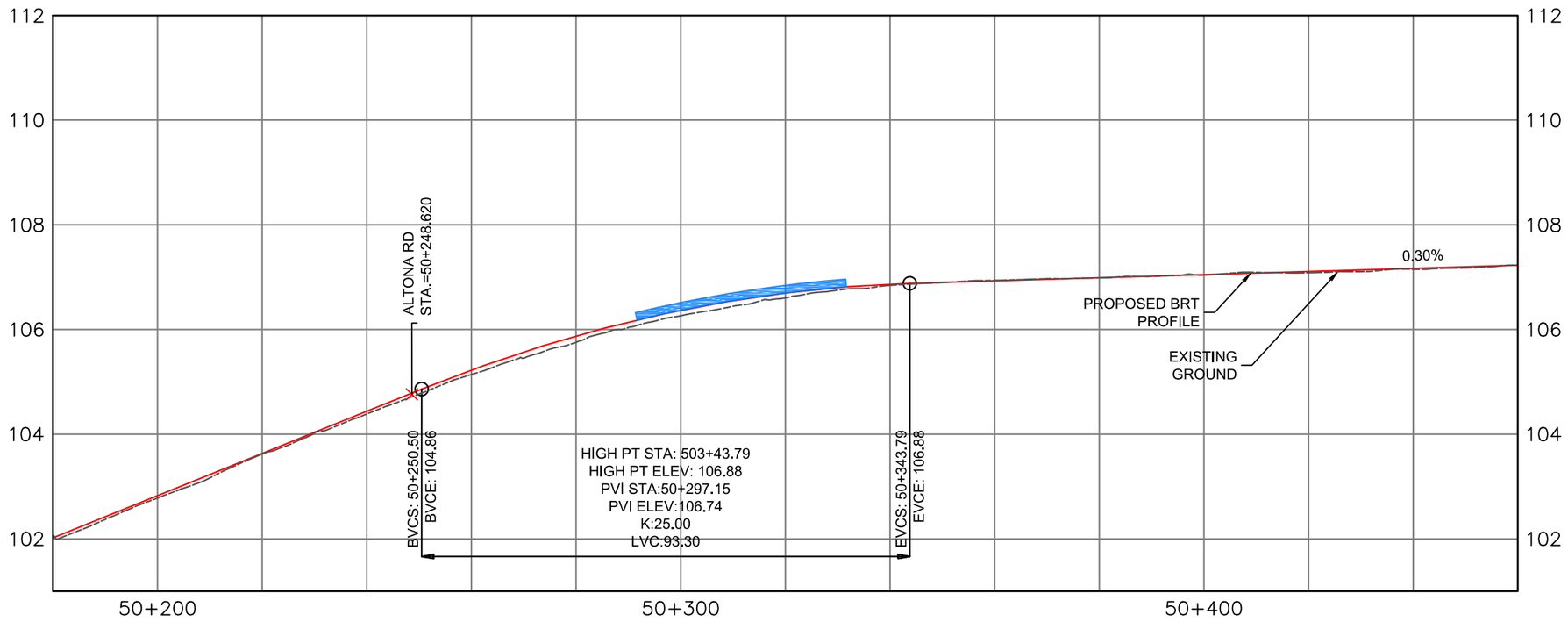
Smart Signals on Highway 2 are already installed and will adapt to support smoother traffic flow for all commutes - on buses, in personal vehicles, and on bicycles.

Better Connections: TTC, DRT and GO Transit routes can use the dedicated lanes and share the same stops, making it easier to travel throughout the region.

Reliable Service with buses that are separated from general traffic in most areas.


PROJECT PROCESS: Transit Project Assessment Process (TPAP) & Preliminary Design Business Case (PDBC)
2019
2020
2021
2022
2024
Public Engagement Round 1
Public Engagement Round 2
Public Engagement Round 3
Phase 3: Notice of Commencement for TPAP & Draft EPR
Phase 4: Notice of Completion 30-Day Public Review, 35-Day Ministers Review, Statement of Completion
WE ARE HERE
Phase 1: Project Launch & Initiation of Preliminary Environmental Studies
Phase 2A Preferred Design
Phase 2B: Revise Preferred Design Based on Consultation
Phase 2C: Continued Engagement on Design Refinements
TPAP: Up to 120 Days
Public Engagement Round 4
Phase 5: Preliminary Design Business Case





ALL DIMENSIONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

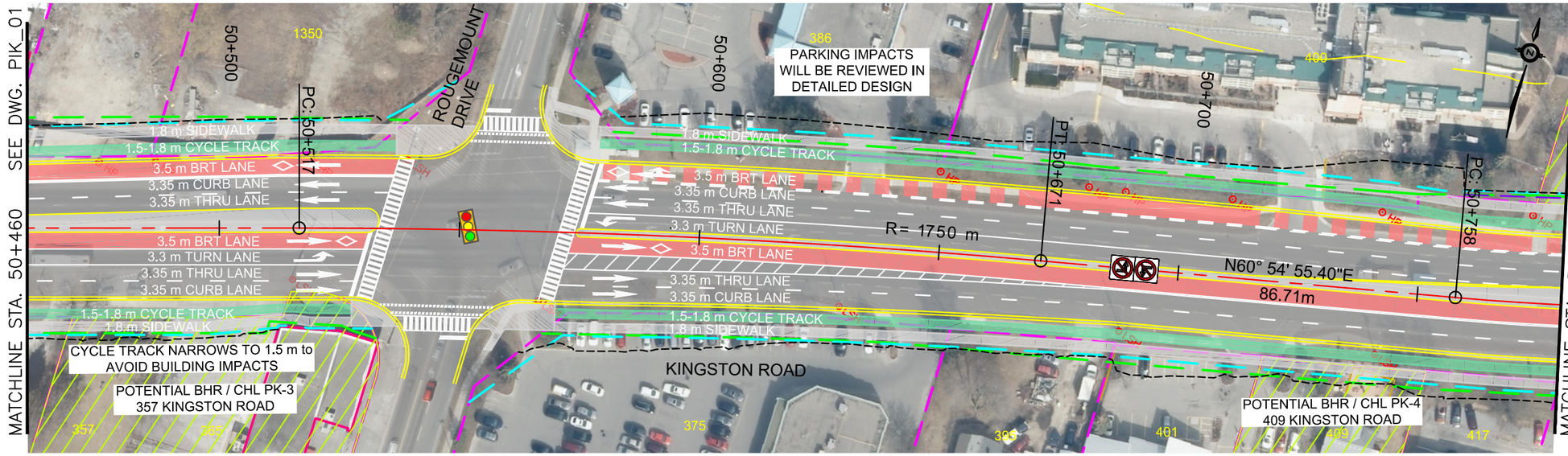
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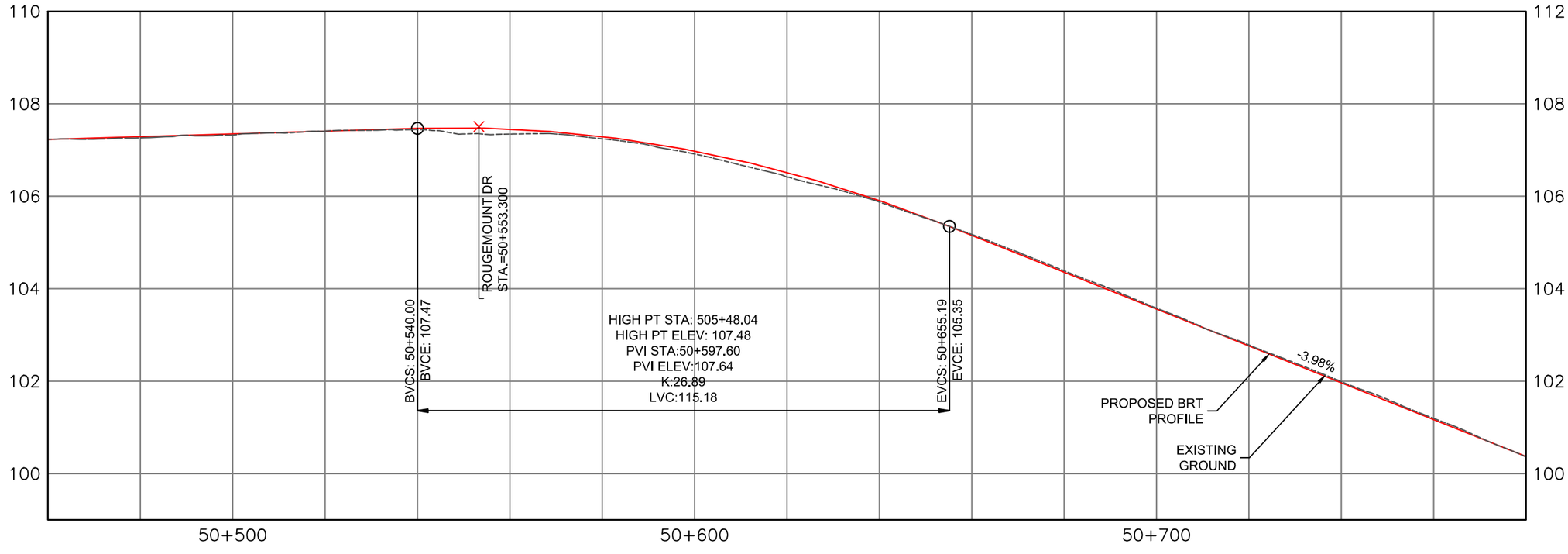
DURHAM–SCARBOROUGH BUS RAPID TRANSIT
ENVIRONMENTAL ASSESSMENT
PLAN AND PROFILE
STA. 50+180 TO STA. 50+460

DURHAM – SCARBOROUGH
Bus Rapid Transit

CONTRACT NO.	DWG. NO.	REV.	SHEET
RQQ–2018–PPDD–244	CPG_DSBRT_C0–200_PLAN&PROFILE_PIK	01	PIK_01

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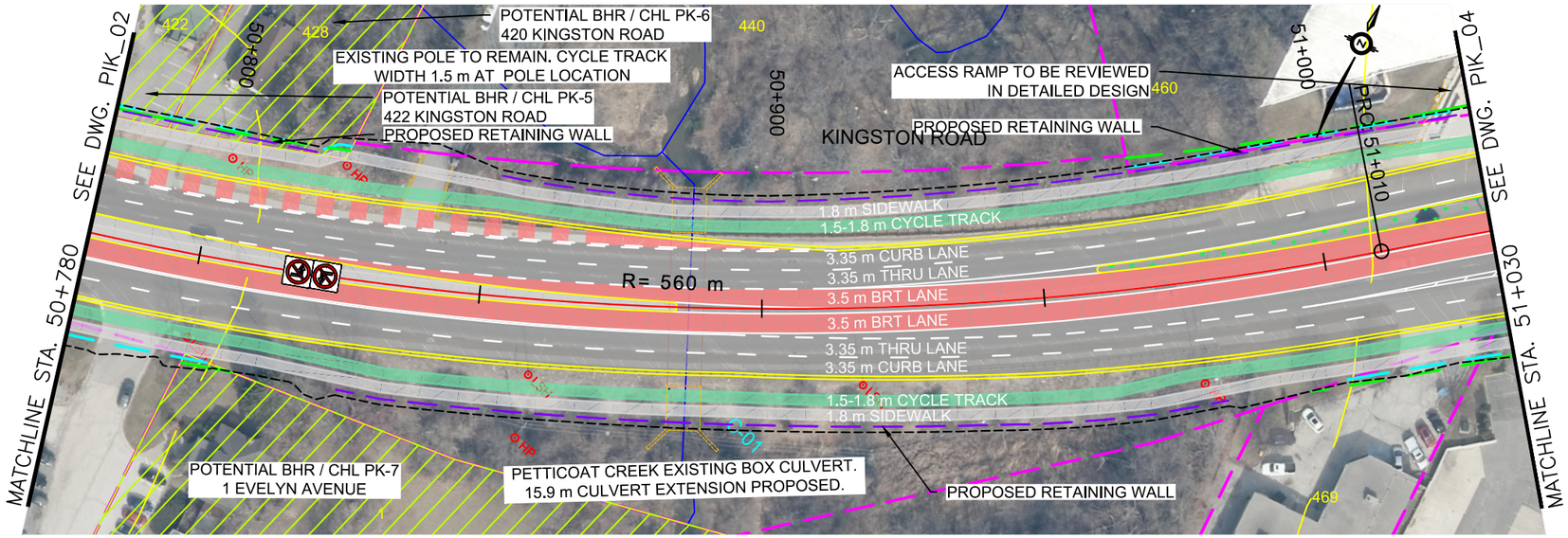
TORONTO | DURHAM REGION | IBI | PARSONS | METROLINX | Durham Region Transit

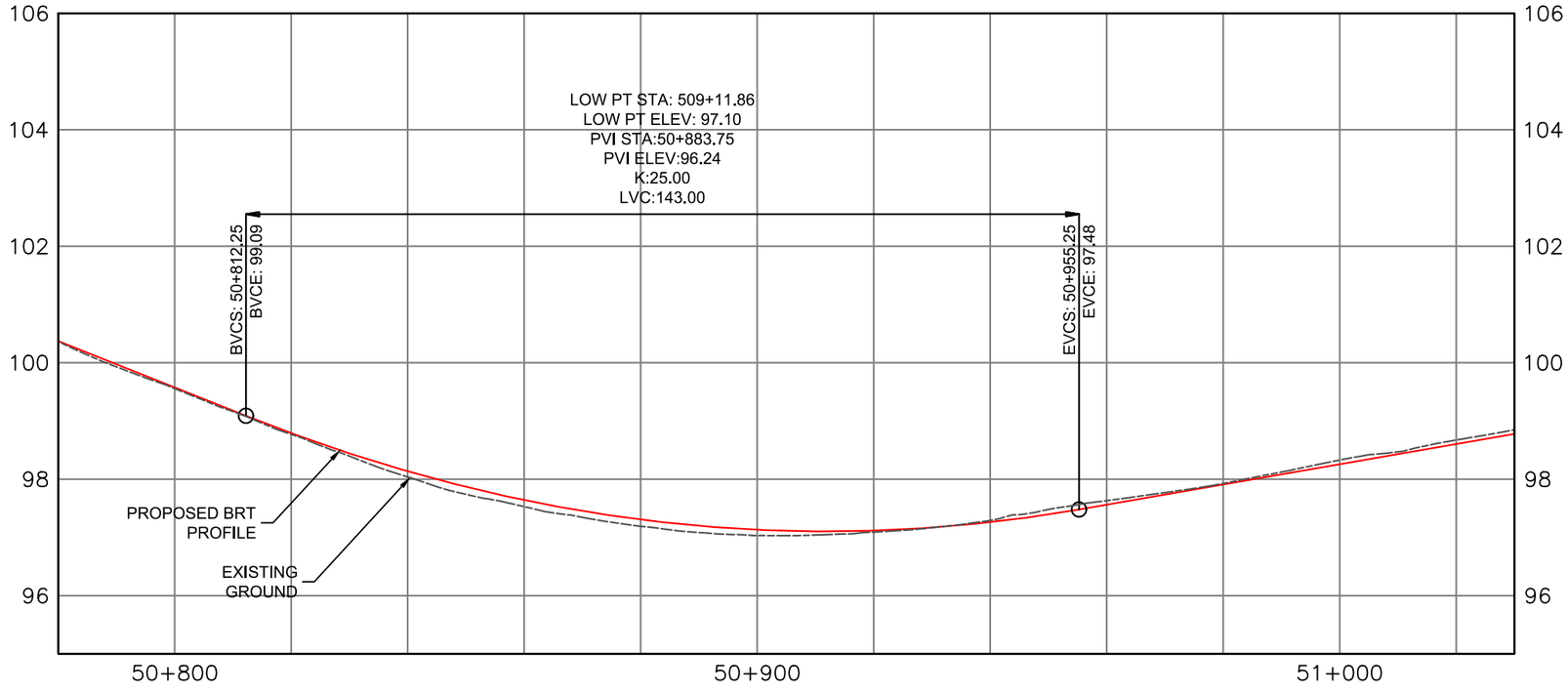
DURHAM – SCARBOROUGH Bus Rapid Transit

DURHAM–SCARBOROUGH BUS RAPID TRANSIT
ENVIRONMENTAL ASSESSMENT
PLAN AND PROFILE
STA. 50+460 TO STA. 50+780

CONTRACT NO.	DWG. NO.	REV.	SHEET
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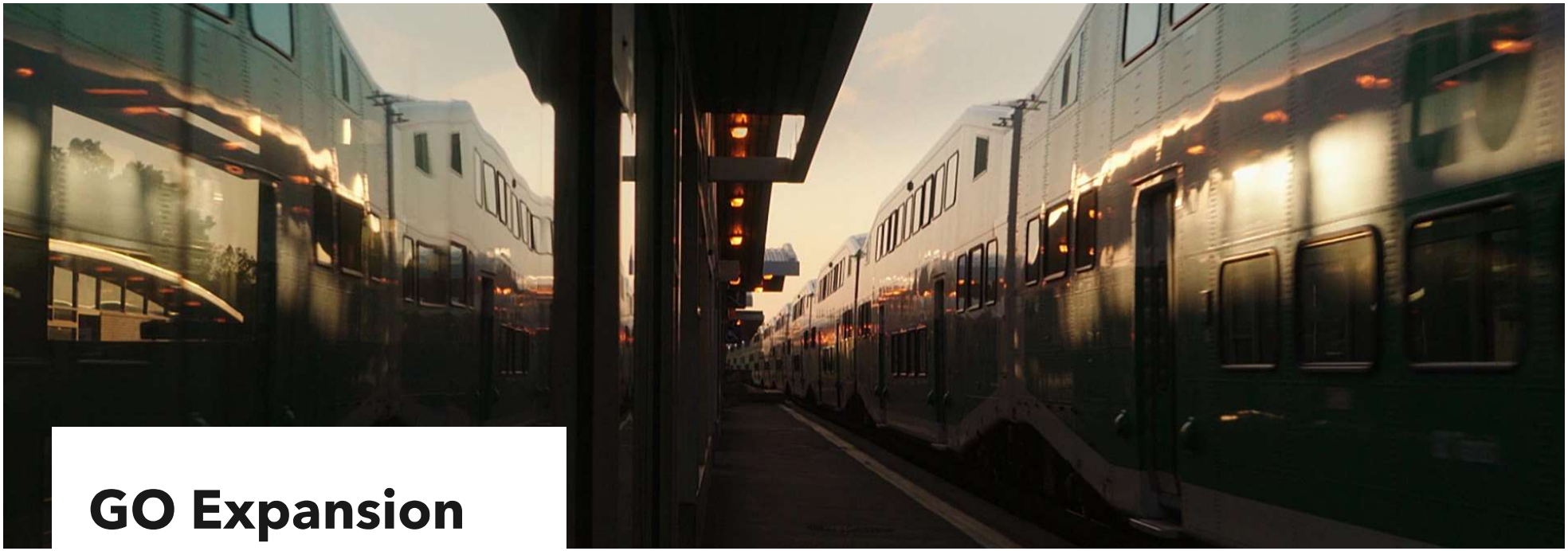
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DURHAM – SCARBOROUGH
Bus Rapid Transit

DURHAM–SCARBOROUGH BUS RAPID TRANSIT
ENVIRONMENTAL ASSESSMENT
PLAN AND PROFILE
STA. 50+780 TO STA. 51+030

CONTRACT NO.	DWG. NO.	REV.	SHEET
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GO Expansion

Now Under Construction

One region, connected

Year after year, train by train, bus by bus, Metrolinx has steadily increased GO Transit service. And now, that work is taking on a whole new energy. We're building transit service that will change life in this region through the GO Expansion program. More than a rush hour commuter service, GO will offer more service with faster trains, more stations and seamless connections to a regional rapid transit network.

GO Expansion will make the network better, faster and the region easier to travel in.

Sign Up

for updates and more from Metrolinx

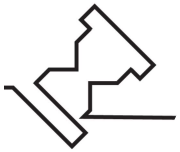
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All-day, two-way service



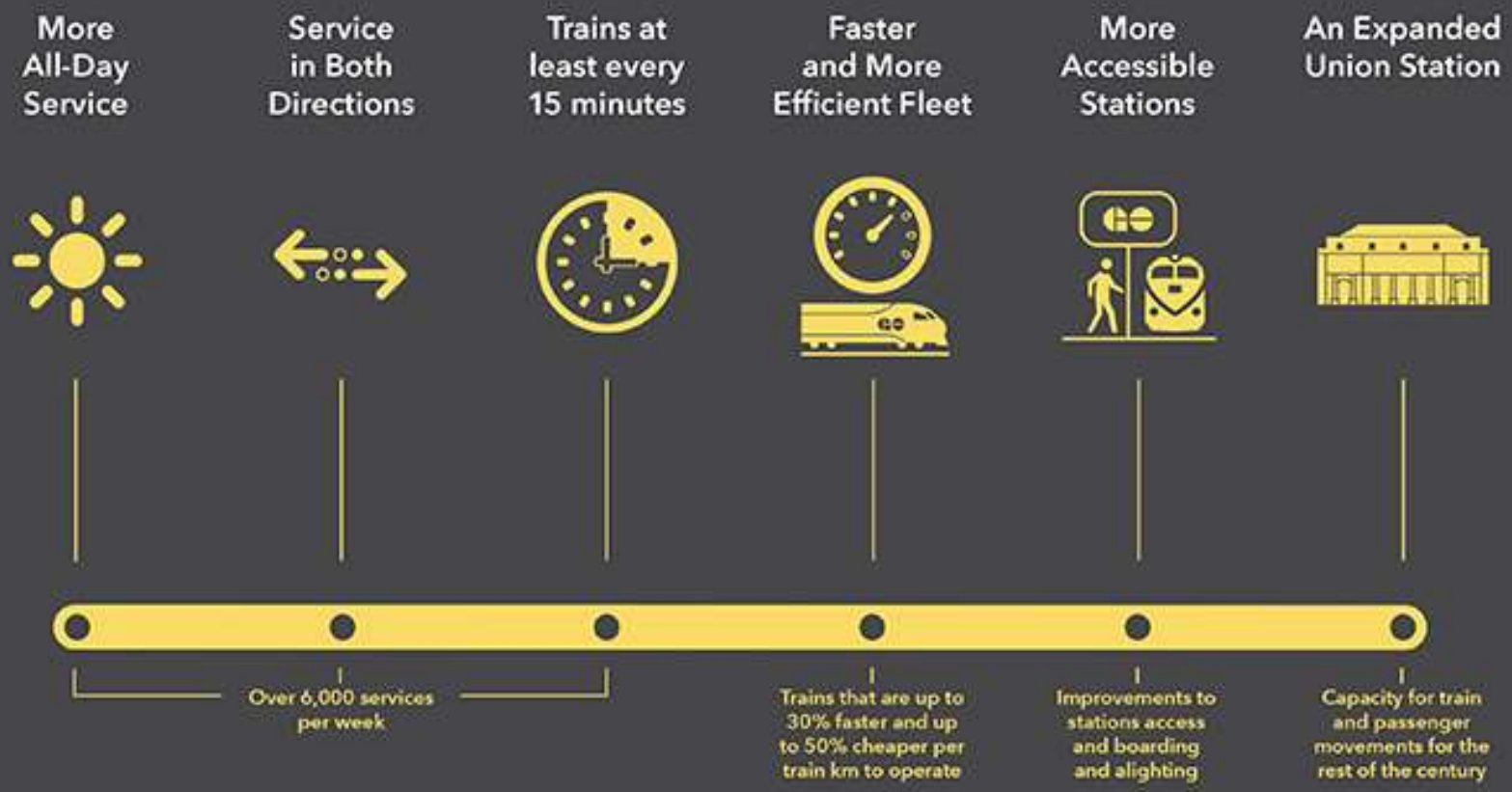
15 minute service



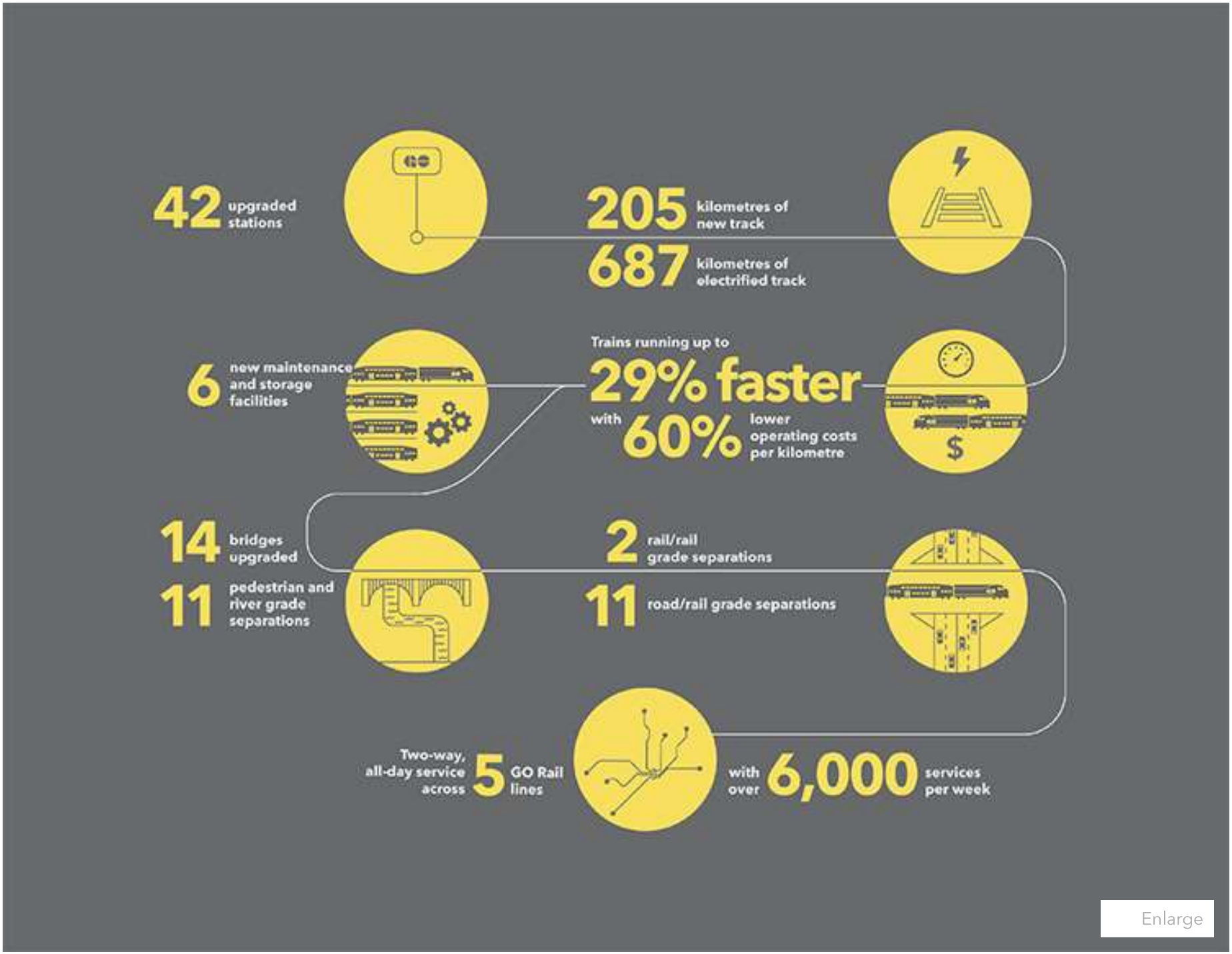
Faster trains

What it Takes to Transform the GO Rail Network

The GO Expansion program will provide a range of improvements across the GTHA:



Enlarge


42 upgraded stations
205 kilometres of new track
687 kilometres of electrified track
6 new maintenance and storage facilities
Trains running up to 29% faster with 60% lower operating costs per kilometre
$
14 bridges upgraded
11 pedestrian and river grade separations
2 rail/rail grade separations
11 road/rail grade separations
Two-way, all-day service across 5 GO Rail lines
with over 6,000 services per week

Enlarge

Growth

We're experiencing incredible growth, with an estimated nine million people calling our region home by 2041. Growth means opportunities – for careers, for families, for entertainment and everyday life. It must be matched by a transit system that keeps pace with changing realities. Today, we run 1,500 weekly trips on the GO Transit system. Each year we're adding more, and when we're done building, we'll be running over 6,000 weekly trips.

Connection

The Greater Golden Horseshoe needs more rapid transit options than ever before. GO expansion will take you more places than ever before, will get you there faster, and will give you more options to connect seamlessly to the network of subways, light rail transit and buses throughout the region.

Frequency

How do we take a rush hour commuter service to the next level? It's about more than just the number of trips. Using a new train technology on the Barrie, Lakeshore, Stouffville and Kitchener lines will allow faster trains to transport you and will offer all-day trips, going two ways, as quickly as every 15 minutes. Milton and Richmond Hill lines will also offer you up to 30% more service.

Everyone in the Greater Golden Horseshoe, from east to west, north to south, will benefit from this expansion of GO service.

Get Involved

Your GO Expansion primer – New details released on projects taking place across the transit network

Updates

GO Expansion Moving Forward

The next big move toward GO Transit expansion is now taking place and the transformation is beginning.

There is no precedent for the GO expansion program – it is a highly complex project unlike anything before in Canada. The GO Expansion program is a single innovative, fully-integrated contract to run more and better service. The winning team will design, build, operate and maintain the new infrastructure and trains for 25 years, a massive, multibillion-dollar undertaking.

The successful proponent team will be responsible for operating trains to a world-class standard and selecting and delivering the right infrastructure to unlock the benefits of GO Expansion. The contract is in a multi-year procurement process, and currently teams are completing the bids that will close in 2021. Construction will get underway in 2022/3.

Stations & Projects:

- Lakeshore East Line
- Lakeshore West Line
- Milton Line
- Barrie Line
- Stouffville Line
- Richmond Hill Line
- Kitchener Line
- Union Station
- Niagara Extension
- Bowmanville Expansion
- GO Electrification
- Hydrail Projects
- Don Valley Layover

Community Commitments

- Property and Transit Construction
- Vegetation Management and Tree Compensation Program
- Wayfinding

Construction on the GO Rail

Français



Toronto Lakeshore East Rail Corridor

More trips, more trains, more of what you need.

We're making improvements today to bring you even more service in the future. The Lakeshore East rail corridor serves many communities in Toronto and is the second busiest GO rail line.

Whether you are traveling to work or visiting friends and family – we're committed to getting you there better, faster, easier.

By building on what we have today, we can improve infrastructure that will deliver faster, two-way, all-day, 15 minute service.

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Rendering: Woodbine bridge. All renderings are subject to change. (Metrolinx photo).

Benefits to the community

GO Expansion on the Lakeshore East line will offer more frequent service during middays, evenings and weekends – giving customers more flexibility to schedule what is most important and everything else in between.

We're transforming the Lakeshore East corridor to bring more trips along the line for those traveling from and to Toronto. Frequent GO rail service will offer more service with faster trains and seamless connections to a regional rapid transit network.

Infrastructure required between Pape Avenue and Kennedy Road includes:

- A new fourth track
- Grading, retaining walls and culvert extensions to accommodate the fourth track
- Danforth Avenue, Warden Avenue and Woodbine Avenue bridge expansions to accommodate the fourth track

Infrastructure from approximately Scarborough Golf Club Road to just east of Rouge Hill GO Station includes:

- Construction of a new road-under-rail grade separation at Scarborough Golf Club Road including road and track diversions and utility relocations
- Construction of a new road-under-rail grade separation at Morningside Avenue, including road and track diversions and utility relocations.
- Construction of new grading and drainage for a future third track between Galloway Road and Beechgrove Road.
- Expansion of Highland Creek Bridge (2 spans: new north span and new south span)
- Construction of new grading and drainage for a future third track between Beechgrove Road and east of Rouge Hill GO Station.
- Replacement of Chesterton Shores manhole.

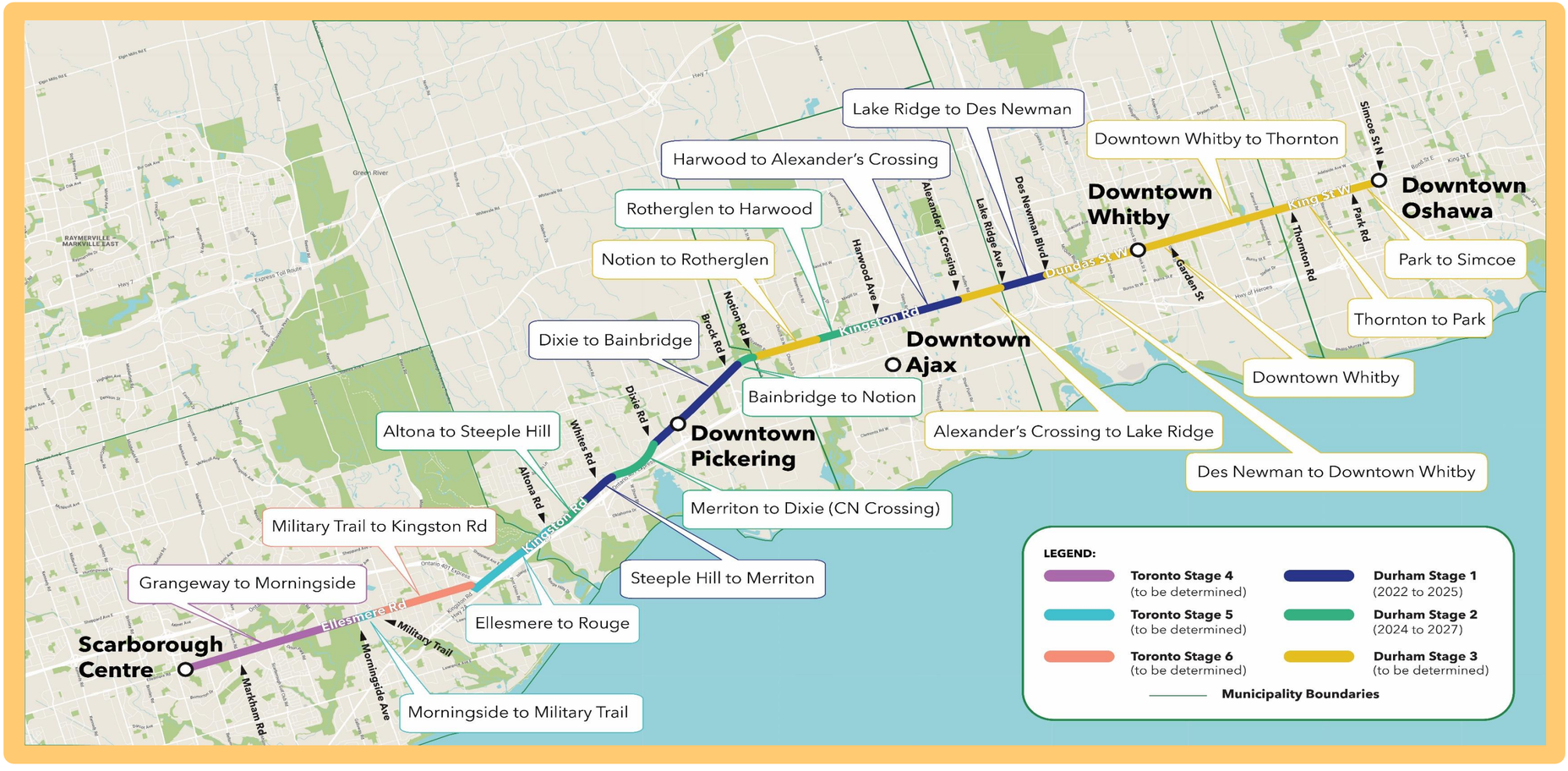
In The News

- Metrolinx Q and A – Your top questions get answered after recent Small's Creek ravine consultations



Draft Implementation Strategy

- Subject to Federal approval of ICIP funding and TPAP approval, Durham Region plans to begin construction in specific areas in 2022.
- In Toronto, construction would proceed when funding is available.
- Construction is planned to occur in phases. Quick wins and areas with existing congestion should be prioritized.
- Construction phases will be further assessed through the Preliminary Design Business Case.



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Construction and Deliverability



Source: Durham Region Transit



Source: Durham Region Transit Twitter

- Curbside bus lanes have already been constructed in Pickering and Ajax. Since the road has been widened to accommodate the infrastructure, construction costs and duration will be minimized in these areas.
- Construction will depend on funding, property acquisition, permits and approvals.
- After this phase, the project will advance to detail design prior to construction. Segments of the corridor in Durham Region will be constructed as part of the Investing in Canada Infrastructure Program, subject to Federal Approval.

APPENDIX C

Traffic Data

Spectrum

Turning Movement Count
Location Name: EVELYN AVENUE & KINGSTON ROAD
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (5 . EVELYN AVENUE & KINGSTON ROAD) MioID: 1253338

Start Time	N Approach EVELYN AVENUE						E Approach KINGSTON ROAD						S Approach EVELYN AVENUE						W Approach KINGSTON ROAD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
2024-11-28 06:00:00	0	0	0	0	0	0	0	70	0	0	0	70	0	0	0	0	0	0	0	20	0	0	0	20	90	
2024-11-28 06:15:00	0	0	0	0	1	0	0	74	0	0	0	74	0	0	0	0	0	0	0	20	0	0	0	20	94	
2024-11-28 06:30:00	0	0	0	0	0	0	0	91	0	0	0	91	0	0	0	0	0	0	0	45	0	0	0	45	136	
2024-11-28 06:45:00	0	0	0	0	1	0	0	81	1	0	0	82	0	0	0	0	1	0	0	51	0	0	0	51	133	453
2024-11-28 07:00:00	0	0	0	0	0	0	0	105	0	0	0	105	0	0	0	0	0	0	0	58	0	0	0	58	163	526
2024-11-28 07:15:00	1	0	0	0	0	1	0	127	0	0	0	127	0	0	0	0	0	0	0	67	0	0	0	67	195	627
2024-11-28 07:30:00	0	0	0	0	3	0	0	143	0	0	0	143	0	0	0	0	0	0	0	89	0	0	0	89	232	723
2024-11-28 07:45:00	0	0	0	0	3	0	0	167	1	1	0	169	0	0	0	0	1	0	0	94	0	0	0	94	263	853
2024-11-28 08:00:00	0	0	0	0	2	0	0	190	6	0	0	196	1	0	0	0	0	1	2	100	0	0	0	102	299	989
2024-11-28 08:15:00	0	0	0	0	3	0	0	173	7	0	0	180	5	0	1	0	0	6	1	120	0	0	0	121	307	1101
2024-11-28 08:30:00	0	0	0	0	1	0	0	199	7	0	0	206	5	0	3	0	1	8	3	154	0	0	0	157	371	1240
2024-11-28 08:45:00	0	0	0	0	4	0	0	183	5	0	0	188	5	0	0	0	0	5	2	192	0	1	0	195	388	1365
2024-11-28 09:00:00	0	0	0	0	3	0	0	202	1	0	0	203	2	0	0	0	1	2	3	166	0	0	0	169	374	1440
2024-11-28 09:15:00	0	0	0	0	1	0	0	154	2	0	0	156	2	0	1	0	1	3	0	192	0	0	0	192	351	1484
2024-11-28 09:30:00	0	0	0	0	1	0	0	172	0	0	0	172	0	0	0	0	0	0	1	127	0	0	0	128	300	1413
2024-11-28 09:45:00	0	0	0	0	1	0	0	145	3	0	0	148	0	0	1	0	0	1	0	133	0	0	0	133	282	1307
BREAK																										
2024-11-28 15:00:00	0	0	0	0	1	0	0	193	2	0	0	195	2	0	0	0	2	2	1	209	0	0	1	210	407	
2024-11-28 15:15:00	0	0	0	0	0	0	0	207	1	0	0	208	0	0	0	0	0	0	0	240	0	0	0	240	448	
2024-11-28 15:30:00	0	0	0	0	1	0	0	256	2	1	0	259	3	0	0	0	1	3	0	248	0	0	0	248	510	
2024-11-28 15:45:00	0	0	0	0	6	0	0	267	1	0	0	268	1	0	0	0	1	1	2	243	0	0	0	245	514	1879
2024-11-28 16:00:00	0	0	0	0	5	0	0	214	5	0	0	219	5	0	2	0	1	7	2	248	0	0	0	250	476	1948
2024-11-28 16:15:00	0	0	0	0	9	0	0	223	2	0	0	225	5	0	0	0	0	5	0	280	0	0	0	280	510	2010
2024-11-28 16:30:00	0	0	0	0	4	0	0	198	2	0	0	200	5	0	2	0	0	7	0	261	0	0	0	261	468	1968
2024-11-28 16:45:00	0	0	1	0	0	1	0	199	1	0	0	200	2	0	0	0	2	2	0	259	0	0	0	259	462	1916
2024-11-28 17:00:00	0	0	0	0	4	0	0	202	0	0	0	202	5	0	2	0	0	7	0	227	0	0	0	227	436	1876
2024-11-28 17:15:00	0	0	0	0	3	0	0	192	0	0	0	192	0	0	1	0	1	1	1	245	0	0	0	246	439	1805
2024-11-28 17:30:00	0	0	0	0	1	0	1	191	0	0	0	192	0	0	0	0	0	0	1	220	0	0	0	221	413	1750
2024-11-28 17:45:00	0	0	0	0	1	0	0	196	0	0	0	196	0	0	1	0	1	1	0	217	0	0	0	217	414	1702
2024-11-28 18:00:00	0	0	0	0	0	0	0	177	1	0	0	178	1	0	0	0	0	1	0	219	0	0	0	219	398	1664
2024-11-28 18:15:00	0	0	0	0	4	0	0	143	3	0	0	146	0	0	0	0	0	0	0	177	0	0	0	177	323	1548
2024-11-28 18:30:00	0	0	0	0	1	0	0	153	0	0	0	153	1	0	1	0	0	2	1	181	0	0	0	182	337	1472
2024-11-28 18:45:00	0	0	0	0	0	0	0	164	0	0	0	164	1	0	0	0	0	1	0	180	0	0	0	180	345	1403
Grand Total	1	0	1	0	64	2	1	5451	53	2	0	5507	51	0	15	0	14	66	20	5282	0	1	1	5303	**10878**	-
Approach%	50%	0%	50%	0%		-	0%	99%	1%	0%		-	77.3%	0%	22.7%	0%		-	0.4%	99.6%	0%	0%		-	-	-
Totals %	0%	0%	0%	0%		0%	0%	50.1%	0.5%	0%		50.6%	0.5%	0%	0.1%	0%		0.6%	0.2%	48.6%	0%	0%		48.7%	-	-
Heavy	0	0	0	0		-	0	123	0	0		-	0	0	1	0		-	1	125	0	0		-	-	-
Heavy %	0%	0%	0%	0%		-	0%	2.3%	0%	0%		-	0%	0%	6.7%	0%		-	5%	2.4%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: EVELYN AVENUE & KINGSTON ROAD
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:30 AM - 09:30 AM Weather: Light Snow (1.1 °C)

Start Time	N Approach EVELYN AVENUE						E Approach KINGSTON ROAD						S Approach EVELYN AVENUE						W Approach KINGSTON ROAD						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
2024-11-28 08:30:00	0	0	0	0	1	0	0	199	7	0	0	206	5	0	3	0	1	8	3	154	0	0	0	157	371
2024-11-28 08:45:00	0	0	0	0	4	0	0	183	5	0	0	188	5	0	0	0	0	5	2	192	0	1	0	195	388
2024-11-28 09:00:00	0	0	0	0	3	0	0	202	1	0	0	203	2	0	0	0	1	2	3	166	0	0	0	169	374
2024-11-28 09:15:00	0	0	0	0	1	0	0	154	2	0	0	156	2	0	1	0	1	3	0	192	0	0	0	192	351
Grand Total	0	0	0	0	9	0	0	738	15	0	0	753	14	0	4	0	3	18	8	704	0	1	0	713	**1484**
Approach%	0%	0%	0%	0%		-	0%	98%	2%	0%		-	77.8%	0%	22.2%	0%		-	1.1%	98.7%	0%	0.1%		-	**-**
Totals %	0%	0%	0%	0%		0%	0%	49.7%	1%	0%		50.7%	0.9%	0%	0.3%	0%		1.2%	0.5%	47.4%	0%	0.1%		48%	**-**
PHF	0	0	0	0		0	0	0.91	0.54	0		0.91	0.7	0	0.33	0		0.56	0.67	0.92	0	0.25		0.91	0.96
Heavy	0	0	0	0		0	0	15	0	0		15	0	0	0	0		0	0	24	0	0		24	39
Heavy %	0%	0%	0%	0%		0%	0%	2%	0%	0%		2%	0%	0%	0%	0%		0%	0%	3.4%	0%	0%		3.4%	2.6%
Lights	0	0	0	0		0	0	723	15	0		738	14	0	4	0		18	8	680	0	1		689	1445
Lights %	0%	0%	0%	0%		0%	0%	98%	100%	0%		98%	100%	0%	100%	0%		100%	100%	96.6%	0%	100%		96.6%	97.4%
Single-Unit Trucks	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	0	5	0	0		5	10
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	0.7%
Buses	0	0	0	0		0	0	10	0	0		10	0	0	0	0		0	0	18	0	0		18	28
Buses %	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.3%	0%	0%	0%	0%		0%	0%	2.6%	0%	0%		2.5%	1.9%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	1
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0.1%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	66.7%		-	-	-	-	0%		-	-	-	-	16.7%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	8.3%		-	-	-	-	0%		-	-	-	-	8.3%		-	-	-	-	0%		**-**

Spectrum

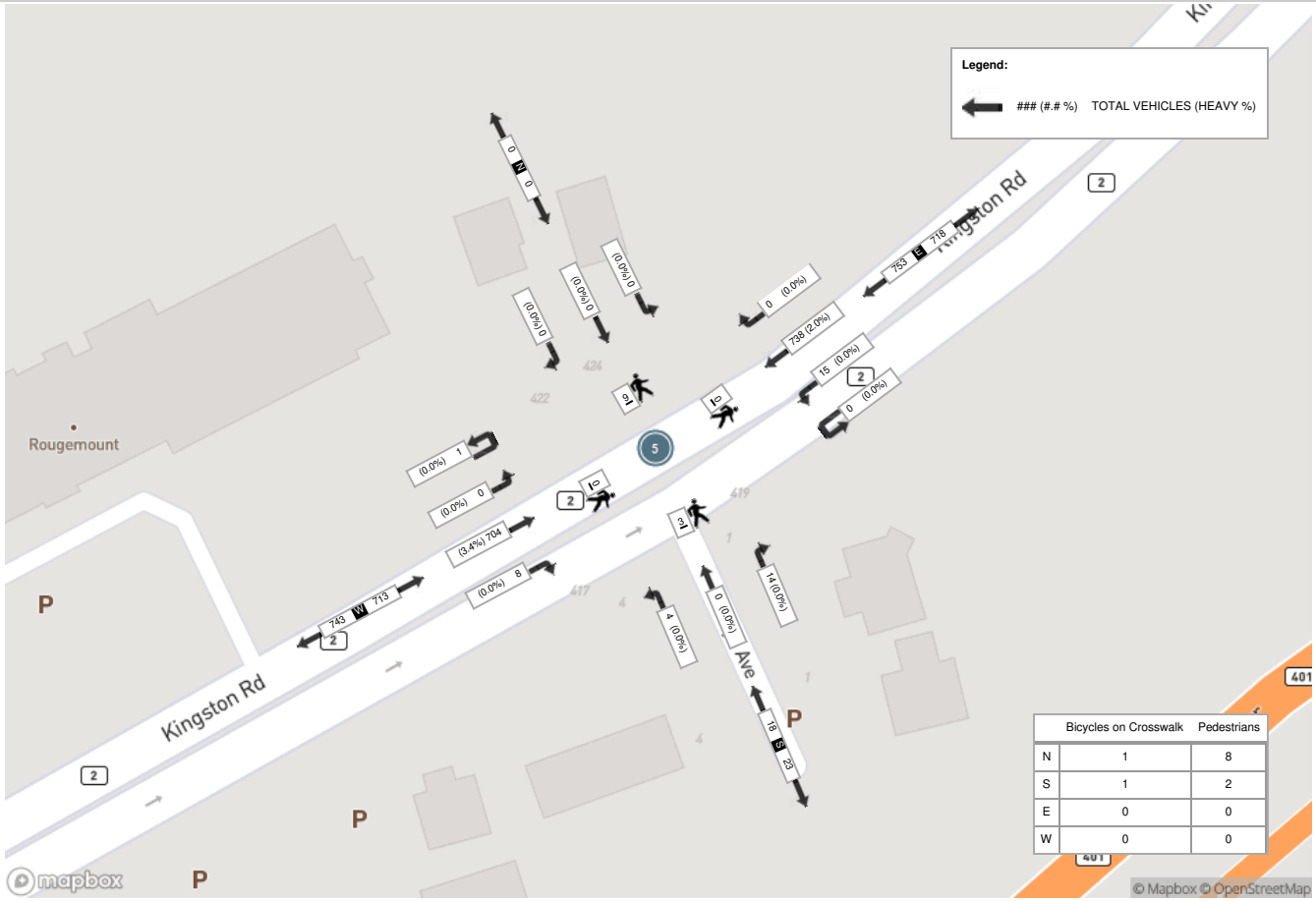
Turning Movement Count
Location Name: EVELYN AVENUE & KINGSTON ROAD
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 03:30 PM - 04:30 PM Weather: Overcast Clouds (5.15 °C)

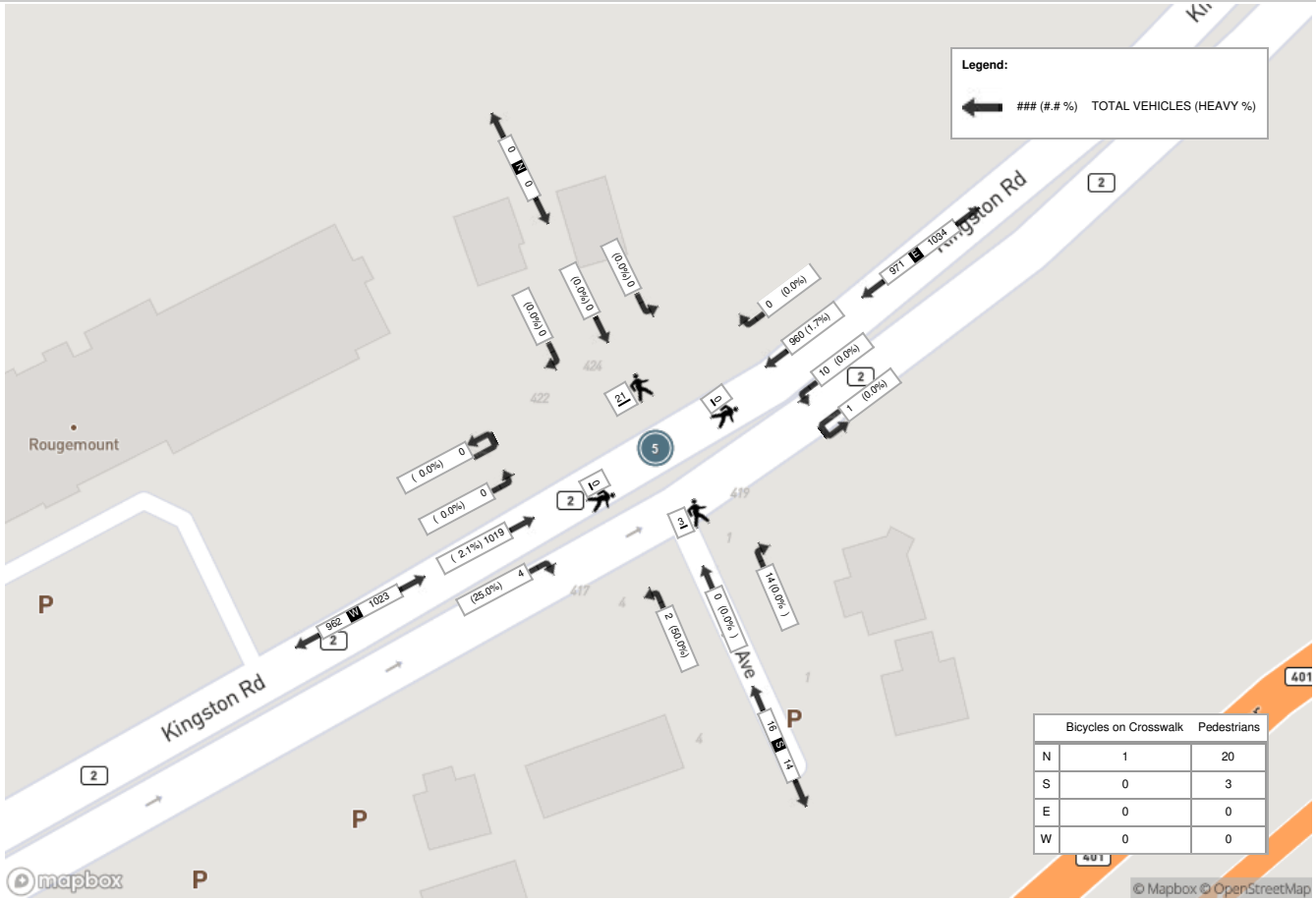
Start Time	N Approach EVELYN AVENUE						E Approach KINGSTON ROAD						S Approach EVELYN AVENUE						W Approach KINGSTON ROAD						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
2024-11-28 15:30:00	0	0	0	0	1	0	0	256	2	1	0	259	3	0	0	0	1	3	0	248	0	0	0	248	510
2024-11-28 15:45:00	0	0	0	0	6	0	0	267	1	0	0	268	1	0	0	0	1	1	2	243	0	0	0	245	514
2024-11-28 16:00:00	0	0	0	0	5	0	0	214	5	0	0	219	5	0	2	0	1	7	2	248	0	0	0	250	476
2024-11-28 16:15:00	0	0	0	0	9	0	0	223	2	0	0	225	5	0	0	0	0	5	0	280	0	0	0	280	510
Grand Total	0	0	0	0	21	0	0	960	10	1	0	971	14	0	2	0	3	16	4	1019	0	0	0	1023	**2010**
Approach%	0%	0%	0%	0%		-	0%	98.9%	1%	0.1%		-	87.5%	0%	12.5%	0%		-	0.4%	99.6%	0%	0%		-	**-**
Totals %	0%	0%	0%	0%		0%	0%	47.8%	0.5%	0%		48.3%	0.7%	0%	0.1%	0%		0.8%	0.2%	50.7%	0%	0%		50.9%	**-**
PHF	0	0	0	0		0	0	0.9	0.5	0.25		0.91	0.7	0	0.25	0		0.57	0.5	0.91	0	0		0.91	0.98
Heavy	0	0	0	0		0	0	16	0	0		16	0	0	1	0		1	1	21	0	0		22	39
Heavy %	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.6%	0%	0%	50%	0%		6.3%	25%	2.1%	0%	0%		2.2%	1.9%
Lights	0	0	0	0		0	0	944	10	1		955	14	0	1	0		15	3	998	0	0		1001	1971
Lights %	0%	0%	0%	0%		0%	0%	98.3%	100%	100%		98.4%	100%	0%	50%	0%		93.8%	75%	97.9%	0%	0%		97.8%	98.1%
Single-Unit Trucks	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	0	6	0	0		6	11
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.6%	0.5%
Buses	0	0	0	0		0	0	10	0	0		10	0	0	1	0		1	1	15	0	0		16	27
Buses %	0%	0%	0%	0%		0%	0%	1%	0%	0%		1%	0%	0%	50%	0%		6.3%	25%	1.5%	0%	0%		1.6%	1.3%
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	1
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	20	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	83.3%		-	-	-	-	0%		-	-	-	-	12.5%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	4.2%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 08:30 AM - 09:30 AM **Weather: Light Snow (1.1 °C)**



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 03:30 PM - 04:30 PM Weather: Overcast Clouds (5.15 °C)



	Bicycles on Crosswalk	Pedestrians
N	1	20
S	0	3
E	0	0
W	0	0

Spectrum

Turning Movement Count
Location Name: KINGSTON ROAD & ALTONA ROAD
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (1 . KINGSTON ROAD & ALTONA ROAD)

Start Time	N Approach ALTONA RD						E Approach KINGSTON RD						S Approach ALTONA RD						W Approach KINGSTON RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2024-11-28 06:00:00	74	0	3	0	0	77	2	93	0	0	0	95	0	0	1	0	0	1	0	26	11	0	0	37	210	
2024-11-28 06:15:00	106	0	6	0	0	112	10	93	0	0	0	103	0	0	0	0	0	0	0	20	13	0	0	33	248	
2024-11-28 06:30:00	92	0	11	0	0	103	12	104	0	0	0	116	0	0	0	0	0	0	0	38	18	0	0	56	275	
2024-11-28 06:45:00	116	0	14	0	0	130	10	83	0	0	0	93	0	0	0	0	0	0	0	43	27	0	0	70	293	1026
2024-11-28 07:00:00	141	0	12	0	0	153	14	108	0	0	1	122	0	0	0	0	1	0	0	46	36	0	0	82	357	1173
2024-11-28 07:15:00	140	0	13	0	1	153	18	138	0	0	1	156	1	0	0	0	1	1	0	53	39	0	0	92	402	1327
2024-11-28 07:30:00	148	0	28	0	2	176	19	149	0	0	0	168	0	0	1	0	0	1	0	59	63	0	0	122	467	1519
2024-11-28 07:45:00	183	0	26	0	2	209	27	155	0	0	1	182	0	0	1	0	0	1	0	77	68	0	0	145	537	1763
2024-11-28 08:00:00	207	0	43	0	2	250	35	173	0	0	2	208	0	0	0	0	2	0	0	74	70	0	1	144	602	2008
2024-11-28 08:15:00	168	0	48	0	3	216	46	150	0	0	1	196	0	0	0	0	2	0	0	76	74	0	0	150	562	2168
2024-11-28 08:30:00	158	0	71	0	2	229	43	132	0	0	3	175	0	0	0	0	3	0	0	108	81	0	0	189	593	2294
2024-11-28 08:45:00	145	0	62	0	2	207	43	154	0	0	1	197	1	0	0	0	2	1	0	112	77	0	0	189	594	2351
2024-11-28 09:00:00	102	0	45	0	1	147	35	152	1	0	2	188	1	0	0	0	2	1	0	91	67	0	0	158	494	2243
2024-11-28 09:15:00	108	0	48	0	1	156	32	114	0	0	3	146	0	0	0	0	2	0	0	109	52	0	0	161	463	2144
2024-11-28 09:30:00	97	0	23	0	4	120	30	113	0	0	2	143	0	0	0	0	0	0	0	90	40	0	0	130	393	1944
2024-11-28 09:45:00	99	0	36	0	0	135	23	120	0	0	0	143	0	0	0	0	0	0	0	97	42	0	0	139	417	1767
BREAK																										
2024-11-28 15:00:00	75	0	40	0	1	115	49	128	0	0	1	177	0	0	1	0	1	1	0	169	98	0	0	267	560	
2024-11-28 15:15:00	87	0	56	0	0	143	44	141	1	0	0	186	0	0	0	0	0	0	0	182	128	0	0	310	639	
2024-11-28 15:30:00	93	0	47	0	0	140	59	150	0	0	2	209	0	0	0	0	2	0	0	222	144	0	0	366	715	
2024-11-28 15:45:00	80	0	51	0	0	131	65	166	0	0	1	231	0	0	0	0	3	0	1	229	129	0	0	359	721	2635
2024-11-28 16:00:00	89	0	44	0	2	133	60	154	0	0	2	214	0	0	0	0	1	0	0	203	152	0	1	355	702	2777
2024-11-28 16:15:00	73	0	53	0	0	126	51	150	0	0	1	201	0	0	0	0	2	0	0	247	139	0	0	386	713	2851
2024-11-28 16:30:00	100	0	37	0	4	137	57	154	0	0	2	211	0	1	0	0	0	1	1	241	143	0	0	385	734	2870
2024-11-28 16:45:00	122	0	33	0	1	155	50	133	1	0	1	184	0	0	0	0	0	0	0	227	159	0	0	386	725	2874
2024-11-28 17:00:00	102	1	41	0	1	144	46	168	0	0	2	214	0	0	0	0	3	0	0	215	153	0	0	368	726	2898
2024-11-28 17:15:00	106	0	50	0	0	156	49	141	0	0	0	190	0	1	0	0	1	1	0	234	154	1	0	389	736	2921
2024-11-28 17:30:00	104	0	39	0	3	143	48	129	0	0	1	177	0	0	0	0	2	0	1	201	150	0	0	352	672	2859
2024-11-28 17:45:00	83	0	41	0	0	124	32	139	0	0	2	171	0	1	0	0	3	1	0	183	154	0	0	337	633	2767
2024-11-28 18:00:00	91	1	39	0	0	131	48	117	0	0	0	165	0	1	0	0	0	1	0	208	152	0	0	360	657	2698
2024-11-28 18:15:00	91	0	32	0	0	123	29	105	0	0	4	134	0	0	1	0	5	1	1	145	134	0	0	280	538	2500
2024-11-28 18:30:00	78	0	35	0	1	113	27	115	0	0	1	142	0	0	0	0	0	0	0	186	141	1	0	328	583	2411
2024-11-28 18:45:00	92	0	30	0	0	122	30	126	0	0	2	156	0	0	0	0	3	0	1	149	114	1	0	265	543	2321
Grand Total	3550	2	1157	0	33	4709	1143	4247	3	0	39	5393	3	4	5	0	41	12	5	4360	3022	3	2	7390	**17504**	-
Approach%	75.4%	0%	24.6%	0%		-	21.2%	78.8%	0.1%	0%		-	25%	33.3%	41.7%	0%		-	0.1%	59%	40.9%	0%		-	-	-
Totals %	20.3%	0%	6.6%	0%		26.9%	6.5%	24.3%	0%	0%		30.8%	0%	0%	0%	0%		0.1%	0%	24.9%	17.3%	0%		42.2%	-	-
Heavy	43	0	28	0		-	27	96	0	0		-	0	0	1	0		-	0	89	41	0		-	-	-
Heavy %	1.2%	0%	2.4%	0%		-	2.4%	2.3%	0%	0%		-	0%	0%	20%	0%		-	0%	2%	1.4%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: KINGSTON ROAD & ALTONA ROAD
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Light Snow (1.1 °C)

Start Time	N Approach ALTONA RD						E Approach KINGSTON RD						S Approach ALTONA RD						W Approach KINGSTON RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2024-11-28 08:00:00	207	0	43	0	2	250	35	173	0	0	2	208	0	0	0	0	2	0	0	74	70	0	1	144	602
2024-11-28 08:15:00	168	0	48	0	3	216	46	150	0	0	1	196	0	0	0	0	2	0	0	76	74	0	0	150	562
2024-11-28 08:30:00	158	0	71	0	2	229	43	132	0	0	3	175	0	0	0	0	3	0	0	108	81	0	0	189	593
2024-11-28 08:45:00	145	0	62	0	2	207	43	154	0	0	1	197	1	0	0	0	2	1	0	112	77	0	0	189	594
Grand Total	678	0	224	0	9	902	167	609	0	0	7	776	1	0	0	0	9	1	0	370	302	0	1	672	**2351**
Approach%	75.2%	0%	24.8%	0%		-	21.5%	78.5%	0%	0%		-	100%	0%	0%	0%		-	0%	55.1%	44.9%	0%		-	**-**
Totals %	28.8%	0%	9.5%	0%		38.4%	7.1%	25.9%	0%	0%		33%	0%	0%	0%	0%		0%	0%	15.7%	12.8%	0%		28.6%	**-**
PHF	0.82	0	0.79	0		0.9	0.91	0.88	0	0		0.93	0.25	0	0	0		0.25	0	0.83	0.93	0		0.89	0.98
Heavy	9	0	6	0		15	4	10	0	0		14	0	0	0	0		0	0	10	7	0		17	46
Heavy %	1.3%	0%	2.7%	0%		1.7%	2.4%	1.6%	0%	0%		1.8%	0%	0%	0%	0%		0%	0%	2.7%	2.3%	0%		2.5%	2%
Lights	669	0	218	0		887	163	599	0	0		762	1	0	0	0		1	0	360	295	0		655	2305
Lights %	98.7%	0%	97.3%	0%		98.3%	97.6%	98.4%	0%	0%		98.2%	100%	0%	0%	0%		100%	0%	97.3%	97.7%	0%		97.5%	98%
Single-Unit Trucks	5	0	1	0		6	1	2	0	0		3	0	0	0	0		0	0	5	3	0		8	17
Single-Unit Trucks %	0.7%	0%	0.4%	0%		0.7%	0.6%	0.3%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	1.4%	1%	0%		1.2%	0.7%
Buses	1	0	5	0		6	3	6	0	0		9	0	0	0	0		0	0	5	1	0		6	21
Buses %	0.1%	0%	2.2%	0%		0.7%	1.8%	1%	0%	0%		1.2%	0%	0%	0%	0%		0%	0%	1.4%	0.3%	0%		0.9%	0.9%
Articulated Trucks	3	0	0	0		3	0	2	0	0		2	0	0	0	0		0	0	0	3	0		3	8
Articulated Trucks %	0.4%	0%	0%	0%		0.3%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0%	1%	0%		0.4%	0.3%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	9	-	-	-	-	-	7	-	-	-	-	-	9	-	-	-	-	-	1	-	**-**
Pedestrians%	-	-	-	-	34.6%		-	-	-	-	26.9%		-	-	-	-	34.6%		-	-	-	-	3.8%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: KINGSTON ROAD & ALTONA ROAD
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

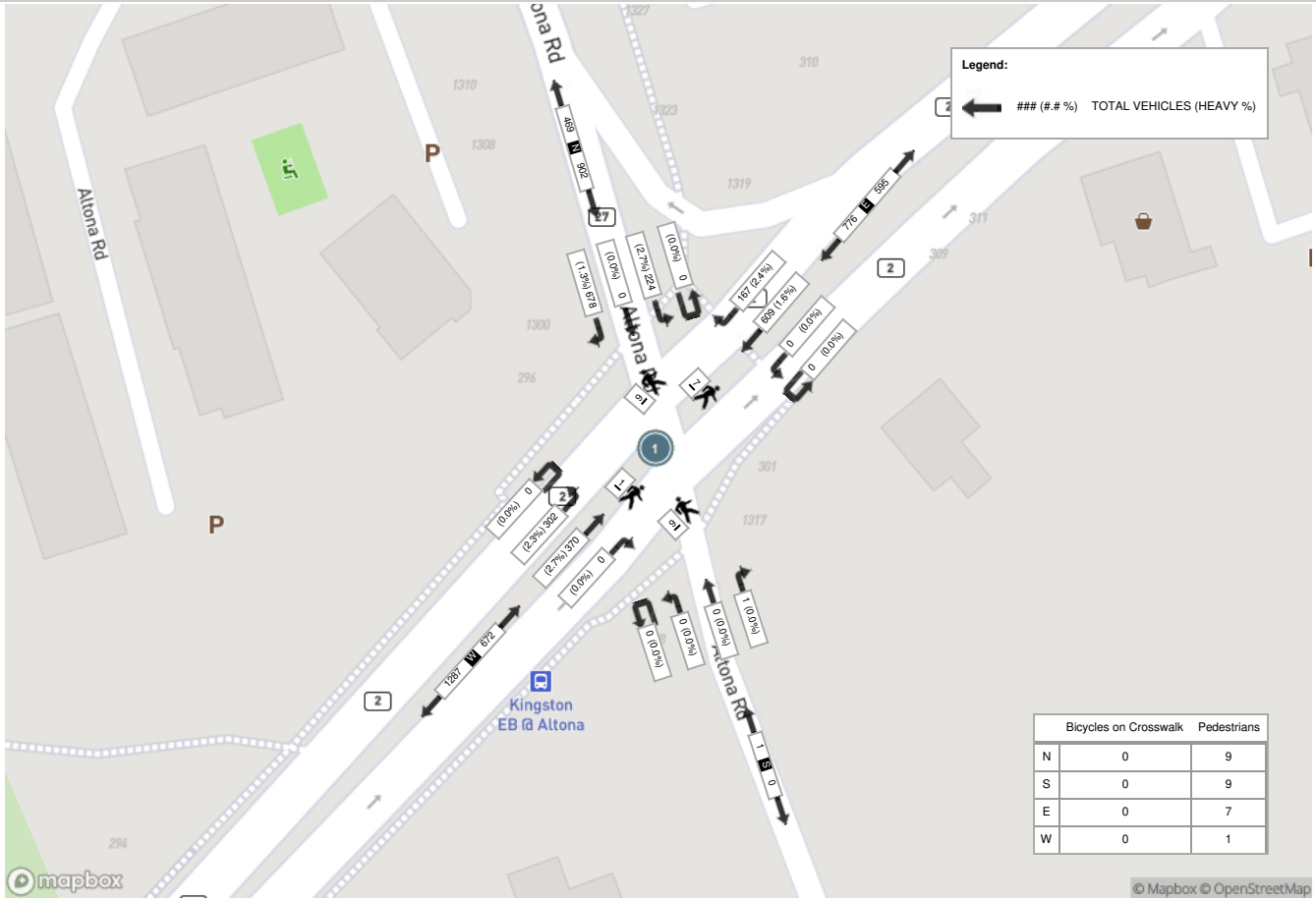
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (5.15 °C)

Start Time	N Approach ALTONA RD						E Approach KINGSTON RD						S Approach ALTONA RD						W Approach KINGSTON RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2024-11-28 16:30:00	100	0	37	0	4	137	57	154	0	0	2	211	0	1	0	0	0	1	1	241	143	0	0	385	734
2024-11-28 16:45:00	122	0	33	0	1	155	50	133	1	0	1	184	0	0	0	0	0	0	0	227	159	0	0	386	725
2024-11-28 17:00:00	102	1	41	0	1	144	46	168	0	0	2	214	0	0	0	0	3	0	0	215	153	0	0	368	726
2024-11-28 17:15:00	106	0	50	0	0	156	49	141	0	0	0	190	0	1	0	0	1	1	0	234	154	1	0	389	736
Grand Total	430	1	161	0	6	592	202	596	1	0	5	799	0	2	0	0	4	2	1	917	609	1	0	1528	**2921**
Approach%	72.6%	0.2%	27.2%	0%		-	25.3%	74.6%	0.1%	0%		-	0%	100%	0%	0%		-	0.1%	60%	39.9%	0.1%		-	**-**
Totals %	14.7%	0%	5.5%	0%		20.3%	6.9%	20.4%	0%	0%		27.4%	0%	0.1%	0%	0%		0.1%	0%	31.4%	20.8%	0%		52.3%	**-**
PHF	0.88	0.25	0.81	0		0.95	0.89	0.89	0.25	0		0.93	0	0.5	0	0		0.5	0.25	0.95	0.96	0.25		0.98	0.99
Heavy	8	0	2	0		10	3	9	0	0		12	0	0	0	0		0	0	9	7	0		16	38
Heavy %	1.9%	0%	1.2%	0%		1.7%	1.5%	1.5%	0%	0%		1.5%	0%	0%	0%	0%		0%	0%	1%	1.1%	0%		1%	1.3%
Lights	422	1	159	0		582	199	587	1	0		787	0	2	0	0		2	1	908	602	1		1512	2883
Lights %	98.1%	100%	98.8%	0%		98.3%	98.5%	98.5%	100%	0%		98.5%	0%	100%	0%	0%		100%	100%	99%	98.9%	100%		99%	98.7%
Single-Unit Trucks	2	0	2	0		4	3	2	0	0		5	0	0	0	0		0	0	1	5	0		6	15
Single-Unit Trucks %	0.5%	0%	1.2%	0%		0.7%	1.5%	0.3%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.1%	0.8%	0%		0.4%	0.5%
Buses	2	0	0	0		2	0	7	0	0		7	0	0	0	0		0	0	7	1	0		8	17
Buses %	0.5%	0%	0%	0%		0.3%	0%	1.2%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	0.8%	0.2%	0%		0.5%	0.6%
Articulated Trucks	4	0	0	0		4	0	0	0	0		0	0	0	0	0		0	0	1	1	0		2	6
Articulated Trucks %	0.9%	0%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.1%	0.2%	0%		0.1%	0.2%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	6	-	-	-	-	-	5	-	-	-	-	-	4	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	40%		-	-	-	-	33.3%		-	-	-	-	26.7%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

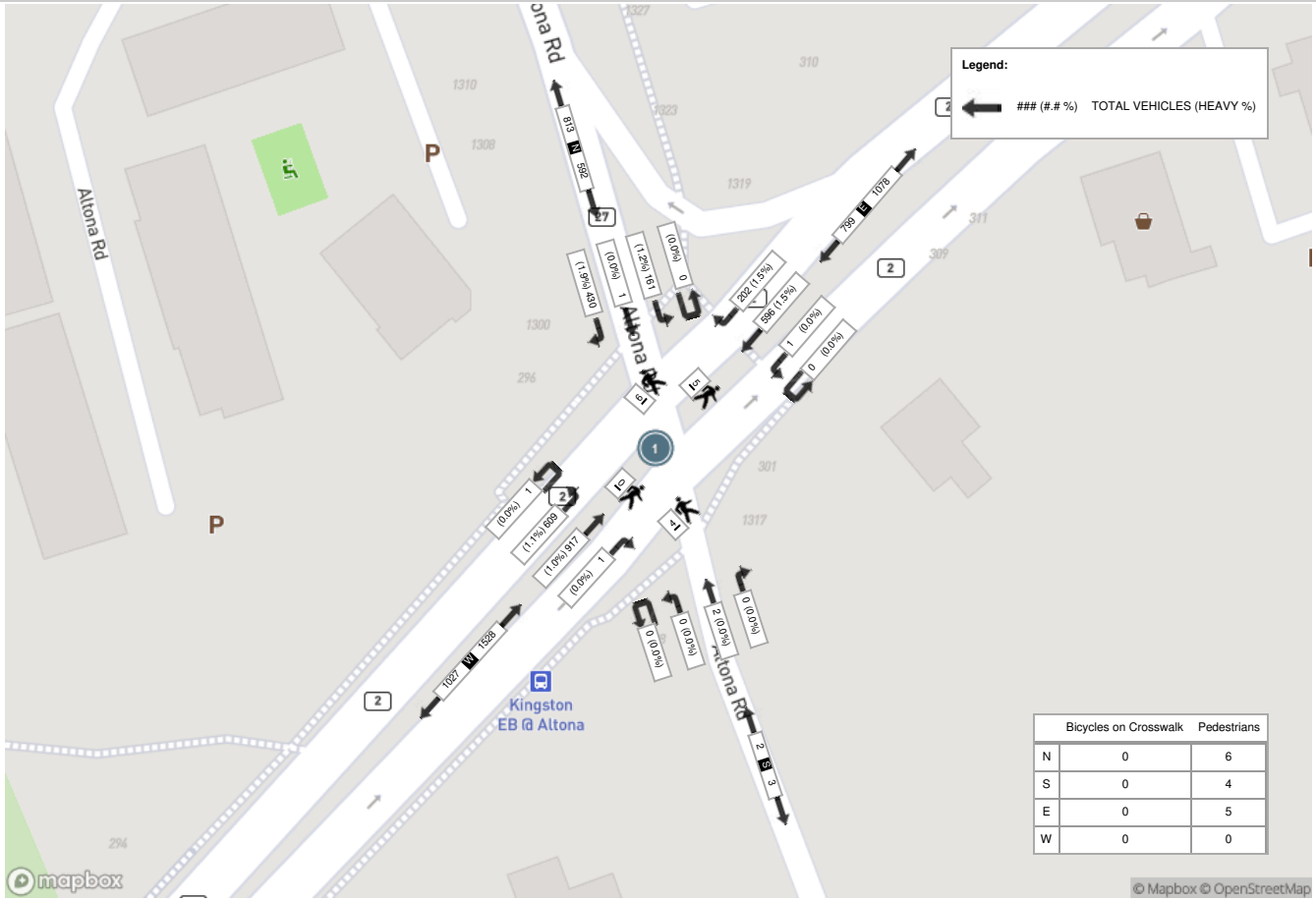
Peak Hour: 08:00 AM - 09:00 AM **Weather: Light Snow (1.1 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	9
S	0	9
E	0	7
W	0	1

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (5.15 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	6
S	0	4
E	0	5
W	0	0

Spectrum

Turning Movement Count
Location Name: KINGSTON ROAD & ROUGEMOUNT DRIVE
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (2 . KINGSTON ROAD & ROUGEMOUNT DRIVE) MioID: 1253321

Start Time	N Approach ROUGEMOUNT DRIVE						E Approach KINGSTON ROAD						S Approach ROUGEMOUNT DRIVE						W Approach KINGSTON ROAD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
2024-11-28 06:00:00	4	0	0	0	0	4	3	59	4	0	1	66	3	0	26	0	0	29	6	24	0	0	0	30	129	
2024-11-28 06:15:00	3	0	1	0	0	4	0	77	0	0	1	77	1	0	24	0	0	25	7	17	0	0	0	24	130	
2024-11-28 06:30:00	2	1	0	0	0	3	4	76	3	0	0	83	6	1	29	0	0	36	12	38	2	0	0	52	174	
2024-11-28 06:45:00	5	2	4	0	0	11	1	73	7	0	0	81	5	0	20	0	0	25	23	34	0	0	0	57	174	607
2024-11-28 07:00:00	4	0	2	0	0	6	2	80	9	0	2	91	13	3	40	0	1	56	16	42	3	0	0	61	214	692
2024-11-28 07:15:00	3	2	6	0	0	11	4	119	8	0	2	131	8	5	33	0	2	46	17	48	2	0	0	67	255	817
2024-11-28 07:30:00	4	3	9	0	3	16	8	108	9	0	8	125	15	6	56	0	1	77	20	64	2	0	0	86	304	947
2024-11-28 07:45:00	10	9	8	0	1	27	13	133	12	0	1	158	10	6	39	0	0	55	27	74	4	0	0	105	345	1118
2024-11-28 08:00:00	11	5	8	0	2	24	13	144	13	0	1	170	14	6	47	0	0	67	23	88	5	0	0	116	377	1281
2024-11-28 08:15:00	2	9	15	0	4	26	15	144	15	0	1	174	15	9	58	0	0	82	25	92	4	0	1	121	403	1429
2024-11-28 08:30:00	13	8	29	0	3	50	17	130	32	0	4	179	26	12	36	0	5	74	62	97	10	0	2	169	472	1597
2024-11-28 08:45:00	11	9	29	0	1	49	13	120	46	0	4	179	51	13	79	0	3	143	67	109	2	0	2	178	549	1801
2024-11-28 09:00:00	5	1	8	0	1	14	9	141	31	0	5	181	46	6	42	0	1	94	42	91	4	0	3	137	426	1850
2024-11-28 09:15:00	5	2	15	0	3	22	11	104	26	0	2	141	41	6	37	0	0	84	30	122	13	0	1	165	412	1859
2024-11-28 09:30:00	12	2	10	0	3	24	7	123	22	0	1	152	20	4	21	0	3	45	22	88	4	0	2	114	335	1722
2024-11-28 09:45:00	5	2	10	0	0	17	3	111	17	0	1	131	11	6	31	0	1	48	30	88	7	0	0	125	321	1494
BREAK																										
2024-11-28 15:00:00	9	6	15	0	0	30	18	151	19	0	3	188	20	7	30	0	1	57	48	164	9	0	0	221	496	
2024-11-28 15:15:00	7	11	17	0	1	35	16	157	27	0	2	200	28	7	36	0	3	71	47	180	14	0	0	241	547	
2024-11-28 15:30:00	3	8	18	0	4	29	18	158	46	0	6	222	32	5	43	0	3	80	64	191	8	0	4	263	594	
2024-11-28 15:45:00	6	10	13	0	0	29	13	182	34	0	6	229	42	18	48	0	3	108	80	182	10	0	1	272	638	2275
2024-11-28 16:00:00	11	12	15	0	6	38	18	147	29	0	2	194	38	18	61	0	1	117	62	172	11	0	1	245	594	2373
2024-11-28 16:15:00	14	3	14	0	6	31	10	142	26	0	4	178	22	12	48	0	1	82	61	228	11	0	4	300	591	2417
2024-11-28 16:30:00	7	9	28	0	8	44	19	137	30	0	1	186	26	13	65	0	3	104	61	187	17	0	2	265	599	2422
2024-11-28 16:45:00	11	7	18	0	0	36	13	140	29	0	2	182	29	8	39	0	0	76	60	197	10	0	0	267	561	2345
2024-11-28 17:00:00	9	2	12	0	2	23	14	132	27	0	4	173	30	16	77	1	0	124	51	179	14	0	5	244	564	2315
2024-11-28 17:15:00	16	11	13	0	2	40	20	126	30	0	4	176	21	13	56	0	1	90	51	208	14	0	0	273	579	2303
2024-11-28 17:30:00	8	8	13	0	1	29	11	138	17	0	3	166	14	11	41	0	2	66	45	185	11	0	1	241	502	2206
2024-11-28 17:45:00	1	6	11	0	1	18	22	145	20	0	3	187	17	3	29	0	0	49	52	175	9	0	3	236	490	2135
2024-11-28 18:00:00	2	1	13	0	3	16	10	137	15	0	1	162	15	3	30	0	1	48	54	183	10	0	1	247	473	2044
2024-11-28 18:15:00	7	3	11	0	1	21	13	105	19	0	1	137	15	2	30	0	0	47	27	142	8	0	0	177	382	1847
2024-11-28 18:30:00	12	8	12	0	1	32	18	110	19	0	2	147	17	8	26	0	3	51	45	155	12	0	2	212	442	1787
2024-11-28 18:45:00	5	5	11	0	1	21	8	132	22	0	3	162	14	4	27	0	1	45	19	146	9	0	0	174	402	1699
Grand Total	227	165	388	0	58	780	364	3981	663	0	81	5008	665	231	1304	1	40	2201	1256	3990	239	0	35	5485	**13474**	-
Approach%	29.1%	21.2%	49.7%	0%		-	7.3%	79.5%	13.2%	0%		-	30.2%	10.5%	59.2%	0%		-	22.9%	72.7%	4.4%	0%		-	-	-
Totals %	1.7%	1.2%	2.9%	0%		5.8%	2.7%	29.5%	4.9%	0%		37.2%	4.9%	1.7%	9.7%	0%		16.3%	9.3%	29.6%	1.8%	0%		40.7%	-	-
Heavy	4	1	5	0		-	3	104	7	0		-	12	3	13	0		-	19	102	1	0		-	-	-
Heavy %	1.8%	0.6%	1.3%	0%		-	0.8%	2.6%	1.1%	0%		-	1.8%	1.3%	1%	0%		-	1.5%	2.6%	0.4%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: KINGSTON ROAD & ROUGEMOUNT DRIVE
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:30 AM - 09:30 AM Weather: Light Snow (1.1 °C)

Start Time	N Approach ROUGEMOUNT DRIVE						E Approach KINGSTON ROAD						S Approach ROUGEMOUNT DRIVE						W Approach KINGSTON ROAD						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
2024-11-28 08:30:00	13	8	29	0	3	50	17	130	32	0	4	179	26	12	36	0	5	74	62	97	10	0	2	169	472
2024-11-28 08:45:00	11	9	29	0	1	49	13	120	46	0	4	179	51	13	79	0	3	143	67	109	2	0	2	178	549
2024-11-28 09:00:00	5	1	8	0	1	14	9	141	31	0	5	181	46	6	42	0	1	94	42	91	4	0	3	137	426
2024-11-28 09:15:00	5	2	15	0	3	22	11	104	26	0	2	141	41	6	37	0	0	84	30	122	13	0	1	165	412
Grand Total	34	20	81	0	8	135	50	495	135	0	15	680	164	37	194	0	9	395	201	419	29	0	8	649	**1859**
Approach%	25.2%	14.8%	60%	0%		-	7.4%	72.8%	19.9%	0%		-	41.5%	9.4%	49.1%	0%		-	31%	64.6%	4.5%	0%		-	**-**
Totals %	1.8%	1.1%	4.4%	0%		7.3%	2.7%	26.6%	7.3%	0%		36.6%	8.8%	2%	10.4%	0%		21.2%	10.8%	22.5%	1.6%	0%		34.9%	**-**
PHF	0.65	0.56	0.7	0		0.68	0.74	0.88	0.73	0		0.94	0.8	0.71	0.61	0		0.69	0.75	0.86	0.56	0		0.91	0.85
Heavy	0	0	1	0		1	1	12	1	0		14	2	1	1	0		4	3	19	0	0		22	41
Heavy %	0%	0%	1.2%	0%		0.7%	2%	2.4%	0.7%	0%		2.1%	1.2%	2.7%	0.5%	0%		1%	1.5%	4.5%	0%	0%		3.4%	2.2%
Lights	34	20	80	0		134	49	483	134	0		666	162	36	193	0		391	198	400	29	0		627	1818
Lights %	100%	100%	98.8%	0%		99.3%	98%	97.6%	99.3%	0%		97.9%	98.8%	97.3%	99.5%	0%		99%	98.5%	95.5%	100%	0%		96.6%	97.8%
Single-Unit Trucks	0	0	0	0		0	1	4	0	0		5	1	0	0	0		1	2	3	0	0		5	11
Single-Unit Trucks %	0%	0%	0%	0%		0%	2%	0.8%	0%	0%		0.7%	0.6%	0%	0%	0%		0.3%	1%	0.7%	0%	0%		0.8%	0.6%
Buses	0	0	1	0		1	0	8	1	0		9	1	1	0	0		2	1	15	0	0		16	28
Buses %	0%	0%	1.2%	0%		0.7%	0%	1.6%	0.7%	0%		1.3%	0.6%	2.7%	0%	0%		0.5%	0.5%	3.6%	0%	0%		2.5%	1.5%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	0	1	0	0		1	2
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0.5%	0%		0.3%	0%	0.2%	0%	0%		0.2%	0.1%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	8	-	-	-	-	-	14	-	-	-	-	-	9	-	-	-	-	-	8	-	**-**
Pedestrians%	-	-	-	-	20%		-	-	-	-	35%		-	-	-	-	22.5%		-	-	-	-	20%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	2.5%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: KINGSTON ROAD & ROUGEMOUNT DRIVE
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 03:45 PM - 04:45 PM Weather: Overcast Clouds (5.15 °C)

Start Time	N Approach ROUGEMOUNT DRIVE						E Approach KINGSTON ROAD						S Approach ROUGEMOUNT DRIVE						W Approach KINGSTON ROAD						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
2024-11-28 15:45:00	6	10	13	0	0	29	13	182	34	0	6	229	42	18	48	0	3	108	80	182	10	0	1	272	638
2024-11-28 16:00:00	11	12	15	0	6	38	18	147	29	0	2	194	38	18	61	0	1	117	62	172	11	0	1	245	594
2024-11-28 16:15:00	14	3	14	0	6	31	10	142	26	0	4	178	22	12	48	0	1	82	61	228	11	0	4	300	591
2024-11-28 16:30:00	7	9	28	0	8	44	19	137	30	0	1	186	26	13	65	0	3	104	61	187	17	0	2	265	599
Grand Total	38	34	70	0	20	142	60	608	119	0	13	787	128	61	222	0	8	411	264	769	49	0	8	1082	**2422**
Approach%	26.8%	23.9%	49.3%	0%		-	7.6%	77.3%	15.1%	0%		-	31.1%	14.8%	54%	0%		-	24.4%	71.1%	4.5%	0%		-	**-**
Totals %	1.6%	1.4%	2.9%	0%		5.9%	2.5%	25.1%	4.9%	0%		32.5%	5.3%	2.5%	9.2%	0%		17%	10.9%	31.8%	2%	0%		44.7%	**-**
PHF	0.68	0.71	0.63	0		0.81	0.79	0.84	0.88	0		0.86	0.76	0.85	0.85	0		0.88	0.83	0.84	0.72	0		0.9	0.95
Heavy	1	0	1	0		2	0	13	0	0		13	3	0	3	0		6	5	18	0	0		23	44
Heavy %	2.6%	0%	1.4%	0%		1.4%	0%	2.1%	0%	0%		1.7%	2.3%	0%	1.4%	0%		1.5%	1.9%	2.3%	0%	0%		2.1%	1.8%
Lights	37	34	69	0		140	60	595	119	0		774	125	61	218	0		404	259	751	49	0		1059	2377
Lights %	97.4%	100%	98.6%	0%		98.6%	100%	97.9%	100%	0%		98.3%	97.7%	100%	98.2%	0%		98.3%	98.1%	97.7%	100%	0%		97.9%	98.1%
Single-Unit Trucks	0	0	1	0		1	0	4	0	0		4	0	0	2	0		2	3	5	0	0		8	15
Single-Unit Trucks %	0%	0%	1.4%	0%		0.7%	0%	0.7%	0%	0%		0.5%	0%	0%	0.9%	0%		0.5%	1.1%	0.7%	0%	0%		0.7%	0.6%
Buses	1	0	0	0		1	0	8	0	0		8	3	0	0	0		3	2	13	0	0		15	27
Buses %	2.6%	0%	0%	0%		0.7%	0%	1.3%	0%	0%		1%	2.3%	0%	0%	0%		0.7%	0.8%	1.7%	0%	0%		1.4%	1.1%
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	1	0		1	0	0	0	0		0	2
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	0%	0%	0.5%	0%		0.2%	0%	0%	0%	0%		0%	0.1%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	1	0		1	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0.5%	0%		0.2%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	20	-	-	-	-	-	13	-	-	-	-	-	8	-	-	-	-	-	8	-	**-**
Pedestrians%	-	-	-	-	40.8%		-	-	-	-	26.5%		-	-	-	-	16.3%		-	-	-	-	16.3%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: KINGSTON ROAD & ROUGEMOUNT DRIVE
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:30 AM - 09:30 AM **Weather: Light Snow (1.1 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	8
S	0	9
E	1	14
W	0	8

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 03:45 PM - 04:45 PM **Weather: Overcast Clouds (5.15 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	20
S	0	8
E	0	13
W	0	8

Spectrum

Turning Movement Count
Location Name: ROUGEMOUNT SQUAREâ€™S ACCESS & KINGSTON ROAD
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (4 . ROUGEMOUNT SQUAREâ€™S ACCESS & KINGSTON ROAD) MioID: 1253333

Start Time	N Approach NORTH DRIVEWAY						E Approach KINGSTON ROAD						S Approach ROUGEMOUNT SQUAREâ€™S ACCESS						W Approach KINGSTON ROAD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2024-11-28 06:00:00	0	0	1	0	1	1	1	67	0	0	0	68	0	0	0	0	0	0	0	21	1	0	0	22	91	
2024-11-28 06:15:00	0	0	1	0	1	1	0	74	0	0	0	74	0	0	1	0	0	1	0	19	0	0	0	19	95	
2024-11-28 06:30:00	0	0	2	0	0	2	1	83	0	0	0	84	0	0	1	0	0	1	1	40	1	0	0	42	129	
2024-11-28 06:45:00	0	0	0	0	0	0	4	82	5	0	0	91	1	0	1	0	1	2	1	47	0	0	0	48	141	456
2024-11-28 07:00:00	0	0	3	0	0	3	3	92	0	0	0	95	1	0	0	0	0	1	0	54	1	0	0	55	154	519
2024-11-28 07:15:00	0	0	1	0	0	1	0	126	3	0	0	129	2	0	1	0	0	3	0	61	0	0	0	61	194	618
2024-11-28 07:30:00	1	0	2	0	3	3	6	122	7	0	0	135	2	0	0	0	1	2	1	86	0	0	0	87	227	716
2024-11-28 07:45:00	0	0	0	0	3	0	5	152	4	0	0	161	3	0	1	0	1	4	2	92	0	0	0	94	259	834
2024-11-28 08:00:00	0	0	2	0	2	2	8	178	2	0	0	188	0	0	0	0	1	0	0	108	0	0	0	108	298	978
2024-11-28 08:15:00	0	0	1	0	7	1	6	173	3	0	0	182	0	0	0	0	1	0	2	118	1	0	0	121	304	1088
2024-11-28 08:30:00	1	0	2	0	4	3	7	179	8	0	0	194	0	0	0	0	0	0	0	150	0	0	0	150	347	1208
2024-11-28 08:45:00	3	0	2	0	2	5	12	173	7	0	0	192	4	1	0	0	0	5	2	185	1	0	0	188	390	1339
2024-11-28 09:00:00	1	0	6	0	1	7	11	187	7	0	0	205	9	0	1	0	1	10	0	147	1	0	0	148	370	1411
2024-11-28 09:15:00	0	0	0	0	1	0	7	138	10	1	0	156	11	0	1	0	1	12	1	175	0	0	0	176	344	1451
2024-11-28 09:30:00	1	1	2	0	1	4	9	154	4	0	0	167	7	0	0	0	0	7	2	115	0	0	0	117	295	1399
2024-11-28 09:45:00	1	0	3	0	2	4	5	131	6	1	0	143	10	0	0	0	0	10	0	116	0	0	0	116	273	1282
BREAK																										
2024-11-28 15:00:00	1	0	0	0	0	1	3	188	3	2	0	196	10	0	0	0	4	10	2	198	0	0	0	200	407	
2024-11-28 15:15:00	1	0	2	0	0	3	4	198	11	0	0	213	17	0	1	0	3	18	6	218	1	0	2	225	459	
2024-11-28 15:30:00	1	0	3	0	3	4	4	221	6	0	0	231	12	0	3	0	0	15	1	237	0	0	2	238	488	
2024-11-28 15:45:00	0	0	0	0	3	0	10	235	24	0	0	269	15	0	1	0	3	16	2	231	0	0	0	233	518	1872
2024-11-28 16:00:00	1	0	0	0	3	1	10	184	13	2	0	209	8	0	2	0	4	10	2	234	0	0	0	236	456	1921
2024-11-28 16:15:00	0	0	2	0	2	2	18	190	9	0	0	217	15	0	1	0	0	16	2	255	0	1	0	258	493	1955
2024-11-28 16:30:00	1	0	1	0	4	2	19	172	6	0	0	197	7	0	2	0	4	9	1	231	0	0	0	232	440	1907
2024-11-28 16:45:00	1	0	2	0	0	3	9	183	17	0	0	209	20	0	0	0	2	20	2	233	0	0	0	235	467	1856
2024-11-28 17:00:00	1	0	1	0	1	2	6	181	7	0	0	194	6	0	1	0	1	7	2	220	0	0	0	222	425	1825
2024-11-28 17:15:00	1	0	2	0	2	3	9	174	10	0	0	193	6	0	0	0	3	6	1	254	0	0	0	255	457	1789
2024-11-28 17:30:00	0	0	1	0	1	1	10	174	11	0	0	195	20	0	0	0	0	20	1	206	1	0	0	208	424	1773
2024-11-28 17:45:00	1	0	0	0	2	1	10	180	12	0	0	202	16	1	0	0	1	17	0	205	1	0	0	206	426	1732
2024-11-28 18:00:00	2	0	1	0	0	3	4	159	6	0	0	169	8	0	1	0	0	9	3	203	0	0	0	206	387	1694
2024-11-28 18:15:00	1	0	2	0	1	3	7	124	5	0	0	136	13	0	2	0	0	15	2	167	0	0	0	169	323	1560
2024-11-28 18:30:00	0	0	0	0	1	0	2	143	5	0	0	150	6	0	1	0	0	7	1	180	1	0	0	182	339	1475
2024-11-28 18:45:00	1	0	0	0	0	1	5	156	5	0	0	166	11	0	1	0	0	12	0	167	1	0	0	168	347	1396
Grand Total	21	1	45	0	51	67	215	4973	216	6	0	5410	240	2	23	0	32	265	40	4973	11	1	4	5025	**10767**	-
Approach%	31.3%	1.5%	67.2%	0%		-	4%	91.9%	4%	0.1%		-	90.6%	0.8%	8.7%	0%		-	0.8%	99%	0.2%	0%		-	-	-
Totals %	0.2%	0%	0.4%	0%		0.6%	2%	46.2%	2%	0.1%		50.2%	2.2%	0%	0.2%	0%		2.5%	0.4%	46.2%	0.1%	0%		46.7%	-	-
Heavy	1	0	1	0		-	2	110	4	0		-	4	0	0	0		-	2	108	0	0		-	-	-
Heavy %	4.8%	0%	2.2%	0%		-	0.9%	2.2%	1.9%	0%		-	1.7%	0%	0%	0%		-	5%	2.2%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:30 AM - 09:30 AM Weather: Light Snow (1.1 °C)

Start Time	N Approach NORTH DRIVEWAY						E Approach KINGSTON ROAD						S Approach ROUGEMOUNT SQUAREâ€™S ACCESS						W Approach KINGSTON ROAD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2024-11-28 08:30:00	1	0	2	0	4	3	7	179	8	0	0	194	0	0	0	0	0	0	0	150	0	0	0	150	347
2024-11-28 08:45:00	3	0	2	0	2	5	12	173	7	0	0	192	4	1	0	0	0	5	2	185	1	0	0	188	390
2024-11-28 09:00:00	1	0	6	0	1	7	11	187	7	0	0	205	9	0	1	0	1	10	0	147	1	0	0	148	370
2024-11-28 09:15:00	0	0	0	0	1	0	7	138	10	1	0	156	11	0	1	0	1	12	1	175	0	0	0	176	344
Grand Total	5	0	10	0	8	15	37	677	32	1	0	747	24	1	2	0	2	27	3	657	2	0	0	662	**1451**
Approach%	33.3%	0%	66.7%	0%		-	5%	90.6%	4.3%	0.1%		-	88.9%	3.7%	7.4%	0%		-	0.5%	99.2%	0.3%	0%		-	**-**
Totals %	0.3%	0%	0.7%	0%		1%	2.5%	46.7%	2.2%	0.1%		51.5%	1.7%	0.1%	0.1%	0%		1.9%	0.2%	45.3%	0.1%	0%		45.6%	**-**
PHF	0.42	0	0.42	0		0.54	0.77	0.91	0.8	0.25		0.91	0.55	0.25	0.5	0		0.56	0.38	0.89	0.5	0		0.88	0.93
Heavy	0	0	0	0		0	0	13	0	0		13	0	0	0	0		0	0	22	0	0		22	35
Heavy %	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		1.7%	0%	0%	0%	0%		0%	0%	3.3%	0%	0%		3.3%	2.4%
Lights	5	0	10	0		15	37	664	32	1		734	24	1	2	0		27	3	635	2	0		640	1416
Lights %	100%	0%	100%	0%		100%	100%	98.1%	100%	100%		98.3%	100%	100%	100%	0%		100%	100%	96.7%	100%	0%		96.7%	97.6%
Single-Unit Trucks	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	3	0	0		3	6
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.5%	0.4%
Buses	0	0	0	0		0	0	10	0	0		10	0	0	0	0		0	0	18	0	0		18	28
Buses %	0%	0%	0%	0%		0%	0%	1.5%	0%	0%		1.3%	0%	0%	0%	0%		0%	0%	2.7%	0%	0%		2.7%	1.9%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	1
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0.1%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	7	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	70%		-	-	-	-	0%		-	-	-	-	20%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	10%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: ROUGEMOUNT SQUAREâ€™S ACCESS & KINGSTON ROAD
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

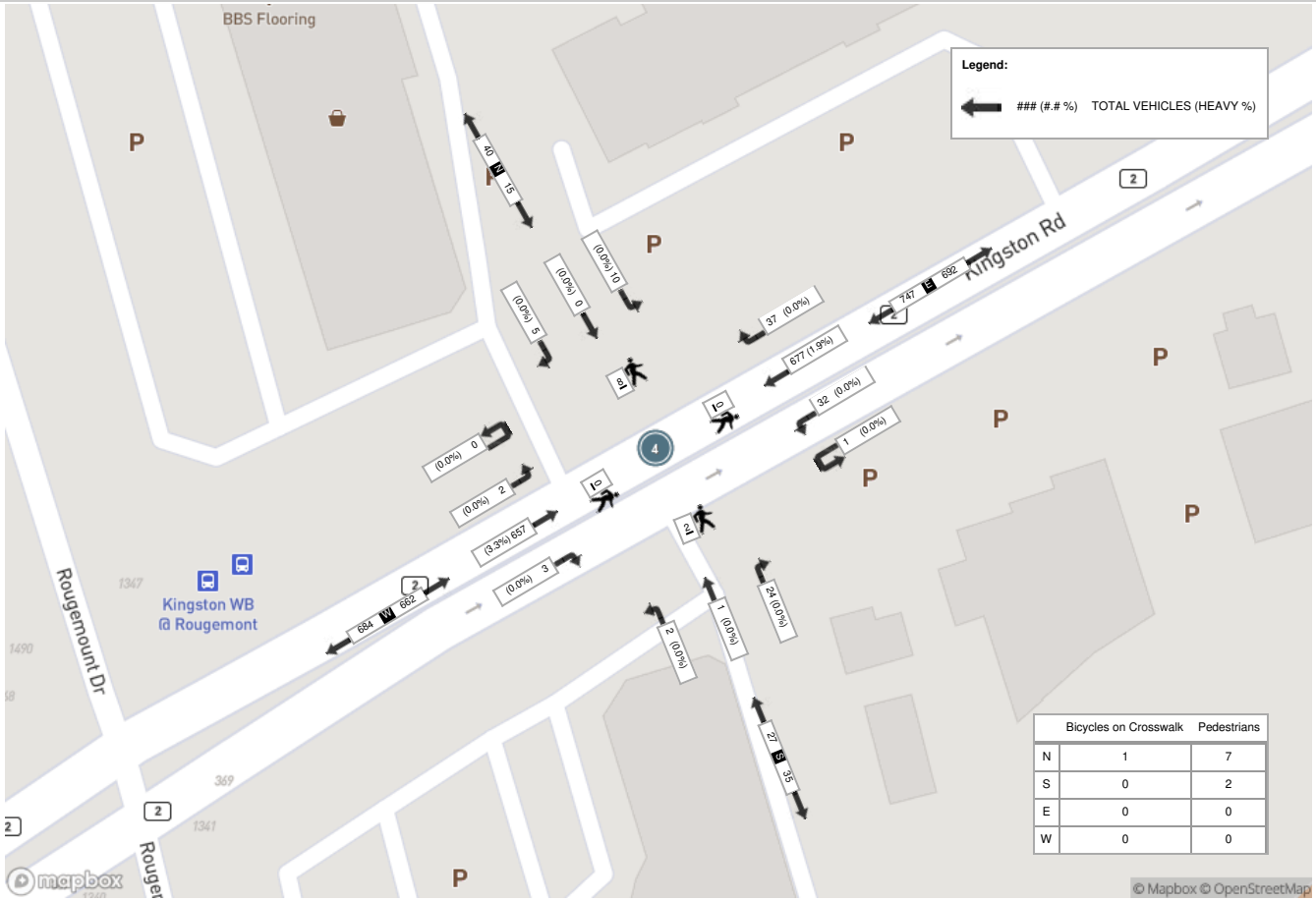
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 03:30 PM - 04:30 PM Weather: Overcast Clouds (5.15 °C)

Start Time	N Approach NORTH DRIVEWAY						E Approach KINGSTON ROAD						S Approach ROUGEMOUNT SQUAREâ€™S ACCESS						W Approach KINGSTON ROAD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2024-11-28 15:30:00	1	0	3	0	3	4	4	221	6	0	0	231	12	0	3	0	0	15	1	237	0	0	2	238	488
2024-11-28 15:45:00	0	0	0	0	3	0	10	235	24	0	0	269	15	0	1	0	3	16	2	231	0	0	0	233	518
2024-11-28 16:00:00	1	0	0	0	3	1	10	184	13	2	0	209	8	0	2	0	4	10	2	234	0	0	0	236	456
2024-11-28 16:15:00	0	0	2	0	2	2	18	190	9	0	0	217	15	0	1	0	0	16	2	255	0	1	0	258	493
Grand Total	2	0	5	0	11	7	42	830	52	2	0	926	50	0	7	0	7	57	7	957	0	1	2	965	**1955**
Approach%	28.6%	0%	71.4%	0%		-	4.5%	89.6%	5.6%	0.2%		-	87.7%	0%	12.3%	0%		-	0.7%	99.2%	0%	0.1%		-	**-**
Totals %	0.1%	0%	0.3%	0%		0.4%	2.1%	42.5%	2.7%	0.1%		47.4%	2.6%	0%	0.4%	0%		2.9%	0.4%	49%	0%	0.1%		49.4%	**-**
PHF	0.5	0	0.42	0		0.44	0.58	0.88	0.54	0.25		0.86	0.83	0	0.58	0		0.89	0.88	0.94	0	0.25		0.94	0.94
Heavy	0	0	0	0		0	0	14	3	0		17	1	0	0	0		1	0	20	0	0		20	38
Heavy %	0%	0%	0%	0%		0%	0%	1.7%	5.8%	0%		1.8%	2%	0%	0%	0%		1.8%	0%	2.1%	0%	0%		2.1%	1.9%
Lights	2	0	5	0		7	42	816	49	2		909	49	0	7	0		56	7	937	0	1		945	1917
Lights %	100%	0%	100%	0%		100%	100%	98.3%	94.2%	100%		98.2%	98%	0%	100%	0%		98.2%	100%	97.9%	0%	100%		97.9%	98.1%
Single-Unit Trucks	0	0	0	0		0	0	4	0	0		4	0	0	0	0		0	0	4	0	0		4	8
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	0.4%
Buses	0	0	0	0		0	0	9	3	0		12	1	0	0	0		1	0	16	0	0		16	29
Buses %	0%	0%	0%	0%		0%	0%	1.1%	5.8%	0%		1.3%	2%	0%	0%	0%		1.8%	0%	1.7%	0%	0%		1.7%	1.5%
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	1
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.1%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	10	-	-	-	-	-	0	-	-	-	-	-	7	-	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	-	50%		-	-	-	-	0%		-	-	-	-	35%		-	-	-	-	10%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	5%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

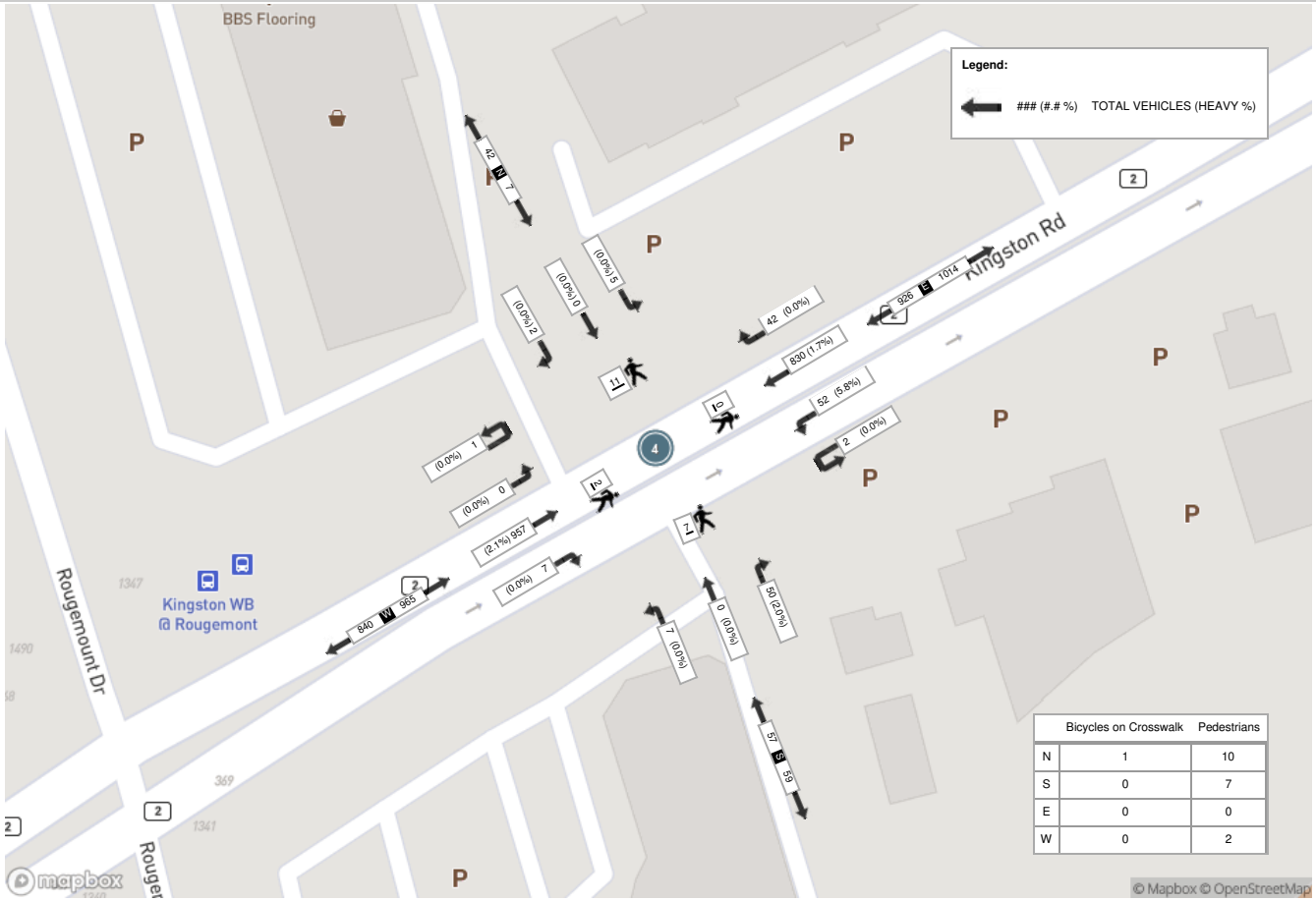
Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:30 AM - 09:30 AM Weather: Light Snow (1.1 °C)



Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 03:30 PM - 04:30 PM Weather: Overcast Clouds (5.15 °C)



	Bicycles on Crosswalk	Pedestrians
N	1	10
S	0	7
E	0	0
W	0	2

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Turning Movement Count (3 . ROUGEMOUNT SQUAREâ€™S ACCESS & ROUGEMOUNT DRIVE) MioID: 1253327

Start Time	N Approach ROUGEMOUNT DRIVE						E Approach ROUGEMOUNT SQUAREâ€™S ACCESS						S Approach ROUGEMOUNT DRIVE						W Approach WEST DRIVEWAY						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
2024-11-28 06:00:00	0	10	0	0	0	10	0	0	0	0	1	0	0	29	0	0	0	29	0	0	0	0	0	0	39	
2024-11-28 06:15:00	0	7	0	0	0	7	0	0	0	0	1	0	1	27	0	0	0	28	0	0	0	0	0	0	35	
2024-11-28 06:30:00	0	15	0	0	0	15	1	0	0	0	0	1	1	36	0	0	0	37	0	0	0	0	1	0	53	
2024-11-28 06:45:00	1	30	1	0	0	32	1	0	0	0	1	1	1	28	0	0	0	29	0	0	0	0	0	0	62	189
2024-11-28 07:00:00	1	21	1	0	0	23	0	0	0	0	1	0	1	51	0	0	0	52	0	0	0	0	0	0	75	225
2024-11-28 07:15:00	0	28	0	0	0	28	2	0	1	0	1	3	3	46	0	0	1	49	0	0	1	0	1	1	81	271
2024-11-28 07:30:00	0	28	2	0	0	30	4	0	0	0	5	4	1	72	0	1	0	74	0	0	0	0	0	0	108	326
2024-11-28 07:45:00	0	42	6	0	0	48	0	0	1	0	0	1	1	61	0	0	0	62	0	0	0	0	0	0	111	375
2024-11-28 08:00:00	1	42	1	0	0	44	0	0	0	0	1	0	1	66	0	0	0	67	0	0	1	0	3	1	112	412
2024-11-28 08:15:00	1	43	4	0	0	48	3	0	0	0	0	3	0	79	0	1	0	80	0	0	0	0	0	0	131	462
2024-11-28 08:30:00	3	90	4	0	0	97	1	0	0	0	2	1	1	76	6	0	0	83	2	0	2	0	0	4	185	539
2024-11-28 08:45:00	7	106	9	0	0	122	8	0	1	0	1	9	5	128	2	0	0	135	2	1	4	0	2	7	273	701
2024-11-28 09:00:00	3	62	5	0	0	70	4	0	3	0	2	7	6	91	0	0	0	97	0	0	4	0	8	4	178	767
2024-11-28 09:15:00	1	54	8	0	0	63	7	0	0	0	3	7	4	70	0	0	0	74	1	0	2	0	2	3	147	783
2024-11-28 09:30:00	2	40	6	0	0	48	8	0	3	0	0	11	0	35	0	0	0	35	0	0	2	0	0	2	96	694
2024-11-28 09:45:00	0	36	11	0	0	47	5	0	1	0	1	6	4	47	0	0	0	51	0	0	0	0	1	0	104	525
BREAK																										
2024-11-28 15:00:00	1	56	18	0	0	75	15	0	6	0	3	21	2	42	0	0	0	44	0	0	0	0	0	0	140	
2024-11-28 15:15:00	1	65	18	0	0	84	10	0	5	0	3	15	2	62	0	0	0	64	0	0	1	0	0	1	164	
2024-11-28 15:30:00	0	107	11	0	0	118	10	0	8	0	3	18	6	71	0	0	0	77	0	0	1	0	0	1	214	
2024-11-28 15:45:00	2	107	15	0	0	124	13	0	8	0	5	21	3	98	0	0	0	101	0	0	0	0	2	0	246	764
2024-11-28 16:00:00	3	86	15	0	0	104	19	0	6	0	1	25	8	92	0	0	0	100	0	0	3	0	1	3	232	856
2024-11-28 16:15:00	2	78	8	0	0	88	11	0	10	0	6	21	4	63	2	0	0	69	1	0	4	0	1	5	183	875
2024-11-28 16:30:00	6	82	14	0	0	102	9	0	3	0	0	12	5	85	0	0	0	90	0	0	8	0	2	8	212	873
2024-11-28 16:45:00	1	74	22	0	0	97	18	0	3	0	3	21	5	55	1	0	0	61	0	0	2	0	0	2	181	808
2024-11-28 17:00:00	0	73	10	0	0	83	15	0	7	0	1	22	5	105	2	0	0	112	2	0	4	0	0	6	223	799
2024-11-28 17:15:00	0	72	19	0	0	91	18	0	2	0	5	20	3	73	0	0	0	76	0	0	0	0	0	0	187	803
2024-11-28 17:30:00	1	54	12	0	0	67	11	0	5	0	2	16	1	55	0	0	0	56	0	0	1	0	1	1	140	731
2024-11-28 17:45:00	1	66	13	0	0	80	5	0	3	0	3	8	1	41	0	0	0	42	0	0	1	0	1	1	131	681
2024-11-28 18:00:00	0	52	20	0	0	72	13	0	4	0	1	17	4	36	0	0	0	40	0	0	0	0	0	0	129	587
2024-11-28 18:15:00	0	46	3	0	0	49	11	0	4	0	0	15	4	33	0	0	0	37	0	0	0	0	1	0	101	501
2024-11-28 18:30:00	0	64	9	0	1	73	10	0	3	0	0	13	3	40	0	0	0	43	0	0	0	0	0	0	129	490
2024-11-28 18:45:00	0	39	6	0	0	45	12	0	2	0	1	14	4	33	0	0	0	37	1	0	0	0	0	1	97	456
Grand Total	38	1775	271	0	1	2084	244	0	89	0	57	333	90	1926	13	2	1	2031	9	1	41	0	27	51	**4499**	-
Approach%	1.8%	85.2%	13%	0%		-	73.3%	0%	26.7%	0%		-	4.4%	94.8%	0.6%	0.1%		-	17.6%	2%	80.4%	0%		-	-	-
Totals %	0.8%	39.5%	6%	0%		46.3%	5.4%	0%	2%	0%		7.4%	2%	42.8%	0.3%	0%		45.1%	0.2%	0%	0.9%	0%		1.1%	-	-
Heavy	0	22	5	0		-	4	0	0	0		-	0	25	0	0		-	0	0	0	0		-	-	-
Heavy %	0%	1.2%	1.8%	0%		-	1.6%	0%	0%	0%		-	0%	1.3%	0%	0%		-	0%	0%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: ROUGEMOUNT SQUAREâ€™S ACCESS & ROUGEMOUNT DRIVE
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

Crozier & Associates
SUITE 301 211 YONGE
STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 08:30 AM - 09:30 AM Weather: Light Snow (1.1 °C)

Start Time	N Approach ROUGEMOUNT DRIVE						E Approach ROUGEMOUNT SQUAREâ€™S ACCESS						S Approach ROUGEMOUNT DRIVE						W Approach WEST DRIVEWAY						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
2024-11-28 08:30:00	3	90	4	0	0	97	1	0	0	0	2	1	1	76	6	0	0	83	2	0	2	0	0	4	185
2024-11-28 08:45:00	7	106	9	0	0	122	8	0	1	0	1	9	5	128	2	0	0	135	2	1	4	0	2	7	273
2024-11-28 09:00:00	3	62	5	0	0	70	4	0	3	0	2	7	6	91	0	0	0	97	0	0	4	0	8	4	178
2024-11-28 09:15:00	1	54	8	0	0	63	7	0	0	0	3	7	4	70	0	0	0	74	1	0	2	0	2	3	147
Grand Total	14	312	26	0	0	352	20	0	4	0	8	24	16	365	8	0	0	389	5	1	12	0	12	18	**783**
Approach%	4%	88.6%	7.4%	0%		-	83.3%	0%	16.7%	0%		-	4.1%	93.8%	2.1%	0%		-	27.8%	5.6%	66.7%	0%		-	**-**
Totals %	1.8%	39.8%	3.3%	0%		45%	2.6%	0%	0.5%	0%		3.1%	2%	46.6%	1%	0%		49.7%	0.6%	0.1%	1.5%	0%		2.3%	**-**
PHF	0.5	0.74	0.72	0		0.72	0.63	0	0.33	0		0.67	0.67	0.71	0.33	0		0.72	0.63	0.25	0.75	0		0.64	0.72
Heavy	0	3	1	0		4	1	0	0	0		1	0	3	0	0		3	0	0	0	0		0	8
Heavy %	0%	1%	3.8%	0%		1.1%	5%	0%	0%	0%		4.2%	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	1%
Lights	14	309	25	0		348	19	0	4	0		23	16	362	8	0		386	5	1	12	0		18	775
Lights %	100%	99%	96.2%	0%		98.9%	95%	0%	100%	0%		95.8%	100%	99.2%	100%	0%		99.2%	100%	100%	100%	0%		100%	99%
Single-Unit Trucks	0	1	1	0		2	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	3
Single-Unit Trucks %	0%	0.3%	3.8%	0%		0.6%	5%	0%	0%	0%		4.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.4%
Buses	0	2	0	0		2	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	4
Buses %	0%	0.6%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.5%	0%	0%	0%	0%		0%	0.5%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	1
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0.1%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	0	-	-	-	-	-	7	-	-	-	-	-	0	-	-	-	-	-	12	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	35%		-	-	-	-	0%		-	-	-	-	60%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	5%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: ROUGEMOUNT SQUAREâ€™S ACCESS & ROUGEMOUNT DRIVE
Date: Thu, Nov 28, 2024 Deployment Lead: Rey Fernandez

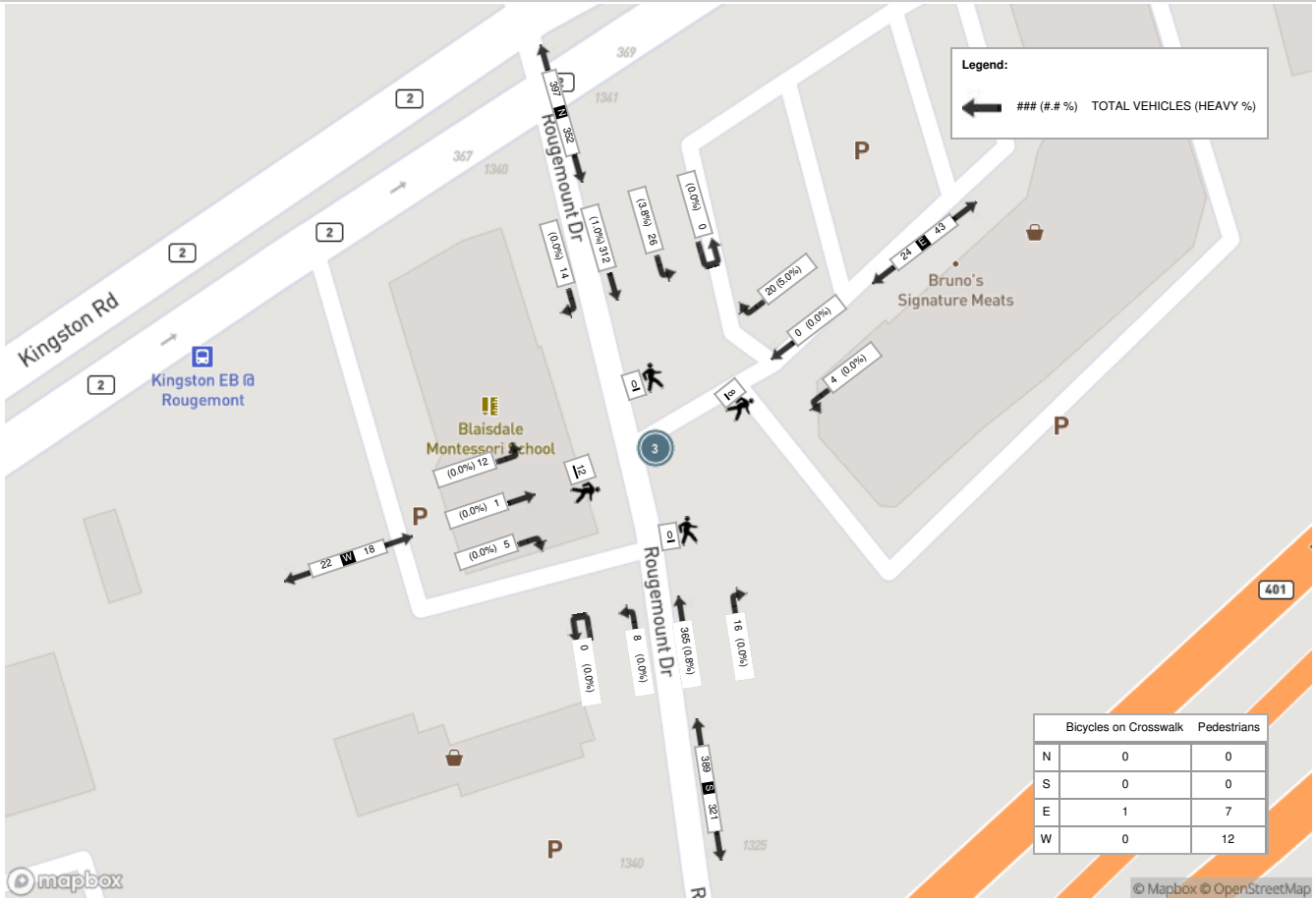
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STREET
TORONTO ONTARIO, M5B 1M4
CANADA

Peak Hour: 03:30 PM - 04:30 PM Weather: Overcast Clouds (5.15 °C)

Start Time	N Approach ROUGEMOUNT DRIVE						E Approach ROUGEMOUNT SQUAREâ€™S ACCESS						S Approach ROUGEMOUNT DRIVE						W Approach WEST DRIVEWAY						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
2024-11-28 15:30:00	0	107	11	0	0	118	10	0	8	0	3	18	6	71	0	0	0	77	0	0	1	0	0	1	214
2024-11-28 15:45:00	2	107	15	0	0	124	13	0	8	0	5	21	3	98	0	0	0	101	0	0	0	0	2	0	246
2024-11-28 16:00:00	3	86	15	0	0	104	19	0	6	0	1	25	8	92	0	0	0	100	0	0	3	0	1	3	232
2024-11-28 16:15:00	2	78	8	0	0	88	11	0	10	0	6	21	4	63	2	0	0	69	1	0	4	0	1	5	183
Grand Total	7	378	49	0	0	434	53	0	32	0	15	85	21	324	2	0	0	347	1	0	8	0	4	9	**875**
Approach%	1.6%	87.1%	11.3%	0%		-	62.4%	0%	37.6%	0%		-	6.1%	93.4%	0.6%	0%		-	11.1%	0%	88.9%	0%		-	**-**
Totals %	0.8%	43.2%	5.6%	0%		49.6%	6.1%	0%	3.7%	0%		9.7%	2.4%	37%	0.2%	0%		39.7%	0.1%	0%	0.9%	0%		1%	**-**
PHF	0.58	0.88	0.82	0		0.88	0.7	0	0.8	0		0.85	0.66	0.83	0.25	0		0.86	0.25	0	0.5	0		0.45	0.89
Heavy	0	3	0	0		3	0	0	0	0		0	0	7	0	0		7	0	0	0	0		0	10
Heavy %	0%	0.8%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	2.2%	0%	0%		2%	0%	0%	0%	0%		0%	1.1%
Lights	7	374	49	0		430	53	0	32	0		85	21	317	2	0		340	1	0	8	0		9	864
Lights %	100%	98.9%	100%	0%		99.1%	100%	0%	100%	0%		100%	100%	97.8%	100%	0%		98%	100%	0%	100%	0%		100%	98.7%
Single-Unit Trucks	0	1	0	0		1	0	0	0	0		0	0	4	0	0		4	0	0	0	0		0	5
Single-Unit Trucks %	0%	0.3%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1.2%	0%	0%	0%	0%		0%	0.6%
Buses	0	2	0	0		2	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	5
Buses %	0%	0.5%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	0%	0%	0%	0%		0%	0.6%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Bicycles on Road	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1
Bicycles on Road %	0%	0.3%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.1%
Pedestrians	-	-	-	-	0	-	-	-	-	-	13	-	-	-	-	-	0	-	-	-	-	-	4	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	68.4%		-	-	-	-	0%		-	-	-	-	21.1%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	10.5%		-	-	-	-	0%		-	-	-	-	0%		**-**

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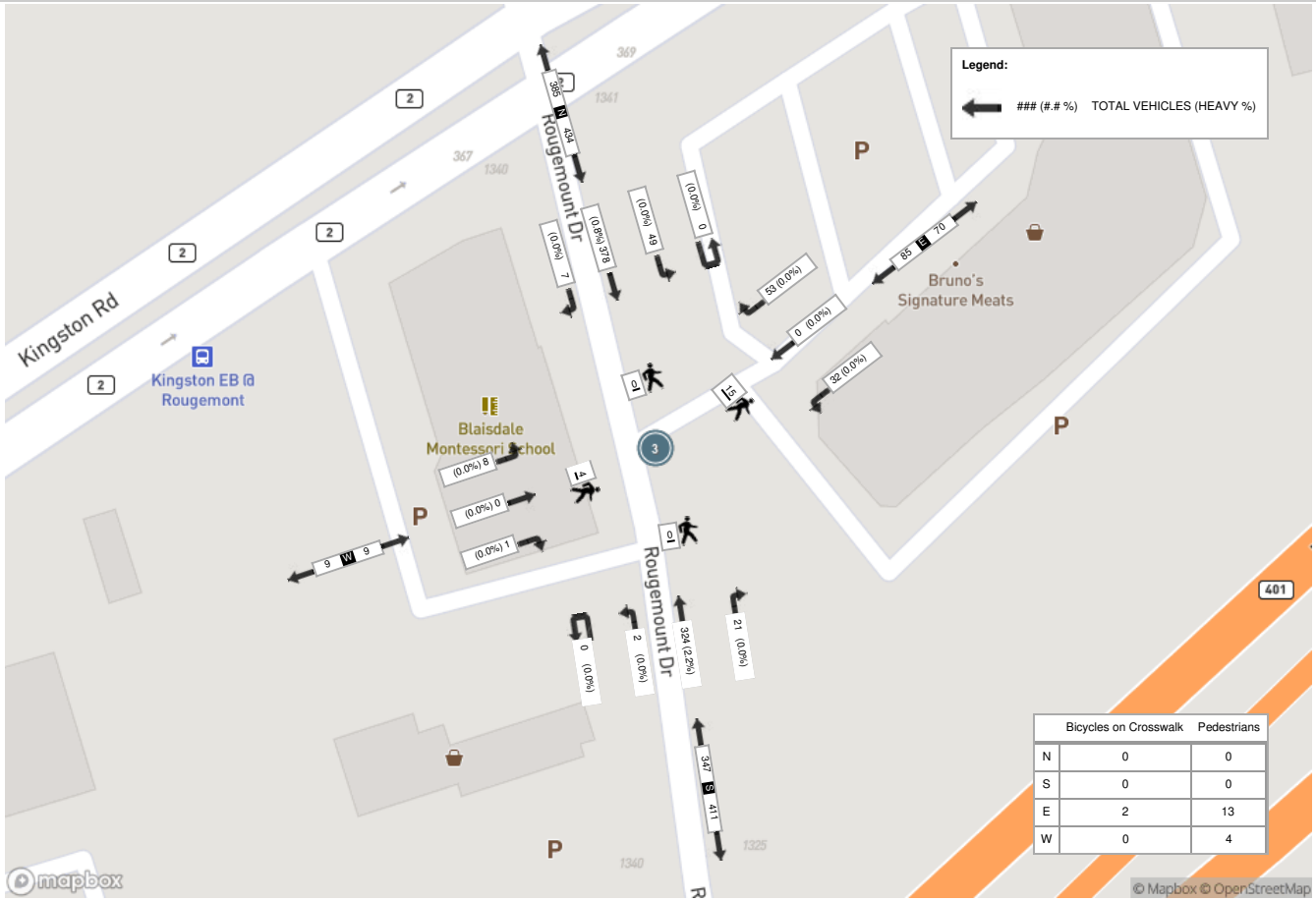
Peak Hour: 08:30 AM - 09:30 AM **Weather: Light Snow (1.1 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
E	1	7
W	0	12

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CANADA

Peak Hour: 03:30 PM - 04:30 PM **Weather: Overcast Clouds (5.15 °C)**



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
E	2	13
W	0	4

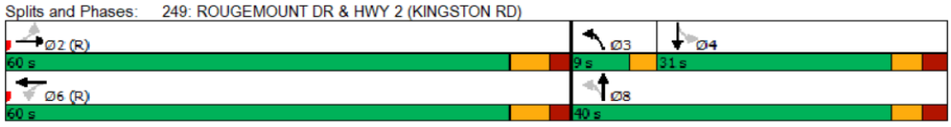
INTERSECTION SIGNAL TIMING REPORT

Location	Kingston Rd. (Hwy. 2) and Rougemount Dr.				
Date	2024-12-11	**C&E No.**	71273970	**Prepared by**	M. Patel
Prepared for	C.F. Crozier & Associates Inc				

AM Peak (5:30-9:00)

Phase Number	2	3	4	6	8
Movement	EBTL	NBL	SBTL	WBTL	NBTL
Lead/Lag		Lead	Lag		
Lead-Lag Optimize		Yes	Yes		
Recall Mode	C-Max	None	None	C-Max	None
Maximum Split (s)	60	9	31	60	40
Maximum Split (%)	60.0%	9.0%	31.0%	60.0%	40.0%
Minimum Split (s)	31	8	30	31	30
Yellow Time (s)	4.2	3	3.3	4.2	3.3
All-Red Time (s)	2.4	0	2.8	2.4	2.8
Minimum Initial (s)	20	5	8	20	8
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7	7	7
Flash Dont Walk (s)	17		16	17	16
Intersection Summary					
Cycle Length			100		
Control Type			Actuated-Coordinated		
Natural Cycle			110		
Offset: 95 (95%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green					

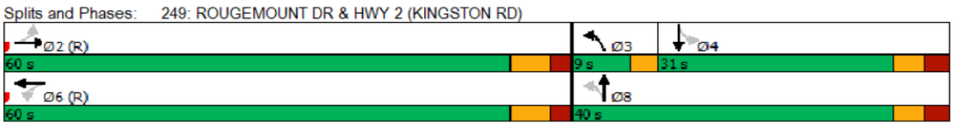
Splits and Phases: 249: ROUGEMOUNT DR & HWY 2 (KINGSTON RD)



PM Peak (14:30-19:00)

Phase Number	2	3	4	6	8
Movement	EBTL	NBL	SBTL	WBTL	NBTL
Lead/Lag		Lead	Lag		
Lead-Lag Optimize		Yes	Yes		
Recall Mode	C-Max	None	None	C-Max	None
Maximum Split (s)	60	9	31	60	40
Maximum Split (%)	60.0%	9.0%	31.0%	60.0%	40.0%
Minimum Split (s)	31	8	30	31	30
Yellow Time (s)	4.2	3	3.3	4.2	3.3
All-Red Time (s)	2.4	0	2.8	2.4	2.8
Minimum Initial (s)	20	5	8	20	8
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7		7	7	7
Flash Dont Walk (s)	17		16	17	16
Intersection Summary					
Cycle Length			100		
Control Type			Actuated-Coordinated		
Natural Cycle			110		
Offset: 23 (23%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green					

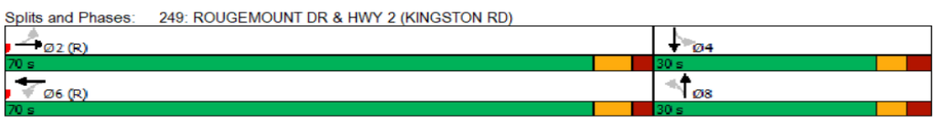
Splits and Phases: 249: ROUGEMOUNT DR & HWY 2 (KINGSTON RD)



Weekend Peak (8:00-21:00)

Phase Number	2	4	6	8
Movement	EBTL	SBTL	WBTL	NBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	70	30	70	30
Maximum Split (%)	70.0%	30.0%	70.0%	30.0%
Minimum Split (s)	31	30	31	30
Yellow Time (s)	4.2	3.3	4.2	3.3
All-Red Time (s)	2.4	2.8	2.4	2.8
Minimum Initial (s)	20	8	20	8
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	17	16	17	16
Intersection Summary				
Cycle Length			100	
Control Type			Actuated-Coordinated	
Natural Cycle			65	
Offset: 56 (56%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green				

Splits and Phases: 249: ROUGEMOUNT DR & HWY 2 (KINGSTON RD)



**Please note a concerted effort has been made to ensure the accuracy and completeness of the data provided, however, inadvertent errors or omissions can still occur. Please bring any errors or omissions to the Region's attention.*

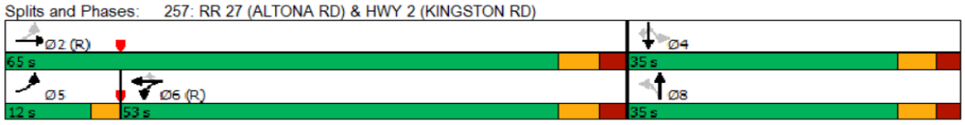
INTERSECTION SIGNAL TIMING REPORT

Location	Kingston Rd. (Hwy 2) and Altona Rd. (RR 27)				
Date	2024-12-11	**C&E No.**	71273970	**Prepared by**	M. Patel
Prepared for	C.F. Crozier & Associates Inc				

AM Peak (5:30-9:00)

Phase Number	2	4	5	6	8
Movement	EBTL	SBTL	EBL	WBTL	NBTL
Lead/Lag			Lead	Lag	
Lead-Lag Optimize			Yes	Yes	
Recall Mode	C-Max	None	None	C-Max	None
Maximum Split (s)	65	35	12	53	35
Maximum Split (%)	65.0%	35.0%	12.0%	53.0%	35.0%
Minimum Split (s)	33	29	8	33	29
Yellow Time (s)	4.3	4	3	4.3	4
All-Red Time (s)	2.9	2.7	0	2.9	2.7
Minimum Initial (s)	20	8	5	20	8
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7		7	7
Flash Dont Walk (s)	18	15		18	15
Intersection Summary					
Cycle Length			100		
Control Type		Actuated-Coordinated			
Natural Cycle			90		
Offset: 13 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green					

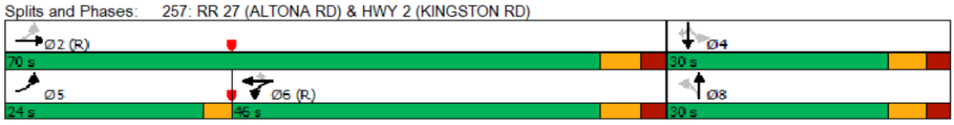
Splits and Phases: 257: RR 27 (ALTONA RD) & HWY 2 (KINGSTON RD)



PM Peak (14:30-21:00)

Phase Number	2	4	5	6	8
Movement	EBTL	SBTL	EBL	WBTL	NBTL
Lead/Lag			Lead	Lag	
Lead-Lag Optimize			Yes	Yes	
Recall Mode	C-Max	None	None	C-Max	None
Maximum Split (s)	70	30	24	46	30
Maximum Split (%)	70.0%	30.0%	24.0%	46.0%	30.0%
Minimum Split (s)	33	29	8	33	29
Yellow Time (s)	4.3	4	3	4.3	4
All-Red Time (s)	2.9	2.7	0	2.9	2.7
Minimum Initial (s)	20	8	5	20	8
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)	7	7		7	7
Flash Dont Walk (s)	18	15		18	15
Intersection Summary					
Cycle Length			100		
Control Type		Actuated-Coordinated			
Natural Cycle			90		
Offset: 41 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green					

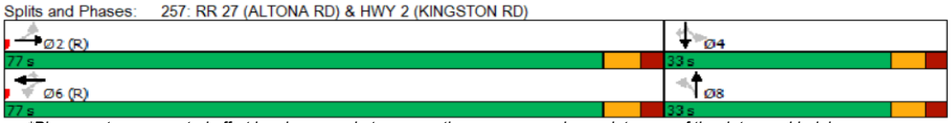
Splits and Phases: 257: RR 27 (ALTONA RD) & HWY 2 (KINGSTON RD)



Weekend Peak (8:00-21:00)

Phase Number	2	4	6	8
Movement	EBTL	SBTL	WBTL	NBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Max	None	C-Max	None
Maximum Split (s)	77	33	77	33
Maximum Split (%)	70.0%	30.0%	70.0%	30.0%
Minimum Split (s)	33	29	33	29
Yellow Time (s)	4.3	4	4.3	4
All-Red Time (s)	2.9	2.7	2.9	2.7
Minimum Initial (s)	20	8	20	8
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7	7	7
Flash Dont Walk (s)	18	15	18	15
Intersection Summary				
Cycle Length			110	
Control Type		Actuated-Coordinated		
Natural Cycle			70	
Offset: 62.7 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green				

Splits and Phases: 257: RR 27 (ALTONA RD) & HWY 2 (KINGSTON RD)



**Please note a concerted effort has been made to ensure the accuracy and completeness of the data provided, however, inadvertent errors or omissions can still occur. Please bring any errors or omissions to the Region's attention.*

Mon Oct 04 2021 16:10:55 GMT-0400 (Eastern Daylight Time) - Run Time: 2649ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig

Column: Primary travel mode of trip - mode_prime

Filters:

Start time of trip - start_time In 0700-0900

and

2006 GTA zone of destination - gta06_dest In 1046

and

Primary travel mode of trip - mode_prime In D

Trip 2016

Table:

	Auto driver
PD 5 of Toronto	40
PD 6 of Toronto	12
PD 11 of Toronto	36
PD 13 of Toronto	21
PD 14 of Toronto	42
PD 15 of Toronto	107
PD 16 of Toronto	12
Pickering	1038
Ajax	147
Whitby	107
Oshawa	10
Clarington	75
Richmond Hill	3
Whitchurch-Stouffville	30
City of Guelph	28

Mon Oct 04 2021 16:12:17 GMT-0400 (Eastern Daylight Time) - Run Time: 2544ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest

Column: Primary travel mode of trip - mode_prime

Filters:

Start time of trip - start_time In 0700-0900

and

2006 GTA zone of origin - gta06_orig In 1046

and

Primary travel mode of trip - mode_prime In D

Trip 2016

Table:

	Auto driver
PD 1 of Toronto	61
PD 2 of Toronto	24
PD 4 of Toronto	24
PD 5 of Toronto	180
PD 6 of Toronto	67
PD 10 of Toronto	12
PD 11 of Toronto	26
PD 12 of Toronto	57
PD 13 of Toronto	417
PD 14 of Toronto	15
PD 15 of Toronto	175
PD 16 of Toronto	12
Pickering	758
Ajax	128
Whitby	35
Oshawa	39
Clarington	72
Richmond Hill	18
Markham	251
Vaughan	27
Mississauga	42
Hastings	13
External	64

Thu Oct 28 2021 11:02:21 GMT-0400 (Eastern Daylight Time) - Run Time: 2794ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig

Column: Primary travel mode of trip - mode_prime

Filters:

2006 GTA zone of destination - gta06_dest In 1046

and

Primary travel mode of trip - mode_prime In D

and

Start time of trip - start_time In 700-900

and

Planning district of origin - pd_orig In 20

Trip 2016

Table:

	Auto driver
1002	49
1029	28
1030	32
1033	32
1034	55
1035	173
1036	53
1037	76
1038	44
1039	12
1040	23
1046	323
1047	43
1049	28
1050	57
1056	11
Total	1039

Thu Oct 28 2021 10:58:43 GMT-0400 (Eastern Daylight Time) - Run Time: 2524ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of destination - gta06_dest

Column: Primary travel mode of trip - mode_prime

Filters:

2006 GTA zone of origin - gta06_orig In 1046

and

Primary travel mode of trip - mode_prime In D

and

Start time of trip - start_time In 700-900

and

Planning district of destination - pd_dest In 20

Trip 2016

Table:

	Auto driver
1031	15
1034	33
1035	69
1036	32
1037	18
1038	34
1041	23
1043	35
1045	28
1046	323
1047	8
1048	52
1049	52
1053	26
1055	10
Total	758

APPENDIX D

Level of Service Definitions

Level of Service Definitions

Two-Way Stop Controlled Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare.
B	> 10 and ≤ 15	VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal.
C	> 15 and ≤ 25	GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable.
D	> 25 and ≤ 35	FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street.
E	> 35 and ≤ 50	POOR. Very infrequent gaps in traffic on the main roadway. Queue lengths become noticeable.
F	> 50	UNSATISFACTORY. Very few gaps in traffic on the main roadway. Excessive delay with significant queue lengths on the minor street.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

Signalized Intersections

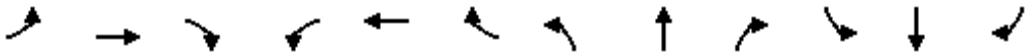
Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Extremely favourable progression with most vehicles arriving during the green phase. Most vehicles do not stop and short cycle lengths may contribute to low delay.
B	> 10 and ≤ 20	VERY GOOD. Very good progression and/or short cycle lengths with slightly more vehicles stopping than LOS "A" causing slightly higher levels of average delay.
C	> 20 and ≤ 35	GOOD. Fair progression and longer cycle lengths lead to a greater number of vehicles stopping than LOS "B".
D	> 35 and ≤ 55	FAIR. Congestion becomes noticeable with higher average delays resulting from a combination of long cycle lengths, high volume-to-capacity ratios and unfavourable progression.
E	> 55 and ≤ 80	POOR. Lengthy delays values are indicative of poor progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures are common with individual movement failures also common.
F	> 80	UNSATISFACTORY. Indicative of oversaturated conditions with vehicular demand greater than the capacity of the intersection.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

APPENDIX E

Detailed Capacity Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	370	0	0	609	167	0	0	1	224	0	678
Future Volume (vph)	302	370	0	0	609	167	0	0	1	224	0	678
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	100.0		30.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			50.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt						0.850		0.865				0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1612	3245	0	1816	3336	1465	0	1625	0	0	1638	2677
Flt Permitted	0.339										0.757	
Satd. Flow (perm)	575	3245	0	1816	3336	1465	0	1625	0	0	1305	2677
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						172		445				555
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.9			91.7			349.7	
Travel Time (s)		7.0			18.4			6.6			25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	10%	2%	0%	7%	9%	0%	0%	0%	9%	0%	5%
Adj. Flow (vph)	328	402	0	0	662	182	0	0	1	243	0	737
Shared Lane Traffic (%)												
Lane Group Flow (vph)	328	402	0	0	662	182	0	1	0	0	243	737
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		0	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		0.0	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		0.0	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		0.0	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		6.1	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0

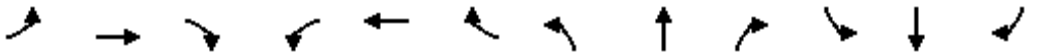


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	8.0	33.0		33.0	33.0	33.0	30.0	30.0		29.0	29.0	29.0
Total Split (s)	12.0	65.0		53.0	53.0	53.0	35.0	35.0		35.0	35.0	35.0
Total Split (%)	12.0%	65.0%		53.0%	53.0%	53.0%	35.0%	35.0%		35.0%	35.0%	35.0%
Maximum Green (s)	9.0	57.8		45.8	45.8	45.8	28.3	28.3		28.3	28.3	28.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		18.0		18.0	18.0	18.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	66.6	62.4			49.3	49.3		23.7			23.7	23.7
Actuated g/C Ratio	0.67	0.62			0.49	0.49		0.24			0.24	0.24
v/c Ratio	0.67	0.20			0.40	0.22		0.00			0.79	0.70
Control Delay	16.9	9.1			18.5	4.8		0.0			53.3	11.6
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay	16.9	9.1			18.5	4.8		0.0			53.3	11.6
LOS	B	A			B	A		A			D	B
Approach Delay		12.6			15.5						22.0	
Approach LOS		B			B						C	
Queue Length 50th (m)	25.2	16.9			53.4	3.5		0.0			43.3	16.0
Queue Length 95th (m)	#44.6	26.0			69.8	m6.9		0.0			68.3	35.6
Internal Link Dist (m)		92.0			281.9			67.7			325.7	
Turn Bay Length (m)	16.0					30.0						
Base Capacity (vph)	487	2024			1645	810		778			369	1155
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	0.67	0.20			0.40	0.22		0.00			0.66	0.64

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 13 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 17.2		Intersection LOS: B	
Intersection Capacity Utilization 70.0%		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.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 1: Altona Road & Kingston Road



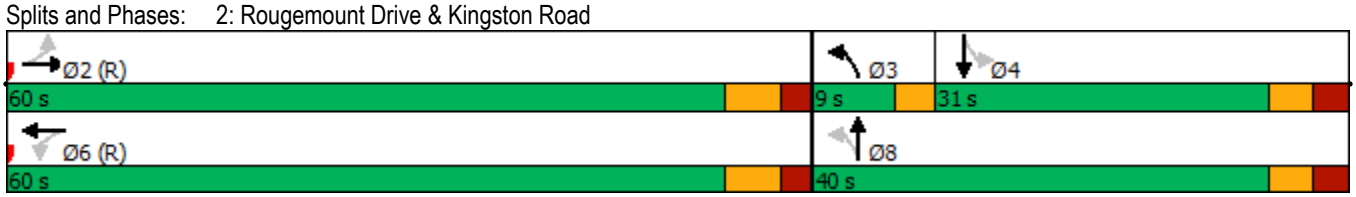


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	419	201	135	495	50	194	37	164	81	20	34
Future Volume (vph)	29	419	201	135	495	50	194	37	164	81	20	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	40.0		0.0	80.0		0.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	80.0			50.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.951			0.986			0.878			0.906	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1725	3285	0	1675	3379	0	1708	1619	0	1691	1659	0
Flt Permitted	0.424			0.384			0.574			0.622		
Satd. Flow (perm)	770	3285	0	677	3379	0	1032	1619	0	1107	1659	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		124			16			178			37	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.9			94.0			81.7			105.7	
Travel Time (s)		18.4			5.6			7.4			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	2%	3%	4%	6%	1%	6%	1%	2%	7%	0%
Adj. Flow (vph)	32	455	218	147	538	54	211	40	178	88	22	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	673	0	147	592	0	211	218	0	88	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	0	0		0	0		1	1		1	1	
Detector Template												
Leading Detector (m)	0.0	0.0		0.0	0.0		13.5	13.5		13.5	13.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		5.0	8.0		8.0	8.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	31.0	31.0		31.0	31.0		8.0	30.0		30.0	30.0	
Total Split (s)	60.0	60.0		60.0	60.0		9.0	40.0		31.0	31.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		9.0%	40.0%		31.0%	31.0%	
Maximum Green (s)	53.4	53.4		53.4	53.4		6.0	33.9		24.9	24.9	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		0.0	2.8		2.8	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	6.6		6.6	6.6		3.0	6.1		6.1	6.1	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0			16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	66.6	66.6		66.6	66.6		23.8	20.7		13.5	13.5	
Actuated g/C Ratio	0.67	0.67		0.67	0.67		0.24	0.21		0.14	0.14	
v/c Ratio	0.06	0.30		0.33	0.26		0.72	0.46		0.59	0.23	
Control Delay	5.2	3.6		11.4	7.9		46.9	10.7		55.4	19.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	5.2	3.6		11.4	7.9		46.9	10.7		55.4	19.9	
LOS	A	A		B	A		D	B		E	B	
Approach Delay		3.7			8.6			28.5			41.1	
Approach LOS		A			A			C			D	
Queue Length 50th (m)	1.3	8.9		11.5	22.3		34.9	6.2		16.3	3.8	
Queue Length 95th (m)	m3.1	12.4		27.9	36.9		51.5	23.1		30.0	14.1	
Internal Link Dist (m)		281.9			70.0			57.7			81.7	
Turn Bay Length (m)	40.0			80.0			35.0			19.0		
Base Capacity (vph)	512	2227		450	2254		293	666		275	440	
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	0.06	0.30		0.33	0.26		0.72	0.33		0.32	0.13	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 95 (95%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 13.5		Intersection LOS: B	
Intersection Capacity Utilization 74.6%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	20	365	16	26	312
Future Volume (vph)	4	20	365	16	26	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.886		0.994			
Flt Protected	0.992					0.996
Satd. Flow (prot)	1619	0	1831	0	0	1835
Flt Permitted	0.992					0.996
Satd. Flow (perm)	1619	0	1831	0	0	1835
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			81.7
Travel Time (s)	2.9		4.9			7.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	22	397	17	28	339
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	0	414	0	0	367
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	20	365	16	26	312
Future Volume (Veh/h)	4	20	365	16	26	312
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	22	397	17	28	339
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						82
pX, platoon unblocked	0.99					
vC, conflicting volume	800	406			414	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	792	406			414	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	97			98	
cM capacity (veh/h)	345	645			1145	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	26	414	367
Volume Left	4	0	28
Volume Right	22	17	0
cSH	569	1700	1145
Volume to Capacity	0.05	0.24	0.02
Queue Length 95th (m)	1.1	0.0	0.6
Control Delay (s)	11.6	0.0	0.9
Lane LOS	B		A
Approach Delay (s)	11.6	0.0	0.9
Approach LOS	B		

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization		47.9%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	657	3	32	677	2	25
Future Volume (vph)	657	3	32	677	2	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)		5.0	15.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850			0.874	
Flt Protected			0.950		0.997	
Satd. Flow (prot)	3500	1566	1750	3500	1605	0
Flt Permitted			0.950		0.997	
Satd. Flow (perm)	3500	1566	1750	3500	1605	0
Link Speed (k/h)	60			60	48	
Link Distance (m)	94.0			140.9	59.2	
Travel Time (s)	5.6			8.5	4.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	714	3	35	736	2	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	714	3	35	736	29	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	657	3	32	677	2	25
Future Volume (Veh/h)	657	3	32	677	2	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	714	3	35	736	2	27
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	94					
pX, platoon unblocked			0.95		0.95	0.95
vC, conflicting volume			717		1152	357
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			608		1064	231
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		99	96
cM capacity (veh/h)			922		200	736

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	357	357	3	35	368	368	29
Volume Left	0	0	0	35	0	0	2
Volume Right	0	0	3	0	0	0	27
cSH	1700	1700	1700	922	1700	1700	621
Volume to Capacity	0.21	0.21	0.00	0.04	0.22	0.22	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.9	0.0	0.0	1.1
Control Delay (s)	0.0	0.0	0.0	9.1	0.0	0.0	11.1
Lane LOS				A			B
Approach Delay (s)	0.0			0.4			11.1
Approach LOS							B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	704	8	15	738	4	14
Future Volume (vph)	704	8	15	738	4	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.998				0.893	
Flt Protected				0.999	0.990	
Satd. Flow (prot)	3493	0	0	3496	1628	0
Flt Permitted				0.999	0.990	
Satd. Flow (perm)	3493	0	0	3496	1628	0
Link Speed (k/h)	60			60	48	
Link Distance (m)	140.9			116.5	66.3	
Travel Time (s)	8.5			7.0	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	765	9	16	802	4	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	774	0	0	818	19	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.1%		ICU Level of Service A	
Analysis Period (min) 15			

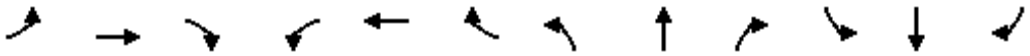


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	704	8	15	738	4	14
Future Volume (Veh/h)	704	8	15	738	4	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	765	9	16	802	4	15
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	235					
pX, platoon unblocked						
vC, conflicting volume			774		1202	387
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			774		1202	387
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	98
cM capacity (veh/h)			837		174	611

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	510	264	283	535	19
Volume Left	0	0	16	0	4
Volume Right	0	9	0	0	15
cSH	1700	1700	837	1700	399
Volume to Capacity	0.30	0.16	0.02	0.31	0.05
Queue Length 95th (m)	0.0	0.0	0.4	0.0	1.1
Control Delay (s)	0.0	0.0	0.7	0.0	14.5
Lane LOS			A		B
Approach Delay (s)	0.0		0.3		14.5
Approach LOS					B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	609	917	1	1	596	202	0	2	0	161	1	430
Future Volume (vph)	609	917	1	1	596	202	0	2	0	161	1	430
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	100.0		30.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			50.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt						0.850						0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1612	3246	0	1725	3336	1465	0	1879	0	0	1644	2677
Flt Permitted	0.308			0.287							0.727	
Satd. Flow (perm)	523	3246	0	521	3336	1465	0	1879	0	0	1254	2677
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						188						467
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.9			91.7			349.7	
Travel Time (s)		7.0			18.4			6.6			25.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	7%	10%	2%	0%	7%	9%	0%	0%	0%	9%	0%	5%
Adj. Flow (vph)	662	997	1	1	648	220	0	2	0	175	1	467
Shared Lane Traffic (%)												
Lane Group Flow (vph)	662	998	0	1	648	220	0	2	0	0	176	467
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		0	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		0.0	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		0.0	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		0.0	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		6.1	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0

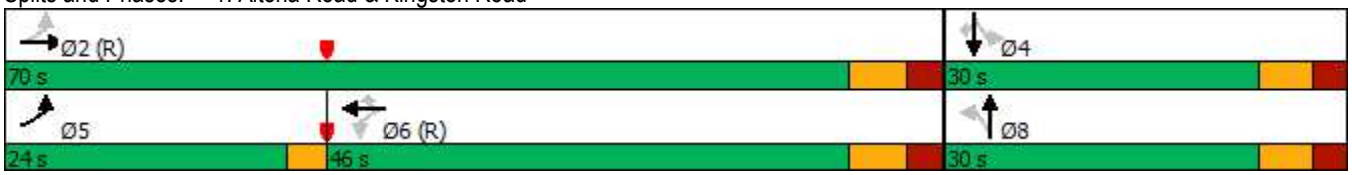


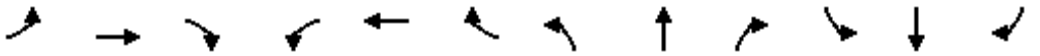
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	8.0	33.0		33.0	33.0	33.0	29.0	29.0		29.0	29.0	29.0
Total Split (s)	24.0	70.0		46.0	46.0	46.0	30.0	30.0		30.0	30.0	30.0
Total Split (%)	24.0%	70.0%		46.0%	46.0%	46.0%	30.0%	30.0%		30.0%	30.0%	30.0%
Maximum Green (s)	21.0	62.8		38.8	38.8	38.8	23.3	23.3		23.3	23.3	23.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		18.0		18.0	18.0	18.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	71.6	67.4		38.8	38.8	38.8		18.7			18.7	18.7
Actuated g/C Ratio	0.72	0.67		0.39	0.39	0.39		0.19			0.19	0.19
v/c Ratio	1.01	0.46		0.00	0.50	0.32		0.01			0.75	0.53
Control Delay	55.7	9.1		16.0	24.0	5.9		30.0			57.5	5.4
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	55.7	9.1		16.0	24.0	5.9		30.0			57.5	5.4
LOS	E	A		B	C	A		C			E	A
Approach Delay		27.7			19.4			30.0			19.7	
Approach LOS		C			B			C			B	
Queue Length 50th (m)	~89.7	44.7		0.1	56.6	8.0		0.3			32.0	0.0
Queue Length 95th (m)	#182.9	64.2		m0.2	m72.3	m6.9		2.1			52.8	13.0
Internal Link Dist (m)		92.0			281.9			67.7			325.7	
Turn Bay Length (m)	16.0			100.0		30.0						
Base Capacity (vph)	653	2187		202	1294	683		437			292	981
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	1.01	0.46		0.00	0.50	0.32		0.00			0.60	0.48

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 41 (41%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 23.8		Intersection LOS: C	
Intersection Capacity Utilization 81.0%		ICU Level of Service D	
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.			

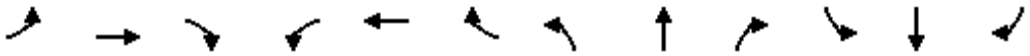
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Altona Road & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	769	264	119	608	60	222	61	128	70	34	38
Future Volume (vph)	49	769	264	119	608	60	222	61	128	70	34	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	40.0		0.0	80.0		0.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	80.0			50.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.987			0.898			0.921	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1725	3318	0	1675	3382	0	1708	1644	0	1691	1675	0
Flt Permitted	0.362			0.216			0.554			0.629		
Satd. Flow (perm)	657	3318	0	381	3382	0	996	1644	0	1120	1675	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73			16			115			41	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.9			93.2			81.7			105.7	
Travel Time (s)		18.4			5.6			7.4			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	2%	3%	4%	6%	1%	6%	1%	2%	7%	0%
Adj. Flow (vph)	53	836	287	129	661	65	241	66	139	76	37	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	1123	0	129	726	0	241	205	0	76	78	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.2			3.2			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	0	0		0	0		1	1		1	1	
Detector Template												
Leading Detector (m)	0.0	0.0		0.0	0.0		13.5	13.5		13.5	13.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		3.5	8.0		8.0	8.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	31.0	31.0		31.0	31.0		8.0	30.0		30.0	30.0	
Total Split (s)	60.0	60.0		60.0	60.0		9.0	40.0		31.0	31.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		9.0%	40.0%		31.0%	31.0%	
Maximum Green (s)	53.4	53.4		53.4	53.4		6.0	33.9		24.9	24.9	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.0	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4		0.0	2.8		2.8	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	6.6		6.6	6.6		3.0	6.1		6.1	6.1	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0			16.0		16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	67.6	67.6		67.6	67.6		22.8	19.7		12.5	12.5	
Actuated g/C Ratio	0.68	0.68		0.68	0.68		0.23	0.20		0.12	0.12	
v/c Ratio	0.12	0.50		0.50	0.32		0.87	0.49		0.54	0.32	
Control Delay	6.0	5.9		18.8	7.8		64.5	18.7		54.4	24.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.0	5.9		18.8	7.8		64.5	18.7		54.4	24.0	
LOS	A	A		B	A		E	B		D	C	
Approach Delay		5.9			9.5			43.5			39.0	
Approach LOS		A			A			D			D	
Queue Length 50th (m)	2.1	29.7		11.5	27.8		41.3	14.6		14.1	6.6	
Queue Length 95th (m)	m5.6	38.9		36.0	44.6		#63.2	32.4		26.9	18.5	
Internal Link Dist (m)		281.9			69.2			57.7			81.7	
Turn Bay Length (m)	40.0			80.0			35.0			19.0		
Base Capacity (vph)	444	2265		257	2290		277	633		278	447	
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	0.12	0.50		0.50	0.32		0.87	0.32		0.27	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 23 (23%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 15.4		Intersection LOS: B	
Intersection Capacity Utilization 85.3%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	32	53	324	21	49	378
Future Volume (vph)	32	53	324	21	49	378
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.916		0.992			
Flt Protected	0.982					0.994
Satd. Flow (prot)	1657	0	1827	0	0	1831
Flt Permitted	0.982					0.994
Satd. Flow (perm)	1657	0	1827	0	0	1831
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			81.7
Travel Time (s)	2.9		4.9			7.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	58	352	23	53	411
Shared Lane Traffic (%)						
Lane Group Flow (vph)	93	0	375	0	0	464
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.0%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	32	53	324	21	49	378
Future Volume (Veh/h)	32	53	324	21	49	378
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	58	352	23	53	411
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						82
pX, platoon unblocked	0.99					
vC, conflicting volume	880	364			375	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	876	364			375	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	88	91			96	
cM capacity (veh/h)	303	681			1183	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	93	375	464
Volume Left	35	0	53
Volume Right	58	23	0
cSH	463	1700	1183
Volume to Capacity	0.20	0.22	0.04
Queue Length 95th (m)	5.6	0.0	1.1
Control Delay (s)	14.7	0.0	1.4
Lane LOS	B		A
Approach Delay (s)	14.7	0.0	1.4
Approach LOS	B		

Intersection Summary			
Average Delay		2.1	
Intersection Capacity Utilization		56.0%	ICU Level of Service B
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	957	7	52	830	7	50
Future Volume (vph)	957	7	52	830	7	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)		5.0	15.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			2.5		2.5	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850			0.882	
Flt Protected			0.950		0.994	
Satd. Flow (prot)	3500	1566	1750	3500	1615	0
Flt Permitted			0.950		0.994	
Satd. Flow (perm)	3500	1566	1750	3500	1615	0
Link Speed (k/h)	60			60	48	
Link Distance (m)	93.2			140.8	50.7	
Travel Time (s)	5.6			8.4	3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1040	8	57	902	8	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1040	8	57	902	62	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	957	7	52	830	7	50
Future Volume (Veh/h)	957	7	52	830	7	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1040	8	57	902	8	54
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	93					
pX, platoon unblocked			0.85		0.85	0.85
vC, conflicting volume			1048		1605	520
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			716		1368	98
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		93	93
cM capacity (veh/h)			753		109	803

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	520	520	8	57	451	451	62
Volume Left	0	0	0	57	0	0	8
Volume Right	0	0	8	0	0	0	54
cSH	1700	1700	1700	753	1700	1700	441
Volume to Capacity	0.31	0.31	0.00	0.08	0.27	0.27	0.14
Queue Length 95th (m)	0.0	0.0	0.0	1.9	0.0	0.0	3.7
Control Delay (s)	0.0	0.0	0.0	10.2	0.0	0.0	14.5
Lane LOS				B			B
Approach Delay (s)	0.0			0.6			14.5
Approach LOS							B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1019	4	10	960	2	14
Future Volume (vph)	1019	4	10	960	2	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.999				0.881	
Flt Protected				0.999	0.994	
Satd. Flow (prot)	3496	0	0	3496	1613	0
Flt Permitted				0.999	0.994	
Satd. Flow (perm)	3496	0	0	3496	1613	0
Link Speed (k/h)	60			60	48	
Link Distance (m)	140.8			129.7	63.2	
Travel Time (s)	8.4			7.8	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1108	4	11	1043	2	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1112	0	0	1054	17	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			

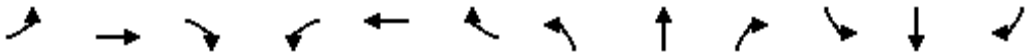


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1019	4	10	960	2	14
Future Volume (Veh/h)	1019	4	10	960	2	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1108	4	11	1043	2	15
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	234					
pX, platoon unblocked			0.89		0.89	0.89
vC, conflicting volume			1112		1654	556
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			869		1480	241
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		98	98
cM capacity (veh/h)			683		101	673

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	739	373	359	695	17
Volume Left	0	0	11	0	2
Volume Right	0	4	0	0	15
cSH	1700	1700	683	1700	404
Volume to Capacity	0.43	0.22	0.02	0.41	0.04
Queue Length 95th (m)	0.0	0.0	0.4	0.0	1.0
Control Delay (s)	0.0	0.0	0.5	0.0	14.3
Lane LOS			A		B
Approach Delay (s)	0.0		0.2		14.3
Approach LOS					B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	441	0	0	714	172	0	0	1	229	0	699
Future Volume (vph)	311	441	0	0	714	172	0	0	1	229	0	699
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor	1.00					0.97		0.98			0.99	0.98
Frt						0.850		0.865				0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1691	3466	0	1837	3461	1566	0	1586	0	0	1733	2783
Flt Permitted	0.279										0.757	
Satd. Flow (perm)	495	3466	0	1837	3461	1525	0	1586	0	0	1364	2719
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						147		373				760
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	9		9	9		9	1		7	7		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	0%	0%	2%	2%	0%	0%	0%	3%	0%	1%
Adj. Flow (vph)	338	479	0	0	776	187	0	0	1	249	0	760
Shared Lane Traffic (%)												
Lane Group Flow (vph)	338	479	0	0	776	187	0	1	0	0	249	760
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

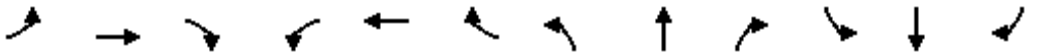


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	30.0	30.0		30.0	30.0	30.0
Total Split (s)	33.0	85.0		52.0	52.0	52.0	45.0	45.0		45.0	45.0	45.0
Total Split (%)	25.4%	65.4%		40.0%	40.0%	40.0%	34.6%	34.6%		34.6%	34.6%	34.6%
Maximum Green (s)	30.0	77.8		44.8	44.8	44.8	38.3	38.3		38.3	38.3	38.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		18.0		18.0	18.0	18.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	90.1	85.9			64.9	64.9		30.2			30.2	30.2
Actuated g/C Ratio	0.69	0.66			0.50	0.50		0.23			0.23	0.23
v/c Ratio	0.67	0.21			0.45	0.22		0.00			0.79	0.63
Control Delay	15.5	9.7			22.2	7.5		0.0			63.8	4.9
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay	15.5	9.7			22.2	7.5		0.0			63.8	4.9
LOS	B	A			C	A		A			E	A
Approach Delay		12.1			19.3						19.5	
Approach LOS		B			B						B	
Queue Length 50th (m)	30.7	23.8			79.3	3.8		0.0			60.0	0.0
Queue Length 95th (m)	53.9	37.3			117.6	36.9		0.0			84.2	15.0
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0					50.0						
Base Capacity (vph)	619	2291			1728	835		730			401	1337
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	0.55	0.21			0.45	0.22		0.00			0.62	0.57

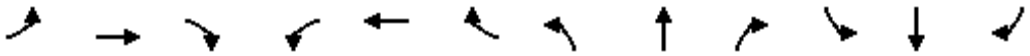
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 17.3		Intersection LOS: B	
Intersection Capacity Utilization 74.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Altona Road & Kingston Road





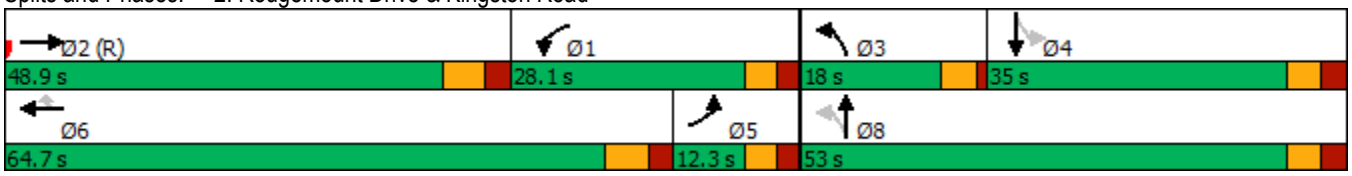
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	493	202	173	594	54	198	38	166	85	20	40
Future Volume (vph)	31	493	202	173	594	54	198	38	166	85	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99		0.96	0.99	0.97		0.99	0.99	
Frt		0.956				0.850		0.878			0.901	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3229	0	1728	3461	1513	1725	1585	0	1708	1668	0
Flt Permitted	0.950			0.950			0.560			0.620		
Satd. Flow (perm)	1729	3229	0	1712	3461	1449	1007	1585	0	1098	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51				108		180			43	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	8		9	9		8	8		15	15		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	1%	1%	2%	2%	0%	3%	1%	1%	0%	0%
Adj. Flow (vph)	34	536	220	188	646	59	215	41	180	92	22	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	756	0	188	646	59	215	221	0	92	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	35.0		35.0	35.0	
Total Split (s)	12.3	48.9		28.1	64.7	64.7	18.0	53.0		35.0	35.0	
Total Split (%)	9.5%	37.6%		21.6%	49.8%	49.8%	13.8%	40.8%		26.9%	26.9%	
Maximum Green (s)	6.9	42.3		22.7	58.1	58.1	13.5	47.0		29.0	29.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0	16.0		22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	6.6	57.9		19.4	75.4	75.4	36.2	34.7		16.3	16.3	
Actuated g/C Ratio	0.05	0.45		0.15	0.58	0.58	0.28	0.27		0.13	0.13	
v/c Ratio	0.39	0.52		0.73	0.32	0.07	0.60	0.40		0.67	0.26	
Control Delay	71.8	18.7		68.9	16.3	0.3	45.5	10.3		76.3	23.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	71.8	18.7		68.9	16.3	0.3	45.5	10.3		76.3	23.2	
LOS	E	B		E	B	A	D	B		E	C	
Approach Delay		21.0			26.3			27.7			54.3	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	9.0	61.9		45.1	46.8	0.0	45.8	8.0		22.8	5.1	
Queue Length 95th (m)	m18.1	75.7		70.2	68.0	0.6	63.8	26.4		39.0	17.5	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	92	1466		301	2006	885	357	687		244	405	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.37	0.52		0.62	0.32	0.07	0.60	0.32		0.38	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 26.7		Intersection LOS: C	
Intersection Capacity Utilization 74.3%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	15	377	11	40	321
Future Volume (vph)	3	15	377	11	40	321
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.886		0.996			
Flt Protected	0.992					0.995
Satd. Flow (prot)	1619	0	1835	0	0	1833
Flt Permitted	0.992					0.995
Satd. Flow (perm)	1619	0	1835	0	0	1833
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	16	410	12	43	349
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	422	0	0	392
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	15	377	11	40	321
Future Volume (Veh/h)	3	15	377	11	40	321
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	16	410	12	43	349
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	851	416			422	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	851	416			422	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	97			96	
cM capacity (veh/h)	318	637			1137	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	19	422	392
Volume Left	3	0	43
Volume Right	16	12	0
cSH	550	1700	1137
Volume to Capacity	0.03	0.25	0.04
Queue Length 95th (m)	0.8	0.0	0.9
Control Delay (s)	11.8	0.0	1.3
Lane LOS	B		A
Approach Delay (s)	11.8	0.0	1.3
Approach LOS	B		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	753	2	0	819	0	17
Future Volume (vph)	753	2	0	819	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3466	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3466	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	818	2	0	890	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	820	0	0	890	0	18
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	753	2	0	819	0	17
Future Volume (Veh/h)	753	2	0	819	0	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	818	2	0	890	0	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91					
pX, platoon unblocked			0.85		0.85	0.85
vC, conflicting volume			820		1264	410
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			442		963	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			950		216	924

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	545	275	445	445	18
Volume Left	0	0	0	0	0
Volume Right	0	2	0	0	18
cSH	1700	1700	1700	1700	924
Volume to Capacity	0.32	0.16	0.26	0.26	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.5
Control Delay (s)	0.0	0.0	0.0	0.0	9.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.0
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	778	23	0	849	0	18
Future Volume (vph)	778	23	0	849	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996					0.865
Flt Protected						
Satd. Flow (prot)	3453	0	0	3500	0	1540
Flt Permitted						
Satd. Flow (perm)	3453	0	0	3500	0	1540
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	846	25	0	923	0	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	871	0	0	923	0	20
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

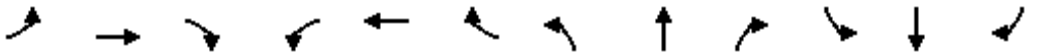
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.2%		ICU Level of Service A	
Analysis Period (min) 15			



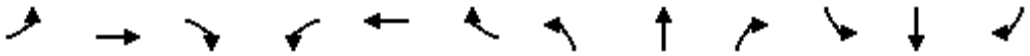
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	778	23	0	849	0	18
Future Volume (Veh/h)	778	23	0	849	0	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	846	25	0	923	0	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	233					
pX, platoon unblocked			0.89		0.89	0.89
vC, conflicting volume			871		1320	436
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			595		1102	103
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			865		182	825

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	564	307	462	462	20
Volume Left	0	0	0	0	0
Volume Right	0	25	0	0	20
cSH	1700	1700	1700	1700	825
Volume to Capacity	0.33	0.18	0.27	0.27	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.6
Control Delay (s)	0.0	0.0	0.0	0.0	9.5
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.5
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	32.2%	ICU Level of Service	A
Analysis Period (min)	15		



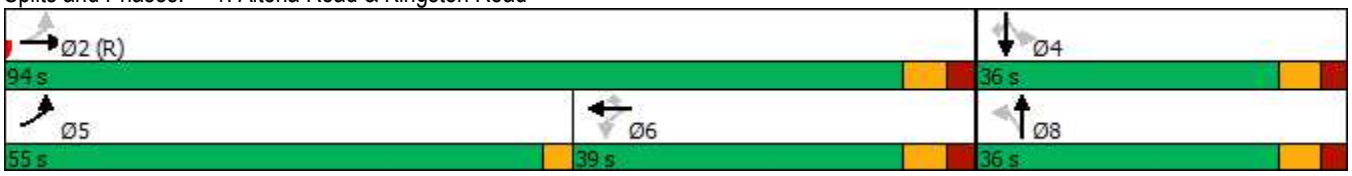
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	627	1109	1	1	617	206	0	2	0	165	1	443
Future Volume (vph)	627	1109	1	1	617	206	0	2	0	165	1	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor	1.00	1.00		1.00		0.98					0.99	
Frt						0.850						0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1708	3534	0	1745	3495	1581	0	1879	0	0	1773	2756
Flt Permitted	0.255			0.233							0.727	
Satd. Flow (perm)	457	3534	0	427	3495	1548	0	1879	0	0	1343	2756
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						176						482
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	6		4	4		6			5	5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	682	1205	1	1	671	224	0	2	0	179	1	482
Shared Lane Traffic (%)												
Lane Group Flow (vph)	682	1206	0	1	671	224	0	2	0	0	180	482
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

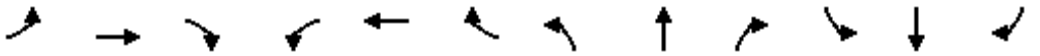


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	35.7	35.7		35.7	35.7	35.7
Total Split (s)	55.0	94.0		39.0	39.0	39.0	36.0	36.0		36.0	36.0	36.0
Total Split (%)	42.3%	72.3%		30.0%	30.0%	30.0%	27.7%	27.7%		27.7%	27.7%	27.7%
Maximum Green (s)	52.0	86.8		31.8	31.8	31.8	29.3	29.3		29.3	29.3	29.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		18.0		18.0	18.0	18.0	22.0	22.0		22.0	22.0	22.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	97.8	93.6		44.0	44.0	44.0		22.5			22.5	22.5
Actuated g/C Ratio	0.75	0.72		0.34	0.34	0.34		0.17			0.17	0.17
v/c Ratio	0.86	0.47		0.01	0.57	0.35		0.01			0.78	0.55
Control Delay	29.9	9.1		41.0	44.8	20.5		40.0			72.4	6.1
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	29.9	9.1		41.0	44.8	20.5		40.0			72.4	6.1
LOS	C	A		D	D	C		D			E	A
Approach Delay		16.6			38.7			40.0			24.1	
Approach LOS		B			D			D			C	
Queue Length 50th (m)	101.8	64.0		0.3	89.7	23.2		0.4			44.1	0.0
Queue Length 95th (m)	166.2	90.9		m0.5	m112.5	m42.9		2.6			66.3	14.6
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0			85.0		50.0						
Base Capacity (vph)	848	2543		144	1183	640		423			302	994
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	0.80	0.47		0.01	0.57	0.35		0.00			0.60	0.48

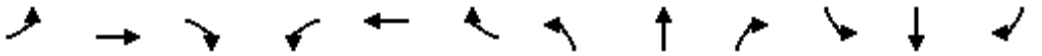
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 23.8		Intersection LOS: C	
Intersection Capacity Utilization 86.3%		ICU Level of Service E	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 1: Altona Road & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	961	261	163	630	65	223	60	126	75	34	41
Future Volume (vph)	56	961	261	163	630	65	223	60	126	75	34	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		1.00		0.92	0.99	0.98		0.99	0.99	
Frt		0.968				0.850		0.898			0.918	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3320	0	1745	3461	1543	1708	1632	0	1708	1676	0
Flt Permitted	0.950			0.950			0.541			0.631		
Satd. Flow (perm)	1707	3320	0	1739	3461	1427	964	1632	0	1120	1676	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33				108		86			44	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	20		8	8		20	8		13	13		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%	1%	0%	2%	1%	0%	3%
Adj. Flow (vph)	61	1045	284	177	685	71	242	65	137	82	37	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	1329	0	177	685	71	242	202	0	82	82	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	

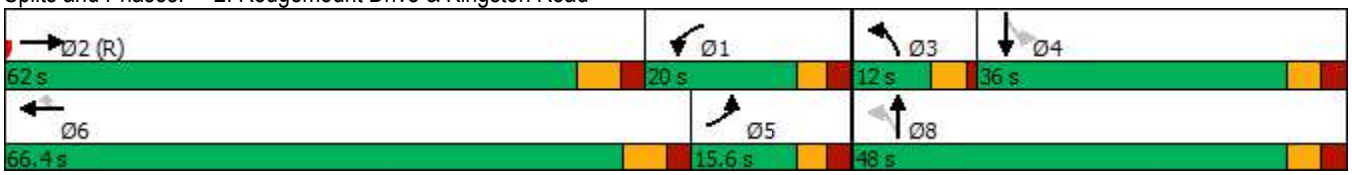


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	36.0		36.0	36.0	
Total Split (s)	15.6	62.0		20.0	66.4	66.4	12.0	48.0		36.0	36.0	
Total Split (%)	12.0%	47.7%		15.4%	51.1%	51.1%	9.2%	36.9%		27.7%	27.7%	
Maximum Green (s)	10.2	55.4		14.6	59.8	59.8	7.5	42.0		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0	16.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	9.4	70.5		14.6	78.0	78.0	28.5	27.0		14.9	14.9	
Actuated g/C Ratio	0.07	0.54		0.11	0.60	0.60	0.22	0.21		0.11	0.11	
v/c Ratio	0.49	0.73		0.91	0.33	0.08	0.95	0.50		0.64	0.35	
Control Delay	63.9	18.7		101.3	15.0	1.0	93.9	29.0		75.7	30.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	63.9	18.7		101.3	15.0	1.0	93.9	29.0		75.7	30.1	
LOS	E	B		F	B	A	F	C		E	C	
Approach Delay		20.7			30.3			64.4			52.9	
Approach LOS		C			C			E			D	
Queue Length 50th (m)	15.3	71.1		45.5	46.5	0.0	56.9	25.9		20.4	9.0	
Queue Length 95th (m)	m29.5	77.9		#87.8	67.2	2.7	#89.9	46.7		35.6	23.0	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	136	1814		195	2075	898	254	585		258	420	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.45	0.73		0.91	0.33	0.08	0.95	0.35		0.32	0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 32.1		Intersection LOS: C	
Intersection Capacity Utilization 87.2%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	22	41	334	14	69	389
Future Volume (vph)	22	41	334	14	69	389
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912		0.995			
Flt Protected	0.983					0.993
Satd. Flow (prot)	1651	0	1833	0	0	1829
Flt Permitted	0.983					0.993
Satd. Flow (perm)	1651	0	1833	0	0	1829
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	45	363	15	75	423
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	0	378	0	0	498
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.5%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	41	334	14	69	389
Future Volume (Veh/h)	22	41	334	14	69	389
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	45	363	15	75	423
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	944	370			378	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	944	370			378	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	93			94	
cM capacity (veh/h)	273	675			1180	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	69	378	498
Volume Left	24	0	75
Volume Right	45	15	0
cSH	446	1700	1180
Volume to Capacity	0.15	0.22	0.06
Queue Length 95th (m)	4.1	0.0	1.5
Control Delay (s)	14.5	0.0	1.8
Lane LOS	B		A
Approach Delay (s)	14.5	0.0	1.8
Approach LOS	B		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1164	5	0	910	0	34
Future Volume (vph)	1164	5	0	910	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999					0.865
Flt Protected						
Satd. Flow (prot)	3463	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3463	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1265	5	0	989	0	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1270	0	0	989	0	37
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1164	5	0	910	0	34
Future Volume (Veh/h)	1164	5	0	910	0	34
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1265	5	0	989	0	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91					
pX, platoon unblocked			0.70		0.70	0.70
vC, conflicting volume			1270		1762	635
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			536		1236	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	95
cM capacity (veh/h)			722		118	761

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	843	427	494	494	37
Volume Left	0	0	0	0	0
Volume Right	0	5	0	0	37
cSH	1700	1700	1700	1700	761
Volume to Capacity	0.50	0.25	0.29	0.29	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.2
Control Delay (s)	0.0	0.0	0.0	0.0	10.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		10.0
Approach LOS					A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1200	14	0	990	0	16
Future Volume (vph)	1200	14	0	990	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.998					0.865
Flt Protected						
Satd. Flow (prot)	3459	0	0	3500	0	1540
Flt Permitted						
Satd. Flow (perm)	3459	0	0	3500	0	1540
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1304	15	0	1076	0	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1319	0	0	1076	0	17
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

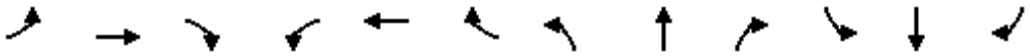


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1200	14	0	990	0	16
Future Volume (Veh/h)	1200	14	0	990	0	16
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1304	15	0	1076	0	17
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	233					
pX, platoon unblocked			0.72		0.72	0.72
vC, conflicting volume			1319		1850	660
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			662		1400	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			663		94	780

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	869	450	538	538	17
Volume Left	0	0	0	0	0
Volume Right	0	15	0	0	17
cSH	1700	1700	1700	1700	780
Volume to Capacity	0.51	0.26	0.32	0.32	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.5
Control Delay (s)	0.0	0.0	0.0	0.0	9.7
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.7
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	317	448	0	0	726	176	0	0	1	233	0	713
Future Volume (vph)	317	448	0	0	726	176	0	0	1	233	0	713
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor						0.97		0.98			0.99	0.98
Frt						0.850		0.865				0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1691	3466	0	1837	3461	1566	0	1586	0	0	1733	2783
Flt Permitted	0.269										0.757	
Satd. Flow (perm)	479	3466	0	1837	3461	1525	0	1586	0	0	1364	2719
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						149		371				775
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	9		9	9		9	1		7	7		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	0%	0%	2%	2%	0%	0%	0%	3%	0%	1%
Adj. Flow (vph)	345	487	0	0	789	191	0	0	1	253	0	775
Shared Lane Traffic (%)												
Lane Group Flow (vph)	345	487	0	0	789	191	0	1	0	0	253	775
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

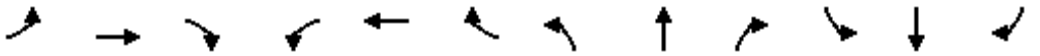


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	30.0	30.0		30.0	30.0	30.0
Total Split (s)	33.0	86.0		53.0	53.0	53.0	44.0	44.0		44.0	44.0	44.0
Total Split (%)	25.4%	66.2%		40.8%	40.8%	40.8%	33.8%	33.8%		33.8%	33.8%	33.8%
Maximum Green (s)	30.0	78.8		45.8	45.8	45.8	37.3	37.3		37.3	37.3	37.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		18.0		18.0	18.0	18.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	90.1	85.9			63.3	63.3		30.2			30.2	30.2
Actuated g/C Ratio	0.69	0.66			0.49	0.49		0.23			0.23	0.23
v/c Ratio	0.67	0.21			0.47	0.23		0.00			0.80	0.63
Control Delay	15.6	9.7			23.9	8.0		0.0			65.0	5.0
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay	15.6	9.7			23.9	8.0		0.0			65.0	5.0
LOS	B	A			C	A		A			E	A
Approach Delay		12.1			20.8						19.7	
Approach LOS		B			C						B	
Queue Length 50th (m)	31.8	24.4			84.6	8.8		0.0			61.0	0.0
Queue Length 95th (m)	54.0	37.1			120.6	38.6		0.0			86.8	15.2
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0					50.0						
Base Capacity (vph)	611	2289			1684	818		719			391	1332
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	0.56	0.21			0.47	0.23		0.00			0.65	0.58

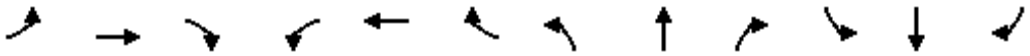
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 17.9		Intersection LOS: B	
Intersection Capacity Utilization 74.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Altona Road & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	501	206	177	604	55	202	39	170	87	20	41
Future Volume (vph)	31	501	206	177	604	55	202	39	170	87	20	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99		0.96	0.99	0.97		0.99	0.98	
Frt		0.956				0.850		0.878			0.899	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3229	0	1728	3461	1513	1725	1585	0	1708	1664	0
Flt Permitted	0.950			0.950			0.562			0.617		
Satd. Flow (perm)	1729	3229	0	1712	3461	1449	1011	1585	0	1093	1664	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52				108		185			45	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	8		9	9		8	8		15	15		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	1%	1%	2%	2%	0%	3%	1%	1%	0%	0%
Adj. Flow (vph)	34	545	224	192	657	60	220	42	185	95	22	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	769	0	192	657	60	220	227	0	95	67	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	

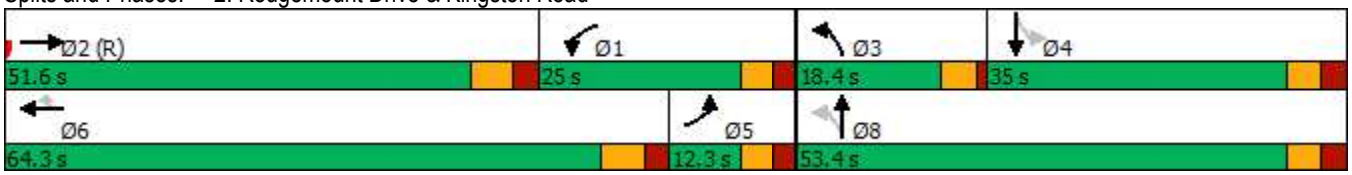


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	35.0		35.0	35.0	
Total Split (s)	12.3	51.6		25.0	64.3	64.3	18.4	53.4		35.0	35.0	
Total Split (%)	9.5%	39.7%		19.2%	49.5%	49.5%	14.2%	41.1%		26.9%	26.9%	
Maximum Green (s)	6.9	45.0		19.6	57.7	57.7	13.9	47.4		29.0	29.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0	16.0		22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	6.6	58.8		17.9	74.6	74.6	36.9	35.4		16.7	16.7	
Actuated g/C Ratio	0.05	0.45		0.14	0.57	0.57	0.28	0.27		0.13	0.13	
v/c Ratio	0.39	0.52		0.81	0.33	0.07	0.60	0.40		0.68	0.27	
Control Delay	71.6	18.2		79.5	16.8	0.4	44.9	10.1		76.3	22.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	71.6	18.2		79.5	16.8	0.4	44.9	10.1		76.3	22.6	
LOS	E	B		E	B	A	D	B		E	C	
Approach Delay		20.5			29.0			27.2			54.1	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	9.0	61.7		47.6	48.6	0.0	46.5	8.1		23.6	5.0	
Queue Length 95th (m)	m18.1	75.9		#80.2	70.2	0.8	64.3	26.3		39.7	17.5	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	92	1488		260	1987	878	365	695		243	406	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.37	0.52		0.74	0.33	0.07	0.60	0.33		0.39	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 27.5		Intersection LOS: C	
Intersection Capacity Utilization 75.0%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	15	385	11	40	328
Future Volume (vph)	3	15	385	11	40	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.886		0.996			
Flt Protected	0.992					0.995
Satd. Flow (prot)	1619	0	1835	0	0	1833
Flt Permitted	0.992					0.995
Satd. Flow (perm)	1619	0	1835	0	0	1833
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	16	418	12	43	357
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	430	0	0	400
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	15	385	11	40	328
Future Volume (Veh/h)	3	15	385	11	40	328
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	16	418	12	43	357
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	867	424			430	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	867	424			430	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	97			96	
cM capacity (veh/h)	311	630			1129	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	19	430	400
Volume Left	3	0	43
Volume Right	16	12	0
cSH	542	1700	1129
Volume to Capacity	0.04	0.25	0.04
Queue Length 95th (m)	0.8	0.0	0.9
Control Delay (s)	11.9	0.0	1.3
Lane LOS	B		A
Approach Delay (s)	11.9	0.0	1.3
Approach LOS	B		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	768	2	0	834	0	17
Future Volume (vph)	768	2	0	834	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3466	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3466	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	835	2	0	907	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	837	0	0	907	0	18
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	768	2	0	834	0	17
Future Volume (Veh/h)	768	2	0	834	0	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	835	2	0	907	0	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91					
pX, platoon unblocked			0.85		0.85	0.85
vC, conflicting volume			837		1290	418
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			457		989	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			936		207	922

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	557	280	454	454	18
Volume Left	0	0	0	0	0
Volume Right	0	2	0	0	18
cSH	1700	1700	1700	1700	922
Volume to Capacity	0.33	0.16	0.27	0.27	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.5
Control Delay (s)	0.0	0.0	0.0	0.0	9.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.0
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	792	24	0	865	0	19
Future Volume (vph)	792	24	0	865	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996					0.865
Flt Protected						
Satd. Flow (prot)	3453	0	0	3500	0	1540
Flt Permitted						
Satd. Flow (perm)	3453	0	0	3500	0	1540
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	861	26	0	940	0	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	887	0	0	940	0	21
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

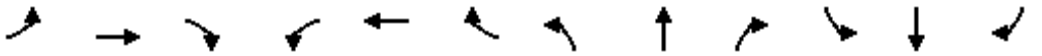
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.7%		ICU Level of Service A	
Analysis Period (min) 15			



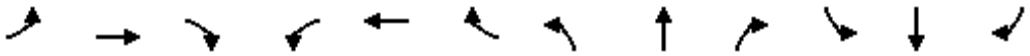
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	792	24	0	865	0	19
Future Volume (Veh/h)	792	24	0	865	0	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	861	26	0	940	0	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	233					
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume			887		1344	444
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			609		1126	108
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	97
cM capacity (veh/h)			853		175	818

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	574	313	470	470	21
Volume Left	0	0	0	0	0
Volume Right	0	26	0	0	21
cSH	1700	1700	1700	1700	818
Volume to Capacity	0.34	0.18	0.28	0.28	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.6
Control Delay (s)	0.0	0.0	0.0	0.0	9.5
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.5
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	640	1128	1	1	628	210	0	2	0	168	1	452
Future Volume (vph)	640	1128	1	1	628	210	0	2	0	168	1	452
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor	1.00	1.00		1.00		0.98					0.99	
Frt						0.850						0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1708	3534	0	1745	3495	1581	0	1879	0	0	1773	2756
Flt Permitted	0.238			0.228							0.727	
Satd. Flow (perm)	427	3534	0	418	3495	1548	0	1879	0	0	1343	2756
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						176						491
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	6		4	4		6			5	5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	696	1226	1	1	683	228	0	2	0	183	1	491
Shared Lane Traffic (%)												
Lane Group Flow (vph)	696	1227	0	1	683	228	0	2	0	0	184	491
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

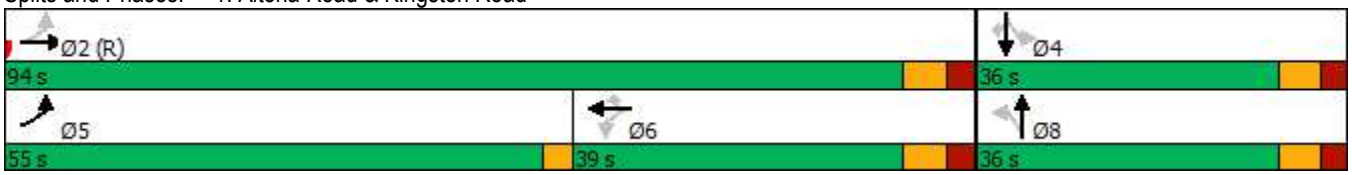


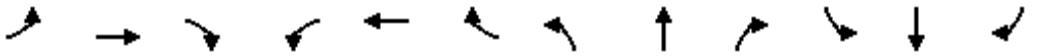
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	35.7	35.7		35.7	35.7	35.7
Total Split (s)	55.0	94.0		39.0	39.0	39.0	36.0	36.0		36.0	36.0	36.0
Total Split (%)	42.3%	72.3%		30.0%	30.0%	30.0%	27.7%	27.7%		27.7%	27.7%	27.7%
Maximum Green (s)	52.0	86.8		31.8	31.8	31.8	29.3	29.3		29.3	29.3	29.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		18.0		18.0	18.0	18.0	22.0	22.0		22.0	22.0	22.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	97.5	93.3		42.2	42.2	42.2		22.8			22.8	22.8
Actuated g/C Ratio	0.75	0.72		0.32	0.32	0.32		0.18			0.18	0.18
v/c Ratio	0.88	0.48		0.01	0.60	0.37		0.01			0.78	0.55
Control Delay	32.9	9.4		41.0	46.4	21.2		40.0			72.7	6.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	32.9	9.4		41.0	46.4	21.2		40.0			72.7	6.0
LOS	C	A		D	D	C		D			E	A
Approach Delay		17.9			40.1			40.0			24.2	
Approach LOS		B			D			D			C	
Queue Length 50th (m)	110.1	66.4		0.2	93.1	24.0		0.4			45.1	0.0
Queue Length 95th (m)	#191.9	93.2		m0.5	m113.3	m43.5		2.6			67.9	14.7
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0			85.0		50.0						
Base Capacity (vph)	838	2535		135	1133	621		423			302	1001
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	0.83	0.48		0.01	0.60	0.37		0.00			0.61	0.49

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 24.9		Intersection LOS: C	
Intersection Capacity Utilization 87.2%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

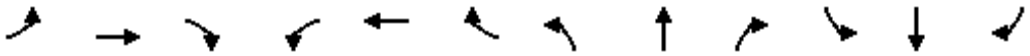
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Altona Road & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	977	266	166	643	66	227	61	128	76	35	42
Future Volume (vph)	57	977	266	166	643	66	227	61	128	76	35	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		1.00		0.92	0.99	0.98		0.99	0.99	
Frt		0.968				0.850		0.898			0.918	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3320	0	1745	3461	1543	1708	1632	0	1708	1676	0
Flt Permitted	0.950			0.950			0.541			0.629		
Satd. Flow (perm)	1707	3320	0	1739	3461	1427	964	1632	0	1116	1676	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35				108		86			44	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	20		8	8		20	8		13	13		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%	1%	0%	2%	1%	0%	3%
Adj. Flow (vph)	62	1062	289	180	699	72	247	66	139	83	38	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	1351	0	180	699	72	247	205	0	83	84	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	

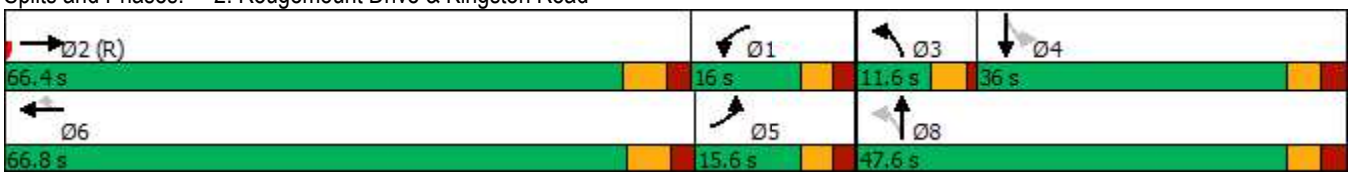


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	36.0		36.0	36.0	
Total Split (s)	15.6	66.4		16.0	66.8	66.8	11.6	47.6		36.0	36.0	
Total Split (%)	12.0%	51.1%		12.3%	51.4%	51.4%	8.9%	36.6%		27.7%	27.7%	
Maximum Green (s)	10.2	59.8		10.6	60.2	60.2	7.1	41.6		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0	16.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	9.4	74.7		10.6	78.2	78.2	28.2	26.7		15.1	15.1	
Actuated g/C Ratio	0.07	0.57		0.08	0.60	0.60	0.22	0.21		0.12	0.12	
v/c Ratio	0.50	0.70		1.27	0.34	0.08	0.99	0.51		0.64	0.36	
Control Delay	64.1	15.8		211.4	14.9	1.0	103.4	29.7		75.8	30.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	64.1	15.8		211.4	14.9	1.0	103.4	29.7		75.8	30.5	
LOS	E	B		F	B	A	F	C		E	C	
Approach Delay		18.0			51.1			70.0			53.0	
Approach LOS		B			D			E			D	
Queue Length 50th (m)	15.6	63.3		~58.0	47.5	0.0	58.4	26.7		20.6	9.4	
Queue Length 95th (m)	m29.8	70.4		#103.7	68.3	2.8	#95.0	47.6		36.1	23.7	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	136	1922		142	2082	901	249	580		257	420	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.46	0.70		1.27	0.34	0.08	0.99	0.35		0.32	0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.27			
Intersection Signal Delay: 38.4		Intersection LOS: D	
Intersection Capacity Utilization 88.1%		ICU Level of Service E	
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	22	41	341	14	69	397
Future Volume (vph)	22	41	341	14	69	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912		0.995			
Flt Protected	0.983					0.993
Satd. Flow (prot)	1651	0	1833	0	0	1829
Flt Permitted	0.983					0.993
Satd. Flow (perm)	1651	0	1833	0	0	1829
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	45	371	15	75	432
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	0	386	0	0	507
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	41	341	14	69	397
Future Volume (Veh/h)	22	41	341	14	69	397
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	45	371	15	75	432
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	960	378			386	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	960	378			386	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	93			94	
cM capacity (veh/h)	266	668			1172	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	69	386	507
Volume Left	24	0	75
Volume Right	45	15	0
cSH	438	1700	1172
Volume to Capacity	0.16	0.23	0.06
Queue Length 95th (m)	4.2	0.0	1.6
Control Delay (s)	14.7	0.0	1.8
Lane LOS	B		A
Approach Delay (s)	14.7	0.0	1.8
Approach LOS	B		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1184	5	0	928	0	34
Future Volume (vph)	1184	5	0	928	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999					0.865
Flt Protected						
Satd. Flow (prot)	3463	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3463	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1287	5	0	1009	0	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1292	0	0	1009	0	37
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1184	5	0	928	0	34
Future Volume (Veh/h)	1184	5	0	928	0	34
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1287	5	0	1009	0	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91					
pX, platoon unblocked			0.72		0.72	0.72
vC, conflicting volume			1292		1794	646
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			614		1315	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	95
cM capacity (veh/h)			688		107	776

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	858	434	504	504	37
Volume Left	0	0	0	0	0
Volume Right	0	5	0	0	37
cSH	1700	1700	1700	1700	776
Volume to Capacity	0.50	0.26	0.30	0.30	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.1
Control Delay (s)	0.0	0.0	0.0	0.0	9.9
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.9
Approach LOS					A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1220	15	0	1010	0	17
Future Volume (Veh/h)	1220	15	0	1010	0	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1326	16	0	1098	0	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	233					
pX, platoon unblocked			0.73		0.73	0.73
vC, conflicting volume			1342		1883	671
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			738		1476	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			633		86	795

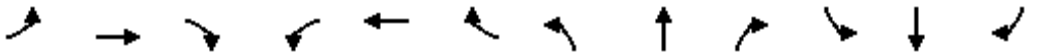
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	884	458	549	549	18
Volume Left	0	0	0	0	0
Volume Right	0	16	0	0	18
cSH	1700	1700	1700	1700	795
Volume to Capacity	0.52	0.27	0.32	0.32	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.5
Control Delay (s)	0.0	0.0	0.0	0.0	9.6
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.6
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

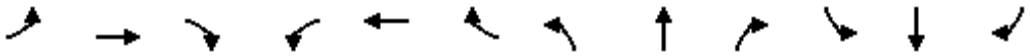


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1220	15	0	1010	0	17
Future Volume (vph)	1220	15	0	1010	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.998					0.865
Flt Protected						
Satd. Flow (prot)	3459	0	0	3500	0	1540
Flt Permitted						
Satd. Flow (perm)	3459	0	0	3500	0	1540
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1326	16	0	1098	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1342	0	0	1098	0	18
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	468	0	0	758	185	0	0	1	245	0	749
Future Volume (vph)	334	468	0	0	758	185	0	0	1	245	0	749
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor						0.97		0.98			0.99	0.98
Frt						0.850		0.865				0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1691	3466	0	1837	3461	1566	0	1586	0	0	1733	2783
Flt Permitted	0.244										0.757	
Satd. Flow (perm)	434	3466	0	1837	3461	1525	0	1586	0	0	1364	2719
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						150		354				806
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	9		9	9		9	1		7	7		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	0%	0%	2%	2%	0%	0%	0%	3%	0%	1%
Adj. Flow (vph)	363	509	0	0	824	201	0	0	1	266	0	814
Shared Lane Traffic (%)												
Lane Group Flow (vph)	363	509	0	0	824	201	0	1	0	0	266	814
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

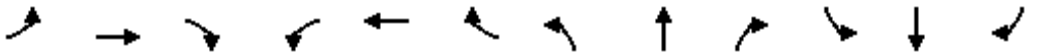


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	30.0	30.0		30.0	30.0	30.0
Total Split (s)	33.0	86.0		53.0	53.0	53.0	44.0	44.0		44.0	44.0	44.0
Total Split (%)	25.4%	66.2%		40.8%	40.8%	40.8%	33.8%	33.8%		33.8%	33.8%	33.8%
Maximum Green (s)	30.0	78.8		45.8	45.8	45.8	37.3	37.3		37.3	37.3	37.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		18.0		18.0	18.0	18.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	89.1	84.9			60.1	60.1		31.2			31.2	31.2
Actuated g/C Ratio	0.69	0.65			0.46	0.46		0.24			0.24	0.24
v/c Ratio	0.72	0.23			0.51	0.26		0.00			0.81	0.64
Control Delay	18.9	10.2			26.6	9.0		0.0			65.3	5.2
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay	18.9	10.2			26.6	9.0		0.0			65.3	5.2
LOS	B	B			C	A		A			E	A
Approach Delay		13.8			23.2						20.0	
Approach LOS		B			C						B	
Queue Length 50th (m)	35.7	27.0			94.4	18.5		0.0			63.6	0.8
Queue Length 95th (m)	63.6	39.0			127.1	41.0		0.0			91.5	16.4
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0					50.0						
Base Capacity (vph)	587	2262			1601	786		707			391	1354
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	0.62	0.23			0.51	0.26		0.00			0.68	0.60

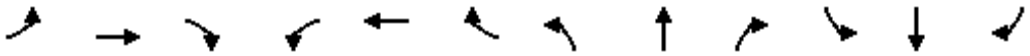
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 19.3		Intersection LOS: B	
Intersection Capacity Utilization 75.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Altona Road & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	524	216	184	631	57	211	41	178	91	21	43
Future Volume (vph)	33	524	216	184	631	57	211	41	178	91	21	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99		0.96	0.99	0.97		0.99	0.98	
Frt		0.956				0.850		0.878			0.899	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3229	0	1728	3461	1513	1725	1585	0	1708	1664	0
Flt Permitted	0.950			0.950			0.565			0.611		
Satd. Flow (perm)	1730	3229	0	1713	3461	1449	1017	1585	0	1082	1664	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52				108		188			47	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	8		9	9		8	8		15	15		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	1%	1%	2%	2%	0%	3%	1%	1%	0%	0%
Adj. Flow (vph)	36	570	235	200	686	62	229	45	193	99	23	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	805	0	200	686	62	229	238	0	99	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	

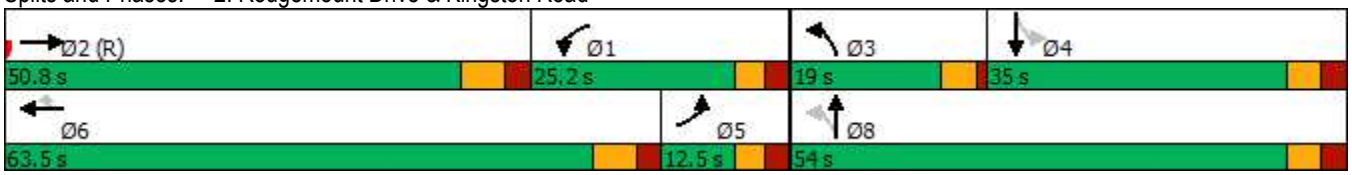


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	35.0		35.0	35.0	
Total Split (s)	12.5	50.8		25.2	63.5	63.5	19.0	54.0		35.0	35.0	
Total Split (%)	9.6%	39.1%		19.4%	48.8%	48.8%	14.6%	41.5%		26.9%	26.9%	
Maximum Green (s)	7.1	44.2		19.8	56.9	56.9	14.5	48.0		29.0	29.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0	16.0		22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	6.7	57.3		18.2	73.4	73.4	38.0	36.5		17.3	17.3	
Actuated g/C Ratio	0.05	0.44		0.14	0.56	0.56	0.29	0.28		0.13	0.13	
v/c Ratio	0.40	0.55		0.83	0.35	0.07	0.61	0.41		0.69	0.27	
Control Delay	71.4	19.4		80.8	17.8	0.6	44.0	10.6		76.5	22.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	71.4	19.4		80.8	17.8	0.6	44.0	10.6		76.5	22.0	
LOS	E	B		F	B	A	D	B		E	C	
Approach Delay		21.6			30.0			27.0			54.0	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	9.4	65.5		49.8	52.6	0.0	48.1	9.6		24.6	5.3	
Queue Length 95th (m)	m18.8	80.3		#84.3	75.8	1.2	66.0	28.4		41.2	17.8	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	95	1452		263	1954	865	378	703		241	407	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.38	0.55		0.76	0.35	0.07	0.61	0.34		0.41	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 28.2		Intersection LOS: C	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	15	404	11	40	345
Future Volume (vph)	3	15	404	11	40	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.886		0.996			
Flt Protected	0.992					0.995
Satd. Flow (prot)	1619	0	1835	0	0	1833
Flt Permitted	0.992					0.995
Satd. Flow (perm)	1619	0	1835	0	0	1833
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	16	439	12	43	375
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	451	0	0	418
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.6%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	15	404	11	40	345
Future Volume (Veh/h)	3	15	404	11	40	345
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	16	439	12	43	375
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	906	445			451	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	906	445			451	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	97			96	
cM capacity (veh/h)	295	613			1109	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	19	451	418
Volume Left	3	0	43
Volume Right	16	12	0
cSH	524	1700	1109
Volume to Capacity	0.04	0.27	0.04
Queue Length 95th (m)	0.9	0.0	0.9
Control Delay (s)	12.1	0.0	1.2
Lane LOS	B		A
Approach Delay (s)	12.1	0.0	1.2
Approach LOS	B		

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization		55.6%	ICU Level of Service B
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	804	2	0	871	0	17
Future Volume (vph)	804	2	0	871	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3466	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3466	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	874	2	0	947	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	876	0	0	947	0	18
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	804	2	0	871	0	17
Future Volume (Veh/h)	804	2	0	871	0	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	874	2	0	947	0	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91					
pX, platoon unblocked			0.84		0.84	0.84
vC, conflicting volume			876		1348	438
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			458		1024	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			918		193	906

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	583	293	474	474	18
Volume Left	0	0	0	0	0
Volume Right	0	2	0	0	18
cSH	1700	1700	1700	1700	906
Volume to Capacity	0.34	0.17	0.28	0.28	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.5
Control Delay (s)	0.0	0.0	0.0	0.0	9.1
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.1
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	828	26	0	903	0	19
Future Volume (vph)	828	26	0	903	0	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Storage Length (m)		0.0	25.0		0.0	0.0
Storage Lanes		0	0		0	1
Taper Length (m)			25.0		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.995					0.865
Flt Protected						
Satd. Flow (prot)	3450	0	0	3500	0	1540
Flt Permitted						
Satd. Flow (perm)	3450	0	0	3500	0	1540
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	900	28	0	982	0	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	928	0	0	982	0	21
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

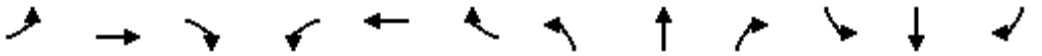
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.7%		ICU Level of Service A	
Analysis Period (min) 15			



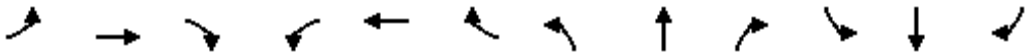
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	828	26	0	903	0	19
Future Volume (Veh/h)	828	26	0	903	0	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	900	28	0	982	0	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	233					
pX, platoon unblocked			0.87		0.87	0.87
vC, conflicting volume			928		1405	464
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			615		1164	81
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	97
cM capacity (veh/h)			834		163	836

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	600	328	491	491	21
Volume Left	0	0	0	0	0
Volume Right	0	28	0	0	21
cSH	1700	1700	1700	1700	836
Volume to Capacity	0.35	0.19	0.29	0.29	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.6
Control Delay (s)	0.0	0.0	0.0	0.0	9.4
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.4
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	673	1175	1	1	659	220	0	2	0	177	1	475
Future Volume (vph)	673	1175	1	1	659	220	0	2	0	177	1	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor	1.00	1.00		1.00		0.98					0.99	
Frt						0.850						0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1708	3534	0	1745	3495	1581	0	1879	0	0	1773	2756
Flt Permitted	0.189			0.217							0.727	
Satd. Flow (perm)	339	3534	0	398	3495	1548	0	1879	0	0	1343	2756
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						176						516
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	6		4	4		6			5	5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	732	1277	1	1	716	239	0	2	0	192	1	516
Shared Lane Traffic (%)												
Lane Group Flow (vph)	732	1278	0	1	716	239	0	2	0	0	193	516
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

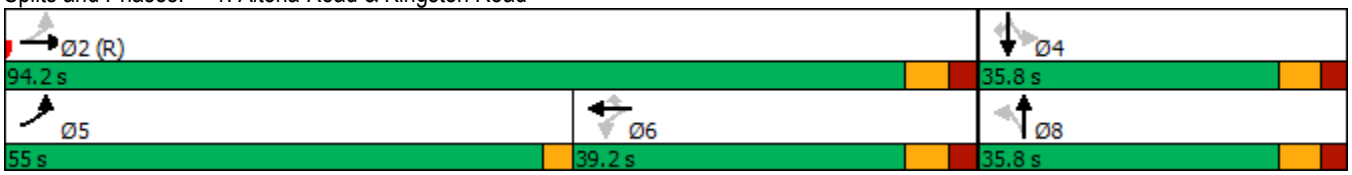


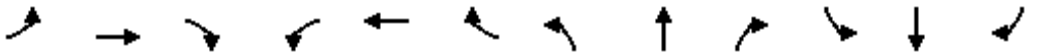
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	35.7	35.7		35.7	35.7	35.7
Total Split (s)	55.0	94.2		39.2	39.2	39.2	35.8	35.8		35.8	35.8	35.8
Total Split (%)	42.3%	72.5%		30.2%	30.2%	30.2%	27.5%	27.5%		27.5%	27.5%	27.5%
Maximum Green (s)	52.0	87.0		32.0	32.0	32.0	29.1	29.1		29.1	29.1	29.1
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		18.0		18.0	18.0	18.0	22.0	22.0		22.0	22.0	22.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	96.9	92.7		37.4	37.4	37.4		23.4			23.4	23.4
Actuated g/C Ratio	0.75	0.71		0.29	0.29	0.29		0.18			0.18	0.18
v/c Ratio	0.91	0.51		0.01	0.71	0.42		0.01			0.80	0.56
Control Delay	41.0	9.9		40.0	51.8	23.1		40.0			73.8	6.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	41.0	9.9		40.0	51.8	23.1		40.0			73.8	6.0
LOS	D	A		D	D	C		D			E	A
Approach Delay		21.2			44.6			40.0			24.4	
Approach LOS		C			D			D			C	
Queue Length 50th (m)	133.8	72.6		0.2	101.5	26.5		0.4			47.2	0.0
Queue Length 95th (m)	#226.1	98.6		m0.5	m117.4	m46.6		2.6			71.5	15.0
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0			85.0		50.0						
Base Capacity (vph)	817	2519		114	1005	570		420			300	1017
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	0.90	0.51		0.01	0.71	0.42		0.00			0.64	0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 27.9		Intersection LOS: C	
Intersection Capacity Utilization 89.6%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

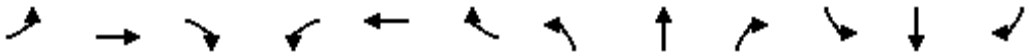
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Altona Road & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1018	278	172	675	69	238	64	134	80	36	44
Future Volume (vph)	60	1018	278	172	675	69	238	64	134	80	36	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		1.00		0.92	0.99	0.98		0.99	0.99	
Frt		0.968				0.850		0.899			0.917	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3320	0	1745	3461	1543	1708	1634	0	1708	1674	0
Flt Permitted	0.950			0.950			0.544			0.623		
Satd. Flow (perm)	1709	3320	0	1739	3461	1427	970	1634	0	1106	1674	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35				108		85			44	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	20		8	8		20	8		13	13		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%	1%	0%	2%	1%	0%	3%
Adj. Flow (vph)	65	1107	302	187	734	75	259	70	146	87	39	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	1409	0	187	734	75	259	216	0	87	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	

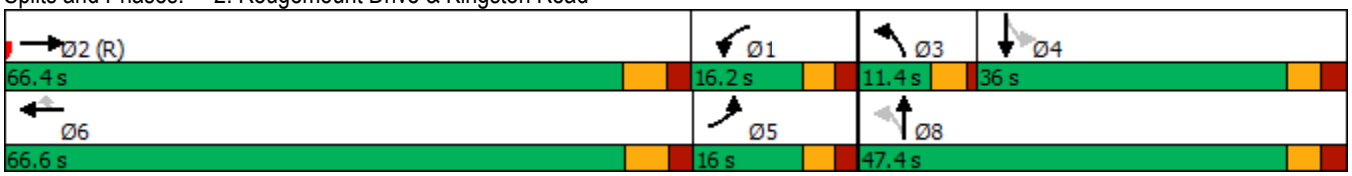


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	36.0		36.0	36.0	
Total Split (s)	16.0	66.4		16.2	66.6	66.6	11.4	47.4		36.0	36.0	
Total Split (%)	12.3%	51.1%		12.5%	51.2%	51.2%	8.8%	36.5%		27.7%	27.7%	
Maximum Green (s)	10.6	59.8		10.8	60.0	60.0	6.9	41.4		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0	16.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	9.7	74.2		10.8	77.6	77.6	28.5	27.0		15.6	15.6	
Actuated g/C Ratio	0.07	0.57		0.08	0.60	0.60	0.22	0.21		0.12	0.12	
v/c Ratio	0.50	0.74		1.30	0.36	0.08	1.03	0.53		0.65	0.36	
Control Delay	62.9	16.9		221.7	15.6	1.2	112.0	31.2		75.9	30.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	62.9	16.9		221.7	15.6	1.2	112.0	31.2		75.9	30.8	
LOS	E	B		F	B	A	F	C		E	C	
Approach Delay		18.9			53.2			75.3			53.4	
Approach LOS		B			D			E			D	
Queue Length 50th (m)	16.3	67.8		~61.0	51.3	0.0	~63.7	29.7		21.6	10.1	
Queue Length 95th (m)	m30.8	74.3		#107.8	73.8	3.3	#100.8	50.9		37.3	24.5	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	142	1908		144	2064	894	252	578		255	420	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.46	0.74		1.30	0.36	0.08	1.03	0.37		0.34	0.21	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.30			
Intersection Signal Delay: 40.4		Intersection LOS: D	
Intersection Capacity Utilization 90.3%		ICU Level of Service E	
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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	22	41	358	14	69	418
Future Volume (vph)	22	41	358	14	69	418
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912		0.995			
Flt Protected	0.983					0.993
Satd. Flow (prot)	1651	0	1833	0	0	1829
Flt Permitted	0.983					0.993
Satd. Flow (perm)	1651	0	1833	0	0	1829
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	45	389	15	75	454
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	0	404	0	0	529
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.2%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	41	358	14	69	418
Future Volume (Veh/h)	22	41	358	14	69	418
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	45	389	15	75	454
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	1000	396			404	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1000	396			404	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	93			94	
cM capacity (veh/h)	252	653			1155	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	69	404	529
Volume Left	24	0	75
Volume Right	45	15	0
cSH	420	1700	1155
Volume to Capacity	0.16	0.24	0.06
Queue Length 95th (m)	4.4	0.0	1.6
Control Delay (s)	15.2	0.0	1.8
Lane LOS	C		A
Approach Delay (s)	15.2	0.0	1.8
Approach LOS	C		

Intersection Summary			
Average Delay		2.0	
Intersection Capacity Utilization		59.2%	ICU Level of Service B
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1235	5	0	971	0	34
Future Volume (vph)	1235	5	0	971	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999					0.865
Flt Protected						
Satd. Flow (prot)	3463	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3463	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1342	5	0	1055	0	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1347	0	0	1055	0	37
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1235	5	0	971	0	34
Future Volume (Veh/h)	1235	5	0	971	0	34
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1342	5	0	1055	0	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91					
pX, platoon unblocked			0.69		0.69	0.69
vC, conflicting volume			1347		1872	674
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			607		1367	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	95
cM capacity (veh/h)			668		95	749

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	895	452	528	528	37
Volume Left	0	0	0	0	0
Volume Right	0	5	0	0	37
cSH	1700	1700	1700	1700	749
Volume to Capacity	0.53	0.27	0.31	0.31	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.2
Control Delay (s)	0.0	0.0	0.0	0.0	10.1
Lane LOS					B
Approach Delay (s)	0.0		0.0		10.1
Approach LOS					B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1271	15	0	1058	0	17
Future Volume (vph)	1271	15	0	1058	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Storage Length (m)		0.0	25.0		0.0	0.0
Storage Lanes		0	0		0	1
Taper Length (m)			25.0		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.998					0.865
Flt Protected						
Satd. Flow (prot)	3459	0	0	3500	0	1540
Flt Permitted						
Satd. Flow (perm)	3459	0	0	3500	0	1540
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1382	16	0	1150	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1398	0	0	1150	0	18
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

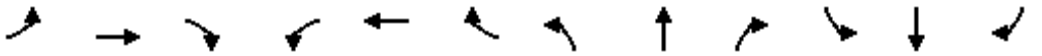
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		



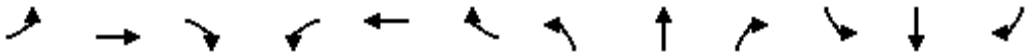
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1271	15	0	1058	0	17
Future Volume (Veh/h)	1271	15	0	1058	0	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1382	16	0	1150	0	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	233					
pX, platoon unblocked			0.71		0.71	0.71
vC, conflicting volume			1398		1965	699
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			735		1537	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			613		75	767

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	921	477	575	575	18
Volume Left	0	0	0	0	0
Volume Right	0	16	0	0	18
cSH	1700	1700	1700	1700	767
Volume to Capacity	0.54	0.28	0.34	0.34	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.5
Control Delay (s)	0.0	0.0	0.0	0.0	9.8
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.8
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	351	488	0	0	792	194	0	0	1	257	0	787
Future Volume (vph)	351	488	0	0	792	194	0	0	1	257	0	787
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor	1.00					0.97		0.98			0.99	0.98
Frt						0.850		0.865				0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1691	3466	0	1837	3461	1566	0	1586	0	0	1733	2783
Flt Permitted	0.228										0.757	
Satd. Flow (perm)	405	3466	0	1837	3461	1525	0	1586	0	0	1364	2719
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						151		343				815
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	9		9	9		9	1		7	7		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	0%	0%	2%	2%	0%	0%	0%	3%	0%	1%
Adj. Flow (vph)	382	530	0	0	861	211	0	0	1	279	0	855
Shared Lane Traffic (%)												
Lane Group Flow (vph)	382	530	0	0	861	211	0	1	0	0	279	855
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

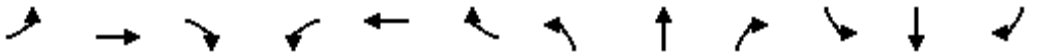


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	30.0	30.0		30.0	30.0	30.0
Total Split (s)	34.0	87.0		53.0	53.0	53.0	43.0	43.0		43.0	43.0	43.0
Total Split (%)	26.2%	66.9%		40.8%	40.8%	40.8%	33.1%	33.1%		33.1%	33.1%	33.1%
Maximum Green (s)	31.0	79.8		45.8	45.8	45.8	36.3	36.3		36.3	36.3	36.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		18.0		18.0	18.0	18.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	88.6	84.4			59.9	59.9		31.7			31.7	31.7
Actuated g/C Ratio	0.68	0.65			0.46	0.46		0.24			0.24	0.24
v/c Ratio	0.78	0.24			0.54	0.27		0.00			0.84	0.67
Control Delay	24.2	10.4			27.0	9.4		0.0			68.1	6.3
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay	24.2	10.4			27.0	9.4		0.0			68.1	6.3
LOS	C	B			C	A		A			E	A
Approach Delay		16.2			23.5						21.5	
Approach LOS		B			C						C	
Queue Length 50th (m)	39.6	29.3			100.7	20.9		0.0			66.5	4.3
Queue Length 95th (m)	73.7	39.7			134.6	44.0		0.0			#98.7	21.0
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0					50.0						
Base Capacity (vph)	582	2249			1595	784		690			380	1346
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	0.66	0.24			0.54	0.27		0.00			0.73	0.64

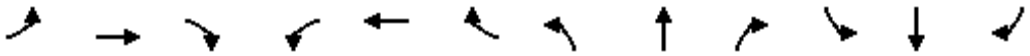
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 20.6		Intersection LOS: C	
Intersection Capacity Utilization 77.2%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Altona Road & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	547	226	191	658	60	222	43	187	96	23	44
Future Volume (vph)	35	547	226	191	658	60	222	43	187	96	23	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99		0.96	0.99	0.97		0.99	0.99	
Frt		0.956				0.850		0.878			0.901	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3229	0	1728	3461	1513	1725	1585	0	1708	1668	0
Flt Permitted	0.950			0.950			0.568			0.604		
Satd. Flow (perm)	1730	3229	0	1714	3461	1449	1022	1585	0	1070	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52				108		189			48	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	8		9	9		8	8		15	15		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	1%	1%	2%	2%	0%	3%	1%	1%	0%	0%
Adj. Flow (vph)	38	595	246	208	715	65	241	47	203	104	25	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	841	0	208	715	65	241	250	0	104	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	

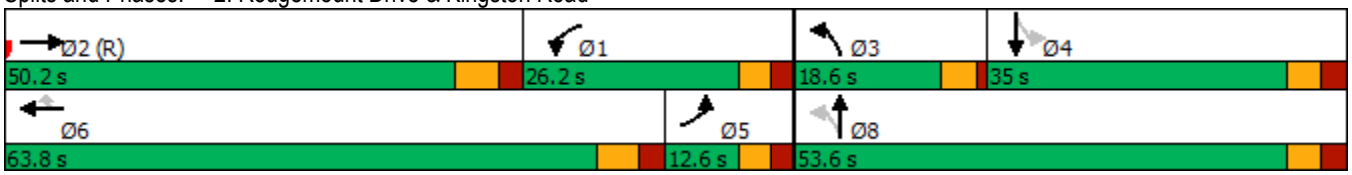


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	35.0		35.0	35.0	
Total Split (s)	12.6	50.2		26.2	63.8	63.8	18.6	53.6		35.0	35.0	
Total Split (%)	9.7%	38.6%		20.2%	49.1%	49.1%	14.3%	41.2%		26.9%	26.9%	
Maximum Green (s)	7.2	43.6		20.8	57.2	57.2	14.1	47.6		29.0	29.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0	16.0		22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	6.8	55.9		19.4	70.7	70.7	38.1	36.6		18.0	18.0	
Actuated g/C Ratio	0.05	0.43		0.15	0.54	0.54	0.29	0.28		0.14	0.14	
v/c Ratio	0.42	0.59		0.81	0.38	0.08	0.64	0.43		0.70	0.27	
Control Delay	71.2	20.6		76.5	19.3	0.8	45.3	11.6		76.7	22.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	71.2	20.6		76.5	19.3	0.8	45.3	11.6		76.7	22.1	
LOS	E	C		E	B	A	D	B		E	C	
Approach Delay		22.8			30.2			28.2			54.2	
Approach LOS		C			C			C			D	
Queue Length 50th (m)	9.9	69.5		51.5	55.8	0.0	50.9	11.7		25.8	5.7	
Queue Length 95th (m)	m19.1	85.1		#86.1	80.3	1.9	69.0	31.0		42.7	18.3	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	96	1419		276	1883	837	376	700		238	409	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.40	0.59		0.75	0.38	0.08	0.64	0.36		0.44	0.18	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 28.9		Intersection LOS: C	
Intersection Capacity Utilization 78.5%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	15	425	11	40	362
Future Volume (vph)	3	15	425	11	40	362
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.886		0.997			
Flt Protected	0.992					0.995
Satd. Flow (prot)	1619	0	1837	0	0	1833
Flt Permitted	0.992					0.995
Satd. Flow (perm)	1619	0	1837	0	0	1833
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	16	462	12	43	393
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	474	0	0	436
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.6%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	15	425	11	40	362
Future Volume (Veh/h)	3	15	425	11	40	362
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	16	462	12	43	393
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	947	468			474	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	947	468			474	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	97			96	
cM capacity (veh/h)	278	595			1088	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	19	474	436
Volume Left	3	0	43
Volume Right	16	12	0
cSH	504	1700	1088
Volume to Capacity	0.04	0.28	0.04
Queue Length 95th (m)	0.9	0.0	0.9
Control Delay (s)	12.4	0.0	1.2
Lane LOS	B		A
Approach Delay (s)	12.4	0.0	1.2
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	840	2	0	909	0	17
Future Volume (vph)	840	2	0	909	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3466	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3466	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	913	2	0	988	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	915	0	0	988	0	18
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	840	2	0	909	0	17
Future Volume (Veh/h)	840	2	0	909	0	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	913	2	0	988	0	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91					
pX, platoon unblocked			0.82		0.82	0.82
vC, conflicting volume			915		1408	458
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			469		1067	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			897		179	893

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	609	306	494	494	18
Volume Left	0	0	0	0	0
Volume Right	0	2	0	0	18
cSH	1700	1700	1700	1700	893
Volume to Capacity	0.36	0.18	0.29	0.29	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.5
Control Delay (s)	0.0	0.0	0.0	0.0	9.1
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.1
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	866	26	0	942	0	21
Future Volume (vph)	866	26	0	942	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996					0.865
Flt Protected						
Satd. Flow (prot)	3453	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3453	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	941	28	0	1024	0	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	969	0	0	1024	0	23
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

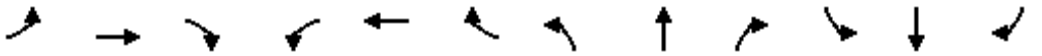
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.8%		ICU Level of Service A	
Analysis Period (min) 15			



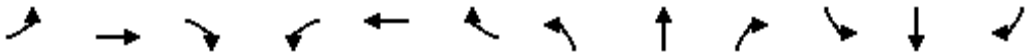
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	866	26	0	942	0	21
Future Volume (Veh/h)	866	26	0	942	0	21
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	941	28	0	1024	0	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	233					
pX, platoon unblocked			0.86		0.86	0.86
vC, conflicting volume			969		1467	484
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			630		1211	64
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	97
cM capacity (veh/h)			813		150	845

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	627	342	512	512	23
Volume Left	0	0	0	0	0
Volume Right	0	28	0	0	23
cSH	1700	1700	1700	1700	845
Volume to Capacity	0.37	0.20	0.30	0.30	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.6
Control Delay (s)	0.0	0.0	0.0	0.0	9.4
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.4
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	707	1225	1	1	691	231	0	2	0	186	1	499
Future Volume (vph)	707	1225	1	1	691	231	0	2	0	186	1	499
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor	1.00	1.00		1.00		0.98					0.99	
Frt						0.850						0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1708	3534	0	1745	3495	1581	0	1879	0	0	1773	2756
Flt Permitted	0.130			0.205							0.727	
Satd. Flow (perm)	233	3534	0	376	3495	1548	0	1879	0	0	1343	2756
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						177						542
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	6		4	4		6			5	5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	768	1332	1	1	751	251	0	2	0	202	1	542
Shared Lane Traffic (%)												
Lane Group Flow (vph)	768	1333	0	1	751	251	0	2	0	0	203	542
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

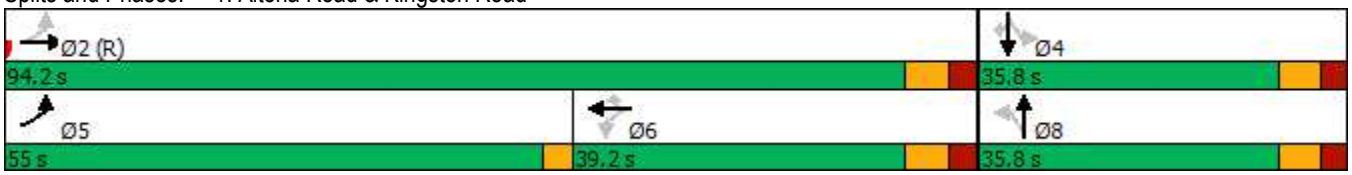


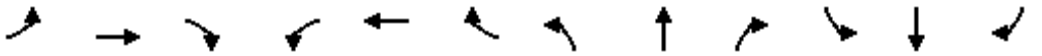
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	35.7	35.7		35.7	35.7	35.7
Total Split (s)	55.0	94.2		39.2	39.2	39.2	35.8	35.8		35.8	35.8	35.8
Total Split (%)	42.3%	72.5%		30.2%	30.2%	30.2%	27.5%	27.5%		27.5%	27.5%	27.5%
Maximum Green (s)	52.0	87.0		32.0	32.0	32.0	29.1	29.1		29.1	29.1	29.1
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		18.0		18.0	18.0	18.0	22.0	22.0		22.0	22.0	22.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	96.0	91.8		32.8	32.8	32.8		24.3			24.3	24.3
Actuated g/C Ratio	0.74	0.71		0.25	0.25	0.25		0.19			0.19	0.19
v/c Ratio	0.95	0.53		0.01	0.85	0.48		0.01			0.81	0.57
Control Delay	51.0	10.6		43.0	60.3	24.7		39.5			74.0	5.8
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	51.0	10.6		43.0	60.3	24.7		39.5			74.0	5.8
LOS	D	B		D	E	C		D			E	A
Approach Delay		25.3			51.4			39.5			24.4	
Approach LOS		C			D			D			C	
Queue Length 50th (m)	166.8	79.7		0.3	107.6	29.5		0.4			49.6	0.0
Queue Length 95th (m)	#264.2	105.2		m0.5	m122.3	m50.3		2.6			75.1	15.2
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0			85.0		50.0						
Base Capacity (vph)	807	2495		94	880	522		420			300	1037
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	0.95	0.53		0.01	0.85	0.48		0.00			0.68	0.52

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 32.0		Intersection LOS: C	
Intersection Capacity Utilization 91.9%		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.			

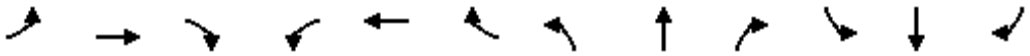
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Altona Road & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	1061	291	179	709	73	248	67	140	84	38	46
Future Volume (vph)	63	1061	291	179	709	73	248	67	140	84	38	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		1.00		0.92	0.99	0.98		0.99	0.99	
Frt		0.968				0.850		0.899			0.918	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3319	0	1745	3461	1543	1708	1634	0	1708	1676	0
Flt Permitted	0.950			0.950			0.544			0.618		
Satd. Flow (perm)	1711	3319	0	1740	3461	1427	970	1634	0	1097	1676	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35				108		85			44	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	20		8	8		20	8		13	13		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%	1%	0%	2%	1%	0%	3%
Adj. Flow (vph)	68	1153	316	195	771	79	270	73	152	91	41	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	1469	0	195	771	79	270	225	0	91	91	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	

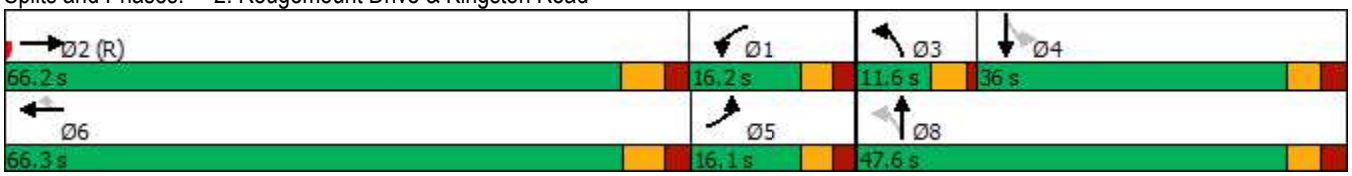


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	36.0		36.0	36.0	
Total Split (s)	16.1	66.2		16.2	66.3	66.3	11.6	47.6		36.0	36.0	
Total Split (%)	12.4%	50.9%		12.5%	51.0%	51.0%	8.9%	36.6%		27.7%	27.7%	
Maximum Green (s)	10.7	59.6		10.8	59.7	59.7	7.1	41.6		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0	16.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	9.8	73.4		10.8	76.7	76.7	29.3	27.8		16.2	16.2	
Actuated g/C Ratio	0.08	0.56		0.08	0.59	0.59	0.23	0.21		0.12	0.12	
v/c Ratio	0.52	0.78		1.35	0.38	0.09	1.05	0.54		0.67	0.37	
Control Delay	62.9	18.1		241.8	16.3	1.5	115.2	31.8		76.2	31.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	62.9	18.1		241.8	16.3	1.5	115.2	31.8		76.2	31.2	
LOS	E	B		F	B	A	F	C		E	C	
Approach Delay		20.1			57.3			77.3			53.8	
Approach LOS		C			E			E			D	
Queue Length 50th (m)	17.1	72.3		~65.2	55.6	0.0	~67.5	31.8		22.6	11.0	
Queue Length 95th (m)	m31.4	78.5		#112.6	79.6	4.0	#105.7	53.4		38.8	25.8	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	143	1889		144	2043	886	258	580		253	420	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.48	0.78		1.35	0.38	0.09	1.05	0.39		0.36	0.22	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.35			
Intersection Signal Delay: 42.6		Intersection LOS: D	
Intersection Capacity Utilization 92.6%		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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	22	41	376	14	69	439
Future Volume (vph)	22	41	376	14	69	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912		0.995			
Flt Protected	0.983					0.993
Satd. Flow (prot)	1651	0	1833	0	0	1829
Flt Permitted	0.983					0.993
Satd. Flow (perm)	1651	0	1833	0	0	1829
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	45	409	15	75	477
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	0	424	0	0	552
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.3%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	41	376	14	69	439
Future Volume (Veh/h)	22	41	376	14	69	439
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	45	409	15	75	477
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	1044	416			424	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1044	416			424	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	93			93	
cM capacity (veh/h)	237	636			1135	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	69	424	552
Volume Left	24	0	75
Volume Right	45	15	0
cSH	401	1700	1135
Volume to Capacity	0.17	0.25	0.07
Queue Length 95th (m)	4.7	0.0	1.6
Control Delay (s)	15.8	0.0	1.8
Lane LOS	C		A
Approach Delay (s)	15.8	0.0	1.8
Approach LOS	C		

Intersection Summary			
Average Delay		2.0	
Intersection Capacity Utilization		61.3%	ICU Level of Service B
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1289	5	0	1018	0	34
Future Volume (vph)	1289	5	0	1018	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999					0.865
Flt Protected						
Satd. Flow (prot)	3463	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3463	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1401	5	0	1107	0	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1406	0	0	1107	0	37
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1289	5	0	1018	0	34
Future Volume (Veh/h)	1289	5	0	1018	0	34
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1401	5	0	1107	0	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91					
pX, platoon unblocked			0.66		0.66	0.66
vC, conflicting volume			1406		1957	703
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			587		1421	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	95
cM capacity (veh/h)			650		84	716

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	934	472	554	554	37
Volume Left	0	0	0	0	0
Volume Right	0	5	0	0	37
cSH	1700	1700	1700	1700	716
Volume to Capacity	0.55	0.28	0.33	0.33	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.2
Control Delay (s)	0.0	0.0	0.0	0.0	10.3
Lane LOS					B
Approach Delay (s)	0.0		0.0		10.3
Approach LOS					B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1325	17	0	1109	0	18
Future Volume (vph)	1325	17	0	1109	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.998					0.865
Flt Protected						
Satd. Flow (prot)	3459	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3459	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1440	18	0	1205	0	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1458	0	0	1205	0	20
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

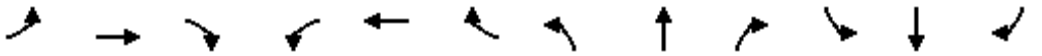
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		



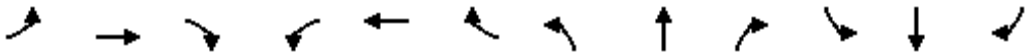
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1325	17	0	1109	0	18
Future Volume (Veh/h)	1325	17	0	1109	0	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1440	18	0	1205	0	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	233					
pX, platoon unblocked			0.68		0.68	0.68
vC, conflicting volume			1458		2052	729
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			723		1599	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	97
cM capacity (veh/h)			593		66	734

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	960	498	602	602	20
Volume Left	0	0	0	0	0
Volume Right	0	18	0	0	20
cSH	1700	1700	1700	1700	734
Volume to Capacity	0.56	0.29	0.35	0.35	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.6
Control Delay (s)	0.0	0.0	0.0	0.0	10.0
Lane LOS					B
Approach Delay (s)	0.0		0.0		10.0
Approach LOS					B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	311	450	0	0	765	187	0	0	1	235	0	699
Future Volume (vph)	311	450	0	0	765	187	0	0	1	235	0	699
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor	1.00					0.97		0.98			0.99	0.98
Frt						0.850		0.865				0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1691	3466	0	1837	3461	1566	0	1586	0	0	1733	2783
Flt Permitted	0.254										0.757	
Satd. Flow (perm)	451	3466	0	1837	3461	1525	0	1586	0	0	1364	2719
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						148		365				760
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	9		9	9		9	1		7	7		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	0%	0%	2%	2%	0%	0%	0%	3%	0%	1%
Adj. Flow (vph)	338	489	0	0	832	203	0	0	1	255	0	760
Shared Lane Traffic (%)												
Lane Group Flow (vph)	338	489	0	0	832	203	0	1	0	0	255	760
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

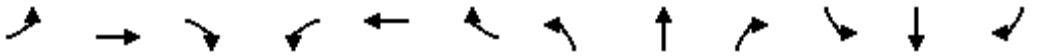


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	30.0	30.0		30.0	30.0	30.0
Total Split (s)	33.0	85.0		52.0	52.0	52.0	45.0	45.0		45.0	45.0	45.0
Total Split (%)	25.4%	65.4%		40.0%	40.0%	40.0%	34.6%	34.6%		34.6%	34.6%	34.6%
Maximum Green (s)	30.0	77.8		44.8	44.8	44.8	38.3	38.3		38.3	38.3	38.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		18.0		18.0	18.0	18.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	89.7	85.5			64.4	64.4		30.6			30.6	30.6
Actuated g/C Ratio	0.69	0.66			0.50	0.50		0.24			0.24	0.24
v/c Ratio	0.70	0.21			0.49	0.24		0.00			0.80	0.62
Control Delay	17.3	9.9			23.5	7.7		0.0			64.3	4.9
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay	17.3	9.9			23.5	7.7		0.0			64.3	4.9
LOS	B	A			C	A		A			E	A
Approach Delay		12.9			20.4						19.8	
Approach LOS		B			C						B	
Queue Length 50th (m)	31.2	24.7			94.0	3.8		0.0			61.5	0.0
Queue Length 95th (m)	53.9	38.1			118.8	44.7		0.0			86.5	15.0
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0					50.0						
Base Capacity (vph)	597	2280			1714	830		724			401	1337
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	0.57	0.21			0.49	0.24		0.00			0.64	0.57

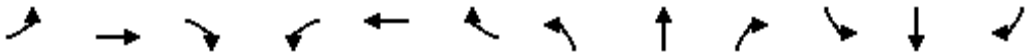
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 18.0		Intersection LOS: B	
Intersection Capacity Utilization 74.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Altona Road & Kingston Road





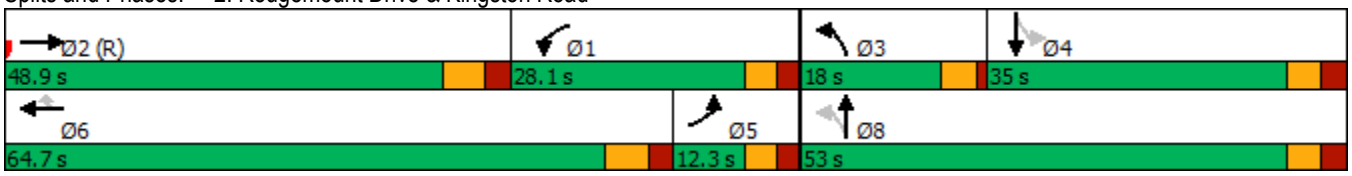
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	508	202	164	660	54	198	38	170	85	20	40
Future Volume (vph)	31	508	202	164	660	54	198	38	170	85	20	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99		0.96	0.99	0.97		0.99	0.99	
Frt		0.957				0.850		0.877			0.901	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3233	0	1728	3461	1513	1725	1583	0	1708	1668	0
Flt Permitted	0.950			0.950			0.560			0.617		
Satd. Flow (perm)	1730	3233	0	1713	3461	1449	1007	1583	0	1093	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49				108		185			43	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	8		9	9		8	8		15	15		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	1%	1%	2%	2%	0%	3%	1%	1%	0%	0%
Adj. Flow (vph)	34	552	220	178	717	59	215	41	185	92	22	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	772	0	178	717	59	215	226	0	92	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	35.0		35.0	35.0	
Total Split (s)	12.3	48.9		28.1	64.7	64.7	18.0	53.0		35.0	35.0	
Total Split (%)	9.5%	37.6%		21.6%	49.8%	49.8%	13.8%	40.8%		26.9%	26.9%	
Maximum Green (s)	6.9	42.3		22.7	58.1	58.1	13.5	47.0		29.0	29.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0	16.0		22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	6.6	58.1		19.2	75.3	75.3	36.2	34.7		16.3	16.3	
Actuated g/C Ratio	0.05	0.45		0.15	0.58	0.58	0.28	0.27		0.13	0.13	
v/c Ratio	0.39	0.52		0.70	0.36	0.07	0.60	0.41		0.67	0.26	
Control Delay	71.7	18.8		58.6	33.7	10.6	45.5	10.2		76.3	23.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	71.7	18.8		58.6	33.7	10.6	45.5	10.2		76.3	23.2	
LOS	E	B		E	C	B	D	B		E	C	
Approach Delay		21.0			36.9			27.4			54.3	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	9.0	63.5		18.9	74.6	2.6	45.8	8.0		22.9	5.1	
Queue Length 95th (m)	m18.1	77.7		47.4	95.8	7.6	63.8	26.4		39.1	17.5	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	92	1472		301	2005	885	357	690		243	405	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.37	0.52		0.59	0.36	0.07	0.60	0.33		0.38	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 30.9		Intersection LOS: C	
Intersection Capacity Utilization 74.3%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	15	381	11	40	327
Future Volume (vph)	3	15	381	11	40	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.886		0.996			
Flt Protected	0.992					0.995
Satd. Flow (prot)	1619	0	1835	0	0	1833
Flt Permitted	0.992					0.995
Satd. Flow (perm)	1619	0	1835	0	0	1833
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	16	414	12	43	355
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	426	0	0	398
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	15	381	11	40	327
Future Volume (Veh/h)	3	15	381	11	40	327
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	16	414	12	43	355
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	861	420			426	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	861	420			426	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	97			96	
cM capacity (veh/h)	314	633			1133	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	19	426	398
Volume Left	3	0	43
Volume Right	16	12	0
cSH	545	1700	1133
Volume to Capacity	0.03	0.25	0.04
Queue Length 95th (m)	0.8	0.0	0.9
Control Delay (s)	11.8	0.0	1.3
Lane LOS	B		A
Approach Delay (s)	11.8	0.0	1.3
Approach LOS	B		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	743	17	0	875	0	17
Future Volume (vph)	743	17	0	875	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.997					0.865
Flt Protected						
Satd. Flow (prot)	3456	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3456	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	808	18	0	951	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	826	0	0	951	0	18
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	743	17	0	875	0	17
Future Volume (Veh/h)	743	17	0	875	0	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	808	18	0	951	0	18
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91			142		
pX, platoon unblocked			0.85		0.87	0.85
vC, conflicting volume			826		1292	413
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			435		261	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			950		617	919

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	539	287	476	476	18
Volume Left	0	0	0	0	0
Volume Right	0	18	0	0	18
cSH	1700	1700	1700	1700	919
Volume to Capacity	0.32	0.17	0.28	0.28	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.5
Control Delay (s)	0.0	0.0	0.0	0.0	9.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.0
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	778	13	38	834	75	49
Future Volume (vph)	778	13	38	834	75	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Storage Length (m)		0.0	25.0		25.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			25.0		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3460	0	1691	3500	1691	1513
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3460	0	1691	3500	1691	1513
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	2					53
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	846	14	41	907	82	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	860	0	41	907	82	53
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.2			3.2	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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (m)	10.0		2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6		2.0	0.6	2.0	2.0
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA	Perm	Perm

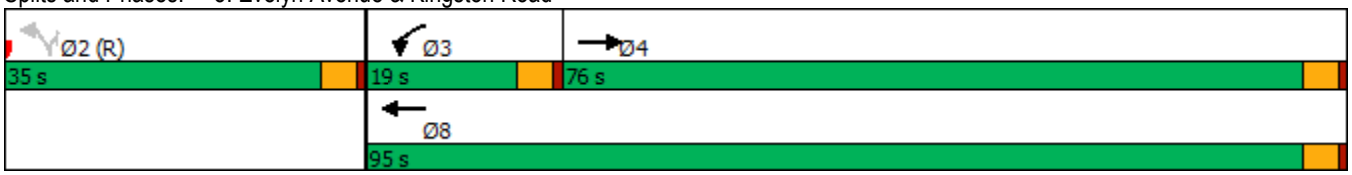


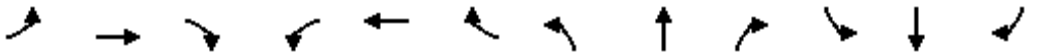
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	4		3	8		
Permitted Phases					2	2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	76.0		19.0	95.0	35.0	35.0
Total Split (%)	58.5%		14.6%	73.1%	26.9%	26.9%
Maximum Green (s)	71.5		14.5	90.5	30.5	30.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	C-Max	C-Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	41.9		8.6	53.0	68.0	68.0
Actuated g/C Ratio	0.32		0.07	0.41	0.52	0.52
v/c Ratio	0.77		0.37	0.64	0.09	0.06
Control Delay	51.3		66.6	32.1	19.2	5.8
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	51.3		66.6	32.1	19.2	5.8
LOS	D		E	C	B	A
Approach Delay	51.3			33.6	13.9	
Approach LOS	D			C	B	
Queue Length 50th (m)	119.8		10.3	94.6	10.4	0.0
Queue Length 95th (m)	129.3		21.5	95.3	23.3	7.8
Internal Link Dist (m)	118.2			97.0	39.2	
Turn Bay Length (m)			25.0		25.0	
Base Capacity (vph)	1903		188	2436	884	816
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		0.22	0.37	0.09	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 40.0		Intersection LOS: D	
Intersection Capacity Utilization 41.5%		ICU Level of Service A	

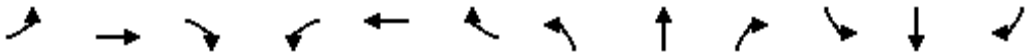
Analysis Period (min) 15

Splits and Phases: 5: Evelyn Avenue & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	627	1169	1	1	634	216	0	2	0	183	1	443
Future Volume (vph)	627	1169	1	1	634	216	0	2	0	183	1	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor	1.00	1.00		1.00		0.98					0.99	
Frt						0.850						0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1708	3534	0	1745	3495	1581	0	1879	0	0	1773	2756
Flt Permitted	0.238			0.218							0.727	
Satd. Flow (perm)	427	3534	0	400	3495	1548	0	1879	0	0	1343	2756
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						180						482
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	6		4	4		6			5	5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	682	1271	1	1	689	235	0	2	0	199	1	482
Shared Lane Traffic (%)												
Lane Group Flow (vph)	682	1272	0	1	689	235	0	2	0	0	200	482
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

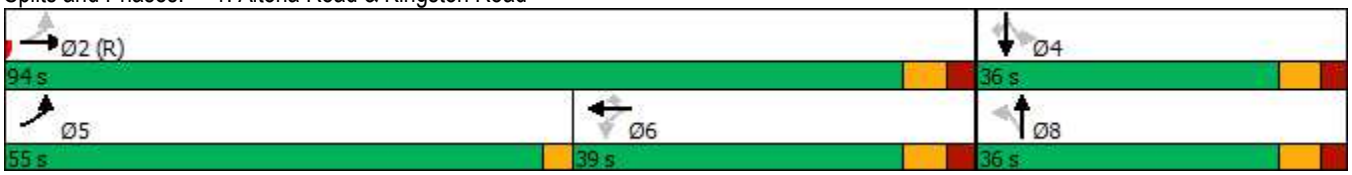


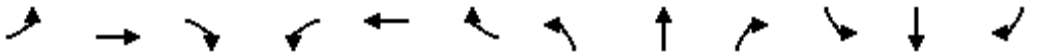
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	35.7	35.7		35.7	35.7	35.7
Total Split (s)	55.0	94.0		39.0	39.0	39.0	36.0	36.0		36.0	36.0	36.0
Total Split (%)	42.3%	72.3%		30.0%	30.0%	30.0%	27.7%	27.7%		27.7%	27.7%	27.7%
Maximum Green (s)	52.0	86.8		31.8	31.8	31.8	29.3	29.3		29.3	29.3	29.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)		18.0		18.0	18.0	18.0	22.0	22.0		22.0	22.0	22.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	96.3	92.1		42.9	42.9	42.9		24.0			24.0	24.0
Actuated g/C Ratio	0.74	0.71		0.33	0.33	0.33		0.18			0.18	0.18
v/c Ratio	0.88	0.51		0.01	0.60	0.37		0.01			0.81	0.53
Control Delay	34.0	10.1		44.0	40.3	17.2		39.5			74.4	5.9
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	34.0	10.1		44.0	40.3	17.2		39.5			74.4	5.9
LOS	C	B		D	D	B		D			E	A
Approach Delay		18.4			34.4			39.5			26.0	
Approach LOS		B			C			D			C	
Queue Length 50th (m)	109.3	73.4		0.2	71.8	23.9		0.4			49.0	0.0
Queue Length 95th (m)	#173.8	98.5		m0.4	m115.9	m38.5		2.6			74.0	14.6
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0			85.0		50.0						
Base Capacity (vph)	829	2504		131	1152	630		423			302	994
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	0.82	0.51		0.01	0.60	0.37		0.00			0.66	0.48

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 24.0		Intersection LOS: C	
Intersection Capacity Utilization 87.3%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

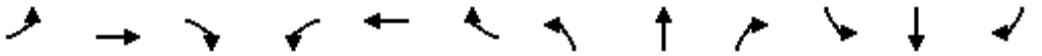
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Altona Road & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	1038	261	159	656	66	223	60	134	76	34	41
Future Volume (vph)	56	1038	261	159	656	66	223	60	134	76	34	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		1.00		0.92	0.99	0.98		0.99	0.99	
Frt		0.970				0.850		0.896			0.918	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3328	0	1745	3461	1543	1708	1628	0	1708	1676	0
Flt Permitted	0.950			0.950			0.542			0.626		
Satd. Flow (perm)	1708	3328	0	1739	3461	1427	966	1628	0	1111	1676	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				108		92			44	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	20		8	8		20	8		13	13		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%	1%	0%	2%	1%	0%	3%
Adj. Flow (vph)	61	1128	284	173	713	72	242	65	146	83	37	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	1412	0	173	713	72	242	211	0	83	82	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	

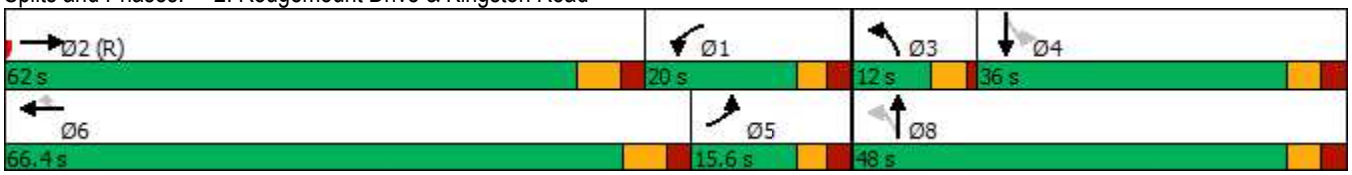


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	36.0		36.0	36.0	
Total Split (s)	15.6	62.0		20.0	66.4	66.4	12.0	48.0		36.0	36.0	
Total Split (%)	12.0%	47.7%		15.4%	51.1%	51.1%	9.2%	36.9%		27.7%	27.7%	
Maximum Green (s)	10.2	55.4		14.6	59.8	59.8	7.5	42.0		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0	16.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	9.4	70.3		14.4	77.6	77.6	28.8	27.3		15.1	15.1	
Actuated g/C Ratio	0.07	0.54		0.11	0.60	0.60	0.22	0.21		0.12	0.12	
v/c Ratio	0.49	0.78		0.90	0.35	0.08	0.94	0.51		0.64	0.35	
Control Delay	62.6	19.9		85.8	16.6	1.6	90.7	28.6		75.9	29.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	62.6	19.9		85.8	16.6	1.6	90.7	28.6		75.9	29.8	
LOS	E	B		F	B	A	F	C		E	C	
Approach Delay		21.6			28.0			61.8			53.0	
Approach LOS		C			C			E			D	
Queue Length 50th (m)	15.4	76.8		44.6	51.5	0.0	56.8	26.6		20.6	8.9	
Queue Length 95th (m)	m29.0	83.1		#86.0	71.1	3.0	#88.8	47.8		36.1	22.9	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	136	1813		195	2066	895	257	588		256	420	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.45	0.78		0.89	0.35	0.08	0.94	0.36		0.32	0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 31.3		Intersection LOS: C	
Intersection Capacity Utilization 89.4%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	22	41	342	14	69	395
Future Volume (vph)	22	41	342	14	69	395
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912		0.995			
Flt Protected	0.983					0.993
Satd. Flow (prot)	1651	0	1833	0	0	1829
Flt Permitted	0.983					0.993
Satd. Flow (perm)	1651	0	1833	0	0	1829
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	45	372	15	75	429
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	0	387	0	0	504
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	22	41	342	14	69	395
Future Volume (Veh/h)	22	41	342	14	69	395
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	45	372	15	75	429
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	958	380			387	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	958	380			387	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	93			94	
cM capacity (veh/h)	267	667			1171	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	69	387	504
Volume Left	24	0	75
Volume Right	45	15	0
cSH	439	1700	1171
Volume to Capacity	0.16	0.23	0.06
Queue Length 95th (m)	4.2	0.0	1.6
Control Delay (s)	14.7	0.0	1.8
Lane LOS	B		A
Approach Delay (s)	14.7	0.0	1.8
Approach LOS	B		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1171	74	0	933	0	37
Future Volume (vph)	1171	74	0	933	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.991					0.865
Flt Protected						
Satd. Flow (prot)	3437	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3437	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1273	80	0	1014	0	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1353	0	0	1014	0	40
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1171	74	0	933	0	37
Future Volume (Veh/h)	1171	74	0	933	0	37
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1273	80	0	1014	0	40
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91			142		
pX, platoon unblocked			0.67		0.75	0.67
vC, conflicting volume			1353		1820	676
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			532		419	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	94
cM capacity (veh/h)			688		423	724

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	849	504	507	507	40
Volume Left	0	0	0	0	0
Volume Right	0	80	0	0	40
cSH	1700	1700	1700	1700	724
Volume to Capacity	0.50	0.30	0.30	0.30	0.06
Queue Length 95th (m)	0.0	0.0	0.0	0.0	1.3
Control Delay (s)	0.0	0.0	0.0	0.0	10.3
Lane LOS					B
Approach Delay (s)	0.0		0.0		10.3
Approach LOS					B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1200	25	56	976	38	52
Future Volume (vph)	1200	25	56	976	38	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Storage Length (m)		0.0	25.0		25.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			25.0		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.997					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3456	0	1691	3500	1691	1513
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3456	0	1691	3500	1691	1513
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	3					57
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1304	27	61	1061	41	57
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1331	0	61	1061	41	57
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.2			3.2	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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (m)	10.0		2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6		2.0	0.6	2.0	2.0
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA	Perm	Perm

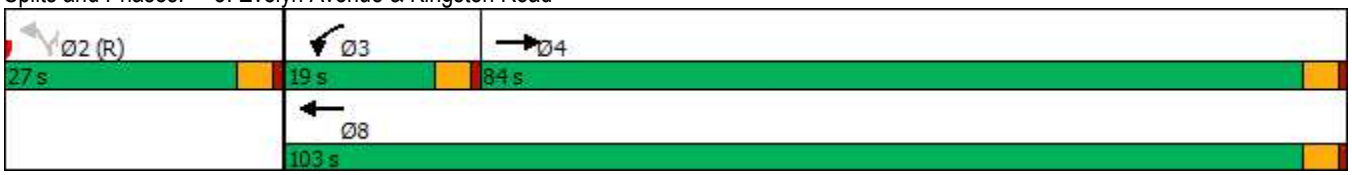


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	4		3	8		
Permitted Phases					2	2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	84.0		19.0	103.0	27.0	27.0
Total Split (%)	64.6%		14.6%	79.2%	20.8%	20.8%
Maximum Green (s)	79.5		14.5	98.5	22.5	22.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	C-Max	C-Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Dont Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	65.0		10.0	77.4	43.6	43.6
Actuated g/C Ratio	0.50		0.08	0.60	0.34	0.34
v/c Ratio	0.77		0.47	0.51	0.07	0.10
Control Delay	35.7		68.2	15.8	37.1	10.5
Queue Delay	0.2		0.0	0.0	0.0	0.0
Total Delay	36.0		68.2	15.8	37.1	10.5
LOS	D		E	B	D	B
Approach Delay	36.0			18.6	21.6	
Approach LOS	D			B	C	
Queue Length 50th (m)	178.5		15.2	74.7	7.4	0.0
Queue Length 95th (m)	185.1		28.9	61.5	18.6	11.2
Internal Link Dist (m)	118.2			97.0	39.2	
Turn Bay Length (m)			25.0		25.0	
Base Capacity (vph)	2114		188	2651	567	545
Starvation Cap Reductn	217		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.70		0.32	0.40	0.07	0.10

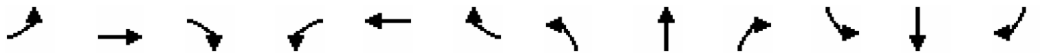
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 27.8		Intersection LOS: C	
Intersection Capacity Utilization 53.5%		ICU Level of Service A	

Analysis Period (min) 15

Splits and Phases: 5: Evelyn Avenue & Kingston Road



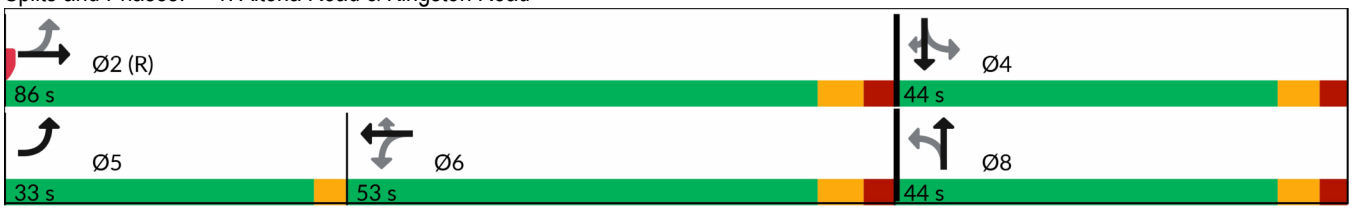
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	317	461	0	0	826	206	0	0	1	240	0	713
Future Volume (vph)	317	461	0	0	826	206	0	0	1	240	0	713
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor						0.97		0.98			0.99	0.98
Frt						0.850		0.865				0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1691	3466	0	1837	3461	1566	0	1586	0	0	1733	2783
Flt Permitted	0.221										0.757	
Satd. Flow (perm)	393	3466	0	1837	3461	1525	0	1586	0	0	1364	2719
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						153		360				775
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	9		9	9		9	1		7	7		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	0%	0%	2%	2%	0%	0%	0%	3%	0%	1%
Adj. Flow (vph)	345	501	0	0	898	224	0	0	1	261	0	775
Shared Lane Traffic (%)												
Lane Group Flow (vph)	345	501	0	0	898	224	0	1	0	0	261	775
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4



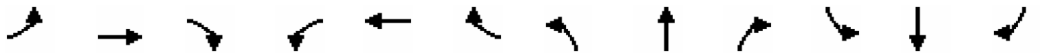
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	30.0	30.0		30.0	30.0	30.0
Total Split (s)	33.0	86.0		53.0	53.0	53.0	44.0	44.0		44.0	44.0	44.0
Total Split (%)	25.4%	66.2%		40.8%	40.8%	40.8%	33.8%	33.8%		33.8%	33.8%	33.8%
Maximum Green (s)	30.0	78.8		45.8	45.8	45.8	37.3	37.3		37.3	37.3	37.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)		18.0		18.0	18.0	18.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	89.5	85.3			62.6	62.6		30.8			30.8	30.8
Actuated g/C Ratio	0.69	0.66			0.48	0.48		0.24			0.24	0.24
v/c Ratio	0.74	0.22			0.54	0.28		0.00			0.81	0.63
Control Delay (s/veh)	20.7	10.0			26.2	9.4		0.0			65.6	4.9
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay (s/veh)	20.7	10.0			26.2	9.4		0.0			65.6	4.9
LOS	C	A			C	A		A			E	A
Approach Delay (s/veh)		14.4			22.8						20.2	
Approach LOS		B			C						C	
Queue Length 50th (m)	32.4	25.7			104.0	14.2		0.0			62.9	0.0
Queue Length 95th (m)	63.4	38.3			129.2	50.8		0.0			89.9	15.2
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0					50.0						
Base Capacity (vph)	570	2275			1667	814		711			391	1332
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	0.61	0.22			0.54	0.28		0.00			0.67	0.58

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 19.5		Intersection LOS: B	
Intersection Capacity Utilization 75.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Altona Road & Kingston Road



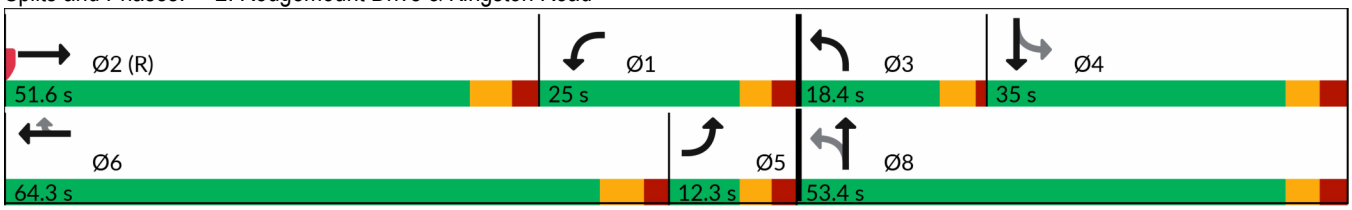
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	529	199	132	695	56	241	38	164	88	19	41
Future Volume (vph)	31	529	199	132	695	56	241	38	164	88	19	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99		0.96	0.99	0.97		0.99	0.98	
Frt		0.959				0.850		0.878			0.898	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3240	0	1728	3461	1513	1725	1585	0	1708	1661	0
Flt Permitted	0.950			0.950			0.562			0.621		
Satd. Flow (perm)	1732	3240	0	1713	3461	1449	1011	1585	0	1100	1661	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46				108		178			45	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	8		9	9		8	8		15	15		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	1%	1%	2%	2%	0%	3%	1%	1%	0%	0%
Adj. Flow (vph)	34	575	216	143	755	61	262	41	178	96	21	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	791	0	143	755	61	262	219	0	96	66	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	35.0		35.0	35.0	
Total Split (s)	12.3	51.6		25.0	64.3	64.3	18.4	53.4		35.0	35.0	
Total Split (%)	9.5%	39.7%		19.2%	49.5%	49.5%	14.2%	41.1%		26.9%	26.9%	
Maximum Green (s)	6.9	45.0		19.6	57.7	57.7	13.9	47.4		29.0	29.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Don't Walk (s)		16.0			16.0	16.0		22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	6.6	59.1		16.5	73.6	73.6	37.9	36.4		16.7	16.7	
Actuated g/C Ratio	0.05	0.45		0.13	0.57	0.57	0.29	0.28		0.13	0.13	
v/c Ratio	0.39	0.53		0.66	0.39	0.07	0.69	0.38		0.68	0.26	
Control Delay (s/veh)	71.0	18.4		58.1	33.9	10.1	48.6	10.0		76.1	22.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	71.0	18.4		58.1	33.9	10.1	48.6	10.0		76.1	22.3	
LOS	E	B		E	C	B	D	B		E	C	
Approach Delay (s/veh)		20.6			36.0			31.0			54.2	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	9.0	64.1		17.1	79.5	2.5	57.0	7.9		23.8	4.8	
Queue Length 95th (m)	m17.8	78.7		41.8	101.0	7.0	77.1	25.8		40.2	17.0	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	92	1497		260	1958	867	378	691		245	405	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.37	0.53		0.55	0.39	0.07	0.69	0.32		0.39	0.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 31.0		Intersection LOS: C	
Intersection Capacity Utilization 72.8%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	47	385	9	3	328
Future Volume (vph)	11	47	385	9	3	328
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.891		0.997			
Flt Protected	0.991					
Satd. Flow (prot)	1626	0	1837	0	0	1842
Flt Permitted	0.991					
Satd. Flow (perm)	1626	0	1837	0	0	1842
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	51	418	10	3	357
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	428	0	0	360
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	47	385	9	3	328
Future Volume (Veh/h)	11	47	385	9	3	328
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	51	418	10	3	357
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	786	423			428	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	786	423			428	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	92			100	
cM capacity (veh/h)	360	631			1131	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	63	428	360
Volume Left	12	0	3
Volume Right	51	10	0
cSH	552	1700	1131
Volume to Capacity	0.11	0.25	0.00
Queue Length 95th (m)	2.9	0.0	0.1
Control Delay (s/veh)	12.4	0.0	0.1
Lane LOS	B		A
Approach Delay (s/veh)	12.4	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay		1.0	
Intersection Capacity Utilization		31.0%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	754	23	0	881	0	12
Future Volume (vph)	754	23	0	881	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996					0.865
Flt Protected						
Satd. Flow (prot)	3453	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3453	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	820	25	0	958	0	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	845	0	0	958	0	13
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	754	23	0	881	0	12
Future Volume (Veh/h)	754	23	0	881	0	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	820	25	0	958	0	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91			142		
pX, platoon unblocked			0.84		0.88	0.84
vC, conflicting volume			845		1312	423
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			443		293	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			938		596	914

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	547	298	479	479	13
Volume Left	0	0	0	0	0
Volume Right	0	25	0	0	13
cSH	1700	1700	1700	1700	914
Volume to Capacity	0.32	0.18	0.28	0.28	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.3
Control Delay (s/veh)	0.0	0.0	0.0	0.0	9.0
Lane LOS					A
Approach Delay (s/veh)	0.0		0.0		9.0
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	781	16	67	820	96	76
Future Volume (vph)	781	16	67	820	96	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Storage Length (m)		0.0	25.0		25.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			25.0		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.997					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3456	0	1691	3500	1691	1513
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3456	0	1691	3500	1691	1513
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	2					83
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	849	17	73	891	104	83
Shared Lane Traffic (%)						
Lane Group Flow (vph)	866	0	73	891	104	83
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.2			3.2	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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (m)	10.0		2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6		2.0	0.6	2.0	2.0
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA	Perm	Perm

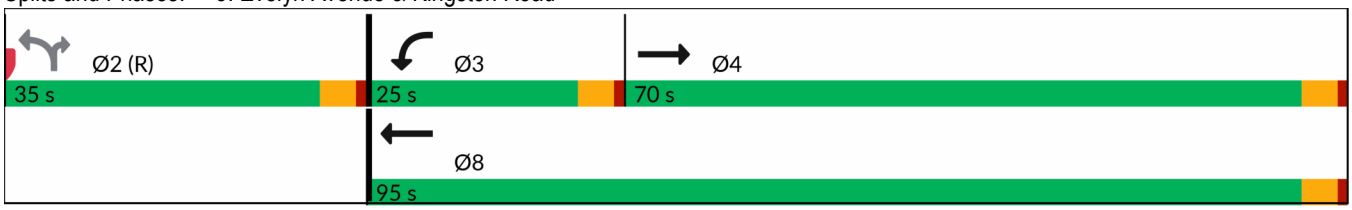


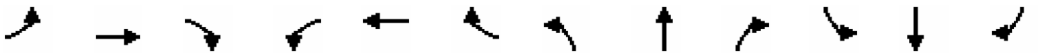
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	4		3	8		
Permitted Phases					2	2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	70.0		25.0	95.0	35.0	35.0
Total Split (%)	53.8%		19.2%	73.1%	26.9%	26.9%
Maximum Green (s)	65.5		20.5	90.5	30.5	30.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	C-Max	C-Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	41.3		11.0	54.5	66.5	66.5
Actuated g/C Ratio	0.32		0.08	0.42	0.51	0.51
v/c Ratio	0.79		0.51	0.61	0.12	0.10
Control Delay (s/veh)	52.0		68.8	30.4	20.5	5.1
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.0		68.8	30.4	20.5	5.1
LOS	D		E	C	C	A
Approach Delay (s/veh)	52.0			33.3	13.7	
Approach LOS	D			C	B	
Queue Length 50th (m)	120.0		18.2	89.7	13.9	0.0
Queue Length 95th (m)	131.0		32.9	88.7	29.5	10.1
Internal Link Dist (m)	118.2			97.0	39.2	
Turn Bay Length (m)			25.0		25.0	
Base Capacity (vph)	1742		266	2436	864	814
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		0.27	0.37	0.12	0.10

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 39.5		Intersection LOS: D	
Intersection Capacity Utilization 42.8%		ICU Level of Service A	

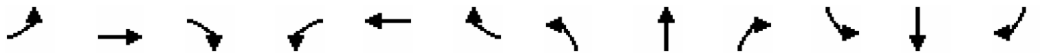
Analysis Period (min) 15

Splits and Phases: 5: Evelyn Avenue & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	640	1232	1	1	646	224	0	2	0	201	1	452
Future Volume (vph)	640	1232	1	1	646	224	0	2	0	201	1	452
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor	1.00	1.00		1.00		0.98					0.99	
Frt						0.850						0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1708	3534	0	1745	3495	1581	0	1879	0	0	1773	2756
Flt Permitted	0.214			0.204							0.727	
Satd. Flow (perm)	384	3534	0	374	3495	1548	0	1879	0	0	1343	2756
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						183						491
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	6		4	4		6			5	5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	696	1339	1	1	702	243	0	2	0	218	1	491
Shared Lane Traffic (%)												
Lane Group Flow (vph)	696	1340	0	1	702	243	0	2	0	0	219	491
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

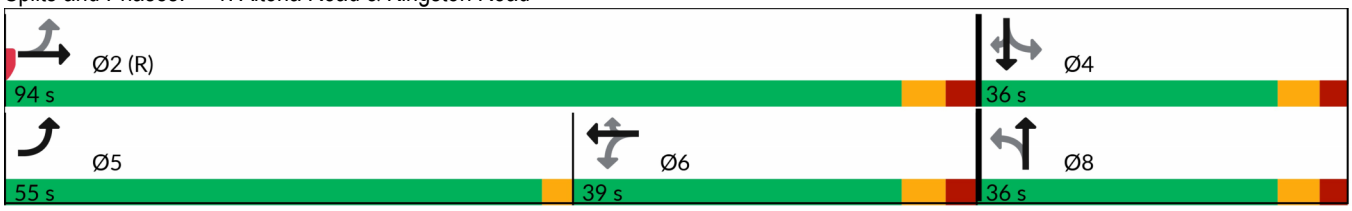


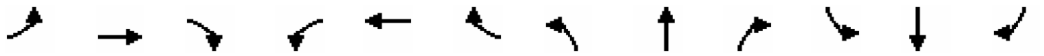
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	35.7	35.7		35.7	35.7	35.7
Total Split (s)	55.0	94.0		39.0	39.0	39.0	36.0	36.0		36.0	36.0	36.0
Total Split (%)	42.3%	72.3%		30.0%	30.0%	30.0%	27.7%	27.7%		27.7%	27.7%	27.7%
Maximum Green (s)	52.0	86.8		31.8	31.8	31.8	29.3	29.3		29.3	29.3	29.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)		18.0		18.0	18.0	18.0	22.0	22.0		22.0	22.0	22.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	95.1	90.9		39.8	39.8	39.8		25.2			25.2	25.2
Actuated g/C Ratio	0.73	0.70		0.31	0.31	0.31		0.19			0.19	0.19
v/c Ratio	0.90	0.54		0.01	0.66	0.41		0.01			0.84	0.53
Control Delay (s/veh)	38.8	11.0		44.0	42.3	17.2		39.5			76.8	5.7
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay (s/veh)	38.8	11.0		44.0	42.3	17.2		39.5			76.8	5.7
LOS	D	B		D	D	B		D			E	A
Approach Delay (s/veh)		20.5			35.8			39.5			27.6	
Approach LOS		C			D			D			C	
Queue Length 50th (m)	121.0	84.9		0.2	88.4	23.3		0.4			53.3	0.0
Queue Length 95th (m)	#199.0	106.6		m0.3	m117.5	m36.8		2.6			#85.5	14.7
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0			85.0		50.0						
Base Capacity (vph)	813	2469		114	1070	600		423			302	1001
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	0.86	0.54		0.01	0.66	0.41		0.00			0.73	0.49

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay (s/veh): 25.8		Intersection LOS: C	
Intersection Capacity Utilization 89.1%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

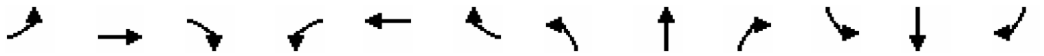
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Altona Road & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1123	257	110	682	68	220	56	117	77	32	42
Future Volume (vph)	57	1123	257	110	682	68	220	56	117	77	32	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		1.00		0.92	0.99	0.98		0.99	0.99	
Frt		0.972				0.850		0.899			0.915	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3337	0	1745	3461	1543	1708	1634	0	1708	1669	0
Flt Permitted	0.950			0.950			0.542			0.639		
Satd. Flow (perm)	1710	3337	0	1740	3461	1427	966	1634	0	1134	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				108		85			46	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	20		8	8		20	8		13	13		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%	1%	0%	2%	1%	0%	3%
Adj. Flow (vph)	62	1221	279	120	741	74	239	61	127	84	35	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	1500	0	120	741	74	239	188	0	84	81	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	36.0		36.0	36.0	
Total Split (s)	15.6	66.4		16.0	66.8	66.8	11.6	47.6		36.0	36.0	
Total Split (%)	12.0%	51.1%		12.3%	51.4%	51.4%	8.9%	36.6%		27.7%	27.7%	
Maximum Green (s)	10.2	59.8		10.6	60.2	60.2	7.1	41.6		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Don't Walk (s)		16.0			16.0	16.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	9.4	74.8		10.5	78.2	78.2	28.2	26.7		15.0	15.0	
Actuated g/C Ratio	0.07	0.58		0.08	0.60	0.60	0.22	0.21		0.12	0.12	
v/c Ratio	0.50	0.78		0.85	0.36	0.08	0.96	0.47		0.64	0.35	
Control Delay (s/veh)	62.4	17.4		91.7	14.4	0.9	94.9	27.2		75.5	28.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	62.4	17.4		91.7	14.4	0.9	94.9	27.2		75.5	28.6	
LOS	E	B		F	B	A	F	C		E	C	
Approach Delay (s/veh)		19.2			23.2			65.1			52.5	
Approach LOS		B			C			E			D	
Queue Length 50th (m)	15.6	73.1		31.0	49.2	0.2	56.2	22.7		20.9	8.2	
Queue Length 95th (m)	m28.4	79.7		#66.0	68.3	2.2	#89.3	42.5		36.3	22.2	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	136	1931		142	2082	901	250	580		261	420	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.46	0.78		0.85	0.36	0.08	0.96	0.32		0.32	0.19	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay (s/veh): 28.5		Intersection LOS: C	
Intersection Capacity Utilization 88.1%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	17	341	18	12	397
Future Volume (vph)	14	17	341	18	12	397
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.926		0.993			
Flt Protected	0.978					0.999
Satd. Flow (prot)	1668	0	1829	0	0	1840
Flt Permitted	0.978					0.999
Satd. Flow (perm)	1668	0	1829	0	0	1840
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	18	371	20	13	432
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	0	391	0	0	445
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	17	341	18	12	397
Future Volume (Veh/h)	14	17	341	18	12	397
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	18	371	20	13	432
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	839	381			391	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	839	381			391	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	97			99	
cM capacity (veh/h)	332	666			1168	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	33	391	445
Volume Left	15	0	13
Volume Right	18	20	0
cSH	457	1700	1168
Volume to Capacity	0.07	0.23	0.01
Queue Length 95th (m)	1.8	0.0	0.3
Control Delay (s/veh)	13.5	0.0	0.4
Lane LOS	B		A
Approach Delay (s/veh)	13.5	0.0	0.4
Approach LOS	B		

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		40.6%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1190	124	0	913	0	18
Future Volume (vph)	1190	124	0	913	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.986					0.865
Flt Protected						
Satd. Flow (prot)	3421	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3421	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1293	135	0	992	0	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1428	0	0	992	0	20
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1190	124	0	913	0	18
Future Volume (Veh/h)	1190	124	0	913	0	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1293	135	0	992	0	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91			142		
pX, platoon unblocked			0.66		0.73	0.66
vC, conflicting volume			1428		1857	714
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			605		511	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	97
cM capacity (veh/h)			636		360	712

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	862	566	496	496	20
Volume Left	0	0	0	0	0
Volume Right	0	135	0	0	20
cSH	1700	1700	1700	1700	712
Volume to Capacity	0.51	0.33	0.29	0.29	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.7
Control Delay (s/veh)	0.0	0.0	0.0	0.0	10.2
Lane LOS					B
Approach Delay (s/veh)	0.0		0.0		10.2
Approach LOS					B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1184	42	109	944	52	86
Future Volume (vph)	1184	42	109	944	52	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Storage Length (m)		0.0	25.0		25.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			25.0		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.995					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3450	0	1691	3500	1691	1513
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3450	0	1691	3500	1691	1513
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4					93
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1287	46	118	1026	57	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1333	0	118	1026	57	93
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.2			3.2	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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (m)	10.0		2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6		2.0	0.6	2.0	2.0
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA	Perm	Perm

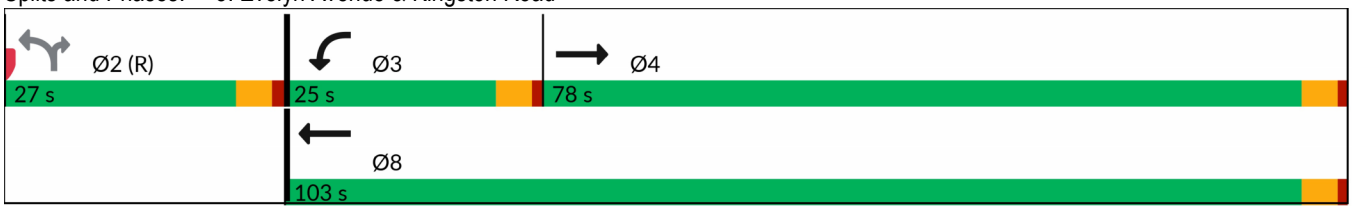


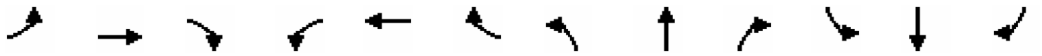
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	4		3	8		
Permitted Phases					2	2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	78.0		25.0	103.0	27.0	27.0
Total Split (%)	60.0%		19.2%	79.2%	20.8%	20.8%
Maximum Green (s)	73.5		20.5	98.5	22.5	22.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	C-Max	C-Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	62.6		14.3	81.4	39.6	39.6
Actuated g/C Ratio	0.48		0.11	0.63	0.30	0.30
v/c Ratio	0.80		0.63	0.47	0.11	0.18
Control Delay (s/veh)	39.7		69.9	13.2	38.5	9.1
Queue Delay	0.3		0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.9		69.9	13.2	38.5	9.1
LOS	D		E	B	D	A
Approach Delay (s/veh)	39.9			19.0	20.2	
Approach LOS	D			B	C	
Queue Length 50th (m)	180.3		29.4	67.8	10.6	0.0
Queue Length 95th (m)	188.1		47.4	55.4	24.5	14.2
Internal Link Dist (m)	118.2			97.0	39.2	
Turn Bay Length (m)			25.0		25.0	
Base Capacity (vph)	1952		266	2651	514	525
Starvation Cap Reductn	164		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.75		0.44	0.39	0.11	0.18

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay (s/veh): 29.7		Intersection LOS: C	
Intersection Capacity Utilization 55.5%		ICU Level of Service B	

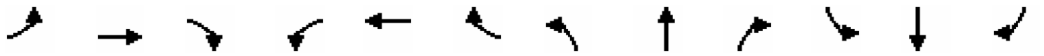
Analysis Period (min) 15

Splits and Phases: 5: Evelyn Avenue & Kingston Road





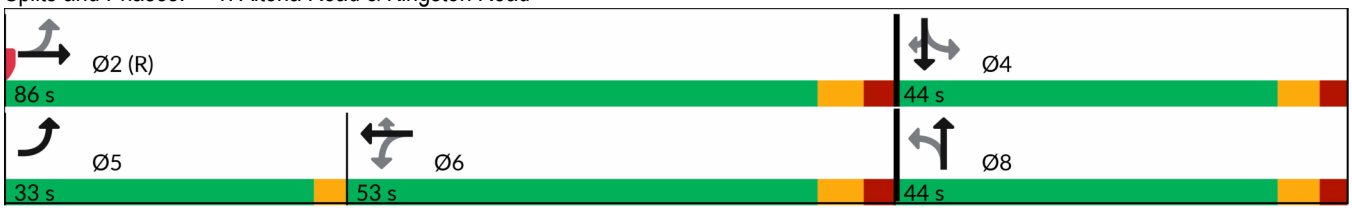
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	481	0	0	858	215	0	0	1	252	0	749
Future Volume (vph)	334	481	0	0	858	215	0	0	1	252	0	749
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor						0.97		0.98			0.99	0.98
Frt						0.850		0.865				0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1691	3466	0	1837	3461	1566	0	1586	0	0	1733	2783
Flt Permitted	0.198										0.757	
Satd. Flow (perm)	352	3466	0	1837	3461	1525	0	1586	0	0	1364	2719
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						154		343				790
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	9		9	9		9	1		7	7		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	0%	0%	2%	2%	0%	0%	0%	3%	0%	1%
Adj. Flow (vph)	363	523	0	0	933	234	0	0	1	274	0	814
Shared Lane Traffic (%)												
Lane Group Flow (vph)	363	523	0	0	933	234	0	1	0	0	274	814
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4



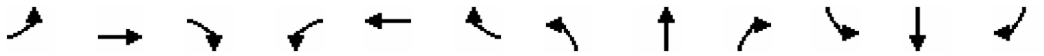
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	30.0	30.0		30.0	30.0	30.0
Total Split (s)	33.0	86.0		53.0	53.0	53.0	44.0	44.0		44.0	44.0	44.0
Total Split (%)	25.4%	66.2%		40.8%	40.8%	40.8%	33.8%	33.8%		33.8%	33.8%	33.8%
Maximum Green (s)	30.0	78.8		45.8	45.8	45.8	37.3	37.3		37.3	37.3	37.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)		18.0		18.0	18.0	18.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	88.6	84.4			59.6	59.6		31.7			31.7	31.7
Actuated g/C Ratio	0.68	0.65			0.46	0.46		0.24			0.24	0.24
v/c Ratio	0.78	0.23			0.59	0.30		0.00			0.83	0.65
Control Delay (s/veh)	26.4	10.4			28.8	10.5		0.0			66.2	5.6
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay (s/veh)	26.4	10.4			28.8	10.5		0.0			66.2	5.6
LOS	C	B			C	B		A			E	A
Approach Delay (s/veh)		17.0			25.1						20.9	
Approach LOS		B			C						C	
Queue Length 50th (m)	38.3	28.4			109.5	25.5		0.0			65.5	2.6
Queue Length 95th (m)	76.4	40.0			134.0	53.1		0.0			94.7	18.2
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0					50.0						
Base Capacity (vph)	548	2249			1586	782		699			391	1343
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	0.66	0.23			0.59	0.30		0.00			0.70	0.61

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 21.3		Intersection LOS: C	
Intersection Capacity Utilization 77.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Altona Road & Kingston Road



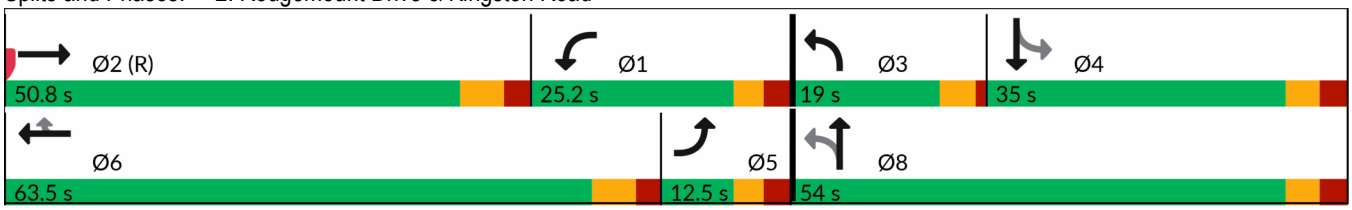
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	552	209	138	722	58	250	40	172	92	20	43
Future Volume (vph)	33	552	209	138	722	58	250	40	172	92	20	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99		0.96	0.99	0.97		0.99	0.98	
Frt		0.959				0.850		0.878			0.898	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3240	0	1728	3461	1513	1725	1585	0	1708	1661	0
Flt Permitted	0.950			0.950			0.565			0.615		
Satd. Flow (perm)	1732	3240	0	1714	3461	1449	1017	1585	0	1089	1661	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46				108		187			47	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	8		9	9		8	8		15	15		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	1%	1%	2%	2%	0%	3%	1%	1%	0%	0%
Adj. Flow (vph)	36	600	227	150	785	63	272	43	187	100	22	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	827	0	150	785	63	272	230	0	100	69	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	35.0		35.0	35.0	
Total Split (s)	12.5	50.8		25.2	63.5	63.5	19.0	54.0		35.0	35.0	
Total Split (%)	9.6%	39.1%		19.4%	48.8%	48.8%	14.6%	41.5%		26.9%	26.9%	
Maximum Green (s)	7.1	44.2		19.8	56.9	56.9	14.5	48.0		29.0	29.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Don't Walk (s)		16.0			16.0	16.0		22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	6.7	57.7		16.8	72.4	72.4	39.0	37.5		17.3	17.3	
Actuated g/C Ratio	0.05	0.44		0.13	0.56	0.56	0.30	0.29		0.13	0.13	
v/c Ratio	0.40	0.57		0.67	0.41	0.07	0.70	0.39		0.69	0.26	
Control Delay (s/veh)	70.8	19.6		59.7	34.9	10.3	47.7	9.7		76.6	21.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	70.8	19.6		59.7	34.9	10.3	47.7	9.7		76.6	21.8	
LOS	E	B		E	C	B	D	A		E	C	
Approach Delay (s/veh)		21.7			37.1			30.3			54.3	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	9.4	67.8		19.3	83.5	2.6	58.8	8.2		24.8	5.0	
Queue Length 95th (m)	m18.3	82.8		45.0	105.3	7.2	79.1	26.4		41.5	17.6	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	95	1463		263	1926	854	391	703		242	407	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.38	0.57		0.57	0.41	0.07	0.70	0.33		0.41	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 31.6		Intersection LOS: C	
Intersection Capacity Utilization 74.5%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	47	404	9	3	345
Future Volume (vph)	11	47	404	9	3	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.891		0.997			
Flt Protected	0.991					
Satd. Flow (prot)	1626	0	1837	0	0	1842
Flt Permitted	0.991					
Satd. Flow (perm)	1626	0	1837	0	0	1842
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	51	439	10	3	375
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	449	0	0	378
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	47	404	9	3	345
Future Volume (Veh/h)	11	47	404	9	3	345
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	51	439	10	3	375
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	825	444			449	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	825	444			449	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	92			100	
cM capacity (veh/h)	341	614			1111	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	63	449	378
Volume Left	12	0	3
Volume Right	51	10	0
cSH	533	1700	1111
Volume to Capacity	0.12	0.26	0.00
Queue Length 95th (m)	3.0	0.0	0.1
Control Delay (s/veh)	12.7	0.0	0.1
Lane LOS	B		A
Approach Delay (s/veh)	12.7	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization		32.0%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	789	23	0	917	0	12
Future Volume (vph)	789	23	0	917	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996					0.865
Flt Protected						
Satd. Flow (prot)	3453	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3453	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	858	25	0	997	0	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	883	0	0	997	0	13
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	789	23	0	917	0	12
Future Volume (Veh/h)	789	23	0	917	0	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	858	25	0	997	0	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91			142		
pX, platoon unblocked			0.83		0.89	0.83
vC, conflicting volume			883		1369	442
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			443		282	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			922		606	898

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	572	311	499	499	13
Volume Left	0	0	0	0	0
Volume Right	0	25	0	0	13
cSH	1700	1700	1700	1700	898
Volume to Capacity	0.34	0.18	0.29	0.29	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.3
Control Delay (s/veh)	0.0	0.0	0.0	0.0	9.1
Lane LOS					A
Approach Delay (s/veh)	0.0		0.0		9.1
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	817	16	67	857	96	76
Future Volume (vph)	817	16	67	857	96	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Storage Length (m)		0.0	25.0		25.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			25.0		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.997					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3456	0	1691	3500	1691	1513
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3456	0	1691	3500	1691	1513
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	2					83
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	888	17	73	932	104	83
Shared Lane Traffic (%)						
Lane Group Flow (vph)	905	0	73	932	104	83
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.2			3.2	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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (m)	10.0		2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6		2.0	0.6	2.0	2.0
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA	Perm	Perm

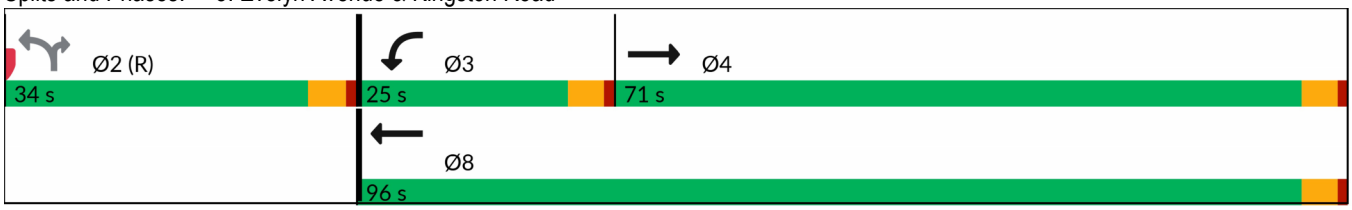


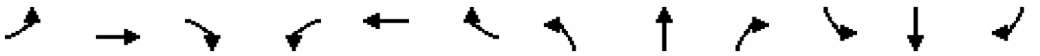
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	4		3	8		
Permitted Phases					2	2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	71.0		25.0	96.0	34.0	34.0
Total Split (%)	54.6%		19.2%	73.8%	26.2%	26.2%
Maximum Green (s)	66.5		20.5	91.5	29.5	29.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	C-Max	C-Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	43.2		11.0	56.4	64.6	64.6
Actuated g/C Ratio	0.33		0.08	0.43	0.50	0.50
v/c Ratio	0.79		0.51	0.61	0.12	0.10
Control Delay (s/veh)	50.4		68.8	29.4	21.7	5.4
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.4		68.8	29.4	21.7	5.4
LOS	D		E	C	C	A
Approach Delay (s/veh)	50.4			32.3	14.4	
Approach LOS	D			C	B	
Queue Length 50th (m)	123.4		18.2	92.7	14.3	0.0
Queue Length 95th (m)	136.4		32.9	90.6	30.3	10.3
Internal Link Dist (m)	118.2			97.0	39.2	
Turn Bay Length (m)			25.0		25.0	
Base Capacity (vph)	1768		266	2463	840	793
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	0.51		0.27	0.38	0.12	0.10

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 38.5		Intersection LOS: D	
Intersection Capacity Utilization 43.8%		ICU Level of Service A	

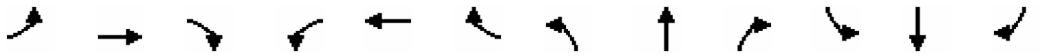
Analysis Period (min) 15

Splits and Phases: 5: Evelyn Avenue & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	673	1279	1	1	677	234	0	2	0	210	1	475
Future Volume (vph)	673	1279	1	1	677	234	0	2	0	210	1	475
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor	1.00	1.00		1.00		0.98					0.99	
Frt						0.850						0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1708	3534	0	1745	3495	1581	0	1879	0	0	1773	2756
Flt Permitted	0.163			0.194							0.727	
Satd. Flow (perm)	292	3534	0	356	3495	1548	0	1879	0	0	1343	2756
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						183						516
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	6		4	4		6			5	5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	732	1390	1	1	736	254	0	2	0	228	1	516
Shared Lane Traffic (%)												
Lane Group Flow (vph)	732	1391	0	1	736	254	0	2	0	0	229	516
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

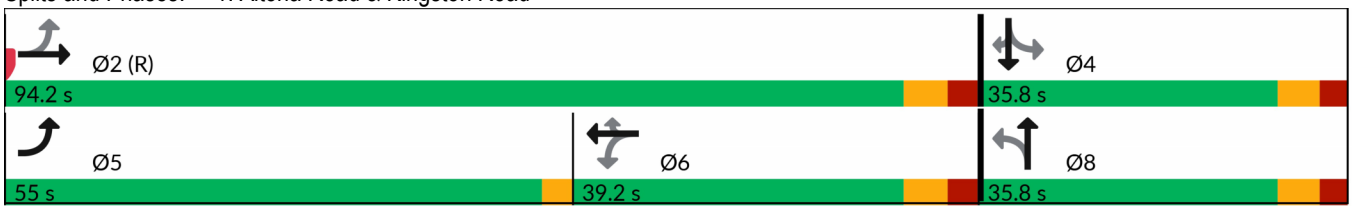


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	35.7	35.7		35.7	35.7	35.7
Total Split (s)	55.0	94.2		39.2	39.2	39.2	35.8	35.8		35.8	35.8	35.8
Total Split (%)	42.3%	72.5%		30.2%	30.2%	30.2%	27.5%	27.5%		27.5%	27.5%	27.5%
Maximum Green (s)	52.0	87.0		32.0	32.0	32.0	29.1	29.1		29.1	29.1	29.1
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)		18.0		18.0	18.0	18.0	22.0	22.0		22.0	22.0	22.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	94.3	90.1		35.5	35.5	35.5		26.0			26.0	26.0
Actuated g/C Ratio	0.73	0.69		0.27	0.27	0.27		0.20			0.20	0.20
v/c Ratio	0.95	0.57		0.01	0.77	0.46		0.01			0.85	0.54
Control Delay (s/veh)	49.4	11.7		44.0	47.9	18.9		39.5			77.4	5.6
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay (s/veh)	49.4	11.7		44.0	47.9	18.9		39.5			77.4	5.6
LOS	D	B		D	D	B		D			E	A
Approach Delay (s/veh)		24.7			40.5			39.5			27.7	
Approach LOS		C			D			D			C	
Queue Length 50th (m)	151.5	93.4		0.2	99.3	26.1		0.4			55.6	0.0
Queue Length 95th (m)	#233.9	112.7		m0.3	m121.7	m39.4		2.6			#92.4	15.0
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0			85.0		50.0						
Base Capacity (vph)	787	2448		97	955	556		420			300	1017
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	0.93	0.57		0.01	0.77	0.46		0.00			0.76	0.51

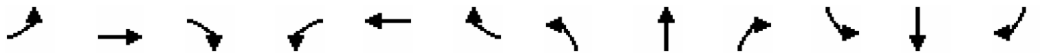
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay (s/veh): 29.3		Intersection LOS: C	
Intersection Capacity Utilization 91.4%		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.			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Altona Road & Kingston Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	1164	269	116	714	71	231	59	123	81	33	44
Future Volume (vph)	60	1164	269	116	714	71	231	59	123	81	33	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		1.00		0.92	0.99	0.98		0.99	0.99	
Frt		0.972				0.850		0.898			0.914	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3337	0	1745	3461	1543	1708	1633	0	1708	1667	0
Flt Permitted	0.950			0.950			0.545			0.633		
Satd. Flow (perm)	1712	3337	0	1740	3461	1427	971	1633	0	1123	1667	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				108		85			48	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	20		8	8		20	8		13	13		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%	1%	0%	2%	1%	0%	3%
Adj. Flow (vph)	65	1265	292	126	776	77	251	64	134	88	36	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	65	1557	0	126	776	77	251	198	0	88	84	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	36.0		36.0	36.0	
Total Split (s)	16.0	66.4		16.2	66.6	66.6	11.4	47.4		36.0	36.0	
Total Split (%)	12.3%	51.1%		12.5%	51.2%	51.2%	8.8%	36.5%		27.7%	27.7%	
Maximum Green (s)	10.6	59.8		10.8	60.0	60.0	6.9	41.4		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Don't Walk (s)		16.0			16.0	16.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	9.7	74.2		10.8	77.6	77.6	28.5	27.0		15.6	15.6	
Actuated g/C Ratio	0.07	0.57		0.08	0.60	0.60	0.22	0.21		0.12	0.12	
v/c Ratio	0.50	0.81		0.88	0.38	0.09	1.00	0.49		0.66	0.35	
Control Delay (s/veh)	60.9	18.7		95.5	15.4	1.1	104.9	28.5		75.8	27.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	60.9	18.7		95.5	15.4	1.1	104.9	28.5		75.8	27.9	
LOS	E	B		F	B	A	F	C		E	C	
Approach Delay (s/veh)		20.4			24.6			71.2			52.4	
Approach LOS		C			C			E			D	
Queue Length 50th (m)	16.4	77.3		32.6	54.0	0.3	59.3	25.1		21.9	8.4	
Queue Length 95th (m)	m28.3	84.2		#69.0	73.5	2.8	#95.8	45.4		37.6	22.5	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	142	1916		144	2065	895	251	577		259	421	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	2		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.46	0.81		0.88	0.38	0.09	1.00	0.34		0.34	0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay (s/veh): 30.4		Intersection LOS: C	
Intersection Capacity Utilization 90.3%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	17	358	18	12	418
Future Volume (vph)	14	17	358	18	12	418
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.926		0.993			
Flt Protected	0.978					0.999
Satd. Flow (prot)	1668	0	1829	0	0	1840
Flt Permitted	0.978					0.999
Satd. Flow (perm)	1668	0	1829	0	0	1840
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	18	389	20	13	454
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	0	409	0	0	467
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	17	358	18	12	418
Future Volume (Veh/h)	14	17	358	18	12	418
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	18	389	20	13	454
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	879	399			409	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	879	399			409	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	97			99	
cM capacity (veh/h)	314	651			1150	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	33	409	467
Volume Left	15	0	13
Volume Right	18	20	0
cSH	438	1700	1150
Volume to Capacity	0.08	0.24	0.01
Queue Length 95th (m)	1.8	0.0	0.3
Control Delay (s/veh)	13.9	0.0	0.3
Lane LOS	B		A
Approach Delay (s/veh)	13.9	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		41.7%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1241	124	0	956	0	18
Future Volume (vph)	1241	124	0	956	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.986					0.865
Flt Protected						
Satd. Flow (prot)	3420	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3420	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1349	135	0	1039	0	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1484	0	0	1039	0	20
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1241	124	0	956	0	18
Future Volume (Veh/h)	1241	124	0	956	0	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1349	135	0	1039	0	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91			142		
pX, platoon unblocked			0.63		0.70	0.63
vC, conflicting volume			1484		1936	742
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			581		503	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	97
cM capacity (veh/h)			620		351	680

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	899	585	520	520	20
Volume Left	0	0	0	0	0
Volume Right	0	135	0	0	20
cSH	1700	1700	1700	1700	680
Volume to Capacity	0.53	0.34	0.31	0.31	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.7
Control Delay (s/veh)	0.0	0.0	0.0	0.0	10.5
Lane LOS					B
Approach Delay (s/veh)	0.0		0.0		10.5
Approach LOS					B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1235	42	109	992	52	86
Future Volume (vph)	1235	42	109	992	52	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Storage Length (m)		0.0	25.0		25.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			25.0		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.995					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3450	0	1691	3500	1691	1513
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3450	0	1691	3500	1691	1513
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4					93
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1342	46	118	1078	57	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1388	0	118	1078	57	93
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.2			3.2	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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (m)	10.0		2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6		2.0	0.6	2.0	2.0
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA	Perm	Perm

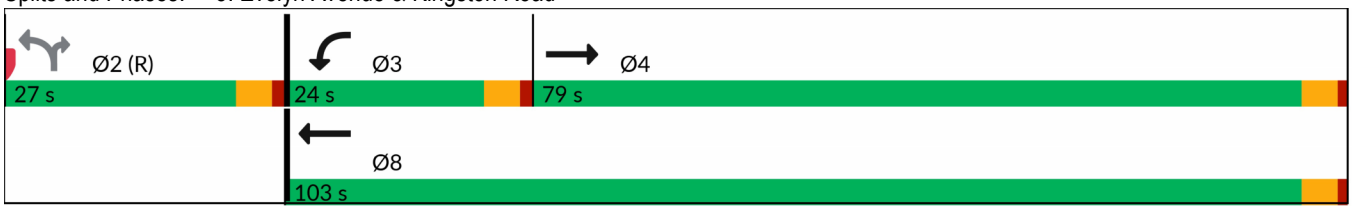


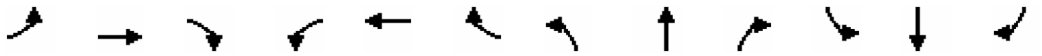
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	4		3	8		
Permitted Phases					2	2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	79.0		24.0	103.0	27.0	27.0
Total Split (%)	60.8%		18.5%	79.2%	20.8%	20.8%
Maximum Green (s)	74.5		19.5	98.5	22.5	22.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	C-Max	C-Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	65.0		14.3	83.8	37.2	37.2
Actuated g/C Ratio	0.50		0.11	0.64	0.29	0.29
v/c Ratio	0.80		0.64	0.48	0.12	0.19
Control Delay (s/veh)	38.6		70.2	12.3	40.3	9.5
Queue Delay	0.4		0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.0		70.2	12.3	40.3	9.5
LOS	D		E	B	D	A
Approach Delay (s/veh)	39.0			18.0	21.2	
Approach LOS	D			B	C	
Queue Length 50th (m)	183.9		29.4	68.1	10.9	0.0
Queue Length 95th (m)	193.6		47.5	55.7	25.0	14.4
Internal Link Dist (m)	118.2			97.0	39.2	
Turn Bay Length (m)			25.0		25.0	
Base Capacity (vph)	1978		253	2651	484	499
Starvation Cap Reductn	192		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.78		0.47	0.41	0.12	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay (s/veh): 28.8		Intersection LOS: C	
Intersection Capacity Utilization 56.9%		ICU Level of Service B	

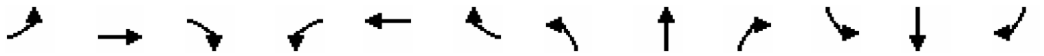
Analysis Period (min) 15

Splits and Phases: 5: Evelyn Avenue & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	351	501	0	0	892	224	0	0	1	264	0	787
Future Volume (vph)	351	501	0	0	892	224	0	0	1	264	0	787
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor						0.97		0.98			0.99	0.98
Frt						0.850		0.865				0.850
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1691	3466	0	1837	3461	1566	0	1586	0	0	1733	2783
Flt Permitted	0.171										0.757	
Satd. Flow (perm)	304	3466	0	1837	3461	1525	0	1586	0	0	1364	2719
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						154		332				800
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	9		9	9		9	1		7	7		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	0%	0%	2%	2%	0%	0%	0%	3%	0%	1%
Adj. Flow (vph)	382	545	0	0	970	243	0	0	1	287	0	855
Shared Lane Traffic (%)												
Lane Group Flow (vph)	382	545	0	0	970	243	0	1	0	0	287	855
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

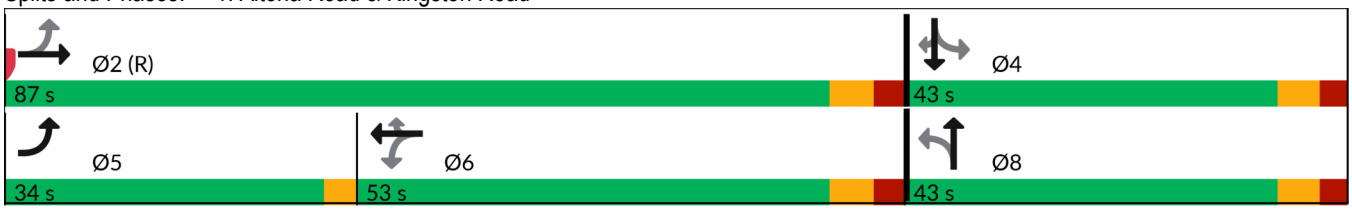


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	30.0	30.0		30.0	30.0	30.0
Total Split (s)	34.0	87.0		53.0	53.0	53.0	43.0	43.0		43.0	43.0	43.0
Total Split (%)	26.2%	66.9%		40.8%	40.8%	40.8%	33.1%	33.1%		33.1%	33.1%	33.1%
Maximum Green (s)	31.0	79.8		45.8	45.8	45.8	36.3	36.3		36.3	36.3	36.3
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)		18.0		18.0	18.0	18.0	15.0	15.0		15.0	15.0	15.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	88.1	83.9			56.2	56.2		32.2			32.2	32.2
Actuated g/C Ratio	0.68	0.65			0.43	0.43		0.25			0.25	0.25
v/c Ratio	0.81	0.24			0.65	0.33		0.00			0.85	0.67
Control Delay (s/veh)	33.2	10.6			31.4	11.9		0.0			69.0	6.7
Queue Delay	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Delay (s/veh)	33.2	10.6			31.4	11.9		0.0			69.0	6.7
LOS	C	B			C	B		A			E	A
Approach Delay (s/veh)		19.9			27.5						22.4	
Approach LOS		B			C						C	
Queue Length 50th (m)	52.9	30.8			115.3	32.0		0.0			68.2	5.9
Queue Length 95th (m)	89.7	40.9			139.4	m53.1		0.0			#106.8	23.6
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0					50.0						
Base Capacity (vph)	536	2236			1497	747		682			380	1335
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	0.71	0.24			0.65	0.33		0.00			0.76	0.64

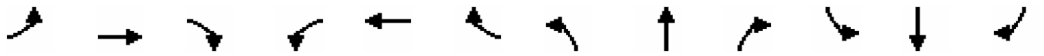
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay (s/veh): 23.6		Intersection LOS: C	
Intersection Capacity Utilization 80.3%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Altona Road & Kingston Road



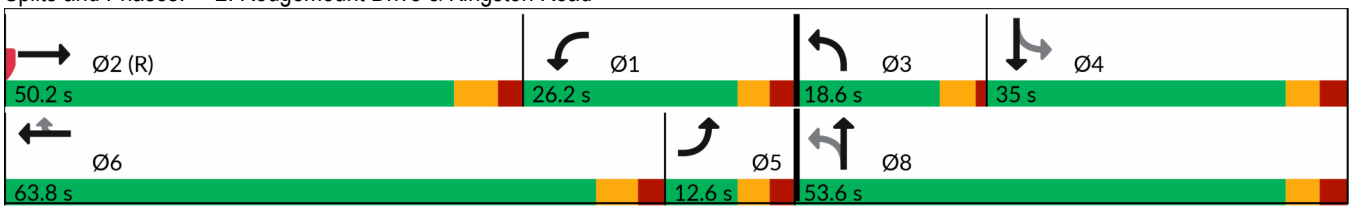
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	575	219	145	749	61	261	42	181	97	22	44
Future Volume (vph)	35	575	219	145	749	61	261	42	181	97	22	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		0.99		0.96	0.99	0.97		0.99	0.98	
Frt		0.959				0.850		0.878			0.900	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3240	0	1728	3461	1513	1725	1585	0	1708	1666	0
Flt Permitted	0.950			0.950			0.568			0.608		
Satd. Flow (perm)	1732	3240	0	1714	3461	1449	1022	1585	0	1077	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46				108		187			48	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	8		9	9		8	8		15	15		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	1%	1%	2%	2%	0%	3%	1%	1%	0%	0%
Adj. Flow (vph)	38	625	238	158	814	66	284	46	197	105	24	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	863	0	158	814	66	284	243	0	105	72	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	35.0		35.0	35.0	
Total Split (s)	12.6	50.2		26.2	63.8	63.8	18.6	53.6		35.0	35.0	
Total Split (%)	9.7%	38.6%		20.2%	49.1%	49.1%	14.3%	41.2%		26.9%	26.9%	
Maximum Green (s)	7.2	43.6		20.8	57.2	57.2	14.1	47.6		29.0	29.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Don't Walk (s)		16.0			16.0	16.0		22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	6.8	56.1		18.8	70.2	70.2	38.6	37.1		18.0	18.0	
Actuated g/C Ratio	0.05	0.43		0.14	0.54	0.54	0.30	0.29		0.14	0.14	
v/c Ratio	0.42	0.61		0.63	0.44	0.08	0.74	0.41		0.70	0.26	
Control Delay (s/veh)	71.0	21.0		54.3	38.1	10.7	50.9	11.1		76.5	21.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	71.0	21.0		54.3	38.1	10.7	50.9	11.1		76.5	21.7	
LOS	E	C		D	D	B	D	B		E	C	
Approach Delay (s/veh)		23.1			38.8			32.5			54.2	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	9.9	71.8		20.5	87.0	2.9	61.6	10.7		26.0	5.4	
Queue Length 95th (m)	m19.1	87.7		47.2	109.3	9.2	81.9	29.6		43.1	18.0	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	96	1424		276	1869	832	382	698		240	408	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.40	0.61		0.57	0.44	0.08	0.74	0.35		0.44	0.18	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 33.2		Intersection LOS: C	
Intersection Capacity Utilization 76.2%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	47	425	9	3	362
Future Volume (vph)	11	47	425	9	3	362
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.891		0.997			
Flt Protected	0.991					
Satd. Flow (prot)	1626	0	1837	0	0	1842
Flt Permitted	0.991					
Satd. Flow (perm)	1626	0	1837	0	0	1842
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	51	462	10	3	393
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	472	0	0	396
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	47	425	9	3	362
Future Volume (Veh/h)	11	47	425	9	3	362
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	51	462	10	3	393
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	866	467			472	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	866	467			472	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	91			100	
cM capacity (veh/h)	323	596			1090	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	63	472	396
Volume Left	12	0	3
Volume Right	51	10	0
cSH	513	1700	1090
Volume to Capacity	0.12	0.28	0.00
Queue Length 95th (m)	3.2	0.0	0.1
Control Delay (s/veh)	13.0	0.0	0.1
Lane LOS	B		A
Approach Delay (s/veh)	13.0	0.0	0.1
Approach LOS	B		

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization		33.1%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	825	23	0	955	0	12
Future Volume (vph)	825	23	0	955	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996					0.865
Flt Protected						
Satd. Flow (prot)	3453	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3453	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	897	25	0	1038	0	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	922	0	0	1038	0	13
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	825	23	0	955	0	12
Future Volume (Veh/h)	825	23	0	955	0	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	897	25	0	1038	0	13
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91			142		
pX, platoon unblocked			0.82		0.88	0.82
vC, conflicting volume			922		1429	461
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			452		281	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			901		606	884

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	598	324	519	519	13
Volume Left	0	0	0	0	0
Volume Right	0	25	0	0	13
cSH	1700	1700	1700	1700	884
Volume to Capacity	0.35	0.19	0.31	0.31	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.3
Control Delay (s/veh)	0.0	0.0	0.0	0.0	9.1
Lane LOS					A
Approach Delay (s/veh)	0.0		0.0		9.1
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	855	16	67	896	96	76
Future Volume (vph)	855	16	67	896	96	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Storage Length (m)		0.0	25.0		25.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			25.0		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.997					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3456	0	1691	3500	1691	1513
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3456	0	1691	3500	1691	1513
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	2					83
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	929	17	73	974	104	83
Shared Lane Traffic (%)						
Lane Group Flow (vph)	946	0	73	974	104	83
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.2			3.2	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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (m)	10.0		2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6		2.0	0.6	2.0	2.0
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA	Perm	Perm

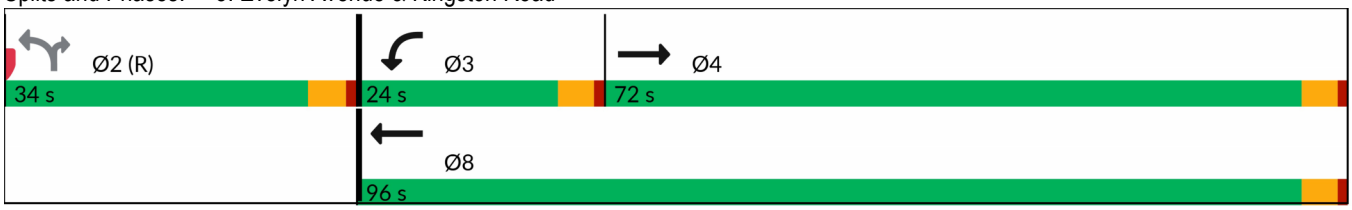


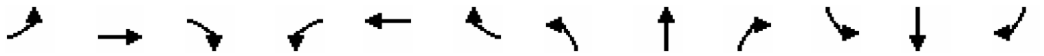
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	4		3	8		
Permitted Phases					2	2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	72.0		24.0	96.0	34.0	34.0
Total Split (%)	55.4%		18.5%	73.8%	26.2%	26.2%
Maximum Green (s)	67.5		19.5	91.5	29.5	29.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	C-Max	C-Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	45.0		11.0	58.2	62.8	62.8
Actuated g/C Ratio	0.35		0.08	0.45	0.48	0.48
v/c Ratio	0.79		0.51	0.62	0.13	0.11
Control Delay (s/veh)	49.4		68.8	28.5	22.8	5.6
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay (s/veh)	49.4		68.8	28.5	22.8	5.6
LOS	D		E	C	C	A
Approach Delay (s/veh)	49.4			31.3	15.2	
Approach LOS	D			C	B	
Queue Length 50th (m)	127.3		18.2	95.7	14.8	0.0
Queue Length 95th (m)	140.7		32.9	92.4	31.1	10.6
Internal Link Dist (m)	118.2			97.0	39.2	
Turn Bay Length (m)			25.0		25.0	
Base Capacity (vph)	1795		253	2463	816	773
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	0.53		0.29	0.40	0.13	0.11

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 37.8		Intersection LOS: D	
Intersection Capacity Utilization 44.9%		ICU Level of Service A	

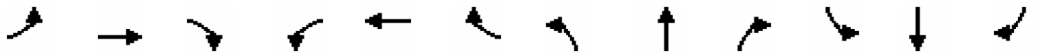
Analysis Period (min) 15

Splits and Phases: 5: Evelyn Avenue & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	707	1329	1	1	709	245	0	2	0	219	1	499
Future Volume (vph)	707	1329	1	1	709	245	0	2	0	219	1	499
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.2	3.5	3.5	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Storage Length (m)	16.0		0.0	85.0		50.0	0.0		0.0	150.0		0.0
Storage Lanes	1		0	1		1	0		0	1		2
Taper Length (m)	45.0			57.0			7.6			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor	1.00	1.00		1.00		0.98					0.99	
Frt						0.850						0.850
Flt Protected	0.950			0.950							0.953	
Satd. Flow (prot)	1708	3534	0	1745	3495	1581	0	1879	0	0	1773	2756
Flt Permitted	0.114			0.183							0.727	
Satd. Flow (perm)	205	3534	0	336	3495	1548	0	1879	0	0	1343	2756
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						182						542
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		116.0			305.7			91.7			349.7	
Travel Time (s)		7.0			18.3			6.6			25.2	
Confl. Peds. (#/hr)	6		4	4		6			5	5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	2%
Adj. Flow (vph)	768	1445	1	1	771	266	0	2	0	238	1	542
Shared Lane Traffic (%)												
Lane Group Flow (vph)	768	1446	0	1	771	266	0	2	0	0	239	542
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.01	1.01	1.04	1.03	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	1
Detector Template							Left			Left		
Leading Detector (m)	24.0	0.0		13.5	0.0	0.0	6.1	13.5		6.1	13.5	13.5
Trailing Detector (m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Position(m)	10.0	0.0		-0.5	0.0	0.0	0.0	-0.5		0.0	-0.5	-0.5
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	6.1	14.0		6.1	14.0	14.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Turn Type	pm+pt	NA		Perm	NA	Perm		NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	4

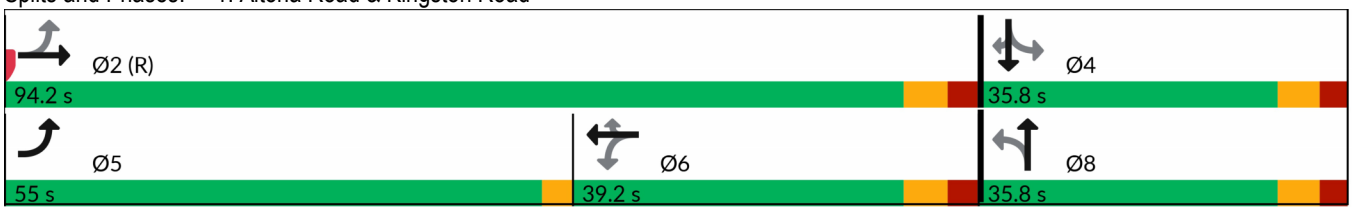


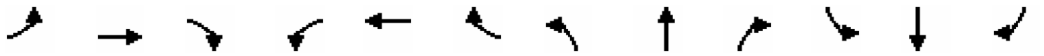
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		20.0	20.0	20.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	8.0	34.0		34.0	34.0	34.0	35.7	35.7		35.7	35.7	35.7
Total Split (s)	55.0	94.2		39.2	39.2	39.2	35.8	35.8		35.8	35.8	35.8
Total Split (%)	42.3%	72.5%		30.2%	30.2%	30.2%	27.5%	27.5%		27.5%	27.5%	27.5%
Maximum Green (s)	52.0	87.0		32.0	32.0	32.0	29.1	29.1		29.1	29.1	29.1
Yellow Time (s)	3.0	4.3		4.3	4.3	4.3	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	0.0	2.9		2.9	2.9	2.9	2.7	2.7		2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	3.0	7.2		7.2	7.2	7.2		6.7			6.7	6.7
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		Max	Max	Max	None	None		None	None	None
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0
Flash Don't Walk (s)		18.0		18.0	18.0	18.0	22.0	22.0		22.0	22.0	22.0
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	0
Act Effct Green (s)	93.8	89.6		32.0	32.0	32.0		26.5			26.5	26.5
Actuated g/C Ratio	0.72	0.69		0.25	0.25	0.25		0.20			0.20	0.20
v/c Ratio	0.99	0.59		0.01	0.90	0.51		0.01			0.87	0.55
Control Delay (s/veh)	60.7	12.3		44.0	57.2	20.5		39.5			79.7	5.5
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay (s/veh)	60.7	12.3		44.0	57.2	20.5		39.5			79.7	5.5
LOS	E	B		D	E	C		D			E	A
Approach Delay (s/veh)		29.1			47.8			39.5			28.3	
Approach LOS		C			D			D			C	
Queue Length 50th (m)	~193.7	100.6		0.2	110.0	28.3		0.4			58.3	0.0
Queue Length 95th (m)	#268.9	119.9		m0.4	m#128.9	m41.7		2.6			#98.8	15.2
Internal Link Dist (m)		92.0			281.7			67.7			325.7	
Turn Bay Length (m)	16.0			85.0		50.0						
Base Capacity (vph)	778	2434		82	860	518		420			300	1037
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	0.99	0.59		0.01	0.90	0.51		0.00			0.80	0.52

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay (s/veh): 33.7		Intersection LOS: C	
Intersection Capacity Utilization 93.8%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			

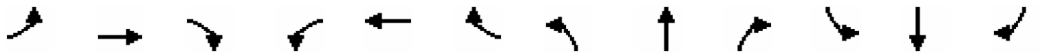
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Altona Road & Kingston Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	1207	282	122	748	75	241	62	129	85	35	46
Future Volume (vph)	63	1207	282	122	748	75	241	62	129	85	35	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.3	3.4	3.4	3.3	3.4	3.2	3.2	3.5	3.5	3.2	3.5	3.5
Storage Length (m)	93.0		0.0	140.0		50.0	35.0		0.0	19.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	93.0			58.0			35.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		1.00		0.92	0.99	0.98		0.99	0.99	
Frt		0.972				0.850		0.899			0.915	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1745	3337	0	1745	3461	1543	1708	1634	0	1708	1669	0
Flt Permitted	0.950			0.950			0.547			0.628		
Satd. Flow (perm)	1713	3337	0	1741	3461	1427	975	1634	0	1115	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29				108		85			47	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		305.7			90.5			94.4			105.7	
Travel Time (s)		18.3			5.4			8.5			9.5	
Confl. Peds. (#/hr)	20		8	8		20	8		13	13		8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	0%	1%	0%	2%	1%	0%	3%
Adj. Flow (vph)	68	1312	307	133	813	82	262	67	140	92	38	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	1619	0	133	813	82	262	207	0	92	88	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.3			3.3			3.2			3.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.04	1.03	1.03	1.04	1.03	1.06	1.06	1.01	1.01	1.06	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	0	1	1		1	1	
Detector Template												
Leading Detector (m)	13.5	0.0		13.5	0.0	0.0	13.5	13.5		13.5	13.5	
Trailing Detector (m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Position(m)	-0.5	0.0		-0.5	0.0	0.0	-0.5	-0.5		-0.5	-0.5	
Detector 1 Size(m)	14.0	1.8		14.0	1.8	6.1	14.0	14.0		14.0	14.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases						6	8			4		
Detector Phase	5	2		1	6	6	3	8		4	4	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0	20.0	5.0	8.0		8.0	8.0	
Minimum Split (s)	10.4	31.0		10.4	31.0	31.0	9.5	36.0		36.0	36.0	
Total Split (s)	16.1	66.2		16.2	66.3	66.3	11.6	47.6		36.0	36.0	
Total Split (%)	12.4%	50.9%		12.5%	51.0%	51.0%	8.9%	36.6%		27.7%	27.7%	
Maximum Green (s)	10.7	59.6		10.8	59.7	59.7	7.1	41.6		30.0	30.0	
Yellow Time (s)	3.0	4.2		3.0	4.2	4.2	3.5	3.3		3.3	3.3	
All-Red Time (s)	2.4	2.4		2.4	2.4	2.4	1.0	2.7		2.7	2.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.6		5.4	6.6	6.6	4.5	6.0		6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	Max	Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Don't Walk (s)		16.0			16.0	16.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	9.8	73.5		10.8	76.8	76.8	29.2	27.7		16.1	16.1	
Actuated g/C Ratio	0.08	0.57		0.08	0.59	0.59	0.22	0.21		0.12	0.12	
v/c Ratio	0.52	0.85		0.92	0.40	0.09	1.01	0.50		0.67	0.36	
Control Delay (s/veh)	61.1	20.4		105.5	15.7	1.3	107.1	29.2		76.0	29.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.1		0.0	0.0	
Total Delay (s/veh)	61.1	20.4		105.5	15.7	1.3	107.1	29.3		76.0	29.0	
LOS	E	C		F	B	A	F	C		E	C	
Approach Delay (s/veh)		22.0			26.2			72.8			53.1	
Approach LOS		C			C			E			D	
Queue Length 50th (m)	17.2	82.1		34.6	57.2	0.2	~62.9	27.2		22.9	9.6	
Queue Length 95th (m)	m28.3	#103.1		#73.9	79.2	3.6	#99.9	47.8		39.0	23.8	
Internal Link Dist (m)		281.7			66.5			70.4			81.7	
Turn Bay Length (m)	93.0			140.0		50.0	35.0			19.0		
Base Capacity (vph)	143	1899		144	2045	887	259	580		257	421	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	32		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.48	0.85		0.92	0.40	0.09	1.01	0.38		0.36	0.21	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay (s/veh): 32.0		Intersection LOS: C	
Intersection Capacity Utilization 92.6%		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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Rougemount Drive & Kingston Road





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	17	376	18	12	439
Future Volume (vph)	14	17	376	18	12	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.926		0.994			
Flt Protected	0.978					0.999
Satd. Flow (prot)	1668	0	1831	0	0	1840
Flt Permitted	0.978					0.999
Satd. Flow (perm)	1668	0	1831	0	0	1840
Link Speed (k/h)	40		40			40
Link Distance (m)	32.0		54.7			94.4
Travel Time (s)	2.9		4.9			8.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	18	409	20	13	477
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	0	429	0	0	490
Enter Blocked Intersection	No	No	No	Yes	Yes	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.5		3.2			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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	17	376	18	12	439
Future Volume (Veh/h)	14	17	376	18	12	439
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	18	409	20	13	477
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						94
pX, platoon unblocked						
vC, conflicting volume	922	419			429	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	922	419			429	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	97			99	
cM capacity (veh/h)	296	634			1130	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	33	429	490
Volume Left	15	0	13
Volume Right	18	20	0
cSH	418	1700	1130
Volume to Capacity	0.08	0.25	0.01
Queue Length 95th (m)	1.9	0.0	0.3
Control Delay (s/veh)	14.4	0.0	0.3
Lane LOS	B		A
Approach Delay (s/veh)	14.4	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		42.8%	ICU Level of Service A
Analysis Period (min)		15	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1294	124	0	1002	0	18
Future Volume (vph)	1294	124	0	1002	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.5	3.5	3.5	3.5
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.987					0.865
Flt Protected						
Satd. Flow (prot)	3424	0	0	3500	0	1593
Flt Permitted						
Satd. Flow (perm)	3424	0	0	3500	0	1593
Link Speed (k/h)	60			60	48	
Link Distance (m)	90.5			142.2	54.0	
Travel Time (s)	5.4			8.5	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1407	135	0	1089	0	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1542	0	0	1089	0	20
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1294	124	0	1002	0	18
Future Volume (Veh/h)	1294	124	0	1002	0	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1407	135	0	1089	0	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	91			142		
pX, platoon unblocked			0.59		0.67	0.59
vC, conflicting volume			1542		2019	771
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			536		482	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	97
cM capacity (veh/h)			608		344	642

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	938	604	545	545	20
Volume Left	0	0	0	0	0
Volume Right	0	135	0	0	20
cSH	1700	1700	1700	1700	642
Volume to Capacity	0.55	0.36	0.32	0.32	0.03
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.7
Control Delay (s/veh)	0.0	0.0	0.0	0.0	10.8
Lane LOS					B
Approach Delay (s/veh)	0.0		0.0		10.8
Approach LOS					B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1289	42	109	1042	52	86
Future Volume (vph)	1289	42	109	1042	52	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.5	3.2	3.5	3.2	3.2
Storage Length (m)		0.0	25.0		25.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			25.0		2.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.995					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3450	0	1691	3500	1691	1513
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3450	0	1691	3500	1691	1513
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4					93
Link Speed (k/h)	60			60	48	
Link Distance (m)	142.2			121.0	63.2	
Travel Time (s)	8.5			7.3	4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	2%	2%	2%	2%
Adj. Flow (vph)	1401	46	118	1133	57	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1447	0	118	1133	57	93
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.2			3.2	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	1.01	1.01	1.06	1.01	1.06	1.06
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (m)	10.0		2.0	10.0	2.0	2.0
Trailing Detector (m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0		0.0	0.0	0.0	0.0
Detector 1 Size(m)	0.6		2.0	0.6	2.0	2.0
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(m)	9.4			9.4		
Detector 2 Size(m)	0.6			0.6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Prot	NA	Perm	Perm

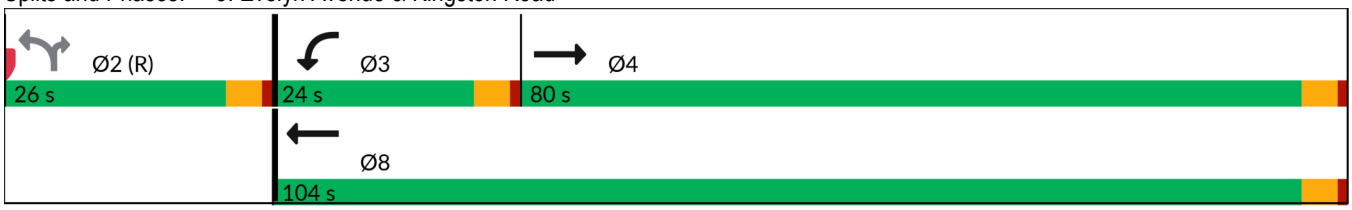


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	4		3	8		
Permitted Phases					2	2
Detector Phase	4		3	8	2	2
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	80.0		24.0	104.0	26.0	26.0
Total Split (%)	61.5%		18.5%	80.0%	20.0%	20.0%
Maximum Green (s)	75.5		19.5	99.5	21.5	21.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	C-Max	C-Max
Walk Time (s)	7.0			7.0	7.0	7.0
Flash Don't Walk (s)	11.0			11.0	11.0	11.0
Pedestrian Calls (#/hr)	0			0	0	0
Act Effct Green (s)	67.6		14.3	86.3	34.7	34.7
Actuated g/C Ratio	0.52		0.11	0.66	0.27	0.27
v/c Ratio	0.81		0.64	0.49	0.13	0.20
Control Delay (s/veh)	37.2		70.2	11.3	42.3	9.9
Queue Delay	0.6		0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.8		70.2	11.3	42.3	9.9
LOS	D		E	B	D	A
Approach Delay (s/veh)	37.8			16.8	22.2	
Approach LOS	D			B	C	
Queue Length 50th (m)	189.6		29.4	68.3	11.2	0.0
Queue Length 95th (m)	200.6		47.5	55.6	25.4	14.7
Internal Link Dist (m)	118.2			97.0	39.2	
Turn Bay Length (m)			25.0		25.0	
Base Capacity (vph)	2005		253	2678	450	471
Starvation Cap Reductn	224		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.81		0.47	0.42	0.13	0.20

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 27.8		Intersection LOS: C	
Intersection Capacity Utilization 58.4%		ICU Level of Service B	

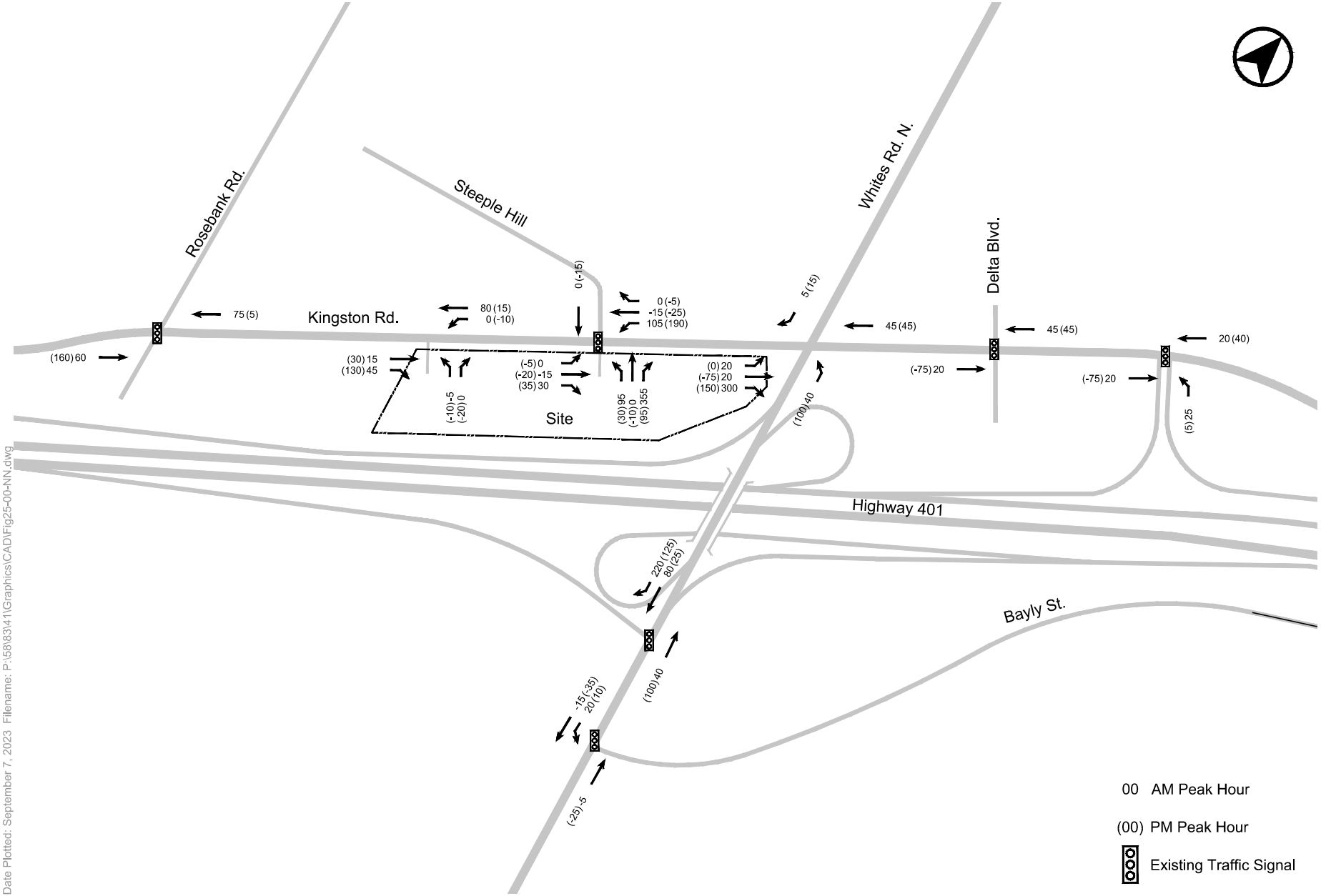
Analysis Period (min) 15

Splits and Phases: 5: Evelyn Avenue & Kingston Road



APPENDIX F

Background Developments Excerpts



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FIGURE 25 FORECAST NET-NEW SITE TRAFFIC VOLUMES

Stantec Consulting Ltd.
100-401 Wellington Street West Toronto ON M5V 1E7

May 28, 2019
File: 160500010

Attention: Mr. Tony Siesto
Old Orchard Properties
609 Marlee Avenue
Toronto, Ontario M6B 3J6

Dear Mr. Siesto,

Reference: TIS Update | 760-770 Kingston Road, City of Pickering

1 INTRODUCTION

The purpose of this Traffic Brief is to summarize the transportation impact of a proposed residential development located at the municipal address of 760-770 Kingston Road in the City of Pickering. This letter reviews the operations on the 2018 base transportation network, and a 2027 horizon year which represents the estimated full build-out of the subject development plus five years. The 2027 horizon year includes background growth and site generated trips. The development site is located on the north side of Kingston Road between Delta Boulevard and the intersection of Kingston Road/Highway 401 Westbound Ramps, as shown in **Figure 1**.

2 SITE/DEVELOPMENT DESCRIPTION

The proposed development lot area is 7,554.85 m^2, which under existing conditions contains two residential homes. The development will consist of three-storey high townhouses, with a total of 82 stacked townhouse dwelling units. No new accesses are proposed fronting on to Kingston Road; access to Kingston Road will be accommodated through the existing access east of the lot which currently services a plaza, and through the extension of Delta Boulevard into the site.

There are 82 resident parking spaces and 21 visitor parking spaces proposed on-site, for a total of 103 parking spaces. As per the December 2016 City of Pickering Zoning By-law 7553/17 parking space requirements, stacked dwellings require 1.25 spaces per dwelling unit and an additional 0.15 spaces per dwelling unit for visitors, which means the proposed development of 82 dwelling units would require 103 resident parking and 13 visitor parking spaces. Although the proposed number of parking spaces does not satisfy the City of Pickering parking space requirements, preliminary discussions with City staff have indicated that the City would be comfortable with provision of 1.0 spaces per dwelling unit for resident parking and 0.2 spaces per dwelling unit for visitor parking. The proposed number of parking spaces satisfies those rates.

A conceptual site plan is shown in **Figure 2**.

4 FUTURE CONDITIONS

4.1 TRIP GENERATION

The number of vehicle trips that would be generated by the proposed development was based on information contained in the Institute of Transportation Engineers (ITE) publication, "Trip Generation, 10th Edition". Specifically, the weekday a.m. and p.m. peak hour trips are estimated using the trip generation formulae for "Multifamily Housing (Mid-Rise)" (ITE land use code #221). The total development consists of 82 stacked townhouse dwelling units. The site generated trips are summarized below in **Table 1**.

Table 1 - Site Trip Generation

Land Use	Dwelling Units	A.M. Peak Hour			P.M. Peak Hour		
		In	Out	Total	In	Out	Total
Multifamily Housing (Mid-Rise)	82	8	22	30	22	15	37

4.2 TRIP DISTRIBUTION AND TRIP ASSIGNMENT

The estimated trip generation is distributed throughout the Study Area based on patterns observed in the conducted traffic counts. Total traffic volume entering and exiting the Study Area in the a.m. and p.m. peak hours are used to determine the existing distribution. The percentage of entering and exiting volumes relative to the total volume entering and exiting the Study Area are illustrated in **Table 2**. The site traffic assignments are illustrated in **Figure 5** and **Figure 6**.

Table 2 - Trip Distribution

To/From		AM Peak Hour		PM Peak Hour	
		Inbound	Outbound	Inbound	Outbound
East	Kingston Road	44%	32%	25%	55%
	Highway 401	26%	-	24%	-
West	Kingston Road	30%	49%	51%	38%
	Highway 401	-	19%	-	7%
Total		100%	100%	100%	100%

4.3 TRAFFIC FORECASTS

The 2027 future total traffic volumes are the combination of the existing traffic, background growth, and site generated traffic. During pre-consultation, City of Pickering staff recommended an annual growth rate of 1.0% per annum. A 1.0% per annum growth rate is applied to the base year traffic volumes to estimate the future background growth representing general population and employment increases in the area. **Figure 7** and **Figure 8** show the background growth of traffic estimated, which is shown to be significantly higher than the trips generated by the proposed development.

The 2027 future total traffic volumes are illustrated in **Figure 9** and **Figure 10** for the a.m. and p.m. peak hours.

Reference: **TIS Update | 760-770 Kingston Road, City of Pickering**

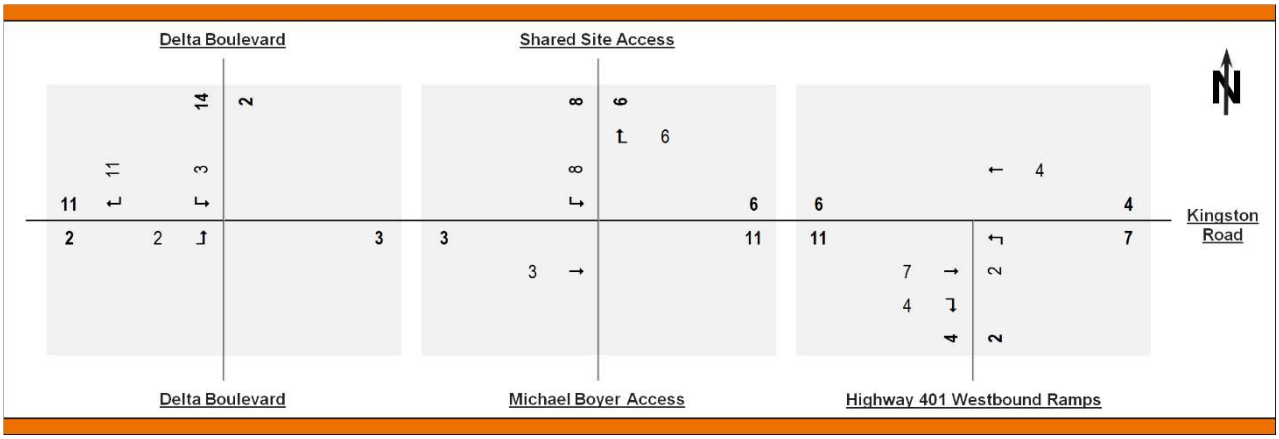


Figure 5 - Site Traffic Volumes AM

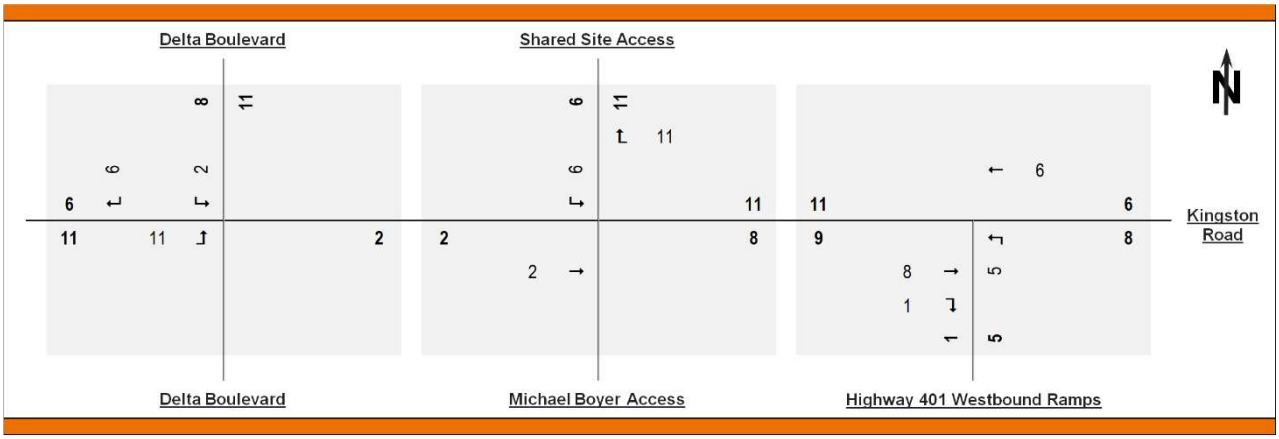


Figure 6 - Site Traffic Volumes PM

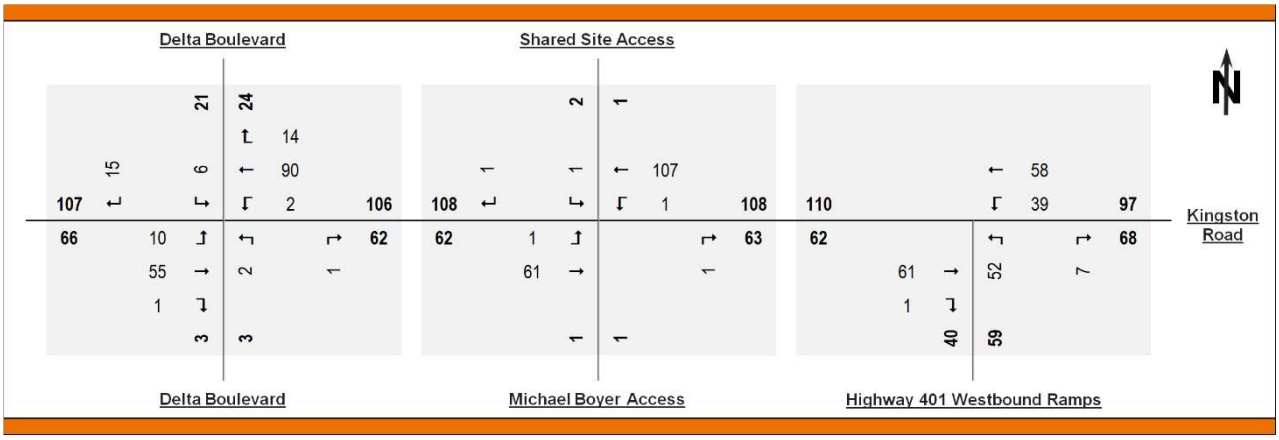


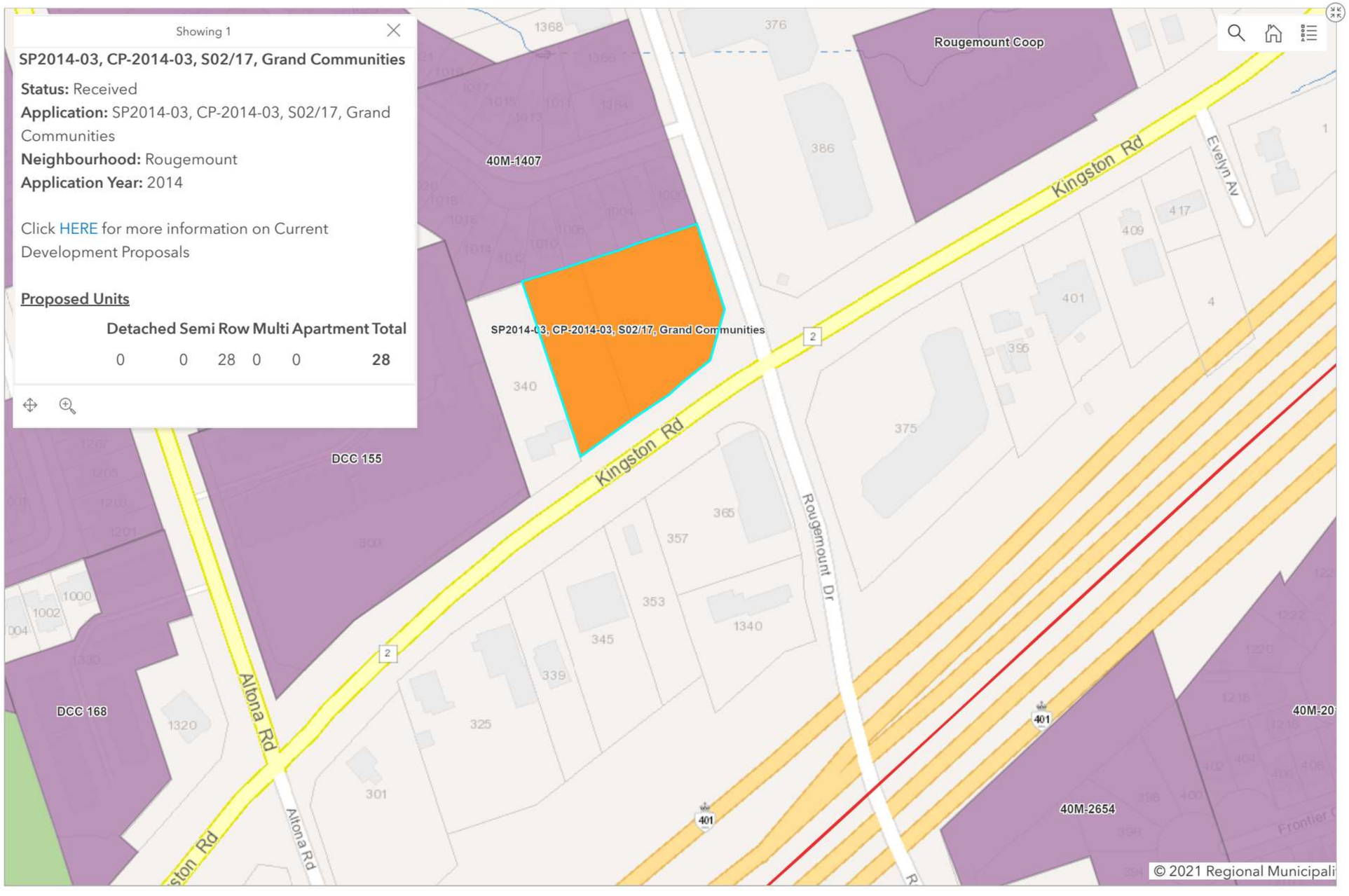
Figure 7 - Background Growth of Traffic AM

Pickering Developments

Welcome | Major Residential | Non-Residential | Definitions

Major Residential Developments and Proposals

Pick a Neighbourhood to change the graph: All





Metropolitan Towns

Kingston Road & Rougemount Drive, Pickering, (/ca/place/pickering-on) ON (/ca/place/on)

By Grand Communities (/ca/db/grand_communities)

From the $700,000's

Townhouse 1645 - 2682 SqFt	28 Units	Preconstruction

Metropolitan Towns is a new townhouse development by Grand Communities (/ca/db/grand_communities) currently in preconstruction at Kingston Road & Rougemount Drive, Pickering (/ca/place/pickering-on). Available units start from the $700,000's. Metropolitan Towns has a total of 28 units. Sizes range from 1645 to 2682 square feet.

Metropolitan Towns Details

Building Type: Townhouse

Ownership: Freehold

Selling Status: Registration

Construction Status: Preconstruction

Builder(s):
Grand Communities
(/ca/db/grand_communities)

Architect(s):
Hunt Design Associates Inc.
(/ca/db/hunt_design_associates_inc)

Marketing Company:
Diezel MarketingStudio
(/ca/db/diezel_marketing__advertising)

Pricing & Fees

Prices - Available Units:
From the $700,000's

C.C / Maint: -

Cost to Purchase Parking: -

Cost to Purchase Storage: -

Average Price per Sqft: -

Co-op Fee Realtors: -

Metropolitan Towns Summary

Metropolitan Towns will offer the epitome in contemporary lifestyle living. Located within one of Pickering's most sought after areas,your Metropolitan Town is just around the corner from the scenic beauty of the Rouge Valley, the Petticoat Creek Conservation Area and the lake at Frenchman's Bay. This exclusive Grand Communities development offers you all the modern amenities that you'll ever need, surrounded by a selection of shops,

See More

Metropolitan Towns Sales Center

Featured Developments

BAY RIDGES, PICKERING
Universal City East
Register Now

MOUNT PLEASANT EAST, TORONTO
Leaside Common
Register Now

FALLINGBROOK, TORONTO
Courcelette Condo
Register Now

WEST H
East
Regist

346-364 Kingston Road Trip Gen					Vehicle			
Land Use	**ITE Land Use**	**Variable**	**Variable Unit**	**Trip Gens**	**In**	**Out**	**Total**	**Notes**
Retail	220 - Multifamily Housing (Low-Rise)	28	Units	AM	8	24	32	
				PM	21	12	33	

APPENDIX G

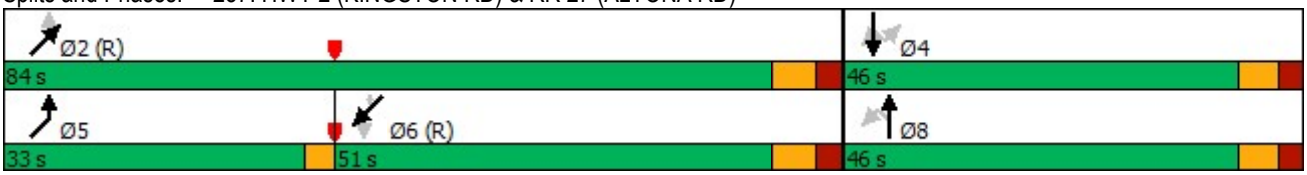
Durham-Scarborough Bus Rapid Transit EA Excerpts

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	0	2	296	0	701	359	431	0	19	873	285
Future Volume (vph)	2	0	2	296	0	701	359	431	0	19	873	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Storage Length (m)	0.0		0.0	154.0		0.0	18.0		0.0	91.0		16.0
Storage Lanes	0		0	1		2	1		0	1		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	*1.00	0.95	1.00	*1.00	1.00
Ped Bike Factor		0.99			1.00							0.98
Frt		0.932				0.850						0.850
Flt Protected		0.976			0.950		0.950			0.950		
Satd. Flow (prot)	0	1736	0	0	1674	2737	1706	3493	0	1825	3591	1498
Flt Permitted		0.893			0.755		0.185			0.495		
Satd. Flow (perm)	0	1588	0	0	1328	2737	332	3493	0	951	3591	1464
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60				762						85
Link Speed (k/h)		50			50			70			60	
Link Distance (m)		143.8			302.0			224.5			306.1	
Travel Time (s)		10.4			21.7			11.5			18.4	
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	9%	0%	5%	7%	10%	0%	0%	7%	9%
Adj. Flow (vph)	2	0	2	322	0	762	390	468	0	21	949	310
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	322	762	390	468	0	21	949	310
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	1		2	1	1	1	0		1	0	0
Detector Template												
Leading Detector (m)	15.2	9.0		15.2	9.0	15.0	18.0	0.0		0.0	0.0	0.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	9.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	9.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	1.8	9.0		1.8	9.0	15.0	9.0	1.8		0.0	1.8	1.8
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)	13.4			13.4								
Detector 2 Size(m)	1.8			1.8								
Detector 2 Type	Cl+Ex			Cl+Ex								
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0								
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases		8			4		5	2			6	
Permitted Phases	8			4		4	2			6		6

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	8	8		4	4	4	5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	5.0	20.0		20.0	20.0	20.0
Minimum Split (s)	30.0	30.0		30.0	30.0	30.0	8.0	34.0		34.0	34.0	34.0
Total Split (s)	46.0	46.0		46.0	46.0	46.0	33.0	84.0		51.0	51.0	51.0
Total Split (%)	35.4%	35.4%		35.4%	35.4%	35.4%	25.4%	64.6%		39.2%	39.2%	39.2%
Maximum Green (s)	39.3	39.3		39.3	39.3	39.3	30.0	76.8		43.8	43.8	43.8
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.4		4.4	4.4	4.4
All-Red Time (s)	2.7	2.7		2.7	2.7	2.7	0.0	2.8		2.8	2.8	2.8
Lost Time Adjust (s)		0.0			-2.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		6.7			4.7	6.7	3.0	7.2		7.2	7.2	7.2
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	15.0	15.0		15.0	15.0	15.0		18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0		0	0	0
Act Effct Green (s)		35.6			37.6	35.6	84.7	80.5		53.3	53.3	53.3
Actuated g/C Ratio		0.27			0.29	0.27	0.65	0.62		0.41	0.41	0.41
v/c Ratio		0.01			0.84	0.58	0.83	0.22		0.05	0.64	0.48
Control Delay		0.0			62.5	4.3	33.7	11.8		24.3	31.4	21.3
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		0.0			62.5	4.3	33.7	11.8		24.3	31.4	21.3
LOS		A			E	A	C	B		C	C	C
Approach Delay					21.6			21.7			28.9	
Approach LOS					C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 35 (27%), Referenced to phase 2:NETL and 6:SWTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 24.5		Intersection LOS: C	
Intersection Capacity Utilization 80.3%		ICU Level of Service D	
Analysis Period (min) 15			
* User Entered Value			

Splits and Phases: 257: HWY 2 (KINGSTON RD) & RR 27 (ALTONA RD)



Lane Group	NBT	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	4	322	762	390	468	21	949	310
v/c Ratio	0.01	0.84	0.58	0.83	0.22	0.05	0.64	0.48
Control Delay	0.0	62.5	4.3	33.7	11.8	24.3	31.4	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.0	62.5	4.3	33.7	11.8	24.3	31.4	21.3
Queue Length 50th (m)	0.0	74.4	0.0	54.3	26.8	3.9	103.1	44.4
Queue Length 95th (m)	0.0	#116.1	14.8	91.6	35.4	m7.4	133.1	m79.3
Internal Link Dist (m)	119.8	278.0			200.5		282.1	
Turn Bay Length (m)				18.0		91.0		16.0
Base Capacity (vph)	521	421	1359	533	2161	390	1472	650
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	0.01	0.76	0.56	0.73	0.22	0.05	0.64	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	0	2	296	0	701	359	431	0	19	873	285
Future Volume (vph)	2	0	2	296	0	701	359	431	0	19	873	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)		6.7			4.7	6.7	3.0	7.2		7.2	7.2	7.2
Lane Util. Factor		1.00			1.00	0.88	1.00	*1.00		1.00	*1.00	1.00
Frpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		0.93			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1736			1671	2737	1706	3493		1825	3591	1464
Flt Permitted		0.89			0.76	1.00	0.19	1.00		0.49	1.00	1.00
Satd. Flow (perm)		1588			1329	2737	333	3493		950	3591	1464
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	0	2	322	0	762	390	468	0	21	949	310
RTOR Reduction (vph)	0	3	0	0	0	553	0	0	0	0	0	50
Lane Group Flow (vph)	0	1	0	0	322	209	390	468	0	21	949	260
Confl. Peds. (#/hr)			1	1			1					1
Heavy Vehicles (%)	0%	0%	0%	9%	0%	5%	7%	10%	0%	0%	7%	9%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases		8			4		5	2			6	
Permitted Phases	8			4		4	2			6		6
Actuated Green, G (s)		35.6			35.6	35.6	80.5	80.5		53.3	53.3	53.3
Effective Green, g (s)		35.6			37.6	35.6	80.5	80.5		53.3	53.3	53.3
Actuated g/C Ratio		0.27			0.29	0.27	0.62	0.62		0.41	0.41	0.41
Clearance Time (s)		6.7			6.7	6.7	3.0	7.2		7.2	7.2	7.2
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		434			384	749	461	2162		389	1472	600
v/s Ratio Prot							c0.16	0.13			0.26	
v/s Ratio Perm		0.00			c0.24	0.08	c0.37			0.02		0.18
v/c Ratio		0.00			0.84	0.28	0.85	0.22		0.05	0.64	0.43
Uniform Delay, d1		34.3			43.4	37.1	22.4	10.9		23.1	30.8	27.5
Progression Factor		1.00			1.00	1.00	1.00	1.00		0.84	0.89	0.84
Incremental Delay, d2		0.0			14.7	0.2	13.4	0.2		0.2	1.9	2.0
Delay (s)		34.3			58.1	37.3	35.8	11.1		19.6	29.1	25.0
Level of Service		C			E	D	D	B		B	C	C
Approach Delay (s)		34.3			43.5			22.3			28.0	
Approach LOS		C			D			C			C	

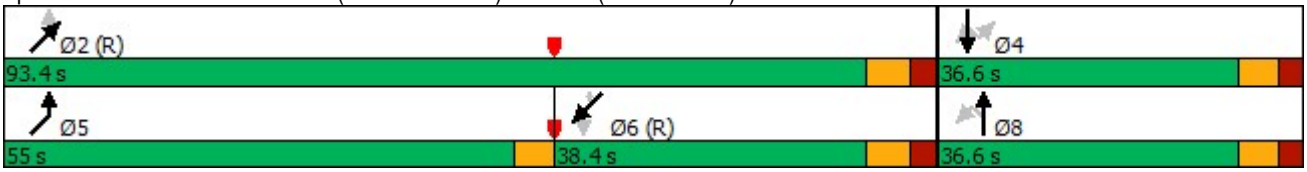
Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.9
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	2	0	218	0	325	754	1639	0	5	665	308
Future Volume (vph)	2	2	0	218	0	325	754	1639	0	5	665	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	2050	2005	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Storage Length (m)	0.0		0.0	154.0		0.0	18.0		0.0	91.0		16.0
Storage Lanes	0		0	1		2	1		0	1		1
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	*1.00	0.95	1.00	*1.00	1.00
Ped Bike Factor					1.00		1.00			1.00		0.97
Frt						0.850						0.850
Flt Protected		0.976			0.950		0.950			0.950		
Satd. Flow (prot)	0	1875	0	0	1644	2737	1875	3754	0	1825	3591	1526
Flt Permitted		0.889			0.755		0.226			0.142		
Satd. Flow (perm)	0	1708	0	0	1305	2737	445	3754	0	273	3591	1484
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						353						105
Link Speed (k/h)		50			50			70			60	
Link Distance (m)		143.8			302.0			224.5			306.1	
Travel Time (s)		10.4			21.7			11.5			18.4	
Confl. Peds. (#/hr)			1	1			3		3	3		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	11%	0%	5%	5%	8%	0%	0%	7%	7%
Adj. Flow (vph)	2	2	0	237	0	353	820	1782	0	5	723	335
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	237	353	820	1782	0	5	723	335
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.89	0.92	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	2	1		2	1	1	1	0		1	0	0
Detector Template												
Leading Detector (m)	15.2	9.0		15.2	9.0	15.0	18.0	0.0		0.0	0.0	0.0
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	9.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	9.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	1.8	9.0		1.8	9.0	15.0	9.0	1.8		0.0	1.8	1.8
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)	13.4			13.4								
Detector 2 Size(m)	1.8			1.8								
Detector 2 Type	Cl+Ex			Cl+Ex								
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0								
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases		8			4		5	2			6	
Permitted Phases	8			4		4	2			6		6

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	8	8		4	4	4	5	2		6	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	8.0	4.0	20.0		20.0	20.0	20.0
Minimum Split (s)	35.7	35.7		35.7	35.7	35.7	10.0	34.0		34.0	34.0	34.0
Total Split (s)	36.6	36.6		36.6	36.6	36.6	55.0	93.4		38.4	38.4	38.4
Total Split (%)	28.2%	28.2%		28.2%	28.2%	28.2%	42.3%	71.8%		29.5%	29.5%	29.5%
Maximum Green (s)	29.9	29.9		29.9	29.9	29.9	51.0	86.2		31.2	31.2	31.2
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.4		4.4	4.4	4.4
All-Red Time (s)	2.7	2.7		2.7	2.7	2.7	0.0	2.8		2.8	2.8	2.8
Lost Time Adjust (s)		0.0			0.0	0.0	-3.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		6.7			6.7	6.7	1.0	7.2		7.2	7.2	7.2
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max		C-Max	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0		7.0	7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0	22.0		18.0		18.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0		0	0	0
Act Effct Green (s)		26.9			26.9	26.9	95.4	89.2		36.9	36.9	36.9
Actuated g/C Ratio		0.21			0.21	0.21	0.73	0.69		0.28	0.28	0.28
v/c Ratio		0.01			0.88	0.42	0.92	0.69		0.06	0.71	0.68
Control Delay		39.0			80.7	5.6	38.8	14.5		24.4	32.1	26.1
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		39.0			80.7	5.6	38.8	14.5		24.4	32.1	26.1
LOS		D			F	A	D	B		C	C	C
Approach Delay		39.0			35.8			22.2			30.2	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 75 (58%), Referenced to phase 2:NETL and 6:SWTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 26.1		Intersection LOS: C	
Intersection Capacity Utilization 95.9%		ICU Level of Service F	
Analysis Period (min) 15			
* User Entered Value			

Splits and Phases: 257: HWY 2 (KINGSTON RD) & RR 27 (ALTONA RD)





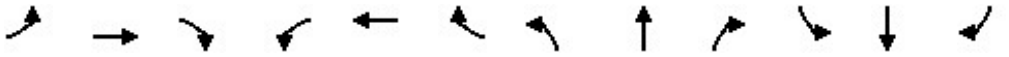
Lane Group	NBT	SBT	SBR	NEL	NET	SWL	SWT	SWR
Lane Group Flow (vph)	4	237	353	820	1782	5	723	335
v/c Ratio	0.01	0.88	0.42	0.92	0.69	0.06	0.71	0.68
Control Delay	39.0	80.7	5.6	38.8	14.5	24.4	32.1	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	80.7	5.6	38.8	14.5	24.4	32.1	26.1
Queue Length 50th (m)	0.8	57.7	0.0	150.5	134.4	0.0	80.1	46.3
Queue Length 95th (m)	3.8	#97.4	13.0	#233.6	158.9	m1.6	m100.9	m81.8
Internal Link Dist (m)	119.8	278.0			200.5		282.1	
Turn Bay Length (m)				18.0		91.0		16.0
Base Capacity (vph)	392	300	901	921	2575	77	1017	495
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	0.01	0.79	0.39	0.89	0.69	0.06	0.71	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	2	2	0	218	0	325	754	1639	0	5	665	308
Future Volume (vph)	2	2	0	218	0	325	754	1639	0	5	665	308
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	2050	2005	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)		6.7			6.7	6.7	1.0	7.2		7.2	7.2	7.2
Lane Util. Factor		1.00			1.00	0.88	1.00	*1.00		1.00	*1.00	1.00
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1874			1642	2737	1875	3754		1824	3591	1484
Flt Permitted		0.89			0.76	1.00	0.23	1.00		0.14	1.00	1.00
Satd. Flow (perm)		1708			1305	2737	447	3754		273	3591	1484
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2	0	237	0	353	820	1782	0	5	723	335
RTOR Reduction (vph)	0	0	0	0	0	280	0	0	0	0	0	75
Lane Group Flow (vph)	0	4	0	0	237	73	820	1782	0	5	723	260
Confl. Peds. (#/hr)			1	1			3		3	3		3
Heavy Vehicles (%)	0%	0%	0%	11%	0%	5%	5%	8%	0%	0%	7%	7%
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm
Protected Phases		8			4		5	2			6	
Permitted Phases	8			4		4	2			6		6
Actuated Green, G (s)		26.9			26.9	26.9	89.2	89.2		36.9	36.9	36.9
Effective Green, g (s)		26.9			26.9	26.9	92.2	89.2		36.9	36.9	36.9
Actuated g/C Ratio		0.21			0.21	0.21	0.71	0.69		0.28	0.28	0.28
Clearance Time (s)		6.7			6.7	6.7	4.0	7.2		7.2	7.2	7.2
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		353			270	566	880	2575		77	1019	421
v/s Ratio Prot							c0.37	c0.47			0.20	
v/s Ratio Perm		0.00			c0.18	0.03	0.29			0.02		0.18
v/c Ratio		0.01			0.88	0.13	0.93	0.69		0.06	0.71	0.62
Uniform Delay, d1		41.0			50.0	42.0	24.8	12.2		34.0	41.7	40.4
Progression Factor		1.00			1.00	1.00	1.00	1.00		0.58	0.64	0.64
Incremental Delay, d2		0.0			25.8	0.1	16.2	1.6		1.4	3.7	5.9
Delay (s)		41.0			75.8	42.1	41.1	13.7		21.1	30.5	31.8
Level of Service		D			E	D	D	B		C	C	C
Approach Delay (s)		41.0			55.6			22.4			30.9	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

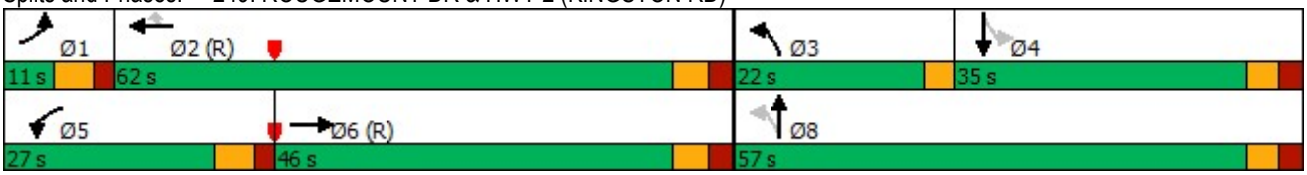


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	536	219	167	838	56	322	38	133	77	32	51
Future Volume (vph)	21	536	219	167	838	56	322	38	133	77	32	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Storage Length (m)	96.0		0.0	50.0		20.0	30.0		0.0	20.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	*1.00	0.95	1.00	*1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		1.00		0.95	0.99	0.98		0.99	0.99	
Frt		0.957				0.850		0.883			0.908	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3499	0	1772	3694	1526	1807	1627	0	1789	1673	0
Flt Permitted	0.950			0.950			0.572			0.640		
Satd. Flow (perm)	1811	3499	0	1765	3694	1453	1082	1627	0	1192	1673	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		55				100		145			55	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		306.1			605.7			166.5			788.7	
Travel Time (s)		18.4			36.3			15.0			71.0	
Confl. Peds. (#/hr)	10		4	4		10	5		11	11		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	5%	2%	3%	4%	7%	1%	6%	1%	2%	8%	0%
Adj. Flow (vph)	23	583	238	182	911	61	350	41	145	84	35	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	821	0	182	911	61	350	186	0	84	90	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	2	1	1		1	1	
Detector Template												
Leading Detector (m)	5.0	0.0		5.0	0.0	15.2	15.0	15.0		15.0	15.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	5.0	1.8		5.0	1.8	1.8	15.0	15.0		15.0	15.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)						13.4						
Detector 2 Size(m)						1.8						
Detector 2 Type						Cl+Ex						
Detector 2 Channel												
Detector 2 Extend (s)						0.0						
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases						2	8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2	2	3	8		4	4	
Switch Phase												
Minimum Initial (s)	4.0	20.0		4.0	20.0	20.0	4.0	8.0		8.0	8.0	
Minimum Split (s)	10.0	31.0		10.0	31.0	31.0	10.0	34.9		34.9	34.9	
Total Split (s)	11.0	46.0		27.0	62.0	62.0	22.0	57.0		35.0	35.0	
Total Split (%)	8.5%	35.4%		20.8%	47.7%	47.7%	16.9%	43.8%		26.9%	26.9%	
Maximum Green (s)	5.0	39.7		21.0	55.7	55.7	19.0	51.1		29.1	29.1	
Yellow Time (s)	4.0	3.7		4.0	3.7	3.7	3.0	3.3		3.3	3.3	
All-Red Time (s)	2.0	2.6		2.0	2.6	2.6	0.0	2.6		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.3		6.0	6.3	6.3	3.0	5.9		5.9	5.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0	16.0		22.0		22.0	22.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	7.2	56.8		18.5	72.8	72.8	39.4	36.5		14.5	14.5	
Actuated g/C Ratio	0.06	0.44		0.14	0.56	0.56	0.30	0.28		0.11	0.11	
v/c Ratio	0.23	0.53		0.73	0.44	0.07	0.81	0.33		0.63	0.38	
Control Delay	72.1	16.1		94.8	5.3	0.3	54.1	10.6		74.8	27.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	72.1	16.1		94.8	5.3	0.3	54.1	10.6		74.8	27.4	
LOS	E	B		F	A	A	D	B		E	C	
Approach Delay		17.7			19.2			39.0			50.2	
Approach LOS		B			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 125 (96%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 24.6		Intersection LOS: C	
Intersection Capacity Utilization 76.9%		ICU Level of Service D	
Analysis Period (min) 15			
* User Entered Value			

Splits and Phases: 249: ROUGEMOUNT DR & HWY 2 (KINGSTON RD)

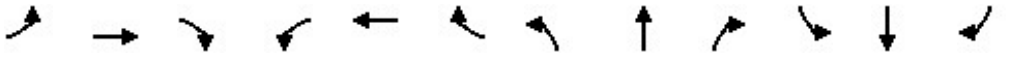




Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	821	182	911	61	350	186	84	90
v/c Ratio	0.23	0.53	0.73	0.44	0.07	0.81	0.33	0.63	0.38
Control Delay	72.1	16.1	94.8	5.3	0.3	54.1	10.6	74.8	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.1	16.1	94.8	5.3	0.3	54.1	10.6	74.8	27.4
Queue Length 50th (m)	5.9	42.9	48.8	18.0	0.0	77.6	7.8	20.9	8.3
Queue Length 95th (m)	m12.6	74.4	73.1	30.8	0.1	101.9	24.3	36.4	23.2
Internal Link Dist (m)		282.1		581.7			142.5		764.7
Turn Bay Length (m)	96.0		50.0		20.0	30.0		20.0	
Base Capacity (vph)	101	1559	297	2067	857	434	727	266	417
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.53	0.61	0.44	0.07	0.81	0.26	0.32	0.22

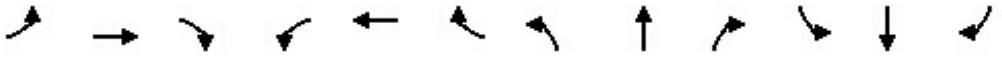
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	536	219	167	838	56	322	38	133	77	32	51
Future Volume (vph)	21	536	219	167	838	56	322	38	133	77	32	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	6.0	6.3		6.0	6.3	6.3	3.0	5.9		5.9	5.9	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.95	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.99	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.88		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	3498		1772	3694	1453	1801	1627		1769	1673	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.57	1.00		0.64	1.00	
Satd. Flow (perm)	1825	3498		1772	3694	1453	1084	1627		1192	1673	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	583	238	182	911	61	350	41	145	84	35	55
RTOR Reduction (vph)	0	31	0	0	0	28	0	104	0	0	49	0
Lane Group Flow (vph)	23	790	0	182	911	33	350	82	0	84	41	0
Confl. Peds. (#/hr)	10		4	4		10	5		11	11		5
Heavy Vehicles (%)	0%	5%	2%	3%	4%	7%	1%	6%	1%	2%	8%	0%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases						2	8			4		
Actuated Green, G (s)	4.9	56.8		18.5	70.4	70.4	36.5	36.5		14.5	14.5	
Effective Green, g (s)	4.9	56.8		18.5	70.4	70.4	36.5	36.5		14.5	14.5	
Actuated g/C Ratio	0.04	0.44		0.14	0.54	0.54	0.28	0.28		0.11	0.11	
Clearance Time (s)	6.0	6.3		6.0	6.3	6.3	3.0	5.9		5.9	5.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	68	1528		252	2000	786	409	456		132	186	
v/s Ratio Prot	0.01	c0.23		c0.10	0.25		c0.12	0.05			0.02	
v/s Ratio Perm						0.02	c0.12			0.07		
v/c Ratio	0.34	0.52		0.72	0.46	0.04	0.86	0.18		0.64	0.22	
Uniform Delay, d1	61.0	26.6		53.3	18.1	14.0	42.4	35.4		55.2	52.6	
Progression Factor	1.15	0.56		1.51	0.25	0.22	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.7	1.2		9.0	0.7	0.1	15.9	0.2		9.6	0.6	
Delay (s)	73.1	16.1		89.7	5.2	3.2	58.3	35.6		64.9	53.2	
Level of Service	E	B		F	A	A	E	D		E	D	
Approach Delay (s)		17.6			18.4			50.4			58.8	
Approach LOS		B			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	21.2
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

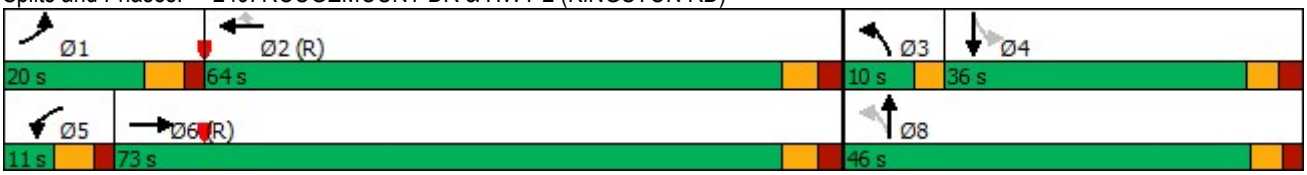


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	1436	463	112	669	52	280	69	80	74	74	43
Future Volume (vph)	91	1436	463	112	669	52	280	69	80	74	74	43
Ideal Flow (vphpl)	1900	2005	1900	2050	1900	1900	2050	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Storage Length (m)	96.0		0.0	50.0		20.0	30.0		0.0	20.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	25.0			25.0			25.0			25.0		
Lane Util. Factor	1.00	*1.00	0.95	1.00	*1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		1.00		0.94	0.99	0.98		0.97	0.99	
Frt		0.963				0.850		0.919			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	3794	0	1969	3767	1633	1969	1722	0	1772	1798	0
Flt Permitted	0.950			0.950			0.565			0.654		
Satd. Flow (perm)	1799	3794	0	1965	3767	1537	1160	1722	0	1186	1798	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54				150		47			21	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		306.1			605.7			166.5			788.7	
Travel Time (s)		18.4			36.3			15.0			71.0	
Confl. Peds. (#/hr)	14		13	13		14	9		27	27		9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	99	1561	503	122	727	57	304	75	87	80	80	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	2064	0	122	727	57	304	162	0	80	127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	0.99	0.92	0.99	0.89	0.99	0.99	0.89	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	0		1	0	2	1	1		1	1	
Detector Template												
Leading Detector (m)	5.0	0.0		5.0	0.0	15.2	15.0	15.0		15.0	15.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	5.0	1.8		5.0	1.8	1.8	15.0	15.0		15.0	15.0	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)						13.4						
Detector 2 Size(m)						1.8						
Detector 2 Type						Cl+Ex						
Detector 2 Channel												
Detector 2 Extend (s)						0.0						
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases						2	8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2	2	3	8		4	4	
Switch Phase												
Minimum Initial (s)	4.0	20.0		4.0	20.0	20.0	4.0	8.0		8.0	8.0	
Minimum Split (s)	10.0	31.0		10.0	31.0	31.0	10.0	35.5		35.9	35.9	
Total Split (s)	20.0	73.0		11.0	64.0	64.0	10.0	46.0		36.0	36.0	
Total Split (%)	15.4%	56.2%		8.5%	49.2%	49.2%	7.7%	35.4%		27.7%	27.7%	
Maximum Green (s)	14.0	66.7		5.0	57.7	57.7	7.0	40.5		30.1	30.1	
Yellow Time (s)	4.0	3.7		4.0	3.7	3.7	3.0	3.3		3.3	3.3	
All-Red Time (s)	2.0	2.6		2.0	2.6	2.6	0.0	2.2		2.6	2.6	
Lost Time Adjust (s)	0.0	0.0		-3.0	0.0	0.0	-3.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.3		3.0	6.3	6.3	0.0	5.5		5.9	5.9	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0		7.0	7.0	
Flash Dont Walk (s)		16.0			16.0	16.0		23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0			0	0		0		0	0	
Act Effct Green (s)	12.4	72.6		18.1	75.3	75.3	30.1	24.6		14.2	14.2	
Actuated g/C Ratio	0.10	0.56		0.14	0.58	0.58	0.23	0.19		0.11	0.11	
v/c Ratio	0.57	0.96		0.45	0.33	0.06	0.92	0.45		0.62	0.59	
Control Delay	80.8	31.5		48.6	14.9	3.2	79.7	35.8		74.7	56.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	80.8	31.5		48.6	14.9	3.2	79.7	35.8		74.7	56.3	
LOS	F	C		D	B	A	E	D		E	E	
Approach Delay		33.8			18.7			64.4			63.4	
Approach LOS		C			B			E			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 56 (43%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 35.6		Intersection LOS: D	
Intersection Capacity Utilization 101.3%		ICU Level of Service G	
Analysis Period (min) 15			
* User Entered Value			

Splits and Phases: 249: ROUGEMOUNT DR & HWY 2 (KINGSTON RD)

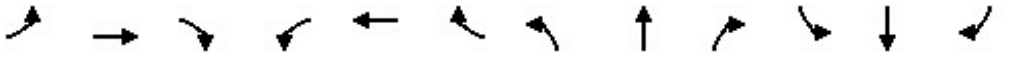




Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	99	2064	122	727	57	304	162	80	127
v/c Ratio	0.57	0.96	0.45	0.33	0.06	0.92	0.45	0.62	0.59
Control Delay	80.8	31.5	48.6	14.9	3.2	79.7	35.8	74.7	56.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.8	31.5	48.6	14.9	3.2	79.7	35.8	74.7	56.3
Queue Length 50th (m)	26.6	249.6	31.3	43.9	0.8	71.3	26.0	19.9	26.2
Queue Length 95th (m)	m36.5	#324.0	38.0	78.0	8.4	#102.9	44.6	34.9	44.5
Internal Link Dist (m)		282.1		581.7			142.5		764.7
Turn Bay Length (m)	96.0		50.0		20.0	30.0		20.0	
Base Capacity (vph)	205	2141	273	2180	952	330	568	274	432
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.96	0.45	0.33	0.06	0.92	0.29	0.29	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	1436	463	112	669	52	280	69	80	74	74	43
Future Volume (vph)	91	1436	463	112	669	52	280	69	80	74	74	43
Ideal Flow (vphpl)	1900	2005	1900	2050	1900	1900	2050	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	6.0	6.3		3.0	6.3	6.3	0.0	5.5		5.9	5.9	
Lane Util. Factor	1.00	*1.00		1.00	*1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.94	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		0.97	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1825	3796		1969	3767	1537	1959	1722		1722	1799	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.56	1.00		0.65	1.00	
Satd. Flow (perm)	1825	3796		1969	3767	1537	1164	1722		1186	1799	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	99	1561	503	122	727	57	304	75	87	80	80	47
RTOR Reduction (vph)	0	24	0	0	0	24	0	38	0	0	19	0
Lane Group Flow (vph)	99	2040	0	122	727	33	304	124	0	80	108	0
Confl. Peds. (#/hr)	14		13	13		14	9		27	27		9
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	0%	0%	3%	0%	0%
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	1	6		5	2		3	8			4	
Permitted Phases						2	8			4		
Actuated Green, G (s)	12.4	72.5		15.1	75.2	75.2	24.6	24.6		14.2	14.2	
Effective Green, g (s)	12.4	72.5		18.1	75.2	75.2	27.6	24.6		14.2	14.2	
Actuated g/C Ratio	0.10	0.56		0.14	0.58	0.58	0.21	0.19		0.11	0.11	
Clearance Time (s)	6.0	6.3		6.0	6.3	6.3	3.0	5.5		5.9	5.9	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	174	2117		274	2179	889	308	325		129	196	
v/s Ratio Prot	0.05	c0.54		c0.06	c0.19		c0.08	0.07			0.06	
v/s Ratio Perm						0.02	0.13			0.07		
v/c Ratio	0.57	0.96		0.45	0.33	0.04	0.99	0.38		0.62	0.55	
Uniform Delay, d1	56.2	27.5		51.3	14.3	11.8	50.0	46.0		55.3	54.9	
Progression Factor	1.28	0.74		0.85	0.94	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.2	10.3		1.1	0.4	0.1	47.3	0.7		8.9	3.3	
Delay (s)	75.0	30.6		44.5	13.8	11.9	97.3	46.8		64.2	58.2	
Level of Service	E	C		D	B	B	F	D		E	E	
Approach Delay (s)		32.6			17.8			79.7			60.6	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX H

Signal Warrants

TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)
PER OTM BOOK 12

Project and Scenario Summary

Project	375-417 Kingston Road	**Project Number**	2144-7313
		Date	2025-03-24
Horizon	2027 Future Total	**Analyst**	MI

Study Intersection Summary

Major Street	Kingston Road	**Direction**	East/West
Minor Street	Evelyn Avenue	**Direction**	North/South

Intersection Details for Warrant Parameters

Flow Conditions	Restricted Flow (Urban)	**Number of Lanes**	2+
T-Intersection?	Yes	**Intersection Type**	Existing

Notes: Free Flow (Rural) is used when the operating speed is greater than or equal to 70km/h. Restricted Flow (Urban) is used otherwise.
The Number of Lanes greater than 1 only needs to be for one direction along the major road.
An intersection is considered New if at least 1-leg is added to an existing intersection.

Input Volumes and Average Hourly Volume Determination

Peak Hour	Major: Kingston Road						Minor: Evelyn Avenue						Pedestrians Crossing Major Street
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
AM	0	778	13	38	834	0	75	0	49	0	0	0	0
PM	0	1200	25	56	976	0	38	0	52	0	0	0	0
AHV	0	495	10	24	453	0	28	0	25	0	0	0	0

The AHV is determined by the availability of the peak hour estimates. If both Peak 1 and Peak 2 Peak Hour Volume estimates are available then AHV = (Peak1phv + Peak2phv)/4. In only the case that one estimate is available then AHV = Peak1phv/2 **or** Peak2phv/2.

Justification 7 - OTM Book 12

JUSTIFICATION	DESCRIPTION	MINIMUM REQUIREMENT 1 LANE HIGHWAYS		MINIMUM REQUIREMENT 2 OR MORE LANE HIGHWAYS		COMPLIANCE		
						Sectional		Entire Percentage
		Free Flow	Restricted Flow	Free Flow	Restricted Flow	Numerical	Percentage	
1. Minimum Vehicular Volume	A. Vehicle Volume, All Approaches (Avg. Hour)	480	720	600	900	1035	115.0%	20.8%
	B. Vehicle Volume, Along Minor Streets (Avg. Hour)	180	255	180	255	53	20.8%	
2. Delay to Cross Traffic	A. Vehicle Volume, Major Street (Avg. Hour)	480	720	600	900	982	109.1%	37.3%
	B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour)	50	75	50	75	28	37.3%	
Applicable Threshold					X			

Note: For T-intersections the thresholds for 1B have been increased by 50% per OTM Book 12.
Existing Intersections Require 120% Justification
New/Proposed Intersections Require 150% Justification

Percent Compliance: 37.3%
Percentage Required to be Justified: 120%

Signal Justification 7 Met: [ ] **Yes** [X] **No**

TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)
PER OTM BOOK 12

Project and Scenario Summary

Project	375-417 Kingston Road	**Project Number**	2144-7313
		Date	2025-03-24
Horizon	2039 Future Total	**Analyst**	MI

Study Intersection Summary

Major Street	Kingston Raod	**Direction**	East/West
Minor Street	Evelyn Avenue	**Direction**	North/South

Intersection Details for Warrant Parameters

Flow Conditions	Restricted Flow (Urban)	**Number of Lanes**	2+
T-Intersection?	Yes	**Intersection Type**	Existing

Notes: Free Flow (Rural) is used when the operating speed is greater than or equal to 70km/h. Restricted Flow (Urban) is used otherwise.
The Number of Lanes greater than 1 only needs to be for one direction along the major road.
An intersection is considered New if at least 1-leg is added to an existing intersection.

Input Volumes and Average Hourly Volume Determination

Peak Hour	Major: Kingston Raod						Minor: Evelyn Avenue						Pedestrians Crossing Major Street
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
AM	0	855	16	67	896	0	96	0	76	0	0	0	0
PM	0	1289	42	109	1042	0	52	0	86	0	0	0	0
AHV	0	536	15	44	485	0	37	0	41	0	0	0	0

The AHV is determined by the availability of the peak hour estimates. If both Peak 1 and Peak 2 Peak Hour Volume estimates are available then AHV = (Peak1phv + Peak2phv)/4. In only the case that one estimate is available then AHV = Peak1phv/2 **or** Peak2phv/2.

Justification 7 - OTM Book 12

JUSTIFICATION	DESCRIPTION	MINIMUM REQUIREMENT 1 LANE HIGHWAYS		MINIMUM REQUIREMENT 2 OR MORE LANE HIGHWAYS		COMPLIANCE		
						Sectional		Entire Percentage
		Free Flow	Restricted Flow	Free Flow	Restricted Flow	Numerical	Percentage	
1. Minimum Vehicular Volume	A. Vehicle Volume, All Approaches (Avg. Hour)	480	720	600	900	1158	128.7%	30.6%
	B. Vehicle Volume, Along Minor Streets (Avg. Hour)	180	255	180	255	78	30.6%	
2. Delay to Cross Traffic	A. Vehicle Volume, Major Street (Avg. Hour)	480	720	600	900	1080	120.0%	49.3%
	B. Combined Vehicle and Pedestrian Volume Crossing Artery From Minor Streets (Avg. Hour)	50	75	50	75	37	49.3%	
Applicable Threshold					X			

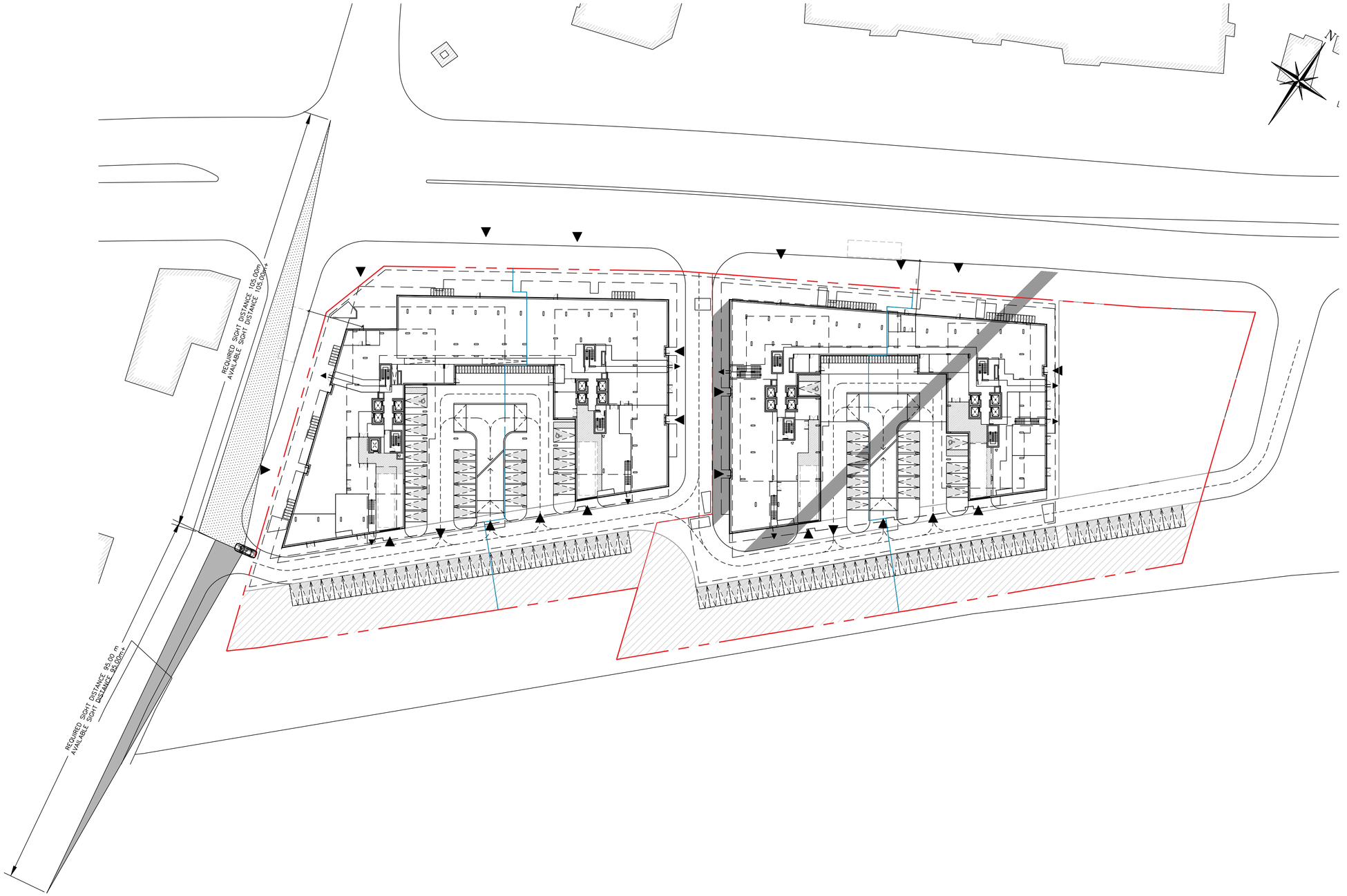
Note: For T-intersections the thresholds for 1B have been increased by 50% per OTM Book 12.
Existing Intersections Require 120% Justification
New/Proposed Intersections Require 150% Justification

Percent Compliance: 49.3%
Percentage Required to be Justified: 120%

Signal Justification 7 Met: [ ] **Yes** [X] **No**

APPENDIX I

Sight Distance Assessment



LEGEND

- PASSENGER CAR
- CASE B2 – ISD
- CASE B1 – ISD
- PROP. R.O.W.

DESIGN INTERSECTION SIGHT DISTANCE

TYPE	INTERSECTION SIGHT DISTANCE (ISD)
CASE	B1, LEFT TURN FROM THE MINOR ROAD
GRADE	−3% TO +3%
APPROACH GRADE FACTOR (T 9.9.2)	1.0
FORMULA (Eq. 9.9.1)	ISD = 0.278Vmajor x TG
VEHICLE TYPE	PASSENGER CAR
V MAJOR ROAD	50 KM/H
TIME GAP (T 9.9.3)	7.5 SECONDS
ISD	105 m

TYPE	INTERSECTION SIGHT DISTANCE (ISD)
CASE	B2, RIGHT TURN FROM THE MINOR ROAD
GRADE	−3% TO +3%
APPROACH GRADE FACTOR (T 9.9.2)	1.0
FORMULA (Eq. 9.9.1)	ISD = 0.278Vmajor x TG
VEHICLE TYPE	PASSENGER CAR
V MAJOR ROAD	50 KM/H
TIME GAP (T 9.9.3)	6.5 SECONDS
ISD	95 m

NOTES:

1. ALL INTERSECTION SIGHT DISTANCE REQUIREMENTS ARE DESCRIBED IN TAC GDGCR SECTION 9.9.
2. MINIMUM STOPPING SIGHT DISTANCE (SSD) REQUIREMENTS ARE DESCRIBED IN TAC GDGCR SECTION 2.5.
3. SIGHT DISTANCE REVIEW HAS BEEN COMPLETED USING DESKTOP METHODOLOGY ONLY, AND MAY BE SUBJECT TO CHANGE PENDING AS−CONSTRUCTED CONDITIONS.
4. VERTEX OF SIGHT TRIANGLE SHALL BE LOCATED BETWEEN 4.40m AND 5.40m FROM THE EDGE OF THE MAJOR−ROAD TRAVELED WAY.
5. TIME GAP (Tg) ASSUMED THE APPROACH GRADE DOES NOT EXCEED A 3% UPGRADE.
6. VERTEX OF TRIANGLE ALONG MAJOR ROADWAY IS MEASURED FROM THE MIDDLE OF THE APPROPRIATE THROUGH LANE.
7. '+' SYMBOL ADDED WHEN AVAILABLE SIGHT DISTANCE IS GREATER THAN REQUIRED.

10 0m 10 20 30 40
SCALE: 1:500

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2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.
3. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
4. REFER TO SECTION 9.9.2 IN THE TAC DESIGN GUIDE FOR DEPARTURE SIGHT TRIANGLE DIMENSIONS.

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/21/2025

Engineer

FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

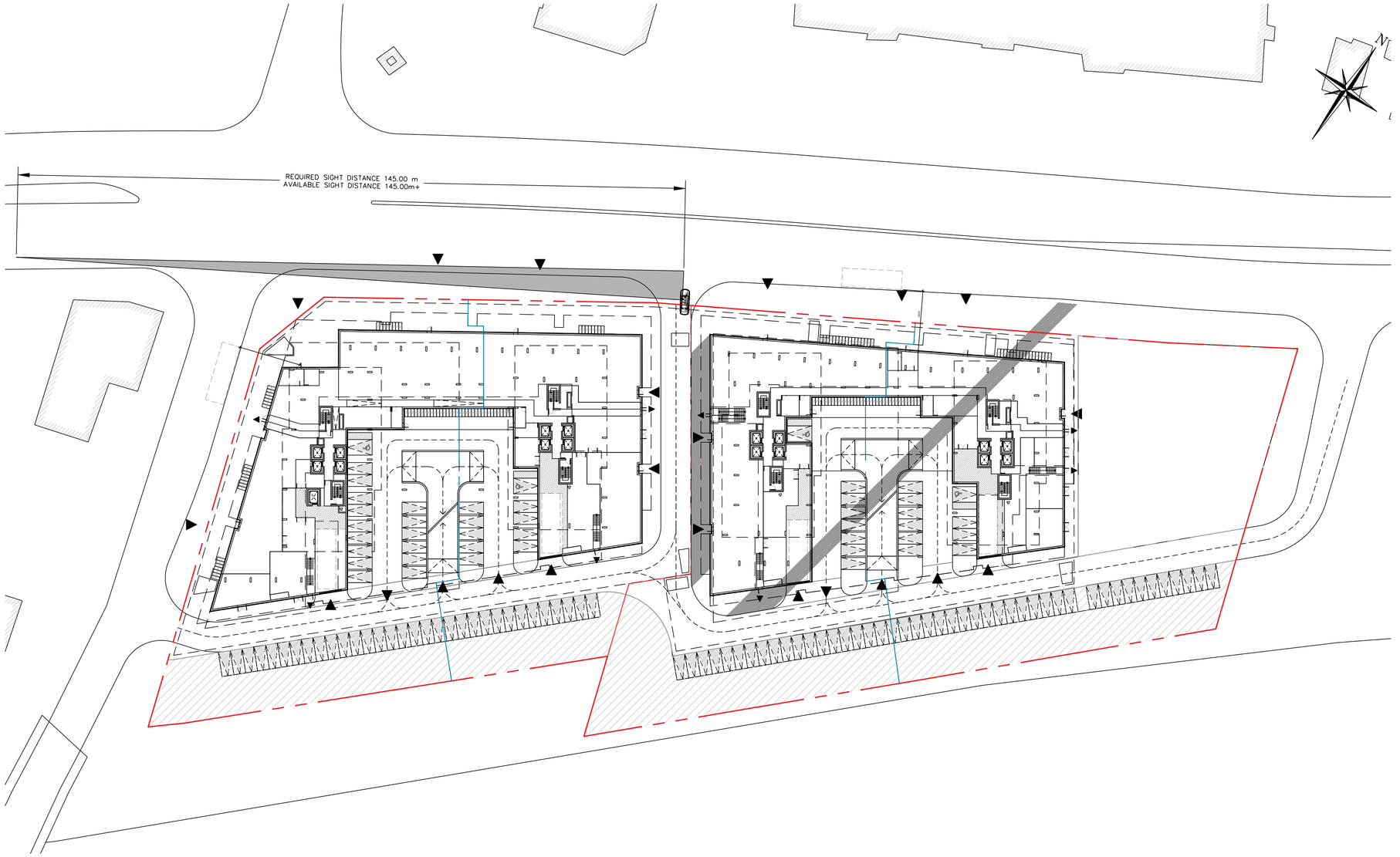
Engineer

Project
375−417 KINGSTON ROAD
CITY OF PICKERING

Drawing
SIGHT DISTANCE ASSESSMENT

CROZIER CONSULTING ENGINEERS

Drawn By	Design By	Project
R.L.		2144−7313
Check By	Check By	Drawing
M.I.		T100



LEGEND

	PASSENGER CAR
	CASE B2 – ISD
	CASE B1 – ISD
	PROP. R.O.W.

DESIGN INTERSECTION SIGHT DISTANCE

TYPE	INTERSECTION SIGHT DISTANCE (ISD)
CASE	B2, RIGHT TURN FROM THE MINOR ROAD
GRADE	−3% TO +3%
APPROACH GRADE FACTOR (T 9.9.2)	1.0
FORMULA (Eq. 9.9.1)	ISD = 0.278Vmajor x TG
VEHICLE TYPE	PASSENGER CAR
V MAJOR ROAD	80 KM/H
TIME GAP (T 9.9.3)	6.5 SECONDS
ISD	145 m

NOTES:

1. ALL INTERSECTION SIGHT DISTANCE REQUIREMENTS ARE DESCRIBED IN TAC GDGCR SECTION 9.9.
2. MINIMUM STOPPING SIGHT DISTANCE (SSD) REQUIREMENTS ARE DESCRIBED IN TAC GDGCR SECTION 2.5.
3. SIGHT DISTANCE REVIEW HAS BEEN COMPLETED USING DESKTOP METHODOLOGY ONLY, AND MAY BE SUBJECT TO CHANGE PENDING AS−CONSTRUCTED CONDITIONS.
4. VERTEX OF SIGHT TRIANGLE SHALL BE LOCATED BETWEEN 4.40m AND 5.40m FROM THE EDGE OF THE MAJOR−ROAD TRAVELED WAY.
5. TIME GAP (Tg) ASSUMED THE APPROACH GRADE DOES NOT EXCEED A 3% UPGRADE.
6. VERTEX OF TRIANGLE ALONG MAJOR ROADWAY IS MEASURED FROM THE MIDDLE OF THE APPROPRIATE THROUGH LANE.
7. '+' SYMBOL ADDED WHEN AVAILABLE SIGHT DISTANCE IS GREATER THAN REQUIRED.

10 0m 10 20 30 40
SCALE: 1:500

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2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.
3. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
4. REFER TO SECTION 9.9.2 IN THE TAC DESIGN GUIDE FOR DEPARTURE SIGHT TRIANGLE DIMENSIONS.

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/21/2025

Engineer

FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

Engineer

Project
375−417 KINGSTON ROAD
CITY OF PICKERING

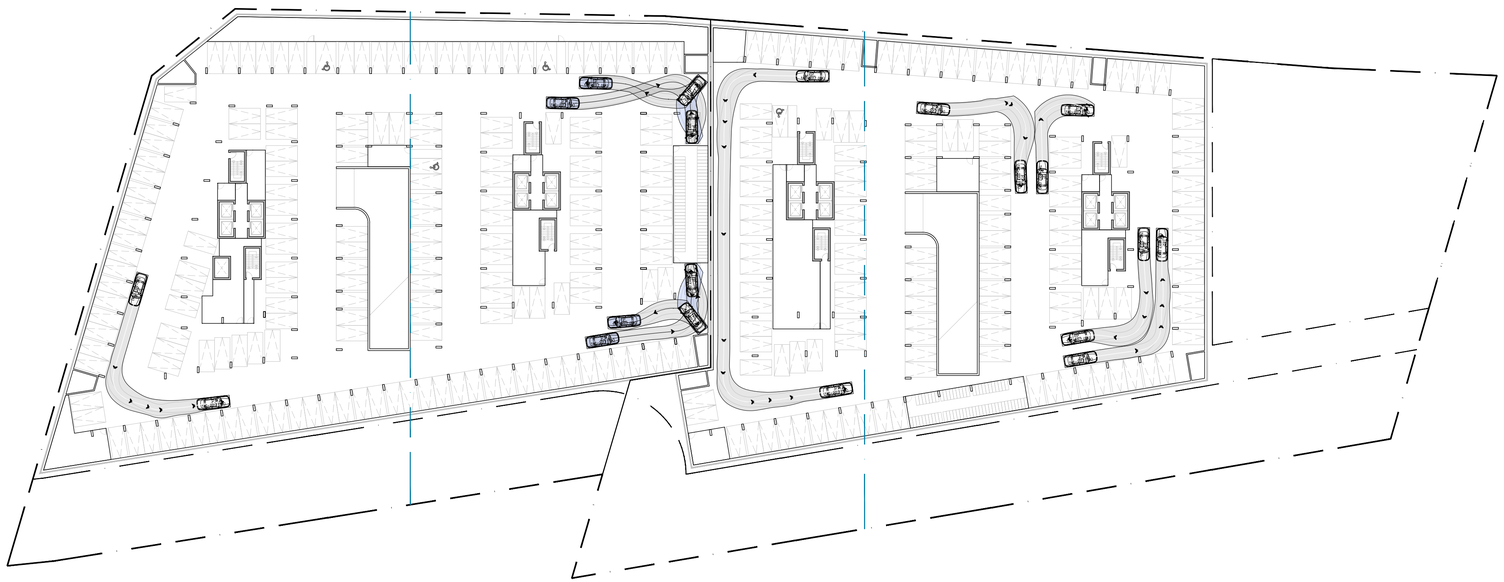
Drawing
SIGHT DISTANCE ASSESSMENT

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project
R.L.		2144−7313
Check By	Check By	Drawing
M.I.		T101

APPENDIX J

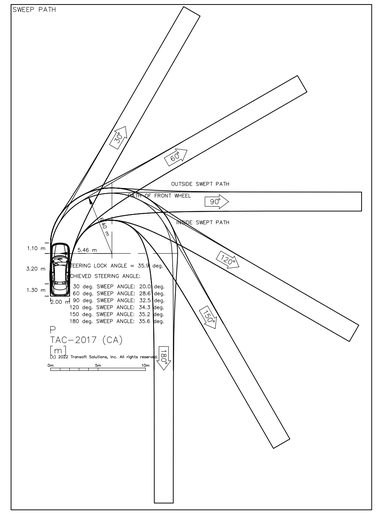
Vehicle Turning Assessment



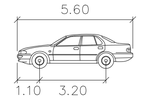
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FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

SWEEP PATH



VEHICLE PROFILE



P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/25/2025

Project

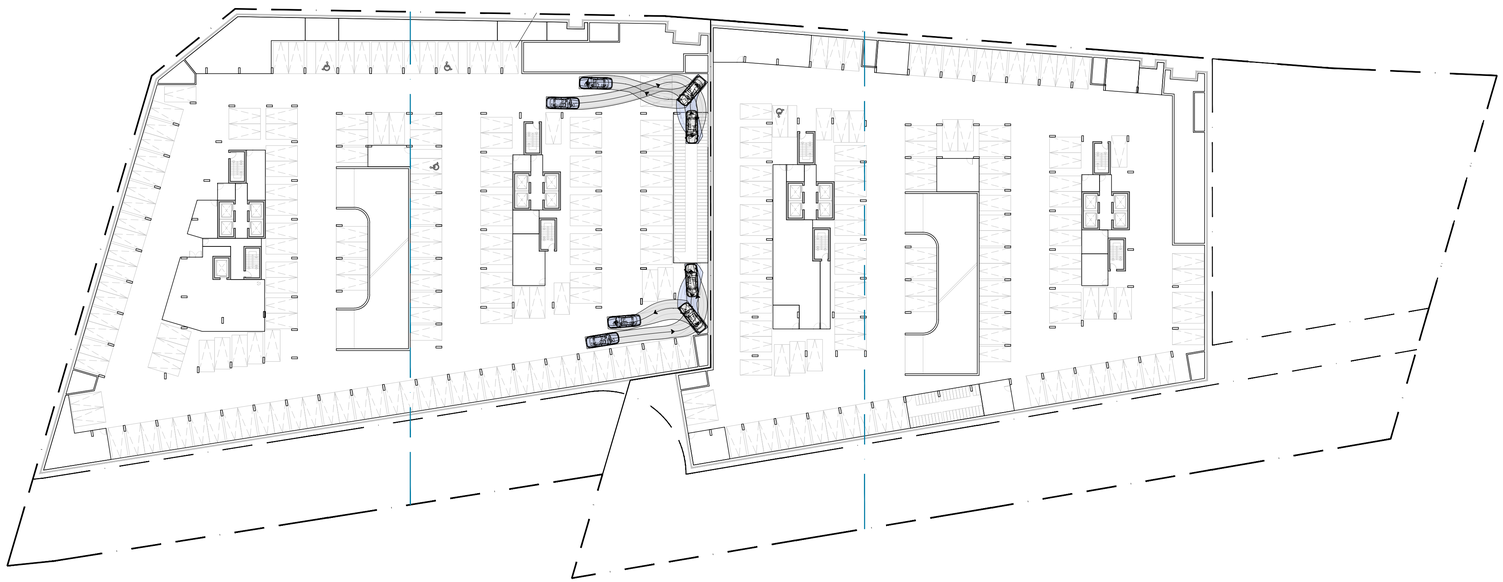
375-417 KINGSTON ROAD
CITY OF PICKERING

Drawing

UNDERGROUND PARKING LEVEL P2
VEHICLE MANEUVERING ANALYSIS

CROZIER
CONSULTING ENGINEERS

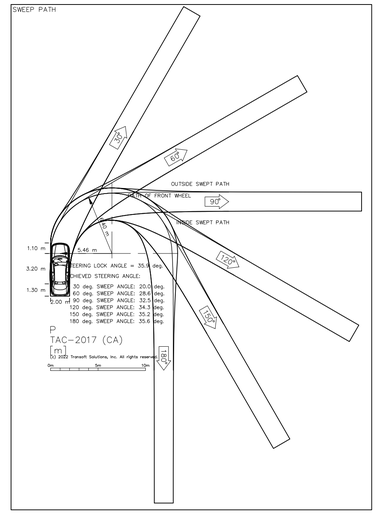
Drawn By	Design By	Project
R.L.		2144-7313
Check By	Check By	Scale / Drawing
M.I.	M.L.	1:500 / T300



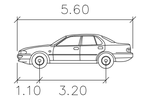
10 0m 10 20 30 40
SCALE: 1:500

FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

SWEEP PATH



VEHICLE PROFILE



P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

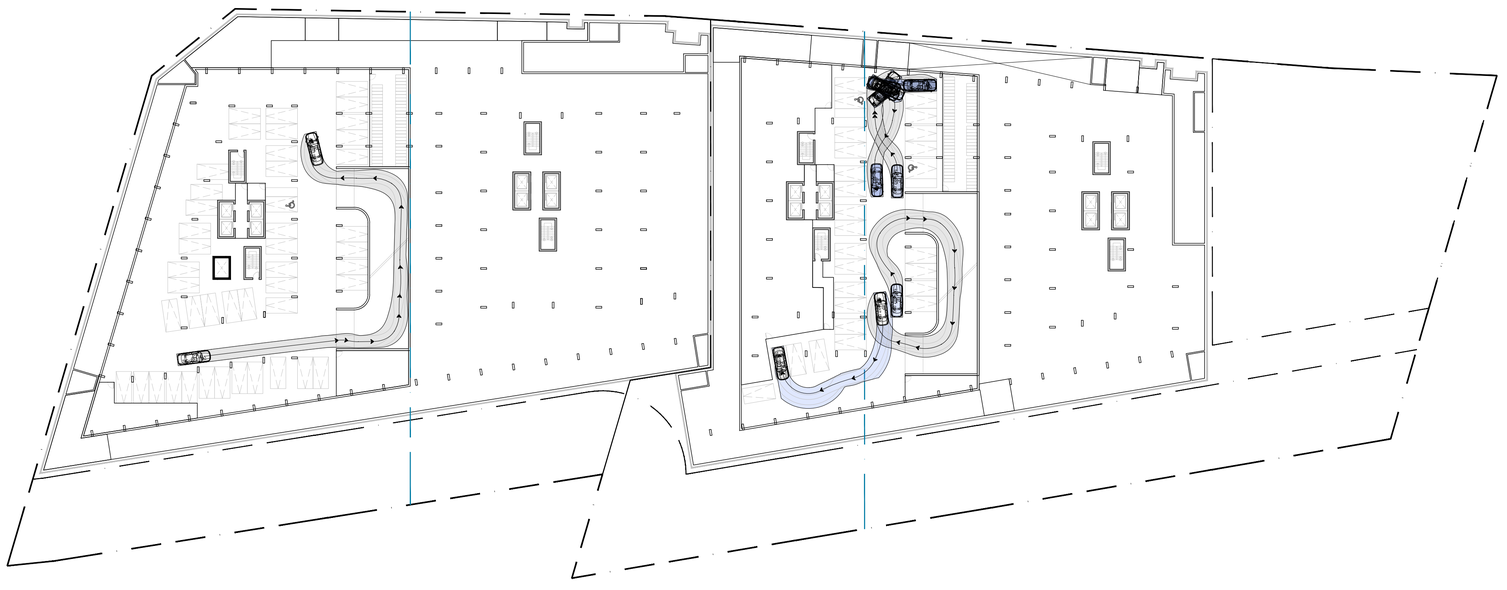
No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/25/2025

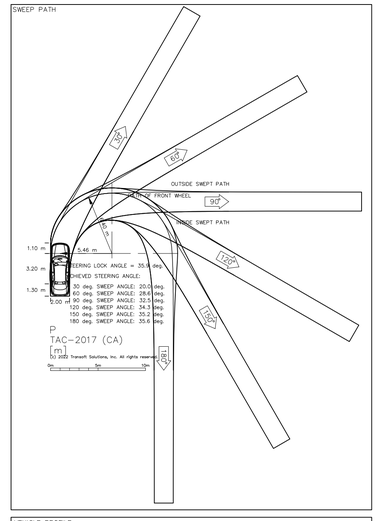
Project
375-417 KINGSTON ROAD
CITY OF PICKERING

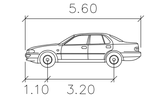
Drawing
UNDERGROUND PARKING LEVEL P1
VEHICLE MANEUVERING ANALYSIS

CROZIER
CONSULTING ENGINEERS

Drawn By: R.L.	Design By:	Project: 2144-7313	
Check By: M.I.	Check By: M.L.	Scale: 1:500	Drawing: T301







P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

FOR REVIEW

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No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/25/2025

Project

375-417 KINGSTON ROAD
CITY OF PICKERING

Drawing

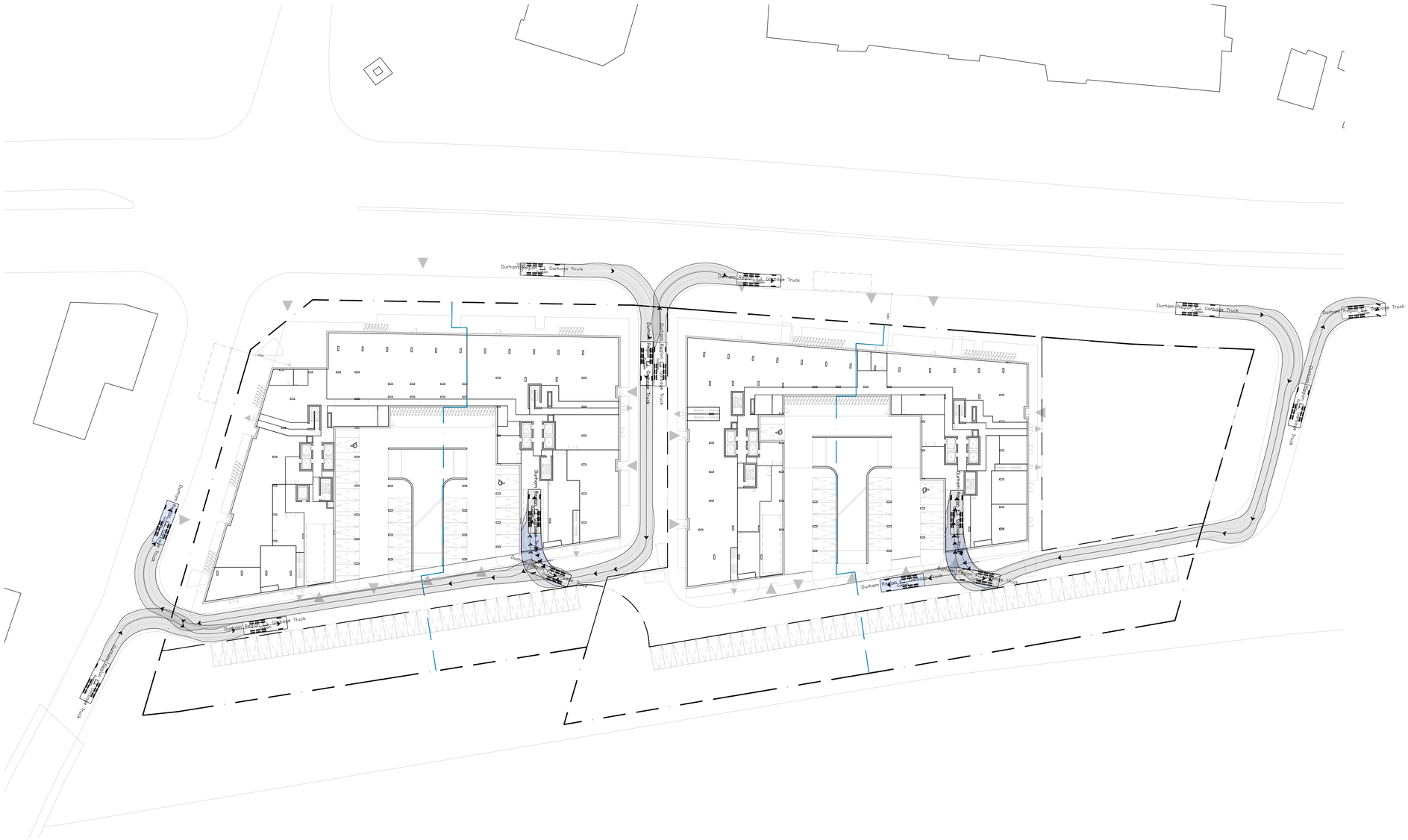
UNDERGROUND MEZZANINE
VEHICLE MANEUVERING ANALYSIS

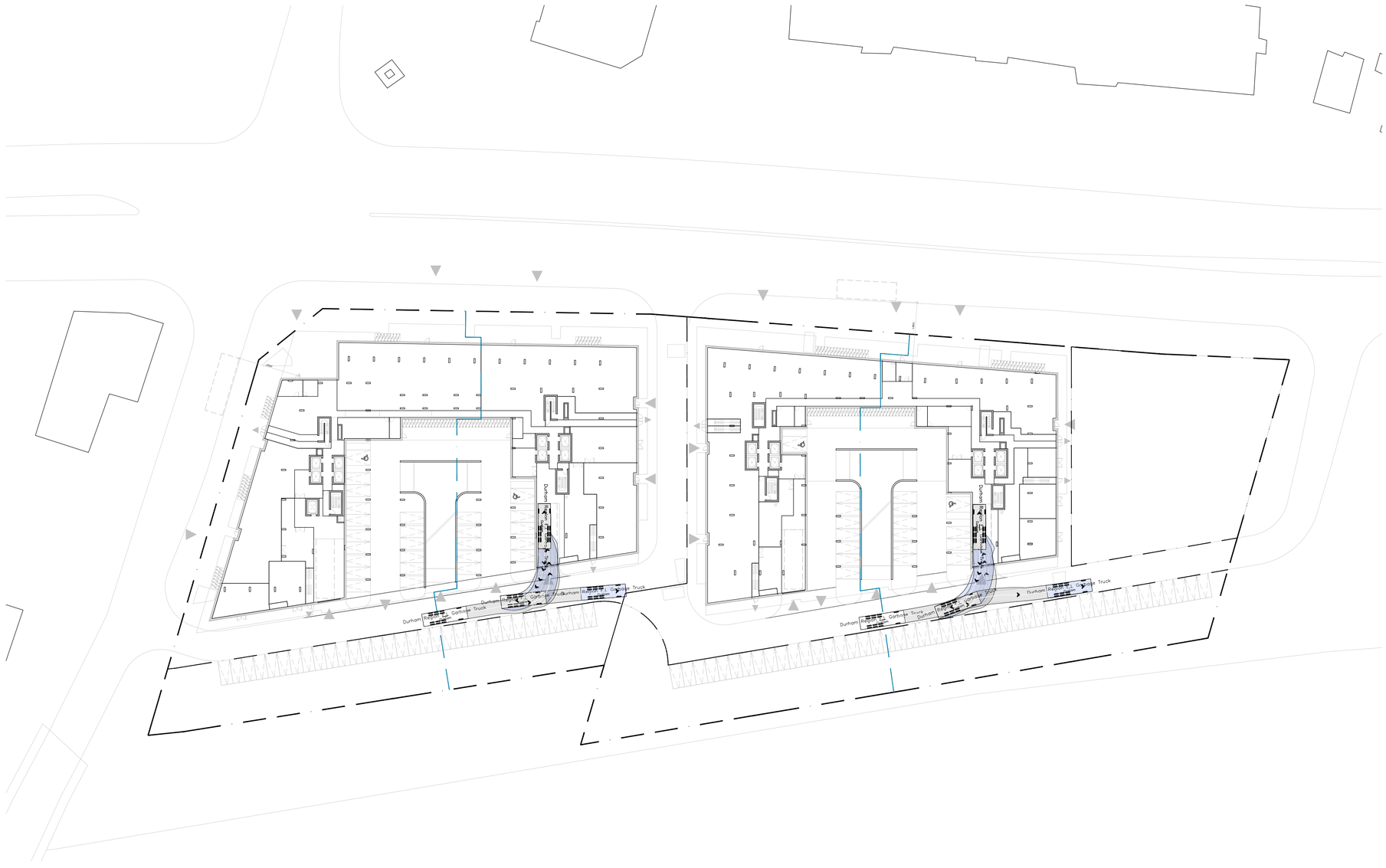
CROZIER
CONSULTING ENGINEERS

Drawn By: R.L.	Design By:	Project: 2144-7313	
Check By: M.J.	Check By: M.L.	Scale: 1:500	Drawing: T302

10 0m 10 20 30 40
SCALE: 1:500

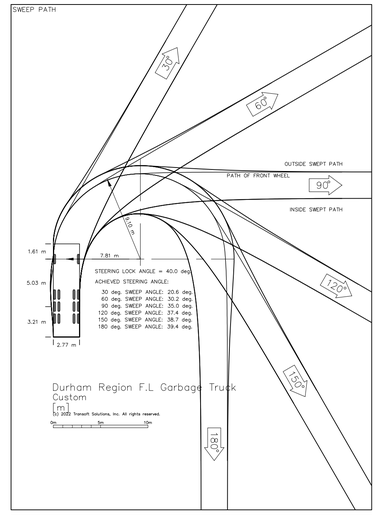
FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

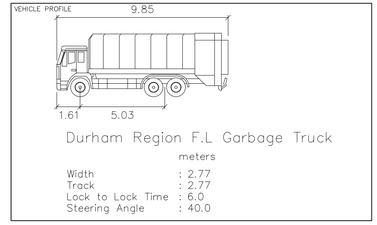

Durham Region F.L Garbage Truck
Durham Region F.L Garbage Truck
Durham Region F.L Garbage Truck



10 0m 10 20 30 40
SCALE: 1:500

FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION





No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/25/2025

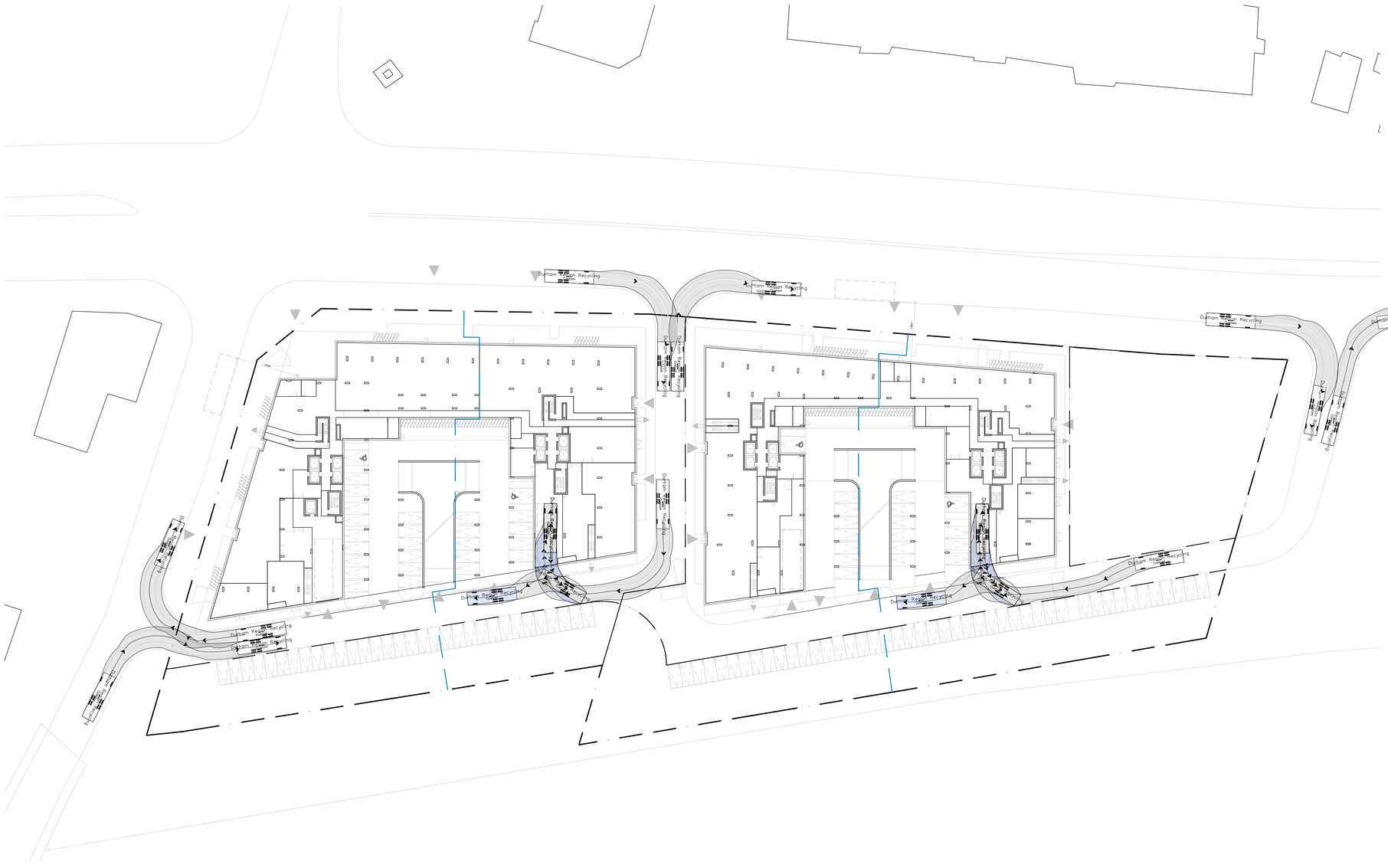
Project
375–417 KINGSTON ROAD
CITY OF PICKERING

Drawing
GROUND FLOOR
VEHICLE MANEUVERING ANALYSIS

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project	2144–7313
R.L.			
Check By	Check By	Scale	Drawing
M.L.	M.L.	1:500	T304

FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION



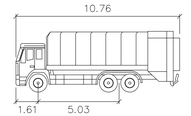
SWEEP PATH

STEERING LOCK ANGLE = 40.0 deg.

ACHIEVED STEERING ANGLE:
- 30 deg. SWEEP ANGLE: 20.8 deg.
- 60 deg. SWEEP ANGLE: 30.2 deg.
- 90 deg. SWEEP ANGLE: 34.1 deg.
- 120 deg. SWEEP ANGLE: 37.4 deg.
- 150 deg. SWEEP ANGLE: 38.7 deg.
- 180 deg. SWEEP ANGLE: 39.4 deg.

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VEHICLE PROFILE



Durham Region Recycling

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/25/2025

Project

375–417 KINGSTON ROAD
CITY OF PICKERING

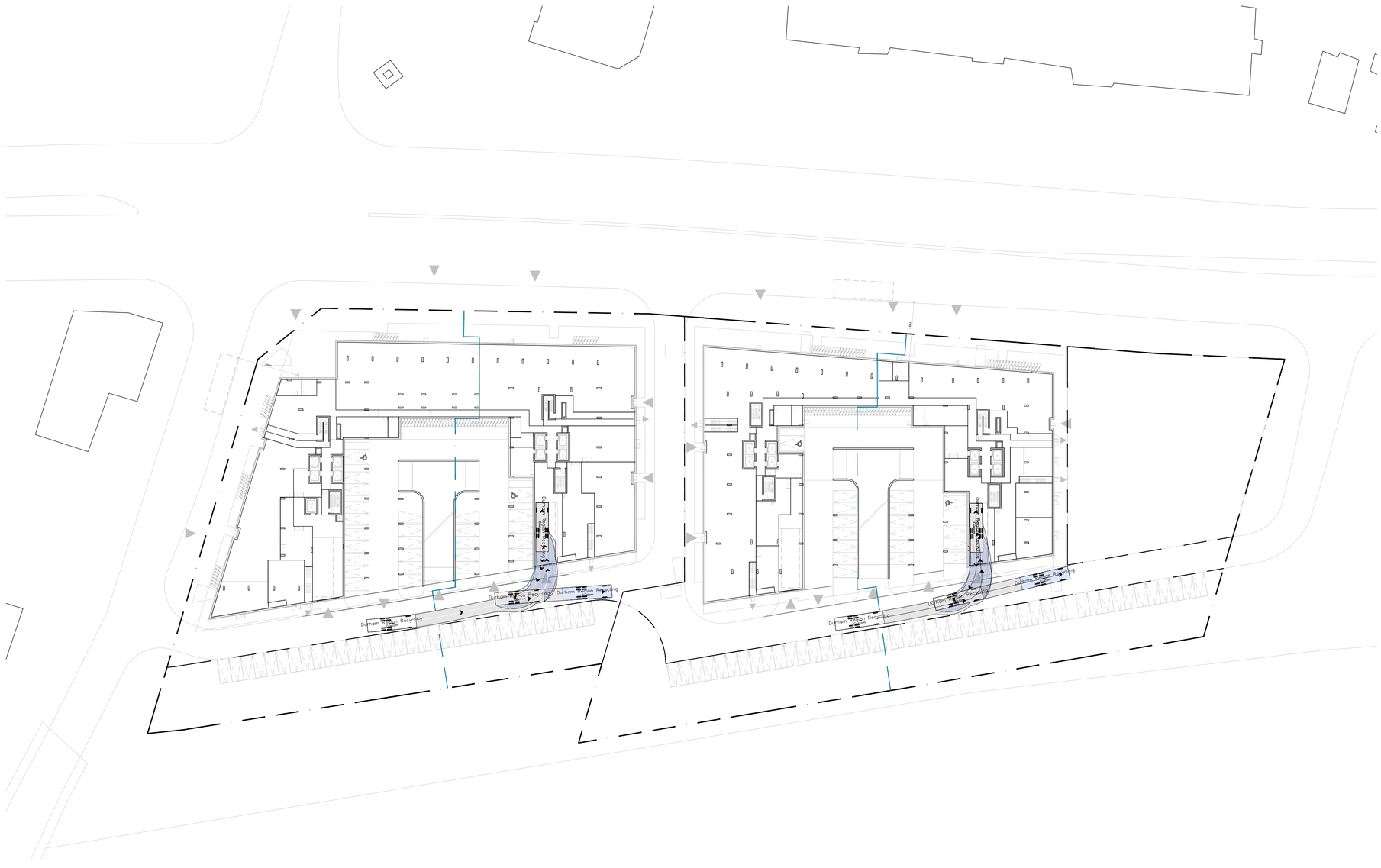
Drawing

GROUND FLOOR
VEHICLE MANEUVERING ANALYSIS

CROZIER
CONSULTING ENGINEERS

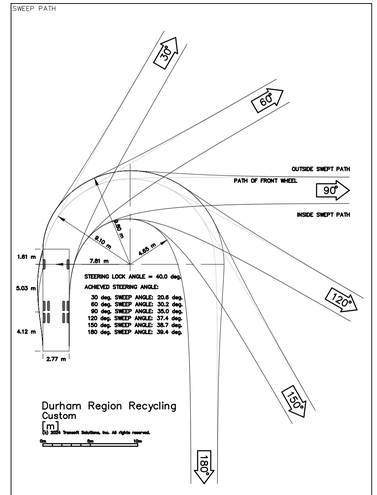
Drawn By	Design By	Project	2144–7313
R.L.			
Check By	Check By	Scale	Drawing
M.L.	M.L.	1:500	T305

10 0m 10 20 30 40
SCALE: 1:500

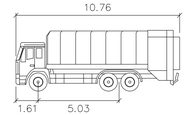


FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

SWEEP PATH



VEHICLE PROFILE



Durham Region Recycling

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/25/2025

Project

375–417 KINGSTON ROAD
CITY OF PICKERING

Drawing

GROUND FLOOR
VEHICLE MANEUVERING ANALYSIS

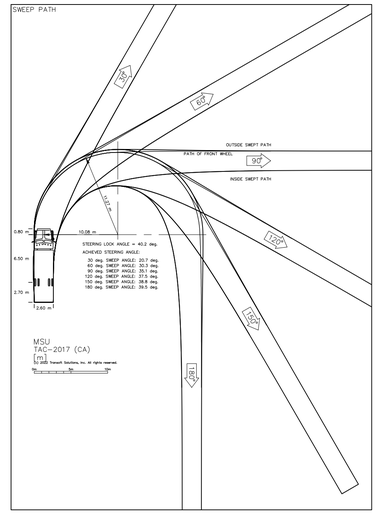
CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project	
R.L.			2144–7313
Check By	Check By	Scale	Drawing
M.J.	M.L.	1:500	T306

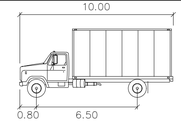
10 0m 10 20 30 40
SCALE: 1:500

N

FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION



VEHICLE PROFILE



MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/25/2025

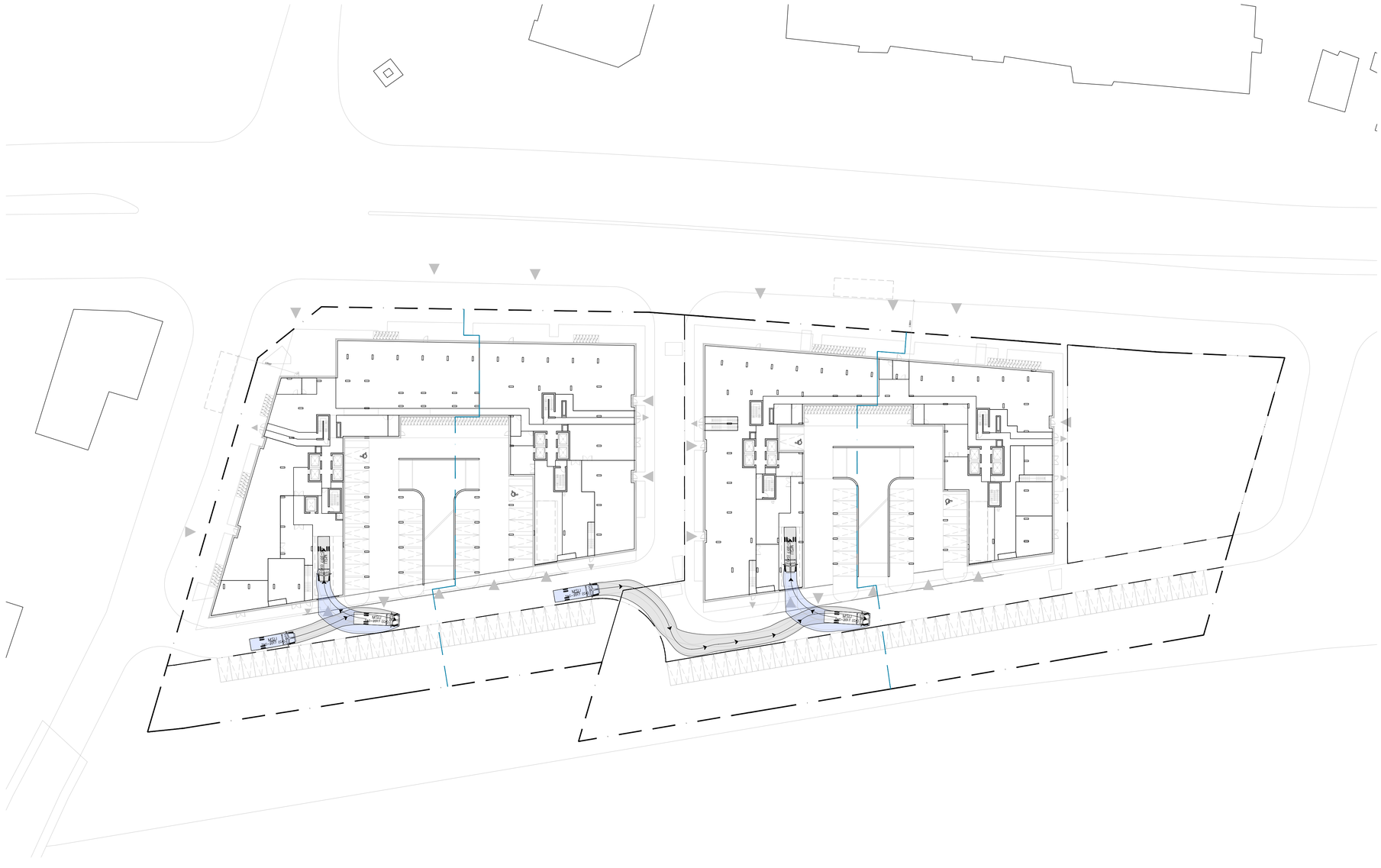
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SCALE: 1:500

Project
375–417 KINGSTON ROAD
CITY OF PICKERING

Drawing
GROUND FLOOR
VEHICLE MANEUVERING ANALYSIS

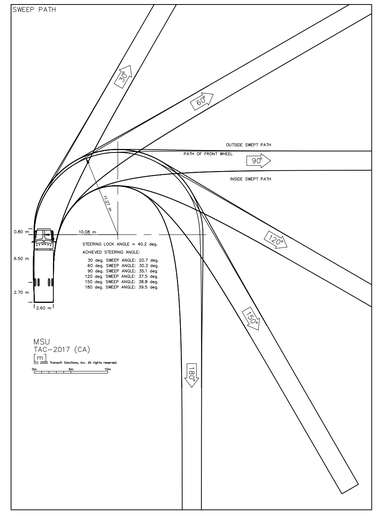
CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project	2144–7313
R.L.			
Check By	Check By	Scale	Drawing
M.L.	M.L.	1:500	T307

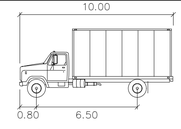


10 0m 10 20 30 40
SCALE: 1:500

FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION



VEHICLE PROFILE



MSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.2

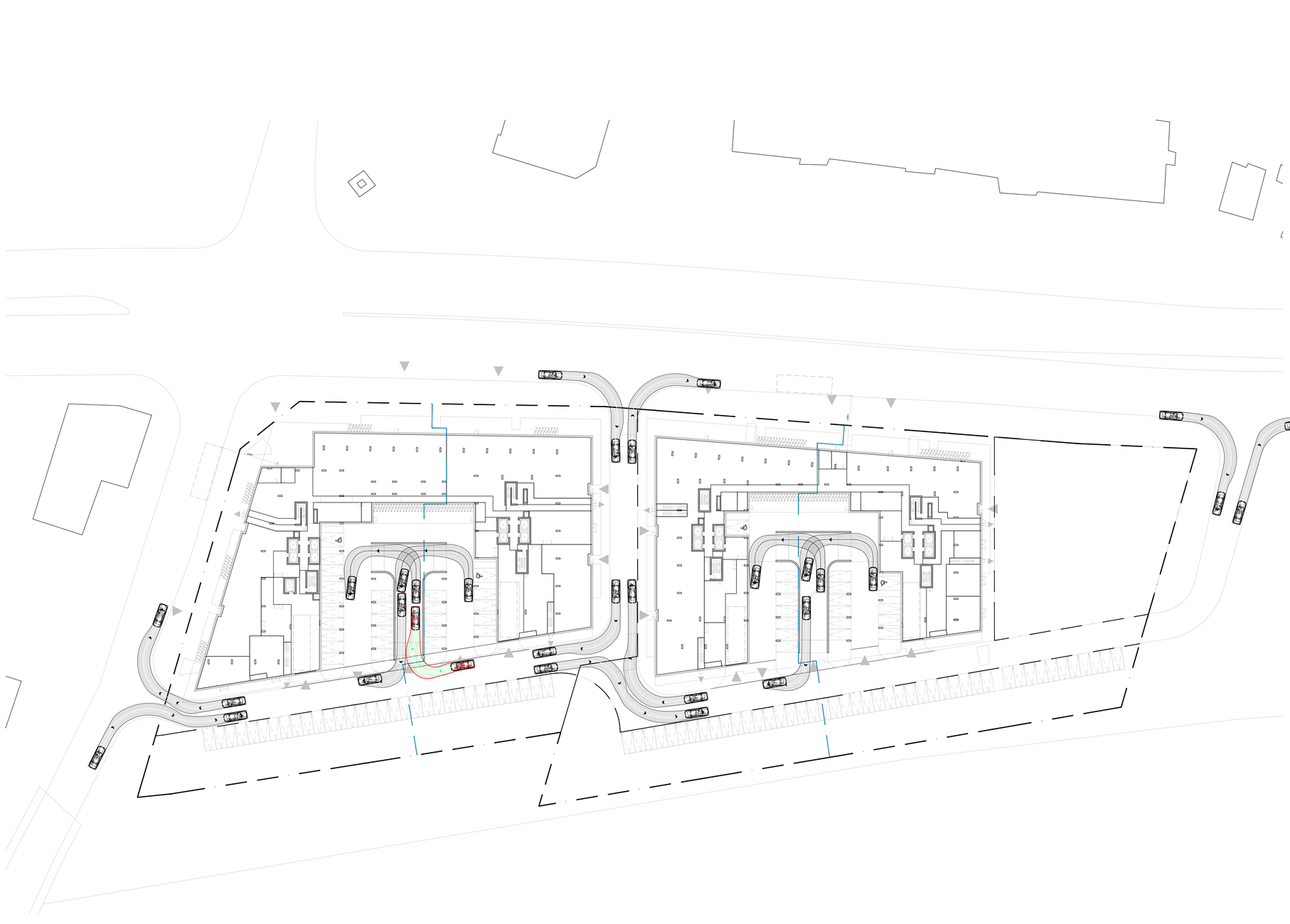
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1	ISSUED FOR 1st SUBMISSION	03/25/2025

Project
375–417 KINGSTON ROAD
CITY OF PICKERING

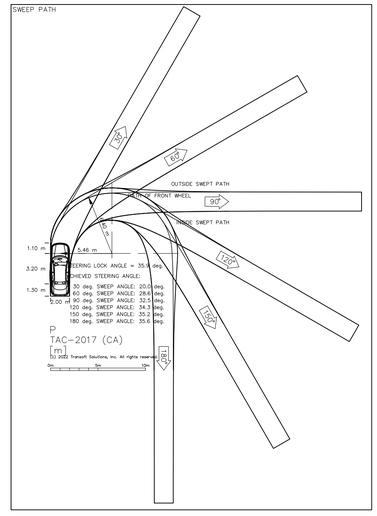
Drawing
GROUND FLOOR
VEHICLE MANEUVERING ANALYSIS

CROZIER
CONSULTING ENGINEERS

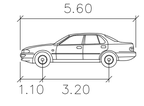
Drawn By	Design By	Project	2144–7313
R.L.			
Check By	Check By	Scale	Drawing
M.I.	M.L.	1:500	T308



FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION



VEHICLE PROFILE



P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/25/2025

Project

375-417 KINGSTON ROAD
CITY OF PICKERING

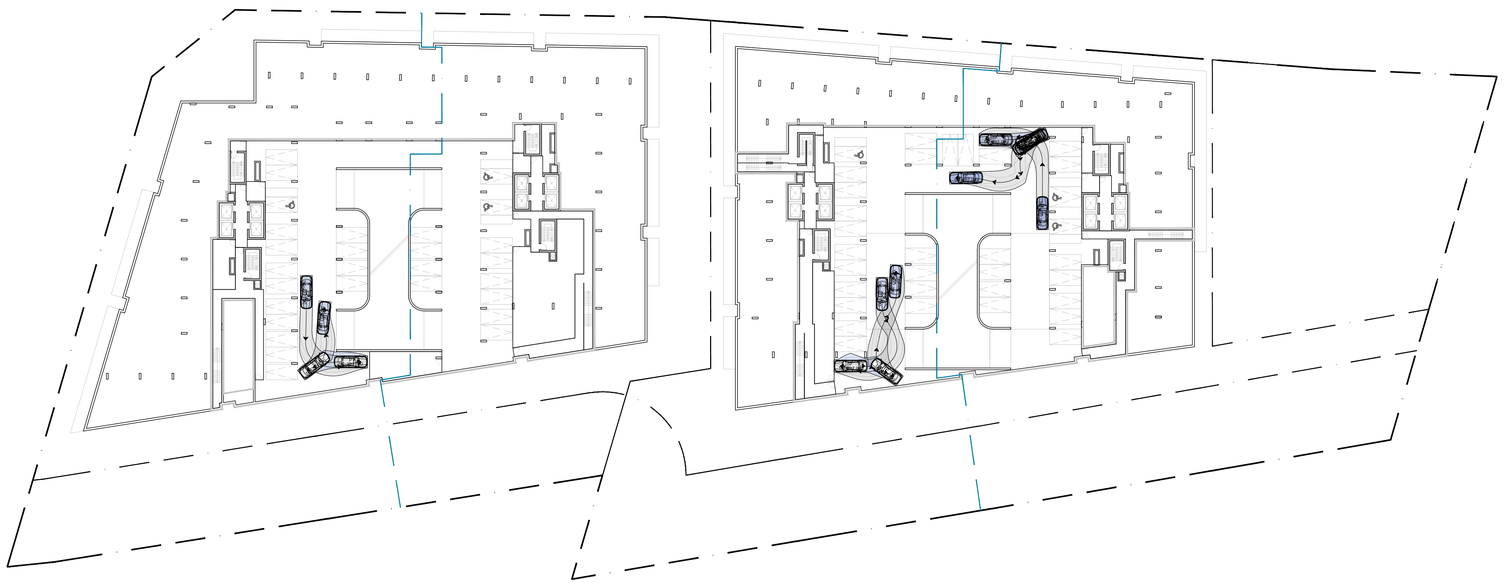
Drawing

GROUND FLOOR
VEHICLE MANEUVERING ANALYSIS

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project	
R.L.			2144-7313
Check By	Check By	Scale	Drawing
M.J.	M.L.	1:500	T309

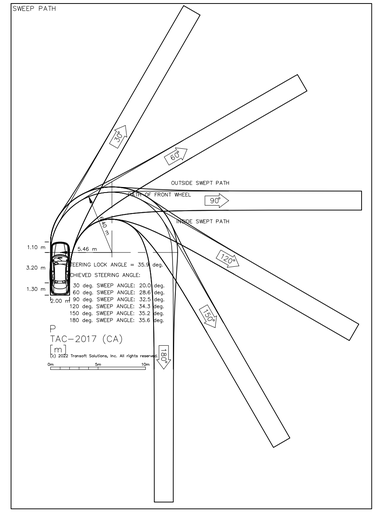
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SCALE: 1:500



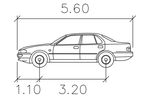
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FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

SWEEP PATH



VEHICLE PROFILE



P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

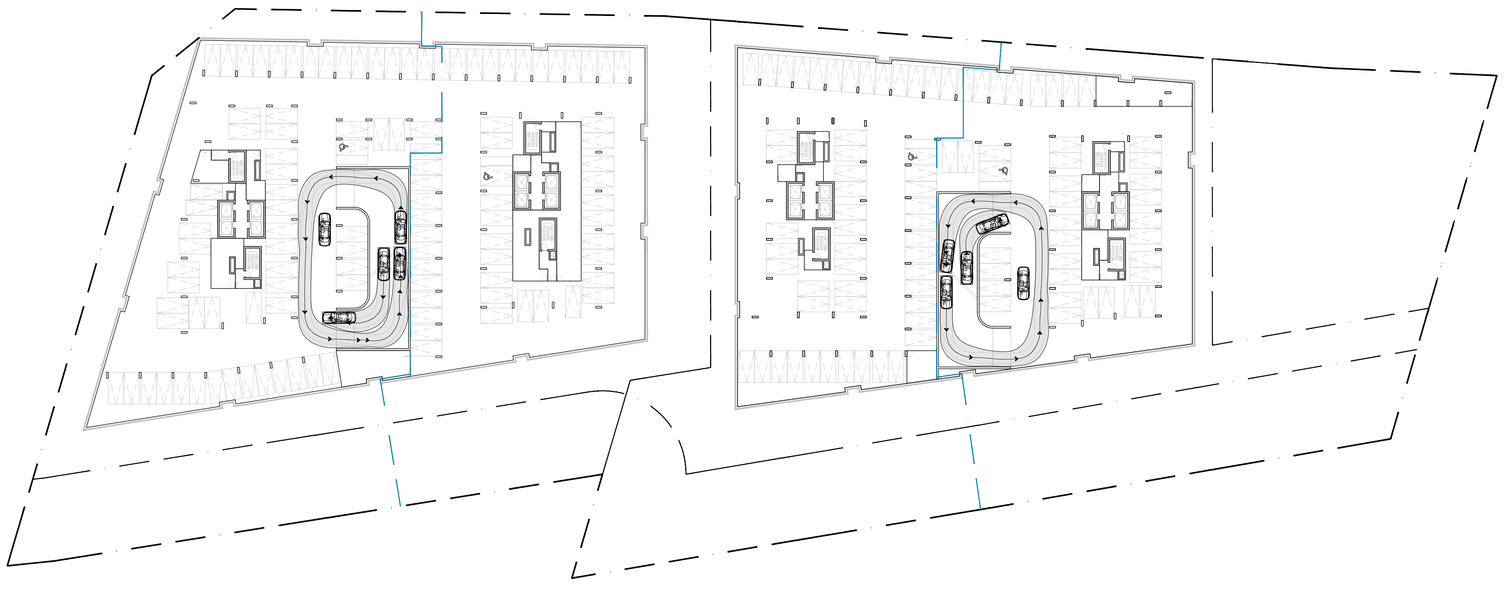
No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/25/2025

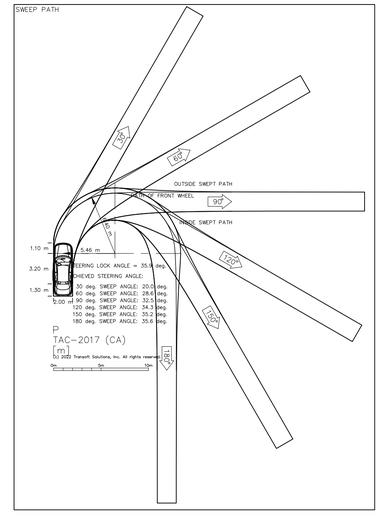
Project
375-417 KINGSTON ROAD
CITY OF PICKERING

Drawing
MEZZANINE
VEHICLE MANEUVERING ANALYSIS

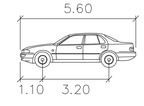
CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project	
R.L.			2144-7313
Check By	Check By	Scale	Drawing
M.L.	M.L.	1:500	T310





VEHICLE PROFILE



P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

FOR REVIEW

NOT TO BE USED FOR CONSTRUCTION

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/25/2025

Project

375–417 KINGSTON ROAD
CITY OF PICKERING

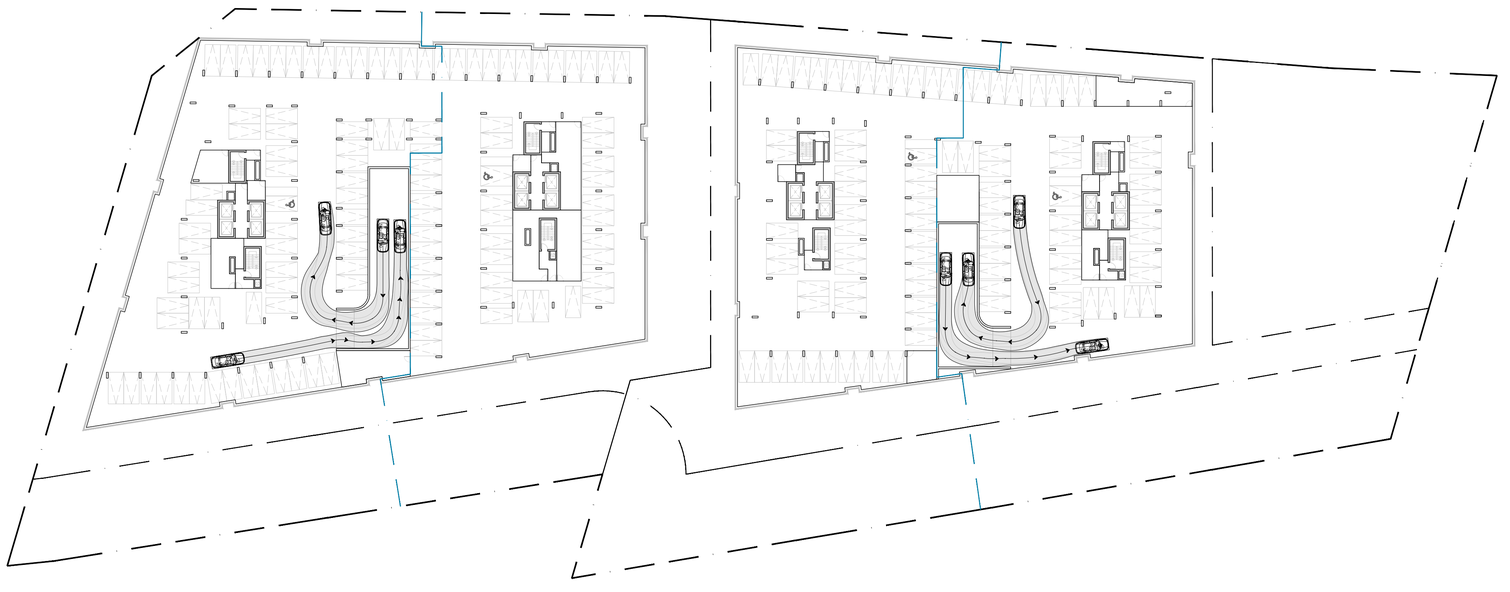
Drawing

PARKING LEVEL 2
VEHICLE MANEUVERING ANALYSIS

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project	
R.L.			2144–7313
Check By	Check By	Scale	Drawing
M.I.	M.L.	1:500	T311

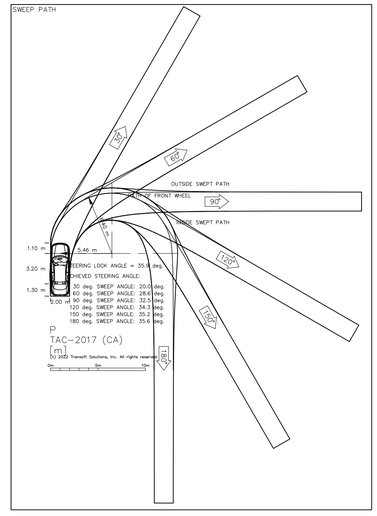
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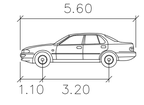
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FOR REVIEW
NOT TO BE USED FOR CONSTRUCTION

SWEEP PATH



VEHICLE PROFILE



P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR 1st SUBMISSION	03/25/2025

Project

375-417 KINGSTON ROAD
CITY OF PICKERING

Drawing

PARKING LEVEL 3
VEHICLE MANEUVERING ANALYSIS

CROZIER
CONSULTING ENGINEERS

Drawn By	Design By	Project	
R.L.			2144-7313
Check By	Check By	Scale	Drawing
M.I.	M.L.	1:500	T312