CRW 1 LP and CRW 2 LP

# TRANSPORTATION IMPACT & PARKING STUDY

## PROPOSED MIXED-USE DEVELOPMENT

**2077, 2105, 2087 and 2097 Royal Windsor Drive, City of Mississauga**

December 2022

23193

LEA Consulting Ltd.
625 Cochrane Drive, 9th Floor
Markham, ON, L3R 9R9 Canada
T | 905 470 0015 F | 905 470 0030
WWW.LEA.CA

December 12, 2022

Reference Number: 23137

Mr. Brandon Donnelly
CRW 1 LP and CRW 2 LP
c/o Slate Asset Management
121 King St W, Suite 200
Toronto, ON M5H 3T9

Dear Mr. Donnelly,

RE: Transportation Impact Study
Proposed Mixed-Use Development
2077, 2105, 2087, and 2097 Royal Windsor Drive, City of Mississauga

LEA Consulting Ltd. is pleased to present the findings of our Transportation Impact Study for the proposed mixed-use development located at 2077, 2105, 2087, and 2097 Royal Windsor Drive in the City of Mississauga. This transportation study has been prepared for CRW 2 LP and CRW 2 LP in support of the Zoning By-law Application for the subject site. This report concludes that the traffic associated with the proposed development does not present any significant impact to traffic conditions in the surrounding area.

Please do not hesitate to contact the undersigned should you have any additional questions or concerns.

Yours truly,

LEA CONSULTING LTD.

Kenneth Chan, P.Eng., PTOE, PMP
Senior Vice President, Transportation Engineering and Planning

Jocelyn Lee, EIT, B.Eng., B.A.
Project Coordinator, Transportation Planning & Engineering

Encl. Transportation Impact Study – 2077, 2105, 2087, and 2097 Royal Windsor Drive, Proposed Mixed-Use Development, City of Mississauga (December 2022)

# Disclaimer

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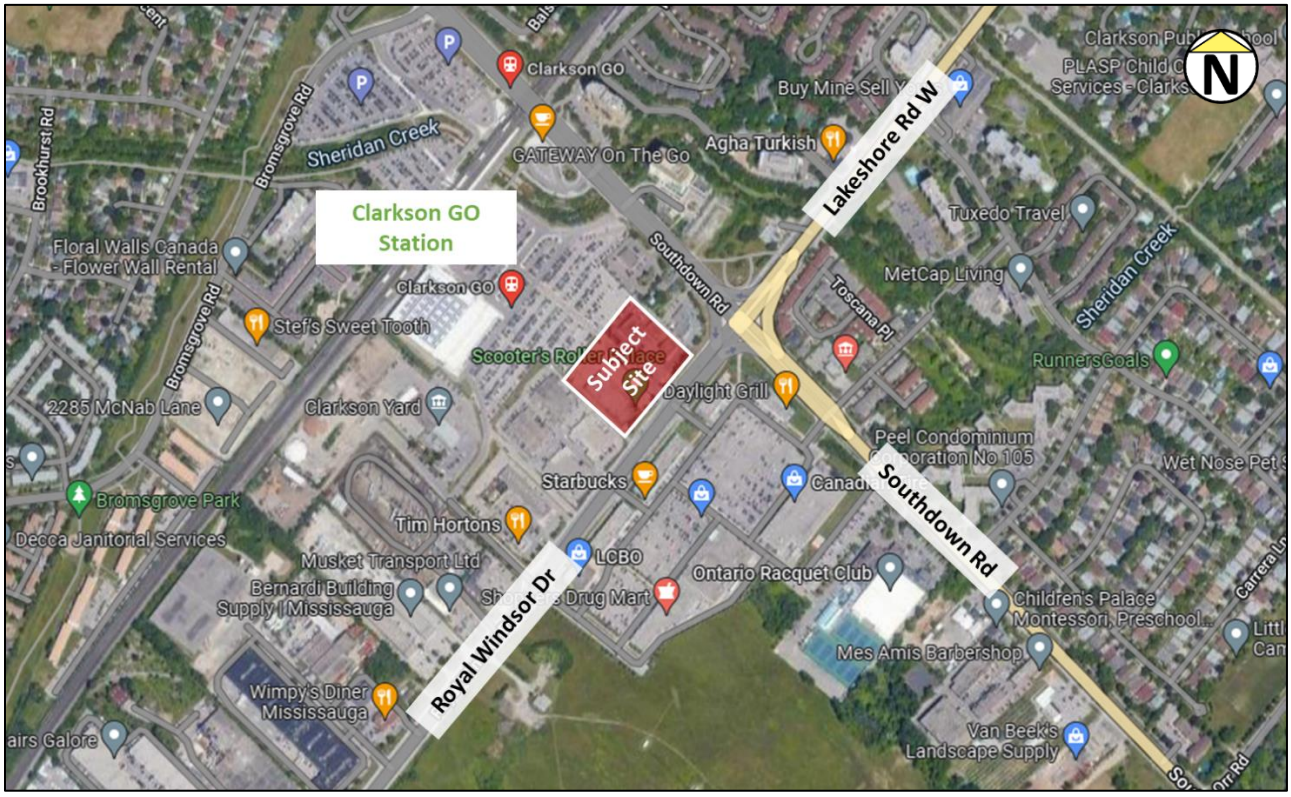
# 1 INTRODUCTION

LEA Consulting Ltd (LEA) has been retained by CRW 1 LP and CRW 2 LP to undertake a Transportation Impact Study (TIS) in support of the Zoning By-law Amendment (ZBA) application for the proposed mixed-use development. The proposed development is located at 2077, 2105, 2087 and 2097 Royal Windsor Drive, along the north side of Royal Windsor Drive and approximately 60 m west of Southdown Road in the City of Mississauga (herein referred to as the "subject site"). The subject site is illustrated in **Figure 1-1**.

**Figure 1-1: Subject Site Location**




*Source: Google Maps, Retrieved December 2022*

The subject site is currently occupied by a commercial plaza containing a mixture of retail, restaurant, entertainment, and service-based uses. The subject site is located within proximity of Clarkson GO Station on the Lakeshore West GO Train Line. The subject site is thus located within the Clarkson Transit Station Area Study, which is being undertaken by the City of Mississauga to provide a planning framework to guide future development within the area and to leverage planned transit improvements being implemented through electrification and two-way all-day, 15-minute train service along the Lakeshore West route.

## 1.1 PROPOSED DEVELOPMENT

The proposed development will consist of two blocks: the West Block and the East Block. Each block includes two residential towers ranging from 23- to 29-storeys and connected by a shared podium. A total of 1,237 dwelling units and 1,978 $m^2$ retail GFA is proposed. A total of 866 parking spaces will be provided across five (5) level of underground parking for the West Block and three (3) levels for the East Block. The site statistics per development block are outlined in **Table 1-1**.

Table 1-1: Site Statistics

| Use | | West Block | East Block | Development Total |
|---|---|---|---|---|
| Residential | 1-Bedroom | 335 units | 313 units | 648 units |
| | 2-Bedroom | 262 units | 220 units | 482 units |
| | 3-Bedroom | 50 units | 48 units | 98 units |
| | **Total** | **650 Units** | **587 Units** | **1,237 Units** |
| Retail | | **987 m²** | **990 m²** | **1,978 m²** |

Access to the subject site will be provided via a private road connection along the west, north, and east frontage of the subject site, as well as in between the two blocks proposed. The western and middle private road connections will intersect with Royal Windsor Drive and will facilitate full movement access into the site. The proposed site plan is shown in **Figure 1-2.** The future site connections are summarized as follow:

- One (1) unsignalized, full movement site access off Royal Windsor Drive;
- One (1) signalized, full movement Metrolinx Easement off Royal Windsor Drive;
- One (1) unsignalized access ROW that connects to adjacent building's access off Southdown Road; and,
- The site can also be accessed through Clarkson GO Station (Southdown Road and Clarkson GO Access/Private Driveway intersection) and proposed private road.

**Figure 1-2: Proposed Site Plan**

# 2 EXISTING TRANSPORTATION CONDITIONS

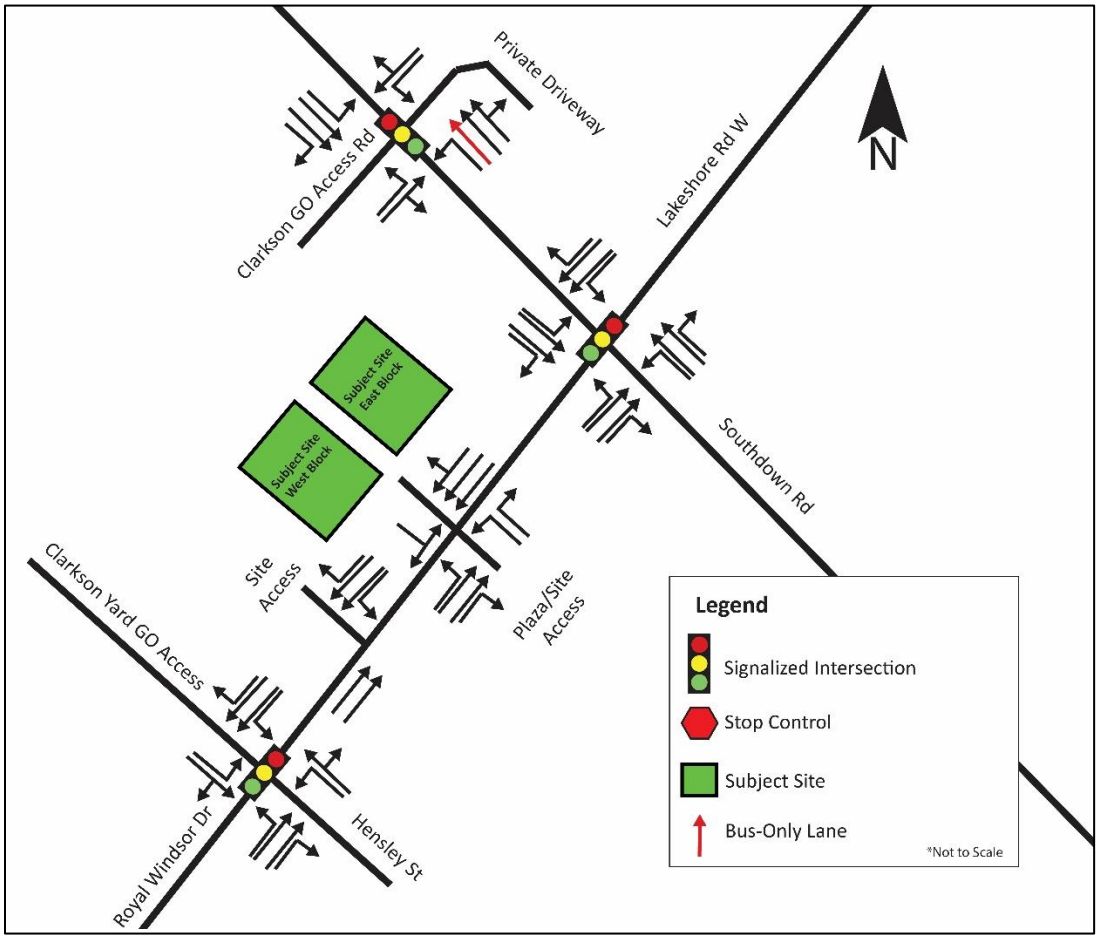
This section identifies and assesses the existing transportation conditions within the study area, including the road, transit, cycling, and pedestrian networks. The study area was determined by assessing the size of the proposed development and its anticipated transportation impact, and through consultation with City staff, which is documented in **Appendix A**. The existing study area includes the following intersections:

- Southdown Road & Clarkson GO Access/Private Driveway (Signalized);
- Southdown Road & Royal Windsor Drive/Lakeshore Road West (Signalized);
- Royal Windsor Drive & Plaza Access/Site Access/Metrolinx Easement (Unsignalized);
- Royal Windsor Drive and Site Access (Unsignalized); and
- Royal Windsor Drive and Clarkson Yard GO Access/Hensley Street (Signalized).

## 2.1 ROAD NETWORK

The following section provides a description and classification of the roadways within the study area. **Figure 2-1** illustrates the existing lane configuration.

**Figure 2-1: Existing Lane Configurations**



**Royal Windsor Drive/Lakeshore Road West** is an urban east-west arterial road with a six (6) lane cross section (three in the westbound direction, two in the eastbound direction, one central left turning lane) in the vicinity of the site. It operates under the jurisdiction of the City of Mississauga, with a posted speed limit of 50 km/h. Pedestrian facility are found on both sides of the road.

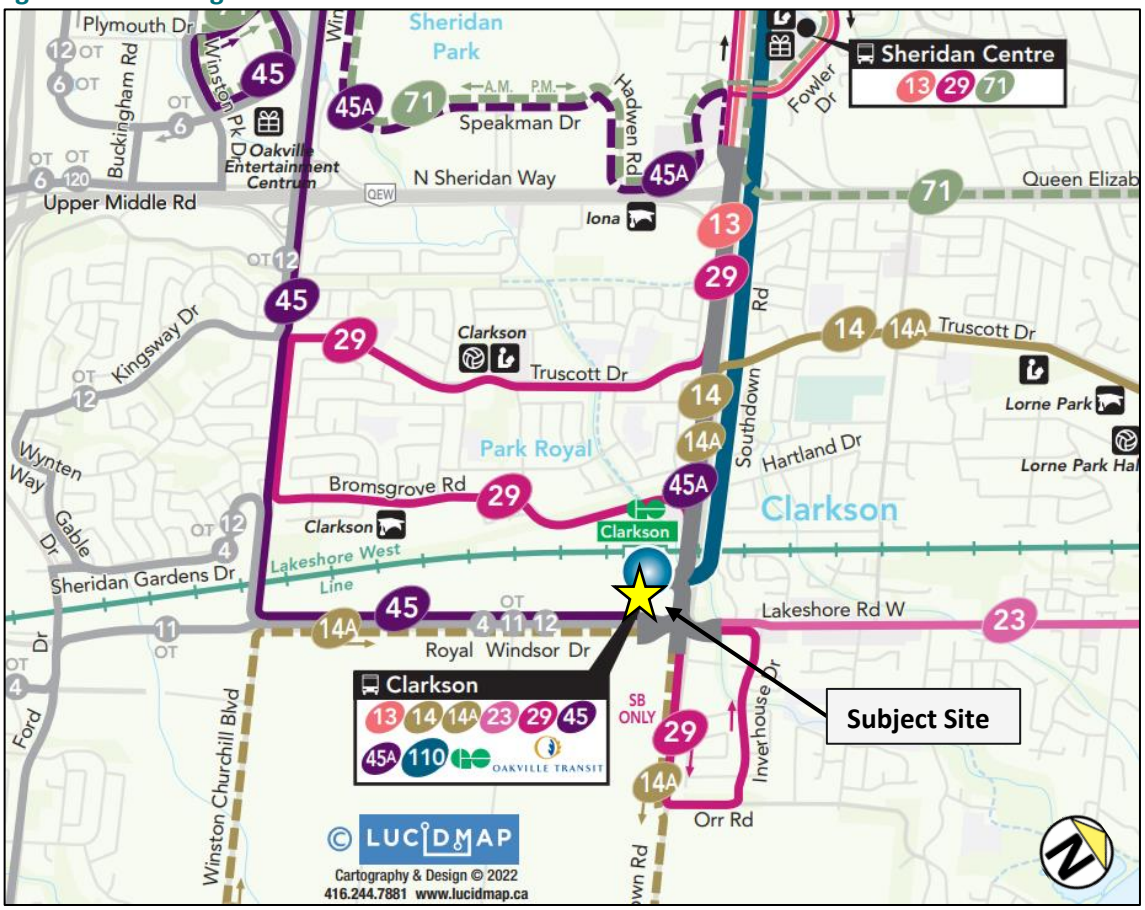
**Southdown Road** is an urban north-south arterial road with a five (5) lane cross section with two lanes in each direction. It operates under the jurisdiction of the City of Mississauga, with a posted speed limit of 50km/h. Pedestrian facility are found on both sides of the road within the study area.

## 2.2 EXISTING TRANSIT NETWORK

The City of Mississauga is well connected by local transit operating within the City, as well as regional transit options that provide service between Mississauga and other areas of the GTA. The site is well-situated to take advantage of these services, with multiple Miway bus routes located near the site. In addition, the site's proximity to Clarkson GO Station provides regional connections via both rail and surface transit routes.

Having access to a wide range of transit routes and options allows for future residents, visitors and employees of the subject site to leverage nearby transit service and investments and opt for travel that is not auto-dependent. **Figure 2-2** shows the existing transit network in proximity to the subject site, with service details provided below.

**Figure 2-2: Existing Transit Network**




*Retrieved from City of Mississauga, September 2022*

### 2.2.1 Existing GO Transit Service

**Lakeshore West GO** departs from Clarkson GO station in Mississauga to Union Station in Toronto, with services provided everyday of the week. Service to Union station operates with a thirty minute headway from 5 am to 11 pm during weekdays, and with an hour headway during the weekends.

> *Access Location: Lakeshore West GO is located at Clarkson GO train station, which is approximately 500 m from the centre of the subject site (equivalent to a 6 minute walk).*

### 2.2.2 Existing Mi-Way Transit Service

**MiWay Route 29** is a bus route the operates generally in the North South direction, connecting the site with Erin Mills. The route operates with a 30 minute headway all day everyday from 5am – 1am. The route is operated by the City of Mississauga.

> *Access Location: MiWay Route 29 is located near the Clarkson GO train station, which is approximately 500 m from the centre of the subject site (equivalent to a 6 minute walk).*

**MiWay Route 14** is a bus route the operates generally in an East West direction, connecting the site with Port Credit GO. The route operates with a 20 minute headway, all day everyday 6am – 10pm. The route is operated by the City of Mississauga.

> *Access Location: MiWay Route 14 is located near the Clarkson GO train station, which is approximately 500 m from the centre of the subject site (equivalent to a 6 minute walk).*

**MiWay Route 45** is a bus route the operates generally in the North South direction, connecting the site with Meadowvale Town Centre. The route operates with a 20 minute headway from 5am – 1am during weekdays. As well as a weekend service with a 30 minute headway from 6:30 am to 9pm. The route is operated by the City of Mississauga.

> *Access Location: MiWay Route 29 is located at the intersection of Royal Windsor Drive, just west of Southdown Road, which is approximately 200 m from the centre of the subject site (equivalent to a 2 minute walk).*

**MiWay Route 23** is a bus route the operates generally in the North South direction, connecting the site with Long Branch GO. The route operates with a 20 minute headway from 12 am to 12 am all day everyday. The route is operated by the City of Mississauga.

> *Access Location: MiWay Route 23 is located near the Clarkson GO train station, which is approximately 500 m from the centre of the subject site (equivalent to a 6 minute walk).*

**MiWay Route 13** is a bus route the operates generally in an East West direction, connecting the site with Meadowvale Town Centre. The route operates with a 20 minute headway from 12 am to 12 am all day everyday. The route is operated by the City of Mississauga.

> *Access Location: MiWay Route 13 is located near the Clarkson GO train station, which is approximately 500 m from the centre of the subject site (equivalent to a 6 minute walk).*

**MiWay Route 45** is a bus route the operates generally in the North South direction, connecting the site with Meadowvale town centre and Winston Churchill Station. The route operates with a 20 minute headway from 4am to 11pm during weekdays. As well as a weekend service with a 30 minute headway from 6:30 am to 9pm. The route is operated by the City of Mississauga.

*Access Location: MiWay Route 45 is located near the Clarkson GO train station, which is located approximately 500 m from the centre of the subject site (equivalent to a 6 minute walk).*

**MiWay Route 110** is a bus route the operates generally in an North South direction, connecting the site with UofT Mississauga, South Common Centre Bus terminals, Erin Mills station, and Mississauga City centre Transit. The route operates with a 15 minute headway from 5 am to 11 am all day everyday. The route is operated by the City of Mississauga.

*Access Location: MiWay Route 110 is located near the Clarkson GO train station, which is located approximately 500 m from the centre of the subject site (equivalent to a 6 minute walk).*

### 2.2.3 Existing Oakville Transit Service

**Oakville Transit Bus Route 4** is a bus route the operates generally in theEast West direction, connecting the site with Oakville GO and Bronte GO. The route operates with a 30 minute headway during weekdays from 6am – 11pm. As well as a weekend service with an hour headway from 6am to 6pm. The route is operated by Oakville Transit.

*Access Location: Oakville Transit Route 4 is accessible at 2165 Royal Windsor Dr, just west of Hensley St, which is located approximately 200 m away from the centre of the site.*

**Oakville Transit Bus Route 12** is a bus route the operates generally in the North South direction, connecting the site with neighbourhood of Erin Mils. The route operates with a 30 minute headway during weekday peak hours. The route is operated by Oakville Transit.

*Access Location: Oakville Transit Route 12 is accessible at 2165 Royal Windsor Dr, just west of Hensley St, which is located approximately 200 m away from the centre of the site.*

**Oakville Transit Bus Route 11** is a bus route the operates generally in theEast West direction, connecting the site with Oakville GO. The route operates with an hour headway al day every day from 6am – 9pm. The route is operated by Oakville Transit.

*Access Location: Oakville Transit Route 11 is accessible at 2165 Royal Windsor Dr, just west of Hensley St, which is located approximately 200 m away from the centre of the site.*

**GO Bus Route 18C** is a bus route the operates generally in the east west direction, connecting the site with Oakville GO, Appleby GO, Bronte GO, Burlington GO, downtown Hamilton. The route operates with three times per day at 2am, 3am, and 6am. The route is operated under the authority of Metrolinx.

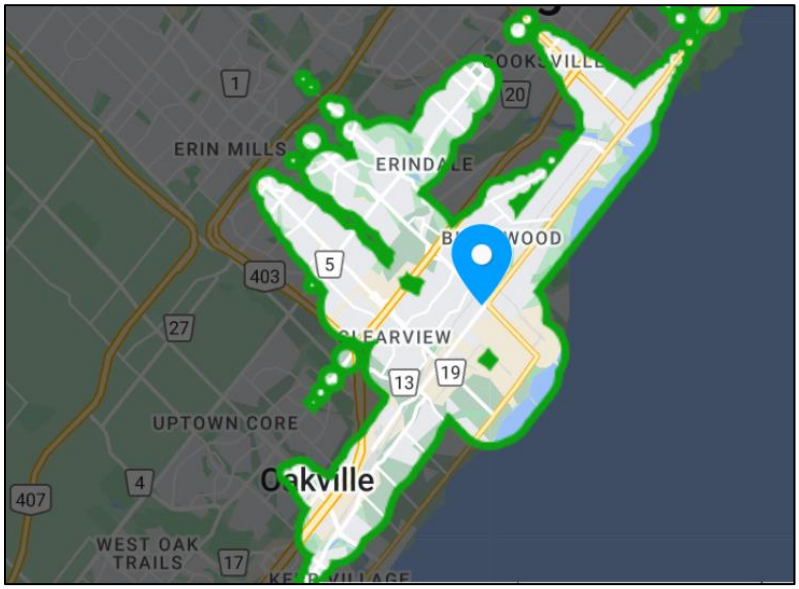
*Access Location: GO Bus Route 18C is located at Clarkson GO train station, which is approximately 500 m from the centre of the subject site (equivalent to a 6 minute walk).*

### 2.2.4 Existing 30-Minute Transit Reach

The subject site has a Transit Score© of 58 (out of 100), a measure of transit access based on service characteristics such as frequency and stop distance. A score of 58 indicates that the area has "Good Transit" access and that the use of transit is convenient for some trips.

**Figure 2-3** depicts the area accessible by transit within 30 minutes of the subject site; notable areas that can be reached within 30 minutes include parts of the downtown Mississauga core, University of Toronto Mississauga Campus, and many areas of the GTA such as Etobicoke and Oakville.

**Figure 2-3: Transit Travel Area - 30 Minutes**

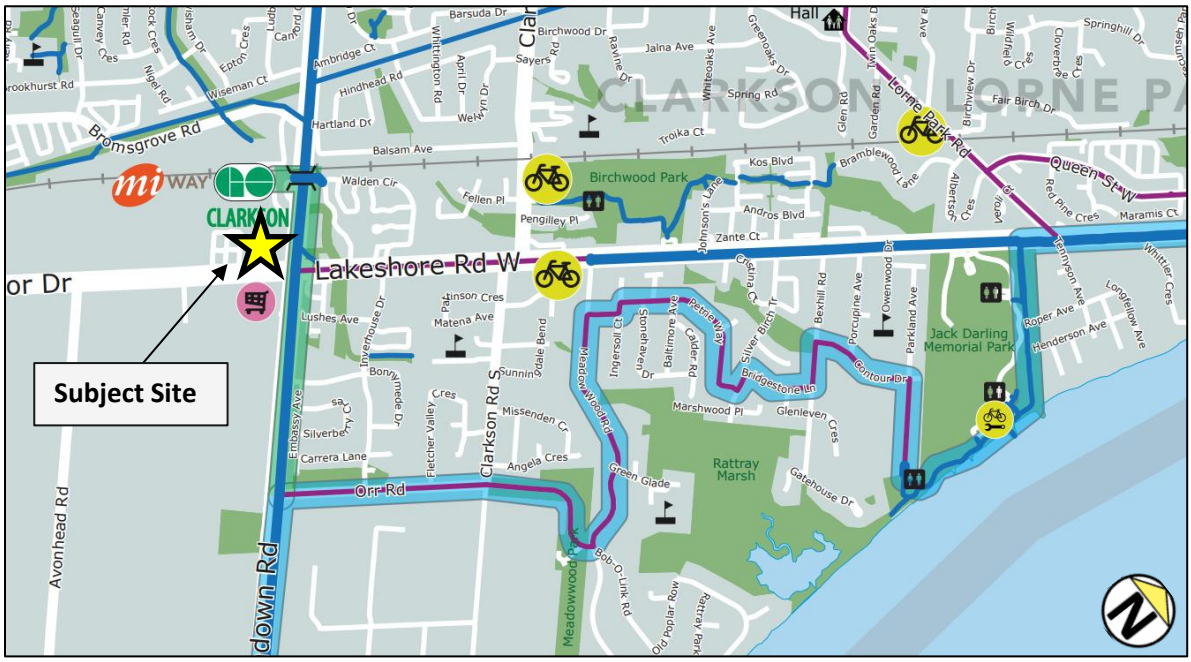



*Source: WalkScore©, Retrieved October 2022*

## 2.3 EXISTING CYCLING NETWORK

Existing cycling infrastructure are found within close proximity of the subject site. **Figure 2-4** shows the cycling network in the surrounding area. Cycle paths are provided along Southdown Road in the north and southbound directions, connecting the site to the east-west cycling corridor on Lakeshore Road West, which forms a part of the Waterfront trail that connects to Oakville and Downtown Toronto.

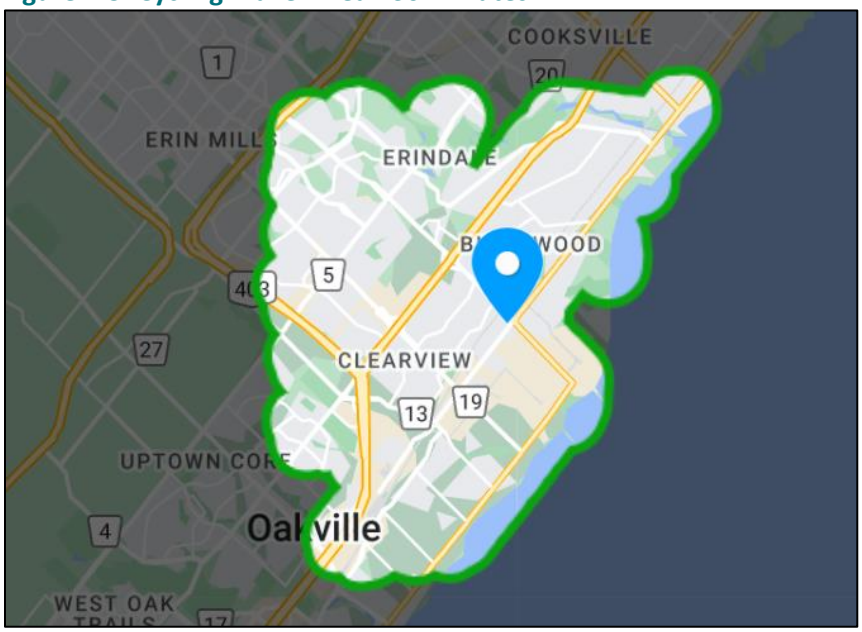
**Figure 2-4: Existing Cycling Network**




*Source: City of Mississauga, Retrieved October 2022*

The study area currently has a Bike Score© of 69 (out of 100), which places the site in a relatively bikeable area due to the provision of adjacent separated cycling facilities and flat terrain. As well as its close approximately to the Lakeshore trail. **Figure 2-5** depicts the area accessible by cycling within 30 minutes, including the entirety of parts of Oakville and the neighborhood of Erin Mills in Mississauga.

**Figure 2-5: Cycling Travel Area - 30 Minutes**



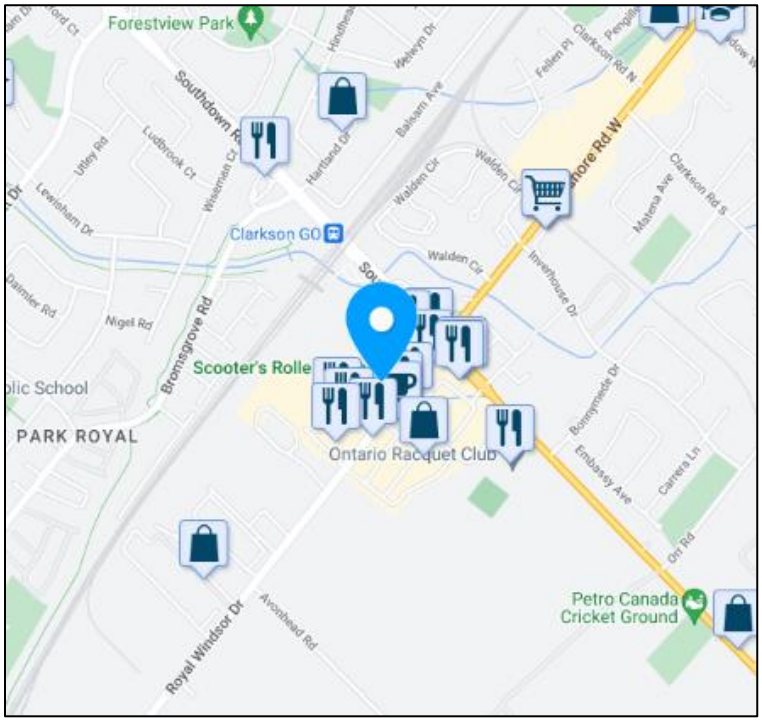

*Source: WalkScore©, Retrieved October 2022*

## 2.4 EXISTING PEDESTRIAN NETWORK

The area within the vicinity of the site is well developed in terms of pedestrian infrastructure. At the signalized intersection of Lakeshore Road West and Southdown Road, there are sidewalks at the corners to enable the pedestrian crosswalks. Sidewalks extend on both sides of Royal Windsor Drive and Southdown Road in the vicinity of the site.

The area surrounding the site is primarily industrial to the west and south, and suburban residential to the north and east. The subject site has a WalkScore© of 58 (out of 100), a measure that assesses the number and type of amenities that can be accessed within a reasonable walking distance. A score of 58 classifies the area as ”Somewhat Walkable” and indicates that some daily errands do not require the use of a vehicle. **Figure 2-6** depicts the range of amenities accessible as a pedestrian from the subject site. Amenities such as retail and dining establishments can be found along Royal Windsor Dr, located in close vicinity of the site.

**Figure 2-6: Local Amenities within Walking Distance**




*Source: WalkScore©, Retrieved October 2022*

## 2.5 TRAFFIC DATA COLLECTION

Turning movement counts (TMCs) were used as the source of traffic data in the intersection capacity analysis. Traffic counts were obtained through surveys undertaken by LEA Consulting and City of Mississauga. Signal timing plans (STPs) at the signalized intersections were obtained from the City of Mississauga. **Table 2-1** summarizes the traffic data utilized in this study, with detailed TMCs and signal timing plans provided in **Appendix B**.

Table 2-1: Traffic Data Collection

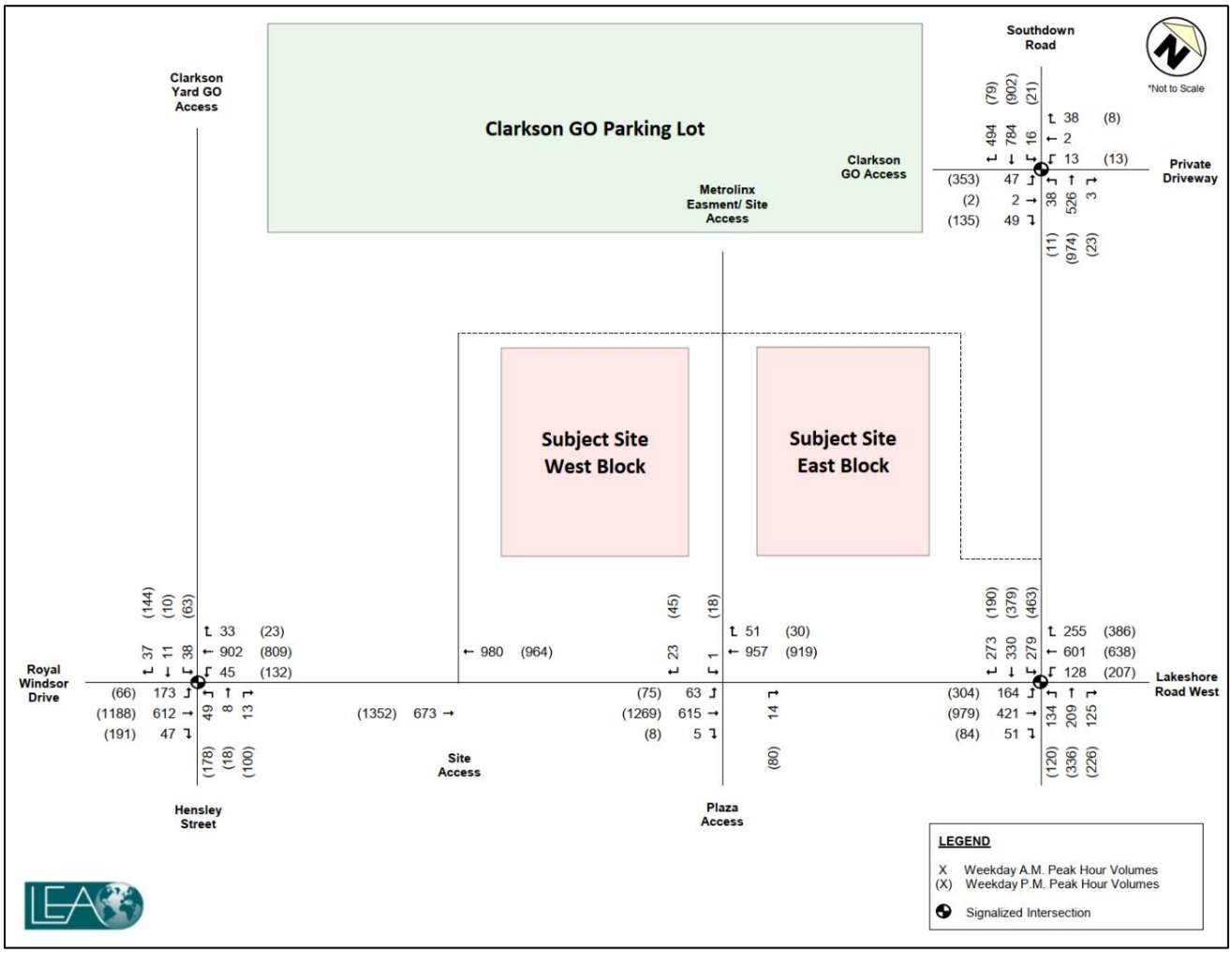
| Intersection | TMC Date | Source |
|---|---|---|
| Southdown Road and Clarkson GO Access/Private Driveway | October 22, 2019 | City of Mississauga |
| Royal Windsor Drive/Lakeshore Road West and Southdown Road | December 17, 2019 | City of Mississauga |
| Royal Windsor Drive and Site Access | September 28, 2022 | LEA Consulting |
| Royal Windsor Drive and Clarkson Yard GO Access/Hensley Street | November 15, 2022 | LEA Consulting |

Given the TMCs were collected following the lifting of most Covid-19 restrictions and during the typical school year, no adjustments to the existing traffic counts were undertaken.

## 2.6 EXISTING TRAFFIC VOLUMES

The existing traffic volumes in the study area during the weekday AM and PM peak hours are illustrated in **Figure 2-7.**

**Figure 2-7: Existing Peak Hour Traffic Volumes**



# 3 FUTURE BACKGROUND TRAFFIC CONDITIONS

For the analysis of future background traffic conditions, this study considers a five-year horizon to the estimated full build-out year of 2027. Future background traffic includes the traffic added to the network from other future developments within the surrounding study area, corridor growth, as well as all planned infrastructure improvements within the study area. The future background conditions will be used as the baseline for evaluating the impact of the proposed development.

## 3.1 CORRIDOR GROWTH

Based on corridor growth rates provided by the City of Mississauga, the following growth rate was applied during the traffic analysis of the site, as shown in **Table 3-1**.

Table 3-1: Expected Corridor Growth on Adjacent Arterial Roads

| Corridor | AM | PM |
|---|---|---|
| Royal Windsor Drive EB | 1.00% | 1.50% |
| Royal Windsor Drive WB | 1.50% | 1.00% |
| Southdown Road NB | 0.00% | 0.00% |
| Southdown Road SB | 0.00% | 0.00% |

Detailed information for the growth rate is provided in **Appendix C**.

## 3.2 BACKGROUND DEVELOPMENTS

One background development was identified within the immediate study area. The background development traffic volumes were extracted from their respective traffic studies and were subsequently assigned to the study area road network. The site statistics for each background development is summarized in **Table 3-2.**

Table 3-2: Background Development(s)

| Location | Proposed Development | Source of Traffic Volumes |
|---|---|---|
| 551 Avonhead Road | 78,344 $m^2$ of industrial GFA | TIS dated June 2021<br>GHD |

## 3.3 FUTURE TRNASPORTATION CONTEXT

For the analysis of future background traffic conditions, this study considers future transportation background in order to fully understand the transportation context in the local area. It is worth noting that that there are no significant road expansion plans outlined in City of Mississauga's transportation master plan.

### 3.3.1 Future Transit Context

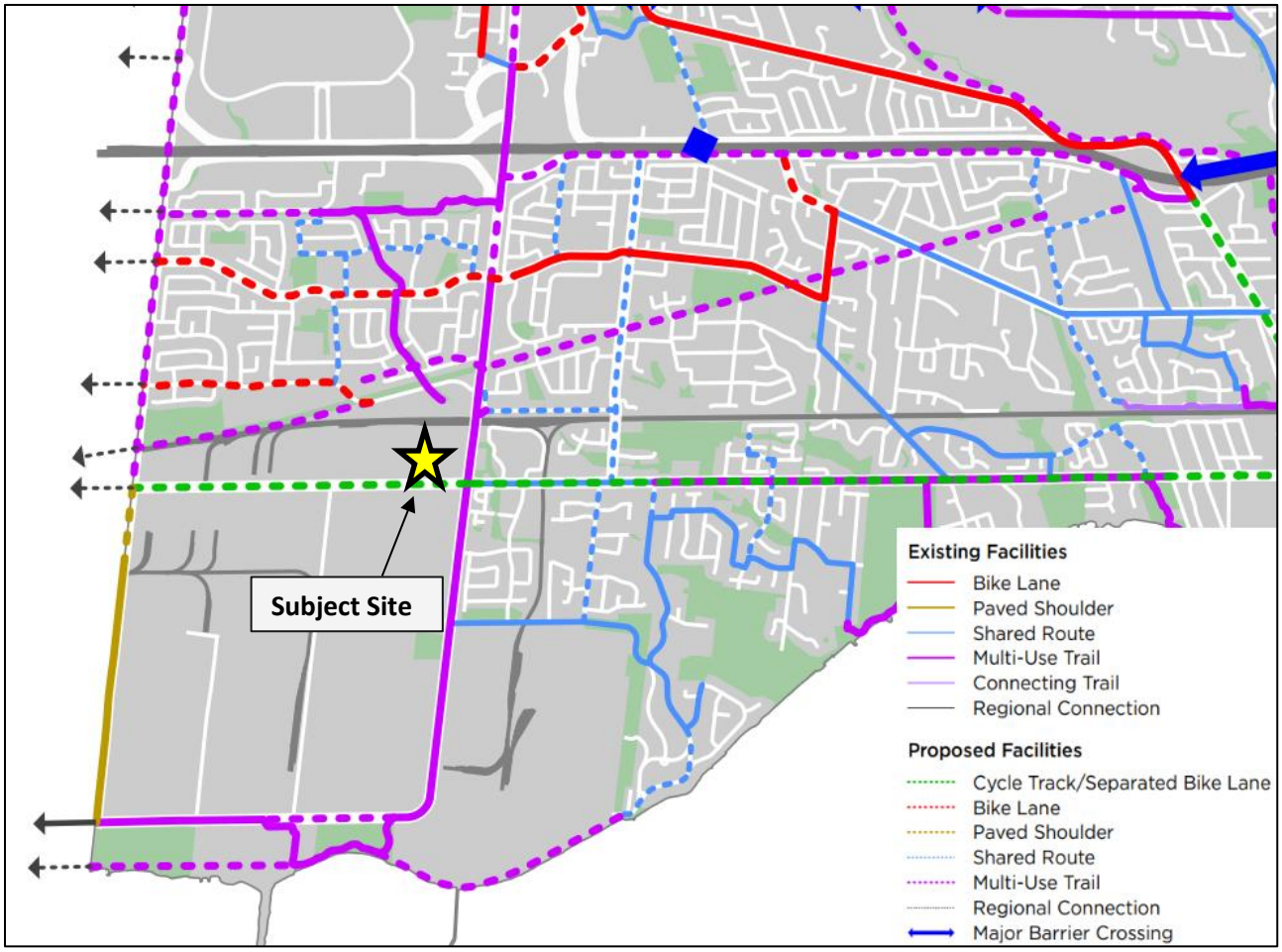
As part of Metrolinx's GO Expansion Program, the Milton Line will offer up to 30% more trips and 15-minute rush hour service, in addition to upgraded stations. This will further improve transit accessibility for the subject site and provide convenient weekday travel to the Toronto downtown core. The Cooksville GO Station will also provide connections to the future Hurontario LRT line.

### 3.3.2 Future Active transit Context

The City of Mississauga completed a *Cycling Master Plan* in 2018, was subsequently endorsed and ratified by Mississauga City Council in June and July 2018, respectively. The proposed cycling network in the Mississauga *Cycling Master Plan* is illustrated in **Figure 3-1**.

The proposed cycling network in the vicinity of the site includes bike lanes along Royal Windsor Drive, whichwill connect with existing multi-use paths and trails surrounding the neighbourhood. The master plan does not specify an implementation timeline but contemplates overall completion within twenty years. When implemented, the site will have improved cycling connectivity to surrounding neighbourhoods.

**Figure 3-1: Proposed Cycling Network Improvements**

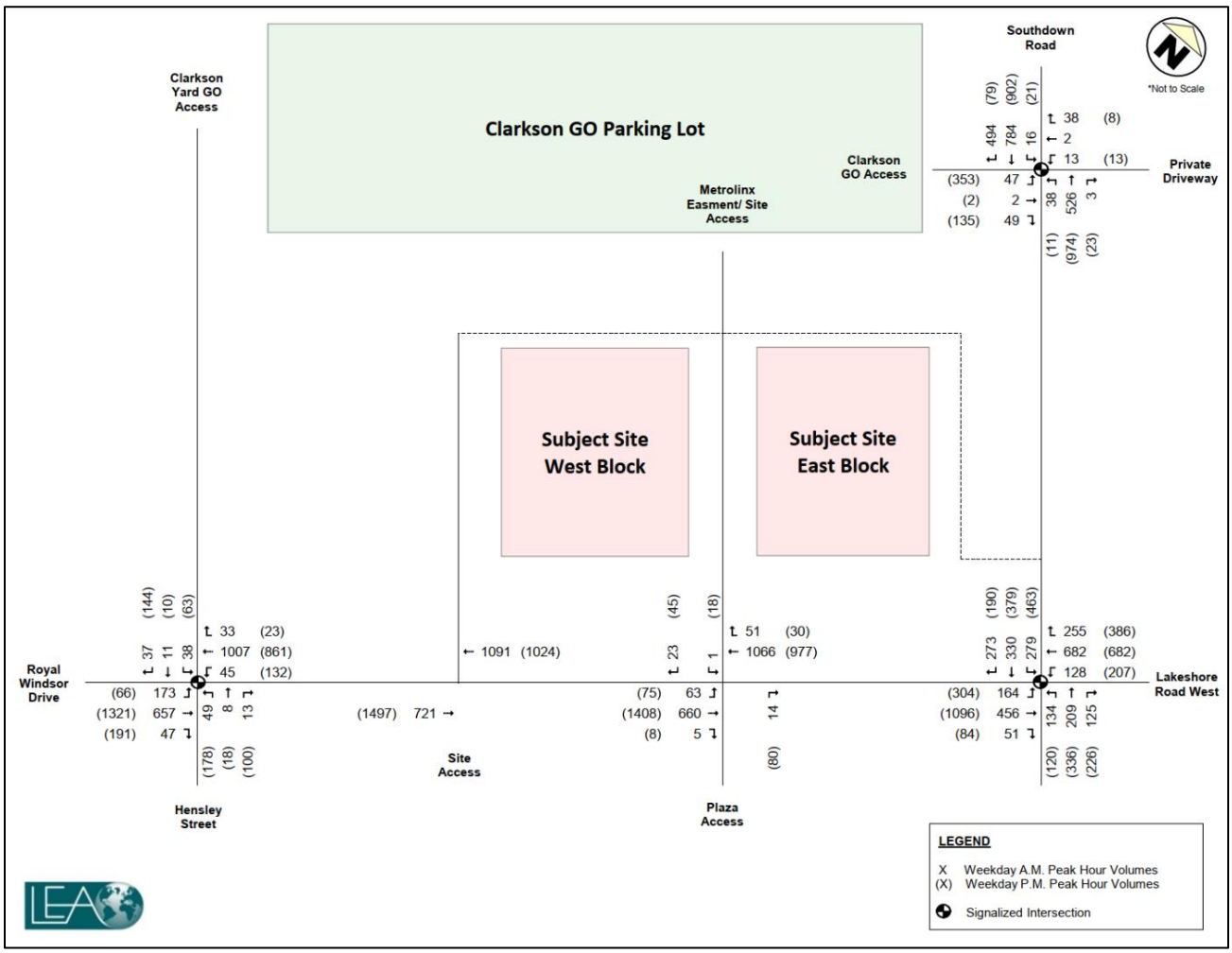



*Source: City of Mississauga, Last Updated: 2019*

## 3.4 FUTURE BACKGROUND TRAFFIC VOLUMES

Future background conditions were determined by incorporating corridor growth for a five-year horizon and background development traffic to the existing traffic volumes. The results for the studied intersections are summarized in **Figure 3-2**.

**Figure 3-2: Future (2027) Background Peak Hour Traffic Volumes**



# 4 SITE-GENERATED TRAFFIC

The proposed redevelopment includes the construction of four (4) residential towers with ground floor retail to be completed in two (2) blocks. The towers will include a total of 1,237 residential units and 1,978 $m^2$ (21,291 $ft^2$) of retail GFA. The proposed development will replace the existing commercial plaza and entertainment uses on-site. Access to the subject site is proposed via two (2) unsignalized, full-movement site accesses onto Royal Windsor Drive. It is noted that the western access will become the future Metrolinx Easement, providing access to Clarkson GO Station. Site access can also be accommodated through the adjacent building's access off Southdown Road.

The sections below discuss the calculation, distribution, and assignment of site-generated single-occupant vehicle (SOV) trips.

## 4.1 MODAL SPLIT & MULTI-MODAL TRIP GENERATION

To determine the modal split of the proposed development, 2016 Transportation Tomorrow Survey (TTS) was used. The parameters used to estimate the modal split were trip modes for apartment/condominium dwelling types that were home based trips during peak periods, located in proximity to the study area. The zones evaluated included zones 3614, 3623, 3639, 3640, 3644, 3645, 3879, and 4023. **Table 4-1** presents the mode split percentages based on the averages from each zone, with further details contained in **Appendix D**.

Table 4-1: Modal Split Summary

| Land Use | Description | Modal Split | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total |
| Proposed Residential | **External Person Trips** | **100%** | **111** | **218** | **329** | **200** | **168** | **368** |
| | Auto Driver Trips | 54% | 60 | 118 | 178 | 108 | 91 | 199 |
| | Passenger Trip | 7% | 8 | 15 | 23 | 14 | 12 | 26 |
| | Transit Trips | 27% | 30 | 59 | 89 | 54 | 45 | 99 |
| | Pedestrian trips | 10% | 11 | 22 | 33 | 20 | 17 | 37 |
| | Cycling Trips | 2% | 2 | 4 | 6 | 4 | 3 | 7 |
| Proposed Retail Primary + Pass-by | **External Person Trips** | **100%** | **34** | **22** | **56** | **82** | **64** | **146** |
| | Auto Driver Trips | 64% | 22 | 14 | 36 | 52 | 40 | 92 |
| | Passenger Trip | 11% | 4 | 2 | 6 | 10 | 8 | 18 |
| | Transit Trips | 17% | 6 | 4 | 10 | 14 | 11 | 25 |
| | Pedestrian trips | 7% | 2 | 2 | 4 | 6 | 4 | 10 |
| | Cycling Trips | 1% | 0 | 0 | 0 | 0 | 1 | 1 |
| Existing to Remove (Retail Primary + Auto Services Primary + Restaurant Primary + Passby) | **External Person Trips** | **100%** | **12** | **8** | **20** | **62** | **60** | **122** |
| | Auto Driver Trips | 64% | 8 | 5 | 13 | 40 | 39 | 79 |
| | Passenger Trip | 11% | 2 | 1 | 3 | 7 | 7 | 14 |
| | Transit Trips | 17% | 2 | 2 | 4 | 11 | 10 | 21 |
| | Pedestrian trips | 7% | 0 | 0 | 0 | 4 | 4 | 8 |
| | Cycling Trips | 1% | 0 | 0 | 0 | 0 | 0 | 0 |
| Net Multi-Modal Trips (Proposed Minus Existing to Remove) | **External Person Trips** | **-** | **133** | **232** | **365** | **220** | **172** | **392** |
| | Auto Driver Trips | - | 74 | 127 | 201 | 120 | 92 | 212 |
| | Passenger Trip | - | 10 | 16 | 26 | 17 | 13 | 30 |
| | Transit Trips | - | 34 | 61 | 95 | 57 | 46 | 103 |
| | Pedestrian trips | - | 13 | 24 | 37 | 22 | 17 | 39 |
| | Cycling Trips | - | 2 | 4 | 6 | 4 | 4 | 8 |

The results indicate that residents in the area highly rely on the automobile transportation mode. However, 36% of trips made are using alternative modes of transportation, which indicates that the multi-modal transit networks in the vicinity of the area provides residents with accessible sustainable travel modes, thereby reducing auto dependency in the future.

In addition, the proposed development is projected to further encourage transit use in the area. The site is currently occupied by low density retail and entertainment uses. The replacement of these uses by higher density, mixed-use residential and retail will help to facilitate future commuter connections throughout Mississauga as well as to/from neighbouring municipalities such as Oakville and Toronto, further improving transit use and connectivity in the area.

## 4.2 TRIP GENERATION METHODOLOGY

Trip generation was estimated using baseline trip rates from the *ITE Trip Generation Manual 11th Edition*.

### 4.2.1 Baseline Trip Generation

The baseline trip rates were used to determine new trips associated with the proposed residential and retail uses, as well as trips associated with the existing uses on-site to be removed. The baseline trips were determined through the following steps:

- **Proposed residential use**: the average rates for ITE LUC 222 Multifamily Housing (High-Rise) in General Urban/Suburban, Close to Rail Transit Setting, were used.
- **Proposed retail use:** the average rates for ITE LUC 822 Strip Retail Plaza (<40k) in General Urban/Suburban setting were used.
- **Existing retail use**: the average rates for ITE LUC 822 Strip Retail Plaza (<40k) in General Urban/Suburban setting were used.
- **Existing auto services:** the average rates for ITE LUC 943 Automobile Parts and Service Center in General Urban/Suburban setting were used.
- **Existing restaurant use:** the average rates for ITE LUC 934 Fast-Food Restaurant with Drive-Thru in General Urban/Suburban setting were used.
  Since the restaurant currently located on site is not open during weekday Am peak period, no AM trips were calculated for existing restaurant use. As such, no restaurant trips were removed from the AM peak period in future conditions. It is also worth noting that a 70% ITE trip rate was applied for the following reasons:
  - Other fast-food chains are more likely to be used as ITE trip survey locations
  - Harvey's is associated with a longer turnover time in comparison with other fast-food chains

### 4.2.2 Person-Trip Conversion

A Conversion to person trips was subsequently undertaken for the proposed and existing uses where the ITE auto trip rates were used in place of person trip rates. The following steps were undertaken:

- **Proposed residential use**: based on an assumed auto split of 95% and average vehicle occupancy for ITE LUC 220 per ITE Trip Generation Handbook, 3rd edition.

- **Proposed and existing retail use:** based on an assumed auto split of 95% and average vehicle occupancy for ITE LUC 820 per ITE Trip Generation Handbook, 3rd edition.
- **Existing auto services:** based on an assumed auto split of 95%.
- **Existing restaurant use:** based on an assumed auto split of 95% and average vehicle occupancy for ITE LUC 934 per ITE Trip Generation Handbook, 3rd edition.

### 4.2.3 Site Interaction Trip Reduction:

Since the proposed development will be mixed-use, it was assumed that some trips would be taken between the proposed residential and retail uses within the site, thus these trips wouldn't be added to the external network. Internal trip reduction was applied between the proposed residential and retail uses following the methodology outlined in the *ITE Trip Generation Handbook, 3rd Edition*.

### 4.2.4 Pass-by Retail Trips:

As the site currently features a number of existing uses, pass-by traffic was calculated through the following considerations:

- No pass-by trips were assumed for the retail and auto services trips as the *ITE Trip Generation Manual, 11th Edition's List of Land Uses with Vehicle Pass-By Rates and Data* does not include the aforementioned land uses.
- A 55% pass-by rate was applied to restaurant trips for the PM peak period as per the *ITE Trip Generation Manual, 11th Edition's List of Land Uses with Vehicle Pass-By Rates and Data.*

## 4.3 EXISTING SITE TRIPS TO BE REMOVED

For the purpose of the analysis, the existing site traffic was removed from the road network in the study area as these uses will be replaced by the new residential and retail site traffic volumes. The removed existing site traffic volumes are illustrated in **Table 4-2**.

Table 4-2: Existing Subject Site Trip Generation – Proposed Uses

| Land Use | Description | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| ITE LUC 822 - Strip Retail Plaza <40k 3,800 ft$^2$ | Auto Trip Rate (/1000 ft$^2$) | 1.42 | 0.94 | 2.36 | 3.30 | 3.30 | 6.59 |
| | Total Auto Trips | 5 | 4 | 9 | 13 | 12 | 25 |
| | Adjusted Person Trips | 6 | 5 | 11 | 17 | 15 | 32 |
| | Site Interaction | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Total External Trips** | **6** | **5** | **11** | **17** | **15** | **32** |
| | **External Auto Trips (64%)** | **4** | **3** | **7** | **11** | **10** | **21** |
| | Pass-By | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Primary External Auto Trips** | **4** | **3** | **7** | **11** | **10** | **21** |
| ITE LUC 943 - Automobile Parts and Service Center 4,500 ft$^2$ | Auto Trip Rate (/1000 ft$^2$) | 1.38 | 0.53 | 1.91 | 0.80 | 1.26 | 2.06 |
| | Total Auto Trips | 6 | 3 | 9 | 4 | 5 | 9 |
| | Adjusted Person Trips | 6 | 3 | 9 | 4 | 5 | 9 |
| | Site Interaction | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Total External Trips** | **6** | **3** | **9** | **4** | **5** | **9** |
| | **External Auto Trips (64%)** | **4** | **2** | **6** | **3** | **3** | **6** |
| | Pass-By | 0 | 0 | 0 | 0 | 0 | 0 |

| Land Use | Description | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| | **Primary External Auto Trips** | **4** | **2** | **6** | **3** | **3** | **6** |
| ITE LUC 934 - Fast-Food Restaurant with Drive-Thru 2,600 ft² | Auto Trip Rate (/1000 ft²) | 0.00 | 0.00 | 0.00 | 12.02 | 11.10 | 23.12 |
| | Total Auto Trips | 0 | 0 | 0 | 31 | 29 | 60 |
| | Adjusted Person Trips | 0 | 0 | 0 | 41 | 40 | 81 |
| | Site Interaction | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Total External Trips** | **0** | **0** | **0** | **41** | **40** | **81** |
| | **External Auto Trips (64%)** | **0** | **0** | **0** | **26** | **26** | **52** |
| | Pass-By | 0 | 0 | 0 | 14 | 14 | 28 |
| | **Primary External Auto Trips** | **0** | **0** | **0** | **12** | **12** | **24** |
| **Total Existing Site Auto Trips** | | **8** | **5** | **13** | **40** | **39** | **79** |

The existing retail spaces located on site is generating a total of 13 vehicle trips (8 inbound and 5 outbound) in the AM peak hour and 79 vehicle trips (40 inbound and 39 outbound) in the PM peak hour.

## 4.4 PROPOSED SITE TRIP GENERATION

The site trip generation for the proposed development is outlined in **Table 4-3**. For the purposes of calculating site-generated trips, the site statistics were rounded up to the nearest 5 units for residential and the nearest 1,000 square foot for retail GFA, with the rounded stats noted in **Table 4-3**.

Table 4-3: Subject Site Trip Generation – Proposed Uses

| Land Use | Description | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| Residential ITE LUC 222 – Multifamily Housing (High-Rise) West Block - 655 Units | Auto Trip Rate (/unit) | 0.08 | 0.15 | 0.23 | 0.15 | 0.11 | 0.26 |
| | Total Auto Trips | 50 | 101 | 151 | 97 | 73 | 170 |
| | Adjusted Person Trips | 59 | 116 | 175 | 117 | 93 | 210 |
| | Site Interaction | -1 | -1 | -2 | -12 | -5 | -17 |
| | **Total External Trips** | **58** | **115** | **173** | **105** | **88** | **193** |
| | **External Auto Trips (54%)** | **31** | **62** | **93** | **57** | **48** | **105** |
| Residential ITE LUC 222 – Multifamily Housing (High-Rise) East Block - 590 Units | Auto Trip Rate (/unit) | 0.08 | 0.15 | 0.23 | 0.15 | 0.11 | 0.26 |
| | Total Auto Trips | 45 | 91 | 136 | 87 | 66 | 153 |
| | Adjusted Person Trips | 54 | 104 | 158 | 105 | 84 | 189 |
| | Site Interaction | -1 | -1 | -2 | -10 | -4 | -14 |
| | **Total External Trips** | **53** | **103** | **156** | **95** | **80** | **175** |
| | **External Auto Trips (54%)** | **29** | **56** | **85** | **51** | **43** | **94** |
| **Total New Residential Site Auto Trips** | | **60** | **118** | **178** | **108** | **91** | **199** |
| ITE LUC 822 - Strip Retail Plaza <40k West Block - 10,700 ft² | Auto Trip Rate (/1000 ft²) | 1.42 | 0.94 | 2.36 | 3.30 | 3.30 | 6.59 |
| | Total Auto Trips | 15 | 10 | 25 | 36 | 35 | 71 |
| | Adjusted Person Trips | 18 | 12 | 30 | 46 | 43 | 89 |
| | Site Interaction | -1 | -1 | -2 | -5 | -11 | -16 |
| | **Total External Trips** | **17** | **11** | **28** | **41** | **32** | **73** |
| | **External Auto Trips (64%)** | **11** | **7** | **18** | **26** | **20** | **46** |
| | Pass-By | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Primary External Auto Trips** | **11** | **7** | **18** | **26** | **20** | **46** |
| ITE LUC 822 - Strip Retail Plaza <40k | Auto Trip Rate (/1000 ft²) | 1.42 | 0.94 | 2.36 | 3.30 | 3.30 | 6.59 |
| | Total Auto Trips | 15 | 10 | 25 | 36 | 35 | 71 |
| | Adjusted Person Trips | 18 | 12 | 30 | 46 | 43 | 89 |

| Land Use | Description | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| East Block - 10,700 ft$^2$ | Site Interaction | -1 | -1 | -2 | -5 | -11 | -16 |
| | **Total External Trips** | **17** | **11** | **28** | **41** | **32** | **73** |
| | **External Auto Trips (64%)** | **11** | **7** | **18** | **26** | **20** | **46** |
| | Pass-By | 0 | 0 | 0 | 0 | 0 | 0 |
| | **Primary External Auto Trips** | **11** | **7** | **18** | **26** | **20** | **46** |
| **Total New Retail Site Auto Trips** | | **22** | **14** | **36** | **52** | **40** | **92** |
| **Total New Site Auto Trips** | | 82 | 132 | 214 | 160 | 131 | 291 |

The proposed development is project to generate a total of 214 vehicle trips (82 inbound and 132 outbound) in the AM peak hour and 219 vehicle trips (160 inbound and 131 outbound) in the PM peak hour.

## 4.5 NET FUTURE SITE TRIP GENERATION

As noted in Section 1, this study considers a five-year horizon to the year 2027 as the proposed redevelopment includes residential use. It is expected that by 2027, the construction for both residential towers as well as on-site retail spaces would be completed. As such, existing retail services located on site would be removed. A summary of the net anticipated site vehicle trip is summarized in **Table 4-4.**

Table 4-4: Net Subject Site Trip Generation

| Land Use | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total |
| Total Residential | 60 | 118 | 178 | 108 | 91 | 199 |
| Net Retail | 18 | 11 | 29 | 41 | 30 | 71 |
| Total Auto Service | -4 | -2 | -6 | -3 | -3 | -6 |
| Total Restaurant | 0 | 0 | 0 | -12 | -12 | -24 |
| Total Pass-by | 0 | 0 | 0 | -14 | -14 | -28 |
| **Net Site Auto Trips** | **74** | **127** | **201** | **120** | **92** | **212** |

The proposed development is anticipated to generate a net total of 201 vehicle trips (74 inbound and 127 outbound) in the AM peak hour and 212 vehicle trips (120 inbound and 92 outbound) in the PM peak hour when accounting for the removal of existing site trips.

## 4.6 TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution and assignment of site traffic was developed based on Transportation Tomorrow Survey (TTS) 2016 data. The destination of home-based trips generated during the weekday AM and PM peak periods by the traffic zones where the subject site is located was used to determine the directional trip distribution. The trips were assigned based on the most logical routing considering the site access location. For retail use, inbound and outbound distribution was based on PM due to limited data in the AM. **Table 4-5** below summarizes the assumed residential trip assignment for this study. The details of the TTS data are contained in **Appendix D.**

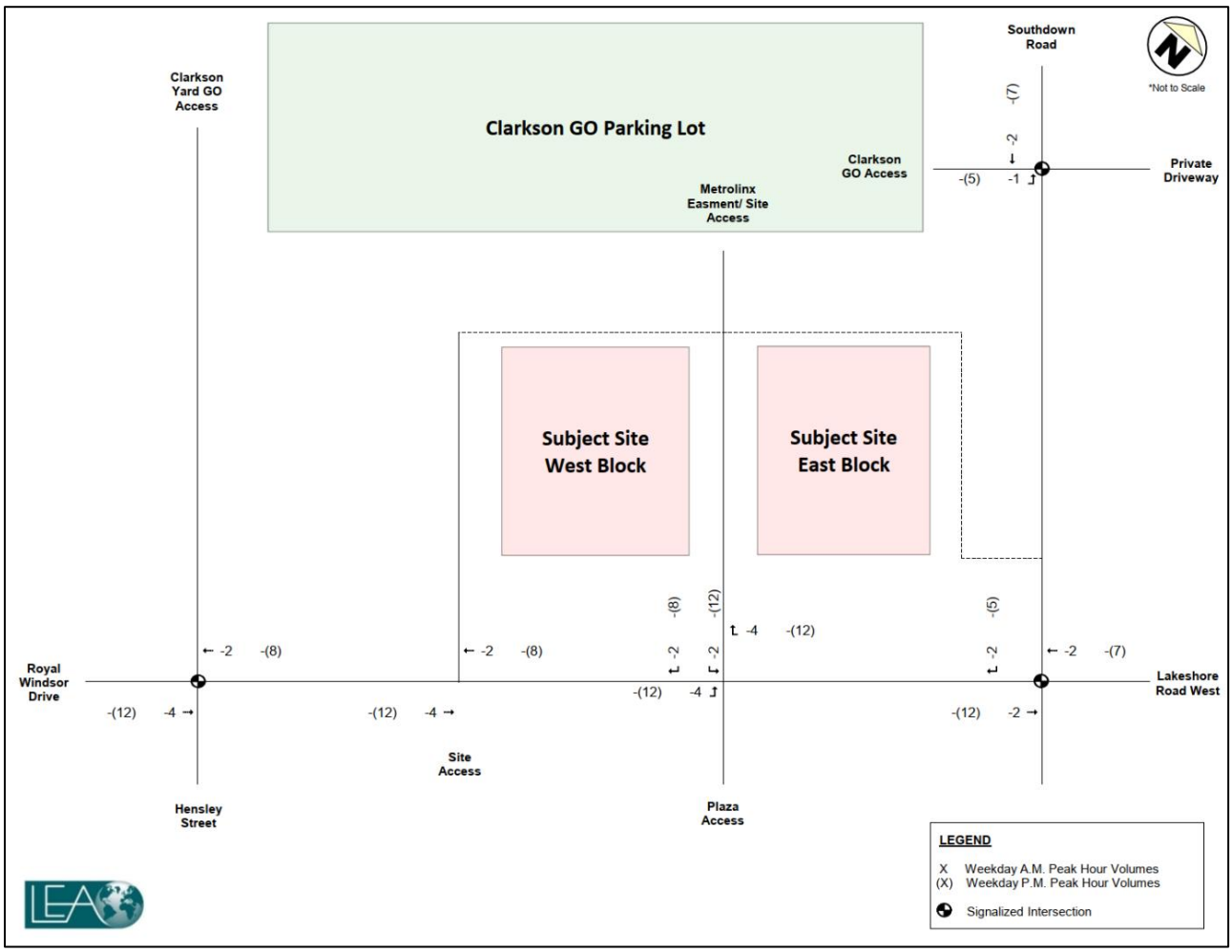
Table 4-5: Trip Distribution

| Direction From/ To | Expected Route | Residential Weekday AM/PM | | Retail Weekday AM/PM | |
|---|---|---|---|---|---|
| | | In | Out | In | Out |
| N | Southdown Road and EW Corridors | 11% | 14% | 15% | 13% |
| | Highway 403 & Highway 410 via Southdown Road | 4% | 3% | 1% | - |
| | QEW and Highway 427 via Southdown Road | 2% | 2% | - | - |
| | Royal Windsor Drive and Winston Churchill Boulevard | 10% | 11% | 14% | 16% |
| S | Southdown Road and EW Corridors | 3% | 3% | 1% | - |
| E | Highway 403 via Southdown Road | 15% | 13% | 2% | -- |
| | QEW via Southdown Road | 9% | 7% | 6% | 6% |
| | QEW, Gardiner & DVP via Southdown Road | 1% | 1% | - | - |
| | QEW and Highway 427 via Southdown Road | 5% | 5% | - | 1% |
| | QEW, Highway 427 & Highway 401 via Southdown Road | 2% | 1% | - | - |
| | QEW, Highway 427, Highway 401 & Highway 400/404 via Southdown Road | 3% | 3% | - | - |
| | Lakeshore Road West and NS Corridors | 9% | 9% | 27% | 46% |
| W | Royal Windsor Drive and NS Corridors | 6% | 6% | 1% | - |
| | Highway 403 via Royal Windsor Drive & Winston Churchill Boulevard | 17% | 19% | 33% | 18% |
| | Highway 403 & Highway 410 via Royal Windsor Drive & Winston Churchill Boulevard | 3% | 3% | - | - |
| | **Total** | **100%** | **100%** | **100%** | **100%** |

## 4.7 SITE TRIPS ON THE ROAD NETWORK

The existing site trips to be removed, site trips associated with the proposed uses, and overall net site trips to be generated for the peak hours are illustrated in **Figure 4-1, Figure 4-2**, and **Figure 4-3,** respectively.

**Figure 4-1: Existing Peak Hour Site Traffic to be Removed**



## Figure 4-2: Proposed Peak Hour Site Traffic

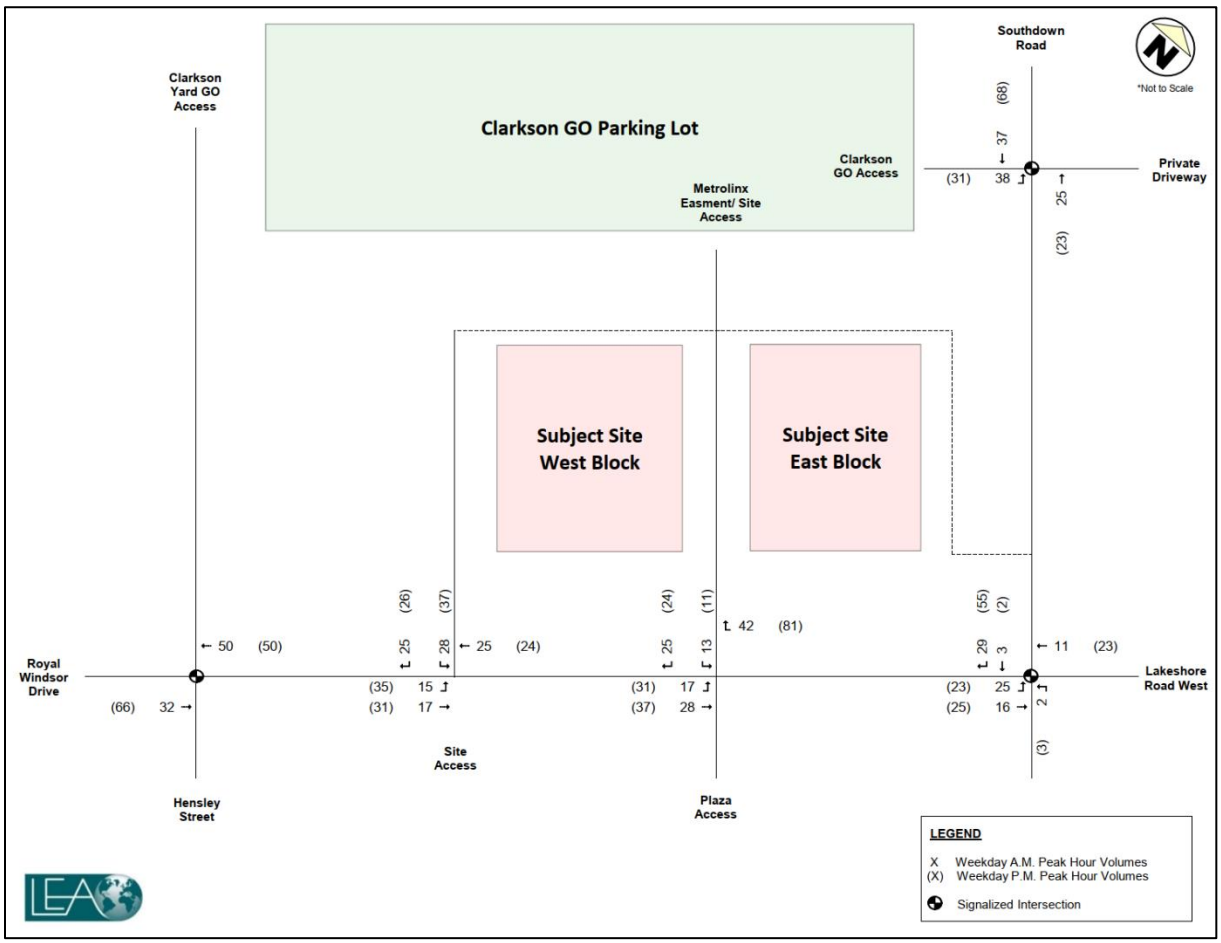
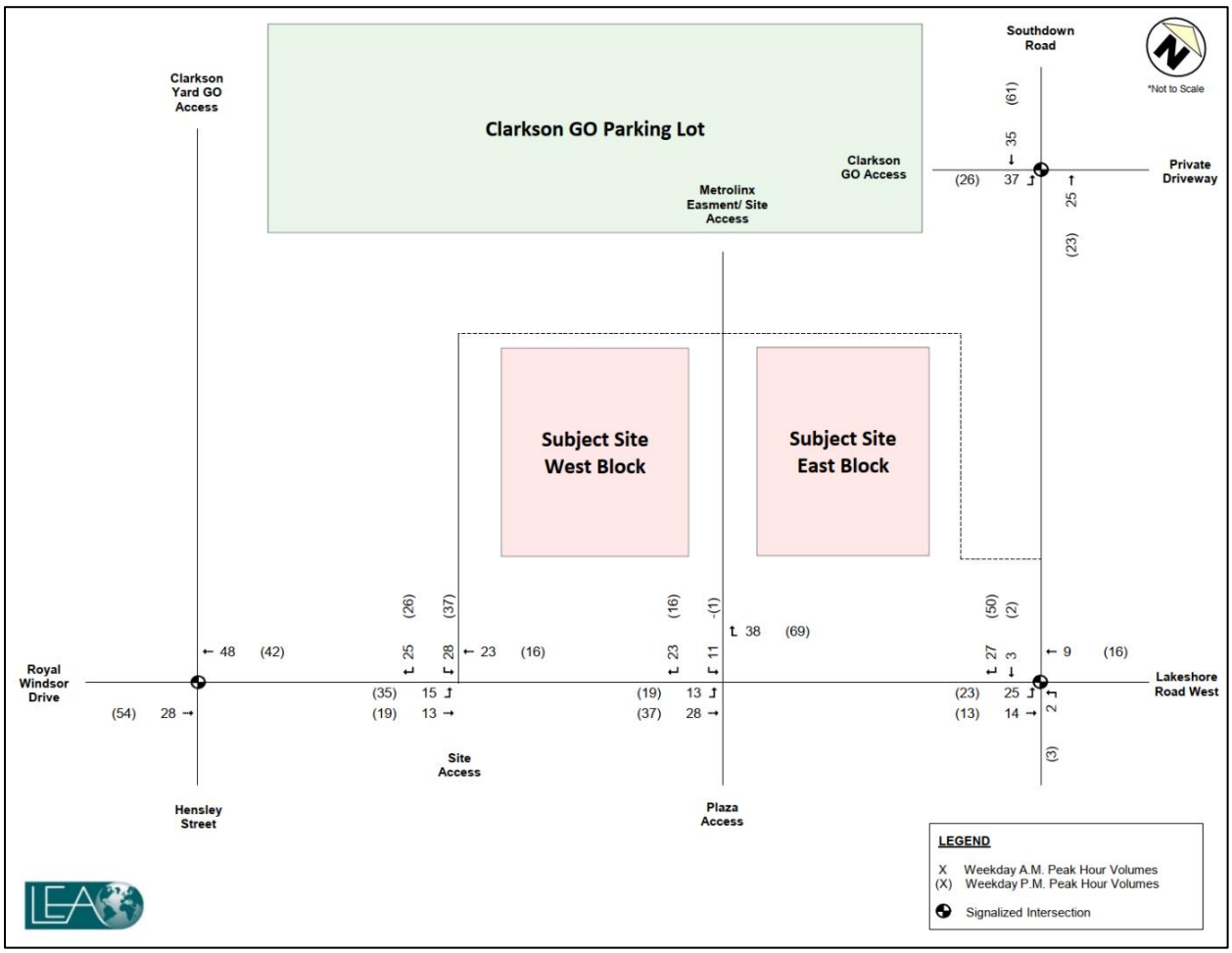


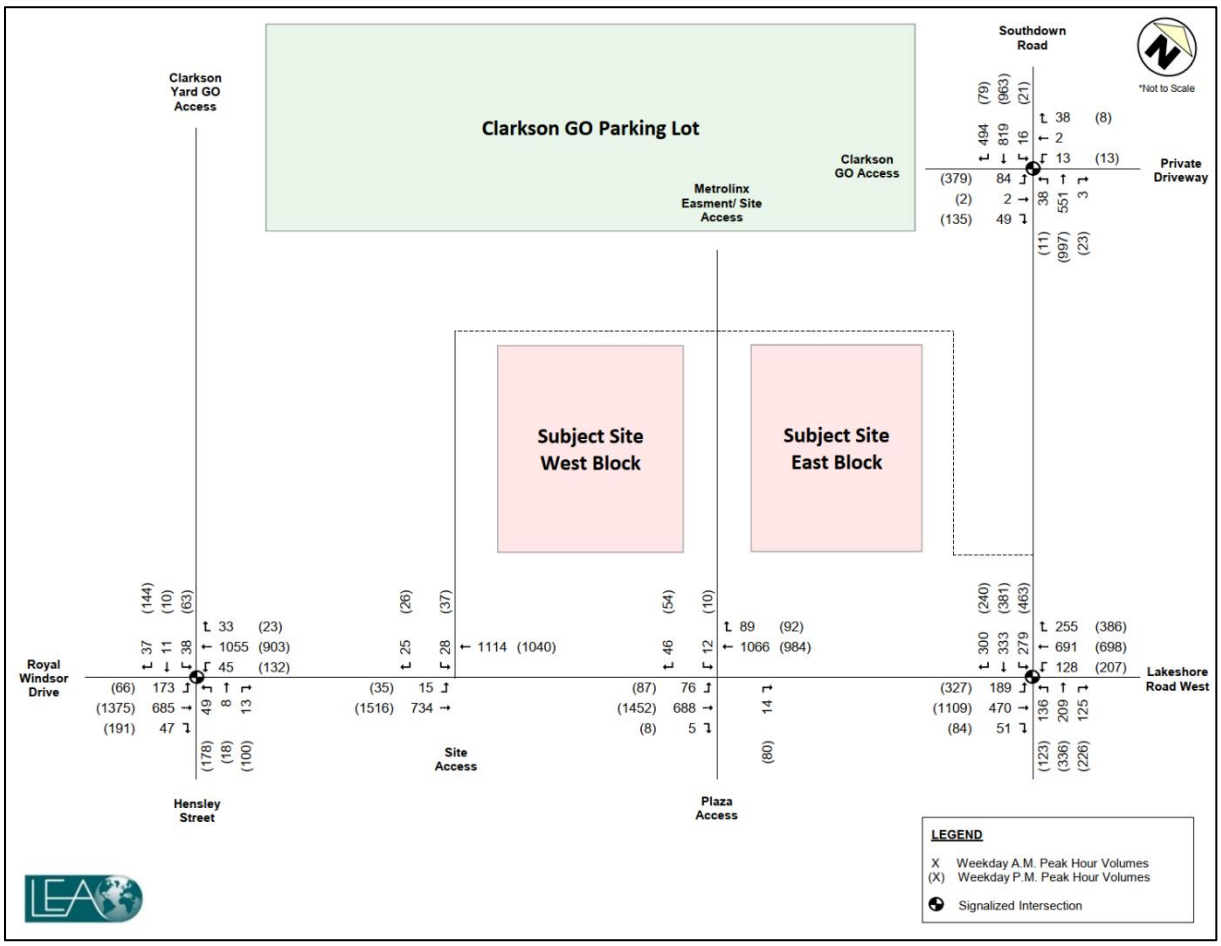
**Figure 4-3: Net Peak Hour Site Traffic**




## 4.8 FUTURE TOTAL TRAFFIC VOLUMES

Future total transportation conditions include future background volumes, in addition to the site trips generated by the proposed development. The future total traffic volumes for the AM and PM peak hours are illustrated in **Figure 4-4**.

## Figure 4-4: Future Total Peak Hour Traffic Volumes



# 5 INTERSECTION CAPACITY ANALYSIS RESULTS

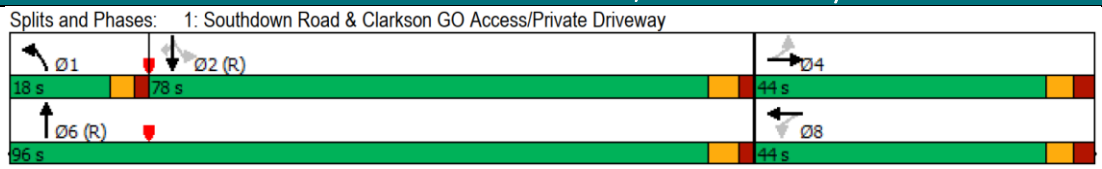
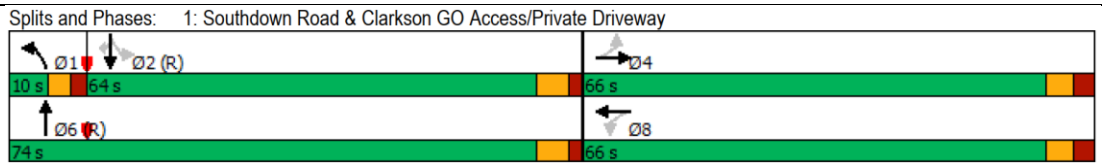
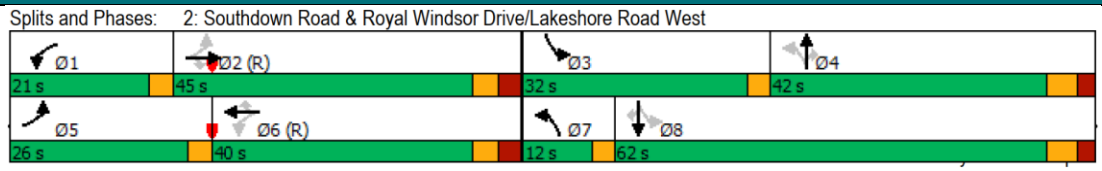
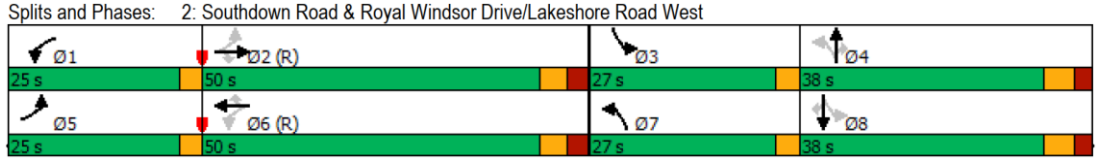
The following sections provide an analysis of the intersection operations under existing, future background, and future total scenarios. The intersection capacity analysis for the study area was undertaken using Synchro version 11.0, which is based on the Highway Capacity Manual 2000 methodology. Critical movements are defined as movements with level-of-service (LOS) E or worse or volume-to-capacity (v/c) ratio greater than 0.85 for through and right-turn movements and v/c greater than 0.90 for left-turn movements.

## 5.1 SYNCHRO MODEL INPUTS

**Existing Conditions:** Signal timing plans were obtained from the City of Mississauga for the signalized intersections in the study area. No changes to the lost time adjust or saturation flows were made based on the City of Mississauga's guidelines.

**Future Background and Future Total Conditions:** Due to capacity constraints observed during the PM peak hour in the future background scenario (due to corridor growth), signal timing optimization is recommended for the future scenarios at the Southdown Road & Clarkson GO Access/Private Driveway and Royal Windsor Drive/Lakeshore Road West & Southdown Road interchanges during the PM peak hour. The optimized signal timing plans compared to the existing signal timing plans are summarized in **Table 5-1**. Where possible, the existing cycle length was maintained.

Table 5-1: Summary of Signal Timing Plan Optimization Undertaken for Future Conditions

| Southdown Road & Clarkson GO Access/Private Driveway | |
|---|---|
| Existing – PM Peak Period |  |
| Future Optimized – PM Peak Period |  |
| **Royal Windsor Drive/Lakeshore Road West & Southdown Road** | |
| Existing – PM Peak Period |  |
| Future Optimized – PM Peak Period |  |

## 5.2 SIGNALIZED INTERSECTION CAPACITY ANALYSIS

The intersection capacity analysis was conducted under existing, future background, as well as future total conditions during the weekday AM and PM peak hours, where the results for the each of the studied signalized intersections are summarized in **Table 5-2**, **Table 5-3**, **Table 5-4**, and **Table 5-5.** Detailed capacity results are provided in **Appendix E**.

Table 5-2: Intersection Capacity Analysis – Southdown Road & Clarkson GO Access/Private Drive

| AM | Existing Traffic | | | | | Future Background Traffic | | | | | Future Total Traffic | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.39 | 11 | B | - | - | 0.39 | 11 | B | - | - | 0.41 | 13 | B | - |
| EBL | 47 | 0.54 | 70 | E | 27 | 47 | 0.54 | 70 | E | 27 | 84 | 0.63 | 69 | E | 42 |
| EBTR | 51 | 0.05 | 61 | E | 14 | 51 | 0.05 | 61 | E | 14 | 51 | 0.05 | 57 | E | 14 |
| WBL | 13 | 0.16 | 62 | E | 11 | 13 | 0.16 | 62 | E | 11 | 13 | 0.10 | 57 | E | 11 |
| WBTR | 40 | 0.05 | 61 | E | 13 | 40 | 0.05 | 61 | E | 13 | 40 | 0.04 | 57 | E | 12 |
| NBL | 38 | 0.43 | 63 | E | 23 | 38 | 0.43 | 63 | E | 23 | 38 | 0.43 | 64 | E | 22 |
| NBTR | 529 | 0.21 | 3 | A | 33 | 529 | 0.21 | 3 | A | 33 | 554 | 0.23 | 4 | A | 39 |
| SBL | 16 | 0.03 | 4 | A | 4 | 16 | 0.03 | 4 | A | 4 | 16 | 0.03 | 6 | A | 5 |
| SBT | 784 | 0.33 | 6 | A | 61 | 784 | 0.33 | 6 | A | 61 | 819 | 0.36 | 8 | A | 73 |
| SBR | 494 | 0.38 | 7 | A | 11 | 494 | 0.38 | 7 | A | 11 | 494 | 0.38 | 9 | A | 13 |
| PM | Existing Traffic | | | | | Future Background Traffic | | | | | Future Total Traffic | | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.67 | 26 | C | - | - | 0.67 | 24 | C | - | - | 0.70 | 26 | C | - |
| EBL | 353 | 0.99 | 93 | F | 179 | 353 | 0.84 | 56 | E | 128 | 379 | 0.85 | 56 | E | 136 |
| EBTR | 137 | 0.10 | 39 | D | 18 | 137 | 0.13 | 34 | C | 20 | 137 | 0.14 | 32 | C | 20 |
| WBL | 13 | 0.05 | 38 | D | 9 | 13 | 0.04 | 33 | C | 7 | 13 | 0.04 | 31 | C | 7 |
| WBTR | 8 | 0.01 | 38 | D | 0 | 8 | 0.01 | 33 | C | 0 | 8 | 0.01 | 31 | C | 0 |
| NBL | 11 | 0.32 | 87 | F | 7 | 11 | 0.32 | 88 | F | 7 | 11 | 0.36 | 90 | F | 6 |
| NBTR | 997 | 0.49 | 8 | A | 53 | 997 | 0.53 | 14 | B | 84 | 1020 | 0.56 | 15 | B | 151 |
| SBL | 21 | 0.09 | 14 | B | 8 | 21 | 0.11 | 17 | B | 11 | 21 | 0.12 | 19 | B | 11 |
| SBT | 902 | 0.48 | 18 | B | 109 | 902 | 0.53 | 22 | C | 145 | 963 | 0.58 | 25 | C | 158 |
| SBR | 79 | 0.06 | 13 | B | 8 | 79 | 0.06 | 16 | B | 11 | 79 | 0.07 | 17 | B | 12 |

**Existing Conditions:** Under existing weekday AM and PM peak hour conditions, the intersection is operating within capacity with an overall v/c ratio of less than 1.00. All movements have a v/c below 1.00. During the AM peak hour, the eastbound and westbound movements experience LOS E and have some delays that are slightly longer than the signal timing plan split for the associated phases. Similarly, the northbound left movement experiences LOS E and delays. During the PM peak hour, the eastbound left, and northbound left movements experience LOS F. The eastbound left movement experiences delay and queuing constraints. The 95$^{th}$ percentile queue lengths for most movements are indicated to be accommodated within the available storage, with the exception of the eastbound left movement in the PM hour. No further intersection changes are recommended.

**Future Background Conditions:** Under weekday AM and PM peak hour conditions, the intersection is expected to continue operating with minimal changes to operations compared to existing. Signal timing

optimization was implemented for the PM peak hour. Improvements in capacity are expected for the eastbound left movement.

**Future Total Conditions:** Under weekday AM and PM peak hour conditions, the intersection is expected to continue operating similarly to future background. The v/c ratios, delay, and queue lengths for most movements during both peak hours indicate acceptable changes with the added site traffic compared to future background conditions. No additional constraints were identified because of the added site traffic.

Table 5-3: Intersection Capacity Analysis – Royal Windsor Drive/Lakeshore Road West & Southdown Road

| AM | Existing Traffic | | | | | Future Background Traffic | | | | | Future Total Traffic | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.59 | 36 | D | - | - | 0.62 | 37 | D | - | - | 0.67 | 37 | D | - |
| EBL | 164 | 0.66 | 34 | C | 52 | 164 | 0.73 | 39 | D | 52 | 189 | 0.83 | 50 | D | 72 |
| EBT | 421 | 0.39 | 36 | D | 70 | 456 | 0.42 | 37 | D | 76 | 470 | 0.44 | 37 | D | 78 |
| EBR | 51 | 0.04 | 247 | F | 6 | 51 | 0.04 | 243 | F | 6 | 51 | 0.04 | 224 | F | 3 |
| WBL | 128 | 0.37 | 33 | C | 38 | 128 | 0.39 | 33 | C | 38 | 128 | 0.40 | 34 | C | 38 |
| WBT | 601 | 0.62 | 47 | D | 107 | 682 | 0.70 | 49 | D | 124 | 691 | 0.73 | 51 | D | 126 |
| WBR | 255 | 0.18 | 39 | D | 23 | 255 | 0.18 | 39 | D | 23 | 255 | 0.18 | 40 | D | 23 |
| NBL | 134 | 0.33 | 28 | C | 34 | 134 | 0.33 | 28 | C | 34 | 136 | 0.33 | 28 | C | 34 |
| NBT | 209 | 0.22 | 34 | C | 37 | 209 | 0.22 | 34 | C | 37 | 209 | 0.22 | 34 | C | 37 |
| NBR | 125 | 0.08 | 32 | C | 16 | 125 | 0.08 | 32 | C | 16 | 125 | 0.08 | 32 | C | 16 |
| SBL | 279 | 0.49 | 17 | B | 37 | 279 | 0.49 | 17 | B | 37 | 279 | 0.49 | 17 | B | 37 |
| SBT | 330 | 0.26 | 23 | C | 25 | 330 | 0.26 | 23 | C | 25 | 333 | 0.26 | 22 | C | 25 |
| SBR | 273 | 0.20 | 14 | B | 7 | 273 | 0.20 | 14 | B | 7 | 300 | 0.22 | 12 | B | 7 |
| PM | Existing Traffic | | | | | Future Background Traffic | | | | | Future Total Traffic | | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.95 | 53 | D | - | - | 0.97 | 52 | D | - | - | 0.98 | 56 | E | - |
| EBL | 304 | 0.96 | 77 | E | 124 | 304 | 0.86 | 54 | D | 95 | 327 | 0.91 | 67 | E | 118 |
| EBT | 979 | 0.99 | 63 | E | 210 | 1096 | 0.89 | 40 | D | 172 | 1109 | 0.90 | 41 | D | 188 |
| EBR | 84 | 0.06 | 16 | B | 3 | 84 | 0.06 | 19 | B | 6 | 84 | 0.06 | 22 | C | 6 |
| WBL | 207 | 0.84 | 58 | E | 81 | 207 | 0.92 | 74 | E | 96 | 207 | 0.92 | 74 | E | 95 |
| WBT | 638 | 0.78 | 56 | E | 121 | 682 | 0.69 | 48 | D | 127 | 698 | 0.74 | 51 | D | 130 |
| WBR | 386 | 0.26 | 45 | D | 29 | 386 | 0.26 | 39 | D | 28 | 386 | 0.26 | 41 | D | 28 |
| NBL | 120 | 0.40 | 35 | D | 32 | 120 | 0.42 | 38 | D | 36 | 123 | 0.43 | 39 | D | 37 |
| NBT | 336 | 0.39 | 44 | D | 61 | 336 | 0.45 | 49 | D | 64 | 336 | 0.45 | 49 | D | 64 |
| NBR | 226 | 0.16 | 40 | D | 22 | 226 | 0.17 | 45 | D | 24 | 226 | 0.17 | 45 | D | 24 |
| SBL | 463 | 0.85 | 56 | E | 146 | 463 | 0.98 | 88 | F | 167 | 463 | 0.98 | 89 | F | 170 |
| SBT | 379 | 0.29 | 30 | C | 50 | 379 | 0.36 | 41 | D | 66 | 381 | 0.36 | 42 | D | 68 |
| SBR | 190 | 0.14 | 55 | D | 22 | 190 | 0.14 | 107 | F | 43 | 240 | 0.18 | 127 | F | 55 |

**Existing Conditions:** Under existing weekday AM peak hour conditions, the intersection is operating within capacity with an overall v/c ratio of less than 1.00. Under existing weekday PM peak hour conditions, the intersection is operating close to capacity. All movements have a v/c below 1.00. During the AM peak hour, the eastbound right movement experiences LOS F and experiences significant delays. It is likely that this is not a reflection of the actual operation of the movement and is a limitation of Synchro. Comparing Synchro results and HCM 2000 results, we can see that there is available capacity and that these delays are not expected to

be occurring. During the PM peak hour, the eastbound left, and eastbound through movements experience LOS E and are approaching capacity. The westbound left, westbound through, and southbound left movements experience LOS E. These critical movements experience delay and queuing constraints. No further intersection changes are recommended.

**Future Background Conditions:** Under AM and PM peak hour conditions, the intersection is expected to continue operating with minimal changes to operations compared to existing. Signal timing optimization was implemented for the PM peak hour. Improvements in capacity are expected for the eastbound left and eastbound through movements. The westbound left and southbound left movements are expected to approach capacity.

**Future Total Conditions:** Under weekday AM and PM peak hour conditions, the intersection is expected to continue operating similarly to future background. The v/c ratios, delay, and queue lengths for most movements during both peak hours indicate acceptable changes with the added site traffic compared to future background conditions. No additional constraints were identified because of the added site traffic.

Table 5-4: Intersection Capacity Analysis – Royal Windsor Drive/ Drive & Hensley Street/Clarkson Yard GO Access

| AM | Existing Traffic | | | | | Future Background Traffic | | | | | Future Total Traffic | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| **Overall** | - | **0.43** | **9** | **A** | - | - | **0.47** | **9** | **A** | - | - | **0.49** | **9** | **A** | - |
| EBL | 173 | 0.41 | 3 | A | 14 | 173 | 0.45 | 4 | A | 14 | 173 | 0.47 | 4 | A | 14 |
| EBT | 612 | 0.23 | 3 | A | 28 | 657 | 0.24 | 3 | A | 30 | 685 | 0.25 | 3 | A | 32 |
| EBR | 47 | 0.03 | 2 | A | 3 | 47 | 0.04 | 2 | A | 3 | 47 | 0.04 | 2 | A | 3 |
| WBL | 45 | 0.09 | 4 | A | 7 | 45 | 0.10 | 5 | A | 8 | 45 | 0.10 | 5 | A | 8 |
| WBT | 902 | 0.37 | 4 | A | 58 | 1007 | 0.41 | 6 | A | 79 | 1055 | 0.43 | 6 | A | 87 |
| WBR | 33 | 0.02 | 3 | A | 1 | 33 | 0.02 | 7 | A | 1 | 33 | 0.02 | 6 | A | 1 |
| **NBL** | **49** | **0.59** | **72** | **E** | **30** | **49** | **0.59** | **72** | **E** | **30** | **49** | **0.59** | **72** | **E** | **30** |
| **NBTR** | **21** | **0.08** | **61** | **E** | **12** | **21** | **0.08** | **61** | **E** | **12** | **21** | **0.08** | **61** | **E** | **12** |
| **SBL** | **38** | **0.45** | **66** | **E** | **24** | **38** | **0.45** | **66** | **E** | **24** | **38** | **0.45** | **66** | **E** | **24** |
| **SBTR** | **48** | **0.13** | **62** | **E** | **16** | **48** | **0.13** | **62** | **E** | **16** | **48** | **0.13** | **62** | **E** | **16** |
| **PM** | **Existing Traffic** | | | | | **Future Background Traffic** | | | | | **Future Total Traffic** | | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| **Overall** | - | **0.63** | **26** | **C** | - | - | **0.68** | **27** | **C** | - | - | **0.70** | **27** | **C** | - |
| EBL | 66 | 0.18 | 14 | B | 22 | 66 | 0.19 | 15 | B | 24 | 66 | 0.20 | 15 | B | 24 |
| EBT | 1188 | 0.56 | 18 | B | 166 | 1321 | 0.64 | 21 | C | 204 | 1375 | 0.67 | 22 | C | 218 |
| EBR | 191 | 0.18 | 13 | B | 36 | 191 | 0.18 | 14 | B | 38 | 191 | 0.18 | 14 | B | 38 |
| WBL | 132 | 0.45 | 35 | C | 41 | 132 | 0.49 | 45 | D | 48 | 132 | 0.51 | 40 | D | 44 |
| WBT | 809 | 0.32 | 19 | B | 105 | 861 | 0.34 | 17 | B | 120 | 903 | 0.36 | 17 | B | 124 |
| WBR | 23 | 0.02 | 28 | C | 4 | 23 | 0.02 | 26 | C | 5 | 23 | 0.02 | 25 | C | 4 |
| **NBL** | **178** | **0.90** | **91** | **F** | **76** | **178** | **0.90** | **91** | **F** | **76** | **178** | **0.90** | **91** | **F** | **76** |
| NBTR | 118 | 0.12 | 46 | D | 20 | 118 | 0.12 | 46 | D | 20 | 118 | 0.12 | 46 | D | 20 |
| SBL | 63 | 0.28 | 48 | D | 28 | 63 | 0.28 | 48 | D | 28 | 63 | 0.28 | 48 | D | 28 |
| SBTR | 154 | 0.12 | 46 | D | 20 | 154 | 0.15 | 47 | D | 23 | 154 | 0.18 | 47 | D | 26 |

**Existing Conditions:** Under existing weekday AM and PM peak hour conditions, the intersection is operating within capacity with an overall v/c ratio of less than 1.00. All movements have a v/c below 1.00. During the

AM peak hour, the northbound and southbound movements experience LOS E and have some delays that are slightly longer than the signal timing plan split for the associated phases. During the PM peak hour, the northbound left movement is approaching capacity and experiences LOS F with some delay. The 95$^{th}$ percentile queue lengths for all movements are indicated to be accommodated within the available storage. No further intersection changes are recommended.

**Future Background Conditions:** Under weekday AM and PM peak hour conditions, the intersection is expected to continue operating with minimal changes to operations compared to existing.

**Future Total Conditions:** Under weekday AM and PM peak hour conditions, the intersection is expected to continue operating similarly to future background. The v/c ratios, delay, and queue lengths for most movements during both peak hours indicate acceptable changes with the added site traffic compared to future background conditions. No additional constraints were identified because of the added site traffic.

## 5.3 UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS

The intersection capacity analysis was conducted under existing, future background, as well as future total conditions during the weekday AM and PM peak hours, where the results for the each of the studied unsignalized intersections are summarized in **Table 5-5** and **Table 5-6.** Detailed capacity results are provided in **Appendix E**.

Table 5-5: Unsignalized Intersection Capacity Analysis – Royal Windsor Drive & Plaza Access/Site Access/Metrolinx Easement

| Royal Windsor Drive & Plaza Access/Site Access/Metrolinx Easement | AM | Existing Traffic | | | | | Future Background Traffic | | | | | Future Total Traffic | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| | EBT | 66 | 0.08 | 3 | A | 2 | 66 | 0.08 | 3 | A | 2 | 80 | 0.10 | 3 | A | 3 |
| | EBT | 431 | 0.25 | 0 | - | 0 | 463 | 0.27 | 0 | - | 0 | 483 | 0.28 | 0 | - | 0 |
| | EBR | 5 | 0.00 | 0 | - | 0 | 5 | 0.00 | 0 | - | 0 | 5 | 0.00 | 0 | - | 0 |
| | WBT | 403 | 0.24 | 0 | - | 0 | 449 | 0.26 | 0 | - | 0 | 449 | 0.26 | 0 | - | 0 |
| | WBT | 403 | 0.24 | 0 | - | 0 | 449 | 0.26 | 0 | - | 0 | 449 | 0.26 | 0 | - | 0 |
| | WBTR | 255 | 0.15 | 0 | - | 0 | 278 | 0.16 | 0 | - | 0 | 318 | 0.19 | 0 | - | 0 |
| | NBR | 15 | 0.02 | 10 | B | 1 | 15 | 0.02 | 10 | B | 1 | 15 | 0.02 | 11 | B | 1 |
| | SBL | 1 | 0.00 | 15 | C | 0 | 1 | 0.00 | 16 | C | 0 | 13 | 0.04 | 17 | C | 1 |
| | SBR | 24 | 0.03 | 9 | A | 1 | 24 | 0.03 | 9 | A | 1 | 48 | 0.05 | 9 | A | 1 |
| | PM | Existing Traffic | | | | | Future Background Traffic | | | | | Future Total Traffic | | | | |
| | Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| | EBT | 85 | 0.09 | 3 | A | 3 | 85 | 0.10 | 3 | A | 3 | 99 | 0.12 | 3 | A | 3 |
| | EBT | 961 | 0.57 | 0 | - | 0 | 1067 | 0.63 | 0 | - | 0 | 1100 | 0.65 | 0 | - | 0 |
| | EBR | 9 | 0.01 | 0 | - | 0 | 9 | 0.01 | 0 | - | 0 | 9 | 0.01 | 0 | - | 0 |
| | WBT | 418 | 0.25 | 0 | - | 0 | 444 | 0.26 | 0 | - | 0 | 447 | 0.26 | 0 | - | 0 |
| | WBT | 418 | 0.25 | 0 | - | 0 | 444 | 0.26 | 0 | - | 0 | 447 | 0.26 | 0 | - | 0 |
| | WBTR | 243 | 0.14 | 0 | - | 0 | 256 | 0.15 | 0 | - | 0 | 329 | 0.19 | 0 | - | 0 |
| | NBR | 91 | 0.12 | 11 | B | 3 | 91 | 0.12 | 10 | B | 3 | 91 | 0.12 | 10 | B | 3 |
| | SBL | 20 | 0.06 | 16 | C | 2 | 20 | 0.06 | 17 | C | 2 | 11 | 0.03 | 17 | C | 1 |
| | SBR | 51 | 0.06 | 9 | A | 1 | 51 | 0.06 | 9 | A | 1 | 61 | 0.07 | 9 | A | 2 |

Table 5-6: Unsignalized Intersection Capacity Analysis – Royal Windsor Drive & Site Access

| | AM | Existing Traffic | | | | | Future Background Traffic | | | | | Future Total Traffic | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Royal Windsor Drive & Site Access | EBT | 374 | 0.22 | 0 | - | 0 | 400 | 0.24 | 0 | - | 0 | 17 | 0.02 | 1 | A | 1 |
| | EBT | 374 | 0.22 | 0 | - | 0 | 400 | 0.24 | 0 | - | 0 | 544 | 0.32 | 0 | - | 0 |
| | WBT | 436 | 0.26 | 0 | - | 0 | 485 | 0.29 | 0 | - | 0 | 495 | 0.29 | 0 | - | 0 |
| | WBT | 436 | 0.26 | 0 | - | 0 | 485 | 0.29 | 0 | - | 0 | 495 | 0.29 | 0 | - | 0 |
| | WBTR | 218 | 0.13 | 0 | - | 0 | 242 | 0.14 | 0 | - | 0 | 248 | 0.15 | 0 | - | 0 |
| | SBLR | 0 | 0.00 | 0 | A | 0 | 0 | 0.00 | 0 | A | 0 | 59 | 0.12 | 13 | B | 3 |
| | PM | Existing Traffic | | | | | Future Background Traffic | | | | | Future Total Traffic | | | | |
| | Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| | EBT | 712 | 0.42 | 0 | - | 0 | 788 | 0.46 | 0 | - | 0 | 37 | 0.05 | 1 | A | 1 |
| | EBT | 712 | 0.42 | 0 | - | 0 | 788 | 0.46 | 0 | - | 0 | 1064 | 0.63 | 0 | - | 0 |
| | WBT | 406 | 0.24 | 0 | - | 0 | 431 | 0.25 | 0 | - | 0 | 438 | 0.26 | 0 | - | 0 |
| | WBT | 406 | 0.24 | 0 | - | 0 | 431 | 0.25 | 0 | - | 0 | 438 | 0.26 | 0 | - | 0 |
| | WBTR | 203 | 0.12 | 0 | - | 0 | 216 | 0.13 | 0 | - | 0 | 219 | 0.13 | 0 | - | 0 |
| | SBLR | 0 | 0.00 | 0 | A | 0 | 0 | 0.00 | 0 | A | 0 | 66 | 0.15 | 14 | B | 4 |

**Existing and Future Background Conditions:** Under weekday AM and PM peak hour conditions, all movements at the unsignalized intersections within the study area are expected to the operate within capacity with acceptable LOS C or better.

**Future Total Conditions:** Under weekday AM and PM peak hour conditions, movements at the proposed site accesses are expected to operate well within capacity with v/c ratios below 1.00, minimal delay with acceptable LOS of C or better, and minimal queuing that is not expected to interfere with operations of nearby study intersections. No constraints were identified as a result of the added site trips.

# 6 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) is a set of strategies which works towards a more efficient transportation network by influencing travel behavior. Effective TDM measures can reduce vehicle usage and encourage people to engage in more sustainable methods of travel. To encourage the continuation of the existing travel behavior, a comprehensive transportation management plan, including the parking reduction is recommended for the proposed development. This section provides the comprehensive TDM plan for the proposed development.

The densification of the area within the Clarkson Transit Station Area provides several opportunities to incorporate TDM measures for the subject site to promote alternative modes of transportation. Potential TDM strategies and opportunities are detailed in the following sections to reduce the auto-dependency of residents and visitors of the subject development and encourage more sustainable travel habits.

## 6.1 PEDESTRIAN-BASED RECOMMENDED STRATEGIES

Building entrances should be oriented close to the street with direct connections to the pedestrian pathways.

Many pedestrian entrances will be provided to access the building on the subject site. These proposed pedestrian entrances provide access to MiWay bus routes on Royal Windsor Drive, which are located less than 100 m from the furthest entrance, as well as access to Clarkson GO Station, which is located approximately 350 m from the nearest and 700 m from the furthest entrance.

The provision of a fine-grid network for pedestrians will increase accessibility and connectivity.

The pedestrian network expands with the internal walkways proposed on-site, which establishes a fine-grid network for pedestrians' ease of use. The accessibility and connectivity of the subject stie significantly improves the pedestrian network compared to existing conditions and will support pedestrian permeability and walkability throughout the Clarkson Transit Station Area.

The pedestrian network should be provided with an enhanced landscape that would encourage walking.

The proposed redevelopment will identify opportunities to provide walkways with enhanced landscaping, which would improve the comfort and attractiveness of the pedestrian environment. The site plan will support an enjoyable pedestrian environment, which will encourage the use of active transportation modes.

## 6.2 CYCLING-BASED RECOMMENDED STRATEGIES

The proposed development should provide short- and long-term bicycle parking.

The subject development will provide a minimum of 704 bicycle parking spaces to support and encourage active transportation. The short-term spaces should be in highly visible and convenient areas close to the building entrances for visitors. Long-term bicycle parking should be provided in secure and weather protected locations, including storage rooms, bicycle lockers and underground parking areas.

Promote and increase cycling awareness.

Provide information packages to encourage cycling as a viable opportunity of active transportation. This could include educating residents on the health and environmental benefits of cycling, as well as providing maps of

the cycling network and available infrastructure in the surrounding area. The applicant should consider providing information packages and communications to be distributed to future tenants of the building.

Provide an on-site ancillary facility to support cyclists.

It is recommended that an on-site bicycle repair area where residents can repair bicycles and obtain up-to-date information be considered as the plan develops. The repair area should be located close to the bicycle parking area, which would allow for residents to do regular maintenance activities on their bicycles.

## 6.3 TRANSIT-BASED RECOMMENDED STRATEGIES

Connection to transit network.

The first and last mile of the trip focuses on the user's experience to/from the door of their origin/destination. The site design establishes the most direct connection to Clarkson GO and transit stops on Royal Windsor Drive, which provides a wide range of transit routes within a 10-minute walking distance, where residents will have a convenient access to various GO, Oakville Transit, and MiWay routes.

## 6.4 PARKING DEMAND MANAGEMENT STRATEGIES

The automobile reliance be reduced through reduction in parking supply.

A parking reduction is recommended for the subject site to avoid oversupply of parking and to better align with the City's, Region's and Province's objectives of reducing auto-dependency and to encourage alternative travel modes. This is especially relevant given the site's existing travel behavior, proximity to the transit stops on Royal Windsor Drive and Clarkson GO Station, as well as wealth of accessibility to various transit routes.

A shared parking supply between the residential visitor and retail use will also improve the efficiency of parking on-site by accommodating demand experiencing different peak times in a shared supply.

Unbundling the cost of parking.

It is recommended that the cost of parking be "unbundled" from the cost of new dwelling units by selling or renting parking spaces separately from units themselves. The provision of unbundled parking will help to reduce parking demand within the residential component of the proposed development.

# 7 PARKING AND LOADING REVIEW

The following sections will provide a review of the applicable parking requirements and proposed parking supply with respect to vehicle and bicycle parking. A Transportation Demand Management (TDM) Plan has also been prepared (**Section 6**) for the subject site to support the proposed parking strategy and the accommodation of travel by non-single-occupant vehicle modes to and from the subject site. Following will be a review of the applicable loading standards for the site and a confirmation of the proposed supply and site functionality with respect to loading and passenger vehicle circulation.

## 7.1 VEHICLE PARKING REVIEW

The subject site is governed by the City of Mississauga Zoning By-law 0225-2007, which sets out the minimum vehicular parking rates required for the subject site. It is noted that Zoning By-law 0225-2007 has been amended by By-law 0117-2022 as of June 8, 2022, following the City's completion of a citywide Parking Regulations Study.

A key change of this by-law is the removal of unit-type rates for residential dwellings, to be replaced by one rate for condominium apartments and one rate for rental apartments based on the site's location in the City. This results in a general reduction in parking requirements for most residential uses.

As the subject site is located within the Clarkson Transit Station Area, the site is located within Precinct 2 and is subject to a set of parking requirements in line with other transit-accessible areas of the City, such as the majority of the Hurontario LRT corridor. The rates set out in By-law 0225-2007, as well as the proposed rates and corresponding supply, are summarized in **Table 7-1**.

Table 7-1: Zoning By-law Parking Requirements and Proposed Supply

| Land Use | Units / GFA | Zoning By-law 0225-2007 (Precinct 2) | | Proposed Parking Rates & Supply | |
|---|---|---|---|---|---|
| | | Minimum Rate | Spaces | Proposed Rate | Spaces |
| **West Block** | | | | | |
| Residential (Condo) | 651 units | 0.9 spaces / unit | 586 | 0.6 spaces / unit | 390 |
| Residential Visitors | | 0.2 spaces / unit | 130* | 0.1 spaces / unit | 65 |
| Retail | 987 $m^2$ | 3 spaces / 100 $m^2$ | | | |
| | | **Total** | **716** | **Total** | **455** |
| **East Block** | | | | | |
| Residential (Condo) | 587 units | 0.9 spaces / unit | 528 | 0.6 spaces / unit | 352 |
| Residential Visitors | | 0.2 spaces / unit | 117* | 0.1 spaces / unit | 59 |
| Retail | 990 $m^2$ | 3 spaces / 100 $m^2$ | | | |
| | | **Total** | **645** | **Total** | **411** |
| | | **Required Development Total** | **1,361** | **Proposed Development Total** | **866** |
| note: rate is based on apartment, condo. Rental rates are 0.8/unit<br>note: 20% of parking spaces are required to be EV-ready | | | | | |

*According to Zoning By-law 0225-2007 section 3.1.2.1.3, a shared parking arrangement may be used for the calculation of required visitor/non-residential parking in accordance with either the greater of 0.20 visitor spaces per unit or the required number of spaces for all non-residential uses including retail.

Based on By-law 0117-2022 rates, the subject site would be required to provide a total of 1,361 spaces, including 716 spaces for the West Block and 645 spaces for the East Block. With a proposed parking supply of 866 spaces, the site is currently facing a deficit of 495 spaces.

A parking reduction from the latest requirements is currently being proposed for the subject site. Specifically, a residential rate of 0.60 spaces per unit is proposed. The required visitor parking rate, to be shared amongst the proposed retail uses, is proposed to be reduced to 0.10 spaces per unit. Overall, a combined rate of 0.70 spaces per unit is proposed.

While these rates represent a deficiency compared to the latest parking requirements identified in the City's by-law, these rates will encourage and support residents to travel by alternative modes other than the single-occupant vehicle for regular travel and will support a shift away from vehicle ownership. Given the site's context with respect to existing and planned transit infrastructure and service frequency, cycling facilities, and the evolving land use context within the Clarkson Transit Station Area, these rates are considered to be supportable.

Additional justification for the proposed parking rates is provided in the following sections. Based on the major investment in transit infrastructure, the expected modal shift towards transit and active transportation, observed precedents, and the Transportation Demand Management (TDM) measures proposed for the subject site, the proposed supply is expected to be appropriate for the development.

## 7.2 PARKING JUSTIFICATION

To assess the appropriateness of the proposed parking rates and supply, the following section will review the planning context and existing and future neighbourhood conditions.

### 7.2.1 Planning Context and Framework

The following planning policies, documents and projects were reviewed to establish an understanding of the current planning and transportation context and objectives applicable to the subject site:

- Provincial Policy Statement, 2020
- A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2020
- City of Mississauga Official Plan (2021 Consolidation)
- Peel Region MTSA Study and Official Plan Review (Ongoing)
- GO Transit Expansion (Ongoing)

Based on a review of the above-noted planning policies and projects, it is noted that the proposed development is subject to several planning goals that seek to support intensification along major corridors and within the GTA, and support transit infrastructure investment and ridership while avoiding an oversupply of parking and in order to minimize impacts to the natural environment. Key planning policies and goals with respect to land use, transportation, and sustainability applicable to the subject site are summarized below.

#### The Provincial Policy Statement (2020)

The Provincial Policy Statement (PPS) outlines the Ontario government's policies on land use planning and provides direction in ensuring the development of healthy and resilient communities within a thriving economy. A key focus of the statement is to manage development to support population growth while minimizing impacts to the natural environment. For transportation systems, which are defined to include parking, key directives include providing efficient systems to address project needs, efficiently using existing and planned infrastructure through TDM strategies, minimizing the length and number of vehicle trips, and supporting use of transit and active transportation modes.

Under Section 3 of the Planning Act, all decisions affecting land use planning matters "shall be consistent with" the PPS. One of the key matters pertaining to PPS policies includes the promotion of transportation decisions that increase active transportation and transit usage. As stated under Section 1.8.1 b. of the PPS, **planning authorities shall support land use and development patterns which: "promote the use of active transportation and transit in and between residential, employment (including commercial and industrial) and institutional uses and other areas;"**

Through proposing a reduced parking supply, the proposed redevelopment is in support of the changing paradigm, which shifts away from the provision of excess parking. The **subject site is located within a 5-minute walking distance of Clarkson GO Station, providing existing local and regional rail and surface transit connections with planned improvements to service levels and frequency currently underway. Thus, the site is accessible to existing transit serving the City of Mississauga and GTA overall**, as well as **planned higher-order transit investments**. Therefore, the decision to provide **less parking aids in promoting mobility options** that are not automobile-dependent, such as active transportation and transit.

### Growth Plan for the Greater Golden Horseshoe (2020)

The Growth Plan for the Greater Golden Horseshoe provides a framework for municipalities to better manage growth in the Region to support a high quality of life, environmental protection, as well as economic prosperity. The support of municipalities in land use choices is vital to achieving the long-term framework outlined by the Growth Plan. Some of the key objectives outlined in the Growth Plan include:

- Reduce sprawl;
- Build complete communities to better connect transit with where residents live, work, and play;
- Minimize the negative impacts of climate change.

By supplying a reduced number of parking spaces available for future residents of the subject site, the proposed redevelopment supports an increasing trend towards a reduction in car ownership. **By planning for development that leverages existing and planned transit service and active transportation options, the proposed development discourages sprawl and limits the need for travelling long distances for daily needs. This change would also lower the negative environmental impact caused by car usage.** The proposed parking for this development aligns with the transportation-related issues and goals outlined in the Growth Plan.

### City of Mississauga Official Plan (2021)

The City's Official Plan sets out a framework for how the municipality will grow to the year 2031. The Official Plan aims to direct growth in a sustainable manner that protects and enhances its natural and cultural heritage resources, as well as the urban form. The Official Plan's approach to land use planning focuses on strategic management of growth and integration of land use, transportation, and design.

The City plans to direct growth within locations supported by existing and planned higher-order transit through high density and pedestrian-oriented development. In particular, one of the Plan's seven (7) guiding principles includes "Create a Multi-Modal City", which speaks to prioritizing transit and implementing an efficient active transportation network for cyclists and pedestrians. Section 8.4 addresses parking specifically and recognizes it as a tool to help influence travel behavior and choice of transportation modes. Specifically, Policy 8.4.3 states that **"Consideration will be given to reducing off-street parking requirements for developments to reflect levels of vehicle ownership and usage, and as a means of encouraging the greater use of transit, cycling and walking…"**

The **proposed reduced parking supply is supportive of the City's Official Plan growth approach** as it plans to **leverage its location in proximity to the Clarkson GO Station and within the Clarkson Transit Station Area**. The proposed development will encourage future residents, visitors, customers, and employees to utilize alternative transportation modes to the personal vehicle.

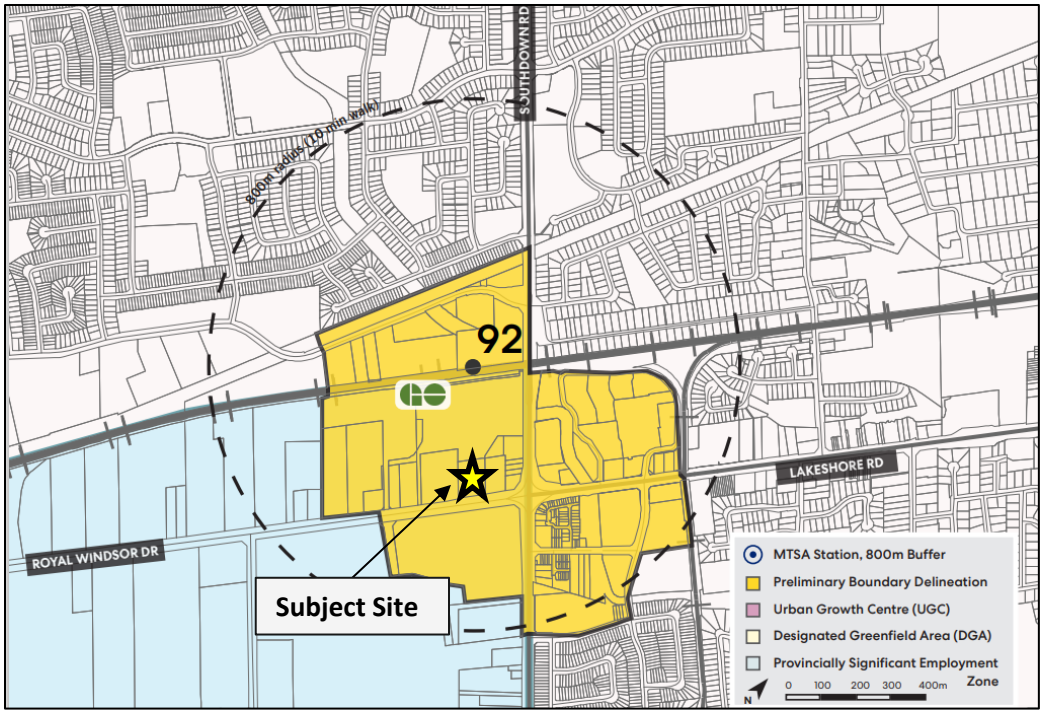
### Peel Region MTSA Study and Official Plan Review

In response to the provincial Growth Plan, the Region of Peel has been developing a strategic plan and policy framework to guide growth within Major Transit Station Areas (MTSAs) as part of the Peel 2051 Official Plan and Municipal Comprehensive Review. Similar to the PMPIS undertaken by the City of Mississauga, the Region's MTSA Study acknowledges that MTSAs are intended to develop in a manner that **supports higher densities and mixed-use growth within proximity to existing or planned higher-order transit**, such as LRT and BRT stations. MTSAs are specifically intended to be **developed as high density, mixed-use, transit-supportive neighborhoods** that **provide access to local amenities, jobs, housing, and recreation** opportunities. They are generally defined as the area within an approximate 500-800 m radius of a transit station or stop, representing about a 10-minute walk.

As part of the Region's MTSA Study, a number of priority MTSAs have been identified. As shown in **Figure 7-1**, the subject site is located within **the Clarkson GO MTSA**. MTSA policies are important as they promote transit-supportive neighborhoods that achieve community benefits such as shortened commutes, reduced congestion and pollution, and increased opportunity to walk and cycle as part of a healthy community.

The subject site's location within an MTSA will support the site as a multi-use development comprising part of a larger, transit-supportive neighborhood that facilitates access to key destinations and amenities by modes other than the single-occupant vehicle, thus supporting further parking reductions for the non-residential uses proposed on-site.

**Figure 7-1: Major Transit Station Area (HLRT 9) – 800 m Buffer**



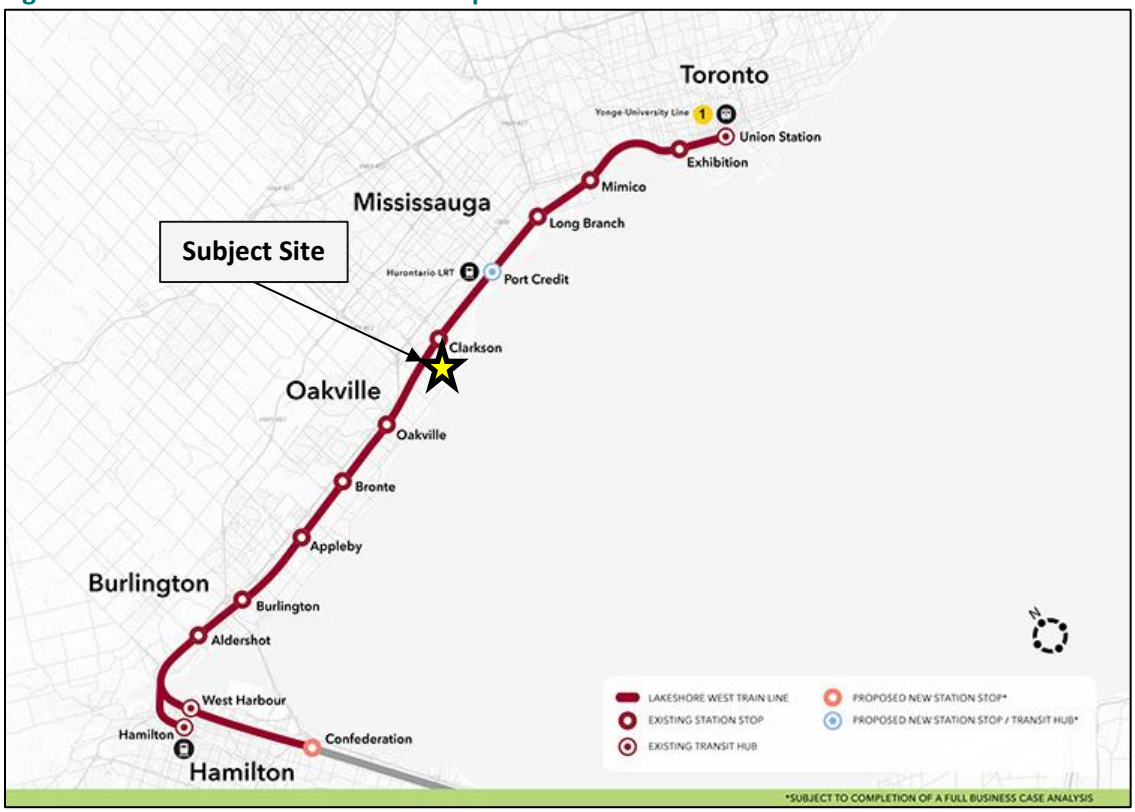

*Source: Peel Region – Regional Major Transit Station Areas Study, MTSA Profiles Part 1 (October 2021)*

### Metrolinx GO Transit Expansion

The Greater Toronto Area is expected to experience tremendous growth, with an estimated population of nine million by 2041. GO Transit expansion plans to increase from about 1,500 weekly trips to nearly 6,000 weekly trips. GO transit plans to provide 15-minute headways and two-way all-day services for the Lakeshore West GO line. The improved Lakeshore West GO line will connect people and businesses between the City of Toronto, Mississauga, Oakville, Burlington, and Hamilton, as well as facilitate connections to Durham Region further east and Niagara Region further southwest. **Figure 7-2** illustrates the Lakeshore West route map with its planned stations in relation to the subject site location.

The subject site's location within easy access of the Clarkson GO Station will enable future residents and visitors to leverage the existing and improving regional rail connections available within a 5-minute walking distance at Clarkson GO Station, in addition to surface transit routes also accessible at the station. This will support the site's multi-modal connectivity and will enable the proposed parking reductions for the residential and non-residential uses to be viable.

**Figure 7-2: Lakeshore West Station Stops**




*Source: Metrolinx, 2022*

## 7.2.2 Precedent Parking Demand

While a review of the planning and evolving built form and transit context of the subject site and surrounding area are supportive of a parking reduction to encourage multi-modal travel and leverage transit and active transportation infrastructure investment, a review has also been undertaken of development precedents that have sought a similar reduction to what is proposed to determine whether there is a precedent for reduced parking in locations near rail transit in the form of GO Transit and/or LRT and streetcar service.

### Precedent Setting Developments

Several recent developments in Mississauga and neighbouring Etobicoke have sought to provide reduced parking for residents and visitors to encourage usage of the transit improvements underway, as well as to support the Citys' urban planning goals.

A review of precedent setting approvals in Mississauga City Centre, the Port Credit neighbourhood, and future Park Lawn community was conducted. This includes developments within Mississauga and the Etobicoke district of Toronto that have similar access to local surface transit and regional transit service. A review of these developments indicates a precedent for reduced parking to capitalize on existing and planned transit access and support a shift towards transit and active transportation modes from the onset of development, as summarized in **Table 7-2**:. The list includes development applications, and a secondary plan with respect to the former Christie's site.

Table 7-2: Approved Developments/Area Plans with Reduced Parking Rates

| Site Location | Site Stats | Closest GO Station / Transit Options | Proposed Parking Rate (spaces/unit) | Application Status |
|---|---|---|---|---|
| **City Centre** | | | | |
| 151 City Centre Drive | Two 60-storey mixed-use buildings; 1,962 units; 4,956 $m^2$ of retail space, 4,816 $m^2$ of office spaces; 26 hotel rooms | **Cooksville GO Station:** 2.4 km walking distance<br>**Main Hurontario LRT Stop**: adjacent to development | 1-Bed: 0.62<br>2-Bed: 0.72<br>Vis: 0.15<br>Overall: 0.77-0.87 | Approved CoA Decision 'A' - 355/21 |
| **Port Credit** | | | | |
| 28 Ann Street | 22-storey condo building with ground floor retail; 300 units | **Port Credit GO Station / Hurontario LRT Stop:** 150 m walking distance | 1-Bed: 0.57<br>2-Bed: 0.73<br>Vis: 0.10<br>Overall: 0.67-0.83 | Approved CoA Decision 'A' - 413/20 |
| **Park Lawn** | | | | |
| 2150 Lake Shore Boulevard West (Former Christies Site) | Mixed-Use, Master Planned Community with 25+ buildings and 7,500+ residential units | **Future Park Lawn GO Station:** 50-500 m from the proposed station location<br>**Route 501 Streetcar Service:** 50-500 m from streetcar route along Lake Shore Blvd W | Residential: 0.40<br>Visitor: 0.10<br>Overall: 0.50 | OPA & ZBA Approved in April 2021 |
| **Subject Site** | **Two 23-29-storey mixed-use buildings; 1,237 units; 1,978 $m^2$ retail space** | **Clarkson GO Station / Bus Terminal:** 350 m walking distance | **Res: 0.60<br>Vis: 0.10<br>Overall: 0.70** | **Proposed** |

A review of recently approved developments and secondary plan studies with a comparable urban planning and transportation context to the subject site reveals significantly reduced parking rates in comparison to the City of Mississauga's Zoning By-law 0225-2007 and City of Toronto Zoning By-law 569-2013 standards in place at the time of these proposals.

Additionally, while the subject site shares similarities with the other precedent developments listed as each seek to add significant residential density to the surrounding community, while capitalizing on proposed or planned transit improvements underway, it is also important to note that its location within the evolving Clarkson Transit Station Area will provide a significant opportunity to support a shift in travel behaviour towards non-auto modes from the onset of development.

### 7.2.3 Parking Justification Conclusion

Given the subject site's access to a robust transit network and proximity to nearby employment occurring in the Clarkson Transit Station Area, it is expected that individuals who choose to reside at, work at, or visit the subject site will not be required to utilize a car to travel to and from the subject site. The context of the area itself, with its **abundance of multi-modal transportation alternatives** and a **robust and improving transit and active transportation network,** provides many opportunities for the **use of sustainable modes of travel** such as transit, cycling, and walking to fulfill individuals' transportation needs. Supportive pedestrian and transit infrastructure surrounding the subject site **allows for regular travel to be accommodated via a transit ride or walking** without the need of a private automobile.

Additionally, a review of **precedent-setting developments** in comparable locations within Mississauga and neighboring Etobicoke indicate there has been **demand for lower rates for new development** and master planned communities in proximity to GO Train service from the rates that would otherwise be required under the by-law in place at the time.

The proposed residential parking rate of 0.60 spaces per unit will **support residents to adopt a car-free lifestyle** and utilize alternative modes to the single-occupant vehicle for regular travel. Based on the review of contemporary policy direction at the municipal, regional, and provincial levels, a reduced parking supply is **in line with broader planning goals to create multi-modal communities, support non-auto modes, and reduce greenhouse gas emissions** attributable to auto use. Therefore, the proposed supply is sufficient to meet the needs of the proposed development.

## 7.3 BICYCLE PARKING REVIEW

The City of Mississauga's Zoning By-law 0225-2007 was amended on June 8, 2022, by By-law 0118-2022 to include bicycle parking regulations based on the City's Bicycle Parking Regulations Study. A summary of the application of the recommended and proposed bicycle parking rates for the proposed development is provided in **Table 7-3**.

Table 7-3: Bicycle Parking Requirements and Proposed Supply

| Land Use | Units / GFA | Zoning By-law 0225-2007 | | Proposed Supply |
|---|---|---|---|---|
| | | Minimum Rate | Spaces | Spaces |
| **West Block** | | | | |
| Residential long-term | 650 units | 0.6 spaces / unit | 390 | 416 |
| Residential short-term | | 0.05 spaces / unit | 33 | |
| Retail long-term | 987 $m^2$ | 0.15 spaces / 100 $m^2$ | 1 | |
| Retail short-term | | 0.20 spaces / 100 $m^2$ | 3 | |
| | | **Total** | **427** | **416** |
| **East Block** | | | | |
| Residential long-term | 587 units | 0.6 spaces / unit | 352 | 288 |
| Residential short-term | | 0.05 spaces / unit | 29 | |
| Retail long-term | 990 $m^2$ | 0.15 spaces / 100 $m^2$ | 1 | |
| Retail short-term | | 0.20 spaces / 100 $m^2$ | 4 | |
| | | **Total** | **387** | **288** |
| | | **Development Total** | **814** | **704** |

The proposed development proposes to provide a total of 704 bicycle parking spaces, which is deficient by 110 bicycle parking spaces compared to the latest by-law requirements. Opportunities to increase the bicycle parking supply on-site can be explored as the site plan develops.

## 7.4 LOADING REVIEW

Based on the City of Mississauga By-law 0225-2007, one (1) loading space is required per building containing a minimum of 30 dwelling units and one (1) loading space for the proposed retail use on-site. **Table 7-4** summarizes the loading requirements.

Table 7-4: Zoning By-law Loading Requirements

| Use | Size | Zoning By-law 0225-2007 | | Proposed Supply |
|---|---|---|---|---|
| | | Loading Rate | Loading Spaces Required | |
| Residential | West Block | > 30 units | 1 | 1 |
| | East Block | > 30 units | 1 | 1 |
| Retail | West Block | > 250 $m^2$ and < 2,350 $m^2$ | 1 | 1 |
| | East Block | > 250 $m^2$ and < 2,350 $m^2$ | 1 | 1 |
| | | Total | 4 | 4 |

A total of four (4) loading spaces are proposed for the development overall, including two (2) spaces per block to accommodate retail and residential loading requirements simultaneously.

# 8 CONCLUSION

- The proposed development will consist of two blocks: the West Block and the East Block. Each block includes two residential towers ranging from 23- to 29-storeys and connected by a shared podium. A total of 1,237 dwelling units and 1,978 $m^2$ retail GFA is proposed, accompanied by a total of 866 parking spaces to be provided across five (5) levels of underground parking for the West Block and three (3) levels for the East Block.
- Access to the subject site will be facilitated via a full movement site access off Royal Windsor Drive, a full movement Metrolinx Easement off Royal Windsor Drive, an access ROW that connects to adjacent building's access off Southdown Road, and through Clarkson GO Station via the Southdown Road and Clarkson GO Access/Private Driveway intersection and proposed private road.
- Site can also be accessed through Clarkson GO Station (Southdown Road and Clarkson GO Access/Private Driveway intersection) and proposed private road
- The proposed development is located within the Clarkson Transit Station Area and is within a 5-minute walking distance of the station. Under existing conditions, the subject site has good connections to both local surface transit and regional rail transit service operated by Metrolinx/GO Transit, MiWay Transit, and Oakville Transit, providing direct transit connections within the City of Mississauga and adjacent municipalities.
- The site's existing transit accessibility is expected to be improved through the implementation of 15-minute headways and two-way all-day service along the Lakeshore West Line, which will further support local and regional transit connections to and from the site.
- With respect to active transportation, the subject site has access to existing cycling facilities along Southdown Road and Lakeshore Boulevard West, east of Southdown Road, providing connections to the City's cycling network. An extension of cycling west along Lakeshore Boulevard will further improve active transportation connections to and from the site. The site plan has also been designed to improve pedestrian walkability and permeability, which is expected to further improve as additional development of the Clarkson Transit Station Area continues.
- Under existing conditions, all interchanges and signalized and unsignalized intersections are operating within capacity and at acceptable levels of service overall, with select movements at the signalized intersections operating with capacity constraints associated with relatively high levels of delay at some intersections approaching capacity. However, the 95$^{th}$ percentile queue lengths for the majority of signalized intersections movements are indicated to be accommodated within the available storage.
- Under future background, optimization of signal timing plans was required to address capacity constraints otherwise observed. With the optimized signal timings, the critical movements identified are now operating at acceptable levels of service (LOS < 1.00), with no critical movements identified. The optimized signal timing plan will be carried forward to the future total scenario, which is expected to continue operating similar to future background conditions. No additional constraints were identified because of the added site traffic.

- Under existing conditions, the unsignalized intersections are operating well and within capacity, with no constraints identified. This is expected to continue under future background and future total conditions as well, and the proposed site accesses are expected to operate well within capacity, with minimal delay, and with acceptable LOS C or better. No constraints were identified as a result of the added site trips.
- The proposed development is anticipated to generate a net total of 201 vehicle trips (74 inbound and 127 outbound) in the AM peak hour and 212 vehicle trips (120 inbound and 92 outbound) in the PM peak hour when accounting for the existing site trips to be removed from the network.
- A robust set of TDM measures have been recommended for consideration to support and facilitate the necessary change in travel behaviour sought for the area and reduce single-occupant vehicle trips to/from the proposed development. Recommended measures include the provision of bicycle parking facilities, pedestrian connections, direct active transportation connections to active transportation facilities and transit, and the promotion of multi-modal travel alternatives. Furthermore, the transit stops adjacent to the site will give future residents and visitors an opportunity to shift their preferred mode choice to transit.
- Based on By-law 0117-2022 rates, the subject site would be required to provide a total of 1,361 spaces, including 716 spaces for the Western Block and 645 spaces for the Eastern Block. With a proposed parking supply of 866 spaces, the site is currently facing a deficit of 495 spaces. However, considering that daily activities are expected to be achievable conveniently from the subject site by transit due to the site's close approximation to Clarkson GO Station and by walking to nearby amenities and destinations.
- Precedent approvals for development's also located near existing and planned rail transit, including in the City Centre, Port Credit, and Park Lawn communities, indicate a precedent for reduced parking where density in response to transit improvements is planned.
- By providing a reduced parking supply, the proposed development is expected to attract a population that is not car-dependent and will rely on alternative modes of travel for their daily needs. Moreover, the provincial and municipal policies also support a decrease in auto-dependency and the shift to more sustainable modes of travel. As such, the proposed reduced parking supply is considered to be adequate in meeting the needs of the proposed residential development, as well as being supportive of the Province of Ontario and City of Mississauga's long-term transportation objectives.
- Four (4) loading spaces will be provided on the subject site, including two (2) per block, which will meet the needs of the proposed development.

# APPENDIX A

## Terms of Reference

From: Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Sent: September 19, 2022 10:53 AM
To: Jocelyn Lee
Cc: Trans Projects
Subject: RE: Terms of Reference - DARC 22-226 W2: 2077 & 2105 Royal Windsor Drive

External Sender

Good morning Jocelyn,

I apologize for the delay, please proceed with the TIS but please be advised that additional comments might be forthcoming in regards of ROPA and MTSA. Please find additional comments for original TOR below in blue. Please don't hesitate to contact me if you have any additional questions.

Thank you,

**Kate (Jekaterina) Vassilyev**
Traffic Planning Technologist
T 905-615-3200 ext.8171
kate.vassilyev@mississauga.ca

City of Mississauga | Transportation and Works Department,
Infrustructure Planning Division

Please consider the environment before printing.

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From: Jocelyn Lee <JLee@lea.ca>
Sent: Wednesday, September 14, 2022 4:30 PM
To: Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Subject: RE: Terms of Reference - DARC 22-226 W2: 2077 & 2105 Royal Windsor Drive

Hi Kate,

Just wanted to check in on the email below.

Thanks,
Jocelyn Lee, EIT, B.Eng., B.A.
Project Coordinator
LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor | Markham, ON | L3R 9R9
T: 905-470-0015 ext. 374 E: jlee@lea.ca W: www.LEA.ca

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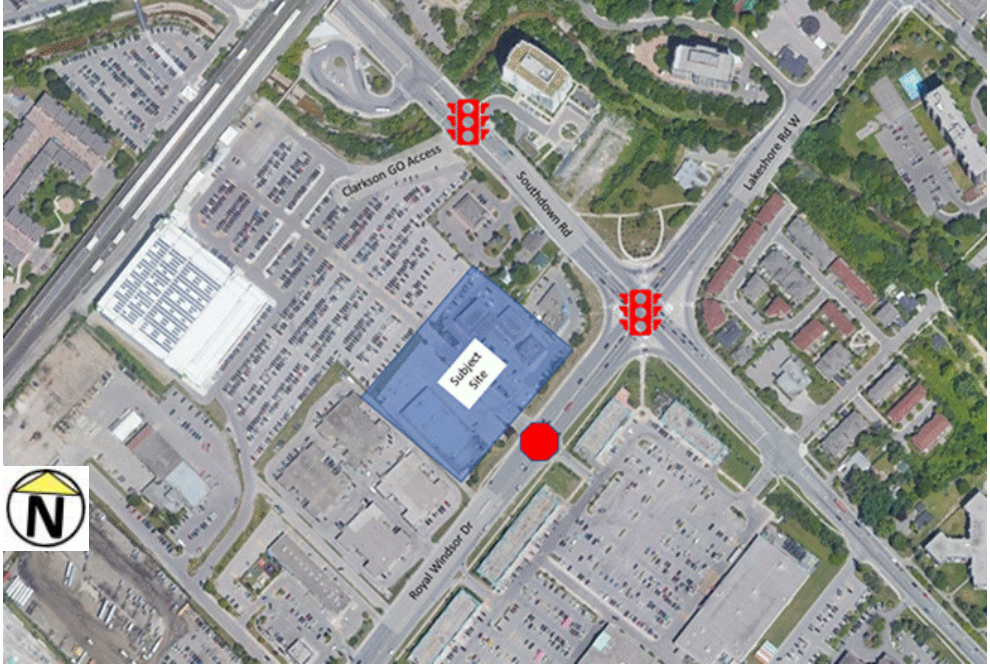
From: Jocelyn Lee
Sent: August 2, 2022 10:23 AM
To: 'kate.vassilyev@mississauga.ca' <kate.vassilyev@mississauga.ca>
Subject: Terms of Reference - DARC 22-226 W2: 2077 & 2105 Royal Windsor Drive

Good morning,

Please see below the work plan for a Transportation Impact Study (TIS) for the proposed mixed-use development located at 2077 & 2105 Royal Windsor Drive, illustrated in Figure 1, in the City of Mississauga. The development proposal consists of four (4) residential buildings with approximately 1,167 units total and retail at grade.

To support the Official Plan Amendment and Zoning By-law Amendment submission for the proposed development, LEA will prepare a TIS, which will include an assessment of the development's impact on traffic operations as well as its parking and loading provisions. The TIS will conform to the City of Mississauga Traffic Impact Study Guidelines.

Figure 1: Subject Site




## Proposed Development

It is our understanding that the proposed development consists of four (4) buildings with approximately 1,167 residential units and some ground floor retail space.

## Study Area & Traffic Data

The TIA will assess the weekday AM and PM peak periods (7:00-9:00 a.m. and 4:00-6:00 p.m.). The current preference in terms of TMC is to obtain existing counts from the City's staff or other TIS. Please be advised if new post pandemic traffic movement counts will be conducted the additional sensitivity analysis would be required. The proposed study area will include the analysis of the following intersections:

- Royal Windsor Drive and Southdown Road (Signalized);
- Royal Windsor Drive and Access to 2077 and 2015 Royal Windsor Drive (Unsignalized); and
- Southdown Road and Clarkson GO Parking Lot Access/Private Driveway (Signalized).
- Include Royal Windsor Drive and Clarkson Yard/Go Access (Signalized).

Turning movement counts at the above intersections will be within the last 2 years.

## Traffic Assessment and Study Horizon Year

The study will focus on weekday AM and PM peak hour traffic operations. Synchro will be used to assess intersection operations during the peak hours. The horizon year of 2027 will be assessed in this TIA for a 5-year horizon.

## Background Traffic

*General Corridor Growth Rate* – Please provide the annual growth rate that should be applied for the major roads in the study area (Royal Windsor Drive and Southdown Road) Please contact Tyler Xuereb, Transportation Planning Analyst, tyler.xuereb@mississauga.ca, ext. 4783.

*Road Network Improvements* – LEA will investigate and account for any anticipated road improvement (e.g. road widening) in the study area within the five (5) year study horizon

*Background Development Traffic* – Please provide TIS's or trips generated for any background developments in the study area that should be included in the TIS. For the background development applications please refer to http://www.mississauga.ca/portal/residents/developmentinformation

## Trip Generation, Distribution and Assignment

The trip generation of the proposed development will be calculated based on Institute of Transportation Engineering (ITE) Trip Generation Manual 11$^{th}$ Edition.

The general trip distribution utilized will be based on 2016 Transportation Tomorrow Survey (TTS) data.

## Traffic Operation Analysis

The traffic operation analysis for signalized and unsignalized intersections will be undertaken using Synchro, utilizing the methodology of the 2010 Highway Capacity Manual and input parameter values as suggested with the Regional Guidelines for Using Synchro Version 11.

## Future Traffic Scenarios

Future background and future total analysis for the aforementioned intersections within the study area will be over the horizon year of 2027.

## Parking Study

LEA will consult with the City's Parking Services to confirm the terms of reference regarding the parking study.

## Safety Analysis

It is assumed that the intersections and roadways in the vicinity of the subject site do not have any identified safety problems. As such, collision data and

sightlines will not need to be reviewed as part of the TIS.

### Transportation Demand Management (TDM) Plan

A Transportation Demand Management (TDM) Plan will be developed to reduce the dependency of single-occupancy vehicular trips to and from the subject site. The TDM plan will review pedestrian, cyclist, and transit infrastructure and recommend key programming to encourage alternative modes of travel for the subject site.

## Include Community Impact Section

Include a section for Community Impacts. Any traffic related impacts on the existing community and comments from the public through the planning approvals process shall be addressed in this section.

Please let me know if you have any comments or concerns with our assumptions.

Thanks,

Jocelyn Lee, EIT, B.Eng., B.A.
Project Coordinator
LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor | Markham, ON | L3R 9R9
T: 905-470-0015 ext. 374 E: jlee@lea.ca W: www.LEA.ca

*Please note I will be out of the office starting Friday, July 22 returning Tuesday, August 2*

# APPENDIX B

## Existing Traffic Data and Signal Timing Plans

| | Generic ASC | | 0301 | | | LAKESHORE ROAD E @ Southdown Road | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Phase - Parameter 1-16** | **Units** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **Walk** | Sec | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 |
| **Ped Clear** | Sec | 0 | 23 | 0 | 21 | 0 | 23 | 0 | 21 |
| **Min Green** | Sec | 5 | 8 | 5 | 8 | 5 | 8 | 5 | 8 |
| **Passage** | Sec | 3.0 | 3.0 | 3.0 | 5.0 | 3.0 | 3.0 | 3.0 | 5.0 |
| **Maximum 1** | Sec | 10 | 30 | 10 | 30 | 10 | 30 | 10 | 30 |
| **Maximum 2** | Sec | 10 | 30 | 10 | 30 | 10 | 30 | 10 | 30 |
| **Yellow Change** | Sec | 3.0 | 3.5 | 3.0 | 4.0 | 3.0 | 3.5 | 3.0 | 4.0 |
| **Red Clearance** | Sec | 0.0 | 3.0 | 0.0 | 2.5 | 0.0 | 3.0 | 0.0 | 2.5 |
| **Red Revert** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Added Initial** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Max Initial** | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Time Before Reduction** | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Cars Before Reduction** | Veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Time To Reduce** | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Reduce By** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Min Gap** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Dynamic Max Limit** | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Dynamic Max Step** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **[P2] Start Up** | Enum | phaseNotOn | redClear | phaseNotOn | phaseNotOn | phaseNotOn | redClear | phaseNotOn | phaseNotOn |
| **[P2] Options** | Bit | 0:Enabled Phase<br>5:Non Lock Detector Memory | 0:Enabled Phase<br>3:Non-Actuated 1<br>7:Max Vehicle Recall<br>8:Ped. Recall<br>10:Dual Entry Phase<br>13:Actuated Rest In Walk | 0:Enabled Phase<br>5:Non Lock Detector Memory | 0:Enabled Phase<br>5:Non Lock Detector Memory<br>10:Dual Entry Phase | 0:Enabled Phase<br>5:Non Lock Detector Memory | 0:Enabled Phase<br>3:Non-Actuated 1<br>7:Max Vehicle Recall<br>8:Ped. Recall<br>10:Dual Entry Phase<br>13:Actuated Rest In Walk | 0:Enabled Phase<br>5:Non Lock Detector Memory | 0:Enabled Phase<br>5:Non Lock Detector Memory<br>10:Dual Entry Phase |
| **[P2] Ring** | Ring | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| **[P2] Concurrency** | Phase (,) | (5,6) | (5,6) | (7,8) | (7,8) | (1,2) | (1,2) | (3,4) | (3,4) |

# Signal Timing Report

| | Generic ASC | | 0301 | | | LAKESHORE ROAD E @ Southdown Road | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Coordination - Pattern 1-16** | **Units** | **1** | **2** | **3** | **4** | **5** | | | |
| **Cycle Time** | Sec | 140 | 140 | 120 | 140 | 140 | | | |
| **Offset** | Sec | 57 | 11 | 34 | 38 | 38 | | | |
| **Split** | Split | 1 | 2 | 3 | 4 | 5 | | | |
| **Sequence** | Sequence | 1 | 1 | 1 | 1 | 1 | | | |
| **Coordination - Splits** | **Units** | **Phase 1** | **Phase 2** | **Phase 3** | **Phase 4** | **Phase 5** | **Phase 6** | **Phase 7** | **Phase 8** |
| **Split 1 - Mode** | Enum | none | none | none | none | none | none | none | none |
| **Split 1 - Time** | Sec | 12 | 52 | 28 | 48 | 20 | 44 | 13 | 63 |
| **Split 1 - Coord** | Enum | False | True | False | False | False | True | False | False |
| **Split 2 - Mode** | Enum | none | none | none | pedestrianRecall | none | none | none | pedestrianRecall |
| **Split 2 - Time** | Sec | 12 | 52 | 28 | 48 | 20 | 44 | 13 | 63 |
| **Split 2 - Coord** | Enum | False | True | False | False | False | True | False | False |
| **Split 3 - Mode** | Enum | none | none | none | none | none | none | none | none |
| **Split 3 - Time** | Sec | 17 | 41 | 18 | 44 | 17 | 41 | 11 | 51 |
| **Split 3 - Coord** | Enum | False | True | False | False | False | True | False | False |
| **Split 4 - Mode** | Enum | none | none | none | none | none | none | none | none |
| **Split 4 - Time** | Sec | 21 | 45 | 32 | 42 | 26 | 40 | 12 | 62 |
| **Split 4 - Coord** | Enum | False | True | False | False | False | True | False | False |
| **Split 5 - Mode** | Enum | none | none | none | pedestrianRecall | none | none | none | pedestrianRecall |
| **Split 5 - Time** | Sec | 21 | 45 | 32 | 42 | 26 | 40 | 12 | 62 |
| **Split 5 - Coord** | Enum | False | True | False | False | False | True | False | False |
| **Time Base - Schedule 1-16** | **Units** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **Month** | Bit | JFMAMJJASOND | JFMAMJJASOND | JFMAMJJASOND | J---------- | -F--------- | ---A------- | ----M------ | -----J----- |
| **Day of Week** | Bit | -MTWTF- | S------ | ------S | -M----- | -M----- | -----F- | -M----- | -----F- |

| | Generic ASC | | 0301 | | | LAKESHORE ROAD E @ Southdown Road | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Time Base - Schedule 1-16** | **Units** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **Day of Month** | Bit | 12345678901234567890123456789 | 12345678901234567890123456789 | 12345678901234567890123456789 | --3---------- | ----------1---------- | ----------5---------- | ----------3---------- | 1---------- |
| **Day Plan** | Number | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 |
| **Time Base - Schedule 1-16** | **Units** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** |
| **Month** | Bit | --------A---- | --------S--- | ---------O-- | ----------D | ----------D | ----------D | --------S--- | ---------- |
| **Day of Week** | Bit | -M----- | -M----- | -M----- | --T---- | -M----- | ---W--- | -----F- | SMTWTFS |
| **Day of Month** | Bit | 1---------- | ----S---------- | ---------0---------- | ---------- | ----------7---------- | ----------6---------- | ----------8---------- | ---------- |
| **Day Plan** | Number | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 |
| **Time Base - Day Plans** | **Units** | **Evt 1** | **Evt 2** | **Evt 3** | **Evt 4** | **Evt 5** | **Evt 6** | **Evt 7** | **Evt 8** |
| **Plan 1 Hour** | Hour | 0 | 6 | 7 | 9 | 9 | 15 | 16 | 19 |
| **Plan 1 Minute** | Min | 0 | 0 | 30 | 0 | 30 | 0 | 45 | 0 |
| **Plan 1 Action** | Number | 8 | 1 | 2 | 1 | 3 | 4 | 5 | 4 |
| **Plan 2 Hour** | Hour | 0 | 7 | 3 | 0 | 0 | 0 | 0 | 0 |
| **Plan 2 Minute** | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Plan 2 Action** | Number | 8 | 3 | 7 | 0 | 0 | 0 | 0 | 0 |
| **Plan 3 Hour** | Hour | 0 | 8 | 23 | 3 | 0 | 0 | 0 | 0 |
| **Plan 3 Minute** | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Plan 3 Action** | Number | 8 | 3 | 8 | 7 | 0 | 0 | 0 | 0 |
| **Time Base - Day Plans** | **Units** | **Evt 9** | **Evt 10** | | | | | | |
| **Plan 1 Hour** | Hour | 19 | 3 | | | | | | |
| **Plan 1 Minute** | Min | 30 | 0 | | | | | | |
| **Plan 1 Action** | Number | 3 | 7 | | | | | | |
| **Time Base - Action 1-16** | **Units** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **Pattern** | Enum | Pattern 1 | Pattern 2 | Pattern 3 | Pattern 4 | Pattern 5 | Pattern 6 | Free | Free |
| **Aux. Functions** | Bit | | | | | | | | |
| **Spec. Functions** | Bit | | | | | | | | |
| **Time Base - Action 1-16** | **Units** | **9** | **10** | | | | | | |
| **Pattern** | Enum | Pattern 9 | Pattern 10 | | | | | | |
| **Aux. Functions** | Bit | | | | | | | | |
| **Spec. Functions** | Bit | | | | | | | | |

| | Generic ASC | | 0403 | | | ROYAL WINDSOR DRIVE E @ Clarkson GO / Canadian Tire | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Phase - Parameter 1-16** | **Units** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **Walk** | Sec | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 |
| **Ped Clear** | Sec | 0 | 18 | 0 | 23 | 0 | 18 | 0 | 23 |
| **Min Green** | Sec | 5 | 8 | 0 | 8 | 5 | 8 | 0 | 8 |
| **Passage** | Sec | 2.0 | 3.0 | 0.0 | 5.0 | 2.0 | 3.0 | 0.0 | 5.0 |
| **Maximum 1** | Sec | 10 | 33 | 0 | 40 | 10 | 33 | 0 | 40 |
| **Maximum 2** | Sec | 10 | 33 | 0 | 40 | 10 | 33 | 0 | 40 |
| **Yellow Change** | Sec | 3.0 | 4.0 | 3.0 | 3.5 | 3.0 | 4.0 | 3.0 | 3.5 |
| **Red Clearance** | Sec | 0.0 | 2.5 | 0.0 | 3.0 | 0.0 | 2.5 | 0.0 | 3.0 |
| **Red Revert** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Added Initial** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Max Initial** | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Time Before Reduction** | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Cars Before Reduction** | Veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Time To Reduce** | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Reduce By** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Min Gap** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Dynamic Max Limit** | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Dynamic Max Step** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **[P2] Start Up** | Enum | phaseNotOn | redClear | other | phaseNotOn | phaseNotOn | redClear | other | phaseNotOn |
| **[P2] Options** | Bit | 0:Enabled Phase<br>5:Non Lock Detector Memory | 0:Enabled Phase<br>3:Non-Actuated 1<br>7:Max Vehicle Recall<br>8:Ped. Recall<br>10:Dual Entry Phase<br>13:Actuated Rest In Walk | | 0:Enabled Phase<br>5:Non Lock Detector Memory<br>10:Dual Entry Phase<br>13:Actuated Rest In Walk | 0:Enabled Phase<br>5:Non Lock Detector Memory | 0:Enabled Phase<br>3:Non-Actuated 1<br>7:Max Vehicle Recall<br>8:Ped. Recall<br>10:Dual Entry Phase<br>13:Actuated Rest In Walk | | 0:Enabled Phase<br>5:Non Lock Detector Memory<br>10:Dual Entry Phase<br>13:Actuated Rest In Walk |
| **[P2] Ring** | Ring | 1 | 1 | 0 | 1 | 2 | 2 | 0 | 2 |
| **[P2] Concurrency** | Phase (,) | (5,6) | (5,6) | () | (8) | (1,2) | (1,2) | () | (4) |

# Signal Timing Report

| | Generic ASC | | 0403 | | | ROYAL WINDSOR DRIVE E @ Clarkson GO / Canadian Tire | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Coordination - Pattern 1-16** | **Units** | **1** | **2** | **3** | | | | | |
| **Cycle Time** | Sec | 140 | 120 | 140 | | | | | |
| **Offset** | Sec | 136 | 26 | 7 | | | | | |
| **Split** | Split | 1 | 2 | 3 | | | | | |
| **Sequence** | Sequence | 1 | 1 | 1 | | | | | |
| **Coordination - Splits** | **Units** | **Phase 1** | **Phase 2** | **Phase 4** | **Phase 5** | **Phase 6** | **Phase 8** | | |
| **Split 1 - Mode** | Enum | phaseOmitted | none | none | none | none | none | | |
| **Split 1 - Time** | Sec | 0 | 100 | 40 | 27 | 73 | 40 | | |
| **Split 1 - Coord** | Enum | False | True | False | False | True | False | | |
| **Split 2 - Mode** | Enum | none | none | none | phaseOmitted | none | none | | |
| **Split 2 - Time** | Sec | 19 | 61 | 40 | 0 | 80 | 40 | | |
| **Split 2 - Coord** | Enum | False | True | False | False | True | False | | |
| **Split 3 - Mode** | Enum | none | none | none | phaseOmitted | none | none | | |
| **Split 3 - Time** | Sec | 17 | 71 | 52 | 0 | 88 | 52 | | |
| **Split 3 - Coord** | Enum | False | True | False | False | True | False | | |
| **Time Base - Schedule 1-16** | **Units** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **Month** | Bit | JFMAMJJASOND | JFMAMJJASOND | JFMAMJJASOND | J---------- | -F--------- | ---A-------- | ----M------- | ------J----- |
| **Day of Week** | Bit | -MTWTF- | S------ | ------S | -M----- | -M----- | -----F- | -M----- | -----F- |
| **Day of Month** | Bit | 123456789012345678901234567890 | 123456789012345678901234567890 | 123456789012345678901234567890 | --3----------1------ | ----------5---------- | ----------3---- | 1---------- | |
| **Day Plan** | Number | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 |
| **Time Base - Schedule 1-16** | **Units** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** |
| **Month** | Bit | --------A---- | --------S--- | ---------O-- | ----------D | ----------D | ----------D | --------S--- | ---------- |

| | Generic ASC | | 0403 | | | ROYAL WINDSOR DRIVE E @ Clarkson GO / Canadian Tire | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Time Base - Schedule 1-16** | **Units** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** |
| **Day of Week** | Bit | -M----- | -M----- | -M----- | --T---- | -M----- | ---W--- | -----F- | SMTWTFS |
| **Day of Month** | Bit | 1---------- | ----5---------- | ---------0---------- | ---------- | ----------6---------- | ---------- | ---------- | ---------- |
| **Day Plan** | Number | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 |
| **Time Base - Day Plans** | **Units** | **Evt 1** | **Evt 2** | **Evt 3** | **Evt 4** | **Evt 5** | **Evt 6** | | |
| **Plan 1 Hour** | Hour | 0 | 6 | 9 | 15 | 19 | 3 | | |
| **Plan 1 Minute** | Min | 0 | 0 | 30 | 0 | 30 | 0 | | |
| **Plan 1 Action** | Number | 8 | 1 | 2 | 3 | 2 | 7 | | |
| **Plan 2 Hour** | Hour | 0 | 7 | 3 | 0 | 0 | 0 | | |
| **Plan 2 Minute** | Min | 0 | 0 | 0 | 0 | 0 | 0 | | |
| **Plan 2 Action** | Number | 8 | 2 | 7 | 0 | 0 | 0 | | |
| **Plan 3 Hour** | Hour | 0 | 8 | 23 | 3 | 0 | 0 | | |
| **Plan 3 Minute** | Min | 0 | 0 | 0 | 0 | 0 | 0 | | |
| **Plan 3 Action** | Number | 8 | 2 | 8 | 7 | 0 | 0 | | |
| **Time Base - Action 1-16** | **Units** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **Pattern** | Enum | Pattern 1 | Pattern 2 | Pattern 3 | Pattern 4 | Pattern 5 | Pattern 6 | Free | Free |
| **Aux. Functions** | Bit | | | | | | | | |
| **Spec. Functions** | Bit | | | | | | | | |
| **Time Base - Action 1-16** | **Units** | **9** | **10** | | | | | | |
| **Pattern** | Enum | Pattern 9 | Pattern 10 | | | | | | |
| **Aux. Functions** | Bit | | | | | | | | |
| **Spec. Functions** | Bit | | | | | | | | |

| | Generic ASC | | 1005 | | | SOUTHDOWN ROAD N @ GO Access | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Phase - Parameter 1-16** | **Units** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **Walk** | Sec | 0 | 10 | 0 | 10 | 0 | 0 | 0 | 0 |
| **Ped Clear** | Sec | 0 | 15 | 0 | 26 | 0 | 0 | 0 | 0 |
| **Min Green** | Sec | 5 | 8 | 0 | 8 | 0 | 0 | 0 | 0 |
| **Passage** | Sec | 2.0 | 3.0 | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Maximum 1** | Sec | 20 | 18 | 0 | 30 | 0 | 0 | 0 | 0 |
| **Maximum 2** | Sec | 20 | 18 | 0 | 30 | 0 | 0 | 0 | 0 |
| **Yellow Change** | Sec | 3.0 | 4.0 | 0.0 | 3.5 | 3.0 | 3.0 | 3.0 | 3.0 |
| **Red Clearance** | Sec | 2.0 | 2.0 | 0.0 | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Red Revert** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Added Initial** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Max Initial** | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Time Before Reduction** | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Cars Before Reduction** | Veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Time To Reduce** | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Reduce By** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Min Gap** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Dynamic Max Limit** | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Dynamic Max Step** | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **[P2] Start Up** | Enum | phaseNotOn | redClear | phaseNotOn | phaseNotOn | phaseNotOn | phaseNotOn | phaseNotOn | phaseNotOn |
| **[P2] Options** | Bit | 0:Enabled Phase<br>5:Non Lock Detector Memory | 0:Enabled Phase<br>3:Non-Actuated 1<br>7:Max Vehicle Recall<br>8:Ped. Recall<br>13:Actuated Rest In Walk | | 0:Enabled Phase<br>5:Non Lock Detector Memory | | | | |
| **[P2] Ring** | Ring | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| **[P2] Concurrency** | Phase (,) | () | () | () | () | () | () | () | () |

# Signal Timing Report

| | Generic ASC | | 1005 | | | SOUTHDOWN ROAD N @ GO Access | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Coordination - Pattern 1-16** | **Units** | **1** | **2** | **3** | **4** | **5** | | | |
| **Cycle Time** | Sec | 140 | 120 | 140 | 140 | 140 | | | |
| **Offset** | Sec | 57 | 97 | 118 | 83 | 118 | | | |
| **Split** | Split | 1 | 2 | 3 | 4 | 5 | | | |
| **Sequence** | Sequence | 1 | 1 | 1 | 1 | 1 | | | |

| **Coordination - Splits** | **Units** | **Phase 1** | **Phase 2** | **Phase 4** |
|---|---|---|---|---|
| **Split 1 - Mode** | Enum | none | none | none |
| **Split 1 - Time** | Sec | 21 | 75 | 44 |
| **Split 1 - Coord** | Enum | False | True | False |
| **Split 2 - Mode** | Enum | none | none | none |
| **Split 2 - Time** | Sec | 18 | 58 | 44 |
| **Split 2 - Coord** | Enum | False | True | False |
| **Split 3 - Mode** | Enum | none | none | none |
| **Split 3 - Time** | Sec | 18 | 78 | 44 |
| **Split 3 - Coord** | Enum | False | True | False |
| **Split 4 - Mode** | Enum | none | none | pedestrianRecall |
| **Split 4 - Time** | Sec | 21 | 75 | 44 |
| **Split 4 - Coord** | Enum | False | True | False |
| **Split 5 - Mode** | Enum | none | none | pedestrianRecall |
| **Split 5 - Time** | Sec | 18 | 78 | 44 |
| **Split 5 - Coord** | Enum | False | True | False |

| **Time Base - Schedule 1-16** | **Units** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
|---|---|---|---|---|---|---|---|---|---|
| **Month** | Bit | JFMAMJJASOND | JFMAMJJASOND | JFMAMJJASOND | J---------- | -F---------- | ---A------- | ----M------ | ------J----- |
| **Day of Week** | Bit | -MTWTF- | S------ | ------S | -M----- | -M----- | -----F- | -M----- | -----F- |
| **Day of Month** | Bit | 12345678901234567890123456789012 | 12345678901234567890123456789012 | 12345678901234567890123456789012 | --3---------- | ----------1-------- | ----------5---------- | ----------3------ | 1---------- |
| **Day Plan** | Number | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 |

| | Generic ASC | | 1005 | | | SOUTHDOWN ROAD N @ GO Access | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Time Base - Schedule 1-16** | **Units** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** |
| **Month** | Bit | -------A---- | --------S--- | ---------O-- | ----------D | ----------D | ----------D | --------S--- | ---------- |
| **Day of Week** | Bit | -M----- | -M----- | -M----- | --T---- | -M----- | ---W--- | -----F- | SMTWTFS |
| **Day of Month** | Bit | 1---------- | ----5---------- | ---------0---------- | ----------7-- | ----------6--- | ----------8- | ---------- | ---------- |
| **Day Plan** | Number | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 |

| **Time Base - Day Plans** | **Units** | **Evt 1** | **Evt 2** | **Evt 3** | **Evt 4** | **Evt 5** | **Evt 6** | **Evt 7** | **Evt 8** |
|---|---|---|---|---|---|---|---|---|---|
| **Plan 1 Hour** | Hour | 0 | 6 | 7 | 9 | 9 | 15 | 16 | 19 |
| **Plan 1 Minute** | Min | 0 | 0 | 30 | 0 | 30 | 0 | 45 | 0 |
| **Plan 1 Action** | Number | 8 | 1 | 4 | 1 | 2 | 3 | 5 | 3 |
| **Plan 2 Hour** | Hour | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Plan 2 Minute** | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Plan 2 Action** | Number | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Plan 3 Hour** | Hour | 0 | 8 | 23 | 0 | 0 | 0 | 0 | 0 |
| **Plan 3 Minute** | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Plan 3 Action** | Number | 8 | 2 | 8 | 0 | 0 | 0 | 0 | 0 |

| **Time Base - Day Plans** | **Units** | **Evt 9** |
|---|---|---|
| **Plan 1 Hour** | Hour | 19 |
| **Plan 1 Minute** | Min | 30 |
| **Plan 1 Action** | Number | 2 |

| **Time Base - Action 1-16** | **Units** | **1** | **2** | **3** | **4** | **5** | **8** |
|---|---|---|---|---|---|---|---|
| **Pattern** | Enum | Pattern 1 | Pattern 2 | Pattern 3 | Pattern 4 | Pattern 5 | Free |
| **Aux. Functions** | Bit | | | | | | |
| **Spec. Functions** | Bit | | | | | | |

# LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

Project No.: 23137 File Name : 2077 & 2105 Royal Windsor Dr Site Access & Royal Windsor Dr-AM
Intersection: Site Access & Royal Windsor Dr Site Code : 23137000
Weather: Clear Start Date : 2022-09-28
Surveyor(s): JT Page No : 1

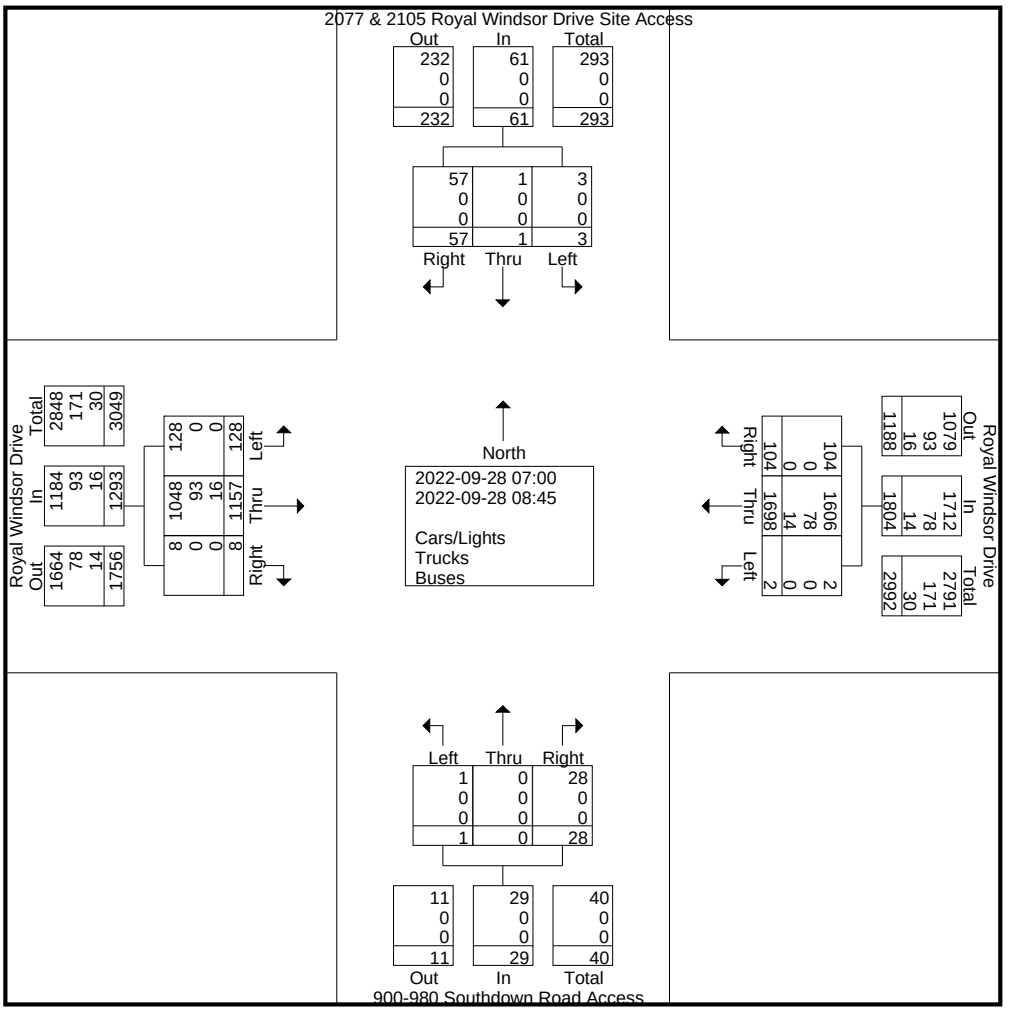
**Groups Printed- Cars/Lights - Trucks - Buses**

| | 2077 & 2105 Royal Windsor Drive Site Access Southbound | | | | | Royal Windsor Drive Westbound | | | | | 900-980 Southdown Road Access Northbound | | | | | Royal Windsor Drive Eastbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 | 0 | 0 | 2 | [0] | 2 | 0 | 138 | 8 | [0] | 146 | 0 | 0 | 2 | [0] | 2 | 7 | 144 | 0 | [0] | 151 | 0 | 301 | 301 |
| 07:15 | 2 | 0 | 10 | [2] | 12 | 1 | 166 | 19 | [0] | 186 | 0 | 0 | 2 | [0] | 2 | 26 | 101 | 0 | [0] | 127 | 2 | 327 | 329 |
| 07:30 | 0 | 0 | 15 | [0] | 15 | 0 | 193 | 16 | [0] | 209 | 0 | 0 | 4 | [0] | 4 | 21 | 145 | 2 | [0] | 168 | 0 | 396 | 396 |
| 07:45 | 0 | 0 | 6 | [1] | 6 | 0 | 243 | 24 | [3] | 267 | 0 | 0 | 3 | [1] | 3 | 22 | 158 | 2 | [0] | 182 | 5 | 458 | 463 |
| Total | 2 | 0 | 33 | [3] | 35 | 1 | 740 | 67 | [3] | 808 | 0 | 0 | 11 | [1] | 11 | 76 | 548 | 4 | [0] | 628 | 7 | 1482 | 1489 |
| 08:00 | 0 | 1 | 6 | [2] | 7 | 0 | 230 | 13 | [1] | 243 | 0 | 0 | 3 | [0] | 3 | 22 | 151 | 0 | [1] | 173 | 4 | 426 | 430 |
| 08:15 | 1 | 0 | 8 | [1] | 9 | 0 | 230 | 12 | [0] | 242 | 1 | 0 | 2 | [1] | 3 | 17 | 162 | 1 | [0] | 180 | 2 | 434 | 436 |
| 08:30 | 0 | 0 | 3 | [3] | 3 | 0 | 254 | 2 | [0] | 256 | 0 | 0 | 6 | [2] | 6 | 2 | 144 | 2 | [0] | 148 | 5 | 413 | 418 |
| 08:45 | 0 | 0 | 7 | [1] | 7 | 1 | 244 | 10 | [0] | 255 | 0 | 0 | 6 | [0] | 6 | 11 | 152 | 1 | [1] | 164 | 2 | 432 | 434 |
| Total | 1 | 1 | 24 | [7] | 26 | 1 | 958 | 37 | [1] | 996 | 1 | 0 | 17 | [3] | 18 | 52 | 609 | 4 | [2] | 665 | 13 | 1705 | 1718 |
| Grand Total | 3 | 1 | 57 | [10] | 61 | 2 | 1698 | 104 | [4] | 1804 | 1 | 0 | 28 | [4] | 29 | 128 | 1157 | 8 | [2] | 1293 | 20 | 3187 | 3207 |
| Apprch % | 4.9 | 1.6 | 93.4 | | | 0.1 | 94.1 | 5.8 | | | 3.4 | 0 | 96.6 | | | 9.9 | 89.5 | 0.6 | | | | | |
| Total % | 0.1 | 0 | 1.8 | | 1.9 | 0.1 | 53.3 | 3.3 | | 56.6 | 0 | 0 | 0.9 | | 0.9 | 4 | 36.3 | 0.3 | | 40.6 | 0.6 | 99.4 | |
| Cars/Lights | 3 | 1 | 57 | | 69 | 2 | 1606 | 104 | | 1713 | 1 | 0 | 28 | | 31 | 128 | 1048 | 8 | | 1184 | 0 | 0 | 2997 |
| % Cars/Lights | 100 | 100 | 100 | 80 | 97.2 | 100 | 94.6 | 100 | 25 | 94.7 | 100 | 0 | 100 | 50 | 93.9 | 100 | 90.6 | 100 | 0 | 91.4 | 0 | 0 | 93.5 |
| Trucks | 0 | 0 | 0 | | 2 | 0 | 78 | 0 | | 81 | 0 | 0 | 0 | | 2 | 0 | 93 | 0 | | 95 | 0 | 0 | 180 |
| % Trucks | 0 | 0 | 0 | 20 | 2.8 | 0 | 4.6 | 0 | 75 | 4.5 | 0 | 0 | 0 | 50 | 6.1 | 0 | 8 | 0 | 100 | 7.3 | 0 | 0 | 5.6 |
| Buses | 0 | 0 | 0 | | 0 | 0 | 14 | 0 | | 14 | 0 | 0 | 0 | | 0 | 0 | 16 | 0 | | 16 | 0 | 0 | 30 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 0 | 0 | 0.8 | 0 | 0 | 0 | 0 | 0 | 0 | 1.4 | 0 | 0 | 1.2 | 0 | 0 | 0.9 |

# LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9


File Name : 2077 & 2105 Royal Windsor Dr Site Access & Royal Windsor Dr-AM
Site Code : 23137000
Start Date : 2022-09-28
Page No : 2

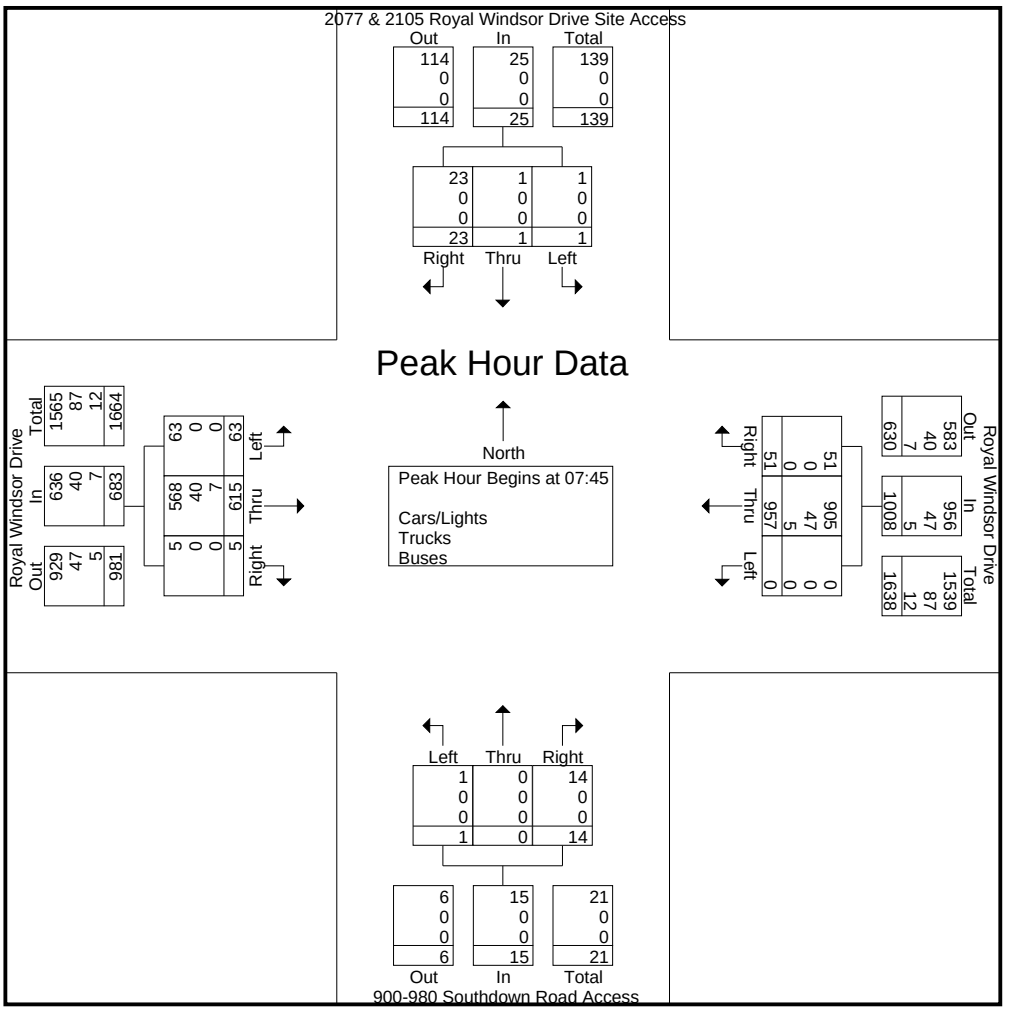


# LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9


File Name : 2077 & 2105 Royal Windsor Dr Site Access & Royal Windsor Dr-AM
Site Code : 23137000
Start Date : 2022-09-28
Page No : 3

| | 2077 & 2105 Royal Windsor Drive Site Access Southbound | | | | Royal Windsor Drive Westbound | | | | 900-980 Southdown Road Access Northbound | | | | Royal Windsor Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 | | | | | | | | | | | | | | | | | |
| 07:45 | 0 | 0 | 6 | 6 | 0 | 243 | **24** | **267** | 0 | 0 | 3 | 3 | **22** | 158 | **2** | **182** | **458** |
| 08:00 | 0 | **1** | 6 | 7 | 0 | 230 | 13 | 243 | 0 | 0 | 3 | 3 | 22 | 151 | 0 | 173 | 426 |
| 08:15 | **1** | 0 | **8** | **9** | 0 | 230 | 12 | 242 | **1** | 0 | 2 | 3 | 17 | **162** | 1 | 180 | 434 |
| 08:30 | 0 | 0 | 3 | 3 | 0 | **254** | 2 | 256 | 0 | 0 | **6** | **6** | 2 | 144 | 2 | 148 | 413 |
| Total Volume | 1 | 1 | 23 | 25 | 0 | 957 | 51 | 1008 | 1 | 0 | 14 | 15 | 63 | 615 | 5 | 683 | 1731 |
| % App. Total | 4 | 4 | 92 | | 0 | 94.9 | 5.1 | | 6.7 | 0 | 93.3 | | 9.2 | 90 | 0.7 | | |
| PHF | .250 | .250 | .719 | .694 | .000 | .942 | .531 | .944 | .250 | .000 | .583 | .625 | .716 | .949 | .625 | .938 | .945 |
| Cars/Lights | 1 | 1 | 23 | 25 | 0 | 905 | 51 | 956 | 1 | 0 | 14 | 15 | 63 | 568 | 5 | 636 | 1632 |
| % Cars/Lights | 100 | 100 | 100 | 100 | 0 | 94.6 | 100 | 94.8 | 100 | 0 | 100 | 100 | 100 | 92.4 | 100 | 93.1 | 94.3 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 47 | 0 | 47 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 40 | 87 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 4.9 | 0 | 4.7 | 0 | 0 | 0 | 0 | 0 | 6.5 | 0 | 5.9 | 5.0 |
| Buses | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 12 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0.5 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 1.1 | 0 | 1.0 | 0.7 |



# LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

Project No.: 23137 File Name : 2077 & 2105 Royal Windsor Dr Site Access & Royal Windsor Dr-PM
Intersection: Site Access & Royal Windsor Dr Site Code : 23137000
Weather: Clear Start Date : 2022-09-28
Surveyor(s): JT Page No : 1

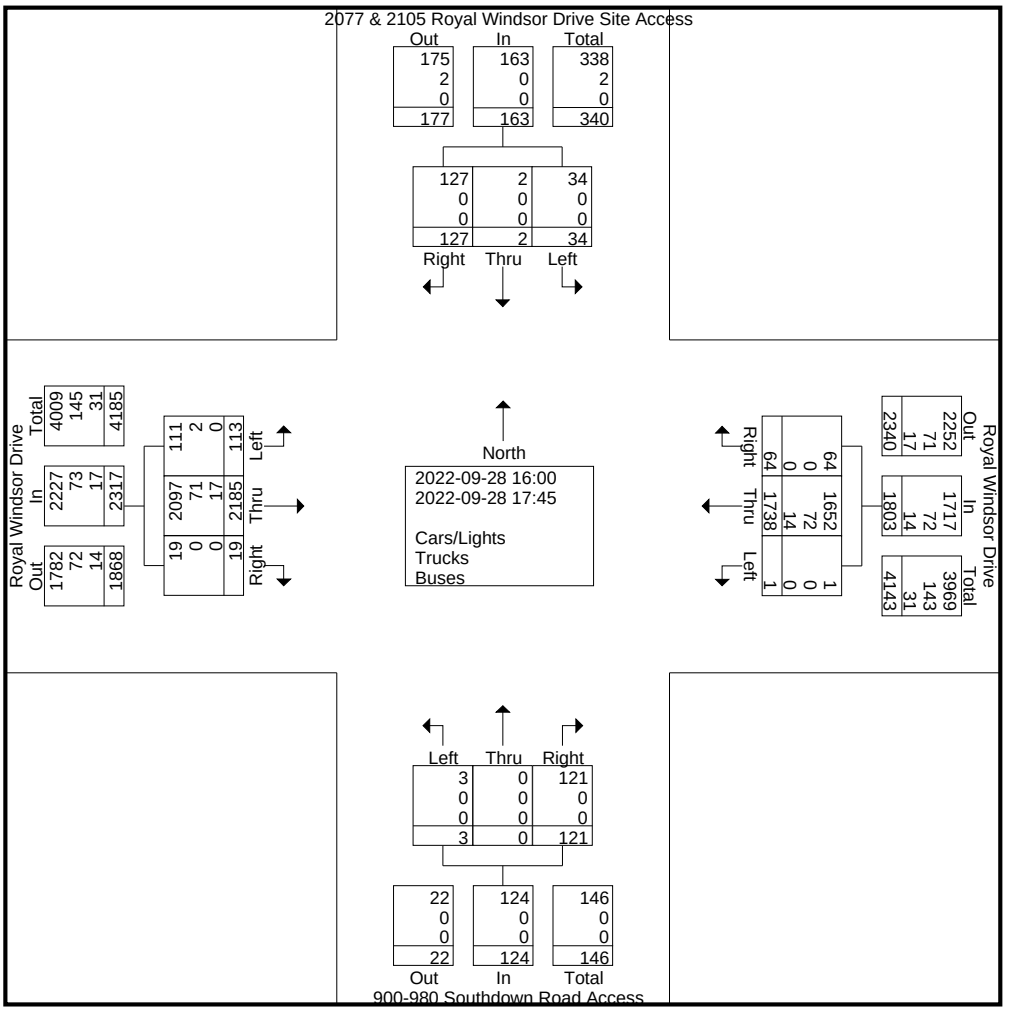
**Groups Printed- Cars/Lights - Trucks - Buses**

| | 2077 & 2105 Royal Windsor Drive Site Access Southbound | | | | | Royal Windsor Drive Westbound | | | | | 900-980 Southdown Road Access Northbound | | | | | Royal Windsor Drive Eastbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 16:00 | 3 | 1 | 12 | [2] | 16 | 0 | 221 | 4 | [1] | 225 | 0 | 0 | 19 | [0] | 19 | 7 | 220 | 2 | [0] | 229 | 3 | 489 | 492 |
| 16:15 | 6 | 1 | 21 | [0] | 28 | 0 | 220 | 7 | [1] | 227 | 1 | 0 | 8 | [0] | 9 | 14 | 280 | 4 | [1] | 298 | 2 | 562 | 564 |
| 16:30 | 2 | 0 | 5 | [3] | 7 | 0 | 214 | 7 | [0] | 221 | 0 | 0 | 14 | [0] | 14 | 11 | 247 | 1 | [2] | 259 | 5 | 501 | 506 |
| 16:45 | 5 | 0 | 17 | [3] | 22 | 0 | 220 | 6 | [0] | 226 | 0 | 0 | 13 | [0] | 13 | 16 | 272 | 2 | [1] | 290 | 4 | 551 | 555 |
| Total | 16 | 2 | 55 | [8] | 73 | 0 | 875 | 24 | [2] | 899 | 1 | 0 | 54 | [0] | 55 | 48 | 1019 | 9 | [4] | 1076 | 14 | 2103 | 2117 |
| 17:00 | 2 | 0 | 20 | [1] | 22 | 0 | 230 | 5 | [0] | 235 | 0 | 0 | 27 | [1] | 27 | 18 | 293 | 4 | [3] | 315 | 5 | 599 | 604 |
| 17:15 | 7 | 0 | 3 | [2] | 10 | 0 | 255 | 12 | [0] | 267 | 1 | 0 | 18 | [0] | 19 | 30 | 333 | 1 | [3] | 364 | 5 | 660 | 665 |
| 17:30 | 1 | 0 | 8 | [1] | 9 | 0 | 179 | 8 | [4] | 187 | 1 | 0 | 10 | [2] | 11 | 8 | 273 | 2 | [2] | 283 | 9 | 490 | 499 |
| 17:45 | 8 | 0 | 41 | [1] | 49 | 1 | 199 | 15 | [0] | 215 | 0 | 0 | 12 | [0] | 12 | 9 | 267 | 3 | [0] | 279 | 1 | 555 | 556 |
| Total | 18 | 0 | 72 | [5] | 90 | 1 | 863 | 40 | [4] | 904 | 2 | 0 | 67 | [3] | 69 | 65 | 1166 | 10 | [8] | 1241 | 20 | 2304 | 2324 |
| Grand Total | 34 | 2 | 127 | [13] | 163 | 1 | 1738 | 64 | [6] | 1803 | 3 | 0 | 121 | [3] | 124 | 113 | 2185 | 19 | [12] | 2317 | 34 | 4407 | 4441 |
| Apprch % | 20.9 | 1.2 | 77.9 | | | 0.1 | 96.4 | 3.5 | | | 2.4 | 0 | 97.6 | | | 4.9 | 94.3 | 0.8 | | | | | |
| Total % | 0.8 | 0 | 2.9 | | 3.7 | 0 | 39.4 | 1.5 | | 40.9 | 0.1 | 0 | 2.7 | | 2.8 | 2.6 | 49.6 | 0.4 | | 52.6 | 0.8 | 99.2 | |
| Cars/Lights | 34 | 2 | 127 | | 175 | 1 | 1652 | 64 | | 1723 | 3 | 0 | 121 | | 127 | 111 | 2097 | 19 | | 2236 | 0 | 0 | 4261 |
| % Cars/Lights | 100 | 100 | 100 | 92.3 | 99.4 | 100 | 95.1 | 100 | 100 | 95.2 | 100 | 0 | 100 | 100 | 100 | 98.2 | 96 | 100 | 75 | 96 | 0 | 0 | 95.9 |
| Trucks | 0 | 0 | 0 | | 1 | 0 | 72 | 0 | | 72 | 0 | 0 | 0 | | 0 | 2 | 71 | 0 | | 76 | 0 | 0 | 149 |
| % Trucks | 0 | 0 | 0 | 7.7 | 0.6 | 0 | 4.1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1.8 | 3.2 | 0 | 25 | 3.3 | 0 | 0 | 3.4 |
| Buses | 0 | 0 | 0 | | 0 | 0 | 14 | 0 | | 14 | 0 | 0 | 0 | | 0 | 0 | 17 | 0 | | 17 | 0 | 0 | 31 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 0 | 0 | 0.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 0 | 0 | 0.7 | 0 | 0 | 0.7 |

# LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9


File Name : 2077 & 2105 Royal Windsor Dr Site Access & Royal Windsor Dr-PM
Site Code : 23137000
Start Date : 2022-09-28
Page No : 2

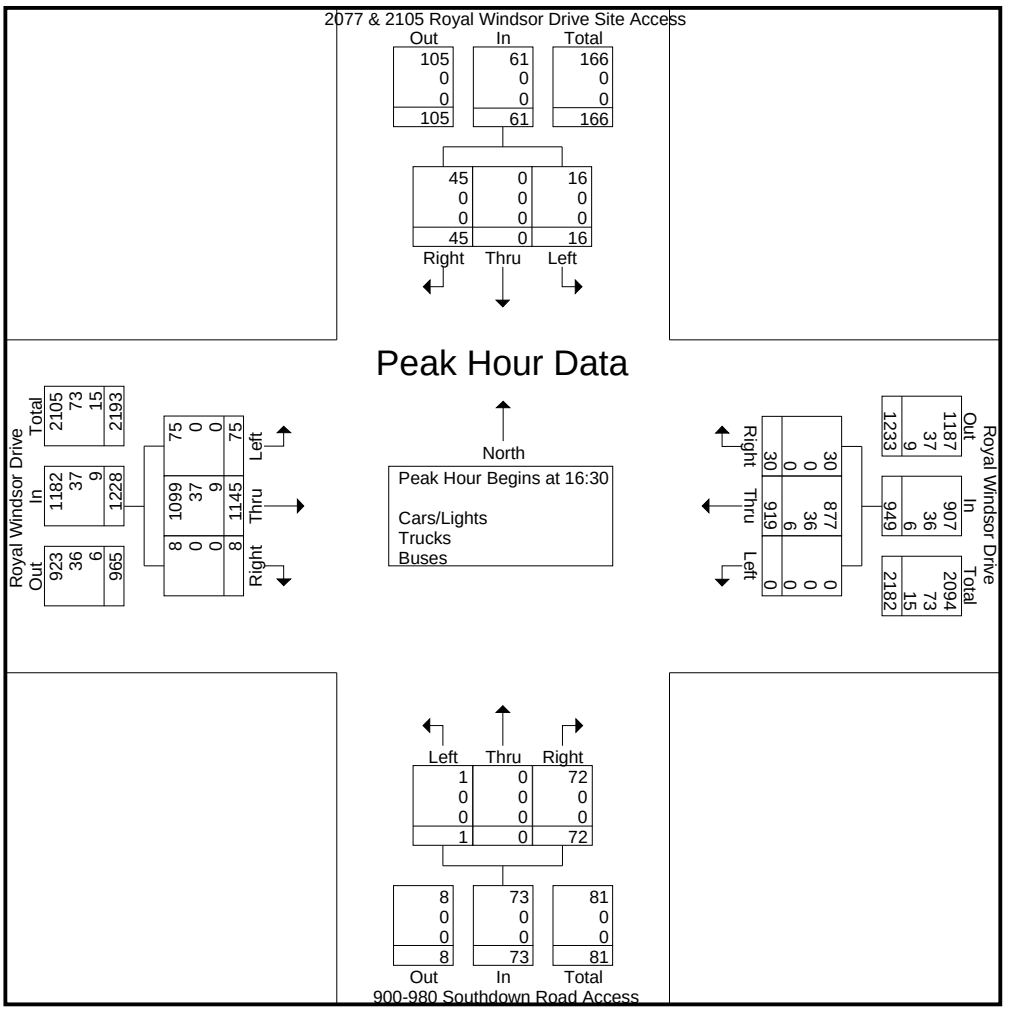


# LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9


File Name : 2077 & 2105 Royal Windsor Dr Site Access & Royal Windsor Dr-PM
Site Code : 23137000
Start Date : 2022-09-28
Page No : 3

| | 2077 & 2105 Royal Windsor Drive Site Access Southbound | | | | Royal Windsor Drive Westbound | | | | 900-980 Southdown Road Access Northbound | | | | Royal Windsor Drive Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:30 | | | | | | | | | | | | | | | | | |
| 16:30 | 2 | 0 | 5 | 7 | 0 | 214 | 7 | 221 | 0 | 0 | 14 | 14 | 11 | 247 | 1 | 259 | 501 |
| 16:45 | 5 | 0 | 17 | **22** | 0 | 220 | 6 | 226 | 0 | 0 | 13 | 13 | 16 | 272 | 2 | 290 | 551 |
| 17:00 | 2 | 0 | **20** | 22 | 0 | 230 | 5 | 235 | 0 | 0 | **27** | **27** | 18 | 293 | **4** | 315 | 599 |
| 17:15 | **7** | 0 | 3 | 10 | 0 | **255** | **12** | **267** | **1** | 0 | 18 | 19 | **30** | **333** | 1 | **364** | **660** |
| Total Volume | 16 | 0 | 45 | 61 | 0 | 919 | 30 | 949 | 1 | 0 | 72 | 73 | 75 | 1145 | 8 | 1228 | 2311 |
| % App. Total | 26.2 | 0 | 73.8 | | 0 | 96.8 | 3.2 | | 1.4 | 0 | 98.6 | | 6.1 | 93.2 | 0.7 | | |
| PHF | .571 | .000 | .563 | .693 | .000 | .901 | .625 | .889 | .250 | .000 | .667 | .676 | .625 | .860 | .500 | .843 | .875 |
| Cars/Lights | 16 | 0 | 45 | 61 | 0 | 877 | 30 | 907 | 1 | 0 | 72 | 73 | 75 | 1099 | 8 | 1182 | 2223 |
| % Cars/Lights | 100 | 0 | 100 | 100 | 0 | 95.4 | 100 | 95.6 | 100 | 0 | 100 | 100 | 100 | 96.0 | 100 | 96.3 | 96.2 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 37 | 73 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 3.9 | 0 | 3.8 | 0 | 0 | 0 | 0 | 0 | 3.2 | 0 | 3.0 | 3.2 |
| Buses | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 15 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0.7 | 0 | 0.6 | 0 | 0 | 0 | 0 | 0 | 0.8 | 0 | 0.7 | 0.6 |



LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 Klo@LEA.ca

Count Name: 23137_Hensley St & Royal Windsor Dr-AM
Site Code: 23137
Start Date: 11/15/2022


# Turning Movement Data

| Start Time | Clarkson Yard / GO Access Southbound | | | | | Royal Windsor Drive Westbound | | | | | Hensley Street Northbound | | | | | Royal Windsor Drive Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 7:00 AM | 5 | 2 | 5 | 3 | 12 | 5 | 136 | 5 | 0 | 146 | 3 | 0 | 2 | 0 | 5 | 39 | 117 | 8 | 0 | 164 | 327 |
| 7:15 AM | 8 | 0 | 6 | 5 | 14 | 5 | 155 | 6 | 0 | 166 | 7 | 2 | 4 | 0 | 13 | 54 | 95 | 9 | 0 | 158 | 351 |
| 7:30 AM | 15 | 0 | 7 | 4 | 22 | 6 | 186 | 5 | 1 | 197 | 4 | 1 | 4 | 1 | 9 | 51 | 143 | 4 | 0 | 198 | 426 |
| 7:45 AM | 8 | 2 | 14 | 2 | 24 | 8 | 234 | 11 | 1 | 253 | 11 | 1 | 3 | 0 | 15 | 79 | 147 | 9 | 0 | 235 | 527 |
| Hourly Total | 36 | 4 | 32 | 14 | 72 | 24 | 711 | 27 | 2 | 762 | 25 | 4 | 13 | 1 | 42 | 223 | 502 | 30 | 0 | 755 | 1631 |
| 8:00 AM | 9 | 2 | 9 | 4 | 20 | 10 | 187 | 6 | 2 | 203 | 8 | 3 | 2 | 1 | 13 | 41 | 174 | 12 | 2 | 227 | 463 |
| 8:15 AM | 11 | 4 | 7 | 3 | 22 | 16 | 184 | 10 | 5 | 210 | 16 | 1 | 4 | 0 | 21 | 27 | 144 | 15 | 2 | 186 | 439 |
| 8:30 AM | 10 | 3 | 7 | 2 | 20 | 6 | 205 | 3 | 0 | 214 | 14 | 3 | 4 | 1 | 21 | 26 | 147 | 11 | 1 | 184 | 439 |
| 8:45 AM | 13 | 3 | 15 | 4 | 31 | 15 | 200 | 5 | 0 | 220 | 14 | 5 | 2 | 0 | 21 | 34 | 145 | 26 | 1 | 205 | 477 |
| Hourly Total | 43 | 12 | 38 | 13 | 93 | 47 | 776 | 24 | 7 | 847 | 52 | 12 | 12 | 2 | 76 | 128 | 610 | 64 | 6 | 802 | 1818 |
| 9:00 AM | 10 | 0 | 7 | 0 | 17 | 21 | 193 | 11 | 4 | 225 | 13 | 3 | 5 | 0 | 21 | 30 | 113 | 20 | 0 | 163 | 426 |
| 9:15 AM | 11 | 1 | 7 | 0 | 19 | 10 | 195 | 7 | 2 | 212 | 20 | 7 | 5 | 3 | 32 | 15 | 111 | 29 | 0 | 155 | 418 |
| 9:30 AM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 |
| Grand Total | 100 | 17 | 84 | 27 | 201 | 103 | 1876 | 69 | 15 | 2048 | 110 | 26 | 35 | 6 | 171 | 396 | 1337 | 143 | 6 | 1876 | 4296 |
| Approach % | 49.8 | 8.5 | 41.8 | - | - | 5.0 | 91.6 | 3.4 | - | - | 64.3 | 15.2 | 20.5 | - | - | 21.1 | 71.3 | 7.6 | - | - | - |
| Total % | 2.3 | 0.4 | 2.0 | - | 4.7 | 2.4 | 43.7 | 1.6 | - | 47.7 | 2.6 | 0.6 | 0.8 | - | 4.0 | 9.2 | 31.1 | 3.3 | - | 43.7 | - |
| Lights | 76 | 11 | 73 | - | 160 | 99 | 1710 | 49 | - | 1858 | 102 | 24 | 30 | - | 156 | 389 | 1166 | 138 | - | 1693 | 3867 |
| % Lights | 76.0 | 64.7 | 86.9 | - | 79.6 | 96.1 | 91.2 | 71.0 | - | 90.7 | 92.7 | 92.3 | 85.7 | - | 91.2 | 98.2 | 87.2 | 96.5 | - | 90.2 | 90.0 |
| Buses | 0 | 0 | 0 | - | 0 | 0 | 26 | 0 | - | 26 | 0 | 0 | 0 | - | 0 | 0 | 32 | 0 | - | 32 | 58 |
| % Buses | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 1.4 | 0.0 | - | 1.3 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 2.4 | 0.0 | - | 1.7 | 1.4 |
| Trucks | 24 | 6 | 11 | - | 41 | 4 | 140 | 20 | - | 164 | 8 | 2 | 5 | - | 15 | 7 | 138 | 5 | - | 150 | 370 |
| % Trucks | 24.0 | 35.3 | 13.1 | - | 20.4 | 3.9 | 7.5 | 29.0 | - | 8.0 | 7.3 | 7.7 | 14.3 | - | 8.8 | 1.8 | 10.3 | 3.5 | - | 8.0 | 8.6 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 1 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.1 | 0.0 | - | 0.1 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 2 | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 7.4 | - | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 25 | - | - | - | - | 15 | - | - | - | - | 6 | - | - | - | - | 6 | - | - |
| % Pedestrians | - | - | - | 92.6 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |

LEA Consulting Ltd.
625 Cochrane Drive

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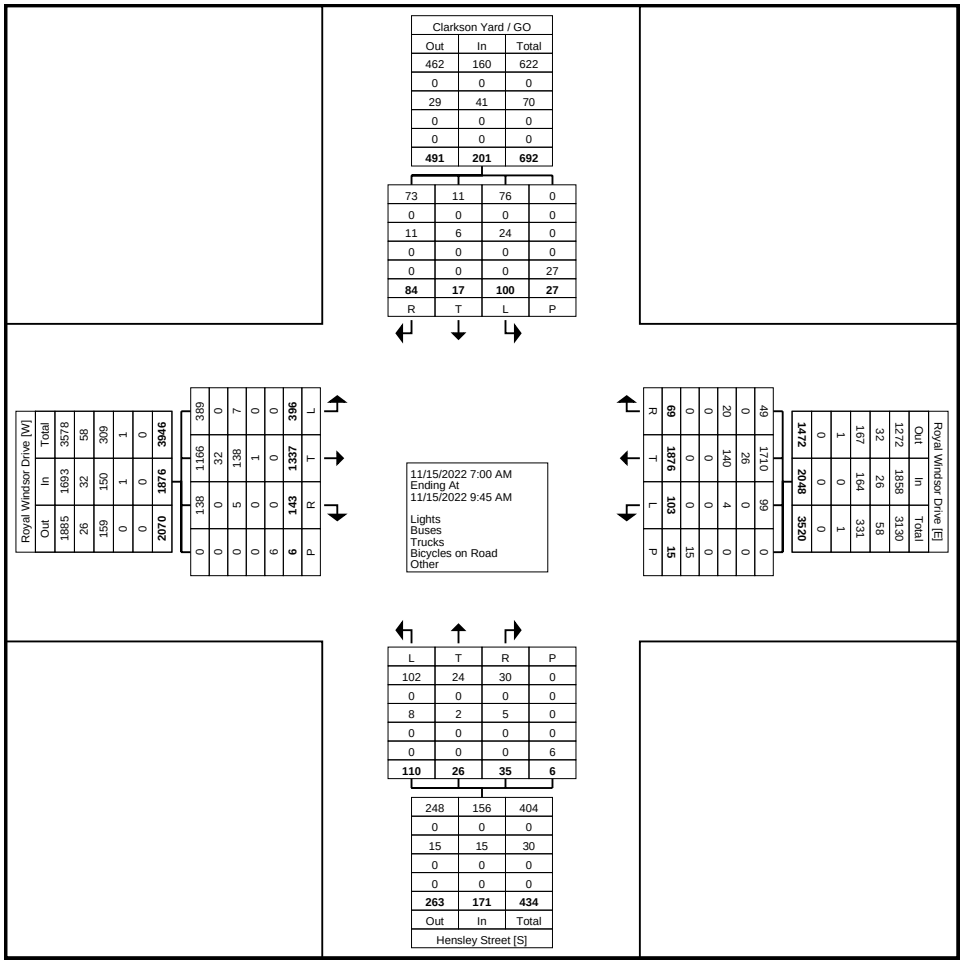
Count Name: 23137_Hensley St & Royal Windsor Dr-AM
Site Code: 23137
Start Date: 11/15/2022


Turning Movement Data Plot

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 Klo@LEA.ca

Count Name: 23137_Hensley St & Royal Windsor Dr-AM
Site Code: 23137
Start Date: 11/15/2022


# Turning Movement Peak Hour Data (7:45 AM)

| Start Time | Clarkson Yard / GO Access Southbound | | | | | Royal Windsor Drive Westbound | | | | | Hensley Street Northbound | | | | | Royal Windsor Drive Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 7:45 AM | 8 | 2 | 14 | 2 | 24 | 8 | 234 | 11 | 1 | 253 | 11 | 1 | 3 | 0 | 15 | 79 | 147 | 9 | 0 | 235 | 527 |
| 8:00 AM | 9 | 2 | 9 | 4 | 20 | 10 | 187 | 6 | 2 | 203 | 8 | 3 | 2 | 1 | 13 | 41 | 174 | 12 | 2 | 227 | 463 |
| 8:15 AM | 11 | 4 | 7 | 3 | 22 | 16 | 184 | 10 | 5 | 210 | 16 | 1 | 4 | 0 | 21 | 27 | 144 | 15 | 2 | 186 | 439 |
| 8:30 AM | 10 | 3 | 7 | 2 | 20 | 6 | 205 | 3 | 0 | 214 | 14 | 3 | 4 | 1 | 21 | 26 | 147 | 11 | 1 | 184 | 439 |
| Total | 38 | 11 | 37 | 11 | 86 | 40 | 810 | 30 | 8 | 880 | 49 | 8 | 13 | 2 | 70 | 173 | 612 | 47 | 5 | 832 | 1868 |
| Approach % | 44.2 | 12.8 | 43.0 | - | - | 4.5 | 92.0 | 3.4 | - | - | 70.0 | 11.4 | 18.6 | - | - | 20.8 | 73.6 | 5.6 | - | - | - |
| Total % | 2.0 | 0.6 | 2.0 | - | 4.6 | 2.1 | 43.4 | 1.6 | - | 47.1 | 2.6 | 0.4 | 0.7 | - | 3.7 | 9.3 | 32.8 | 2.5 | - | 44.5 | - |
| PHF | 0.864 | 0.688 | 0.661 | - | 0.896 | 0.625 | 0.865 | 0.682 | - | 0.870 | 0.766 | 0.667 | 0.813 | - | 0.833 | 0.547 | 0.879 | 0.783 | - | 0.885 | 0.886 |
| Lights | 29 | 6 | 32 | - | 67 | 39 | 749 | 21 | - | 809 | 44 | 8 | 11 | - | 63 | 169 | 539 | 45 | - | 753 | 1692 |
| % Lights | 76.3 | 54.5 | 86.5 | - | 77.9 | 97.5 | 92.5 | 70.0 | - | 91.9 | 89.8 | 100.0 | 84.6 | - | 90.0 | 97.7 | 88.1 | 95.7 | - | 90.5 | 90.6 |
| Buses | 0 | 0 | 0 | - | 0 | 0 | 9 | 0 | - | 9 | 0 | 0 | 0 | - | 0 | 0 | 16 | 0 | - | 16 | 25 |
| % Buses | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 1.1 | 0.0 | - | 1.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 2.6 | 0.0 | - | 1.9 | 1.3 |
| Trucks | 9 | 5 | 5 | - | 19 | 1 | 52 | 9 | - | 62 | 5 | 0 | 2 | - | 7 | 4 | 56 | 2 | - | 62 | 150 |
| % Trucks | 23.7 | 45.5 | 13.5 | - | 22.1 | 2.5 | 6.4 | 30.0 | - | 7.0 | 10.2 | 0.0 | 15.4 | - | 10.0 | 2.3 | 9.2 | 4.3 | - | 7.5 | 8.0 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 1 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.2 | 0.0 | - | 0.1 | 0.1 |
| Bicycles on Crosswalk | - | - | - | 1 | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 9.1 | - | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 10 | - | - | - | - | 8 | - | - | - | - | 2 | - | - | - | - | 5 | - | - |
| % Pedestrians | - | - | - | 90.9 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |

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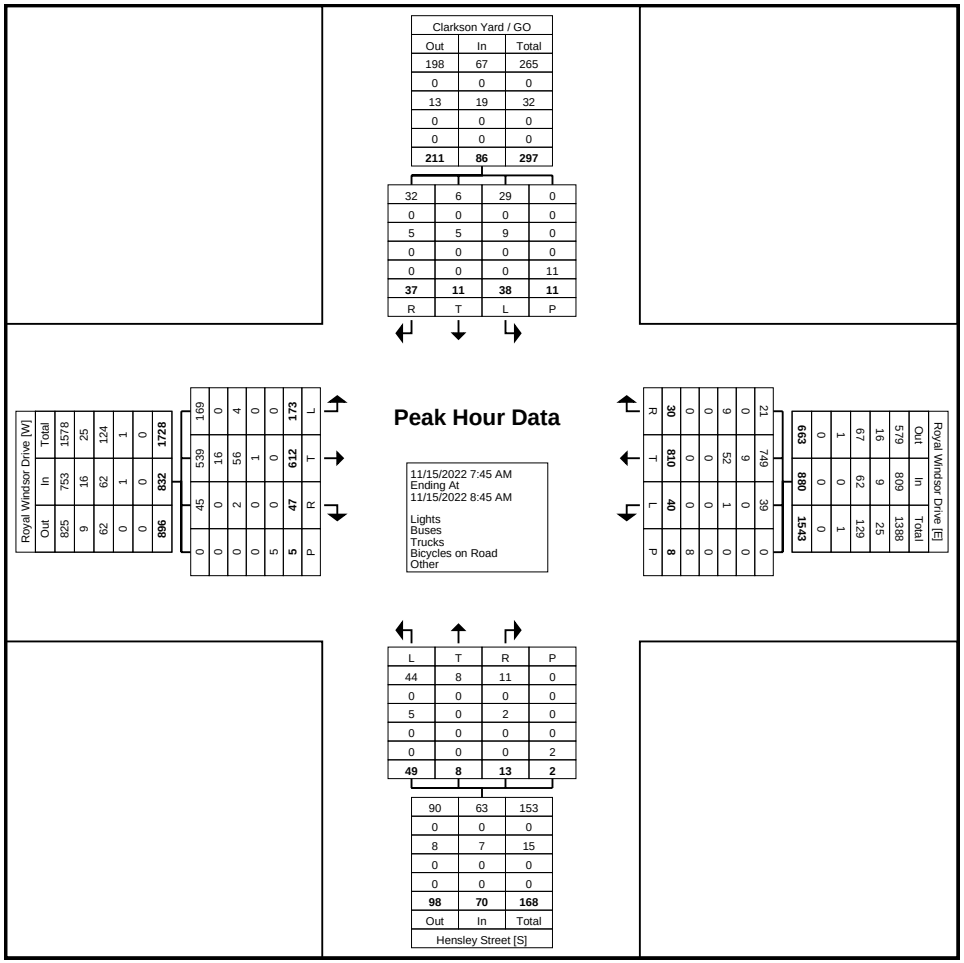
Start Date: 11/15/2022
Page No: 4




Turning Movement Peak Hour Data Plot (7:45 AM)

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 Klo@LEA.ca

Count Name: 23137_Hensley St & Royal Windsor Dr-PM
Site Code: 23137
Start Date: 11/15/2022


# Turning Movement Data

| Start Time | Clarkson Yard / GO Access Southbound | | | | | Royal Windsor Drive Westbound | | | | | Hensley Street Northbound | | | | | Royal Windsor Drive Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 4:00 PM | 8 | 1 | 14 | 5 | 23 | 31 | 226 | 7 | 3 | 264 | 44 | 1 | 11 | 1 | 56 | 18 | 168 | 38 | 0 | 224 | 567 |
| 4:15 PM | 14 | 6 | 37 | 5 | 57 | 27 | 216 | 5 | 3 | 248 | 33 | 8 | 11 | 3 | 52 | 11 | 160 | 59 | 1 | 230 | 587 |
| 4:30 PM | 9 | 0 | 14 | 5 | 23 | 34 | 197 | 5 | 2 | 236 | 40 | 5 | 18 | 5 | 63 | 17 | 182 | 48 | 0 | 247 | 569 |
| 4:45 PM | 11 | 5 | 47 | 0 | 63 | 24 | 198 | 5 | 3 | 227 | 38 | 3 | 15 | 0 | 56 | 17 | 199 | 52 | 0 | 268 | 614 |
| Hourly Total | 42 | 12 | 112 | 15 | 166 | 116 | 837 | 22 | 11 | 975 | 155 | 17 | 55 | 9 | 227 | 63 | 709 | 197 | 1 | 969 | 2337 |
| 5:00 PM | 10 | 2 | 36 | 7 | 48 | 36 | 189 | 5 | 3 | 230 | 62 | 4 | 18 | 0 | 84 | 16 | 206 | 38 | 0 | 260 | 622 |
| 5:15 PM | 13 | 3 | 47 | 0 | 63 | 29 | 169 | 6 | 4 | 204 | 38 | 6 | 17 | 1 | 61 | 16 | 218 | 53 | 1 | 287 | 615 |
| 5:30 PM | 6 | 1 | 26 | 1 | 33 | 27 | 174 | 4 | 5 | 205 | 33 | 2 | 10 | 1 | 45 | 12 | 207 | 41 | 0 | 260 | 543 |
| 5:45 PM | 4 | 1 | 48 | 1 | 53 | 33 | 161 | 4 | 3 | 198 | 25 | 2 | 14 | 1 | 41 | 8 | 198 | 37 | 0 | 243 | 535 |
| Hourly Total | 33 | 7 | 157 | 9 | 197 | 125 | 693 | 19 | 15 | 837 | 158 | 14 | 59 | 3 | 231 | 52 | 829 | 169 | 1 | 1050 | 2315 |
| 6:00 PM | 5 | 4 | 33 | 1 | 42 | 34 | 181 | 2 | 0 | 217 | 45 | 4 | 14 | 0 | 63 | 6 | 154 | 40 | 0 | 200 | 522 |
| 6:15 PM | 8 | 6 | 46 | 0 | 60 | 26 | 152 | 1 | 1 | 179 | 38 | 2 | 18 | 0 | 58 | 5 | 166 | 32 | 0 | 203 | 500 |
| 6:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 2 |
| Grand Total | 88 | 29 | 348 | 25 | 465 | 301 | 1863 | 44 | 27 | 2208 | 396 | 37 | 146 | 12 | 579 | 126 | 1859 | 439 | 2 | 2424 | 5676 |
| Approach % | 18.9 | 6.2 | 74.8 | - | - | 13.6 | 84.4 | 2.0 | - | - | 68.4 | 6.4 | 25.2 | - | - | 5.2 | 76.7 | 18.1 | - | - | - |
| Total % | 1.6 | 0.5 | 6.1 | - | 8.2 | 5.3 | 32.8 | 0.8 | - | 38.9 | 7.0 | 0.7 | 2.6 | - | 10.2 | 2.2 | 32.8 | 7.7 | - | 42.7 | - |
| Lights | 78 | 29 | 345 | - | 452 | 301 | 1725 | 29 | - | 2055 | 394 | 36 | 145 | - | 575 | 124 | 1758 | 432 | - | 2314 | 5396 |
| % Lights | 88.6 | 100.0 | 99.1 | - | 97.2 | 100.0 | 92.6 | 65.9 | - | 93.1 | 99.5 | 97.3 | 99.3 | - | 99.3 | 98.4 | 94.6 | 98.4 | - | 95.5 | 95.1 |
| Buses | 1 | 0 | 0 | - | 1 | 0 | 20 | 0 | - | 20 | 0 | 0 | 0 | - | 0 | 0 | 24 | 0 | - | 24 | 45 |
| % Buses | 1.1 | 0.0 | 0.0 | - | 0.2 | 0.0 | 1.1 | 0.0 | - | 0.9 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 1.3 | 0.0 | - | 1.0 | 0.8 |
| Trucks | 9 | 0 | 3 | - | 12 | 0 | 118 | 15 | - | 133 | 2 | 1 | 1 | - | 4 | 2 | 77 | 7 | - | 86 | 235 |
| % Trucks | 10.2 | 0.0 | 0.9 | - | 2.6 | 0.0 | 6.3 | 34.1 | - | 6.0 | 0.5 | 2.7 | 0.7 | - | 0.7 | 1.6 | 4.1 | 1.6 | - | 3.5 | 4.1 |
| Bicycles on Road | 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 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 2 | - | - | - | - | 3 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 7.4 | - | - | - | - | 25.0 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 25 | - | - | - | - | 25 | - | - | - | - | 9 | - | - | - | - | 2 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 92.6 | - | - | - | - | 75.0 | - | - | - | - | 100.0 | - | - |

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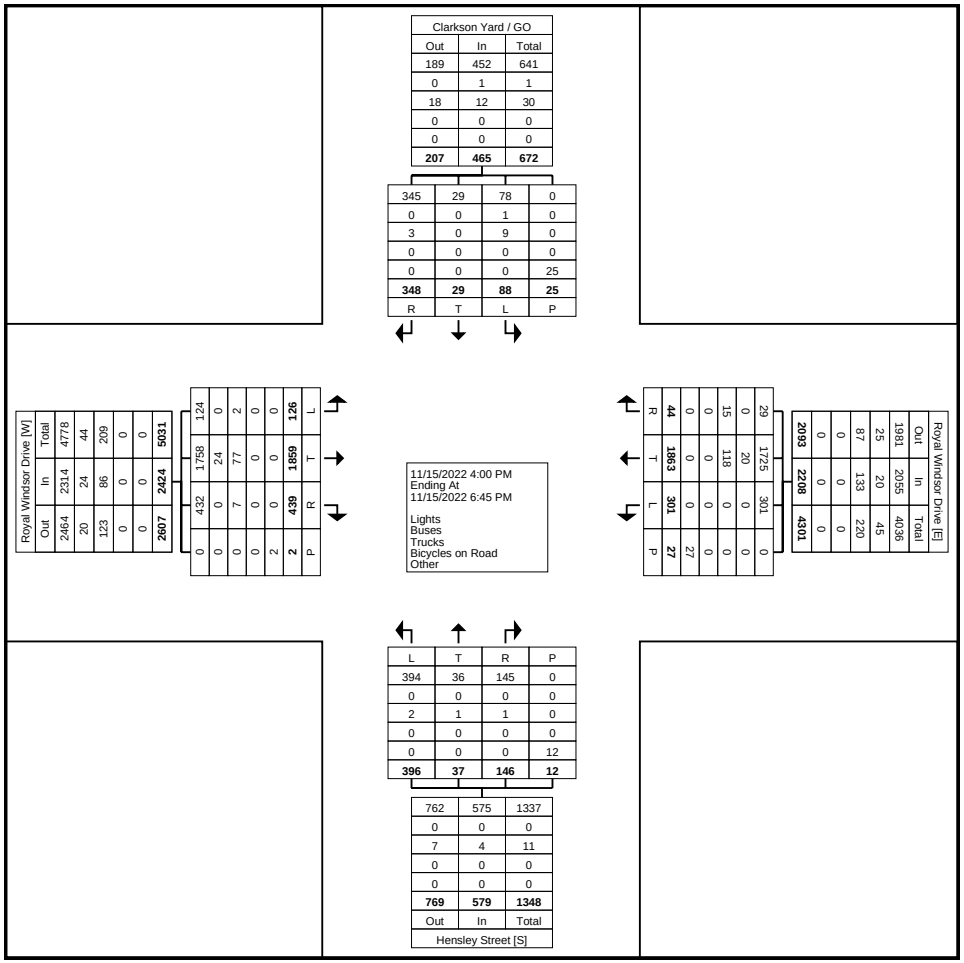
Start Date: 11/15/2022
Page No: 2




Turning Movement Data Plot

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 Klo@LEA.ca

Count Name: 23137_Hensley St & Royal Windsor Dr-PM
Site Code: 23137
Start Date: 11/15/2022

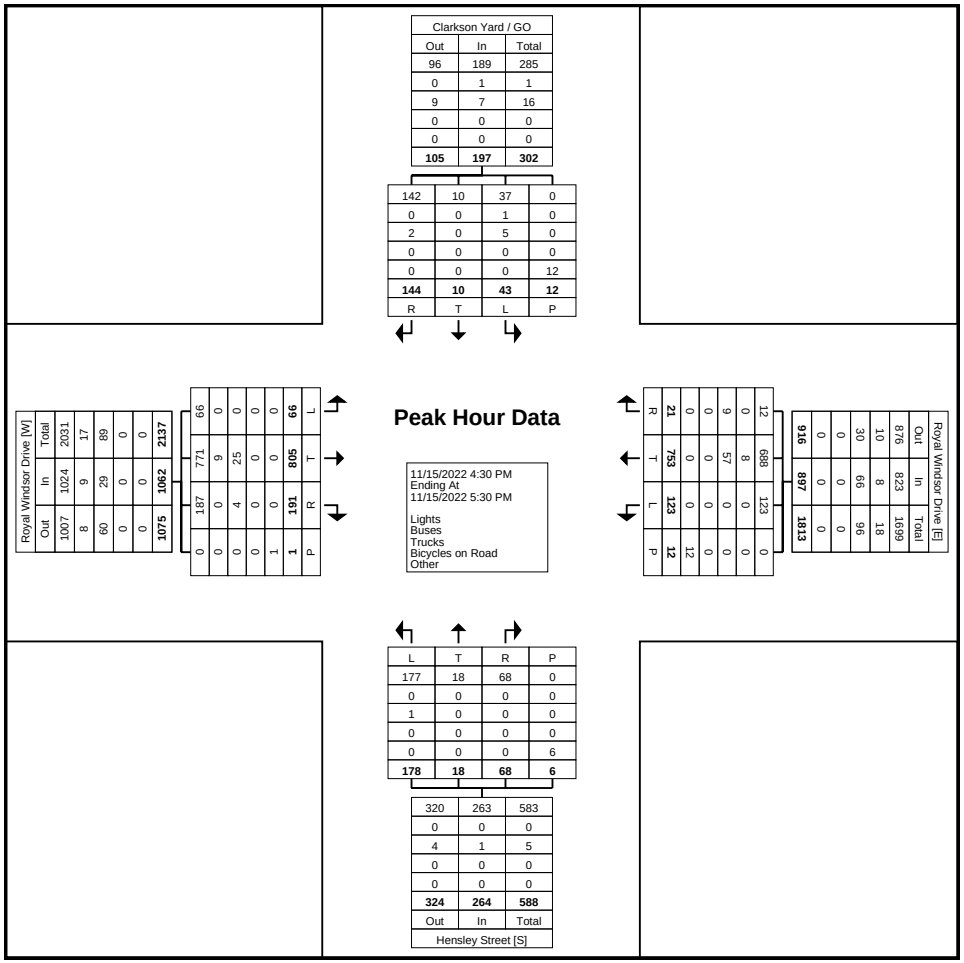

# Turning Movement Peak Hour Data (4:30 PM)

| Start Time | Clarkson Yard / GO Access Southbound | | | | | Royal Windsor Drive Westbound | | | | | Hensley Street Northbound | | | | | Royal Windsor Drive Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| 4:30 PM | 9 | 0 | 14 | 5 | 23 | 34 | 197 | 5 | 2 | 236 | 40 | 5 | 18 | 5 | 63 | 17 | 182 | 48 | 0 | 247 | 569 |
| 4:45 PM | 11 | 5 | 47 | 0 | 63 | 24 | 198 | 5 | 3 | 227 | 38 | 3 | 15 | 0 | 56 | 17 | 199 | 52 | 0 | 268 | 614 |
| 5:00 PM | 10 | 2 | 36 | 7 | 48 | 36 | 189 | 5 | 3 | 230 | 62 | 4 | 18 | 0 | 84 | 16 | 206 | 38 | 0 | 260 | 622 |
| 5:15 PM | 13 | 3 | 47 | 0 | 63 | 29 | 169 | 6 | 4 | 204 | 38 | 6 | 17 | 1 | 61 | 16 | 218 | 53 | 1 | 287 | 615 |
| Total | 43 | 10 | 144 | 12 | 197 | 123 | 753 | 21 | 12 | 897 | 178 | 18 | 68 | 6 | 264 | 66 | 805 | 191 | 1 | 1062 | 2420 |
| Approach % | 21.8 | 5.1 | 73.1 | - | - | 13.7 | 83.9 | 2.3 | - | - | 67.4 | 6.8 | 25.8 | - | - | 6.2 | 75.8 | 18.0 | - | - | - |
| Total % | 1.8 | 0.4 | 6.0 | - | 8.1 | 5.1 | 31.1 | 0.9 | - | 37.1 | 7.4 | 0.7 | 2.8 | - | 10.9 | 2.7 | 33.3 | 7.9 | - | 43.9 | - |
| PHF | 0.827 | 0.500 | 0.766 | - | 0.782 | 0.854 | 0.951 | 0.875 | - | 0.950 | 0.718 | 0.750 | 0.944 | - | 0.786 | 0.971 | 0.923 | 0.901 | - | 0.925 | 0.973 |
| Lights | 37 | 10 | 142 | - | 189 | 123 | 688 | 12 | - | 823 | 177 | 18 | 68 | - | 263 | 66 | 771 | 187 | - | 1024 | 2299 |
| % Lights | 86.0 | 100.0 | 98.6 | - | 95.9 | 100.0 | 91.4 | 57.1 | - | 91.8 | 99.4 | 100.0 | 100.0 | - | 99.6 | 100.0 | 95.8 | 97.9 | - | 96.4 | 95.0 |
| Buses | 1 | 0 | 0 | - | 1 | 0 | 8 | 0 | - | 8 | 0 | 0 | 0 | - | 0 | 0 | 9 | 0 | - | 9 | 18 |
| % Buses | 2.3 | 0.0 | 0.0 | - | 0.5 | 0.0 | 1.1 | 0.0 | - | 0.9 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 1.1 | 0.0 | - | 0.8 | 0.7 |
| Trucks | 5 | 0 | 2 | - | 7 | 0 | 57 | 9 | - | 66 | 1 | 0 | 0 | - | 1 | 0 | 25 | 4 | - | 29 | 103 |
| % Trucks | 11.6 | 0.0 | 1.4 | - | 3.6 | 0.0 | 7.6 | 42.9 | - | 7.4 | 0.6 | 0.0 | 0.0 | - | 0.4 | 0.0 | 3.1 | 2.1 | - | 2.7 | 4.3 |
| Bicycles on Road | 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 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 2 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - | - | - | 33.3 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 12 | - | - | - | - | 12 | - | - | - | - | 4 | - | - | - | - | 1 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 66.7 | - | - | - | - | 100.0 | - | - |

LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 Klo@LEA.ca

Count Name: 23137_Hensley St & Royal Windsor Dr-PM
Site Code: 23137
Start Date: 11/15/2022


Turning Movement Peak Hour Data Plot (4:30 PM)

# Turning Movement Count - Details Report

**Location.....** SOUTHDOWN RD @ UNNAMED UCOM

**Municipality.....** Mississauga

**Road 1** UNNAMED UCOM **Road 2** SOUTHDOWN RD

**Count Date.....** Tuesday, October 22, 2019

| | | North Approach | | | | | South Approach | | | | | East Approach | | | | | West Approach | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Period | | LT | TH | RT | Heavy | TOT | LT | TH | RT | Heavy | TOT | LT | TH | RT | Heavy | TOT | LT | TH | RT | Heavy | TOT |
| 07:00 | 07:15 | 0 | 144 | 45 | 15 | 189 | 5 | 85 | 0 | 20 | 90 | 1 | 1 | 4 | 0 | 6 | 11 | 0 | 11 | 0 | 22 |
| 07:15 | 07:30 | 0 | 158 | 83 | 19 | 241 | 9 | 109 | 0 | 23 | 118 | 10 | 0 | 10 | 0 | 20 | 7 | 1 | 7 | 1 | 15 |
| 07:30 | 07:45 | 2 | 178 | 88 | 19 | 268 | 10 | 120 | 0 | 23 | 130 | 0 | 0 | 10 | 0 | 10 | 14 | 1 | 7 | 0 | 22 |
| 07:45 | 08:00 | 2 | 212 | 97 | 13 | 311 | 14 | 138 | 0 | 23 | 152 | 5 | 0 | 4 | 0 | 9 | 15 | 1 | 17 | 1 | 33 |
| 08:00 | 08:15 | 6 | 198 | 82 | 23 | 286 | 6 | 124 | 1 | 16 | 131 | 1 | 2 | 18 | 2 | 21 | 14 | 1 | 18 | 2 | 33 |
| 08:15 | 08:30 | 4 | 176 | 159 | 18 | 339 | 12 | 129 | 1 | 25 | 142 | 5 | 0 | 8 | 0 | 13 | 10 | 0 | 5 | 0 | 15 |
| 08:30 | 08:45 | 4 | 198 | 156 | 28 | 358 | 6 | 135 | 1 | 21 | 142 | 2 | 0 | 8 | 0 | 10 | 8 | 0 | 9 | 0 | 17 |
| 08:45 | 09:00 | 4 | 173 | 71 | 11 | 248 | 2 | 102 | 0 | 21 | 104 | 1 | 0 | 3 | 0 | 4 | 16 | 0 | 6 | 0 | 22 |
| 11:00 | 11:15 | 1 | 194 | 6 | 34 | 201 | 0 | 160 | 0 | 29 | 160 | 1 | 0 | 4 | 0 | 5 | 4 | 0 | 6 | 0 | 10 |
| 11:15 | 11:30 | 1 | 161 | 7 | 31 | 169 | 0 | 167 | 2 | 24 | 169 | 2 | 0 | 3 | 0 | 5 | 5 | 0 | 3 | 0 | 8 |
| 11:30 | 11:45 | 4 | 186 | 3 | 31 | 193 | 0 | 174 | 3 | 30 | 177 | 5 | 0 | 9 | 1 | 14 | 2 | 0 | 3 | 1 | 5 |
| 11:45 | 12:00 | 4 | 188 | 12 | 32 | 204 | 0 | 180 | 4 | 20 | 184 | 3 | 0 | 3 | 0 | 6 | 3 | 0 | 4 | 0 | 7 |
| 12:00 | 12:15 | 3 | 218 | 8 | 41 | 229 | 2 | 179 | 5 | 31 | 186 | 2 | 0 | 3 | 0 | 5 | 9 | 0 | 4 | 0 | 13 |
| 12:15 | 12:30 | 2 | 184 | 5 | 31 | 191 | 0 | 166 | 1 | 28 | 167 | 3 | 0 | 4 | 0 | 7 | 7 | 0 | 4 | 0 | 11 |
| 12:30 | 12:45 | 5 | 182 | 5 | 33 | 192 | 1 | 184 | 2 | 35 | 187 | 0 | 0 | 4 | 0 | 4 | 4 | 0 | 2 | 0 | 6 |
| 12:45 | 13:00 | 4 | 214 | 4 | 31 | 222 | 1 | 187 | 5 | 31 | 193 | 1 | 0 | 1 | 0 | 2 | 4 | 0 | 3 | 0 | 7 |
| 13:00 | 13:15 | 4 | 183 | 0 | 32 | 187 | 3 | 191 | 2 | 32 | 196 | 5 | 0 | 5 | 1 | 10 | 6 | 0 | 2 | 0 | 8 |
| 13:15 | 13:30 | 3 | 207 | 8 | 33 | 218 | 1 | 185 | 1 | 44 | 187 | 1 | 0 | 3 | 0 | 4 | 6 | 0 | 6 | 1 | 12 |
| 13:30 | 13:45 | 2 | 192 | 1 | 17 | 195 | 0 | 219 | 0 | 35 | 219 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 |
| 13:45 | 14:00 | 3 | 204 | 2 | 36 | 209 | 0 | 187 | 1 | 27 | 188 | 2 | 0 | 4 | 0 | 6 | 2 | 1 | 0 | 0 | 3 |
| 15:00 | 15:15 | 2 | 176 | 3 | 23 | 181 | 0 | 159 | 2 | 16 | 161 | 1 | 0 | 3 | 0 | 4 | 6 | 0 | 3 | 0 | 9 |
| 15:15 | 15:30 | 2 | 209 | 6 | 35 | 217 | 2 | 195 | 3 | 21 | 200 | 3 | 0 | 2 | 1 | 5 | 15 | 1 | 6 | 0 | 22 |
| 15:30 | 15:45 | 3 | 202 | 7 | 20 | 212 | 0 | 238 | 5 | 31 | 243 | 2 | 0 | 2 | 1 | 4 | 8 | 0 | 3 | 0 | 11 |
| 15:45 | 16:00 | 9 | 259 | 12 | 26 | 280 | 6 | 270 | 0 | 28 | 276 | 2 | 0 | 4 | 1 | 6 | 38 | 0 | 11 | 0 | 49 |
| 16:00 | 16:15 | 12 | 177 | 12 | 16 | 201 | 1 | 244 | 9 | 17 | 254 | 1 | 0 | 3 | 0 | 4 | 23 | 0 | 6 | 0 | 29 |
| 16:15 | 16:30 | 8 | 247 | 9 | 15 | 264 | 2 | 246 | 6 | 23 | 254 | 7 | 0 | 2 | 0 | 9 | 62 | 0 | 26 | 0 | 88 |
| 16:30 | 16:45 | 11 | 188 | 16 | 15 | 215 | 8 | 244 | 9 | 13 | 261 | 2 | 0 | 5 | 0 | 7 | 22 | 0 | 2 | 0 | 24 |
| 16:45 | 17:00 | 7 | 245 | 21 | 16 | 273 | 5 | 258 | 8 | 18 | 271 | 4 | 0 | 0 | 1 | 4 | 24 | 0 | 9 | 0 | 33 |
| 17:00 | 17:15 | 7 | 207 | 14 | 15 | 228 | 2 | 241 | 7 | 13 | 250 | 4 | 0 | 1 | 0 | 5 | 103 | 1 | 45 | 1 | 149 |
| 17:15 | 17:30 | 5 | 243 | 25 | 8 | 273 | 1 | 259 | 9 | 21 | 269 | 6 | 0 | 4 | 1 | 10 | 100 | 0 | 26 | 0 | 126 |
| 17:30 | 17:45 | 2 | 230 | 20 | 20 | 252 | 3 | 264 | 4 | 13 | 271 | 1 | 0 | 1 | 0 | 2 | 44 | 0 | 28 | 3 | 72 |
| 17:45 | 18:00 | 7 | 222 | 20 | 9 | 249 | 5 | 210 | 3 | 14 | 218 | 2 | 0 | 2 | 0 | 4 | 106 | 1 | 36 | 0 | 143 |
| Total | ..... | 133 | 6355 | 1007 | 746 | 7495 | 107 | 5949 | 94 | 766 | 6150 | 85 | 3 | 137 | 9 | 225 | 703 | 8 | 318 | 10 | 1029 |

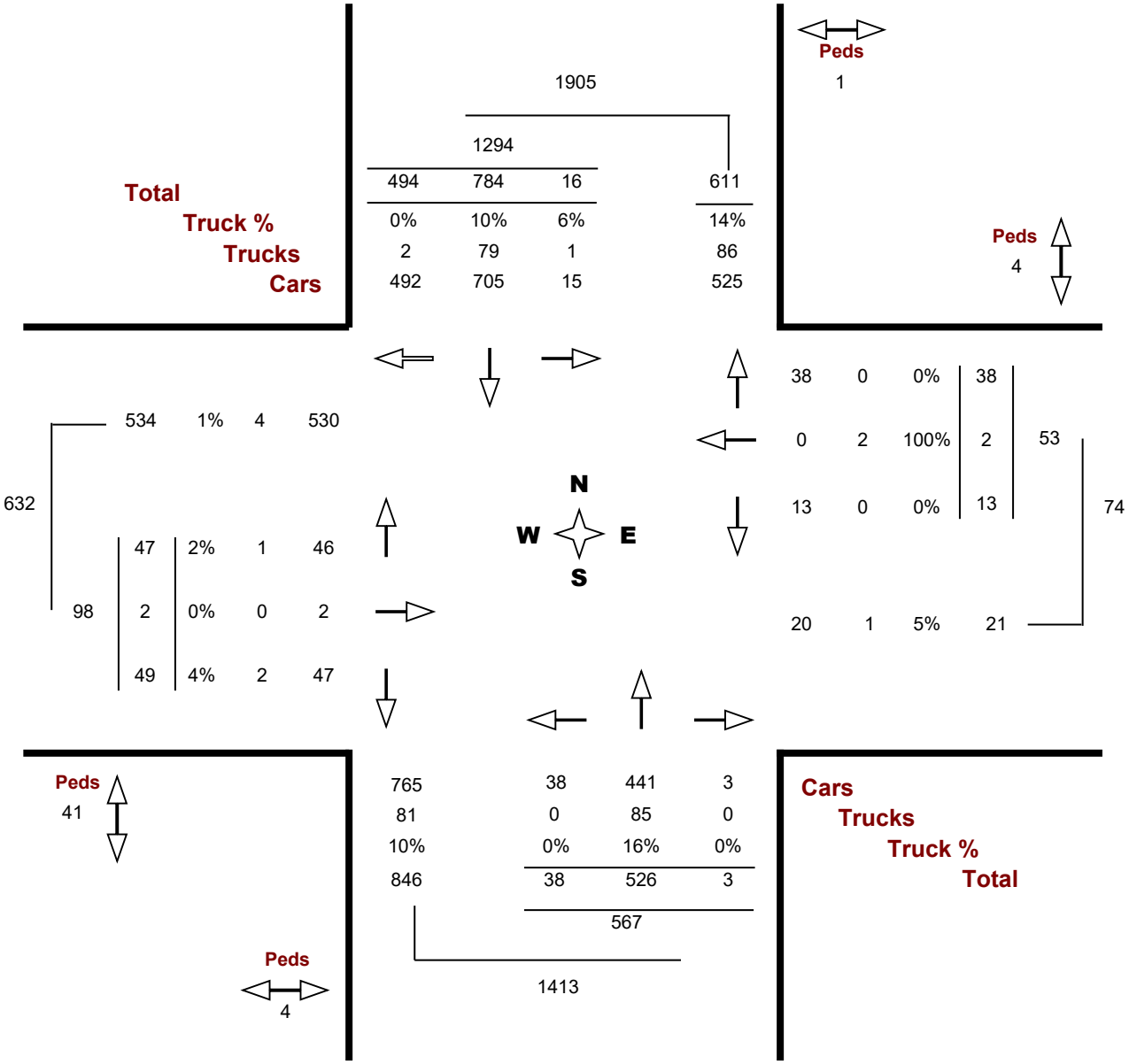
# Turning Movements Report - AM Period

**Location.....** SOUTHDOWN RD @ UNNAMED UCOM

**Municipality.....** Mississauga **GeoID.....** 1058053

**Count Date.....** Tuesday, 22 October, 2019 **Peak Hour.....** 07:45 AM — 08:45 AM

**Road 1** UNNAMED UCOM **Road 2** SOUTHDOWN RD



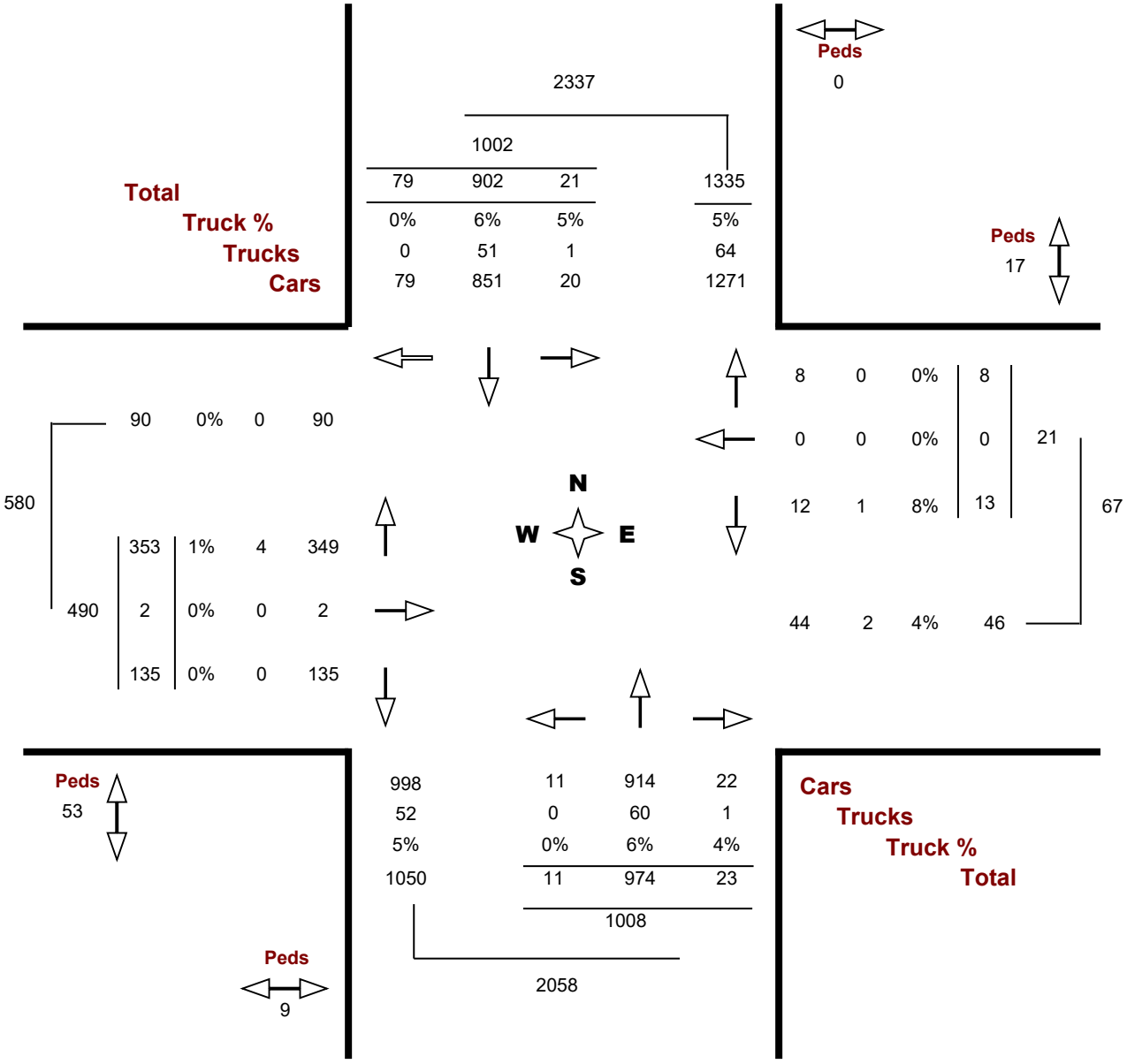
# Turning Movements Report - PM Period

**Location.....** SOUTHDOWN RD @ UNNAMED UCOM

**Municipality.....** Mississauga **GeoID.....** 1058053

**Count Date.....** Tuesday, 22 October, 2019 **Peak Hour.....** 05:00 PM — 06:00 PM

**Road 1** UNNAMED UCOM **Road 2** SOUTHDOWN RD



# Turning Movement Count - Details Report

**Location.....** LAKESHORE RD W / SOUTHDOWN RD @ ROYAL WINDSOR DR

**Municipality.....** Mississauga

**Road 1** ROYAL WINDSOR DR **Road 2** LAKESHORE RD W / SOUTHDOWN RD

**Count Date.....** Tuesday, December 17, 2019

| | | North Approach | | | | | South Approach | | | | | East Approach | | | | | West Approach | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Period | | LT | TH | RT | Heavy | TOT | LT | TH | RT | Heavy | TOT | LT | TH | RT | Heavy | TOT | LT | TH | RT | Heavy | TOT |
| 07:00 | 07:15 | 40 | 61 | 60 | 19 | 161 | 30 | 43 | 29 | 16 | 102 | 9 | 85 | 42 | 5 | 136 | 29 | 84 | 4 | 11 | 117 |
| 07:15 | 07:30 | 39 | 60 | 48 | 17 | 147 | 28 | 36 | 19 | 19 | 83 | 19 | 98 | 46 | 4 | 163 | 34 | 93 | 5 | 25 | 132 |
| 07:30 | 07:45 | 55 | 80 | 67 | 18 | 202 | 47 | 70 | 39 | 32 | 156 | 22 | 116 | 54 | 7 | 192 | 24 | 95 | 27 | 23 | 146 |
| 07:45 | 08:00 | 60 | 66 | 88 | 15 | 214 | 33 | 52 | 24 | 15 | 109 | 26 | 158 | 72 | 8 | 256 | 30 | 97 | 17 | 16 | 144 |
| 08:00 | 08:15 | 77 | 89 | 54 | 22 | 220 | 46 | 66 | 32 | 22 | 144 | 26 | 148 | 64 | 8 | 238 | 34 | 100 | 17 | 25 | 151 |
| 08:15 | 08:30 | 62 | 72 | 65 | 15 | 199 | 26 | 53 | 30 | 18 | 109 | 28 | 161 | 68 | 10 | 257 | 46 | 95 | 12 | 19 | 153 |
| 08:30 | 08:45 | 69 | 84 | 64 | 22 | 217 | 38 | 46 | 27 | 16 | 111 | 38 | 139 | 53 | 6 | 230 | 43 | 95 | 9 | 15 | 147 |
| 08:45 | 09:00 | 71 | 85 | 80 | 26 | 236 | 19 | 44 | 36 | 11 | 99 | 36 | 114 | 70 | 15 | 220 | 41 | 119 | 13 | 16 | 173 |
| 11:00 | 11:15 | 82 | 59 | 77 | 31 | 218 | 26 | 60 | 30 | 16 | 116 | 47 | 88 | 77 | 16 | 212 | 48 | 106 | 8 | 13 | 162 |
| 11:15 | 11:30 | 65 | 65 | 71 | 26 | 201 | 20 | 67 | 26 | 21 | 113 | 47 | 87 | 87 | 16 | 221 | 56 | 118 | 10 | 19 | 184 |
| 11:30 | 11:45 | 86 | 93 | 69 | 26 | 248 | 24 | 76 | 56 | 22 | 156 | 37 | 86 | 83 | 11 | 206 | 55 | 85 | 6 | 10 | 146 |
| 11:45 | 12:00 | 79 | 75 | 64 | 31 | 218 | 34 | 57 | 52 | 36 | 143 | 47 | 95 | 82 | 8 | 224 | 59 | 150 | 7 | 16 | 216 |
| 12:00 | 12:15 | 74 | 86 | 67 | 29 | 227 | 28 | 71 | 48 | 22 | 147 | 39 | 83 | 87 | 8 | 209 | 64 | 133 | 8 | 20 | 205 |
| 12:15 | 12:30 | 72 | 80 | 61 | 21 | 213 | 29 | 65 | 43 | 26 | 137 | 43 | 99 | 74 | 9 | 216 | 66 | 167 | 19 | 23 | 252 |
| 12:30 | 12:45 | 87 | 81 | 68 | 29 | 236 | 18 | 74 | 48 | 21 | 140 | 53 | 106 | 109 | 8 | 268 | 64 | 108 | 18 | 18 | 190 |
| 12:45 | 13:00 | 76 | 81 | 77 | 24 | 234 | 28 | 65 | 42 | 23 | 135 | 53 | 130 | 94 | 8 | 277 | 67 | 158 | 10 | 17 | 235 |
| 13:00 | 13:15 | 85 | 80 | 66 | 23 | 231 | 25 | 79 | 22 | 23 | 126 | 55 | 97 | 89 | 6 | 241 | 71 | 111 | 11 | 13 | 193 |
| 13:15 | 13:30 | 74 | 78 | 67 | 20 | 219 | 28 | 52 | 31 | 22 | 111 | 53 | 120 | 86 | 10 | 259 | 68 | 119 | 29 | 23 | 216 |
| 13:30 | 13:45 | 70 | 77 | 67 | 18 | 214 | 24 | 76 | 40 | 20 | 140 | 49 | 90 | 89 | 11 | 228 | 69 | 137 | 26 | 20 | 232 |
| 13:45 | 14:00 | 79 | 84 | 70 | 29 | 233 | 20 | 67 | 29 | 14 | 116 | 47 | 170 | 69 | 10 | 286 | 57 | 125 | 23 | 21 | 205 |
| 15:00 | 15:15 | 90 | 87 | 52 | 28 | 229 | 25 | 82 | 46 | 16 | 153 | 48 | 112 | 99 | 9 | 259 | 97 | 148 | 5 | 9 | 250 |
| 15:15 | 15:30 | 81 | 85 | 63 | 24 | 229 | 29 | 75 | 33 | 16 | 137 | 47 | 132 | 85 | 13 | 264 | 87 | 155 | 13 | 15 | 255 |
| 15:30 | 15:45 | 82 | 93 | 57 | 23 | 232 | 36 | 124 | 51 | 21 | 211 | 53 | 159 | 101 | 9 | 313 | 73 | 176 | 7 | 13 | 256 |
| 15:45 | 16:00 | 80 | 105 | 56 | 20 | 241 | 27 | 102 | 47 | 19 | 176 | 54 | 134 | 89 | 10 | 277 | 81 | 163 | 6 | 10 | 250 |
| 16:00 | 16:15 | 82 | 81 | 42 | 18 | 205 | 22 | 98 | 45 | 13 | 165 | 58 | 142 | 95 | 11 | 295 | 86 | 157 | 14 | 17 | 257 |
| 16:15 | 16:30 | 95 | 103 | 47 | 18 | 245 | 24 | 81 | 46 | 14 | 151 | 59 | 120 | 97 | 11 | 276 | 72 | 175 | 17 | 12 | 264 |
| 16:30 | 16:45 | 79 | 81 | 49 | 13 | 209 | 30 | 67 | 75 | 7 | 172 | 68 | 150 | 81 | 20 | 299 | 86 | 189 | 19 | 9 | 294 |
| 16:45 | 17:00 | 101 | 79 | 46 | 17 | 226 | 25 | 80 | 56 | 11 | 161 | 53 | 130 | 72 | 7 | 255 | 83 | 228 | 19 | 13 | 330 |
| 17:00 | 17:15 | 87 | 66 | 32 | 12 | 185 | 30 | 95 | 70 | 8 | 195 | 50 | 134 | 85 | 6 | 269 | 79 | 181 | 23 | 11 | 283 |
| 17:15 | 17:30 | 96 | 77 | 44 | 11 | 217 | 29 | 87 | 55 | 12 | 171 | 54 | 159 | 99 | 5 | 312 | 73 | 257 | 16 | 10 | 346 |
| 17:30 | 17:45 | 99 | 92 | 46 | 12 | 237 | 25 | 94 | 44 | 11 | 163 | 46 | 117 | 104 | 8 | 267 | 88 | 237 | 29 | 10 | 354 |
| 17:45 | 18:00 | 95 | 74 | 47 | 11 | 216 | 23 | 60 | 57 | 8 | 140 | 57 | 132 | 98 | 4 | 287 | 64 | 261 | 16 | 11 | 341 |
| Total | ..... | 2469 | 2559 | 1931 | 668 | 6959 | 896 | 2264 | 1328 | 571 | 4488 | 1421 | 3891 | 2600 | 297 | 7912 | 1994 | 4622 | 463 | 503 | 7079 |

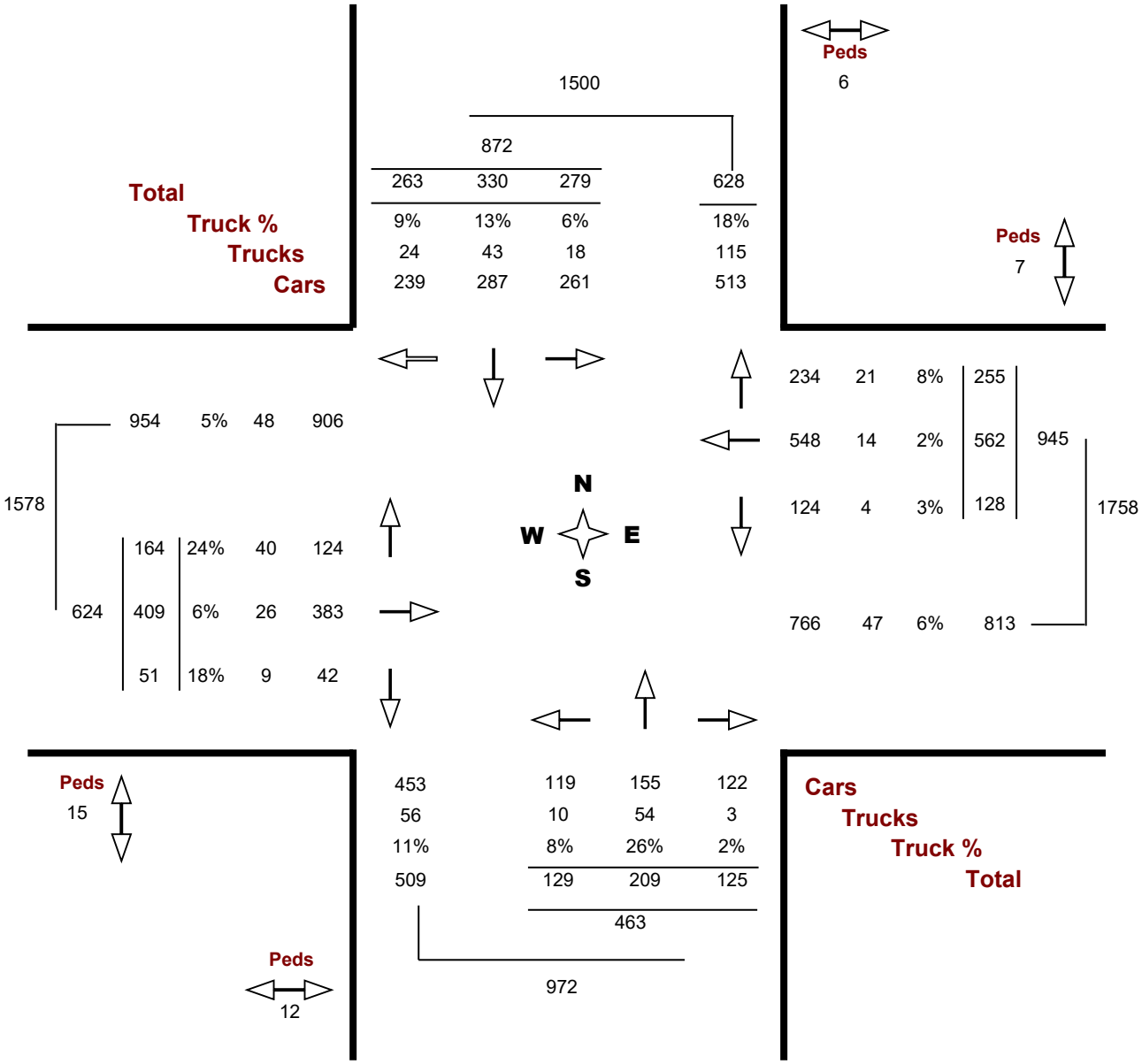
# Turning Movements Report - AM Period

**Location.....** LAKESHORE RD W / SOUTHDOWN RD @ ROYAL WINDSOR DR

**Municipality.....** Mississauga **GeoID.....** 349075

**Count Date.....** Tuesday, 17 December, 2019 **Peak Hour.....** 08:00 AM — 09:00 AM

**Road 1** ROYAL WINDSOR DR **Road 2** LAKESHORE RD W / SOUTHDOWN RD



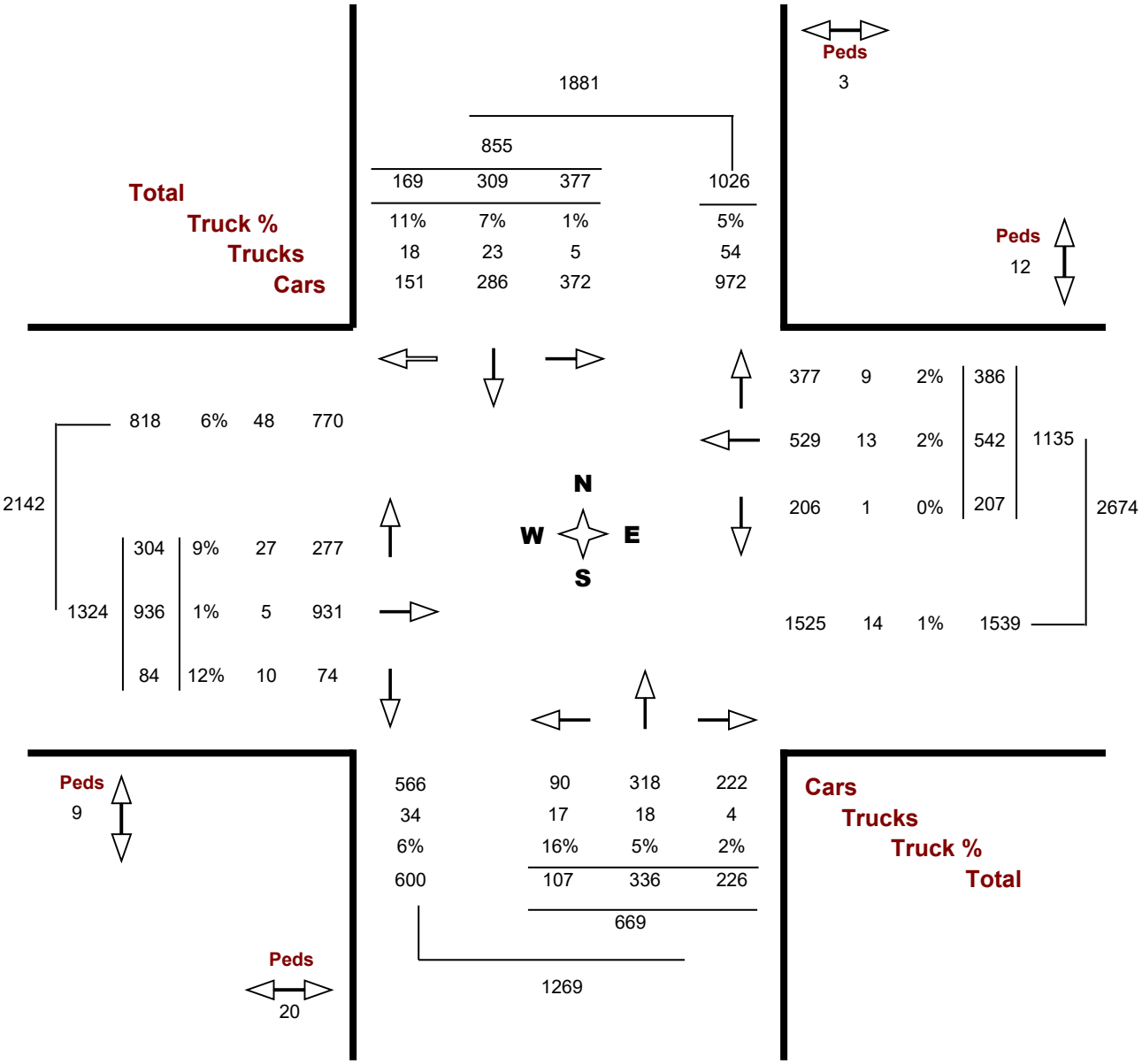
# Turning Movements Report - PM Period

**Location.....** LAKESHORE RD W / SOUTHDOWN RD @ ROYAL WINDSOR DR

**Municipality.....** Mississauga **GeoID.....** 349075

**Count Date.....** Tuesday, 17 December, 2019 **Peak Hour.....** 05:00 PM — 06:00 PM

**Road 1** ROYAL WINDSOR DR **Road 2** LAKESHORE RD W / SOUTHDOWN RD



# APPENDIX C

## Growth Rate Information

### *Royal Windsor Drive*

| | Compounded Annual Growth from Existing to 2027 | |
|---|---|---|
| | EB | WB |
| AM Peak Hour | 1.0% | 1.5% |
| | | |
| PM Peak Hour | 1.5% | 1.0% |

### *Southdown Road*

| | Compounded Annual Growth from Existing to 2027 | |
|---|---|---|
| | NB | SB |
| AM Peak Hour | 0.0% | 0.0% |
| | | |
| PM Peak Hour | 0.0% | 0.0% |

**Tyler Xuereb**
Transportation Planning Analyst
T 905-615-3200 ext.4783
Tyler.xuereb@mississauga.ca

City of Mississauga | Transportation and Works Department,
Infrastructure Planning and Engineering Services Division

# APPENDIX D

## TTS 2016 Data

## Mode Split for Residential Trips

Fri Sep 30 2022 13:59:32 GMT-0400 (Eastern Daylight Time) - Run Time: 3187ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Type of dwelling unit - dwell_type
Column: Primary travel mode of trip - mode_prime

Filters:
(2006 GTA zone of household - gta06_hhld In 3614, 3623, 3639, 3640, 3644, 3645, 3879, 4023
and
Trip purpose - trip_purp In 1,2

Trip 2016
Table:

| | Transit excluding GO rail | Cycle | Auto driver | GO rail only | Joint GO rail and local transit | Motorcycle | Other | Auto passenger | School bus | Taxi passenger | Paid rideshare |
|---|---|---|---|---|---|---|---|---|---|---|---|
| House | 837 | 306 | 12500 | 1703 | 1040 | 19 | 21 | 1251 | 1569 | 85 | 114 |
| Apartment | 1083 | 125 | 2291 | 646 | 335 | 0 | 0 | 313 | 185 | 0 | 118 |
| Townhouse | 413 | 78 | 2032 | 201 | 271 | 0 | 0 | 422 | 273 | 0 | 0 |
| SUM | 2333 | 509 | 16823 | 2550 | 1646 | 19 | 21 | 1986 | 2027 | 85 | 232 |
| | | | | | | | | | | | GRAND SUM |

| Mode | % |
|---|---|
| Auto Driver | 54% |
| Passenger | 7% |
| Transit | 27% |
| Pedestrian | 10% |
| Cycling | 2% |
| Total | 100% |

## Mode Split for Retail Trips

Fri Sep 30 2022 14:07:21 GMT-0400 (Eastern Daylight Time) - Run Time: 2854ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Type of dwelling unit - dwell_type
Column: Primary travel mode of trip - mode_prime

Filters:
(2006 GTA zone of household - gta06_hhld In 3614, 3623, 3639, 3640, 3644, 3645, 3879, 4023
and
Trip purpose - trip_purp In 1,2,3

Trip 2016
Table:

| | Transit excluding GO rail | Cycle | Auto driver | GO rail only | Joint GO rail and local transit | Motorcycle | Other | Auto passenger | School bus | Taxi passenger | Paid rideshare |
|---|---|---|---|---|---|---|---|---|---|---|---|
| House | 1063 | 365 | 28260 | 2055 | 1060 | 19 | 21 | 4454 | 1569 | 120 | 150 |
| Apartment | 1322 | 125 | 4486 | 723 | 504 | 0 | 4 | 769 | 185 | 15 | 118 |
| Townhouse | 492 | 102 | 5045 | 226 | 271 | 0 | 0 | 1149 | 273 | 0 | 0 |
| SUM | 2877 | 592 | 37791 | 3004 | 1835 | 19 | 25 | 6372 | 2027 | 135 | 268 |
| | | | | | | | | | | | GRAND SUM |

| Mode | % |
|---|---|
| Auto Driver | 64% |
| Passenger | 11% |
| Transit | 17% |
| Pedestrian | 7% |
| Cycling | 1% |
| Total | 100% |

Mon Oct 03 2022 09:12:00 GMT-0400 (Eastern Daylight Time) - Run Time: 3034ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of destination - gta06_dest In 3614, 3623, 3639, 3640, 3644, 3645, 3879, 4023
and
Start time of trip - start_time In 1500-1900
and
Trip purpose of destination - purp_dest In H
and
Primary travel mode of trip - mode_prime In D, M

Trip 2016
Table:

| Origin | Destination | | | | | | | Trips from Origin | Trip Distribution | | Trip Assignment | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3614 | 3623 | 3640 | 3644 | 3645 | 3879 | 4023 | | Distribution | Direction From | From East | From West | From North | From South | Assignment |
| PD 1 of Toronto | 62 | 14 | 111 | 0 | 61 | 30 | 29 | 307 | 3% | E | 3% | | | | QEW, SB Southdown |
| PD 2 of Toronto | 0 | 0 | 19 | 0 | 24 | 9 | 36 | 88 | 1% | E | 1% | | | | QEW, SB Southdown |
| PD 3 of Toronto | 71 | 0 | 45 | 0 | 0 | 0 | 0 | 116 | 1% | E | 1% | | | | Hwy 427, QEW, SB Southdown |
| PD 4 of Toronto | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 9 | 0% | E | 0% | | | | Hwy 401, Hwy 427, QEW, SB Southdown |
| | | | | | | | | | | E | 0% | | | | DVP, QEW, SB Southdown |
| PD 5 of Toronto | 18 | 0 | 27 | 10 | 0 | 0 | 0 | 55 | 1% | E | 0% | | | | Hwy 401, Hwy 427, QEW, SB Southdown |
| | | | | | | | | | | E | 0% | | | | DVP, QEW, SB Southdown |
| PD 6 of Toronto | 14 | 0 | 0 | 30 | 0 | 0 | 0 | 44 | 0% | E | 0% | | | | DVP, QEW, SB Southdown |
| PD 7 of Toronto | 57 | 53 | 51 | 0 | 30 | 28 | 16 | 235 | 2% | E | 1% | | | | QEW, SB Southdown |
| | | | | | | | | | | E | 1% | | | | WB Lakeshore |
| PD 8 of Toronto | 137 | 29 | 92 | 7 | 58 | 14 | 45 | 382 | 4% | E | 4% | | | | Hwy 427, QEW, SB Southdown |
| PD 9 of Toronto | 38 | 29 | 0 | 35 | 0 | 0 | 11 | 113 | 1% | N | | | 1% | | Hwy 427, QEW, SB Southdown |
| PD 10 of Toronto | 13 | 0 | 43 | 0 | 0 | 0 | 80 | 136 | 1% | E | 1% | | | | Hwy 400, Hwy 401, Hwy 427, QEW, SB Southdown |
| PD 11 of Toronto | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 0% | E | 0% | | | | Hwy 401, Hwy 427, QEW, SB Southdown |
| PD 12 of Toronto | 0 | 0 | 34 | 10 | 0 | 0 | 0 | 44 | 0% | E | 0% | | | | Hwy 404, Hwy 401, Hwy 427, QEW, SB Southdown |
| PD 13 of Toronto | 0 | 0 | 0 | 69 | 0 | 16 | 0 | 85 | 1% | E | 0% | | | | Hwy 401, Hwy 427, QEW, SB Southdown |
| | | | | | | | | | | E | 0% | | | | DVP, QEW, SB Southdown |
| PD 16 of Toronto | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 22 | 0% | E | 0% | | | | Hwy 401, Hwy 427, QEW, SB Southdown |
| Pickering | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 0% | E | 0% | | | | Hwy 401, Hwy 427, QEW, SB Southdown |
| Whitby | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 31 | 0% | E | 0% | | | | Hwy 401, Hwy 427, QEW, SB Southdown |
| Oshawa | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0% | E | 0% | | | | Hwy 401, Hwy 427, QEW, SB Southdown |
| Richmond Hill | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0% | E | 0% | | | | Hwy 404, Hwy 401, Hwy 427, QEW, SB Southdown |
| Markham | 0 | 0 | 23 | 0 | 12 | 0 | 17 | 52 | 1% | E | 1% | | | | Hwy 404, Hwy 401, Hwy 427, QEW, SB Southdown |
| Vaughan | 32 | 0 | 23 | 0 | 0 | 0 | 0 | 55 | 1% | E | 1% | | | | Hwy 400, Hwy 401, Hwy 427, QEW, SB Southdown |
| Caledon | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 22 | 0% | N | | | 0% | | Hwy 410, Hwy 403, SB Southdown |
| Brampton | 0 | 11 | 33 | 9 | 79 | 103 | 120 | 355 | 4% | N | | | 4% | | Hwy 410, Hwy 403, SB Southdown |
| Halton Hills | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 10 | 0% | W | | 0% | | | Hwy 401, Hwy 403, EB Royal Windsor |
| Milton | 96 | 0 | 0 | 90 | 0 | 10 | 11 | 207 | 2% | W | | 2% | | | Hwy 401, Hwy 403, EB Royal Windsor |
| Oakville | 224 | 0 | 230 | 233 | 95 | 61 | 537 | 1380 | 14% | W | | 14% | | | Hwy 403, SB Southdown |
| Burlington | 34 | 9 | 7 | 0 | 0 | 29 | 16 | 95 | 1% | W | | 1% | | | Hwy 403, SB Southdown |
| Flamborough | 0 | 0 | 15 | 0 | 0 | 0 | 26 | 41 | 0% | W | | 0% | | | Hwy 403, SB Southdown |
| Hamilton | 0 | 57 | 16 | 0 | 29 | 0 | 0 | 102 | 1% | W | | 1% | | | Hwy 403, SB Southdown |
| Waterloo | 17 | 5 | 0 | 0 | 0 | 0 | 13 | 35 | 0% | W | | 0% | | | Hwy 401, Hwy 403, EB Royal Windsor |
| City of Guelph | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0% | W | | 0% | | | Hwy 401, Hwy 403, EB Royal Windsor |
| Erin | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0% | W | | 0% | | | Hwy 401, Hwy 403, EB Royal Windsor |
| New Tecumseth | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 22 | 0% | N | | | 0% | | Hwy 427, QEW, SB Southdown |
| Brant | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0% | W | | 0% | | | Hwy 403, SB Southdown |
| 3601 | 13 | 0 | 9 | 10 | 0 | 0 | 0 | 32 | 0% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| | | | | | | | | | | N | | | 0% | | SB Southdown |
| 3602 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| | | | | | | | | | | N | | | 0% | | SB Southdown |
| 3604 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0% | N | | | 0% | | SB Southdown |
| 3605 | 0 | 0 | 0 | 20 | 0 | 0 | 43 | 63 | 1% | E | 1% | | | | Hwy 403, SB Southdown |
| 3607 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 14 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3609 | 10 | 0 | 0 | 37 | 0 | 0 | 0 | 47 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3611 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 6 | 0% | N | | | 0% | | SB Southdown |
| 3612 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0% | N | | | 0% | | SB Southdown |
| 3613 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 16 | 0% | N | | | 0% | | SB Southdown |
| 3614 | 190 | 14 | 77 | 61 | 44 | 71 | 0 | 457 | 5% | N | | | 4% | | SB Winston Churchill, EB Royal Windsor |
| | | | | | | | | | | N | | | 1% | | SB Southdown |
| 3615 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 19 | 0% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| 3618 | 0 | 0 | 0 | 0 | 0 | 33 | 29 | 62 | 1% | N | | | 1% | | SB Winston Churchill, EB Royal Windsor |
| 3621 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 30 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3623 | 0 | 54 | 33 | 0 | 30 | 0 | 0 | 117 | 1% | N | | | 1% | | SB Southdown |
| 3631 | 19 | 0 | 13 | 0 | 0 | 0 | 0 | 32 | 0% | N | | | 0% | | SB Southdown |
| 3632 | 24 | 0 | 15 | 23 | 0 | 0 | 0 | 62 | 1% | E | 1% | | | | QEW, SB Southdown |
| 3633 | 0 | 56 | 18 | 0 | 0 | 0 | 140 | 214 | 2% | N | | | 1% | | SB Winston Churchill, EB Royal Windsor |
| | | | | | | | | | | N | | | 1% | | SB Southdown |
| 3634 | 0 | 0 | 18 | 0 | 22 | 9 | 21 | 70 | 1% | N | | | 1% | | SB Winston Churchill, EB Royal Windsor |
| 3635 | 85 | 5 | 19 | 11 | 0 | 0 | 0 | 120 | 1% | N | | | 1% | | SB Winston Churchill, EB Royal Windsor |
| 3636 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 13 | 0% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| 3639 | 103 | 16 | 253 | 34 | 134 | 102 | 261 | 903 | 9% | S | | | | 3% | NB Southdown |
| | | | | | | | | | | W | | 6% | | | EB Royal Windsor |
| 3640 | 13 | 0 | 38 | 0 | 39 | 0 | 0 | 90 | 1% | E | 1% | | | | WB Lakeshore |
| 3641 | 0 | 0 | 11 | 0 | 30 | 0 | 0 | 41 | 0% | E | 0% | | | | WB Lakeshore |
| 3642 | 6 | 25 | 10 | 0 | 0 | 0 | 0 | 41 | 0% | E | 0% | | | | WB Lakeshore |
| 3643 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 20 | 0% | E | 0% | | | | WB Lakeshore |
| 3644 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 0% | N | | | 0% | | SB Southdown |
| 3645 | 13 | 46 | 88 | 0 | 66 | 18 | 0 | 231 | 2% | N | | | 1% | | SB Southdown |
| | | | | | | | | | | E | 1% | | | | WB Lakeshore |
| 3646 | 0 | 0 | 40 | 0 | 57 | 5 | 0 | 102 | 1% | E | 1% | | | | WB Lakeshore |
| 3648 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 26 | 0% | E | 0% | | | | WB Lakeshore |
| 3649 | 0 | 0 | 0 | 5 | 18 | 14 | 0 | 37 | 0% | E | 0% | | | | WB Lakeshore |
| 3650 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | 64 | 1% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| | | | | | | | | | | N | | | 0% | | SB Southdown |
| 3651 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 15 | 0% | N | | | 0% | | SB Southdown |
| 3653 | 0 | 0 | 0 | 0 | 9 | 0 | 17 | 26 | 0% | E | 0% | | | | QEW, SB Southdown |
| 3654 | 19 | 0 | 0 | 0 | 0 | 0 | 33 | 52 | 1% | E | 1% | | | | QEW, SB Southdown |
| 3655 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0% | N | | | 0% | | SB Southdown |
| 3658 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 22 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3660 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0% | E | 0% | | | | QEW, SB Southdown |
| 3661 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 16 | 0% | E | 0% | | | | QEW, SB Southdown |
| 3662 | 19 | 12 | 24 | 0 | 25 | 0 | 0 | 80 | 1% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| | | | | | | | | | | N | | | 0% | | SB Southdown |
| 3663 | 0 | 0 | 0 | 35 | 0 | 0 | 0 | 35 | 0% | N | | | 0% | | SB Southdown |
| 3664 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0% | N | | | 0% | | SB Southdown |
| 3665 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 24 | 0% | E | 0% | | | | QEW, SB Southdown |
| 3666 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 23 | 0% | E | 0% | | | | QEW, SB Southdown |
| 3668 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0% | E | 0% | | | | QEW, SB Southdown |
| 3669 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0% | E | 0% | | | | QEW, SB Southdown |
| 3670 | 0 | 35 | 0 | 0 | 0 | 11 | 0 | 46 | 0% | E | 0% | | | | QEW, SB Southdown |
| 3671 | 150 | 0 | 68 | 0 | 0 | 0 | 23 | 241 | 2% | E | 2% | | | | Hwy 403, SB Southdown |
| 3678 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0% | N | | | 0% | | SB Southdown |
| 3680 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 42 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3683 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| | | | | | | | | | | N | | | 0% | | SB Southdown |
| 3692 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3693 | 142 | 0 | 32 | 0 | 0 | 0 | 0 | 174 | 2% | E | 2% | | | | Hwy 403, SB Southdown |
| 3695 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 9 | 0% | N | | | 0% | | SB Southdown |
| 3699 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 13 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3701 | 201 | 0 | 0 | 11 | 0 | 0 | 21 | 233 | 2% | E | 2% | | | | Hwy 403, SB Southdown |
| 3702 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3703 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3705 | 0 | 0 | 0 | 59 | 0 | 0 | 0 | 59 | 1% | E | 1% | | | | Hwy 403, SB Southdown |
| 3706 | 44 | 0 | 19 | 0 | 0 | 0 | 0 | 63 | 1% | E | 1% | | | | Hwy 403, SB Southdown |
| 3709 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3710 | 0 | 0 | 0 | 0 | 38 | 0 | 0 | 38 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3711 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3715 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 13 | 0% | N | | | 0% | | SB Southdown |
| 3717 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 1% | N | | | 1% | | SB Southdown |
| 3720 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 23 | 0% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| 3721 | 0 | 0 | 4 | 0 | 34 | 0 | 16 | 54 | 1% | N | | | 1% | | SB Winston Churchill, EB Royal Windsor |
| 3723 | 0 | 0 | 0 | 34 | 0 | 0 | 0 | 34 | 0% | E | 0% | | | | QEW, SB Southdown |
| 3809 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 18 | 0% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| 3811 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 18 | 0% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| 3812 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| 3813 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 29 | 0% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| 3816 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 25 | 0% | N | | | 0% | | Hwy 427, QEW, SB Southdown |
| 3821 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 21 | 0% | N | | | 0% | | SB Southdown |
| 3822 | 0 | 0 | 24 | 0 | 22 | 0 | 0 | 46 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3825 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 43 | 0% | N | | | 0% | | SB Southdown |
| 3829 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 29 | 0% | N | | | 0% | | Hwy 427, QEW, SB Southdown |
| 3831 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3834 | 49 | 0 | 2 | 0 | 0 | 0 | 0 | 51 | 1% | E | 1% | | | | Hwy 403, SB Southdown |
| 3835 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3838 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 19 | 0% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| | | | | | | | | | | N | | | 0% | | SB Southdown |
| 3847 | 0 | 0 | 38 | 0 | 0 | 49 | 0 | 87 | 1% | E | 1% | | | | Hwy 403, SB Southdown |
| 3848 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 21 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3849 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3850 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 20 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3851 | 15 | 0 | 29 | 0 | 7 | 0 | 0 | 51 | 1% | E | 1% | | | | Hwy 403, SB Southdown |
| 3853 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3854 | 0 | 0 | 0 | 9 | 0 | 0 | 16 | 25 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3866 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0% | E | 0% | | | | Hwy 403, SB Southdown |
| 3867 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0% | E | 0% | | | | QEW, SB Southdown |
| 3868 | 31 | 14 | 0 | 18 | 18 | 7 | 0 | 88 | 1% | N | | | 1% | | SB Southdown |
| 3869 | 0 | 0 | 9 | 40 | 14 | 0 | 0 | 63 | 1% | N | | | 1% | | SB Southdown |
| 3870 | 77 | 0 | 0 | 11 | 0 | 0 | 0 | 88 | 1% | N | | | 1% | | SB Southdown |
| 3876 | 0 | 0 | 0 | 0 | 20 | 0 | 4 | 24 | 0% | E | 0% | | | | WB Lakeshore |
| 3877 | 77 | 6 | 35 | 0 | 0 | 0 | 37 | 155 | 2% | E | 2% | | | | WB Lakeshore |
| 3878 | 0 | 0 | 13 | 0 | 0 | 7 | 0 | 20 | 0% | E | 0% | | | | WB Lakeshore |
| 3879 | 0 | 0 | 50 | 0 | 12 | 0 | 0 | 62 | 1% | E | 1% | | | | WB Lakeshore |
| | | | | | | | | 9824 | 100% | TOTAL | 43% | 26% | 28% | 3% | 100% |

Pull for Mississauga only:

Mon Oct 03 2022 09:14:06 GMT-0400 (Eastern Daylight Time) - Run Time: 2778ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of destination - gta06_dest In 3614, 3623, 3639, 3640, 3644, 3645, 3879, 4023
and
Start time of trip - start_time In 1500-1900
and
Trip purpose of destination - purp_dest In H
and
Primary travel mode of trip - mode_prime In D, M
and
Planning district of origin - pd_orig In 36

Trip 2016
Table:

| | 3614 | 3623 | 3640 | 3644 | 3645 | 3879 | 4023 |
|---|---|---|---|---|---|---|---|
| 3601 | 13 | 0 | 9 | 10 | 0 | 0 | 0 |
| 3602 | 0 | 0 | 12 | 0 | 0 | 0 | 0 |
| 3604 | 27 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3605 | 0 | 0 | 0 | 20 | 0 | 0 | 43 |
| 3607 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 3609 | 10 | 0 | 0 | 37 | 0 | 0 | 0 |
| 3611 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 3612 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| 3613 | 0 | 0 | 16 | 0 | 0 | 0 | 0 |
| 3614 | 190 | 14 | 77 | 61 | 44 | 71 | 0 |
| 3615 | 0 | 0 | 0 | 0 | 19 | 0 | 0 |
| 3618 | 0 | 0 | 0 | 0 | 0 | 33 | 29 |
| 3621 | 0 | 0 | 30 | 0 | 0 | 0 | 0 |
| 3623 | 0 | 54 | 33 | 0 | 30 | 0 | 0 |
| 3631 | 19 | 0 | 13 | 0 | 0 | 0 | 0 |
| 3632 | 24 | 0 | 15 | 23 | 0 | 0 | 0 |
| 3633 | 0 | 56 | 18 | 0 | 0 | 0 | 140 |
| 3634 | 0 | 0 | 18 | 0 | 22 | 9 | 21 |
| 3635 | 85 | 5 | 19 | 11 | 0 | 0 | 0 |
| 3636 | 0 | 0 | 13 | 0 | 0 | 0 | 0 |
| 3639 | 103 | 16 | 253 | 34 | 134 | 102 | 261 |
| 3640 | 13 | 0 | 38 | 0 | 39 | 0 | 0 |
| 3641 | 0 | 0 | 11 | 0 | 30 | 0 | 0 |
| 3642 | 6 | 25 | 10 | 0 | 0 | 0 | 0 |
| 3643 | 0 | 0 | 0 | 0 | 0 | 20 | 0 |
| 3644 | 48 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3645 | 13 | 46 | 88 | 0 | 66 | 18 | 0 |
| 3646 | 0 | 0 | 40 | 0 | 57 | 5 | 0 |
| 3648 | 0 | 0 | 26 | 0 | 0 | 0 | 0 |
| 3649 | 0 | 0 | 0 | 5 | 18 | 14 | 0 |
| 3650 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 3651 | 0 | 0 | 15 | 0 | 0 | 0 | 0 |
| 3653 | 0 | 0 | 0 | 0 | 9 | 0 | 17 |
| 3654 | 19 | 0 | 0 | 0 | 0 | 0 | 33 |
| 3655 | 0 | 0 | 11 | 0 | 0 | 0 | 0 |
| 3658 | 0 | 0 | 22 | 0 | 0 | 0 | 0 |
| 3660 | 41 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3661 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 3662 | 19 | 12 | 24 | 0 | 25 | 0 | 0 |
| 3663 | 0 | 0 | 0 | 35 | 0 | 0 | 0 |
| 3664 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |
| 3665 | 0 | 0 | 0 | 0 | 24 | 0 | 0 |
| 3666 | 0 | 0 | 0 | 23 | 0 | 0 | 0 |
| 3668 | 0 | 0 | 10 | 0 | 0 | 0 | 0 |
| 3669 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| 3670 | 0 | 35 | 0 | 0 | 0 | 11 | 0 |
| 3671 | 150 | 0 | 68 | 0 | 0 | 0 | 23 |
| 3678 | 0 | 0 | 12 | 0 | 0 | 0 | 0 |
| 3680 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 3683 | 0 | 0 | 11 | 0 | 0 | 0 | 0 |
| 3692 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| 3693 | 142 | 0 | 32 | 0 | 0 | 0 | 0 |
| 3695 | 0 | 0 | 0 | 0 | 9 | 0 | 0 |
| 3699 | 0 | 0 | 0 | 0 | 13 | 0 | 0 |
| 3701 | 201 | 0 | 0 | 11 | 0 | 0 | 21 |
| 3702 | 0 | 0 | 9 | 0 | 0 | 0 | 0 |
| 3703 | 29 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3705 | 0 | 0 | 0 | 59 | 0 | 0 | 0 |
| 3706 | 44 | 0 | 19 | 0 | 0 | 0 | 0 |
| 3709 | 0 | 0 | 0 | 0 | 18 | 0 | 0 |
| 3710 | 0 | 0 | 0 | 0 | 38 | 0 | 0 |
| 3711 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| 3715 | 0 | 0 | 0 | 13 | 0 | 0 | 0 |
| 3717 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3720 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 3721 | 0 | 0 | 4 | 0 | 34 | 0 | 16 |
| 3723 | 0 | 0 | 0 | 34 | 0 | 0 | 0 |
| 3809 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 3811 | 0 | 0 | 18 | 0 | 0 | 0 | 0 |
| 3812 | 29 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3813 | 0 | 0 | 0 | 29 | 0 | 0 | 0 |
| 3816 | 0 | 0 | 25 | 0 | 0 | 0 | 0 |
| 3821 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 3822 | 0 | 0 | 24 | 0 | 22 | 0 | 0 |
| 3825 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 3829 | 0 | 0 | 0 | 29 | 0 | 0 | 0 |
| 3831 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 3834 | 49 | 0 | 2 | 0 | 0 | 0 | 0 |
| 3835 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| 3838 | 0 | 19 | 0 | 0 | 0 | 0 | 0 |
| 3847 | 0 | 0 | 38 | 0 | 0 | 49 | 0 |
| 3848 | 0 | 0 | 21 | 0 | 0 | 0 | 0 |
| 3849 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 3850 | 0 | 0 | 20 | 0 | 0 | 0 | 0 |
| 3851 | 15 | 0 | 29 | 0 | 7 | 0 | 0 |
| 3853 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| 3854 | 0 | 0 | 0 | 9 | 0 | 0 | 16 |
| 3866 | 0 | 0 | 0 | 0 | 7 | 0 | 0 |
| 3867 | 26 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3868 | 31 | 14 | 0 | 18 | 18 | 7 | 0 |
| 3869 | 0 | 0 | 9 | 40 | 14 | 0 | 0 |
| 3870 | 77 | 0 | 0 | 11 | 0 | 0 | 0 |
| 3876 | 0 | 0 | 0 | 0 | 20 | 0 | 4 |
| 3877 | 77 | 6 | 35 | 0 | 0 | 0 | 37 |
| 3878 | 0 | 0 | 13 | 0 | 0 | 7 | 0 |
| 3879 | 0 | 0 | 50 | 0 | 12 | 0 | 0 |

Mon Oct 03 2022 09:22:29 GMT-0400 (Eastern Daylight Time) - Run Time: 2854ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
(2006 GTA zone of origin - gta06_orig In 3614, 3623, 3639, 3640, 3644, 3645, 3879, 4023
and
Start time of trip - start_time In 600-1000
and
Trip purpose of origin - purp_orig In H
and
Primary travel mode of trip - mode_prime In D, M

Trip 2016
Table:

| Destination | Origin | | | | | | | Trips to Destination | Trip Distribution | | Trip Assignment | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3614 | 3623 | 3640 | 3644 | 3645 | 3879 | 4023 | | Distribution | Direction To | To East | To West | To North | To South | Assignment |
| PD 1 of Toronto | 14 | 31 | 102 | 0 | 38 | 6 | 50 | 241 | 2% | E | 2% | | | | NB Southdown, QEW |
| PD 2 of Toronto | 0 | 0 | 19 | 0 | 12 | 9 | 36 | 76 | 1% | E | 1% | | | | NB Southdown, QEW |
| PD 3 of Toronto | 71 | 0 | 45 | 0 | 21 | 0 | 0 | 137 | 1% | E | 1% | | | | NB Southdown, QEW, Hwy 427 |
| PD 5 of Toronto | 0 | 0 | 32 | 10 | 30 | 0 | 0 | 72 | 1% | E | 0% | | | | NB Southdown, QEW, Hwy 427, Hwy 401 |
| | | | | | | | | | | E | 0% | | | | NB Southdown, QEW, DVP |
| PD 6 of Toronto | 0 | 0 | 0 | 39 | 0 | 0 | 0 | 39 | 0% | E | 0% | | | | NB Southdown, QEW, DVP |
| PD 7 of Toronto | 44 | 49 | 108 | 0 | 30 | 20 | 9 | 260 | 3% | E | 1% | | | | NB Southdown, QEW |
| | | | | | | | | | | E | 1% | | | | EB Lakeshore |
| PD 8 of Toronto | 127 | 19 | 106 | 12 | 18 | 7 | 79 | 368 | 4% | E | 4% | | | | NB Southdown, QEW, Hwy 427 |
| PD 9 of Toronto | 38 | 29 | 0 | 35 | 0 | 0 | 11 | 113 | 1% | N | | | 1% | | NB Southdown, QEW, Hwy 427 |
| PD 10 of Toronto | 13 | 0 | 28 | 0 | 0 | 0 | 80 | 121 | 1% | E | 1% | | | | NB Southdown, QEW, Hwy 427, Hwy 401, Hwy 400 |
| PD 11 of Toronto | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0% | E | 0% | | | | NB Southdown, QEW, Hwy 427, Hwy 401 |
| PD 12 of Toronto | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 34 | 0% | E | 0% | | | | NB Southdown, QEW, Hwy 427, Hwy 401, Hwy 404 |
| PD 13 of Toronto | 0 | 0 | 0 | 69 | 0 | 16 | 0 | 85 | 1% | E | 0% | | | | NB Southdown, QEW, Hwy 427, Hwy 401 |
| | | | | | | | | | | E | 0% | | | | NB Southdown, QEW, DVP |
| Pickering | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 0% | E | 0% | | | | NB Southdown, QEW, Hwy 427, Hwy 401 |
| Oshawa | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0% | E | 0% | | | | NB Southdown, QEW, Hwy 427, Hwy 401 |
| Richmond Hill | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0% | E | 0% | | | | NB Southdown, QEW, Hwy 427, Hwy 401, Hwy 404 |
| Whitchurch-Stouffville | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 0% | E | 0% | | | | NB Southdown, QEW, Hwy 427, Hwy 401, Hwy 404 |
| Markham | 0 | 0 | 23 | 5 | 12 | 0 | 17 | 57 | 1% | E | 1% | | | | NB Southdown, QEW, Hwy 427, Hwy 401, Hwy 404 |
| Vaughan | 19 | 25 | 23 | 0 | 0 | 0 | 21 | 88 | 1% | E | 1% | | | | NB Southdown, QEW, Hwy 427, Hwy 401, Hwy 400 |
| Caledon | 0 | 0 | 0 | 22 | 22 | 0 | 0 | 44 | 0% | N | | | 0% | | NB Southdown, Hwy 403, Hwy 410 |
| Brampton | 0 | 11 | 35 | 0 | 100 | 109 | 23 | 278 | 3% | N | | | 3% | | NB Southdown, Hwy 403, Hwy 410 |
| Halton Hills | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 10 | 0% | W | | 0% | | | WB Royal Windsor, Hwy 403, Hwy 401 |
| Milton | 96 | 0 | 23 | 90 | 0 | 10 | 33 | 252 | 2% | W | | 2% | | | WB Royal Windsor, Hwy 403, Hwy 401 |
| Oakville | 265 | 0 | 166 | 176 | 106 | 68 | 817 | 1598 | 16% | W | | 16% | | | WB Royal Windsor, Hwy 403 |
| Burlington | 38 | 34 | 61 | 0 | 0 | 25 | 16 | 174 | 2% | W | | 2% | | | WB Royal Windsor, Hwy 403 |
| Flamborough | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 26 | 0% | W | | 0% | | | WB Royal Windsor, Hwy 403 |
| Hamilton | 0 | 57 | 31 | 0 | 29 | 0 | 71 | 188 | 2% | W | | 2% | | | WB Royal Windsor, Hwy 403 |
| Fort Erie | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 10 | 0% | W | | 0% | | | WB Royal Windsor, Hwy 403 |
| Waterloo | 17 | 5 | 0 | 0 | 0 | 0 | 13 | 35 | 0% | W | | 0% | | | WB Royal Windsor, Hwy 403, Hwy 401 |
| Wilmot | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 9 | 0% | W | | 0% | | | WB Royal Windsor, Hwy 403, Hwy 401 |
| City of Guelph | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0% | W | | 0% | | | WB Royal Windsor, Hwy 403, Hwy 401 |
| Erin | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0% | W | | 0% | | | WB Royal Windsor, Hwy 403, Hwy 401 |
| New Tecumseth | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 22 | 0% | N | | | 0% | | NB Southdown, QEW, Hwy 427 |
| Kawartha Lakes | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0% | E | 0% | | | | NB Southdown, QEW, Hwy 427, Hwy 401, Hwy 404 |
| 3601 | 0 | 0 | 17 | 10 | 32 | 13 | 0 | 72 | 1% | N | | | 0% | | WB Royal Windsor, NB Winston Churchill |
| | | | | | | | | | | N | | | 0% | | NB Southdown |
| 3602 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0% | N | | | 0% | | WB Royal Windsor, NB Winston Churchill |
| | | | | | | | | | | N | | | 0% | | NB Southdown |
| 3605 | 0 | 0 | 33 | 38 | 0 | 0 | 43 | 114 | 1% | E | 1% | | | | NB Southdown, Hwy 403 |
| 3609 | 10 | 0 | 0 | 62 | 0 | 0 | 0 | 72 | 1% | E | 1% | | | | NB Southdown, Hwy 403 |
| 3611 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 6 | 0% | N | | | 0% | | NB Southdown |
| 3612 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0% | N | | | 0% | | NB Southdown |
| 3613 | 0 | 6 | 34 | 0 | 0 | 0 | 0 | 40 | 0% | N | | | 0% | | NB Southdown |
| 3614 | 242 | 12 | 102 | 70 | 0 | 41 | 21 | 488 | 5% | N | | | 4% | | WB Royal Windsor, NB Winston Churchill |
| | | | | | | | | | | N | | | 1% | | NB Southdown |
| 3618 | 0 | 0 | 23 | 0 | 33 | 0 | 29 | 85 | 1% | N | | | 1% | | WB Royal Windsor, NB Winston Churchill |
| 3623 | 12 | 0 | 4 | 16 | 0 | 0 | 0 | 32 | 0% | N | | | 0% | | NB Southdown |
| 3627 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 12 | 0% | N | | | 0% | | NB Southdown, QEW, Hwy 427 |
| 3631 | 33 | 0 | 21 | 0 | 50 | 0 | 0 | 104 | 1% | N | | | 1% | | NB Southdown |
| 3632 | 24 | 0 | 35 | 0 | 0 | 0 | 0 | 59 | 1% | E | 1% | | | | NB Southdown, QEW |
| 3633 | 16 | 56 | 18 | 0 | 0 | 0 | 140 | 230 | 2% | N | | | 1% | | WB Royal Windsor, NB Winston Churchill |
| | | | | | | | | | | N | | | 1% | | NB Southdown |
| 3634 | 5 | 0 | 4 | 0 | 0 | 0 | 14 | 23 | 0% | N | | | 0% | | WB Royal Windsor, NB Winston Churchill |
| 3635 | 85 | 9 | 58 | 11 | 0 | 0 | 0 | 163 | 2% | N | | | 2% | | WB Royal Windsor, NB Winston Churchill |
| 3636 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 13 | 0% | N | | | 0% | | WB Royal Windsor, NB Winston Churchill |
| 3639 | 77 | 11 | 212 | 100 | 144 | 82 | 270 | 896 | 9% | S | | | | 3% | SB Southdown |
| | | | | | | | | | | W | | 6% | | | WB Royal Windsor |
| 3640 | 0 | 0 | 60 | 0 | 17 | 7 | 0 | 84 | 1% | E | 1% | | | | EB Lakeshore |
| 3641 | 0 | 0 | 9 | 0 | 0 | 15 | 0 | 24 | 0% | E | 0% | | | | EB Lakeshore |
| 3642 | 11 | 25 | 10 | 0 | 0 | 0 | 0 | 46 | 0% | E | 0% | | | | EB Lakeshore |
| 3643 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0% | E | 0% | | | | EB Lakeshore |
| 3644 | 57 | 19 | 0 | 0 | 0 | 7 | 13 | 96 | 1% | N | | | 1% | | NB Southdown |
| 3645 | 0 | 137 | 76 | 5 | 137 | 10 | 0 | 365 | 4% | N | | | 2% | | NB Southdown |
| | | | | | | | | | | E | 2% | | | | EB Lakeshore |
| 3646 | 0 | 0 | 28 | 0 | 49 | 49 | 0 | 126 | 1% | E | 1% | | | | EB Lakeshore |
| 3648 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 24 | 0% | E | 0% | | | | EB Lakeshore |
| 3649 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 18 | 0% | E | 0% | | | | EB Lakeshore |
| 3650 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 7 | 0% | N | | | 0% | | WB Royal Windsor, NB Winston Churchill |
| | | | | | | | | | | N | | | 0% | | NB Southdown |
| 3651 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 9 | 0% | N | | | 0% | | NB Southdown |
| 3652 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0% | E | 0% | | | | NB Southdown, QEW |
| 3653 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 9 | 0% | E | 0% | | | | NB Southdown, QEW |
| 3654 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 33 | 0% | E | 0% | | | | NB Southdown, QEW |
| 3655 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 17 | 0% | N | | | 0% | | NB Southdown |
| 3658 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 22 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3660 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 0% | E | 0% | | | | NB Southdown, QEW |
| 3661 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 16 | 0% | E | 0% | | | | NB Southdown, QEW |
| 3662 | 0 | 0 | 20 | 0 | 9 | 7 | 60 | 96 | 1% | N | | | 0% | | WB Royal Windsor, NB Winston Churchill |
| | | | | | | | | | | N | | | 0% | | NB Southdown |
| 3663 | 0 | 0 | 0 | 35 | 0 | 0 | 0 | 35 | 0% | N | | | 0% | | NB Southdown |
| 3664 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 0% | N | | | 0% | | NB Southdown |
| 3665 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 24 | 0% | E | 0% | | | | NB Southdown, QEW |
| 3666 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 23 | 0% | E | 0% | | | | NB Southdown, QEW |
| 3670 | 0 | 35 | 0 | 0 | 0 | 11 | 0 | 46 | 0% | E | 0% | | | | NB Southdown, QEW |
| 3671 | 0 | 0 | 0 | 0 | 0 | 4 | 47 | 51 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3677 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 7 | 0% | N | | | 0% | | NB Southdown |
| 3680 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 42 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3683 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0% | N | | | 0% | | WB Royal Windsor, NB Winston Churchill |
| | | | | | | | | | | N | | | 0% | | NB Southdown |
| 3688 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 10 | 0% | N | | | 0% | | NB Southdown |
| 3689 | 0 | 0 | 0 | 37 | 0 | 0 | 0 | 37 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3692 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3693 | 142 | 0 | 32 | 0 | 0 | 0 | 0 | 174 | 2% | E | 2% | | | | NB Southdown, Hwy 403 |
| 3694 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 23 | 0% | N | | | 0% | | NB Southdown |
| 3695 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 9 | 0% | N | | | 0% | | NB Southdown |
| 3699 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 13 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3701 | 201 | 0 | 0 | 11 | 0 | 0 | 21 | 233 | 2% | E | 2% | | | | NB Southdown, Hwy 403 |
| 3702 | 0 | 0 | 9 | 6 | 9 | 0 | 0 | 24 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3703 | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 1% | E | 1% | | | | NB Southdown, Hwy 403 |
| 3704 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 14 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3706 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 19 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3707 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 31 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3709 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 19 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3710 | 0 | 0 | 0 | 0 | 38 | 0 | 0 | 38 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3711 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3715 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 13 | 0% | N | | | 0% | | NB Southdown |
| 3717 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0% | N | | | 0% | | NB Southdown |
| 3720 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 23 | 0% | N | | | 0% | | WB Royal Windsor, NB Winston Churchill |
| 3721 | 13 | 0 | 0 | 0 | 52 | 0 | 26 | 91 | 1% | N | | | 1% | | WB Royal Windsor, NB Winston Churchill |
| 3723 | 0 | 0 | 0 | 34 | 0 | 0 | 0 | 34 | 0% | E | 0% | | | | NB Southdown, QEW |
| 3811 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 37 | 0% | N | | | 0% | | WB Royal Windsor, NB Winston Churchill |
| 3813 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 29 | 0% | N | | | 0% | | WB Royal Windsor, NB Winston Churchill |
| 3816 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 25 | 0% | N | | | 0% | | NB Southdown, QEW, Hwy 427 |
| 3821 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 21 | 0% | N | | | 0% | | NB Southdown |
| 3822 | 0 | 0 | 24 | 0 | 22 | 0 | 0 | 46 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3825 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 43 | 0% | N | | | 0% | | NB Southdown |
| 3829 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 29 | 0% | N | | | 0% | | NB Southdown, QEW, Hwy 427 |
| 3831 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3832 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3834 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3835 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3836 | 0 | 0 | 0 | 0 | 0 | 6 | 80 | 86 | 1% | N | | | 1% | | NB Southdown |
| 3838 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 19 | 0% | N | | | 0% | | WB Royal Windsor, NB Winston Churchill |
| | | | | | | | | | | N | | | 0% | | NB Southdown |
| 3842 | 0 | 0 | 0 | 59 | 0 | 0 | 0 | 59 | 1% | E | 1% | | | | NB Southdown, Hwy 403 |
| 3847 | 0 | 0 | 42 | 0 | 0 | 49 | 0 | 91 | 1% | E | 1% | | | | NB Southdown, Hwy 403 |
| 3848 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 21 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3849 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3851 | 0 | 0 | 13 | 23 | 0 | 0 | 0 | 36 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3853 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3854 | 0 | 0 | 0 | 9 | 0 | 0 | 16 | 25 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3858 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 13 | 0% | E | 0% | | | | NB Southdown, QEW |
| 3864 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3866 | 0 | 0 | 2 | 0 | 7 | 0 | 0 | 9 | 0% | E | 0% | | | | NB Southdown, Hwy 403 |
| 3868 | 31 | 0 | 10 | 48 | 18 | 4 | 0 | 111 | 1% | N | | | 1% | | NB Southdown |
| 3869 | 14 | 0 | 0 | 0 | 14 | 0 | 0 | 28 | 0% | N | | | 0% | | NB Southdown |
| 3870 | 30 | 0 | 12 | 64 | 22 | 11 | 0 | 139 | 1% | N | | | 1% | | NB Southdown |
| 3876 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 0% | E | 0% | | | | EB Lakeshore |
| 3877 | 116 | 0 | 0 | 0 | 0 | 10 | 0 | 126 | 1% | E | 1% | | | | EB Lakeshore |
| 3878 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 24 | 0% | E | 0% | | | | EB Lakeshore |
| 3879 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 54 | 1% | E | 1% | | | | EB Lakeshore |
| | | | | | | | | 10299 | 100% | TOTAL | 40% | 29% | 29% | 3% | 100% |

Pull for Mississauga only:

Mon Oct 03 2022 09:24:17 GMT-0400 (Eastern Daylight Time) - Run Time: 2964ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
(2006 GTA zone of origin - gta06_orig In 3614, 3623, 3639, 3640, 3644, 3645, 3879, 4023
and
Start time of trip - start_time In 600-1000
and
Trip purpose of origin - purp_orig In H
and
Primary travel mode of trip - mode_prime In D, M
and
Planning district of destination - pd_dest In 36

Trip 2016
Table:

| | 3614 | 3623 | 3640 | 3644 | 3645 | 3879 | 4023 |
|---|---|---|---|---|---|---|---|
| 3601 | 0 | 0 | 17 | 10 | 32 | 13 | 0 |
| 3602 | 0 | 0 | 12 | 0 | 0 | 0 | 0 |
| 3605 | 0 | 0 | 33 | 38 | 0 | 0 | 43 |
| 3609 | 10 | 0 | 0 | 62 | 0 | 0 | 0 |
| 3611 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 3612 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| 3613 | 0 | 6 | 34 | 0 | 0 | 0 | 0 |
| 3614 | 242 | 12 | 102 | 70 | 0 | 41 | 21 |
| 3618 | 0 | 0 | 23 | 0 | 33 | 0 | 29 |
| 3623 | 12 | 0 | 4 | 16 | 0 | 0 | 0 |
| 3627 | 0 | 0 | 12 | 0 | 0 | 0 | 0 |
| 3631 | 33 | 0 | 21 | 0 | 50 | 0 | 0 |
| 3632 | 24 | 0 | 35 | 0 | 0 | 0 | 0 |
| 3633 | 16 | 56 | 18 | 0 | 0 | 0 | 140 |
| 3634 | 5 | 0 | 4 | 0 | 0 | 0 | 14 |
| 3635 | 85 | 9 | 58 | 11 | 0 | 0 | 0 |
| 3636 | 0 | 0 | 13 | 0 | 0 | 0 | 0 |
| 3639 | 77 | 11 | 212 | 100 | 144 | 82 | 270 |
| 3640 | 0 | 0 | 60 | 0 | 17 | 7 | 0 |
| 3641 | 0 | 0 | 9 | 0 | 0 | 15 | 0 |
| 3642 | 11 | 25 | 10 | 0 | 0 | 0 | 0 |
| 3643 | 0 | 0 | 0 | 0 | 0 | 13 | 0 |
| 3644 | 57 | 19 | 0 | 0 | 0 | 7 | 13 |
| 3645 | 0 | 137 | 76 | 5 | 137 | 10 | 0 |
| 3646 | 0 | 0 | 28 | 0 | 49 | 49 | 0 |
| 3648 | 0 | 0 | 0 | 0 | 0 | 24 | 0 |
| 3649 | 0 | 0 | 0 | 0 | 18 | 0 | 0 |
| 3650 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 3651 | 0 | 0 | 0 | 0 | 9 | 0 | 0 |
| 3652 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| 3653 | 0 | 0 | 0 | 0 | 9 | 0 | 0 |
| 3654 | 0 | 0 | 0 | 0 | 0 | 0 | 33 |
| 3655 | 0 | 0 | 17 | 0 | 0 | 0 | 0 |
| 3658 | 0 | 0 | 22 | 0 | 0 | 0 | 0 |
| 3660 | 31 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3661 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 3662 | 0 | 0 | 20 | 0 | 9 | 7 | 60 |
| 3663 | 0 | 0 | 0 | 35 | 0 | 0 | 0 |
| 3664 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |
| 3665 | 0 | 0 | 0 | 0 | 24 | 0 | 0 |
| 3666 | 0 | 0 | 0 | 23 | 0 | 0 | 0 |
| 3670 | 0 | 35 | 0 | 0 | 0 | 11 | 0 |
| 3671 | 0 | 0 | 0 | 0 | 0 | 4 | 47 |
| 3677 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| 3680 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 3683 | 0 | 0 | 11 | 0 | 0 | 0 | 0 |
| 3688 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| 3689 | 0 | 0 | 0 | 37 | 0 | 0 | 0 |
| 3692 | 0 | 0 | 0 | 0 | 10 | 0 | 0 |
| 3693 | 142 | 0 | 32 | 0 | 0 | 0 | 0 |
| 3694 | 0 | 0 | 0 | 0 | 23 | 0 | 0 |
| 3695 | 0 | 0 | 0 | 0 | 9 | 0 | 0 |
| 3699 | 0 | 0 | 13 | 0 | 0 | 0 | 0 |
| 3701 | 201 | 0 | 0 | 11 | 0 | 0 | 21 |
| 3702 | 0 | 0 | 9 | 6 | 9 | 0 | 0 |
| 3703 | 55 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3704 | 0 | 0 | 0 | 0 | 14 | 0 | 0 |
| 3706 | 0 | 0 | 19 | 0 | 0 | 0 | 0 |
| 3707 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| 3709 | 0 | 0 | 19 | 0 | 0 | 0 | 0 |
| 3710 | 0 | 0 | 0 | 0 | 38 | 0 | 0 |
| 3711 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| 3715 | 0 | 0 | 0 | 13 | 0 | 0 | 0 |
| 3717 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3720 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| 3721 | 13 | 0 | 0 | 0 | 52 | 0 | 26 |
| 3723 | 0 | 0 | 0 | 34 | 0 | 0 | 0 |
| 3811 | 0 | 0 | 37 | 0 | 0 | 0 | 0 |
| 3813 | 0 | 0 | 0 | 29 | 0 | 0 | 0 |
| 3816 | 0 | 0 | 25 | 0 | 0 | 0 | 0 |
| 3821 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 3822 | 0 | 0 | 24 | 0 | 22 | 0 | 0 |
| 3825 | 0 | 0 | 0 | 0 | 0 | 0 | 43 |
| 3829 | 0 | 0 | 0 | 29 | 0 | 0 | 0 |
| 3831 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 3832 | 0 | 0 | 10 | 0 | 0 | 0 | 0 |
| 3834 | 49 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3835 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| 3836 | 0 | 0 | 0 | 0 | 0 | 6 | 80 |
| 3838 | 0 | 19 | 0 | 0 | 0 | 0 | 0 |
| 3842 | 0 | 0 | 0 | 59 | 0 | 0 | 0 |
| 3847 | 0 | 0 | 42 | 0 | 0 | 49 | 0 |
| 3848 | 0 | 0 | 21 | 0 | 0 | 0 | 0 |
| 3849 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 3851 | 0 | 0 | 13 | 23 | 0 | 0 | 0 |
| 3853 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| 3854 | 0 | 0 | 0 | 9 | 0 | 0 | 16 |
| 3858 | 0 | 0 | 13 | 0 | 0 | 0 | 0 |
| 3864 | 0 | 0 | 11 | 0 | 0 | 0 | 0 |
| 3866 | 0 | 0 | 2 | 0 | 7 | 0 | 0 |
| 3868 | 31 | 0 | 10 | 48 | 18 | 4 | 0 |
| 3869 | 14 | 0 | 0 | 0 | 14 | 0 | 0 |
| 3870 | 30 | 0 | 12 | 64 | 22 | 11 | 0 |
| 3876 | 0 | 0 | 0 | 0 | 20 | 0 | 0 |
| 3877 | 116 | 0 | 0 | 0 | 0 | 10 | 0 |
| 3878 | 0 | 0 | 0 | 0 | 24 | 0 | 0 |
| 3879 | 0 | 0 | 54 | 0 | 0 | 0 | 0 |

Mon Oct 03 2022 09:19:42 GMT-0400 (Eastern Daylight Time) - Run Time: 2862ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of destination - gta06_dest In 3614, 3623, 3639, 3640, 3644, 3645, 3879, 4023
and
Start time of trip - start_time In 1500-1900
and
Trip purpose of destination - purp_dest In M
and
Primary travel mode of trip - mode_prime In D, M

Trip 2016
Table:

| Origin | Destination | | | | | | | Trips from Origin | Trip Distribution | | Trip Assignment | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3614 | 3623 | 3639 | 3640 | 3645 | 3879 | 4023 | | Distribution | Direction From | From East | From West | From North | From South | Assignment |
| Brampton | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 1% | N | | | 1% | | Hwy 410, Hwy 403, SB Southdown |
| Oakville | 79 | 0 | 166 | 0 | 0 | 10 | 19 | 274 | 25% | W | | 25% | | | Hwy 403, SB Southdown |
| Burlington | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 39 | 4% | W | | 4% | | | Hwy 403, SB Southdown |
| Hamilton | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 16 | 1% | W | | 1% | | | Hwy 403, SB Southdown |
| St. Catharines | 0 | 0 | 0 | 0 | 37 | 0 | 0 | 37 | 3% | W | | 3% | | | Hwy 403, SB Southdown |
| 3603 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1% | E | 1% | | | | Hwy 403, SB Southdown |
| 3605 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 10 | 1% | E | 1% | | | | Hwy 403, SB Southdown |
| 3614 | 79 | 0 | 37 | 13 | 0 | 0 | 0 | 129 | 12% | N | | | 9% | | SB Winston Churchill, EB Royal Windsor |
| | | | | | | | | | | N | | | 2% | | SB Southdown |
| 3615 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0% | N | | | 0% | | SB Winston Churchill, EB Royal Windsor |
| 3623 | 14 | 0 | 7 | 0 | 0 | 0 | 0 | 21 | 2% | N | | | 2% | | SB Southdown |
| 3632 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 1% | E | 1% | | | | QEW, SB Southdown |
| 3634 | 35 | 9 | 0 | 0 | 0 | 0 | 0 | 44 | 4% | N | | | 4% | | SB Winston Churchill, EB Royal Windsor |
| 3639 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 | 2% | S | | | | 1% | NB Southdown |
| | | | | | | | | | | W | | 1% | | | EB Royal Windsor |
| 3640 | 34 | 0 | 8 | 0 | 0 | 0 | 0 | 42 | 4% | E | 4% | | | | WB Lakeshore |
| 3641 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 16 | 1% | E | 1% | | | | WB Lakeshore |
| 3642 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 13 | 1% | E | 1% | | | | WB Lakeshore |
| 3644 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 20 | 2% | N | | | 2% | | SB Southdown |
| 3645 | 34 | 0 | 47 | 0 | 0 | 0 | 0 | 81 | 7% | N | | | 4% | | SB Southdown |
| | | | | | | | | | | E | 4% | | | | WB Lakeshore |
| 3646 | 0 | 0 | 138 | 0 | 0 | 0 | 0 | 138 | 13% | E | 13% | | | | WB Lakeshore |
| 3661 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 3% | E | 3% | | | | QEW, SB Southdown |
| 3669 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 13 | 1% | E | 1% | | | | QEW, SB Southdown |
| 3684 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 10 | 1% | N | | | 1% | | SB Southdown |
| 3702 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 1% | E | 1% | | | | Hwy 403, SB Southdown |
| 3868 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 1% | N | | | 1% | | SB Southdown |
| 3870 | 0 | 0 | 22 | 0 | 0 | 0 | 15 | 37 | 3% | N | | | 3% | | SB Southdown |
| 3879 | 0 | 0 | 25 | 0 | 0 | 22 | 0 | 47 | 4% | E | 4% | | | | WB Lakeshore |
| | | | | | | | | 1100 | 100% | TOTAL | 35% | 35% | 30% | 1% | 100% |

Pull for Mississauga only:

Mon Oct 03 2022 09:18:41 GMT-0400 (Eastern Daylight Time) - Run Time: 2729ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of destination - gta06_dest In 3614, 3623, 3639, 3640, 3644, 3645, 3879, 4023
and
Start time of trip - start_time In 1500-1900
and
Trip purpose of destination - purp_dest In M
and
Primary travel mode of trip - m In M
and
Planning district of origin - pd_orig In 36

Trip 2016
Table:

| | 3614 | 3623 | 3639 | 3640 | 3645 | 3879 | 4023 |
|---|---|---|---|---|---|---|---|
| 3603 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3605 | 0 | 0 | 10 | 0 | 0 | 0 | 0 |
| 3614 | 79 | 0 | 37 | 13 | 0 | 0 | 0 |
| 3615 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 3623 | 14 | 0 | 7 | 0 | 0 | 0 | 0 |
| 3632 | 11 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3634 | 35 | 9 | 0 | 0 | 0 | 0 | 0 |
| 3639 | 0 | 0 | 0 | 0 | 0 | 22 | 0 |
| 3640 | 34 | 0 | 8 | 0 | 0 | 0 | 0 |
| 3641 | 0 | 0 | 0 | 0 | 0 | 16 | 0 |
| 3642 | 0 | 0 | 13 | 0 | 0 | 0 | 0 |
| 3644 | 0 | 0 | 0 | 0 | 20 | 0 | 0 |
| 3645 | 34 | 0 | 47 | 0 | 0 | 0 | 0 |
| 3646 | 0 | 0 | 138 | 0 | 0 | 0 | 0 |
| 3661 | 36 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3669 | 0 | 0 | 13 | 0 | 0 | 0 | 0 |
| 3684 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| 3702 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| 3868 | 0 | 0 | 9 | 0 | 0 | 0 | 0 |
| 3870 | 0 | 0 | 22 | 0 | 0 | 0 | 15 |
| 3879 | 0 | 0 | 25 | 0 | 0 | 22 | 0 |

Mon Oct 03 2022 09:35:36 GMT-0400 (Eastern Daylight Time) - Run Time: 2592ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
(2006 GTA zone of origin - gta06_orig In 3614, 3623, 3639, 3640, 3644, 3645, 3879, 4023
and
Start time of trip - start_time In 1500-1900
and
Trip purpose of origin - purp_orig In M
and
Primary travel mode of trip - mode_prime In D, M

Trip 2016
Table:

| Destination | Origin | | | | | | | Trips to Destination | Trip Distribution | | Trip Assignment | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3614 | 3623 | 3639 | 3640 | 3645 | 3879 | 4023 | | Distribution | Direction To | To East | To West | To North | To South | Assignment |
| PD 2 of Toronto | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 13 | 1% | E | 1% | | | | NB Southdown, QEW |
| PD 8 of Toronto | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 1% | E | 1% | | | | NB Southdown, QEW, Hwy 427 |
| Oakville | 0 | 0 | 110 | 0 | 0 | 0 | 18 | 128 | 12% | W | | 12% | | | WB Royal Windsor, Hwy 403 |
| Burlington | 0 | 0 | 33 | 0 | 0 | 41 | 0 | 74 | 7% | W | | 7% | | | WB Royal Windsor, Hwy 403 |
| 3614 | 111 | 0 | 32 | 13 | 20 | 0 | 0 | 176 | 16% | N | | | 13% | | WB Royal Windsor, NB Winston Churchill |
| | | | | | | | | | | N | | | 3% | | NB Southdown |
| 3623 | 14 | 0 | 6 | 0 | 0 | 0 | 0 | 20 | 2% | N | | | 2% | | NB Southdown |
| 3640 | 34 | 0 | 125 | 0 | 0 | 0 | 0 | 159 | 14% | E | 14% | | | | EB Lakeshore |
| 3641 | 0 | 0 | 42 | 0 | 0 | 16 | 0 | 58 | 5% | E | 5% | | | | EB Lakeshore |
| 3642 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 7 | 1% | E | 1% | | | | EB Lakeshore |
| 3644 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 6 | 1% | N | | | 1% | | NB Southdown |
| 3645 | 44 | 30 | 55 | 0 | 0 | 0 | 0 | 129 | 12% | N | | | 6% | | NB Southdown |
| | | | | | | | | | | E | 6% | | | | EB Lakeshore |
| 3646 | 0 | 9 | 20 | 0 | 0 | 35 | 0 | 64 | 6% | E | 6% | | | | EB Lakeshore |
| 3647 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 15 | 1% | E | 1% | | | | NB Southdown, QEW |
| 3650 | 35 | 0 | 0 | 0 | 0 | 0 | 15 | 50 | 4% | N | | | 2% | | WB Royal Windsor, NB Winston Churchill |
| | | | | | | | | | | N | | | 2% | | NB Southdown |
| 3657 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 34 | 3% | E | 3% | | | | NB Southdown, QEW |
| 3813 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 9 | 1% | N | | | 1% | | WB Royal Windsor, NB Winston Churchill |
| 3877 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 | 2% | E | 2% | | | | EB Lakeshore |
| 3879 | 71 | 0 | 42 | 0 | 0 | 26 | 0 | 139 | 13% | E | 13% | | | | EB Lakeshore |
| | | | | | | | | *1112* | *100%* | *TOTAL* | *53%* | *18%* | *29%* | *0%* | *100%* |

Pull for Mississauga only:

Mon Oct 03 2022 09:35:01 GMT-0400 (Eastern Daylight Time) - Run Time: 2693ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of origin - gta06_orig

Filters:
(2006 GTA zone of origin - gta06_orig In 3614, 3623, 3639, 3640, 3644, 3645, 3879, 4023
and
Start time of trip - start_time In 1500-1900
and
Trip purpose of origin - purp_orig In M
and
Primary travel mode of trip - mode_prime In D, M
and
Planning district of destination - pd_dest In 36

Trip 2016
Table:

| | 3614 | 3623 | 3639 | 3640 | 3645 | 3879 | 4023 |
|---|---|---|---|---|---|---|---|
| 3614 | 111 | 0 | 32 | 13 | 20 | 0 | 0 |
| 3623 | 14 | 0 | 6 | 0 | 0 | 0 | 0 |
| 3640 | 34 | 0 | 125 | 0 | 0 | 0 | 0 |
| 3641 | 0 | 0 | 42 | 0 | 0 | 16 | 0 |
| 3642 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |
| 3644 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| 3645 | 44 | 30 | 55 | 0 | 0 | 0 | 0 |
| 3646 | 0 | 9 | 20 | 0 | 0 | 35 | 0 |
| 3647 | 0 | 0 | 0 | 0 | 0 | 15 | 0 |
| 3650 | 35 | 0 | 0 | 0 | 0 | 0 | 15 |
| 3657 | 0 | 0 | 34 | 0 | 0 | 0 | 0 |
| 3813 | 0 | 0 | 9 | 0 | 0 | 0 | 0 |
| 3877 | 0 | 0 | 0 | 0 | 0 | 22 | 0 |
| 3879 | 71 | 0 | 42 | 0 | 0 | 26 | 0 |

# APPENDIX E

## Intersection Capacity Analysis Results

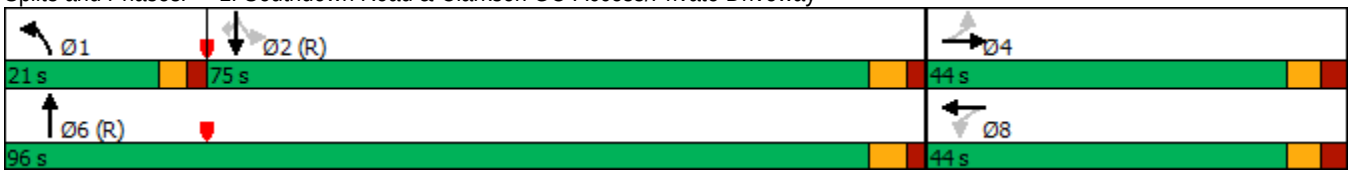
# *Existing Conditions*

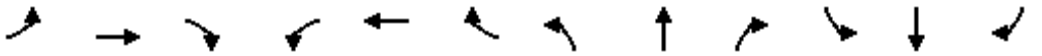
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 47 | 2 | 13 | 2 | 38 | 526 | 16 | 784 | 494 |
| Future Volume (vph) | 47 | 2 | 13 | 2 | 38 | 526 | 16 | 784 | 494 |
| Lane Group Flow (vph) | 49 | 54 | 14 | 42 | 40 | 557 | 17 | 825 | 520 |
| Turn Type | Perm | NA | Perm | NA | Prot | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | 1 | 6 | | 2 | |
| Permitted Phases | 4 | | 8 | | | | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 1 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 42.5 | 10.0 | 31.0 | 31.0 | 31.0 | 31.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 44.0 | 21.0 | 96.0 | 75.0 | 75.0 | 75.0 |
| Total Split (%) | 31.4% | 31.4% | 31.4% | 31.4% | 15.0% | 68.6% | 53.6% | 53.6% | 53.6% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 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) | 6.5 | 6.5 | 6.5 | 6.5 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| v/c Ratio | 0.47 | 0.32 | 0.13 | 0.27 | 0.37 | 0.21 | 0.03 | 0.32 | 0.44 |
| Control Delay | 75.4 | 20.8 | 61.2 | 21.9 | 67.1 | 3.2 | 6.4 | 6.7 | 1.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 75.4 | 20.8 | 61.2 | 21.9 | 67.1 | 3.2 | 6.4 | 6.7 | 1.8 |
| Queue Length 50th (m) | 14.0 | 0.6 | 3.9 | 0.6 | 11.7 | 11.7 | 1.2 | 39.2 | 0.0 |
| Queue Length 95th (m) | 27.3 | 14.2 | 11.2 | 12.5 | m23.2 | 33.1 | 4.2 | 60.7 | 11.2 |
| Internal Link Dist (m) | | 94.1 | | 46.6 | | 182.5 | | 333.7 | |
| Turn Bay Length (m) | | | 20.0 | | 75.0 | | 25.0 | | 85.0 |
| Base Capacity (vph) | 359 | 455 | 361 | 445 | 204 | 2710 | 609 | 2588 | 1194 |
| 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 | 0.14 | 0.12 | 0.04 | 0.09 | 0.20 | 0.21 | 0.03 | 0.32 | 0.44 |

**Intersection Summary**

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 83 (59%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Southdown Road & Clarkson GO Access/Private Driveway





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 47 | 2 | 49 | 13 | 2 | 38 | 38 | 526 | 3 | 16 | 784 | 494 |
| Future Volume (vph) | 47 | 2 | 49 | 13 | 2 | 38 | 38 | 526 | 3 | 16 | 784 | 494 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.98 | | 1.00 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.87 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | 1.00 |
| Frt | 1.00 | 0.86 | | 1.00 | 0.86 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1748 | 1557 | | 1777 | 1552 | | 1785 | 3146 | | 1675 | 3318 | 1385 |
| Flt Permitted | 0.73 | 1.00 | | 0.72 | 1.00 | | 0.95 | 1.00 | | 0.44 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1343 | 1557 | | 1350 | 1552 | | 1785 | 3146 | | 782 | 3318 | 1385 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 49 | 2 | 52 | 14 | 2 | 40 | 40 | 554 | 3 | 17 | 825 | 520 |
| RTOR Reduction (vph) | 0 | 49 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 127 |
| Lane Group Flow (vph) | 49 | 5 | 0 | 14 | 5 | 0 | 40 | 557 | 0 | 17 | 825 | 393 |
| Confl. Peds. (#/hr) | 1 | | 4 | 4 | | 1 | 41 | | 4 | 4 | | 41 |
| Heavy Vehicles (%) | 2% | 0% | 4% | 0% | 100% | 0% | 0% | 16% | 0% | 6% | 10% | 0% |
| Turn Type | Perm | NA | | Perm | NA | | Prot | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 1 | 6 | | | 2 | |
| Permitted Phases | 4 | | | 8 | | | | | | 2 | | 2 |
| Actuated Green, G (s) | 9.4 | 9.4 | | 9.4 | 9.4 | | 7.4 | 118.1 | | 105.7 | 105.7 | 105.7 |
| Effective Green, g (s) | 9.4 | 9.4 | | 9.4 | 9.4 | | 7.4 | 118.1 | | 105.7 | 105.7 | 105.7 |
| Actuated g/C Ratio | 0.07 | 0.07 | | 0.07 | 0.07 | | 0.05 | 0.84 | | 0.76 | 0.76 | 0.76 |
| Clearance Time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| 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) | 90 | 104 | | 90 | 104 | | 94 | 2653 | | 590 | 2505 | 1045 |
| v/s Ratio Prot | | 0.00 | | | 0.00 | | c0.02 | 0.18 | | | 0.25 | |
| v/s Ratio Perm | c0.04 | | | 0.01 | | | | | | 0.02 | | c0.28 |
| v/c Ratio | 0.54 | 0.05 | | 0.16 | 0.05 | | 0.43 | 0.21 | | 0.03 | 0.33 | 0.38 |
| Uniform Delay, d1 | 63.2 | 61.1 | | 61.6 | 61.1 | | 64.2 | 2.1 | | 4.3 | 5.6 | 5.9 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.93 | 1.30 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 6.6 | 0.2 | | 0.8 | 0.2 | | 2.9 | 0.2 | | 0.1 | 0.4 | 1.0 |
| Delay (s) | 69.8 | 61.3 | | 62.4 | 61.3 | | 62.9 | 2.9 | | 4.4 | 5.9 | 6.9 |
| Level of Service | E | E | | E | E | | E | A | | A | A | A |
| Approach Delay (s) | | 65.4 | | | 61.6 | | | 6.9 | | | 6.3 | |
| Approach LOS | | E | | | E | | | A | | | A | |

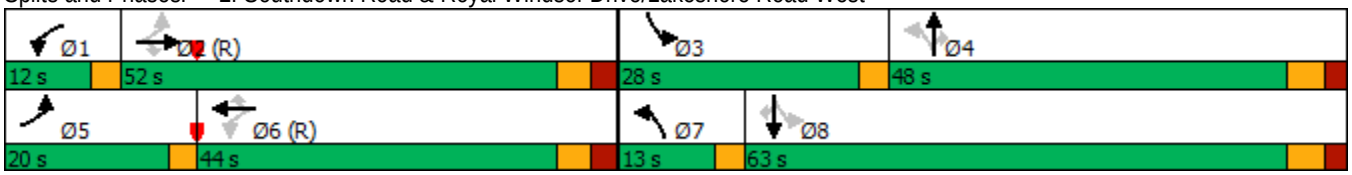
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 10.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.39 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 17.5 |
| Intersection Capacity Utilization | 60.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

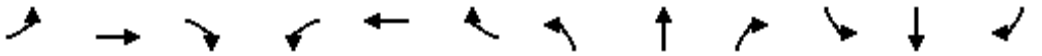
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 164 | 421 | 51 | 128 | 601 | 255 | 134 | 209 | 125 | 279 | 330 | 273 |
| Future Volume (vph) | 164 | 421 | 51 | 128 | 601 | 255 | 134 | 209 | 125 | 279 | 330 | 273 |
| Lane Group Flow (vph) | 171 | 439 | 53 | 133 | 626 | 266 | 140 | 218 | 130 | 291 | 344 | 284 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 7 | 4 | 4 | 3 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 |
| Minimum Split (s) | 9.5 | 39.5 | 39.5 | 9.5 | 39.5 | 39.5 | 9.5 | 37.5 | 37.5 | 9.5 | 37.5 | 37.5 |
| Total Split (s) | 20.0 | 52.0 | 52.0 | 12.0 | 44.0 | 44.0 | 13.0 | 48.0 | 48.0 | 28.0 | 63.0 | 63.0 |
| Total Split (%) | 14.3% | 37.1% | 37.1% | 8.6% | 31.4% | 31.4% | 9.3% | 34.3% | 34.3% | 20.0% | 45.0% | 45.0% |
| Yellow Time (s) | 3.0 | 3.5 | 3.5 | 3.0 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 2.5 | 2.5 | 0.0 | 2.5 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| v/c Ratio | 0.64 | 0.39 | 0.11 | 0.35 | 0.62 | 0.44 | 0.31 | 0.22 | 0.22 | 0.47 | 0.26 | 0.38 |
| Control Delay | 35.5 | 36.5 | 3.2 | 27.9 | 47.2 | 6.9 | 20.5 | 35.1 | 6.5 | 17.5 | 23.0 | 2.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 35.5 | 36.5 | 3.2 | 27.9 | 47.2 | 6.9 | 20.5 | 35.1 | 6.5 | 17.5 | 23.0 | 2.9 |
| Queue Length 50th (m) | 33.1 | 53.6 | 0.1 | 23.4 | 84.8 | 0.0 | 20.7 | 23.9 | 0.0 | 26.5 | 32.5 | 4.2 |
| Queue Length 95th (m) | 52.0 | 70.2 | 5.9 | 37.9 | 107.4 | 22.7 | 33.5 | 37.1 | 15.8 | 37.2 | 24.6 | 6.7 |
| Internal Link Dist (m) | | 119.5 | | | 189.3 | | | 142.3 | | | 182.5 | |
| Turn Bay Length (m) | 115.0 | | 20.0 | 70.0 | | 165.0 | 85.0 | | | 85.0 | | 50.0 |
| Base Capacity (vph) | 284 | 1123 | 494 | 379 | 1013 | 601 | 456 | 974 | 601 | 650 | 1312 | 744 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.60 | 0.39 | 0.11 | 0.35 | 0.62 | 0.44 | 0.31 | 0.22 | 0.22 | 0.45 | 0.26 | 0.38 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

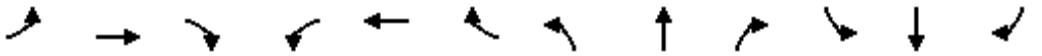
Splits and Phases: 2: Southdown Road & Royal Windsor Drive/Lakeshore Road West





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 164 | 421 | 51 | 128 | 601 | 255 | 134 | 209 | 125 | 279 | 330 | 273 |
| Future Volume (vph) | 164 | 421 | 51 | 128 | 601 | 255 | 134 | 209 | 125 | 279 | 330 | 273 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1439 | 3444 | 1317 | 1727 | 3579 | 1450 | 1642 | 2897 | 1532 | 1678 | 3230 | 1418 |
| Flt Permitted | 0.23 | 1.00 | 1.00 | 0.48 | 1.00 | 1.00 | 0.55 | 1.00 | 1.00 | 0.58 | 1.00 | 1.00 |
| Satd. Flow (perm) | 348 | 3444 | 1317 | 874 | 3579 | 1450 | 942 | 2897 | 1532 | 1022 | 3230 | 1418 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 171 | 439 | 53 | 133 | 626 | 266 | 140 | 218 | 130 | 291 | 344 | 284 |
| RTOR Reduction (vph) | 0 | 0 | 36 | 0 | 0 | 191 | 0 | 0 | 86 | 0 | 0 | 169 |
| Lane Group Flow (vph) | 171 | 439 | 17 | 133 | 626 | 75 | 140 | 218 | 44 | 291 | 344 | 115 |
| Confl. Peds. (#/hr) | 6 | | 12 | 12 | | 6 | 15 | | 7 | 7 | | 15 |
| Heavy Vehicles (%) | 24% | 6% | 18% | 3% | 2% | 8% | 8% | 26% | 2% | 6% | 13% | 9% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 57.5 | 45.7 | 45.7 | 48.4 | 39.6 | 39.6 | 56.7 | 47.1 | 47.1 | 69.5 | 56.9 | 56.9 |
| Effective Green, g (s) | 57.5 | 45.7 | 45.7 | 48.4 | 39.6 | 39.6 | 56.7 | 47.1 | 47.1 | 69.5 | 56.9 | 56.9 |
| Actuated g/C Ratio | 0.41 | 0.33 | 0.33 | 0.35 | 0.28 | 0.28 | 0.41 | 0.34 | 0.34 | 0.50 | 0.41 | 0.41 |
| Clearance Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 259 | 1124 | 429 | 355 | 1012 | 410 | 429 | 974 | 515 | 598 | 1312 | 576 |
| v/s Ratio Prot | c0.07 | 0.13 | | 0.02 | 0.17 | | 0.02 | 0.08 | | c0.07 | 0.11 | |
| v/s Ratio Perm | c0.20 | | 0.01 | 0.11 | | 0.05 | 0.11 | | 0.03 | c0.17 | | 0.08 |
| v/c Ratio | 0.66 | 0.39 | 0.04 | 0.37 | 0.62 | 0.18 | 0.33 | 0.22 | 0.08 | 0.49 | 0.26 | 0.20 |
| Uniform Delay, d1 | 29.4 | 36.4 | 32.2 | 32.5 | 43.6 | 38.0 | 27.1 | 33.3 | 31.7 | 21.5 | 27.6 | 26.8 |
| Progression Factor | 0.95 | 0.96 | 7.66 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.76 | 0.81 | 0.48 |
| Incremental Delay, d2 | 6.1 | 1.0 | 0.2 | 0.7 | 2.8 | 1.0 | 0.4 | 0.5 | 0.3 | 0.6 | 0.5 | 0.8 |
| Delay (s) | 33.9 | 36.1 | 246.8 | 33.1 | 46.5 | 39.0 | 27.5 | 33.9 | 32.1 | 17.0 | 22.7 | 13.7 |
| Level of Service | C | D | F | C | D | D | C | C | C | B | C | B |
| Approach Delay (s) | | 52.4 | | | 42.8 | | | 31.6 | | | 18.1 | |
| Approach LOS | | D | | | D | | | C | | | B | |

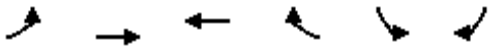
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 35.8 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.59 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 95.4% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 63 | 615 | 5 | 0 | 957 | 51 | 0 | 0 | 14 | 1 | 0 | 23 |
| Future Volume (Veh/h) | 63 | 615 | 5 | 0 | 957 | 51 | 0 | 0 | 14 | 1 | 0 | 23 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 66 | 647 | 5 | 0 | 1007 | 54 | 0 | 0 | 15 | 1 | 0 | 24 |
| Pedestrians | | 1 | | | 4 | | | 4 | | | 7 | |
| Lane Width (m) | | 3.6 | | | 3.7 | | | 3.5 | | | 3.5 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 0 | | | 0 | | | 0 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | TWLTL | | | None | | | | | | | |
| Median storage veh) | | 2 | | | | | | | | | | |
| Upstream signal (m) | | 283 | | | 144 | | | | | | | |
| pX, platoon unblocked | 0.88 | | | 0.98 | | | 0.89 | 0.89 | 0.98 | 0.89 | 0.89 | 0.88 |
| vC, conflicting volume | 1068 | | | 651 | | | 1144 | 1851 | 332 | 1500 | 1824 | 371 |
| vC1, stage 1 conf vol | | | | | | | 783 | 783 | | 1041 | 1041 | |
| vC2, stage 2 conf vol | | | | | | | 361 | 1068 | | 460 | 783 | |
| vCu, unblocked vol | 595 | | | 615 | | | 625 | 1423 | 291 | 1027 | 1392 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | 6.5 | 5.5 | | 6.5 | 5.5 | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 92 | | | 100 | | | 100 | 100 | 98 | 100 | 100 | 97 |
| cM capacity (veh/h) | 866 | | | 957 | | | 331 | 280 | 696 | 350 | 305 | 953 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|---|---|---|
| Volume Total | 282 | 431 | 5 | 403 | 403 | 255 | 15 | 1 | 24 |
| Volume Left | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Volume Right | 0 | 0 | 5 | 0 | 0 | 54 | 15 | 0 | 24 |
| cSH | 866 | 1700 | 1700 | 1700 | 1700 | 1700 | 696 | 350 | 953 |
| Volume to Capacity | 0.08 | 0.25 | 0.00 | 0.24 | 0.24 | 0.15 | 0.02 | 0.00 | 0.03 |
| Queue Length 95th (m) | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.1 | 0.6 |
| Control Delay (s) | 2.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.3 | 15.3 | 8.9 |
| Lane LOS | A | | | | | | B | C | A |
| Approach Delay (s) | 1.1 | | | 0.0 | | | 10.3 | 9.1 | |
| Approach LOS | | | | | | | B | A | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.7 | | | |
| Intersection Capacity Utilization | 51.8% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 673 | 980 | 0 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 673 | 980 | 0 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 748 | 1089 | 0 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (m) | | 213 | 214 | | | |
| pX, platoon unblocked | 0.90 | | | | 0.92 | 0.90 |
| vC, conflicting volume | 1089 | | | | 1463 | 363 |
| vC1, stage 1 conf vol | | | | | 1089 | |
| vC2, stage 2 conf vol | | | | | 374 | |
| vCu, unblocked vol | 719 | | | | 1023 | 0 |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | 5.8 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 804 | | | | 378 | 984 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 374 | 374 | 436 | 436 | 218 | 0 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 0 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.22 | 0.22 | 0.26 | 0.26 | 0.13 | 0.00 |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | | | | | | A |
| Approach Delay (s) | 0.0 | | 0.0 | | | 0.0 |
| Approach LOS | | | | | | A |

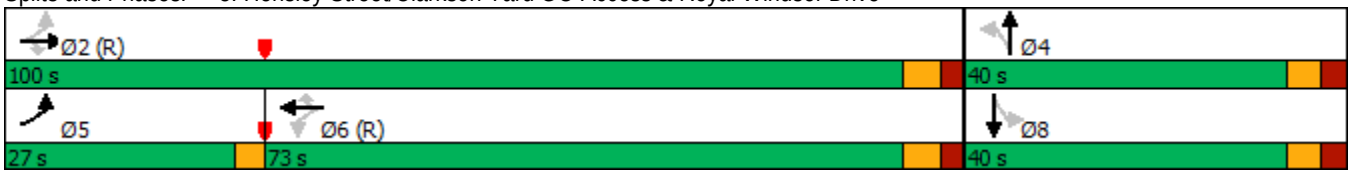
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 22.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

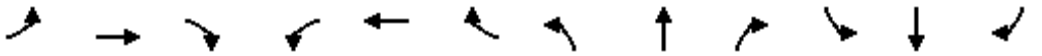
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 173 | 612 | 47 | 45 | 902 | 33 | 49 | 8 | 38 | 11 |
| Future Volume (vph) | 173 | 612 | 47 | 45 | 902 | 33 | 49 | 8 | 38 | 11 |
| Lane Group Flow (vph) | 194 | 688 | 53 | 51 | 1013 | 37 | 55 | 24 | 43 | 54 |
| Turn Type | pm+pt | NA | Perm | Perm | NA | Perm | Perm | NA | Perm | NA |
| Protected Phases | 5 | 2 | | | 6 | | | 4 | | 8 |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 8 | |
| Detector Phase | 5 | 2 | 2 | 6 | 6 | 6 | 4 | 4 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 9.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 39.5 | 39.5 | 39.5 | 39.5 |
| Total Split (s) | 27.0 | 100.0 | 100.0 | 73.0 | 73.0 | 73.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 19.3% | 71.4% | 71.4% | 52.1% | 52.1% | 52.1% | 28.6% | 28.6% | 28.6% | 28.6% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 0.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 3.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | None | C-Max | C-Max | C-Max | C-Max | C-Max | None | None | None | None |
| v/c Ratio | 0.40 | 0.22 | 0.04 | 0.09 | 0.36 | 0.03 | 0.50 | 0.16 | 0.38 | 0.31 |
| Control Delay | 4.2 | 2.7 | 1.0 | 4.8 | 4.8 | 0.8 | 76.2 | 34.4 | 69.6 | 26.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 4.2 | 2.7 | 1.0 | 4.8 | 4.8 | 0.8 | 76.2 | 34.4 | 69.6 | 26.8 |
| Queue Length 50th (m) | 7.1 | 17.8 | 0.3 | 2.3 | 33.8 | 0.1 | 15.7 | 2.5 | 12.1 | 3.3 |
| Queue Length 95th (m) | 14.1 | 27.8 | 2.9 | m6.7 | 57.6 | m0.9 | 29.5 | 11.6 | 24.4 | 16.3 |
| Internal Link Dist (m) | | 210.3 | | | 189.0 | | | 141.2 | | 146.2 |
| Turn Bay Length (m) | 95.0 | | 25.0 | 15.0 | | | | | | |
| Base Capacity (vph) | 640 | 3122 | 1338 | 561 | 2802 | 1182 | 322 | 422 | 330 | 432 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.30 | 0.22 | 0.04 | 0.09 | 0.36 | 0.03 | 0.17 | 0.06 | 0.13 | 0.13 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 136 (97%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Hensley Street/Clarkson Yard GO Access & Royal Windsor Drive





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 173 | 612 | 47 | 45 | 902 | 33 | 49 | 8 | 13 | 38 | 11 | 37 |
| Future Volume (vph) | 173 | 612 | 47 | 45 | 902 | 33 | 49 | 8 | 13 | 38 | 11 | 37 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 3.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.96 | 1.00 | 0.99 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | | 0.99 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.91 | | 1.00 | 0.88 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1783 | 3650 | 1557 | 1782 | 3650 | 1525 | 1774 | 1717 | | 1767 | 1673 | |
| Flt Permitted | 0.26 | 1.00 | 1.00 | 0.39 | 1.00 | 1.00 | 0.72 | 1.00 | | 0.74 | 1.00 | |
| Satd. Flow (perm) | 479 | 3650 | 1557 | 731 | 3650 | 1525 | 1348 | 1717 | | 1380 | 1673 | |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 194 | 688 | 53 | 51 | 1013 | 37 | 55 | 9 | 15 | 43 | 12 | 42 |
| RTOR Reduction (vph) | 0 | 0 | 8 | 0 | 0 | 9 | 0 | 14 | 0 | 0 | 39 | 0 |
| Lane Group Flow (vph) | 194 | 688 | 45 | 51 | 1013 | 28 | 55 | 10 | 0 | 43 | 15 | 0 |
| Confl. Peds. (#/hr) | 10 | | 2 | 2 | | 10 | 5 | | 8 | 8 | | 5 |
| Confl. Bikes (#/hr) | 1 | | | | | 1 | | | | | | |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | pm+pt | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | | 8 | | |
| Actuated Green, G (s) | 117.2 | 117.2 | 117.2 | 106.2 | 106.2 | 106.2 | 9.8 | 9.8 | | 9.8 | 9.8 | |
| Effective Green, g (s) | 117.2 | 117.2 | 117.2 | 106.2 | 106.2 | 106.2 | 9.8 | 9.8 | | 9.8 | 9.8 | |
| Actuated g/C Ratio | 0.84 | 0.84 | 0.84 | 0.76 | 0.76 | 0.76 | 0.07 | 0.07 | | 0.07 | 0.07 | |
| Clearance Time (s) | 3.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 475 | 3055 | 1303 | 554 | 2768 | 1156 | 94 | 120 | | 96 | 117 | |
| v/s Ratio Prot | c0.02 | 0.19 | | | 0.28 | | | 0.01 | | | 0.01 | |
| v/s Ratio Perm | c0.32 | | 0.03 | 0.07 | | 0.02 | c0.04 | | | 0.03 | | |
| v/c Ratio | 0.41 | 0.23 | 0.03 | 0.09 | 0.37 | 0.02 | 0.59 | 0.08 | | 0.45 | 0.13 | |
| Uniform Delay, d1 | 2.7 | 2.3 | 1.9 | 4.4 | 5.6 | 4.2 | 63.1 | 60.9 | | 62.5 | 61.1 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.78 | 0.72 | 0.82 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.6 | 0.2 | 0.0 | 0.3 | 0.3 | 0.0 | 9.0 | 0.3 | | 3.3 | 0.5 | |
| Delay (s) | 3.3 | 2.5 | 2.0 | 3.7 | 4.4 | 3.4 | 72.1 | 61.2 | | 65.8 | 61.6 | |
| Level of Service | A | A | A | A | A | A | E | E | | E | E | |
| Approach Delay (s) | | 2.6 | | | 4.3 | | | 68.8 | | | 63.5 | |
| Approach LOS | | A | | | A | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 8.5 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.43 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 62.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

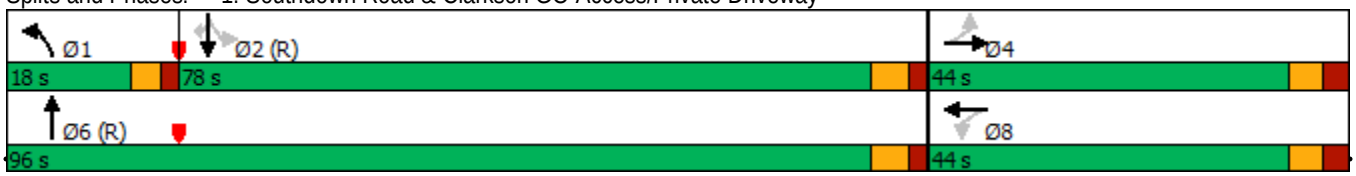
c Critical Lane Group

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 353 | 2 | 13 | 0 | 11 | 974 | 21 | 902 | 79 |
| Future Volume (vph) | 353 | 2 | 13 | 0 | 11 | 974 | 21 | 902 | 79 |
| Lane Group Flow (vph) | 380 | 147 | 14 | 9 | 12 | 1072 | 23 | 970 | 85 |
| Turn Type | Perm | NA | Perm | NA | Prot | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | 1 | 6 | | 2 | |
| Permitted Phases | 4 | | 8 | | | | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 1 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 42.5 | 10.0 | 31.0 | 31.0 | 31.0 | 31.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 44.0 | 18.0 | 96.0 | 78.0 | 78.0 | 78.0 |
| Total Split (%) | 31.4% | 31.4% | 31.4% | 31.4% | 12.9% | 68.6% | 55.7% | 55.7% | 55.7% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.5 | 6.5 | 6.5 | 6.5 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| v/c Ratio | 0.99 | 0.27 | 0.05 | 0.02 | 0.14 | 0.49 | 0.09 | 0.46 | 0.10 |
| Control Delay | 93.7 | 7.5 | 38.8 | 0.0 | 81.1 | 8.5 | 14.8 | 16.8 | 3.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 |
| Total Delay | 93.7 | 7.5 | 38.8 | 0.0 | 81.1 | 8.8 | 14.8 | 16.8 | 3.2 |
| Queue Length 50th (m) | 110.8 | 0.4 | 3.1 | 0.0 | 3.5 | 36.5 | 2.4 | 69.5 | 0.0 |
| Queue Length 95th (m) | #179.4 | 17.6 | 9.2 | 0.0 | m6.6 | m52.5 | 8.4 | 108.9 | 8.1 |
| Internal Link Dist (m) | | 94.1 | | 46.6 | | 182.5 | | 333.7 | |
| Turn Bay Length (m) | | | 20.0 | | 75.0 | | 25.0 | | 85.0 |
| Base Capacity (vph) | 384 | 535 | 285 | 523 | 165 | 2205 | 255 | 2090 | 842 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 467 | 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 | 0.99 | 0.27 | 0.05 | 0.02 | 0.07 | 0.62 | 0.09 | 0.46 | 0.10 |

## Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 118 (84%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
# 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: Southdown Road & Clarkson GO Access/Private Driveway



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 353 | 2 | 135 | 13 | 0 | 8 | 11 | 974 | 23 | 21 | 902 | 79 |
| Future Volume (vph) | 353 | 2 | 135 | 13 | 0 | 8 | 11 | 974 | 23 | 21 | 902 | 79 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.83 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | 1.00 |
| Frt | 1.00 | 0.85 | | 1.00 | 0.85 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1767 | 1601 | | 1639 | 1633 | | 1785 | 3428 | | 1685 | 3444 | 1333 |
| Flt Permitted | 0.75 | 1.00 | | 0.62 | 1.00 | | 0.95 | 1.00 | | 0.24 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1398 | 1601 | | 1065 | 1633 | | 1785 | 3428 | | 422 | 3444 | 1333 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 380 | 2 | 145 | 14 | 0 | 9 | 12 | 1047 | 25 | 23 | 970 | 85 |
| RTOR Reduction (vph) | 0 | 106 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 35 |
| Lane Group Flow (vph) | 380 | 41 | 0 | 14 | 2 | 0 | 12 | 1071 | 0 | 23 | 970 | 50 |
| Confl. Peds. (#/hr) | | | 9 | 9 | | | 53 | | 17 | 17 | | 53 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 8% | 0% | 0% | 0% | 6% | 4% | 5% | 6% | 0% |
| Turn Type | Perm | NA | | Perm | NA | | Prot | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 1 | 6 | | | 2 | |
| Permitted Phases | 4 | | | 8 | | | | | | 2 | | 2 |
| Actuated Green, G (s) | 37.5 | 37.5 | | 37.5 | 37.5 | | 3.0 | 90.0 | | 82.0 | 82.0 | 82.0 |
| Effective Green, g (s) | 38.5 | 37.5 | | 37.5 | 37.5 | | 3.0 | 90.0 | | 82.0 | 82.0 | 82.0 |
| Actuated g/C Ratio | 0.28 | 0.27 | | 0.27 | 0.27 | | 0.02 | 0.64 | | 0.59 | 0.59 | 0.59 |
| Clearance Time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| 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) | 384 | 428 | | 285 | 437 | | 38 | 2203 | | 247 | 2017 | 780 |
| v/s Ratio Prot | | 0.03 | | | 0.00 | | 0.01 | c0.31 | | | 0.28 | |
| v/s Ratio Perm | c0.27 | | | 0.01 | | | | | | 0.05 | | 0.04 |
| v/c Ratio | 0.99 | 0.10 | | 0.05 | 0.01 | | 0.32 | 0.49 | | 0.09 | 0.48 | 0.06 |
| Uniform Delay, d1 | 50.6 | 38.5 | | 38.0 | 37.6 | | 67.5 | 13.0 | | 12.7 | 16.7 | 12.5 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.23 | 0.60 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 42.7 | 0.1 | | 0.1 | 0.0 | | 3.7 | 0.6 | | 0.7 | 0.8 | 0.2 |
| Delay (s) | 93.2 | 38.6 | | 38.1 | 37.6 | | 86.6 | 8.4 | | 13.5 | 17.5 | 12.6 |
| Level of Service | F | D | | D | D | | F | A | | B | B | B |
| Approach Delay (s) | | 78.0 | | | 37.9 | | | 9.3 | | | 17.1 | |
| Approach LOS | | E | | | D | | | A | | | B | |

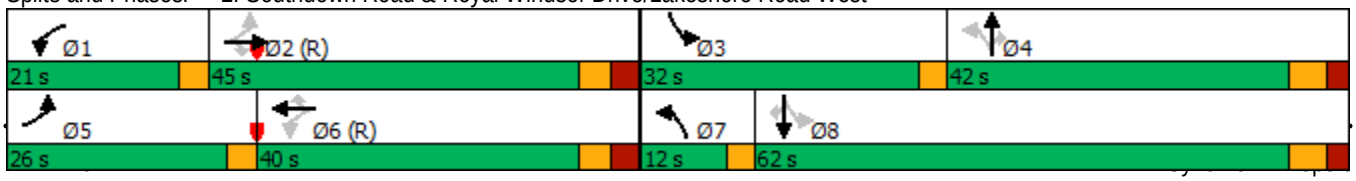
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 26.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.67 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 17.5 |
| Intersection Capacity Utilization | 65.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

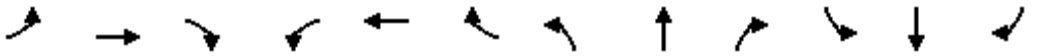
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 304 | 979 | 84 | 207 | 638 | 386 | 120 | 336 | 226 | 463 | 379 | 190 |
| Future Volume (vph) | 304 | 979 | 84 | 207 | 638 | 386 | 120 | 336 | 226 | 463 | 379 | 190 |
| Lane Group Flow (vph) | 320 | 1031 | 88 | 218 | 672 | 406 | 126 | 354 | 238 | 487 | 399 | 200 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 7 | 4 | 4 | 3 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 |
| Minimum Split (s) | 9.5 | 39.5 | 39.5 | 9.5 | 39.5 | 39.5 | 9.5 | 37.5 | 37.5 | 9.5 | 37.5 | 37.5 |
| Total Split (s) | 26.0 | 45.0 | 45.0 | 21.0 | 40.0 | 40.0 | 12.0 | 42.0 | 42.0 | 32.0 | 62.0 | 62.0 |
| Total Split (%) | 18.6% | 32.1% | 32.1% | 15.0% | 28.6% | 28.6% | 8.6% | 30.0% | 30.0% | 22.9% | 44.3% | 44.3% |
| Yellow Time (s) | 3.0 | 3.5 | 3.5 | 3.0 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 2.5 | 2.5 | 0.0 | 2.5 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| v/c Ratio | 0.94 | 0.99 | 0.19 | 0.83 | 0.78 | 0.60 | 0.38 | 0.39 | 0.41 | 0.82 | 0.29 | 0.29 |
| Control Delay | 70.0 | 63.8 | 3.3 | 58.4 | 56.8 | 7.9 | 24.8 | 44.2 | 7.1 | 52.9 | 30.4 | 8.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| Total Delay | 70.0 | 63.8 | 3.3 | 58.4 | 56.8 | 7.9 | 24.8 | 44.2 | 7.1 | 53.1 | 30.4 | 8.1 |
| Queue Length 50th (m) | 49.6 | ~171.0 | 4.0 | 43.0 | 97.2 | 0.0 | 19.2 | 45.4 | 0.0 | 85.1 | 28.7 | 0.1 |
| Queue Length 95th (m) | #124.2 | #209.6 | 3.4 | #80.6 | 120.9 | 29.2 | 31.8 | 61.1 | 21.7 | #145.9 | 50.4 | 22.3 |
| Internal Link Dist (m) | | 119.5 | | | 189.3 | | | 142.3 | | | 182.5 | |
| Turn Bay Length (m) | 115.0 | | 20.0 | 70.0 | | 165.0 | 85.0 | | | 85.0 | | 50.0 |
| Base Capacity (vph) | 345 | 1041 | 464 | 288 | 866 | 680 | 338 | 915 | 576 | 601 | 1357 | 679 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.93 | 0.99 | 0.19 | 0.76 | 0.78 | 0.60 | 0.37 | 0.39 | 0.41 | 0.82 | 0.29 | 0.29 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 38 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
~ 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.

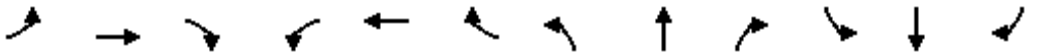
Splits and Phases: 2: Southdown Road & Royal Windsor Drive/Lakeshore Road West





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 304 | 979 | 84 | 207 | 638 | 386 | 120 | 336 | 226 | 463 | 379 | 190 |
| Future Volume (vph) | 304 | 979 | 84 | 207 | 638 | 386 | 120 | 336 | 226 | 463 | 379 | 190 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.96 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.97 | 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 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1637 | 3614 | 1373 | 1785 | 3579 | 1541 | 1533 | 3476 | 1522 | 1761 | 3411 | 1404 |
| Flt Permitted | 0.16 | 1.00 | 1.00 | 0.12 | 1.00 | 1.00 | 0.52 | 1.00 | 1.00 | 0.43 | 1.00 | 1.00 |
| Satd. Flow (perm) | 267 | 3614 | 1373 | 222 | 3579 | 1541 | 834 | 3476 | 1522 | 790 | 3411 | 1404 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 320 | 1031 | 88 | 218 | 672 | 406 | 126 | 354 | 238 | 487 | 399 | 200 |
| RTOR Reduction (vph) | 0 | 0 | 63 | 0 | 0 | 308 | 0 | 0 | 175 | 0 | 0 | 120 |
| Lane Group Flow (vph) | 320 | 1031 | 25 | 218 | 672 | 98 | 126 | 354 | 63 | 487 | 399 | 80 |
| Confl. Peds. (#/hr) | 3 | | 20 | 20 | | 3 | 9 | | 12 | 12 | | 9 |
| Heavy Vehicles (%) | 9% | 1% | 12% | 0% | 2% | 2% | 16% | 5% | 2% | 1% | 7% | 11% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 59.5 | 40.4 | 40.4 | 50.0 | 33.9 | 33.9 | 45.7 | 36.9 | 36.9 | 67.5 | 55.7 | 55.7 |
| Effective Green, g (s) | 59.5 | 40.4 | 40.4 | 50.0 | 33.9 | 33.9 | 45.7 | 36.9 | 36.9 | 67.5 | 55.7 | 55.7 |
| Actuated g/C Ratio | 0.42 | 0.29 | 0.29 | 0.36 | 0.24 | 0.24 | 0.33 | 0.26 | 0.26 | 0.48 | 0.40 | 0.40 |
| Clearance Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 334 | 1042 | 396 | 259 | 866 | 373 | 316 | 916 | 401 | 572 | 1357 | 558 |
| v/s Ratio Prot | c0.15 | c0.29 | | 0.10 | 0.19 | | 0.03 | 0.10 | | c0.17 | 0.12 | |
| v/s Ratio Perm | 0.25 | | 0.02 | 0.20 | | 0.06 | 0.10 | | 0.04 | c0.24 | | 0.06 |
| v/c Ratio | 0.96 | 0.99 | 0.06 | 0.84 | 0.78 | 0.26 | 0.40 | 0.39 | 0.16 | 0.85 | 0.29 | 0.14 |
| Uniform Delay, d1 | 36.4 | 49.6 | 36.1 | 36.6 | 49.5 | 42.9 | 34.6 | 42.3 | 39.6 | 26.5 | 28.7 | 26.9 |
| Progression Factor | 1.12 | 0.78 | 0.43 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.71 | 1.03 | 2.01 |
| Incremental Delay, d2 | 35.8 | 24.3 | 0.3 | 21.2 | 6.7 | 1.7 | 0.8 | 1.2 | 0.8 | 10.8 | 0.5 | 0.5 |
| Delay (s) | 76.8 | 62.7 | 15.6 | 57.8 | 56.3 | 44.7 | 35.4 | 43.5 | 40.4 | 56.0 | 30.2 | 54.6 |
| Level of Service | E | E | B | E | E | D | D | D | D | E | C | D |
| Approach Delay (s) | | 63.0 | | | 52.9 | | | 41.1 | | | 46.3 | |
| Approach LOS | | E | | | D | | | D | | | D | |

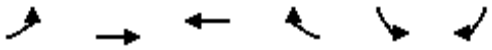
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 52.6 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.95 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 113.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 75 | 1269 | 8 | 0 | 919 | 30 | 0 | 0 | 80 | 18 | 0 | 45 |
| Future Volume (Veh/h) | 75 | 1269 | 8 | 0 | 919 | 30 | 0 | 0 | 80 | 18 | 0 | 45 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 85 | 1442 | 9 | 0 | 1044 | 34 | 0 | 0 | 91 | 20 | 0 | 51 |
| Pedestrians | | 9 | | | | | | 1 | | | 9 | |
| Lane Width (m) | | 3.6 | | | | | | 3.5 | | | 3.5 | |
| Walking Speed (m/s) | | 1.2 | | | | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | | | | 0 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | TWLTL | | | None | | | | | | | |
| Median storage veh) | | 2 | | | | | | | | | | |
| Upstream signal (m) | | 283 | | | 144 | | | | | | | |
| pX, platoon unblocked | 0.86 | | | 0.79 | | | 0.86 | 0.86 | 0.79 | 0.86 | 0.86 | 0.86 |
| vC, conflicting volume | 1087 | | | 1443 | | | 2021 | 2700 | 722 | 1961 | 2683 | 383 |
| vC1, stage 1 conf vol | | | | | | | 1613 | 1613 | | 1070 | 1070 | |
| vC2, stage 2 conf vol | | | | | | | 408 | 1087 | | 891 | 1613 | |
| vCu, unblocked vol | 511 | | | 1020 | | | 851 | 1642 | 103 | 781 | 1622 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | 6.5 | 5.5 | | 6.5 | 5.5 | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 91 | | | 100 | | | 100 | 100 | 88 | 94 | 100 | 94 |
| cM capacity (veh/h) | 904 | | | 541 | | | 132 | 166 | 737 | 348 | 169 | 920 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|---|---|---|
| Volume Total | 566 | 961 | 9 | 418 | 418 | 243 | 91 | 20 | 51 |
| Volume Left | 85 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 |
| Volume Right | 0 | 0 | 9 | 0 | 0 | 34 | 91 | 0 | 51 |
| cSH | 904 | 1700 | 1700 | 1700 | 1700 | 1700 | 737 | 348 | 920 |
| Volume to Capacity | 0.09 | 0.57 | 0.01 | 0.25 | 0.25 | 0.14 | 0.12 | 0.06 | 0.06 |
| Queue Length 95th (m) | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.4 | 1.5 | 1.4 |
| Control Delay (s) | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.6 | 16.0 | 9.1 |
| Lane LOS | A | | | | | | B | C | A |
| Approach Delay (s) | 0.9 | | | 0.0 | | | 10.6 | 11.1 | |
| Approach LOS | | | | | | | B | B | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.1 | | | |
| Intersection Capacity Utilization | 69.0% | ICU Level of Service | C | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 1352 | 964 | 0 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 1352 | 964 | 0 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 0 | 1423 | 1015 | 0 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (m) | | 213 | 214 | | | |
| pX, platoon unblocked | 0.90 | | | | 0.84 | 0.90 |
| vC, conflicting volume | 1015 | | | | 1726 | 338 |
| vC1, stage 1 conf vol | | | | | 1015 | |
| vC2, stage 2 conf vol | | | | | 712 | |
| vCu, unblocked vol | 611 | | | | 743 | 0 |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | 5.8 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 876 | | | | 432 | 978 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 712 | 712 | 406 | 406 | 203 | 0 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 0 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.42 | 0.42 | 0.24 | 0.24 | 0.12 | 0.00 |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | | | | | | A |
| Approach Delay (s) | 0.0 | | 0.0 | | | 0.0 |
| Approach LOS | | | | | | A |

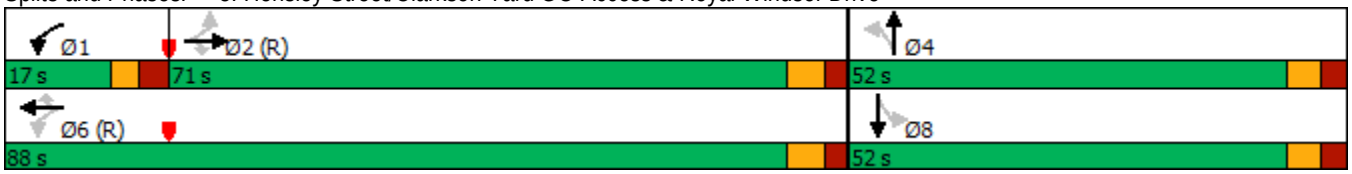
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 40.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

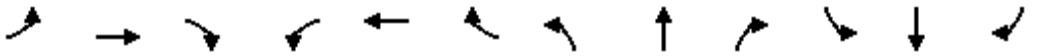
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 66 | 1188 | 191 | 132 | 809 | 23 | 178 | 18 | 63 | 10 |
| Future Volume (vph) | 66 | 1188 | 191 | 132 | 809 | 23 | 178 | 18 | 63 | 10 |
| Lane Group Flow (vph) | 68 | 1225 | 197 | 136 | 834 | 24 | 184 | 122 | 65 | 158 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA |
| Protected Phases | | 2 | | 1 | 6 | | | 4 | | 8 |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 8 | |
| Detector Phase | 2 | 2 | 2 | 1 | 6 | 6 | 4 | 4 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 34.5 | 34.5 | 34.5 | 11.0 | 34.5 | 34.5 | 39.5 | 39.5 | 39.5 | 39.5 |
| Total Split (s) | 71.0 | 71.0 | 71.0 | 17.0 | 88.0 | 88.0 | 52.0 | 52.0 | 52.0 | 52.0 |
| Total Split (%) | 50.7% | 50.7% | 50.7% | 12.1% | 62.9% | 62.9% | 37.1% | 37.1% | 37.1% | 37.1% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 2.5 | 2.5 | 2.5 | 3.0 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.5 | 6.5 | 6.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| Lead/Lag | Lag | Lag | Lag | Lead | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None |
| v/c Ratio | 0.18 | 0.56 | 0.21 | 0.45 | 0.32 | 0.02 | 0.89 | 0.30 | 0.28 | 0.36 |
| Control Delay | 17.3 | 19.9 | 10.1 | 26.2 | 20.9 | 12.8 | 93.5 | 12.5 | 48.0 | 9.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 17.3 | 19.9 | 10.1 | 26.2 | 20.9 | 12.8 | 93.5 | 12.5 | 48.0 | 9.7 |
| Queue Length 50th (m) | 8.4 | 106.9 | 14.7 | 25.8 | 75.2 | 1.4 | 52.7 | 4.5 | 16.3 | 2.4 |
| Queue Length 95th (m) | 22.2 | 166.4 | 35.9 | m40.9 | 104.6 | m4.1 | 76.4 | 20.3 | 28.1 | 20.0 |
| Internal Link Dist (m) | | 210.3 | | | 189.0 | | | 141.2 | | 146.2 |
| Turn Bay Length (m) | 95.0 | | 25.0 | 15.0 | | | | | | |
| Base Capacity (vph) | 376 | 2185 | 956 | 325 | 2587 | 1084 | 338 | 602 | 384 | 629 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 0.56 | 0.21 | 0.42 | 0.32 | 0.02 | 0.54 | 0.20 | 0.17 | 0.25 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 7 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Hensley Street/Clarkson Yard GO Access & Royal Windsor Drive





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 66 | 1188 | 191 | 132 | 809 | 23 | 178 | 18 | 100 | 63 | 10 | 144 |
| Future Volume (vph) | 66 | 1188 | 191 | 132 | 809 | 23 | 178 | 18 | 100 | 63 | 10 | 144 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 6.5 | 6.5 | 6.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 | 1.00 | 0.98 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.99 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.87 | | 1.00 | 0.86 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1768 | 3650 | 1548 | 1785 | 3650 | 1518 | 1783 | 1640 | | 1763 | 1631 | |
| Flt Permitted | 0.34 | 1.00 | 1.00 | 0.15 | 1.00 | 1.00 | 0.55 | 1.00 | | 0.64 | 1.00 | |
| Satd. Flow (perm) | 629 | 3650 | 1548 | 283 | 3650 | 1518 | 1041 | 1640 | | 1183 | 1631 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 68 | 1225 | 197 | 136 | 834 | 24 | 184 | 19 | 103 | 65 | 10 | 148 |
| RTOR Reduction (vph) | 0 | 0 | 30 | 0 | 0 | 7 | 0 | 83 | 0 | 0 | 119 | 0 |
| Lane Group Flow (vph) | 68 | 1225 | 167 | 136 | 834 | 17 | 184 | 39 | 0 | 65 | 39 | 0 |
| Confl. Peds. (#/hr) | 12 | | 4 | 4 | | 12 | 1 | | 12 | 12 | | 1 |
| Confl. Bikes (#/hr) | | | 2 | 2 | | | | | | | | |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | NA | Perm | pm+pt | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | | 8 | | |
| Actuated Green, G (s) | 83.9 | 83.9 | 83.9 | 99.3 | 99.3 | 99.3 | 27.7 | 27.7 | | 27.7 | 27.7 | |
| Effective Green, g (s) | 83.9 | 83.9 | 83.9 | 99.3 | 99.3 | 99.3 | 27.7 | 27.7 | | 27.7 | 27.7 | |
| Actuated g/C Ratio | 0.60 | 0.60 | 0.60 | 0.71 | 0.71 | 0.71 | 0.20 | 0.20 | | 0.20 | 0.20 | |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 376 | 2187 | 927 | 301 | 2588 | 1076 | 205 | 324 | | 234 | 322 | |
| v/s Ratio Prot | | c0.34 | | c0.03 | 0.23 | | | 0.02 | | | 0.02 | |
| v/s Ratio Perm | 0.11 | | 0.11 | 0.29 | | 0.01 | c0.18 | | | 0.05 | | |
| v/c Ratio | 0.18 | 0.56 | 0.18 | 0.45 | 0.32 | 0.02 | 0.90 | 0.12 | | 0.28 | 0.12 | |
| Uniform Delay, d1 | 12.6 | 16.9 | 12.6 | 11.4 | 7.7 | 6.0 | 54.8 | 46.2 | | 47.7 | 46.2 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 2.96 | 2.41 | 4.67 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 1.1 | 1.0 | 0.4 | 0.9 | 0.3 | 0.0 | 35.7 | 0.2 | | 0.6 | 0.2 | |
| Delay (s) | 13.7 | 18.0 | 13.0 | 34.6 | 18.7 | 27.9 | 90.5 | 46.3 | | 48.3 | 46.3 | |
| Level of Service | B | B | B | C | B | C | F | D | | D | D | |
| Approach Delay (s) | | 17.1 | | | 21.1 | | | 72.9 | | | 46.9 | |
| Approach LOS | | B | | | C | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 26.3 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.63 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 82.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

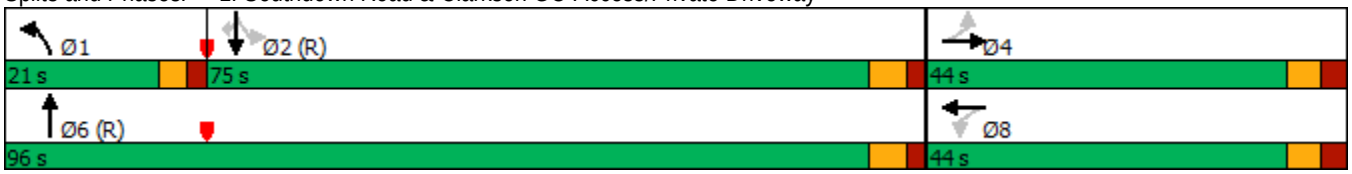
# *Future Background Conditions*

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 47 | 2 | 13 | 2 | 38 | 526 | 16 | 784 | 494 |
| Future Volume (vph) | 47 | 2 | 13 | 2 | 38 | 526 | 16 | 784 | 494 |
| Lane Group Flow (vph) | 49 | 54 | 14 | 42 | 40 | 557 | 17 | 825 | 520 |
| Turn Type | Perm | NA | Perm | NA | Prot | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | 1 | 6 | | 2 | |
| Permitted Phases | 4 | | 8 | | | | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 1 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 42.5 | 10.0 | 31.0 | 31.0 | 31.0 | 31.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 44.0 | 21.0 | 96.0 | 75.0 | 75.0 | 75.0 |
| Total Split (%) | 31.4% | 31.4% | 31.4% | 31.4% | 15.0% | 68.6% | 53.6% | 53.6% | 53.6% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 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) | 6.5 | 6.5 | 6.5 | 6.5 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| v/c Ratio | 0.47 | 0.32 | 0.13 | 0.27 | 0.37 | 0.21 | 0.03 | 0.32 | 0.44 |
| Control Delay | 75.4 | 20.8 | 61.2 | 21.9 | 66.9 | 3.1 | 6.4 | 6.7 | 1.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 75.4 | 20.8 | 61.2 | 21.9 | 66.9 | 3.1 | 6.4 | 6.7 | 1.8 |
| Queue Length 50th (m) | 14.0 | 0.6 | 3.9 | 0.6 | 11.7 | 11.6 | 1.2 | 39.2 | 0.0 |
| Queue Length 95th (m) | 27.3 | 14.2 | 11.2 | 12.5 | m23.0 | 32.8 | 4.2 | 60.7 | 11.2 |
| Internal Link Dist (m) | | 94.1 | | 46.6 | | 182.5 | | 333.7 | |
| Turn Bay Length (m) | | | 20.0 | | 75.0 | | 25.0 | | 85.0 |
| Base Capacity (vph) | 359 | 455 | 361 | 445 | 204 | 2710 | 609 | 2588 | 1194 |
| 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 | 0.14 | 0.12 | 0.04 | 0.09 | 0.20 | 0.21 | 0.03 | 0.32 | 0.44 |

**Intersection Summary**

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 83 (59%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Southdown Road & Clarkson GO Access/Private Driveway



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 47 | 2 | 49 | 13 | 2 | 38 | 38 | 526 | 3 | 16 | 784 | 494 |
| Future Volume (vph) | 47 | 2 | 49 | 13 | 2 | 38 | 38 | 526 | 3 | 16 | 784 | 494 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.98 | | 1.00 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.87 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | 1.00 |
| Frt | 1.00 | 0.86 | | 1.00 | 0.86 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1748 | 1557 | | 1777 | 1552 | | 1785 | 3146 | | 1675 | 3318 | 1385 |
| Flt Permitted | 0.73 | 1.00 | | 0.72 | 1.00 | | 0.95 | 1.00 | | 0.44 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1343 | 1557 | | 1350 | 1552 | | 1785 | 3146 | | 782 | 3318 | 1385 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 49 | 2 | 52 | 14 | 2 | 40 | 40 | 554 | 3 | 17 | 825 | 520 |
| RTOR Reduction (vph) | 0 | 49 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 127 |
| Lane Group Flow (vph) | 49 | 5 | 0 | 14 | 5 | 0 | 40 | 557 | 0 | 17 | 825 | 393 |
| Confl. Peds. (#/hr) | 1 | | 4 | 4 | | 1 | 41 | | 4 | 4 | | 41 |
| Heavy Vehicles (%) | 2% | 0% | 4% | 0% | 100% | 0% | 0% | 16% | 0% | 6% | 10% | 0% |
| Turn Type | Perm | NA | | Perm | NA | | Prot | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 1 | 6 | | | 2 | |
| Permitted Phases | 4 | | | 8 | | | | | | 2 | | 2 |
| Actuated Green, G (s) | 9.4 | 9.4 | | 9.4 | 9.4 | | 7.4 | 118.1 | | 105.7 | 105.7 | 105.7 |
| Effective Green, g (s) | 9.4 | 9.4 | | 9.4 | 9.4 | | 7.4 | 118.1 | | 105.7 | 105.7 | 105.7 |
| Actuated g/C Ratio | 0.07 | 0.07 | | 0.07 | 0.07 | | 0.05 | 0.84 | | 0.76 | 0.76 | 0.76 |
| Clearance Time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| 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) | 90 | 104 | | 90 | 104 | | 94 | 2653 | | 590 | 2505 | 1045 |
| v/s Ratio Prot | | 0.00 | | | 0.00 | | c0.02 | 0.18 | | | 0.25 | |
| v/s Ratio Perm | c0.04 | | | 0.01 | | | | | | 0.02 | | c0.28 |
| v/c Ratio | 0.54 | 0.05 | | 0.16 | 0.05 | | 0.43 | 0.21 | | 0.03 | 0.33 | 0.38 |
| Uniform Delay, d1 | 63.2 | 61.1 | | 61.6 | 61.1 | | 64.2 | 2.1 | | 4.3 | 5.6 | 5.9 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.93 | 1.29 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 6.6 | 0.2 | | 0.8 | 0.2 | | 2.8 | 0.2 | | 0.1 | 0.4 | 1.0 |
| Delay (s) | 69.8 | 61.3 | | 62.4 | 61.3 | | 62.8 | 2.9 | | 4.4 | 5.9 | 6.9 |
| Level of Service | E | E | | E | E | | E | A | | A | A | A |
| Approach Delay (s) | | 65.4 | | | 61.6 | | | 6.9 | | | 6.3 | |
| Approach LOS | | E | | | E | | | A | | | A | |

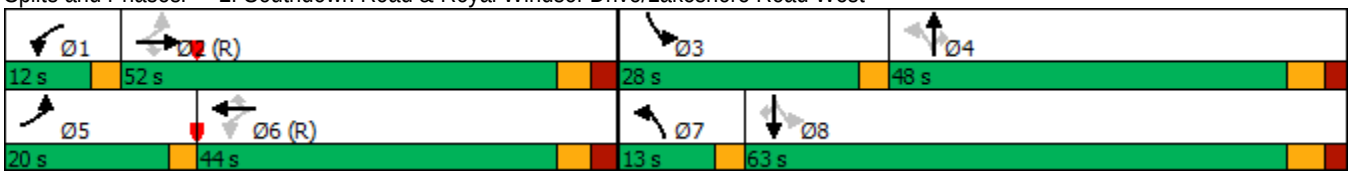
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 10.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.39 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 17.5 |
| Intersection Capacity Utilization | 60.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

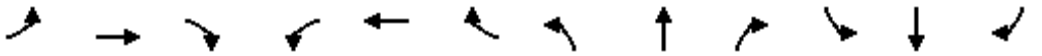
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 164 | 456 | 51 | 128 | 682 | 255 | 134 | 209 | 125 | 279 | 330 | 273 |
| Future Volume (vph) | 164 | 456 | 51 | 128 | 682 | 255 | 134 | 209 | 125 | 279 | 330 | 273 |
| Lane Group Flow (vph) | 171 | 475 | 53 | 133 | 710 | 266 | 140 | 218 | 130 | 291 | 344 | 284 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 7 | 4 | 4 | 3 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 |
| Minimum Split (s) | 9.5 | 39.5 | 39.5 | 9.5 | 39.5 | 39.5 | 9.5 | 37.5 | 37.5 | 9.5 | 37.5 | 37.5 |
| Total Split (s) | 20.0 | 52.0 | 52.0 | 12.0 | 44.0 | 44.0 | 13.0 | 48.0 | 48.0 | 28.0 | 63.0 | 63.0 |
| Total Split (%) | 14.3% | 37.1% | 37.1% | 8.6% | 31.4% | 31.4% | 9.3% | 34.3% | 34.3% | 20.0% | 45.0% | 45.0% |
| Yellow Time (s) | 3.0 | 3.5 | 3.5 | 3.0 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 2.5 | 2.5 | 0.0 | 2.5 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| v/c Ratio | 0.71 | 0.42 | 0.11 | 0.37 | 0.70 | 0.44 | 0.31 | 0.22 | 0.22 | 0.47 | 0.26 | 0.38 |
| Control Delay | 40.4 | 37.0 | 3.2 | 28.3 | 49.8 | 6.9 | 20.5 | 35.1 | 6.5 | 17.5 | 23.0 | 2.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 40.4 | 37.0 | 3.2 | 28.3 | 49.8 | 6.9 | 20.5 | 35.1 | 6.5 | 17.5 | 23.0 | 2.9 |
| Queue Length 50th (m) | 33.0 | 58.6 | 0.1 | 23.4 | 99.1 | 0.0 | 20.7 | 23.9 | 0.0 | 26.5 | 32.5 | 4.2 |
| Queue Length 95th (m) | 51.8 | 75.8 | 6.0 | 37.9 | 123.6 | 22.7 | 33.5 | 37.1 | 15.8 | 37.2 | 24.6 | 6.7 |
| Internal Link Dist (m) | | 119.5 | | | 189.3 | | | 142.3 | | | 182.5 | |
| Turn Bay Length (m) | 115.0 | | 20.0 | 70.0 | | 165.0 | 85.0 | | | 85.0 | | 50.0 |
| Base Capacity (vph) | 258 | 1123 | 494 | 361 | 1011 | 600 | 456 | 974 | 601 | 650 | 1312 | 744 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.66 | 0.42 | 0.11 | 0.37 | 0.70 | 0.44 | 0.31 | 0.22 | 0.22 | 0.45 | 0.26 | 0.38 |

**Intersection Summary**

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

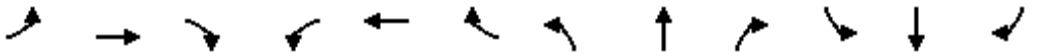
Splits and Phases: 2: Southdown Road & Royal Windsor Drive/Lakeshore Road West





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 164 | 456 | 51 | 128 | 682 | 255 | 134 | 209 | 125 | 279 | 330 | 273 |
| Future Volume (vph) | 164 | 456 | 51 | 128 | 682 | 255 | 134 | 209 | 125 | 279 | 330 | 273 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1439 | 3444 | 1317 | 1727 | 3579 | 1450 | 1642 | 2897 | 1532 | 1678 | 3230 | 1418 |
| Flt Permitted | 0.18 | 1.00 | 1.00 | 0.45 | 1.00 | 1.00 | 0.55 | 1.00 | 1.00 | 0.58 | 1.00 | 1.00 |
| Satd. Flow (perm) | 269 | 3444 | 1317 | 816 | 3579 | 1450 | 942 | 2897 | 1532 | 1022 | 3230 | 1418 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 171 | 475 | 53 | 133 | 710 | 266 | 140 | 218 | 130 | 291 | 344 | 284 |
| RTOR Reduction (vph) | 0 | 0 | 36 | 0 | 0 | 191 | 0 | 0 | 86 | 0 | 0 | 169 |
| Lane Group Flow (vph) | 171 | 475 | 17 | 133 | 710 | 75 | 140 | 218 | 44 | 291 | 344 | 115 |
| Confl. Peds. (#/hr) | 6 | | 12 | 12 | | 6 | 15 | | 7 | 7 | | 15 |
| Heavy Vehicles (%) | 24% | 6% | 18% | 3% | 2% | 8% | 8% | 26% | 2% | 6% | 13% | 9% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 57.5 | 45.7 | 45.7 | 48.4 | 39.6 | 39.6 | 56.7 | 47.1 | 47.1 | 69.5 | 56.9 | 56.9 |
| Effective Green, g (s) | 57.5 | 45.7 | 45.7 | 48.4 | 39.6 | 39.6 | 56.7 | 47.1 | 47.1 | 69.5 | 56.9 | 56.9 |
| Actuated g/C Ratio | 0.41 | 0.33 | 0.33 | 0.35 | 0.28 | 0.28 | 0.41 | 0.34 | 0.34 | 0.50 | 0.41 | 0.41 |
| Clearance Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 235 | 1124 | 429 | 339 | 1012 | 410 | 429 | 974 | 515 | 598 | 1312 | 576 |
| v/s Ratio Prot | c0.08 | 0.14 | | 0.02 | 0.20 | | 0.02 | 0.08 | | c0.07 | 0.11 | |
| v/s Ratio Perm | c0.22 | | 0.01 | 0.11 | | 0.05 | 0.11 | | 0.03 | c0.17 | | 0.08 |
| v/c Ratio | 0.73 | 0.42 | 0.04 | 0.39 | 0.70 | 0.18 | 0.33 | 0.22 | 0.08 | 0.49 | 0.26 | 0.20 |
| Uniform Delay, d1 | 30.2 | 36.8 | 32.2 | 32.5 | 44.9 | 38.0 | 27.1 | 33.3 | 31.7 | 21.5 | 27.6 | 26.8 |
| Progression Factor | 0.94 | 0.96 | 7.54 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.76 | 0.81 | 0.48 |
| Incremental Delay, d2 | 10.6 | 1.2 | 0.2 | 0.8 | 4.1 | 1.0 | 0.4 | 0.5 | 0.3 | 0.6 | 0.5 | 0.8 |
| Delay (s) | 39.1 | 36.6 | 242.8 | 33.2 | 49.0 | 39.0 | 27.5 | 33.9 | 32.1 | 17.0 | 22.7 | 13.7 |
| Level of Service | D | D | F | C | D | D | C | C | C | B | C | B |
| Approach Delay (s) | | 52.9 | | | 44.7 | | | 31.6 | | | 18.1 | |
| Approach LOS | | D | | | D | | | C | | | B | |

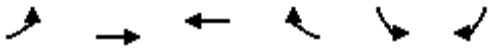
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 36.9 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.62 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 95.4% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 63 | 660 | 5 | 0 | 1066 | 51 | 0 | 0 | 14 | 1 | 0 | 23 |
| Future Volume (Veh/h) | 63 | 660 | 5 | 0 | 1066 | 51 | 0 | 0 | 14 | 1 | 0 | 23 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 66 | 695 | 5 | 0 | 1122 | 54 | 0 | 0 | 15 | 1 | 0 | 24 |
| Pedestrians | | 1 | | | 4 | | | 4 | | | 7 | |
| Lane Width (m) | | 3.6 | | | 3.7 | | | 3.5 | | | 3.5 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 0 | | | 0 | | | 0 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | TWLTL | | | None | | | | | | | |
| Median storage veh) | | 2 | | | | | | | | | | |
| Upstream signal (m) | | 283 | | | 144 | | | | | | | |
| pX, platoon unblocked | 0.85 | | | 0.98 | | | 0.86 | 0.86 | 0.98 | 0.86 | 0.86 | 0.85 |
| vC, conflicting volume | 1183 | | | 699 | | | 1230 | 2014 | 356 | 1640 | 1987 | 409 |
| vC1, stage 1 conf vol | | | | | | | 831 | 831 | | 1156 | 1156 | |
| vC2, stage 2 conf vol | | | | | | | 399 | 1183 | | 484 | 831 | |
| vCu, unblocked vol | 613 | | | 650 | | | 588 | 1496 | 300 | 1062 | 1464 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | 6.5 | 5.5 | | 6.5 | 5.5 | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 92 | | | 100 | | | 100 | 100 | 98 | 100 | 100 | 97 |
| cM capacity (veh/h) | 828 | | | 923 | | | 312 | 263 | 683 | 333 | 288 | 925 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|---|---|---|
| Volume Total | 298 | 463 | 5 | 449 | 449 | 278 | 15 | 1 | 24 |
| Volume Left | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Volume Right | 0 | 0 | 5 | 0 | 0 | 54 | 15 | 0 | 24 |
| cSH | 828 | 1700 | 1700 | 1700 | 1700 | 1700 | 683 | 333 | 925 |
| Volume to Capacity | 0.08 | 0.27 | 0.00 | 0.26 | 0.26 | 0.16 | 0.02 | 0.00 | 0.03 |
| Queue Length 95th (m) | 2.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.1 | 0.6 |
| Control Delay (s) | 2.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.4 | 15.8 | 9.0 |
| Lane LOS | A | | | | | | B | C | A |
| Approach Delay (s) | 1.1 | | | 0.0 | | | 10.4 | 9.3 | |
| Approach LOS | | | | | | | B | A | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.6 | | | |
| Intersection Capacity Utilization | 55.2% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 721 | 1091 | 0 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 721 | 1091 | 0 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 801 | 1212 | 0 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (m) | | 213 | 214 | | | |
| pX, platoon unblocked | 0.88 | | | | 0.89 | 0.88 |
| vC, conflicting volume | 1212 | | | | 1612 | 404 |
| vC1, stage 1 conf vol | | | | | 1212 | |
| vC2, stage 2 conf vol | | | | | 400 | |
| vCu, unblocked vol | 744 | | | | 1065 | 0 |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | 5.8 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 764 | | | | 356 | 955 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 400 | 400 | 485 | 485 | 242 | 0 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 0 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.24 | 0.24 | 0.29 | 0.29 | 0.14 | 0.00 |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | | | | | | A |
| Approach Delay (s) | 0.0 | | 0.0 | | | 0.0 |
| Approach LOS | | | | | | A |

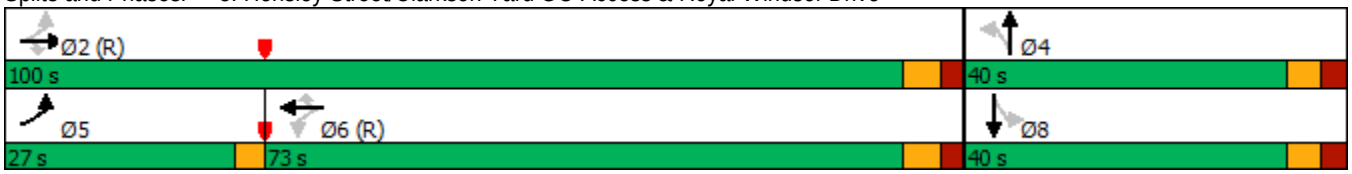
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 24.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

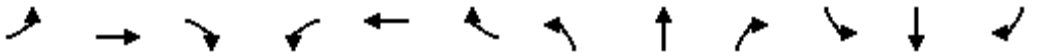
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 173 | 657 | 47 | 45 | 1007 | 33 | 49 | 8 | 38 | 11 |
| Future Volume (vph) | 173 | 657 | 47 | 45 | 1007 | 33 | 49 | 8 | 38 | 11 |
| Lane Group Flow (vph) | 194 | 738 | 53 | 51 | 1131 | 37 | 55 | 24 | 43 | 54 |
| Turn Type | pm+pt | NA | Perm | Perm | NA | Perm | Perm | NA | Perm | NA |
| Protected Phases | 5 | 2 | | | 6 | | | 4 | | 8 |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 8 | |
| Detector Phase | 5 | 2 | 2 | 6 | 6 | 6 | 4 | 4 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 9.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 39.5 | 39.5 | 39.5 | 39.5 |
| Total Split (s) | 27.0 | 100.0 | 100.0 | 73.0 | 73.0 | 73.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 19.3% | 71.4% | 71.4% | 52.1% | 52.1% | 52.1% | 28.6% | 28.6% | 28.6% | 28.6% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 0.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 3.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | None | C-Max | C-Max | C-Max | C-Max | C-Max | None | None | None | None |
| v/c Ratio | 0.44 | 0.24 | 0.04 | 0.10 | 0.41 | 0.03 | 0.50 | 0.16 | 0.38 | 0.31 |
| Control Delay | 5.0 | 2.8 | 1.0 | 6.4 | 6.2 | 1.8 | 76.2 | 34.4 | 69.6 | 26.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 5.0 | 2.8 | 1.0 | 6.4 | 6.2 | 1.8 | 76.2 | 34.4 | 69.6 | 26.8 |
| Queue Length 50th (m) | 7.1 | 19.6 | 0.4 | 2.3 | 38.3 | 0.0 | 15.7 | 2.5 | 12.1 | 3.3 |
| Queue Length 95th (m) | 14.1 | 30.3 | 3.1 | m7.9 | 78.9 | m1.3 | 29.5 | 11.6 | 24.4 | 16.3 |
| Internal Link Dist (m) | | 210.3 | | | 189.0 | | | 141.2 | | 146.2 |
| Turn Bay Length (m) | 95.0 | | 25.0 | 15.0 | | | | | | |
| Base Capacity (vph) | 596 | 3122 | 1338 | 531 | 2789 | 1177 | 322 | 422 | 330 | 432 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.33 | 0.24 | 0.04 | 0.10 | 0.41 | 0.03 | 0.17 | 0.06 | 0.13 | 0.13 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 136 (97%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Hensley Street/Clarkson Yard GO Access & Royal Windsor Drive





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 173 | 657 | 47 | 45 | 1007 | 33 | 49 | 8 | 13 | 38 | 11 | 37 |
| Future Volume (vph) | 173 | 657 | 47 | 45 | 1007 | 33 | 49 | 8 | 13 | 38 | 11 | 37 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 3.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.96 | 1.00 | 0.99 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | | 0.99 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.91 | | 1.00 | 0.88 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1784 | 3650 | 1557 | 1782 | 3650 | 1525 | 1774 | 1717 | | 1767 | 1673 | |
| Flt Permitted | 0.22 | 1.00 | 1.00 | 0.37 | 1.00 | 1.00 | 0.72 | 1.00 | | 0.74 | 1.00 | |
| Satd. Flow (perm) | 414 | 3650 | 1557 | 696 | 3650 | 1525 | 1348 | 1717 | | 1380 | 1673 | |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 194 | 738 | 53 | 51 | 1131 | 37 | 55 | 9 | 15 | 43 | 12 | 42 |
| RTOR Reduction (vph) | 0 | 0 | 7 | 0 | 0 | 9 | 0 | 14 | 0 | 0 | 39 | 0 |
| Lane Group Flow (vph) | 194 | 738 | 46 | 51 | 1131 | 28 | 55 | 10 | 0 | 43 | 15 | 0 |
| Confl. Peds. (#/hr) | 10 | | 2 | 2 | | 10 | 5 | | 8 | 8 | | 5 |
| Confl. Bikes (#/hr) | 1 | | | | | 1 | | | | | | |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | pm+pt | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | | 8 | | |
| Actuated Green, G (s) | 117.2 | 117.2 | 117.2 | 105.8 | 105.8 | 105.8 | 9.8 | 9.8 | | 9.8 | 9.8 | |
| Effective Green, g (s) | 117.2 | 117.2 | 117.2 | 105.8 | 105.8 | 105.8 | 9.8 | 9.8 | | 9.8 | 9.8 | |
| Actuated g/C Ratio | 0.84 | 0.84 | 0.84 | 0.76 | 0.76 | 0.76 | 0.07 | 0.07 | | 0.07 | 0.07 | |
| Clearance Time (s) | 3.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 428 | 3055 | 1303 | 525 | 2758 | 1152 | 94 | 120 | | 96 | 117 | |
| v/s Ratio Prot | c0.03 | 0.20 | | | 0.31 | | | 0.01 | | | 0.01 | |
| v/s Ratio Perm | c0.35 | | 0.03 | 0.07 | | 0.02 | c0.04 | | | 0.03 | | |
| v/c Ratio | 0.45 | 0.24 | 0.04 | 0.10 | 0.41 | 0.02 | 0.59 | 0.08 | | 0.45 | 0.13 | |
| Uniform Delay, d1 | 3.2 | 2.3 | 1.9 | 4.5 | 6.1 | 4.3 | 63.1 | 60.9 | | 62.5 | 61.1 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.99 | 0.86 | 1.64 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.8 | 0.2 | 0.1 | 0.3 | 0.4 | 0.0 | 9.0 | 0.3 | | 3.3 | 0.5 | |
| Delay (s) | 3.9 | 2.5 | 2.0 | 4.8 | 5.6 | 7.0 | 72.1 | 61.2 | | 65.8 | 61.6 | |
| Level of Service | A | A | A | A | A | A | E | E | | E | E | |
| Approach Delay (s) | | 2.8 | | | 5.6 | | | 68.8 | | | 63.5 | |
| Approach LOS | | A | | | A | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 8.9 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.47 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 65.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

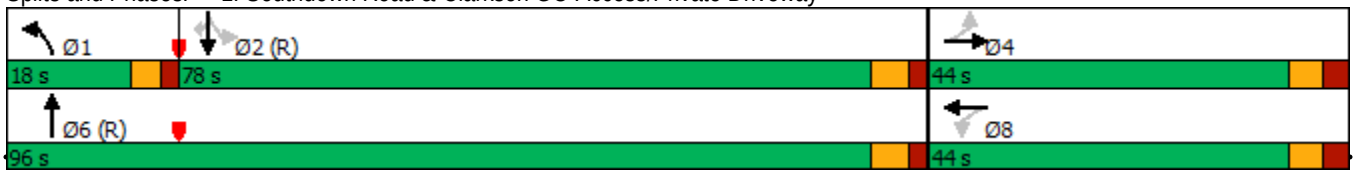
c Critical Lane Group

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 353 | 2 | 13 | 0 | 11 | 974 | 21 | 902 | 79 |
| Future Volume (vph) | 353 | 2 | 13 | 0 | 11 | 974 | 21 | 902 | 79 |
| Lane Group Flow (vph) | 380 | 147 | 14 | 9 | 12 | 1072 | 23 | 970 | 85 |
| Turn Type | Perm | NA | Perm | NA | Prot | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | 1 | 6 | | 2 | |
| Permitted Phases | 4 | | 8 | | | | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 1 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 42.5 | 10.0 | 31.0 | 31.0 | 31.0 | 31.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 44.0 | 18.0 | 96.0 | 78.0 | 78.0 | 78.0 |
| Total Split (%) | 31.4% | 31.4% | 31.4% | 31.4% | 12.9% | 68.6% | 55.7% | 55.7% | 55.7% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.5 | 6.5 | 6.5 | 6.5 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| v/c Ratio | 0.99 | 0.27 | 0.05 | 0.02 | 0.14 | 0.49 | 0.09 | 0.46 | 0.10 |
| Control Delay | 93.7 | 7.5 | 38.8 | 0.0 | 80.3 | 8.0 | 14.8 | 16.8 | 3.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 |
| Total Delay | 93.7 | 7.5 | 38.8 | 0.0 | 80.3 | 8.3 | 14.8 | 16.8 | 3.2 |
| Queue Length 50th (m) | 110.8 | 0.4 | 3.1 | 0.0 | 3.4 | 33.6 | 2.4 | 69.5 | 0.0 |
| Queue Length 95th (m) | #179.4 | 17.6 | 9.2 | 0.0 | m6.6 | m49.3 | 8.4 | 108.9 | 8.1 |
| Internal Link Dist (m) | | 94.1 | | 46.6 | | 182.5 | | 333.7 | |
| Turn Bay Length (m) | | | 20.0 | | 75.0 | | 25.0 | | 85.0 |
| Base Capacity (vph) | 384 | 535 | 285 | 523 | 165 | 2205 | 255 | 2090 | 842 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 468 | 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 | 0.99 | 0.27 | 0.05 | 0.02 | 0.07 | 0.62 | 0.09 | 0.46 | 0.10 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 118 (84%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
# 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: Southdown Road & Clarkson GO Access/Private Driveway



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 353 | 2 | 135 | 13 | 0 | 8 | 11 | 974 | 23 | 21 | 902 | 79 |
| Future Volume (vph) | 353 | 2 | 135 | 13 | 0 | 8 | 11 | 974 | 23 | 21 | 902 | 79 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.83 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | 1.00 |
| Frt | 1.00 | 0.85 | | 1.00 | 0.85 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1767 | 1601 | | 1639 | 1633 | | 1785 | 3428 | | 1685 | 3444 | 1333 |
| Flt Permitted | 0.75 | 1.00 | | 0.62 | 1.00 | | 0.95 | 1.00 | | 0.24 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1398 | 1601 | | 1065 | 1633 | | 1785 | 3428 | | 422 | 3444 | 1333 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 380 | 2 | 145 | 14 | 0 | 9 | 12 | 1047 | 25 | 23 | 970 | 85 |
| RTOR Reduction (vph) | 0 | 106 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 35 |
| Lane Group Flow (vph) | 380 | 41 | 0 | 14 | 2 | 0 | 12 | 1071 | 0 | 23 | 970 | 50 |
| Confl. Peds. (#/hr) | | | 9 | 9 | | | 53 | | 17 | 17 | | 53 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 8% | 0% | 0% | 0% | 6% | 4% | 5% | 6% | 0% |
| Turn Type | Perm | NA | | Perm | NA | | Prot | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 1 | 6 | | | 2 | |
| Permitted Phases | 4 | | | 8 | | | | | | 2 | | 2 |
| Actuated Green, G (s) | 37.5 | 37.5 | | 37.5 | 37.5 | | 3.0 | 90.0 | | 82.0 | 82.0 | 82.0 |
| Effective Green, g (s) | 38.5 | 37.5 | | 37.5 | 37.5 | | 3.0 | 90.0 | | 82.0 | 82.0 | 82.0 |
| Actuated g/C Ratio | 0.28 | 0.27 | | 0.27 | 0.27 | | 0.02 | 0.64 | | 0.59 | 0.59 | 0.59 |
| Clearance Time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| 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) | 384 | 428 | | 285 | 437 | | 38 | 2203 | | 247 | 2017 | 780 |
| v/s Ratio Prot | | 0.03 | | | 0.00 | | 0.01 | c0.31 | | | 0.28 | |
| v/s Ratio Perm | c0.27 | | | 0.01 | | | | | | 0.05 | | 0.04 |
| v/c Ratio | 0.99 | 0.10 | | 0.05 | 0.01 | | 0.32 | 0.49 | | 0.09 | 0.48 | 0.06 |
| Uniform Delay, d1 | 50.6 | 38.5 | | 38.0 | 37.6 | | 67.5 | 13.0 | | 12.7 | 16.7 | 12.5 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.22 | 0.57 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 42.7 | 0.1 | | 0.1 | 0.0 | | 3.6 | 0.6 | | 0.7 | 0.8 | 0.2 |
| Delay (s) | 93.2 | 38.6 | | 38.1 | 37.6 | | 85.8 | 8.0 | | 13.5 | 17.5 | 12.6 |
| Level of Service | F | D | | D | D | | F | A | | B | B | B |
| Approach Delay (s) | | 78.0 | | | 37.9 | | | 8.8 | | | 17.1 | |
| Approach LOS | | E | | | D | | | A | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 25.8 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.67 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 17.5 |
| Intersection Capacity Utilization | 65.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

## 2: Southdown Road & Royal Windsor Drive/Lakeshore Road West

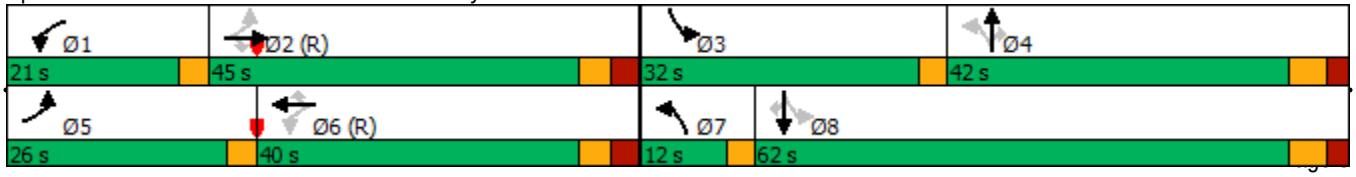
PM Peak Hour

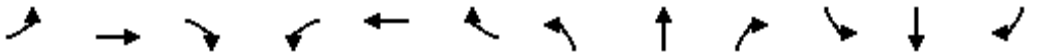
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 304 | 1096 | 84 | 207 | 682 | 386 | 120 | 336 | 226 | 463 | 379 | 190 |
| Future Volume (vph) | 304 | 1096 | 84 | 207 | 682 | 386 | 120 | 336 | 226 | 463 | 379 | 190 |
| Lane Group Flow (vph) | 320 | 1154 | 88 | 218 | 718 | 406 | 126 | 354 | 238 | 487 | 399 | 200 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 7 | 4 | 4 | 3 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 |
| Minimum Split (s) | 9.5 | 39.5 | 39.5 | 9.5 | 39.5 | 39.5 | 9.5 | 37.5 | 37.5 | 9.5 | 37.5 | 37.5 |
| Total Split (s) | 26.0 | 45.0 | 45.0 | 21.0 | 40.0 | 40.0 | 12.0 | 42.0 | 42.0 | 32.0 | 62.0 | 62.0 |
| Total Split (%) | 18.6% | 32.1% | 32.1% | 15.0% | 28.6% | 28.6% | 8.6% | 30.0% | 30.0% | 22.9% | 44.3% | 44.3% |
| Yellow Time (s) | 3.0 | 3.5 | 3.5 | 3.0 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 2.5 | 2.5 | 0.0 | 2.5 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| v/c Ratio | 0.98 | 1.11 | 0.19 | 0.83 | 0.84 | 0.60 | 0.38 | 0.39 | 0.41 | 0.82 | 0.29 | 0.29 |
| Control Delay | 85.3 | 98.6 | 5.1 | 58.0 | 60.6 | 8.0 | 24.8 | 44.2 | 7.1 | 52.9 | 30.4 | 8.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| Total Delay | 85.3 | 98.6 | 5.1 | 58.0 | 60.6 | 8.0 | 24.8 | 44.2 | 7.1 | 53.1 | 30.4 | 8.1 |
| Queue Length 50th (m) | 62.6 | ~210.5 | 2.9 | 42.7 | 105.6 | 0.0 | 19.2 | 45.4 | 0.0 | 85.1 | 28.7 | 0.1 |
| Queue Length 95th (m) | #136.1 | #249.6 | m7.1 | #80.1 | 130.6 | 29.2 | 31.8 | 61.1 | 21.7 | #145.9 | 50.4 | 22.3 |
| Internal Link Dist (m) | | 119.5 | | | 189.3 | | | 142.3 | | | 182.5 | |
| Turn Bay Length (m) | 115.0 | | 20.0 | 70.0 | | 165.0 | 85.0 | | | 85.0 | | 50.0 |
| Base Capacity (vph) | 328 | 1041 | 464 | 288 | 856 | 677 | 338 | 915 | 576 | 601 | 1357 | 679 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.98 | 1.11 | 0.19 | 0.76 | 0.84 | 0.60 | 0.37 | 0.39 | 0.41 | 0.82 | 0.29 | 0.29 |

### Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 38 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
~ 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.

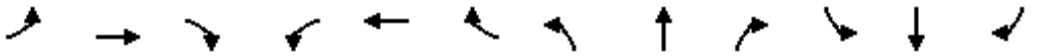
Splits and Phases: 2: Southdown Road & Royal Windsor Drive/Lakeshore Road West





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 304 | 1096 | 84 | 207 | 682 | 386 | 120 | 336 | 226 | 463 | 379 | 190 |
| Future Volume (vph) | 304 | 1096 | 84 | 207 | 682 | 386 | 120 | 336 | 226 | 463 | 379 | 190 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.96 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.97 | 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 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1637 | 3614 | 1373 | 1785 | 3579 | 1541 | 1533 | 3476 | 1522 | 1761 | 3411 | 1404 |
| Flt Permitted | 0.12 | 1.00 | 1.00 | 0.12 | 1.00 | 1.00 | 0.52 | 1.00 | 1.00 | 0.43 | 1.00 | 1.00 |
| Satd. Flow (perm) | 209 | 3614 | 1373 | 224 | 3579 | 1541 | 834 | 3476 | 1522 | 790 | 3411 | 1404 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 320 | 1154 | 88 | 218 | 718 | 406 | 126 | 354 | 238 | 487 | 399 | 200 |
| RTOR Reduction (vph) | 0 | 0 | 63 | 0 | 0 | 309 | 0 | 0 | 175 | 0 | 0 | 120 |
| Lane Group Flow (vph) | 320 | 1154 | 25 | 218 | 718 | 97 | 126 | 354 | 63 | 487 | 399 | 80 |
| Confl. Peds. (#/hr) | 3 | | 20 | 20 | | 3 | 9 | | 12 | 12 | | 9 |
| Heavy Vehicles (%) | 9% | 1% | 12% | 0% | 2% | 2% | 16% | 5% | 2% | 1% | 7% | 11% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 59.5 | 40.4 | 40.4 | 49.6 | 33.5 | 33.5 | 45.7 | 36.9 | 36.9 | 67.5 | 55.7 | 55.7 |
| Effective Green, g (s) | 59.5 | 40.4 | 40.4 | 49.6 | 33.5 | 33.5 | 45.7 | 36.9 | 36.9 | 67.5 | 55.7 | 55.7 |
| Actuated g/C Ratio | 0.42 | 0.29 | 0.29 | 0.35 | 0.24 | 0.24 | 0.33 | 0.26 | 0.26 | 0.48 | 0.40 | 0.40 |
| Clearance Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 323 | 1042 | 396 | 258 | 856 | 368 | 316 | 916 | 401 | 572 | 1357 | 558 |
| v/s Ratio Prot | c0.16 | c0.32 | | 0.10 | 0.20 | | 0.03 | 0.10 | | c0.17 | 0.12 | |
| v/s Ratio Perm | 0.26 | | 0.02 | 0.20 | | 0.06 | 0.10 | | 0.04 | c0.24 | | 0.06 |
| v/c Ratio | 0.99 | 1.11 | 0.06 | 0.84 | 0.84 | 0.26 | 0.40 | 0.39 | 0.16 | 0.85 | 0.29 | 0.14 |
| Uniform Delay, d1 | 41.7 | 49.8 | 36.1 | 36.8 | 50.7 | 43.2 | 34.6 | 42.3 | 39.6 | 26.5 | 28.7 | 26.9 |
| Progression Factor | 1.21 | 0.79 | 0.73 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.71 | 1.03 | 2.01 |
| Incremental Delay, d2 | 44.3 | 60.8 | 0.3 | 21.6 | 9.7 | 1.7 | 0.8 | 1.2 | 0.8 | 10.8 | 0.5 | 0.5 |
| Delay (s) | 94.6 | 100.0 | 26.7 | 58.4 | 60.3 | 45.0 | 35.4 | 43.5 | 40.4 | 56.0 | 30.2 | 54.6 |
| Level of Service | F | F | C | E | E | D | D | D | D | E | C | D |
| Approach Delay (s) | | 94.8 | | | 55.4 | | | 41.1 | | | 46.3 | |
| Approach LOS | | F | | | E | | | D | | | D | |

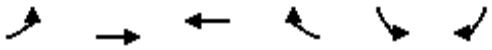
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 64.2 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.99 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 113.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 75 | 1408 | 8 | 0 | 977 | 30 | 0 | 0 | 80 | 18 | 0 | 45 |
| Future Volume (Veh/h) | 75 | 1408 | 8 | 0 | 977 | 30 | 0 | 0 | 80 | 18 | 0 | 45 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 85 | 1600 | 9 | 0 | 1110 | 34 | 0 | 0 | 91 | 20 | 0 | 51 |
| Pedestrians | | 9 | | | | | | 1 | | | 9 | |
| Lane Width (m) | | 3.6 | | | | | | 3.5 | | | 3.5 | |
| Walking Speed (m/s) | | 1.2 | | | | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | | | | 0 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | TWLTL | | | None | | | | | | | |
| Median storage veh) | | 2 | | | | | | | | | | |
| Upstream signal (m) | | 283 | | | 144 | | | | | | | |
| pX, platoon unblocked | 0.84 | | | 0.74 | | | 0.82 | 0.82 | 0.74 | 0.82 | 0.82 | 0.84 |
| vC, conflicting volume | 1153 | | | 1601 | | | 2201 | 2924 | 801 | 2106 | 2907 | 405 |
| vC1, stage 1 conf vol | | | | | | | 1771 | 1771 | | 1136 | 1136 | |
| vC2, stage 2 conf vol | | | | | | | 430 | 1153 | | 970 | 1771 | |
| vCu, unblocked vol | 515 | | | 1102 | | | 846 | 1731 | 16 | 730 | 1710 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | 6.5 | 5.5 | | 6.5 | 5.5 | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 90 | | | 100 | | | 100 | 100 | 88 | 94 | 100 | 94 |
| cM capacity (veh/h) | 885 | | | 472 | | | 109 | 142 | 785 | 354 | 144 | 903 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|---|---|---|
| Volume Total | 618 | 1067 | 9 | 444 | 444 | 256 | 91 | 20 | 51 |
| Volume Left | 85 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 |
| Volume Right | 0 | 0 | 9 | 0 | 0 | 34 | 91 | 0 | 51 |
| cSH | 885 | 1700 | 1700 | 1700 | 1700 | 1700 | 785 | 354 | 903 |
| Volume to Capacity | 0.10 | 0.63 | 0.01 | 0.26 | 0.26 | 0.15 | 0.12 | 0.06 | 0.06 |
| Queue Length 95th (m) | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.1 | 1.4 | 1.4 |
| Control Delay (s) | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.2 | 15.8 | 9.2 |
| Lane LOS | A | | | | | | B | C | A |
| Approach Delay (s) | 0.9 | | | 0.0 | | | 10.2 | 11.1 | |
| Approach LOS | | | | | | | B | B | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.1 | | | |
| Intersection Capacity Utilization | 74.0% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 1497 | 1024 | 0 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 1497 | 1024 | 0 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 0 | 1576 | 1078 | 0 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (m) | | 213 | 214 | | | |
| pX, platoon unblocked | 0.88 | | | | 0.80 | 0.88 |
| vC, conflicting volume | 1078 | | | | 1866 | 359 |
| vC1, stage 1 conf vol | | | | | 1078 | |
| vC2, stage 2 conf vol | | | | | 788 | |
| vCu, unblocked vol | 606 | | | | 675 | 0 |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | 5.8 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 863 | | | | 430 | 959 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 788 | 788 | 431 | 431 | 216 | 0 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 0 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.46 | 0.46 | 0.25 | 0.25 | 0.13 | 0.00 |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | | | | | | A |
| Approach Delay (s) | 0.0 | | 0.0 | | | 0.0 |
| Approach LOS | | | | | | A |

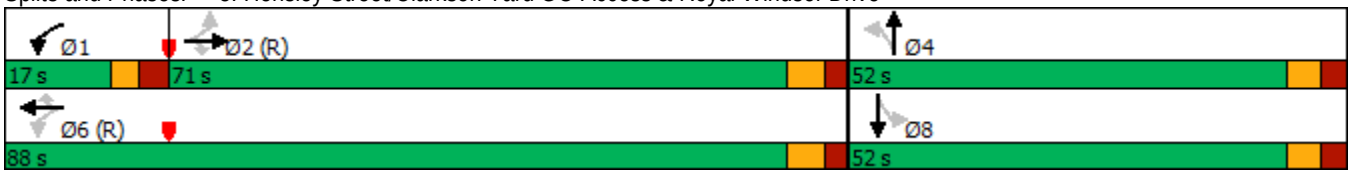
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 44.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

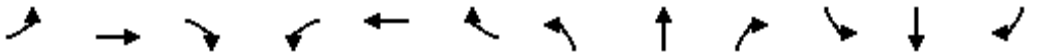
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 66 | 1321 | 191 | 132 | 861 | 23 | 178 | 18 | 63 | 10 |
| Future Volume (vph) | 66 | 1321 | 191 | 132 | 861 | 23 | 178 | 18 | 63 | 10 |
| Lane Group Flow (vph) | 68 | 1362 | 197 | 136 | 888 | 24 | 184 | 122 | 65 | 158 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA |
| Protected Phases | | 2 | | 1 | 6 | | | 4 | | 8 |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 8 | |
| Detector Phase | 2 | 2 | 2 | 1 | 6 | 6 | 4 | 4 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 34.5 | 34.5 | 34.5 | 11.0 | 34.5 | 34.5 | 39.5 | 39.5 | 39.5 | 39.5 |
| Total Split (s) | 71.0 | 71.0 | 71.0 | 17.0 | 88.0 | 88.0 | 52.0 | 52.0 | 52.0 | 52.0 |
| Total Split (%) | 50.7% | 50.7% | 50.7% | 12.1% | 62.9% | 62.9% | 37.1% | 37.1% | 37.1% | 37.1% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 2.5 | 2.5 | 2.5 | 3.0 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.5 | 6.5 | 6.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| Lead/Lag | Lag | Lag | Lag | Lead | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None |
| v/c Ratio | 0.20 | 0.64 | 0.21 | 0.49 | 0.34 | 0.02 | 0.89 | 0.30 | 0.28 | 0.36 |
| Control Delay | 19.2 | 23.1 | 11.0 | 28.6 | 21.9 | 12.9 | 93.5 | 12.5 | 48.0 | 11.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.2 | 23.1 | 11.0 | 28.6 | 21.9 | 12.9 | 93.5 | 12.5 | 48.0 | 11.5 |
| Queue Length 50th (m) | 8.9 | 131.8 | 15.4 | 27.2 | 82.4 | 1.5 | 52.7 | 4.5 | 16.3 | 4.8 |
| Queue Length 95th (m) | 23.6 | 204.3 | 37.7 | m40.3 | 112.4 | m4.0 | 76.4 | 20.3 | 28.1 | 22.5 |
| Internal Link Dist (m) | | 210.3 | | | 189.0 | | | 141.2 | | 146.2 |
| Turn Bay Length (m) | 95.0 | | 25.0 | 15.0 | | | | | | |
| Base Capacity (vph) | 348 | 2133 | 934 | 294 | 2587 | 1084 | 338 | 602 | 384 | 622 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.64 | 0.21 | 0.46 | 0.34 | 0.02 | 0.54 | 0.20 | 0.17 | 0.25 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 7 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Hensley Street/Clarkson Yard GO Access & Royal Windsor Drive





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 66 | 1321 | 191 | 132 | 861 | 23 | 178 | 18 | 100 | 63 | 10 | 144 |
| Future Volume (vph) | 66 | 1321 | 191 | 132 | 861 | 23 | 178 | 18 | 100 | 63 | 10 | 144 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 6.5 | 6.5 | 6.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 | 1.00 | 0.98 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.99 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.87 | | 1.00 | 0.86 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1769 | 3650 | 1547 | 1785 | 3650 | 1518 | 1783 | 1640 | | 1763 | 1631 | |
| Flt Permitted | 0.32 | 1.00 | 1.00 | 0.11 | 1.00 | 1.00 | 0.55 | 1.00 | | 0.64 | 1.00 | |
| Satd. Flow (perm) | 597 | 3650 | 1547 | 213 | 3650 | 1518 | 1041 | 1640 | | 1183 | 1631 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 68 | 1362 | 197 | 136 | 888 | 24 | 184 | 19 | 103 | 65 | 10 | 148 |
| RTOR Reduction (vph) | 0 | 0 | 31 | 0 | 0 | 7 | 0 | 83 | 0 | 0 | 111 | 0 |
| Lane Group Flow (vph) | 68 | 1362 | 166 | 136 | 888 | 17 | 184 | 39 | 0 | 65 | 47 | 0 |
| Confl. Peds. (#/hr) | 12 | | 4 | 4 | | 12 | 1 | | 12 | 12 | | 1 |
| Confl. Bikes (#/hr) | | | 2 | 2 | | | | | | | | |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | NA | Perm | pm+pt | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | | 8 | | |
| Actuated Green, G (s) | 81.9 | 81.9 | 81.9 | 99.3 | 99.3 | 99.3 | 27.7 | 27.7 | | 27.7 | 27.7 | |
| Effective Green, g (s) | 81.9 | 81.9 | 81.9 | 99.3 | 99.3 | 99.3 | 27.7 | 27.7 | | 27.7 | 27.7 | |
| Actuated g/C Ratio | 0.59 | 0.59 | 0.59 | 0.71 | 0.71 | 0.71 | 0.20 | 0.20 | | 0.20 | 0.20 | |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 349 | 2135 | 904 | 279 | 2588 | 1076 | 205 | 324 | | 234 | 322 | |
| v/s Ratio Prot | | c0.37 | | c0.04 | 0.24 | | | 0.02 | | | 0.03 | |
| v/s Ratio Perm | 0.11 | | 0.11 | 0.31 | | 0.01 | c0.18 | | | 0.05 | | |
| v/c Ratio | 0.19 | 0.64 | 0.18 | 0.49 | 0.34 | 0.02 | 0.90 | 0.12 | | 0.28 | 0.15 | |
| Uniform Delay, d1 | 13.6 | 19.2 | 13.5 | 14.5 | 7.8 | 6.0 | 54.8 | 46.2 | | 47.7 | 46.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 3.17 | 2.48 | 4.69 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 1.2 | 1.5 | 0.4 | 1.1 | 0.3 | 0.0 | 35.7 | 0.2 | | 0.6 | 0.2 | |
| Delay (s) | 14.9 | 20.7 | 14.0 | 47.0 | 19.7 | 28.1 | 90.5 | 46.3 | | 48.3 | 46.6 | |
| Level of Service | B | C | B | D | B | C | F | D | | D | D | |
| Approach Delay (s) | | 19.6 | | | 23.4 | | | 72.9 | | | 47.1 | |
| Approach LOS | | B | | | C | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 27.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 86.3% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

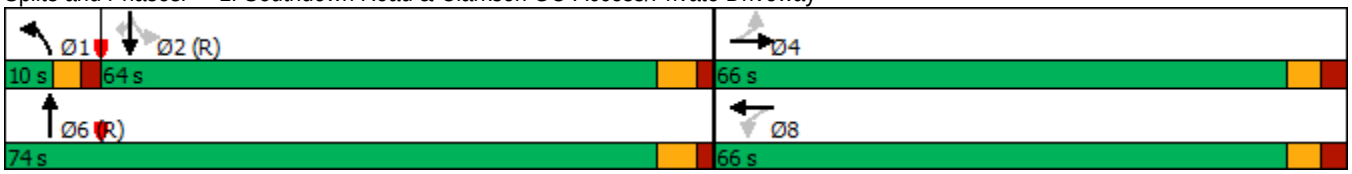
# *Future Background Conditions – Optimized*

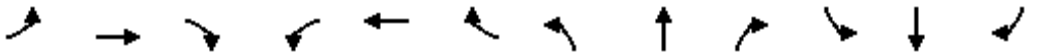
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 353 | 2 | 13 | 0 | 11 | 974 | 21 | 902 | 79 |
| Future Volume (vph) | 353 | 2 | 13 | 0 | 11 | 974 | 21 | 902 | 79 |
| Lane Group Flow (vph) | 380 | 147 | 14 | 9 | 12 | 1072 | 23 | 970 | 85 |
| Turn Type | Perm | NA | Perm | NA | Prot | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | 1 | 6 | | 2 | |
| Permitted Phases | 4 | | 8 | | | | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 1 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 42.5 | 10.0 | 31.0 | 31.0 | 31.0 | 31.0 |
| Total Split (s) | 66.0 | 66.0 | 66.0 | 66.0 | 10.0 | 74.0 | 64.0 | 64.0 | 64.0 |
| Total Split (%) | 47.1% | 47.1% | 47.1% | 47.1% | 7.1% | 52.9% | 45.7% | 45.7% | 45.7% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.5 | 6.5 | 6.5 | 6.5 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| v/c Ratio | 0.84 | 0.25 | 0.04 | 0.02 | 0.14 | 0.53 | 0.10 | 0.51 | 0.11 |
| Control Delay | 59.2 | 8.9 | 28.8 | 0.0 | 82.6 | 14.8 | 22.7 | 23.1 | 5.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 |
| Total Delay | 59.2 | 8.9 | 28.8 | 0.0 | 82.6 | 15.1 | 22.7 | 23.1 | 5.0 |
| Queue Length 50th (m) | 102.1 | 6.1 | 2.8 | 0.0 | 3.4 | 54.4 | 2.8 | 81.4 | 0.0 |
| Queue Length 95th (m) | 127.9 | 19.6 | 7.3 | 0.0 | m6.6 | 83.8 | 11.3 | 145.1 | 10.8 |
| Internal Link Dist (m) | | 94.1 | | 46.6 | | 182.5 | | 333.7 | |
| Turn Bay Length (m) | | | 20.0 | | 75.0 | | 25.0 | | 85.0 |
| Base Capacity (vph) | 604 | 747 | 464 | 729 | 83 | 2031 | 221 | 1916 | 779 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 317 | 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 | 0.63 | 0.20 | 0.03 | 0.01 | 0.14 | 0.63 | 0.10 | 0.51 | 0.11 |

## Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 118 (84%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Southdown Road & Clarkson GO Access/Private Driveway





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 353 | 2 | 135 | 13 | 0 | 8 | 11 | 974 | 23 | 21 | 902 | 79 |
| Future Volume (vph) | 353 | 2 | 135 | 13 | 0 | 8 | 11 | 974 | 23 | 21 | 902 | 79 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.83 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | 1.00 |
| Frt | 1.00 | 0.85 | | 1.00 | 0.85 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1767 | 1601 | | 1639 | 1633 | | 1785 | 3428 | | 1686 | 3444 | 1333 |
| Flt Permitted | 0.75 | 1.00 | | 0.63 | 1.00 | | 0.95 | 1.00 | | 0.22 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1398 | 1601 | | 1094 | 1633 | | 1785 | 3428 | | 397 | 3444 | 1333 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 380 | 2 | 145 | 14 | 0 | 9 | 12 | 1047 | 25 | 23 | 970 | 85 |
| RTOR Reduction (vph) | 0 | 80 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 40 |
| Lane Group Flow (vph) | 380 | 67 | 0 | 14 | 3 | 0 | 12 | 1071 | 0 | 23 | 970 | 45 |
| Confl. Peds. (#/hr) | | | 9 | 9 | | | 53 | | 17 | 17 | | 53 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 8% | 0% | 0% | 0% | 6% | 4% | 5% | 6% | 0% |
| Turn Type | Perm | NA | | Perm | NA | | Prot | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 1 | 6 | | | 2 | |
| Permitted Phases | 4 | | | 8 | | | | | | 2 | | 2 |
| Actuated Green, G (s) | 44.6 | 44.6 | | 44.6 | 44.6 | | 3.0 | 82.9 | | 74.9 | 74.9 | 74.9 |
| Effective Green, g (s) | 45.6 | 44.6 | | 44.6 | 44.6 | | 3.0 | 82.9 | | 74.9 | 74.9 | 74.9 |
| Actuated g/C Ratio | 0.33 | 0.32 | | 0.32 | 0.32 | | 0.02 | 0.59 | | 0.54 | 0.54 | 0.54 |
| Clearance Time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| 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) | 455 | 510 | | 348 | 520 | | 38 | 2029 | | 212 | 1842 | 713 |
| v/s Ratio Prot | | 0.04 | | | 0.00 | | 0.01 | c0.31 | | | 0.28 | |
| v/s Ratio Perm | c0.27 | | | 0.01 | | | | | | 0.06 | | 0.03 |
| v/c Ratio | 0.84 | 0.13 | | 0.04 | 0.01 | | 0.32 | 0.53 | | 0.11 | 0.53 | 0.06 |
| Uniform Delay, d1 | 43.7 | 33.9 | | 32.9 | 32.6 | | 67.5 | 16.9 | | 16.1 | 21.1 | 15.7 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.25 | 0.76 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 12.5 | 0.1 | | 0.0 | 0.0 | | 3.9 | 0.8 | | 1.0 | 1.1 | 0.2 |
| Delay (s) | 56.2 | 34.0 | | 33.0 | 32.6 | | 88.2 | 13.7 | | 17.1 | 22.2 | 15.8 |
| Level of Service | E | C | | C | C | | F | B | | B | C | B |
| Approach Delay (s) | | 50.0 | | | 32.8 | | | 14.5 | | | 21.5 | |
| Approach LOS | | D | | | C | | | B | | | C | |

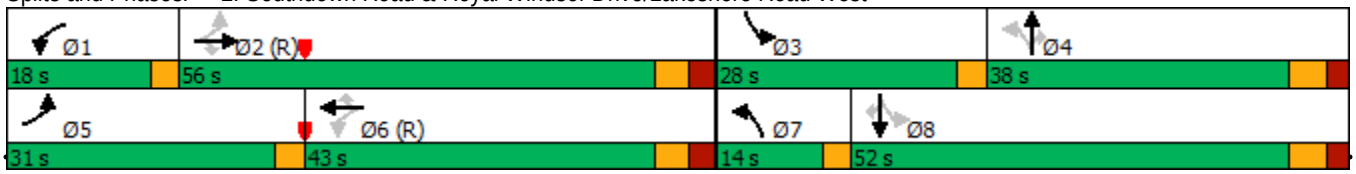
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 24.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.67 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 17.5 |
| Intersection Capacity Utilization | 65.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

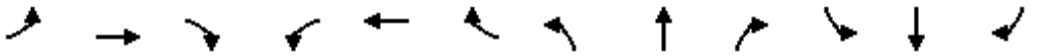
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 304 | 1096 | 84 | 207 | 682 | 386 | 120 | 336 | 226 | 463 | 379 | 190 |
| Future Volume (vph) | 304 | 1096 | 84 | 207 | 682 | 386 | 120 | 336 | 226 | 463 | 379 | 190 |
| Lane Group Flow (vph) | 320 | 1154 | 88 | 218 | 718 | 406 | 126 | 354 | 238 | 487 | 399 | 200 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 7 | 4 | 4 | 3 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 |
| Minimum Split (s) | 9.5 | 39.5 | 39.5 | 9.5 | 39.5 | 39.5 | 9.5 | 37.5 | 37.5 | 9.5 | 37.5 | 37.5 |
| Total Split (s) | 31.0 | 56.0 | 56.0 | 18.0 | 43.0 | 43.0 | 14.0 | 38.0 | 38.0 | 28.0 | 52.0 | 52.0 |
| Total Split (%) | 22.1% | 40.0% | 40.0% | 12.9% | 30.7% | 30.7% | 10.0% | 27.1% | 27.1% | 20.0% | 37.1% | 37.1% |
| Yellow Time (s) | 3.0 | 3.5 | 3.5 | 3.0 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 2.5 | 2.5 | 0.0 | 2.5 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| v/c Ratio | 0.84 | 0.89 | 0.16 | 0.90 | 0.69 | 0.55 | 0.39 | 0.45 | 0.46 | 0.95 | 0.35 | 0.34 |
| Control Delay | 53.1 | 40.7 | 3.6 | 73.4 | 48.8 | 6.8 | 28.4 | 49.0 | 8.7 | 73.3 | 41.3 | 15.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.1 | 40.7 | 3.6 | 73.4 | 48.8 | 6.8 | 28.4 | 49.0 | 8.7 | 73.3 | 41.3 | 15.6 |
| Queue Length 50th (m) | 40.1 | 169.2 | 1.0 | 45.8 | 99.5 | 0.0 | 21.7 | 47.2 | 1.1 | 88.2 | 26.2 | 0.0 |
| Queue Length 95th (m) | 94.6 | #172.1 | m6.0 | #96.1 | 126.7 | 28.1 | 35.9 | 63.5 | 24.3 | #167.4 | 66.4 | 42.9 |
| Internal Link Dist (m) | | 119.5 | | | 189.3 | | | 142.3 | | | 182.5 | |
| Turn Bay Length (m) | 115.0 | | 20.0 | 70.0 | | 165.0 | 85.0 | | | 85.0 | | 50.0 |
| Base Capacity (vph) | 423 | 1290 | 552 | 249 | 1046 | 737 | 328 | 782 | 523 | 515 | 1124 | 596 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.76 | 0.89 | 0.16 | 0.88 | 0.69 | 0.55 | 0.38 | 0.45 | 0.46 | 0.95 | 0.35 | 0.34 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 38 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
# 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.

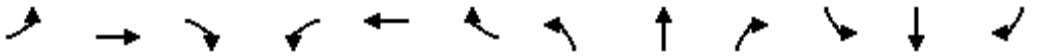
Splits and Phases: 2: Southdown Road & Royal Windsor Drive/Lakeshore Road West





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 304 | 1096 | 84 | 207 | 682 | 386 | 120 | 336 | 226 | 463 | 379 | 190 |
| Future Volume (vph) | 304 | 1096 | 84 | 207 | 682 | 386 | 120 | 336 | 226 | 463 | 379 | 190 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.96 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.97 | 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 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1637 | 3614 | 1373 | 1785 | 3579 | 1541 | 1533 | 3476 | 1522 | 1762 | 3411 | 1404 |
| Flt Permitted | 0.18 | 1.00 | 1.00 | 0.10 | 1.00 | 1.00 | 0.52 | 1.00 | 1.00 | 0.40 | 1.00 | 1.00 |
| Satd. Flow (perm) | 313 | 3614 | 1373 | 184 | 3579 | 1541 | 834 | 3476 | 1522 | 739 | 3411 | 1404 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 320 | 1154 | 88 | 218 | 718 | 406 | 126 | 354 | 238 | 487 | 399 | 200 |
| RTOR Reduction (vph) | 0 | 0 | 57 | 0 | 0 | 287 | 0 | 0 | 181 | 0 | 0 | 134 |
| Lane Group Flow (vph) | 320 | 1154 | 31 | 218 | 718 | 119 | 126 | 354 | 57 | 487 | 399 | 66 |
| Confl. Peds. (#/hr) | 3 | | 20 | 20 | | 3 | 9 | | 12 | 12 | | 9 |
| Heavy Vehicles (%) | 9% | 1% | 12% | 0% | 2% | 2% | 16% | 5% | 2% | 1% | 7% | 11% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 67.5 | 50.0 | 50.0 | 55.4 | 40.9 | 40.9 | 41.9 | 31.5 | 31.5 | 59.5 | 46.1 | 46.1 |
| Effective Green, g (s) | 67.5 | 50.0 | 50.0 | 55.4 | 40.9 | 40.9 | 41.9 | 31.5 | 31.5 | 59.5 | 46.1 | 46.1 |
| Actuated g/C Ratio | 0.48 | 0.36 | 0.36 | 0.40 | 0.29 | 0.29 | 0.30 | 0.22 | 0.22 | 0.42 | 0.33 | 0.33 |
| Clearance Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 374 | 1290 | 490 | 238 | 1045 | 450 | 301 | 782 | 342 | 496 | 1123 | 462 |
| v/s Ratio Prot | c0.14 | c0.32 | | c0.09 | 0.20 | | 0.03 | 0.10 | | c0.18 | 0.12 | |
| v/s Ratio Perm | 0.27 | | 0.02 | 0.27 | | 0.08 | 0.09 | | 0.04 | c0.24 | | 0.05 |
| v/c Ratio | 0.86 | 0.89 | 0.06 | 0.92 | 0.69 | 0.26 | 0.42 | 0.45 | 0.17 | 0.98 | 0.36 | 0.14 |
| Uniform Delay, d1 | 27.6 | 42.5 | 29.6 | 38.2 | 43.9 | 38.0 | 37.4 | 46.8 | 43.7 | 34.9 | 35.7 | 33.0 |
| Progression Factor | 1.40 | 0.74 | 0.64 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.54 | 1.12 | 3.22 |
| Incremental Delay, d2 | 15.4 | 8.8 | 0.2 | 36.1 | 3.7 | 1.4 | 0.9 | 1.9 | 1.1 | 33.6 | 0.8 | 0.6 |
| Delay (s) | 54.1 | 40.2 | 19.3 | 74.3 | 47.6 | 39.4 | 38.4 | 48.7 | 44.8 | 87.5 | 40.9 | 107.0 |
| Level of Service | D | D | B | E | D | D | D | D | D | F | D | F |
| Approach Delay (s) | | 41.8 | | | 49.5 | | | 45.6 | | | 73.9 | |
| Approach LOS | | D | | | D | | | D | | | E | |

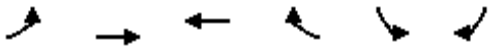
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 52.0 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.97 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 113.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 75 | 1408 | 8 | 0 | 977 | 30 | 0 | 0 | 80 | 18 | 0 | 45 |
| Future Volume (Veh/h) | 75 | 1408 | 8 | 0 | 977 | 30 | 0 | 0 | 80 | 18 | 0 | 45 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 85 | 1600 | 9 | 0 | 1110 | 34 | 0 | 0 | 91 | 20 | 0 | 51 |
| Pedestrians | | 9 | | | | | | 1 | | | 9 | |
| Lane Width (m) | | 3.6 | | | | | | 3.5 | | | 3.5 | |
| Walking Speed (m/s) | | 1.2 | | | | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | | | | 0 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | TWLTL | | | None | | | | | | | |
| Median storage veh) | | 2 | | | | | | | | | | |
| Upstream signal (m) | | 283 | | | 144 | | | | | | | |
| pX, platoon unblocked | 0.85 | | | 0.74 | | | 0.81 | 0.81 | 0.74 | 0.81 | 0.81 | 0.85 |
| vC, conflicting volume | 1153 | | | 1601 | | | 2201 | 2924 | 801 | 2106 | 2907 | 405 |
| vC1, stage 1 conf vol | | | | | | | 1771 | 1771 | | 1136 | 1136 | |
| vC2, stage 2 conf vol | | | | | | | 430 | 1153 | | 970 | 1771 | |
| vCu, unblocked vol | 577 | | | 1102 | | | 927 | 1819 | 16 | 809 | 1798 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | 6.5 | 5.5 | | 6.5 | 5.5 | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 90 | | | 100 | | | 100 | 100 | 88 | 94 | 100 | 94 |
| cM capacity (veh/h) | 853 | | | 472 | | | 107 | 139 | 785 | 334 | 142 | 917 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|---|---|---|
| Volume Total | 618 | 1067 | 9 | 444 | 444 | 256 | 91 | 20 | 51 |
| Volume Left | 85 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 |
| Volume Right | 0 | 0 | 9 | 0 | 0 | 34 | 91 | 0 | 51 |
| cSH | 853 | 1700 | 1700 | 1700 | 1700 | 1700 | 785 | 334 | 917 |
| Volume to Capacity | 0.10 | 0.63 | 0.01 | 0.26 | 0.26 | 0.15 | 0.12 | 0.06 | 0.06 |
| Queue Length 95th (m) | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.1 | 1.5 | 1.4 |
| Control Delay (s) | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.2 | 16.5 | 9.2 |
| Lane LOS | A | | | | | | B | C | A |
| Approach Delay (s) | 0.9 | | | 0.0 | | | 10.2 | 11.2 | |
| Approach LOS | | | | | | | B | B | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.1 | | | |
| Intersection Capacity Utilization | 74.0% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 1497 | 1024 | 0 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 1497 | 1024 | 0 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 0 | 1576 | 1078 | 0 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (m) | | 213 | 214 | | | |
| pX, platoon unblocked | 0.89 | | | | 0.79 | 0.89 |
| vC, conflicting volume | 1078 | | | | 1866 | 359 |
| vC1, stage 1 conf vol | | | | | 1078 | |
| vC2, stage 2 conf vol | | | | | 788 | |
| vCu, unblocked vol | 664 | | | | 756 | 0 |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | 5.8 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 833 | | | | 407 | 973 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 788 | 788 | 431 | 431 | 216 | 0 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 0 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.46 | 0.46 | 0.25 | 0.25 | 0.13 | 0.00 |
| Queue Length 95th (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | | | | | | A |
| Approach Delay (s) | 0.0 | | 0.0 | | | 0.0 |
| Approach LOS | | | | | | A |

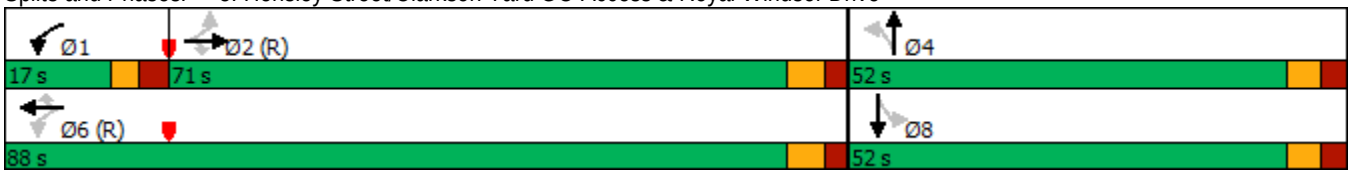
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 44.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

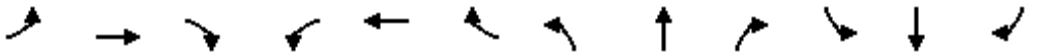
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 66 | 1321 | 191 | 132 | 861 | 23 | 178 | 18 | 63 | 10 |
| Future Volume (vph) | 66 | 1321 | 191 | 132 | 861 | 23 | 178 | 18 | 63 | 10 |
| Lane Group Flow (vph) | 68 | 1362 | 197 | 136 | 888 | 24 | 184 | 122 | 65 | 158 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA |
| Protected Phases | | 2 | | 1 | 6 | | | 4 | | 8 |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 8 | |
| Detector Phase | 2 | 2 | 2 | 1 | 6 | 6 | 4 | 4 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 34.5 | 34.5 | 34.5 | 11.0 | 34.5 | 34.5 | 39.5 | 39.5 | 39.5 | 39.5 |
| Total Split (s) | 71.0 | 71.0 | 71.0 | 17.0 | 88.0 | 88.0 | 52.0 | 52.0 | 52.0 | 52.0 |
| Total Split (%) | 50.7% | 50.7% | 50.7% | 12.1% | 62.9% | 62.9% | 37.1% | 37.1% | 37.1% | 37.1% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 2.5 | 2.5 | 2.5 | 3.0 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.5 | 6.5 | 6.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| Lead/Lag | Lag | Lag | Lag | Lead | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None |
| v/c Ratio | 0.20 | 0.64 | 0.21 | 0.49 | 0.34 | 0.02 | 0.89 | 0.30 | 0.28 | 0.36 |
| Control Delay | 19.2 | 23.1 | 11.0 | 27.8 | 18.6 | 12.1 | 93.5 | 12.5 | 48.0 | 11.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.2 | 23.1 | 11.0 | 27.8 | 18.6 | 12.1 | 93.5 | 12.5 | 48.0 | 11.5 |
| Queue Length 50th (m) | 8.9 | 131.8 | 15.4 | 25.6 | 73.0 | 1.0 | 52.7 | 4.5 | 16.3 | 4.8 |
| Queue Length 95th (m) | 23.6 | 204.3 | 37.7 | m47.7 | 119.9 | m5.0 | 76.4 | 20.3 | 28.1 | 22.5 |
| Internal Link Dist (m) | | 210.3 | | | 189.0 | | | 141.2 | | 146.2 |
| Turn Bay Length (m) | 95.0 | | 25.0 | 15.0 | | | | | | |
| Base Capacity (vph) | 348 | 2133 | 934 | 294 | 2587 | 1084 | 338 | 602 | 384 | 622 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.64 | 0.21 | 0.46 | 0.34 | 0.02 | 0.54 | 0.20 | 0.17 | 0.25 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 7 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Hensley Street/Clarkson Yard GO Access & Royal Windsor Drive





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 66 | 1321 | 191 | 132 | 861 | 23 | 178 | 18 | 100 | 63 | 10 | 144 |
| Future Volume (vph) | 66 | 1321 | 191 | 132 | 861 | 23 | 178 | 18 | 100 | 63 | 10 | 144 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 6.5 | 6.5 | 6.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 | 1.00 | 0.98 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.99 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.87 | | 1.00 | 0.86 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1769 | 3650 | 1547 | 1785 | 3650 | 1518 | 1783 | 1640 | | 1763 | 1631 | |
| Flt Permitted | 0.32 | 1.00 | 1.00 | 0.11 | 1.00 | 1.00 | 0.55 | 1.00 | | 0.64 | 1.00 | |
| Satd. Flow (perm) | 597 | 3650 | 1547 | 213 | 3650 | 1518 | 1041 | 1640 | | 1183 | 1631 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 68 | 1362 | 197 | 136 | 888 | 24 | 184 | 19 | 103 | 65 | 10 | 148 |
| RTOR Reduction (vph) | 0 | 0 | 31 | 0 | 0 | 7 | 0 | 83 | 0 | 0 | 111 | 0 |
| Lane Group Flow (vph) | 68 | 1362 | 166 | 136 | 888 | 17 | 184 | 39 | 0 | 65 | 47 | 0 |
| Confl. Peds. (#/hr) | 12 | | 4 | 4 | | 12 | 1 | | 12 | 12 | | 1 |
| Confl. Bikes (#/hr) | | | 2 | 2 | | | | | | | | |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | NA | Perm | pm+pt | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | | 8 | | |
| Actuated Green, G (s) | 81.9 | 81.9 | 81.9 | 99.3 | 99.3 | 99.3 | 27.7 | 27.7 | | 27.7 | 27.7 | |
| Effective Green, g (s) | 81.9 | 81.9 | 81.9 | 99.3 | 99.3 | 99.3 | 27.7 | 27.7 | | 27.7 | 27.7 | |
| Actuated g/C Ratio | 0.59 | 0.59 | 0.59 | 0.71 | 0.71 | 0.71 | 0.20 | 0.20 | | 0.20 | 0.20 | |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 349 | 2135 | 904 | 279 | 2588 | 1076 | 205 | 324 | | 234 | 322 | |
| v/s Ratio Prot | | c0.37 | | c0.04 | 0.24 | | | 0.02 | | | 0.03 | |
| v/s Ratio Perm | 0.11 | | 0.11 | 0.31 | | 0.01 | c0.18 | | | 0.05 | | |
| v/c Ratio | 0.19 | 0.64 | 0.18 | 0.49 | 0.34 | 0.02 | 0.90 | 0.12 | | 0.28 | 0.15 | |
| Uniform Delay, d1 | 13.6 | 19.2 | 13.5 | 14.5 | 7.8 | 6.0 | 54.8 | 46.2 | | 47.7 | 46.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 3.02 | 2.10 | 4.41 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 1.2 | 1.5 | 0.4 | 1.2 | 0.3 | 0.0 | 35.7 | 0.2 | | 0.6 | 0.2 | |
| Delay (s) | 14.9 | 20.7 | 14.0 | 44.9 | 16.7 | 26.4 | 90.5 | 46.3 | | 48.3 | 46.6 | |
| Level of Service | B | C | B | D | B | C | F | D | | D | D | |
| Approach Delay (s) | | 19.6 | | | 20.6 | | | 72.9 | | | 47.1 | |
| Approach LOS | | B | | | C | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 27.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.68 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 86.3% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

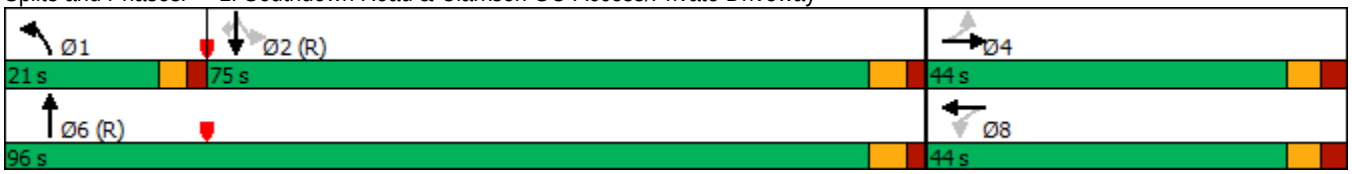
# *Future Total Conditions*

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 84 | 2 | 13 | 2 | 38 | 551 | 16 | 819 | 494 |
| Future Volume (vph) | 84 | 2 | 13 | 2 | 38 | 551 | 16 | 819 | 494 |
| Lane Group Flow (vph) | 88 | 54 | 14 | 42 | 40 | 583 | 17 | 862 | 520 |
| Turn Type | Perm | NA | Perm | NA | Prot | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | 1 | 6 | | 2 | |
| Permitted Phases | 4 | | 8 | | | | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 1 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 42.5 | 10.0 | 31.0 | 31.0 | 31.0 | 31.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 44.0 | 21.0 | 96.0 | 75.0 | 75.0 | 75.0 |
| Total Split (%) | 31.4% | 31.4% | 31.4% | 31.4% | 15.0% | 68.6% | 53.6% | 53.6% | 53.6% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 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) | 6.5 | 6.5 | 6.5 | 6.5 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| v/c Ratio | 0.63 | 0.26 | 0.10 | 0.21 | 0.37 | 0.23 | 0.03 | 0.36 | 0.45 |
| Control Delay | 79.0 | 17.6 | 55.5 | 18.9 | 67.6 | 4.8 | 8.1 | 8.8 | 2.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 79.0 | 17.6 | 55.5 | 18.9 | 67.6 | 4.8 | 8.1 | 8.8 | 2.1 |
| Queue Length 50th (m) | 25.0 | 0.5 | 3.8 | 0.5 | 11.9 | 17.0 | 1.3 | 47.0 | 0.0 |
| Queue Length 95th (m) | 42.1 | 13.5 | 10.6 | 11.9 | m22.0 | 38.9 | 4.8 | 73.4 | 12.8 |
| Internal Link Dist (m) | | 94.1 | | 46.6 | | 182.5 | | 333.7 | |
| Turn Bay Length (m) | | | 20.0 | | 75.0 | | 25.0 | | 85.0 |
| Base Capacity (vph) | 359 | 455 | 361 | 445 | 204 | 2537 | 552 | 2406 | 1147 |
| 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 | 0.25 | 0.12 | 0.04 | 0.09 | 0.20 | 0.23 | 0.03 | 0.36 | 0.45 |

**Intersection Summary**

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 83 (59%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Southdown Road & Clarkson GO Access/Private Driveway



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 84 | 2 | 49 | 13 | 2 | 38 | 38 | 551 | 3 | 16 | 819 | 494 |
| Future Volume (vph) | 84 | 2 | 49 | 13 | 2 | 38 | 38 | 551 | 3 | 16 | 819 | 494 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.98 | | 1.00 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.87 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 0.86 | | 1.00 | 0.86 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1748 | 1557 | | 1777 | 1552 | | 1785 | 3146 | | 1676 | 3318 | 1385 |
| Flt Permitted | 0.73 | 1.00 | | 0.72 | 1.00 | | 0.95 | 1.00 | | 0.43 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1343 | 1557 | | 1350 | 1552 | | 1785 | 3146 | | 762 | 3318 | 1385 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 88 | 2 | 52 | 14 | 2 | 40 | 40 | 580 | 3 | 17 | 862 | 520 |
| RTOR Reduction (vph) | 0 | 47 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 146 |
| Lane Group Flow (vph) | 88 | 7 | 0 | 14 | 6 | 0 | 40 | 583 | 0 | 17 | 862 | 374 |
| Confl. Peds. (#/hr) | 1 | | 4 | 4 | | 1 | 41 | | 4 | 4 | | 41 |
| Heavy Vehicles (%) | 2% | 0% | 4% | 0% | 100% | 0% | 0% | 16% | 0% | 6% | 10% | 0% |
| Turn Type | Perm | NA | | Perm | NA | | Prot | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 1 | 6 | | | 2 | |
| Permitted Phases | 4 | | | 8 | | | | | | 2 | | 2 |
| Actuated Green, G (s) | 14.5 | 14.5 | | 14.5 | 14.5 | | 7.4 | 113.0 | | 100.6 | 100.6 | 100.6 |
| Effective Green, g (s) | 14.5 | 14.5 | | 14.5 | 14.5 | | 7.4 | 113.0 | | 100.6 | 100.6 | 100.6 |
| Actuated g/C Ratio | 0.10 | 0.10 | | 0.10 | 0.10 | | 0.05 | 0.81 | | 0.72 | 0.72 | 0.72 |
| Clearance Time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| 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) | 139 | 161 | | 139 | 160 | | 94 | 2539 | | 547 | 2384 | 995 |
| v/s Ratio Prot | | 0.00 | | | 0.00 | | c0.02 | 0.19 | | | 0.26 | |
| v/s Ratio Perm | c0.07 | | | 0.01 | | | | | | 0.02 | | c0.27 |
| v/c Ratio | 0.63 | 0.05 | | 0.10 | 0.04 | | 0.43 | 0.23 | | 0.03 | 0.36 | 0.38 |
| Uniform Delay, d1 | 60.2 | 56.5 | | 56.8 | 56.5 | | 64.2 | 3.2 | | 5.7 | 7.5 | 7.6 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.95 | 1.31 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 9.1 | 0.1 | | 0.3 | 0.1 | | 2.8 | 0.2 | | 0.1 | 0.4 | 1.1 |
| Delay (s) | 69.3 | 56.6 | | 57.2 | 56.6 | | 63.7 | 4.4 | | 5.8 | 7.9 | 8.7 |
| Level of Service | E | E | | E | E | | E | A | | A | A | A |
| Approach Delay (s) | | 64.5 | | | 56.7 | | | 8.2 | | | 8.2 | |
| Approach LOS | | E | | | E | | | A | | | A | |

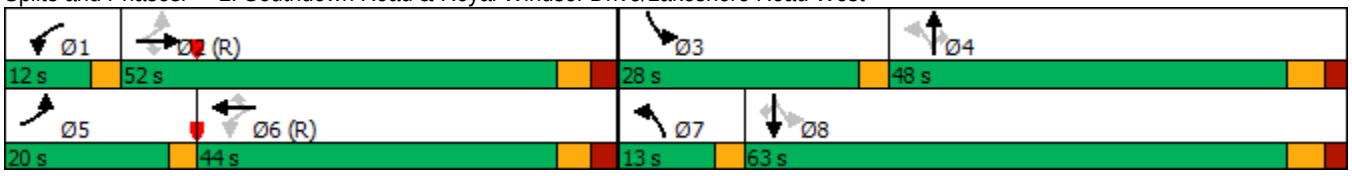
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 13.0 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.41 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 17.5 |
| Intersection Capacity Utilization | 60.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

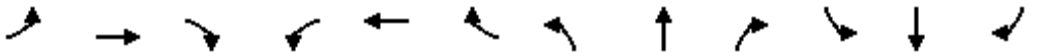
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 189 | 470 | 51 | 128 | 691 | 255 | 136 | 209 | 125 | 279 | 333 | 300 |
| Future Volume (vph) | 189 | 470 | 51 | 128 | 691 | 255 | 136 | 209 | 125 | 279 | 333 | 300 |
| Lane Group Flow (vph) | 197 | 490 | 53 | 133 | 720 | 266 | 142 | 218 | 130 | 291 | 347 | 313 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 7 | 4 | 4 | 3 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 |
| Minimum Split (s) | 9.5 | 39.5 | 39.5 | 9.5 | 39.5 | 39.5 | 9.5 | 37.5 | 37.5 | 9.5 | 37.5 | 37.5 |
| Total Split (s) | 20.0 | 52.0 | 52.0 | 12.0 | 44.0 | 44.0 | 13.0 | 48.0 | 48.0 | 28.0 | 63.0 | 63.0 |
| Total Split (%) | 14.3% | 37.1% | 37.1% | 8.6% | 31.4% | 31.4% | 9.3% | 34.3% | 34.3% | 20.0% | 45.0% | 45.0% |
| Yellow Time (s) | 3.0 | 3.5 | 3.5 | 3.0 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 2.5 | 2.5 | 0.0 | 2.5 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| v/c Ratio | 0.81 | 0.44 | 0.11 | 0.38 | 0.73 | 0.45 | 0.31 | 0.22 | 0.22 | 0.47 | 0.26 | 0.41 |
| Control Delay | 49.9 | 37.2 | 3.0 | 28.5 | 51.5 | 7.0 | 20.6 | 35.1 | 6.5 | 17.2 | 21.7 | 2.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 49.9 | 37.2 | 3.0 | 28.5 | 51.5 | 7.0 | 20.6 | 35.1 | 6.5 | 17.2 | 21.7 | 2.8 |
| Queue Length 50th (m) | 38.5 | 60.5 | 0.1 | 23.4 | 101.7 | 0.0 | 21.1 | 23.9 | 0.0 | 26.4 | 22.7 | 0.0 |
| Queue Length 95th (m) | #71.8 | 78.0 | 2.9 | 37.9 | 125.8 | 22.7 | 33.9 | 37.1 | 15.8 | 36.9 | 24.5 | 7.0 |
| Internal Link Dist (m) | | 119.5 | | | 189.3 | | | 142.3 | | | 182.5 | |
| Turn Bay Length (m) | 115.0 | | 20.0 | 70.0 | | 165.0 | 85.0 | | | 85.0 | | 50.0 |
| Base Capacity (vph) | 252 | 1123 | 494 | 354 | 983 | 591 | 456 | 974 | 601 | 650 | 1311 | 761 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.78 | 0.44 | 0.11 | 0.38 | 0.73 | 0.45 | 0.31 | 0.22 | 0.22 | 0.45 | 0.26 | 0.41 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

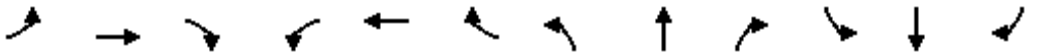
Splits and Phases: 2: Southdown Road & Royal Windsor Drive/Lakeshore Road West





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 189 | 470 | 51 | 128 | 691 | 255 | 136 | 209 | 125 | 279 | 333 | 300 |
| Future Volume (vph) | 189 | 470 | 51 | 128 | 691 | 255 | 136 | 209 | 125 | 279 | 333 | 300 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1439 | 3444 | 1317 | 1728 | 3579 | 1450 | 1642 | 2897 | 1532 | 1678 | 3230 | 1418 |
| Flt Permitted | 0.16 | 1.00 | 1.00 | 0.45 | 1.00 | 1.00 | 0.54 | 1.00 | 1.00 | 0.58 | 1.00 | 1.00 |
| Satd. Flow (perm) | 247 | 3444 | 1317 | 814 | 3579 | 1450 | 939 | 2897 | 1532 | 1022 | 3230 | 1418 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 197 | 490 | 53 | 133 | 720 | 266 | 142 | 218 | 130 | 291 | 347 | 312 |
| RTOR Reduction (vph) | 0 | 0 | 36 | 0 | 0 | 193 | 0 | 0 | 86 | 0 | 0 | 186 |
| Lane Group Flow (vph) | 197 | 490 | 17 | 133 | 720 | 73 | 142 | 218 | 44 | 291 | 347 | 127 |
| Confl. Peds. (#/hr) | 6 | | 12 | 12 | | 6 | 15 | | 7 | 7 | | 15 |
| Heavy Vehicles (%) | 24% | 6% | 18% | 3% | 2% | 8% | 8% | 26% | 2% | 6% | 13% | 9% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 57.5 | 45.7 | 45.7 | 47.3 | 38.5 | 38.5 | 56.7 | 47.1 | 47.1 | 69.5 | 56.9 | 56.9 |
| Effective Green, g (s) | 57.5 | 45.7 | 45.7 | 47.3 | 38.5 | 38.5 | 56.7 | 47.1 | 47.1 | 69.5 | 56.9 | 56.9 |
| Actuated g/C Ratio | 0.41 | 0.33 | 0.33 | 0.34 | 0.28 | 0.28 | 0.41 | 0.34 | 0.34 | 0.50 | 0.41 | 0.41 |
| Clearance Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 237 | 1124 | 429 | 332 | 984 | 398 | 428 | 974 | 515 | 598 | 1312 | 576 |
| v/s Ratio Prot | c0.09 | 0.14 | | 0.03 | 0.20 | | 0.02 | 0.08 | | c0.07 | 0.11 | |
| v/s Ratio Perm | c0.25 | | 0.01 | 0.11 | | 0.05 | 0.11 | | 0.03 | c0.17 | | 0.09 |
| v/c Ratio | 0.83 | 0.44 | 0.04 | 0.40 | 0.73 | 0.18 | 0.33 | 0.22 | 0.08 | 0.49 | 0.26 | 0.22 |
| Uniform Delay, d1 | 31.2 | 37.0 | 32.2 | 33.3 | 46.1 | 38.8 | 27.1 | 33.3 | 31.7 | 21.5 | 27.6 | 27.1 |
| Progression Factor | 0.94 | 0.96 | 6.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.75 | 0.76 | 0.42 |
| Incremental Delay, d2 | 21.0 | 1.2 | 0.2 | 0.8 | 4.8 | 1.0 | 0.5 | 0.5 | 0.3 | 0.6 | 0.5 | 0.8 |
| Delay (s) | 50.3 | 36.9 | 224.4 | 34.1 | 50.9 | 39.8 | 27.6 | 33.9 | 32.1 | 16.8 | 21.5 | 12.3 |
| Level of Service | D | D | F | C | D | D | C | C | C | B | C | B |
| Approach Delay (s) | | 53.9 | | | 46.2 | | | 31.6 | | | 17.0 | |
| Approach LOS | | D | | | D | | | C | | | B | |

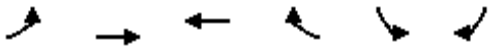
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 37.3 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.67 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 96.8% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 76 | 688 | 5 | 0 | 1066 | 89 | 0 | 0 | 14 | 12 | 0 | 46 |
| Future Volume (Veh/h) | 76 | 688 | 5 | 0 | 1066 | 89 | 0 | 0 | 14 | 12 | 0 | 46 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 80 | 724 | 5 | 0 | 1122 | 94 | 0 | 0 | 15 | 13 | 0 | 48 |
| Pedestrians | | 1 | | | 4 | | | 4 | | | 7 | |
| Lane Width (m) | | 3.6 | | | 3.7 | | | 3.5 | | | 3.5 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 0 | | | 0 | | | 0 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | TWLTL | | | None | | | | | | | |
| Median storage veh) | | 2 | | | | | | | | | | |
| Upstream signal (m) | | 283 | | | 144 | | | | | | | |
| pX, platoon unblocked | 0.85 | | | 0.98 | | | 0.86 | 0.86 | 0.98 | 0.86 | 0.86 | 0.85 |
| vC, conflicting volume | 1223 | | | 728 | | | 1311 | 2111 | 370 | 1702 | 2064 | 429 |
| vC1, stage 1 conf vol | | | | | | | 888 | 888 | | 1176 | 1176 | |
| vC2, stage 2 conf vol | | | | | | | 423 | 1223 | | 526 | 888 | |
| vCu, unblocked vol | 636 | | | 676 | | | 653 | 1584 | 310 | 1108 | 1529 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | 6.5 | 5.5 | | 6.5 | 5.5 | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 90 | | | 100 | | | 100 | 100 | 98 | 96 | 100 | 95 |
| cM capacity (veh/h) | 807 | | | 901 | | | 283 | 241 | 672 | 320 | 272 | 919 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|---|---|---|
| Volume Total | 321 | 483 | 5 | 449 | 449 | 318 | 15 | 13 | 48 |
| Volume Left | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 |
| Volume Right | 0 | 0 | 5 | 0 | 0 | 94 | 15 | 0 | 48 |
| cSH | 807 | 1700 | 1700 | 1700 | 1700 | 1700 | 672 | 320 | 919 |
| Volume to Capacity | 0.10 | 0.28 | 0.00 | 0.26 | 0.26 | 0.19 | 0.02 | 0.04 | 0.05 |
| Queue Length 95th (m) | 2.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 1.0 | 1.3 |
| Control Delay (s) | 3.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.5 | 16.7 | 9.1 |
| Lane LOS | A | | | | | | B | C | A |
| Approach Delay (s) | 1.3 | | | 0.0 | | | 10.5 | 10.7 | |
| Approach LOS | | | | | | | B | B | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.9 | | | |
| Intersection Capacity Utilization | 57.2% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 15 | 734 | 1114 | 0 | 28 | 25 |
| Future Volume (Veh/h) | 15 | 734 | 1114 | 0 | 28 | 25 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 17 | 816 | 1238 | 0 | 31 | 28 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (m) | | 213 | 214 | | | |
| pX, platoon unblocked | 0.88 | | | | 0.90 | 0.88 |
| vC, conflicting volume | 1238 | | | | 1680 | 413 |
| vC1, stage 1 conf vol | | | | | 1238 | |
| vC2, stage 2 conf vol | | | | | 442 | |
| vCu, unblocked vol | 789 | | | | 1141 | 0 |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | 5.8 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 98 | | | | 91 | 97 |
| cM capacity (veh/h) | 738 | | | | 336 | 959 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 289 | 544 | 495 | 495 | 248 | 59 |
| Volume Left | 17 | 0 | 0 | 0 | 0 | 31 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 28 |
| cSH | 738 | 1700 | 1700 | 1700 | 1700 | 486 |
| Volume to Capacity | 0.02 | 0.32 | 0.29 | 0.29 | 0.15 | 0.12 |
| Queue Length 95th (m) | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 3.3 |
| Control Delay (s) | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 13.4 |
| Lane LOS | A | | | | | B |
| Approach Delay (s) | 0.3 | | 0.0 | | | 13.4 |
| Approach LOS | | | | | | B |

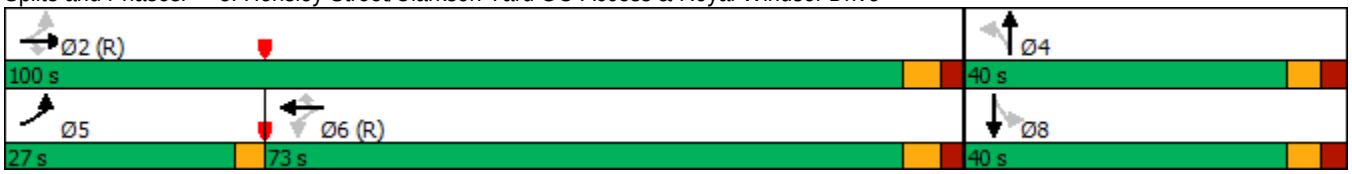
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.5 | | |
| Intersection Capacity Utilization | 41.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

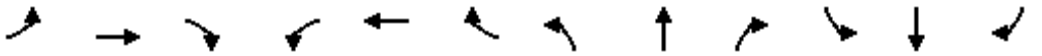
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 173 | 685 | 47 | 45 | 1055 | 33 | 49 | 8 | 38 | 11 |
| Future Volume (vph) | 173 | 685 | 47 | 45 | 1055 | 33 | 49 | 8 | 38 | 11 |
| Lane Group Flow (vph) | 194 | 770 | 53 | 51 | 1185 | 37 | 55 | 24 | 43 | 54 |
| Turn Type | pm+pt | NA | Perm | Perm | NA | Perm | Perm | NA | Perm | NA |
| Protected Phases | 5 | 2 | | | 6 | | | 4 | | 8 |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 8 | |
| Detector Phase | 5 | 2 | 2 | 6 | 6 | 6 | 4 | 4 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 9.5 | 34.5 | 34.5 | 34.5 | 34.5 | 34.5 | 39.5 | 39.5 | 39.5 | 39.5 |
| Total Split (s) | 27.0 | 100.0 | 100.0 | 73.0 | 73.0 | 73.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 19.3% | 71.4% | 71.4% | 52.1% | 52.1% | 52.1% | 28.6% | 28.6% | 28.6% | 28.6% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 0.0 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 3.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| Lead/Lag | Lead | | | Lag | Lag | Lag | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | None | C-Max | C-Max | C-Max | C-Max | C-Max | None | None | None | None |
| v/c Ratio | 0.46 | 0.25 | 0.04 | 0.10 | 0.43 | 0.03 | 0.50 | 0.16 | 0.38 | 0.31 |
| Control Delay | 5.4 | 2.8 | 1.1 | 6.6 | 6.4 | 1.7 | 76.2 | 34.4 | 69.6 | 26.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 5.4 | 2.8 | 1.1 | 6.6 | 6.4 | 1.7 | 76.2 | 34.4 | 69.6 | 26.8 |
| Queue Length 50th (m) | 7.1 | 20.6 | 0.5 | 2.3 | 39.2 | 0.0 | 15.7 | 2.5 | 12.1 | 3.3 |
| Queue Length 95th (m) | 14.1 | 31.7 | 3.2 | m7.5 | 86.9 | m0.8 | 29.5 | 11.6 | 24.4 | 16.3 |
| Internal Link Dist (m) | | 210.3 | | | 189.0 | | | 141.2 | | 146.2 |
| Turn Bay Length (m) | 95.0 | | 25.0 | 15.0 | | | | | | |
| Base Capacity (vph) | 575 | 3122 | 1338 | 513 | 2774 | 1171 | 322 | 422 | 330 | 432 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.34 | 0.25 | 0.04 | 0.10 | 0.43 | 0.03 | 0.17 | 0.06 | 0.13 | 0.13 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 136 (97%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Hensley Street/Clarkson Yard GO Access & Royal Windsor Drive





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 173 | 685 | 47 | 45 | 1055 | 33 | 49 | 8 | 13 | 38 | 11 | 37 |
| Future Volume (vph) | 173 | 685 | 47 | 45 | 1055 | 33 | 49 | 8 | 13 | 38 | 11 | 37 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 3.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.96 | 1.00 | 0.99 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | | 0.99 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.91 | | 1.00 | 0.88 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1784 | 3650 | 1557 | 1782 | 3650 | 1525 | 1774 | 1717 | | 1767 | 1673 | |
| Flt Permitted | 0.21 | 1.00 | 1.00 | 0.36 | 1.00 | 1.00 | 0.72 | 1.00 | | 0.74 | 1.00 | |
| Satd. Flow (perm) | 386 | 3650 | 1557 | 675 | 3650 | 1525 | 1348 | 1717 | | 1380 | 1673 | |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 194 | 770 | 53 | 51 | 1185 | 37 | 55 | 9 | 15 | 43 | 12 | 42 |
| RTOR Reduction (vph) | 0 | 0 | 7 | 0 | 0 | 9 | 0 | 14 | 0 | 0 | 39 | 0 |
| Lane Group Flow (vph) | 194 | 770 | 46 | 51 | 1185 | 28 | 55 | 10 | 0 | 43 | 15 | 0 |
| Confl. Peds. (#/hr) | 10 | | 2 | 2 | | 10 | 5 | | 8 | 8 | | 5 |
| Confl. Bikes (#/hr) | 1 | | | | | 1 | | | | | | |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | pm+pt | NA | Perm | Perm | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | 5 | 2 | | | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | | 8 | | |
| Actuated Green, G (s) | 117.2 | 117.2 | 117.2 | 105.2 | 105.2 | 105.2 | 9.8 | 9.8 | | 9.8 | 9.8 | |
| Effective Green, g (s) | 117.2 | 117.2 | 117.2 | 105.2 | 105.2 | 105.2 | 9.8 | 9.8 | | 9.8 | 9.8 | |
| Actuated g/C Ratio | 0.84 | 0.84 | 0.84 | 0.75 | 0.75 | 0.75 | 0.07 | 0.07 | | 0.07 | 0.07 | |
| Clearance Time (s) | 3.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 413 | 3055 | 1303 | 507 | 2742 | 1145 | 94 | 120 | | 96 | 117 | |
| v/s Ratio Prot | c0.03 | 0.21 | | | 0.32 | | | 0.01 | | | 0.01 | |
| v/s Ratio Perm | c0.36 | | 0.03 | 0.08 | | 0.02 | c0.04 | | | 0.03 | | |
| v/c Ratio | 0.47 | 0.25 | 0.04 | 0.10 | 0.43 | 0.02 | 0.59 | 0.08 | | 0.45 | 0.13 | |
| Uniform Delay, d1 | 3.5 | 2.4 | 1.9 | 4.7 | 6.4 | 4.4 | 63.1 | 60.9 | | 62.5 | 61.1 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.83 | 1.41 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.8 | 0.2 | 0.1 | 0.3 | 0.4 | 0.0 | 9.0 | 0.3 | | 3.3 | 0.5 | |
| Delay (s) | 4.3 | 2.6 | 2.0 | 4.8 | 5.7 | 6.3 | 72.1 | 61.2 | | 65.8 | 61.6 | |
| Level of Service | A | A | A | A | A | A | E | E | | E | E | |
| Approach Delay (s) | | 2.9 | | | 5.7 | | | 68.8 | | | 63.5 | |
| Approach LOS | | A | | | A | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 8.8 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.49 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 16.0 |
| Intersection Capacity Utilization | 66.5% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

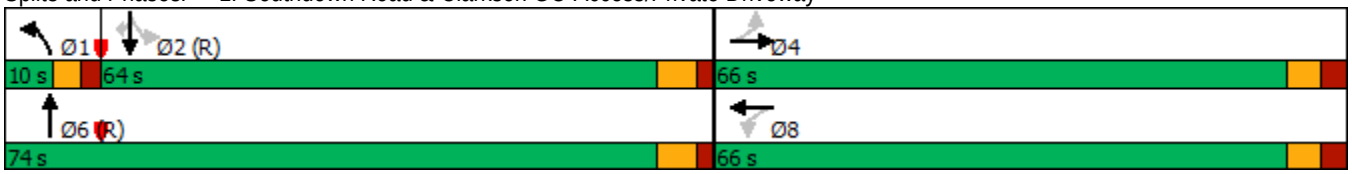
c Critical Lane Group

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 379 | 2 | 13 | 0 | 11 | 997 | 21 | 963 | 79 |
| Future Volume (vph) | 379 | 2 | 13 | 0 | 11 | 997 | 21 | 963 | 79 |
| Lane Group Flow (vph) | 408 | 147 | 14 | 9 | 12 | 1097 | 23 | 1035 | 85 |
| Turn Type | Perm | NA | Perm | NA | Prot | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | 8 | 1 | 6 | | 2 | |
| Permitted Phases | 4 | | 8 | | | | 2 | | 2 |
| Detector Phase | 4 | 4 | 8 | 8 | 1 | 6 | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 42.5 | 10.0 | 31.0 | 31.0 | 31.0 | 31.0 |
| Total Split (s) | 66.0 | 66.0 | 66.0 | 66.0 | 10.0 | 74.0 | 64.0 | 64.0 | 64.0 |
| Total Split (%) | 47.1% | 47.1% | 47.1% | 47.1% | 7.1% | 52.9% | 45.7% | 45.7% | 45.7% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.5 | 6.5 | 6.5 | 6.5 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Lead/Lag | | | | | Lead | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| v/c Ratio | 0.85 | 0.24 | 0.04 | 0.02 | 0.16 | 0.56 | 0.12 | 0.56 | 0.11 |
| Control Delay | 58.5 | 9.3 | 27.2 | 0.0 | 84.4 | 16.5 | 23.9 | 25.2 | 5.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 |
| Total Delay | 58.5 | 9.3 | 27.2 | 0.0 | 84.4 | 16.8 | 23.9 | 25.2 | 5.9 |
| Queue Length 50th (m) | 109.1 | 7.1 | 2.7 | 0.0 | 3.5 | 56.7 | 3.0 | 94.0 | 0.6 |
| Queue Length 95th (m) | 135.9 | 20.2 | 7.1 | 0.0 | m6.2 | 151.3 | 11.4 | 158.1 | 11.7 |
| Internal Link Dist (m) | | 94.1 | | 46.6 | | 182.5 | | 333.7 | |
| Turn Bay Length (m) | | | 20.0 | | 75.0 | | 25.0 | | 85.0 |
| Base Capacity (vph) | 604 | 744 | 468 | 729 | 77 | 1968 | 200 | 1863 | 758 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 312 | 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 | 0.68 | 0.20 | 0.03 | 0.01 | 0.16 | 0.66 | 0.12 | 0.56 | 0.11 |

**Intersection Summary**

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 118 (84%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Southdown Road & Clarkson GO Access/Private Driveway



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 379 | 2 | 135 | 13 | 0 | 8 | 11 | 997 | 23 | 21 | 963 | 79 |
| Future Volume (vph) | 379 | 2 | 135 | 13 | 0 | 8 | 11 | 997 | 23 | 21 | 963 | 79 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 5.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.83 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | 1.00 |
| Frt | 1.00 | 0.85 | | 1.00 | 0.85 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1767 | 1601 | | 1639 | 1633 | | 1785 | 3428 | | 1687 | 3444 | 1333 |
| Flt Permitted | 0.75 | 1.00 | | 0.64 | 1.00 | | 0.95 | 1.00 | | 0.21 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1398 | 1601 | | 1102 | 1633 | | 1785 | 3428 | | 369 | 3444 | 1333 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 408 | 2 | 145 | 14 | 0 | 9 | 12 | 1072 | 25 | 23 | 1035 | 85 |
| RTOR Reduction (vph) | 0 | 74 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 38 |
| Lane Group Flow (vph) | 408 | 73 | 0 | 14 | 3 | 0 | 12 | 1096 | 0 | 23 | 1035 | 47 |
| Confl. Peds. (#/hr) | | | 9 | 9 | | | 53 | | 17 | 17 | | 53 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 8% | 0% | 0% | 0% | 6% | 4% | 5% | 6% | 0% |
| Turn Type | Perm | NA | | Perm | NA | | Prot | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 1 | 6 | | | 2 | |
| Permitted Phases | 4 | | | 8 | | | | | | 2 | | 2 |
| Actuated Green, G (s) | 47.2 | 47.2 | | 47.2 | 47.2 | | 2.6 | 80.3 | | 72.7 | 72.7 | 72.7 |
| Effective Green, g (s) | 48.2 | 47.2 | | 47.2 | 47.2 | | 2.6 | 80.3 | | 72.7 | 72.7 | 72.7 |
| Actuated g/C Ratio | 0.34 | 0.34 | | 0.34 | 0.34 | | 0.02 | 0.57 | | 0.52 | 0.52 | 0.52 |
| Clearance Time (s) | 6.5 | 6.5 | | 6.5 | 6.5 | | 5.0 | 6.0 | | 6.0 | 6.0 | 6.0 |
| 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) | 481 | 539 | | 371 | 550 | | 33 | 1966 | | 191 | 1788 | 692 |
| v/s Ratio Prot | | 0.05 | | | 0.00 | | 0.01 | c0.32 | | | c0.30 | |
| v/s Ratio Perm | c0.29 | | | 0.01 | | | | | | 0.06 | | 0.03 |
| v/c Ratio | 0.85 | 0.14 | | 0.04 | 0.01 | | 0.36 | 0.56 | | 0.12 | 0.58 | 0.07 |
| Uniform Delay, d1 | 42.5 | 32.2 | | 31.2 | 30.8 | | 67.9 | 18.7 | | 17.3 | 23.1 | 16.8 |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.25 | 0.77 | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 13.1 | 0.1 | | 0.0 | 0.0 | | 5.3 | 0.9 | | 1.3 | 1.4 | 0.2 |
| Delay (s) | 55.6 | 32.4 | | 31.2 | 30.8 | | 90.2 | 15.3 | | 18.5 | 24.5 | 16.9 |
| Level of Service | E | C | | C | C | | F | B | | B | C | B |
| Approach Delay (s) | | 49.4 | | | 31.0 | | | 16.1 | | | 23.8 | |
| Approach LOS | | D | | | C | | | B | | | C | |

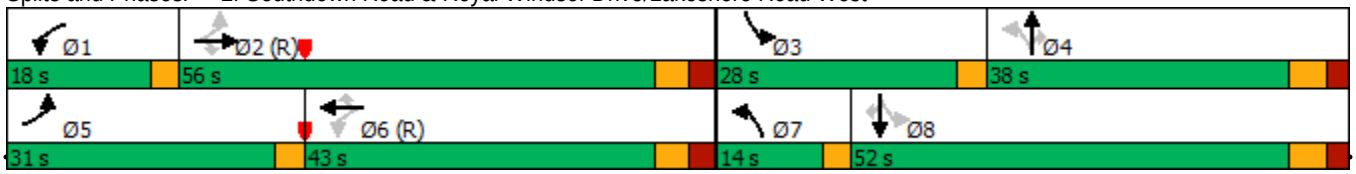
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 25.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 17.5 |
| Intersection Capacity Utilization | 67.0% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

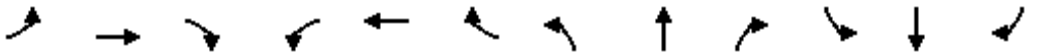
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 327 | 1109 | 84 | 207 | 698 | 386 | 123 | 336 | 226 | 463 | 381 | 240 |
| Future Volume (vph) | 327 | 1109 | 84 | 207 | 698 | 386 | 123 | 336 | 226 | 463 | 381 | 240 |
| Lane Group Flow (vph) | 344 | 1167 | 88 | 218 | 735 | 406 | 129 | 354 | 238 | 487 | 401 | 253 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 7 | 4 | 4 | 3 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 |
| Minimum Split (s) | 9.5 | 39.5 | 39.5 | 9.5 | 39.5 | 39.5 | 9.5 | 37.5 | 37.5 | 9.5 | 37.5 | 37.5 |
| Total Split (s) | 31.0 | 56.0 | 56.0 | 18.0 | 43.0 | 43.0 | 14.0 | 38.0 | 38.0 | 28.0 | 52.0 | 52.0 |
| Total Split (%) | 22.1% | 40.0% | 40.0% | 12.9% | 30.7% | 30.7% | 10.0% | 27.1% | 27.1% | 20.0% | 37.1% | 37.1% |
| Yellow Time (s) | 3.0 | 3.5 | 3.5 | 3.0 | 3.5 | 3.5 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 0.0 | 3.0 | 3.0 | 0.0 | 3.0 | 3.0 | 0.0 | 2.5 | 2.5 | 0.0 | 2.5 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| v/c Ratio | 0.89 | 0.90 | 0.16 | 0.90 | 0.73 | 0.56 | 0.40 | 0.45 | 0.46 | 0.95 | 0.36 | 0.40 |
| Control Delay | 62.1 | 41.8 | 4.0 | 73.8 | 51.6 | 7.0 | 28.7 | 49.0 | 8.7 | 74.7 | 42.7 | 16.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 62.1 | 41.8 | 4.0 | 73.8 | 51.6 | 7.0 | 28.7 | 49.0 | 8.7 | 74.7 | 42.7 | 16.5 |
| Queue Length 50th (m) | 48.7 | 171.9 | 0.8 | 46.4 | 105.5 | 0.0 | 22.2 | 47.2 | 1.1 | 92.9 | 26.2 | 0.0 |
| Queue Length 95th (m) | #118.1 | #188.0 | m6.3 | #94.9 | 130.0 | 28.1 | 36.7 | 63.5 | 24.3 | #169.9 | 67.6 | 55.1 |
| Internal Link Dist (m) | | 119.5 | | | 189.3 | | | 142.3 | | | 182.5 | |
| Turn Bay Length (m) | 115.0 | | 20.0 | 70.0 | | 165.0 | 85.0 | | | 85.0 | | 50.0 |
| Base Capacity (vph) | 411 | 1290 | 552 | 249 | 1000 | 722 | 328 | 782 | 523 | 515 | 1123 | 632 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.84 | 0.90 | 0.16 | 0.88 | 0.73 | 0.56 | 0.39 | 0.45 | 0.46 | 0.95 | 0.36 | 0.40 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 38 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
# 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.

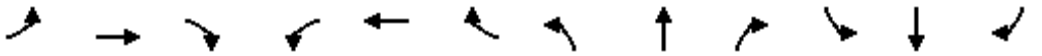
Splits and Phases: 2: Southdown Road & Royal Windsor Drive/Lakeshore Road West





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 327 | 1109 | 84 | 207 | 698 | 386 | 123 | 336 | 226 | 463 | 381 | 240 |
| Future Volume (vph) | 327 | 1109 | 84 | 207 | 698 | 386 | 123 | 336 | 226 | 463 | 381 | 240 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.96 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.97 | 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 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1637 | 3614 | 1373 | 1785 | 3579 | 1541 | 1533 | 3476 | 1522 | 1762 | 3411 | 1404 |
| Flt Permitted | 0.16 | 1.00 | 1.00 | 0.10 | 1.00 | 1.00 | 0.52 | 1.00 | 1.00 | 0.40 | 1.00 | 1.00 |
| Satd. Flow (perm) | 274 | 3614 | 1373 | 192 | 3579 | 1541 | 833 | 3476 | 1522 | 739 | 3411 | 1404 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 344 | 1167 | 88 | 218 | 735 | 406 | 129 | 354 | 238 | 487 | 401 | 253 |
| RTOR Reduction (vph) | 0 | 0 | 57 | 0 | 0 | 293 | 0 | 0 | 181 | 0 | 0 | 170 |
| Lane Group Flow (vph) | 344 | 1167 | 31 | 218 | 735 | 113 | 129 | 354 | 57 | 487 | 401 | 83 |
| Confl. Peds. (#/hr) | 3 | | 20 | 20 | | 3 | 9 | | 12 | 12 | | 9 |
| Heavy Vehicles (%) | 9% | 1% | 12% | 0% | 2% | 2% | 16% | 5% | 2% | 1% | 7% | 11% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 7 | 4 | | 3 | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 4 | 8 | | 8 |
| Actuated Green, G (s) | 67.5 | 50.0 | 50.0 | 53.6 | 39.1 | 39.1 | 41.9 | 31.5 | 31.5 | 59.5 | 46.1 | 46.1 |
| Effective Green, g (s) | 67.5 | 50.0 | 50.0 | 53.6 | 39.1 | 39.1 | 41.9 | 31.5 | 31.5 | 59.5 | 46.1 | 46.1 |
| Actuated g/C Ratio | 0.48 | 0.36 | 0.36 | 0.38 | 0.28 | 0.28 | 0.30 | 0.22 | 0.22 | 0.42 | 0.33 | 0.33 |
| Clearance Time (s) | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 | 3.0 | 6.5 | 6.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 379 | 1290 | 490 | 238 | 999 | 430 | 301 | 782 | 342 | 496 | 1123 | 462 |
| v/s Ratio Prot | c0.16 | 0.32 | | 0.09 | 0.21 | | 0.03 | 0.10 | | c0.18 | 0.12 | |
| v/s Ratio Perm | c0.27 | | 0.02 | 0.26 | | 0.07 | 0.10 | | 0.04 | c0.24 | | 0.06 |
| v/c Ratio | 0.91 | 0.90 | 0.06 | 0.92 | 0.74 | 0.26 | 0.43 | 0.45 | 0.17 | 0.98 | 0.36 | 0.18 |
| Uniform Delay, d1 | 33.6 | 42.7 | 29.6 | 37.9 | 45.8 | 39.3 | 37.5 | 46.8 | 43.7 | 34.9 | 35.7 | 33.5 |
| Progression Factor | 1.33 | 0.74 | 0.73 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.62 | 1.16 | 3.76 |
| Incremental Delay, d2 | 22.3 | 9.5 | 0.2 | 36.1 | 4.8 | 1.5 | 1.0 | 1.9 | 1.1 | 33.0 | 0.8 | 0.7 |
| Delay (s) | 67.1 | 41.2 | 21.9 | 74.0 | 50.6 | 40.7 | 38.5 | 48.7 | 44.8 | 89.4 | 42.2 | 126.6 |
| Level of Service | E | D | C | E | D | D | D | D | D | F | D | F |
| Approach Delay (s) | | 45.7 | | | 51.4 | | | 45.6 | | | 81.1 | |
| Approach LOS | | D | | | D | | | D | | | F | |

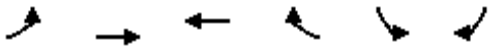
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 55.7 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.98 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 114.6% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 87 | 1452 | 8 | 0 | 984 | 92 | 0 | 0 | 80 | 10 | 0 | 54 |
| Future Volume (Veh/h) | 87 | 1452 | 8 | 0 | 984 | 92 | 0 | 0 | 80 | 10 | 0 | 54 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 99 | 1650 | 9 | 0 | 1118 | 105 | 0 | 0 | 91 | 11 | 0 | 61 |
| Pedestrians | | 9 | | | | | | 1 | | | 9 | |
| Lane Width (m) | | 3.6 | | | | | | 3.5 | | | 3.5 | |
| Walking Speed (m/s) | | 1.2 | | | | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | | | | 0 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | TWLTL | | | None | | | | | | | |
| Median storage veh) | | 2 | | | | | | | | | | |
| Upstream signal (m) | | 283 | | | 144 | | | | | | | |
| pX, platoon unblocked | 0.84 | | | 0.72 | | | 0.80 | 0.80 | 0.72 | 0.80 | 0.80 | 0.84 |
| vC, conflicting volume | 1232 | | | 1651 | | | 2292 | 3081 | 826 | 2202 | 3028 | 443 |
| vC1, stage 1 conf vol | | | | | | | 1849 | 1849 | | 1180 | 1180 | |
| vC2, stage 2 conf vol | | | | | | | 443 | 1232 | | 1023 | 1849 | |
| vCu, unblocked vol | 630 | | | 1128 | | | 944 | 1933 | 0 | 833 | 1867 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | 6.5 | 5.5 | | 6.5 | 5.5 | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 88 | | | 100 | | | 100 | 100 | 88 | 97 | 100 | 93 |
| cM capacity (veh/h) | 806 | | | 451 | | | 93 | 122 | 786 | 318 | 126 | 908 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|---|---|---|
| Volume Total | 649 | 1100 | 9 | 447 | 447 | 329 | 91 | 11 | 61 |
| Volume Left | 99 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 |
| Volume Right | 0 | 0 | 9 | 0 | 0 | 105 | 91 | 0 | 61 |
| cSH | 806 | 1700 | 1700 | 1700 | 1700 | 1700 | 786 | 318 | 908 |
| Volume to Capacity | 0.12 | 0.65 | 0.01 | 0.26 | 0.26 | 0.19 | 0.12 | 0.03 | 0.07 |
| Queue Length 95th (m) | 3.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.1 | 0.9 | 1.7 |
| Control Delay (s) | 3.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.2 | 16.7 | 9.3 |
| Lane LOS | A | | | | | | B | C | A |
| Approach Delay (s) | 1.1 | | | 0.0 | | | 10.2 | 10.4 | |
| Approach LOS | | | | | | | B | B | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.2 | | | |
| Intersection Capacity Utilization | 77.1% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 35 | 1516 | 1040 | 0 | 37 | 26 |
| Future Volume (Veh/h) | 35 | 1516 | 1040 | 0 | 37 | 26 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 37 | 1596 | 1095 | 0 | 39 | 27 |
| Pedestrians | | | | | | |
| Lane Width (m) | | | | | | |
| Walking Speed (m/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | TWLTL | TWLTL | | | |
| Median storage veh) | | 2 | 2 | | | |
| Upstream signal (m) | | 213 | 214 | | | |
| pX, platoon unblocked | 0.93 | | | | 0.75 | 0.93 |
| vC, conflicting volume | 1095 | | | | 1967 | 365 |
| vC1, stage 1 conf vol | | | | | 1095 | |
| vC2, stage 2 conf vol | | | | | 872 | |
| vCu, unblocked vol | 845 | | | | 1088 | 62 |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | 5.8 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 95 | | | | 88 | 97 |
| cM capacity (veh/h) | 745 | | | | 331 | 929 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | SB 1 |
|---|---|---|---|---|---|---|
| Volume Total | 569 | 1064 | 438 | 438 | 219 | 66 |
| Volume Left | 37 | 0 | 0 | 0 | 0 | 39 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 27 |
| cSH | 745 | 1700 | 1700 | 1700 | 1700 | 449 |
| Volume to Capacity | 0.05 | 0.63 | 0.26 | 0.26 | 0.13 | 0.15 |
| Queue Length 95th (m) | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 4.1 |
| Control Delay (s) | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 14.4 |
| Lane LOS | A | | | | | B |
| Approach Delay (s) | 0.5 | | 0.0 | | | 14.4 |
| Approach LOS | | | | | | B |

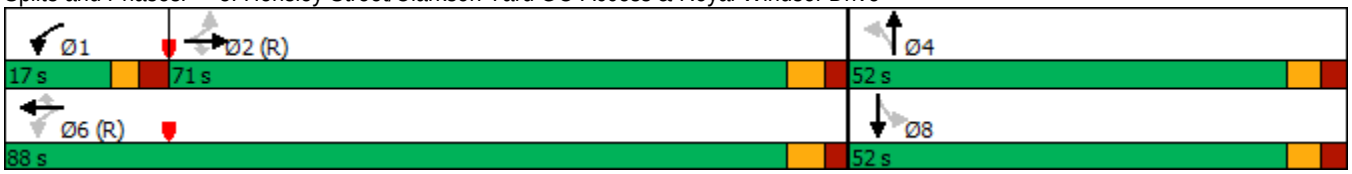
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.6 | | | |
| Intersection Capacity Utilization | 76.7% | ICU Level of Service | | D |
| Analysis Period (min) | 15 | | | |

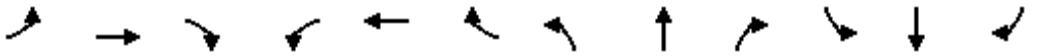
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 66 | 1375 | 191 | 132 | 903 | 23 | 178 | 18 | 63 | 10 |
| Future Volume (vph) | 66 | 1375 | 191 | 132 | 903 | 23 | 178 | 18 | 63 | 10 |
| Lane Group Flow (vph) | 68 | 1418 | 197 | 136 | 931 | 24 | 184 | 122 | 65 | 158 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | Perm | Perm | NA | Perm | NA |
| Protected Phases | | 2 | | 1 | 6 | | | 4 | | 8 |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | 8 | |
| Detector Phase | 2 | 2 | 2 | 1 | 6 | 6 | 4 | 4 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 5.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| Minimum Split (s) | 34.5 | 34.5 | 34.5 | 11.0 | 34.5 | 34.5 | 39.5 | 39.5 | 39.5 | 39.5 |
| Total Split (s) | 71.0 | 71.0 | 71.0 | 17.0 | 88.0 | 88.0 | 52.0 | 52.0 | 52.0 | 52.0 |
| Total Split (%) | 50.7% | 50.7% | 50.7% | 12.1% | 62.9% | 62.9% | 37.1% | 37.1% | 37.1% | 37.1% |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 2.5 | 2.5 | 2.5 | 3.0 | 2.5 | 2.5 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.5 | 6.5 | 6.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| Lead/Lag | Lag | Lag | Lag | Lead | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | None | C-Max | C-Max | None | None | None | None |
| v/c Ratio | 0.20 | 0.67 | 0.21 | 0.51 | 0.36 | 0.02 | 0.89 | 0.30 | 0.28 | 0.37 |
| Control Delay | 19.5 | 24.0 | 11.0 | 27.7 | 19.2 | 11.6 | 93.5 | 12.5 | 48.0 | 13.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.5 | 24.0 | 11.0 | 27.7 | 19.2 | 11.6 | 93.5 | 12.5 | 48.0 | 13.9 |
| Queue Length 50th (m) | 9.0 | 141.3 | 15.5 | 25.5 | 82.6 | 1.3 | 52.7 | 4.5 | 16.3 | 8.0 |
| Queue Length 95th (m) | 23.9 | 218.1 | 37.8 | m44.1 | 123.6 | m4.4 | 76.4 | 20.3 | 28.1 | 25.9 |
| Internal Link Dist (m) | | 210.3 | | | 189.0 | | | 141.2 | | 146.2 |
| Turn Bay Length (m) | 95.0 | | 25.0 | 15.0 | | | | | | |
| Base Capacity (vph) | 333 | 2128 | 933 | 281 | 2587 | 1084 | 338 | 602 | 384 | 614 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.20 | 0.67 | 0.21 | 0.48 | 0.36 | 0.02 | 0.54 | 0.20 | 0.17 | 0.26 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 7 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Hensley Street/Clarkson Yard GO Access & Royal Windsor Drive





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 66 | 1375 | 191 | 132 | 903 | 23 | 178 | 18 | 100 | 63 | 10 | 144 |
| Future Volume (vph) | 66 | 1375 | 191 | 132 | 903 | 23 | 178 | 18 | 100 | 63 | 10 | 144 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 | 3.5 | 3.7 | 3.5 |
| Total Lost time (s) | 6.5 | 6.5 | 6.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.95 | 1.00 | 0.98 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 0.99 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.87 | | 1.00 | 0.86 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1770 | 3650 | 1547 | 1785 | 3650 | 1518 | 1783 | 1640 | | 1763 | 1631 | |
| Flt Permitted | 0.31 | 1.00 | 1.00 | 0.10 | 1.00 | 1.00 | 0.55 | 1.00 | | 0.64 | 1.00 | |
| Satd. Flow (perm) | 572 | 3650 | 1547 | 189 | 3650 | 1518 | 1041 | 1640 | | 1183 | 1631 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 68 | 1418 | 197 | 136 | 931 | 24 | 184 | 19 | 103 | 65 | 10 | 148 |
| RTOR Reduction (vph) | 0 | 0 | 31 | 0 | 0 | 7 | 0 | 83 | 0 | 0 | 100 | 0 |
| Lane Group Flow (vph) | 68 | 1418 | 166 | 136 | 931 | 17 | 184 | 39 | 0 | 65 | 58 | 0 |
| Confl. Peds. (#/hr) | 12 | | 4 | 4 | | 12 | 1 | | 12 | 12 | | 1 |
| Confl. Bikes (#/hr) | | | 2 | 2 | | | | | | | | |
| Heavy Vehicles (%) | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Turn Type | Perm | NA | Perm | pm+pt | NA | Perm | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | 2 | 6 | | 6 | 4 | | | 8 | | |
| Actuated Green, G (s) | 81.7 | 81.7 | 81.7 | 99.3 | 99.3 | 99.3 | 27.7 | 27.7 | | 27.7 | 27.7 | |
| Effective Green, g (s) | 81.7 | 81.7 | 81.7 | 99.3 | 99.3 | 99.3 | 27.7 | 27.7 | | 27.7 | 27.7 | |
| Actuated g/C Ratio | 0.58 | 0.58 | 0.58 | 0.71 | 0.71 | 0.71 | 0.20 | 0.20 | | 0.20 | 0.20 | |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | | 6.5 | 6.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 333 | 2130 | 902 | 266 | 2588 | 1076 | 205 | 324 | | 234 | 322 | |
| v/s Ratio Prot | | c0.39 | | c0.04 | 0.26 | | | 0.02 | | | 0.04 | |
| v/s Ratio Perm | 0.12 | | 0.11 | 0.32 | | 0.01 | c0.18 | | | 0.05 | | |
| v/c Ratio | 0.20 | 0.67 | 0.18 | 0.51 | 0.36 | 0.02 | 0.90 | 0.12 | | 0.28 | 0.18 | |
| Uniform Delay, d1 | 13.8 | 19.9 | 13.6 | 16.1 | 7.9 | 6.0 | 54.8 | 46.2 | | 47.7 | 46.7 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 2.41 | 2.14 | 4.21 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 1.4 | 1.7 | 0.5 | 1.4 | 0.3 | 0.0 | 35.7 | 0.2 | | 0.6 | 0.3 | |
| Delay (s) | 15.2 | 21.5 | 14.1 | 40.2 | 17.3 | 25.2 | 90.5 | 46.3 | | 48.3 | 47.0 | |
| Level of Service | B | C | B | D | B | C | F | D | | D | D | |
| Approach Delay (s) | | 20.4 | | | 20.3 | | | 72.9 | | | 47.4 | |
| Approach LOS | | C | | | C | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 27.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 87.8% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group