1545A Merivale Road

TIA Strategy Report

DRAFT

November 2022

TIA Plan Reports

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

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

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

CERTIFICATION

1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
4. I am either a licensed[1] or registered[2] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering ☑ or transportation planning ☐.

[1,2] **License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.**

City Of Ottawa
Infrastructure Services and Community Sustainability
Planning and Growth Management
110 Laurier Avenue West, 4th fl.
Ottawa, ON K1P 1J1
Tel. : 613-580-2424
Fax: 613-560-6006

Ville d'Ottawa
Services d 'infrastructure et Viabilité des collectivités
Urbanisme et Gestion de la croissance
110, avenue Laurier Ouest
Ottawa (Ontario) K1P 1J1
Tél. : 613-580-2424
Télécopieur: 613-560-6006

Dated at Ottawa (City) this 29 day of November, 2022.

Name: Jake Berube
(Please Print)

Professional Title: Transportation Engineer

Signature of individual certifier that s/he meets the above criteria

Office Contact Information (Please Print)
Address: 1223 Michael Street North, Suite 100
City / Postal Code: Ottawa, Ontario, K1J 7T2
Telephone / Extension: 613-738-4160
E-Mail Address: jake.berube@parsons.com

1545A Merivale Road

TIA Strategy Report

prepared for:
1545 Merivale Inc.
1370 Clyde Avenue
Nepean, ON
K2J 3H8

prepared by:

1223 Michael Street North
Suite 100
Ottawa, ON K1J 7T2

November 29, 2022

478377-01000

DOCUMENT CONTROL PAGE

CLIENT:	1545 Merivale Inc.
PROJECT NAME:	1545A Merivale Road Re-Development
REPORT TITLE:	TIA Step 4 Strategy Report
PARSONS PROJECT NO:	478377 - 01000
APPLICATION TYPE:	Site Plan Application
VERSION:	Draft
DIGITAL MASTER:	H:\ISO\478377\1000\DOCS\STEP4-Design\1545 Merivale Road - Strategy Report v2.docx
ORIGINATOR	Juan Lavin, EIT
REVIEWER:	Jake Berube, P.Eng.
AUTHORIZATION:	
CIRCULATION LIST:	Patrick McMahon
HISTORY:	- TIA Step 1 Screening Form – August 4, 2022 - TIA Step 2 Scoping Report – August 4, 2022 - TIA Step 3 Forecasting Report – August 31 2022 - TIA Step 4 Strategy Report – November 29, 2022

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

STRATEGY REPORT

Parsons has been retained by 1545 Merivale Road Inc. to prepare a TIA in support of a Site Plan Application to re-develop the existing industrial building as a new approximately 27,700 sq. ft. medical imaging clinic. This document follows the TIA process as outlined in the City Transportation Impact Assessment (TIA) Guidelines (2017). The following report represents Step 3 – Forecasting Report.

1.0 SCREENING FORM

The Screening Form confirmed the need for a TIA Report based on the Trip Generation, Location and Safety triggers. The Trip Generation trigger was met as the development is anticipated to generate more than 60 person trips during peak hours. The Screening Form and response to City of Ottawa comments have been provided in **Appendix A.**

2.0 SCOPING REPORT

2.1. Existing and Planned Conditions

2.1.1. Proposed Development

The proposed development will be located at the municipal address of 1545A Merivale Road. The site is currently occupied by an abandoned industrial/warehouse building which likely has little associated traffic.

Figure 1 illustrates the proposed site plan which is to have the existing industrial buildings removed in favour of a one-storey medical imaging clinic with an approximate area of 27,700 ft^2 and accessed from the existing driveway to Merivale Road, which is shared with the adjacent Ultramar Gas Station (1543 Merivale Road) via an easement. The existing access provides for all left turn movements for properties on both the west side and east sides of Merivale Road via a depressed median. Waste pickup is currently provided at the rear of the building through the adjacent 1541 Merivale Road retail property which access Capilano Drive via the 1541 Merivale Road commercial plaza.

The 1545A Merivale Road site is currently zoned as AM10 – Arterial Main Street Zone General Mixed-Use Zone which permits a medical facility. A total of 72 at-grade and 57 underground parking spaces are proposed, for a combined 129 parking spaces. The lot is anticipated to be paid parking. Occupancy is forecasted for 2024 in a single phase.

The local context of the site is illustrated in **Figure 2.**

Figure 1: Site Plan (November 2022)

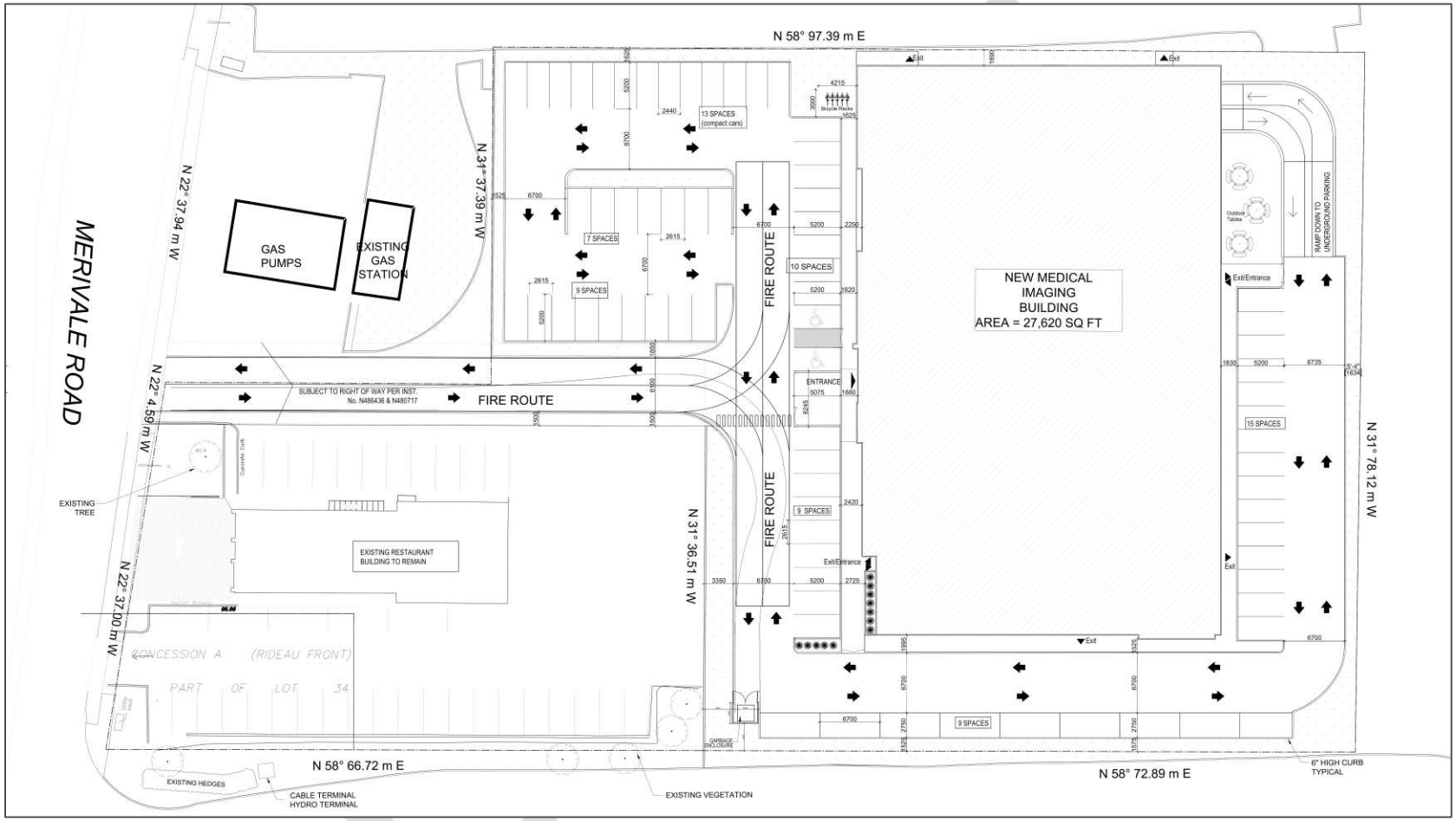


Figure 2: Local Context

2.1.2. Existing Conditions

Area Road Network

The following roads were included in the TIA. Description for each road within the study area has been provided below.

Merivale Road is a north-south municipal arterial road that extends from Island Park in the north to Fallowfield Road. Fronting the site, Merivale Road has a 4-lane divided urban cross section with a posted speed limit of 60 km/h.

Meadowlands Drive is an east-west municipal major collector road that connects Woodroffe in the west to Prince of Wales Drive in the east, which then continues as Hogs' Back Road. It typically provides for a 2-lane urban cross-section, except in the vicinity of Merivale Road where it widens to 4-lanes with additional auxiliary lanes. Nearest Merivale Road, the speed limit is posted 50km/h.

Clyde Avenue is a north-south municipal arterial road which extends northerly to Maitland Avenue and the HWY 417 from the Merivale/Clyde intersection at its south terminus. It is characterized by a 4-lane divided urban cross section with a 60 km/hr posted speed limit.

Capilano Drive is an east-west municipal collector road that connects to Beaver Ridge in the east to Merivale Road to the west, before continuing as Withrow Avenue which extends southwesterly to Meadowlands Drive. It is typified by a 2-lane cross section and a posted 40 km/hr speed limit

Rossland Avenue is a local east-west municipal street that connects to Merivale Road opposite to the existing site access, sharing the same Merivale Road median break. It has a 2-lane rural cross-section and has an assumed posted speed limit of 40 km/hr.

Existing Study Area Intersections

Merivale/Clyde

The Merivale/Clyde intersection is a four-legged signalized intersection. The westbound approach consists of a dedicated through lane, a dedicated and channelized right turn lane and a double left-turn lane. The southbound approach consists of a dedicated through lane, a dedicated left turn lane and a shared thru/right-turn lane. The northbound approach provides for a dedicated left turn lane, two dedicated through lanes and a channelized right turn lane with a large island. The eastbound approach provides for a dedicated left turn lane and a shared through/right turn lane. RTOR is permitted on all approaches and U-turns are not permitted for the eastbound and westbound movements.

Merivale/Capilano-Withrow

The Merivale/Capilano intersection is a four-legged signalized intersection. The minor leg eastbound and westbound approaches each provide for dedicated left turns and shared through/right turns. The major north-south approaches each provide for a dedicated right turn, 2 dedicated through lanes and a dedicated single left-turn. No RTOR restrictions are present. U-Turns are not permitted in the major north-south directions.

Merivale/Rossland-Site Access-Ultramar

The Merivale/Rossland-Site Access intersection is STOP-controlled on the east-west minor approaches. Rossland and the existing site access share a median break on Merivale Road. Rossland and the site access provide a single lane right/through/left approach. The major north-south Merivale Road approaches provide for two through lanes. The site access is shared with the adjacent Ultramar.

Merivale/Emerald Plaza

The Merivale/Emerald Plaza intersection is a four-legged signalized intersection where the east-west approaches serve adjacent private commercial centres. The minor east-west approaches provide for a shared through/right lane and dedicated left-turn lane. The southbound approach provides for a double left tun lane, a dedicated through lane and shared through/right lane. The northbound approach provides or a dedicated left turn lane, two dedicated through lanes and a dedicated right turn lane. No RTOR restrictions are present, however there is a no U-turn allowed restriction for the northbound and southbound movements.

Merivale/Meadowlands

The Merivale/Meadowlands intersection is a signalized four-legged intersection. The minor east-west approaches each provide for a dedicated left turn, two through lanes and a channelized right turn. Similarly, the major north-south approaches accommodate dedicated single left-turns, two dedicated through lanes and a channelized right turn.

Existing Driveways to Adjacent Developments

Within 200m of the proposed site access along Merivale Road, there are 6 accesses adjacent to the site and 4 accesses opposite the site as shown in **Figure 3**.

Figure 3: Adjacent Driveways within 200m of Site Access

Inspection of **Figure 3** and the existing access arrangements along Merivale indicated that:

- The existing site access is shared with the adjacent Ultramar to the north and the adjacent retail building (Formerly a Four Seasons Cookhouse BBQ store) to the south. Each of those separate properties have their own access adjacent to the existing 1545A Merivale property.

- On the east side of Merivale Road between Capilano and Emerald Plaza, there exists 5 driveways including the existing site access to 1545A Merivale.
- Again, between Capilano and Emerald Plaza, there exists an extended median break fronting the site access. This allows the site access, Rossland Avenue and the Shell Gas Station (west side of Merivale) full movements to and from Merivale.

Existing Area Traffic Management Measures

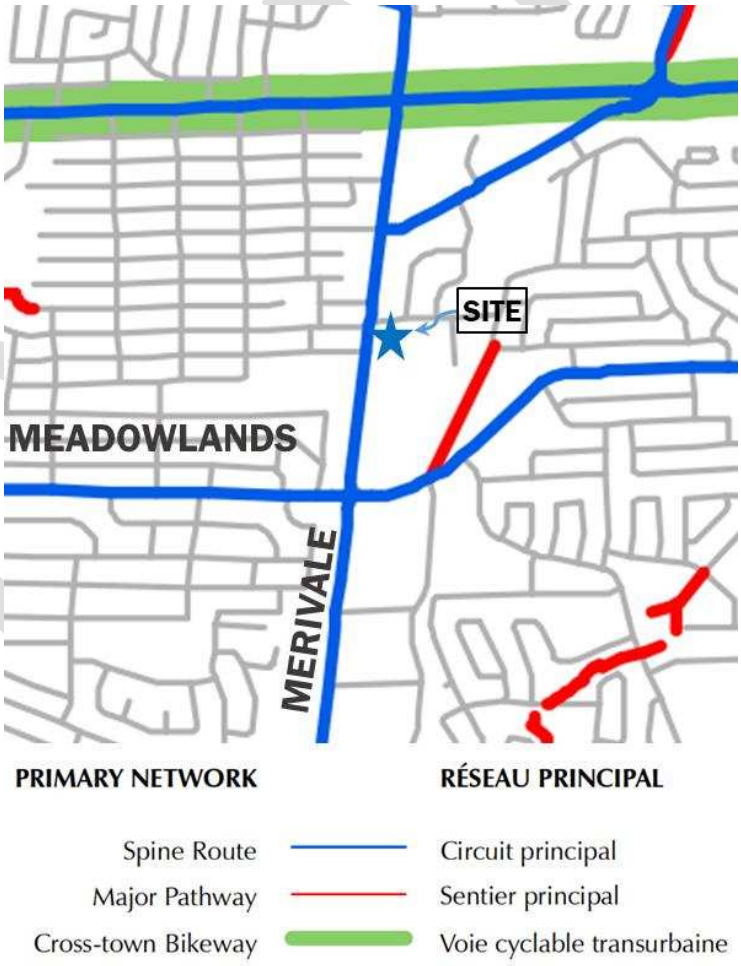
Existing area traffic management measures within the study area are limited to pedestrian advance walk phases and zebra crosswalks at intersections with Merivale Road.

Pedestrian/Cycling Network

Figure 4 illustrates an extract from the City of Ottawa's TMP, Map 1, Cycling Network – Primary Urban. Merivale Road and Meadowlands Drive are designated cycling 'Spine Routes', however, neither roadway provides cycling facilities at segments or intersections in the study area. A review of GeoOttawa indicates that Capilano and Withrow are suggested routes, however a review of street-level photography indicates that no cycling facilities are present. The Nepean Trail is located east of the site, connecting Birchwood Drive to Meadowlands Drive.

A sidewalk and paved boulevard arrangement is provided along both sides of Merivale Road nearest the proposed development. Capilano Drive includes a concrete sidewalk on the south side of the street with a narrow paved boulevard.

Figure 4: Study Area Active Transportation Facilities



Transit Network

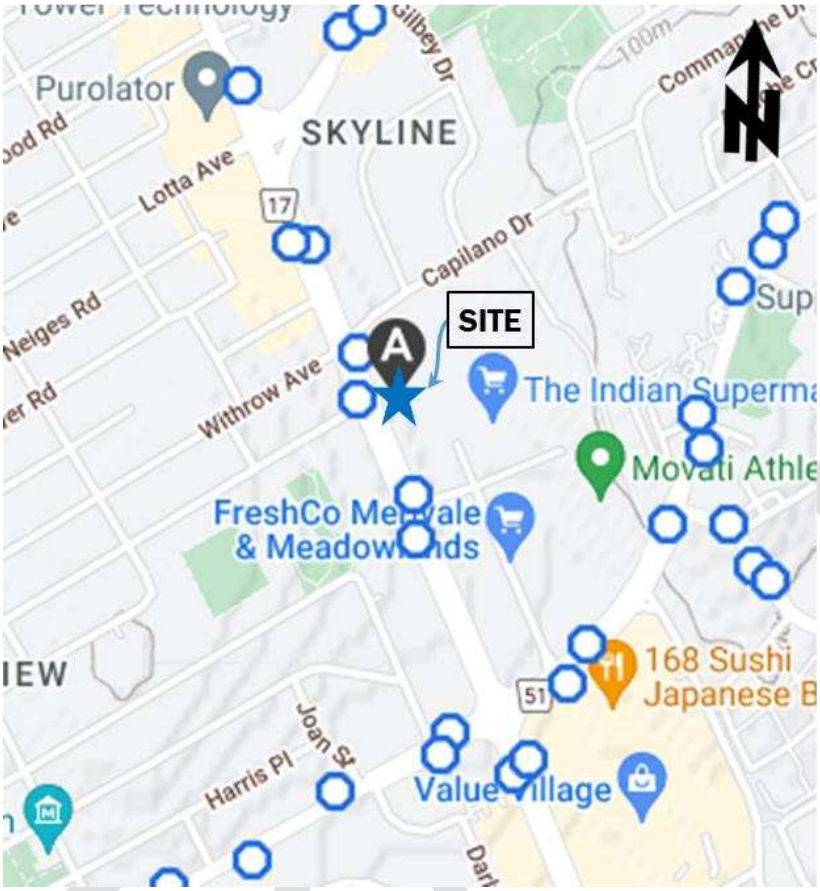
Due to the current circumstances regarding COVID-19, some bus services may have been altered by OC Transpo to operate on a different schedule. The following description of OC Transpo routes within the study area reflect the current bus operations (July 2022):

- **Route #80 (Barrhaven Centre <-> Tunney's Pasture):** identified by OC Transpo as a "Frequent Route", this route operates all day, 7 days a week and at an average rate of every 15 or less on weekdays. The nearest bus stops to the site are at the intersections of Merivale/Capilano (northbound) and Merivale/Rossland (southbound).
- **Route #81 (Clyde <-> Tunney's Pasture):** identified by OC Transpo as a "Local Route", this route operates 7 days a week (except on weekend evenings) and at an average headway of 30 minutes. The nearest bus stops to the site are located at the Merivale / Clyde intersection.
- **Route #86 (Baseline <-> Tunney's Pasture):** identified by OC Transpo as a "Local Route", this route operates 7 days a week with all day service and at an average headway of 15-to-30 minutes. The nearest bus stops to the site are located at the Merivale / Meadowlands intersection.
- **Route #186 (Lincoln Fields <-> Merivale/Slack)**: identified by OC Transpo as a weekday "Local Route" with service during the peak hours, Monday to Friday. The nearest bus stops to the site are located at the Merivale / Meadowlands intersection

The transit network for the study area is illustrated in **Figure 5** and the transit route maps are provided in **Appendix B**. **Figure 6** illustrates the bus stop locations.

Figure 5: Area Transit Network

Figure 6: Bus Stop Locations



Peak Hour Travel Demands

The existing peak hour traffic volumes at the signalized intersections within the study area were obtained from the City of Ottawa for the following intersections:

- Merivale/Clyde – Conducted Wednesday, April 05, 2017
- Merivale/Capilano – Conducted Wednesday, April 19, 2017
- Merivale/Rossland-Ultramar – Conducted side movements on Tuesday, August 2nd, 2022
- Merivale/Emerald Plaza – Conducted Wednesday, April 05, 2017
- Merivale/Meadowlands – Conducted Wednesday, April 05, 2017

The traffic volumes at study area intersections are illustrated in **Figure 7**, with raw traffic count data provided in **Appendix C**. No adjustments such as traffic growth have been applied to the traffic volumes given the study area context includes a well-established neighborhood and in a central area of the City of Ottawa.

The peak hour volumes were then imported into Trafficware Synchro™ 10 software to complete intersection capacity analysis. The resultant intersection performance has been summarized in **Table 1** with detailed results provided in **Appendix D**.

Figure 7: Existing Vehicle & Pedestrian/Cyclist Volumes (2022) – AM (PM) Peak Hours

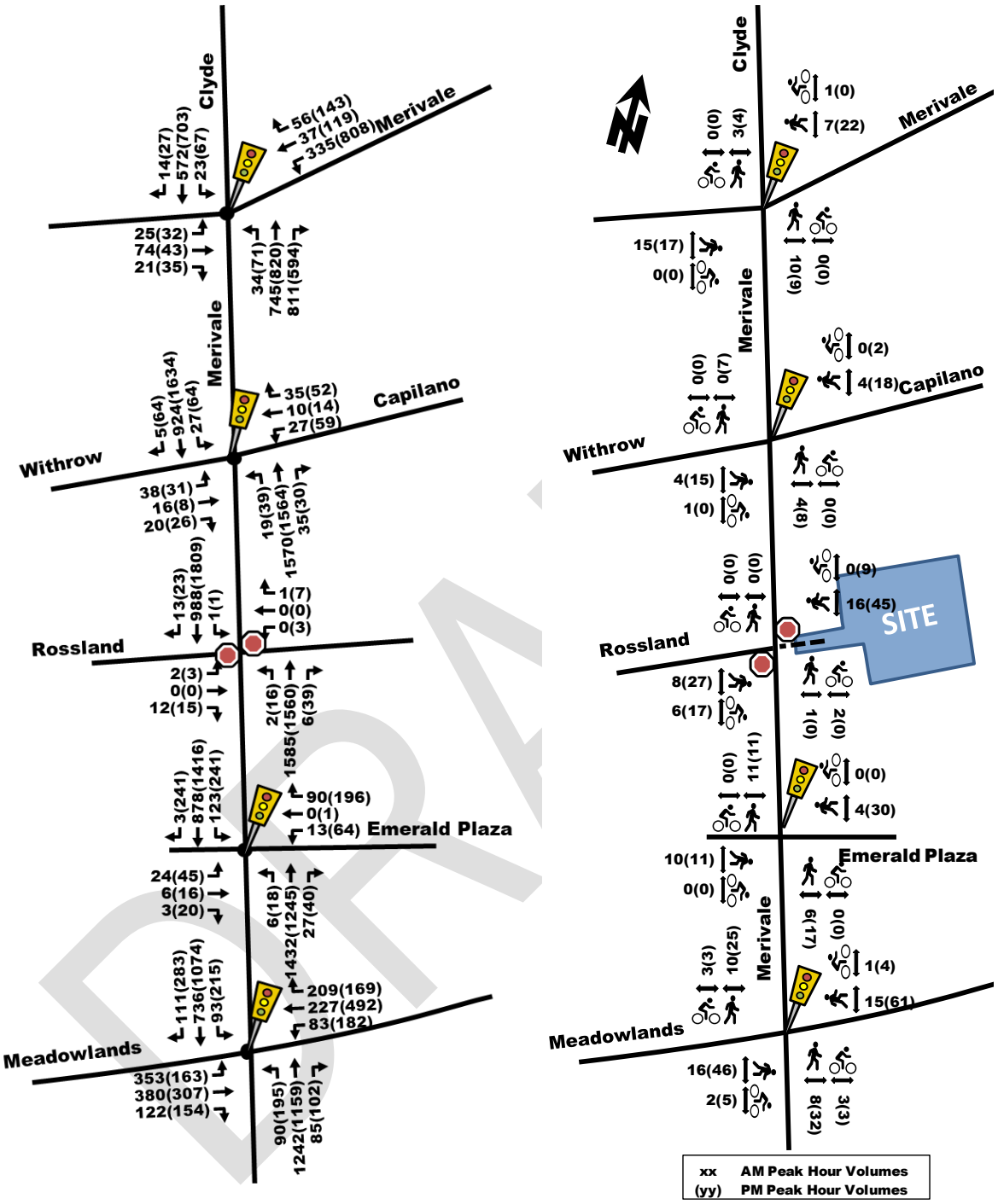


Table 1: Existing Study Area Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LoS	Max Delay (s) or v/c	Movement	Delay (s)	LoS	Max v/c
SIGNALIZED INTERSECTIONS						
Clyde/Merivale	E(C)	0.96(0.74)	WBL(WBL)	41.3(21.5)	D(C)	0.81(0.72)
Capilano/Merivale	D(B)	0.81(0.68)	SBT(NBT)	18.8(9.3)	C(B)	0.77(0.65)
Emerald Plaza/Merivale	E(C)	0.93(0.75)	EBL(NBT)	18.1(17.5)	C(B)	0.75(0.70)
Meadowland/Merivale	E(F)	0.93(1.03)	NBL(EBL)	44.1(39.6)	D(D)	0.84(0.87)
UNSIGNALIZED INTERSECTIONS						
Site – Rossland/Merivale	C(E)	16(44)	WB(WB)	0(2)	A(A)	-
Note: Analysis of intersections assumes a PHF of 0.90 and a saturation flow rate of 1800 veh/h/lane						

As shown in **Table 1**, all intersections perform overall at good LoS D or better; however, most intersections also have critical turning movement, particularly left turns, approaching capacity. In the PM peak hour, the eastbound left turn at Meadowlands/Merivale operates above capacity, which can be expected from a major arterial to arterial intersection which processes a high number of vehicles per hour. Also of note, the westbound left turn at Clyde/Merivale has queue lengths longer than the available storage space for the PM peak hour, with approximately 800 left turning vehicles accommodated in a double left turn lane arrangement.

Existing Road Safety Conditions

Five years of collision history data (2016-2020, inclusive) was obtained from the City of Ottawa OpenData portal for all intersections and road segments within the study area. It was determined that a total of 367 collisions have been reported, of which 50% (185) were rear-ends, 23% (84) were turning movements, 12% (45) were sideswipes and 9% (32) were angle collisions. 81% (297) collisions resulted in property damage while the remaining result in injury. No fatalities were reported. 5 collisions involved pedestrians. The source collision data from OpenData Ottawa and detailed analysis results are provided in **Appendix E**.

A standard unit of measure for assessing collisions at an intersection is based on the number of collisions per million entering vehicles (MEV). Intersections with a ratio of 1.0 Collisions/MEV or greater are considered to be at a higher risk for collisions. At signalized intersections within the study area, reported collisions have historically taken place at a rate of:

- 1.38 Collisions/MEV at the intersection of Clyde/Merivale which experienced 106 collisions in the five-year period. 54% (57) of collisions were reported as rear-ends, 18% (19) were reported as turning movements and 16% reported as sideswipes of which types are typical of congested intersections, particularly those with a heavily utilized double left-turn.
- 0.37 Collisions/MEV at the intersection of Merivale/Capilano where 29 collisions occurred. More than half the collisions were reported as rear-ends. No other discernible pattern was evident in the remaining collisions,
- 0.22 Collisions/MEV at the intersection of Merivale/Rossland where 15 collisions were recorded. While 67% (10) were labelled as rear-ends (typically indicating sudden stops on the mainline) there were 4 collisions reported as turning movements and 4 collisions reported as angle collisions. Closer inspection indicated that a left turn was the initial maneuver for two collisions, one each in the northbound and southbound directions. One incident resulted in an injury collision, which occurred after 2 AM in late December 2020. Given the low number of left turning trips, and that only two collisions were observed in the 5-year period, there is little evidence of a historic collision pattern.

- 0.32 Collisions/MEV at the intersection of Merivale/Emerald Plaza, where a total of 23 collisions were reported. The most frequent type of collision was a rear end, where 10 collisions were reported as such.
- 1.42 Collisions/MEV at the intersection of Merivale/Meadowlands where 130 collisions were reported over the 5-year period. Notably, 53 (41%) rear end collisions, 50 (38%) turning movement collisions and 11 (8%) sideswipe collisions were reported.

With respect to the existing Merivale/Rossland-Site Access intersection, vehicles have been observed to use the depressed median for turns to and from Merivale Road. To turn from Merivale Road, vehicles often wait in the limited vehicle storage area for upstream traffic signals to provide a red phase for oncoming traffic. Similarly, left turning vehicles from the side streets often need red phases from both intersections before proceeding. Two collision patterns of note are rear-ends and angled collisions. The risk of rear-end collisions in the northbound and southbound directions occur when vehicles turn from Merivale Road and remain within the partial storage lane. The driver expectation is for this vehicle to turn left at the next signalized intersection, so sudden braking can be unexpected. Left-turn angled and similar collisions carry a risk due to misjudging vehicle gaps in the 4-lane Merivale Road traffic flow.

Segment collisions have also been evaluated, with particular interest to the Merivale Road segments from Withrow Avenue to Emerald Plaza Shopping Center, an approximate 220-meter segment with the site access located between the two points. Within this segment of Merivale Road, a total of 23 collisions have been recorded, with 13 of them being north of the site access and 10 south of the site access. The collisions north of the site access were predominantly property damage only (11 or 85%) and about half of them involved rear-end collisions, normally attributed with start and go traffic or having a large number of driveway accesses. The segment south of the site however had a larger percentage of non-fatal injury, with 3 or 30% involving injuries, and one of the injuries resulting from a collision with a cyclist. Unlike the north segment, a larger percentage of collisions involved sideswipes and angle collisions, likely attributed to vehicles changing lanes or merging in and out of driveway accesses. It is noteworthy that only 1 of the 23 (4%) involved turning movements.

Of the remaining segment collisions, the majority of collisions were reported as rear-end incidents. This finding is consistent with the presence of a significant number of accesses along Merivale Road which require vehicles to come nearly to a stop resulting in conflicts with through traffic.

2.1.3. Planned Conditions

2.1.3.1. Future Transportation Network Changes

Merivale Road Secondary Plan

The proposed site is located within the Merivale Road Secondary Plan Area which provides planning direction for the Merivale Main Street corridor. The Plan is founded on the premise that Merivale Road is not a 'greenfield' area and is therefore to be maintained as a retail and service corridor between 'Activity Centres'. The purpose of the Merivale Planning Area is to support ongoing retail function.

The relevant Transportation and streetscape policies from the Merivale Road Secondary Plan include:

- **Pedestrian Realm:** Well furnished, protected and continuous pedestrian sidewalks are to be provided on the frontage of all developments.
- **Transit Network:** Pedestrian routes to and from sidewalks shall connect directly to transit stops
- **Interconnected Vehicle Access:** where possible, parking aisles and bays shall be linked between sites

City of Ottawa Transportation Master Plan (2013)

A review of the City of Ottawa Official Plan, Transportation Master Plan, Pedestrian Plan and Cycling Plan has indicated the following:

- The Baseline BRT Corridor Plan and the Affordable Transit Network Plan indicates a future BRT station at the Clyde/Merivale/Baseline junction within approximately 800m of the site. The timing of which is currently unknown and likely outside this development's horizon.
- Merivale Road is designed a transit priority corridor (continuous lanes) in the TMP Network Concept. These transit improvements are omitted from the Affordable Concept. To the knowledge of the proponent, no design has been prepared.
- Merivale Road is designated a Spine Route in the Ultimate Cycling Network
- Capilano Drive-Withrow Drive is designated a Local Route in the Ultimate Cycling Network.
- Birchwood Drive is indicated to extend to Meadowlands Drive (Schedule 4 of the New Official Plan).

2.1.3.1 Other Study Area Developments

Based on the City of Ottawa's Development Applications search tool, several applications have been initiated near the proposed development site which include:

- 1375 Clyde Avenue (Parsons, 2017) This proposal is located north of the Merivale/Clyde intersection within the Baseline-Clyde-Merivale triangle. The proposal includes a self-storage facility, a restaurant (with drive-thru) and an expansion on the existing retail building. The development is anticipated to generated 47 and 93 new AM and PM peak hour two-way auto trips.
- 1357 Baseline Road (Stantec, 2020) This proposal includes 174 residential units, 228 senior residence units and a 5,900 ft^2 ground floor retail. The total two-way trips are estimated to be 53 auto trips in the AM and 66 auto trips in the PM peaks.
- 1500 Merivale Road (Novatech, 2021) This proposal is located within the Baseline-Clyde-Merivale and proposed 1,967 dwelling units and approximately 12,000 ft^2 of commercial over the span of 10 phases from 2023 to 2028. At 50% build-out, the development would contribute 118 two-way AM peak hour trips and 131 PM peak hour trips to the surrounding network.
- 1509 Merivale Road (CGH, 2021) This proposal is located north of Capilano Drive along Merivale and would include a high-rise residential development of 203 units. This proposal is anticipated to generate 32 and 33 morning and afternoon peak hour trips, respectively.
- 56 Capilano Drive (ZBLA) – The existing curling rink is proposed to be re-zoned from an L1 – Community Leisure Facility to an R4Z – Residential use. The proposal would include 50 units. A 2013 Transportation Overview estimated existing peak hour traffic demand of approximately 24 two-way auto trips. When considering the balance of removing the existing curling trips for 50 residential units, the net impact to Capilano and Merivale would be minimal, therefore no additional traffic has been assumed from this proposal.

2.2. Study Area and Time Periods

The proposed development will be constructed in a single phase, anticipated for 2023. The assumed 5-year time horizon will be 2028. Given the proposed site characteristics, the AM and PM peak hours are proposed for evaluation.

Proposed study area intersections are listed below and illustrated in **Figure 8.**

- Merivale/Clyde-Lotto (Signalized) – February, 2020
- Merivale/Capilano-Withrow (Signalized) – February, 2018
- Merivale/Rossland-Site Access (Unsignalized) – August, 2022
- Merivale/Emerald Plaza (Signalized) – February, 2020
- Merivale/Meadowlands (Signalized) – November, 2018

As part of this TIA, a traffic count was undertaken during the AM and PM peak periods to determine turning movement volumes to and from Rossland Avenue and the existing site access. The count also identified pedestrian and cyclist movements during the peak periods. Notably, the majority of vehicles utilizing Rossland Avenue were destined to/originating from the Shell gas station west of Merivale Road. The median break was

observed to be used consistently for all movements. Northbound and south left turns across the median typically relied on downstream traffic signals to provide a red phase to Merivale Road before proceeding.

Figure 8: Study Area

2.3. Exemption Review

The following modules/elements of the TIA process are recommended to be exempt based on the City's TIA guidelines:

Table 2: Exemptions Review Summary

Module	Element	Exemption Consideration
4.1 Development Design	4.1.3 New Street Networks	This element is only required for applications involving Plan of Subdivision.
4.2 Parking	4.2.2 Spillover Parking	Only required for Site Plans where parking supply is 15% below unconstrained demand.
4.6 Neighborhood Traffic Management	4.6.1 Adjacent Neighbourhoods	Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds
4.8 Network Concept	All	Only required when proposed development generates more than 200 person-trips peak hour in excess of the equivalent volumes permitted by established zoning.

3.0 FORECASTING

3.1. Development Generated Travel Demand

3.1.1. Trip Generation and mode shares

Trip Generation Rates

The proposed development includes a single medical clinic commercial building with an approximate area of 27,700 ft². Therefore, trip generation rates for non-residential land uses were obtained from the ITE Trip Generation Manual (10th edition), assuming the "Clinic" land use for the gross floor area. The relevant trip rates for the peak hour of the development are summarized in Table 3 below.

Table 3: Proposed Development Trip Rates

Land Use	ITE/TRANS Designation	Data Source	Trip Rates	
			AM PEAK	PM PEAK
Medical	Clinic	ITE 630	T = 3.69(x);	T = 3.28(x);

Notes: *T = Average Vehicle Trip Ends*
Gross Floor Area (1,000 ft²)

Note that while there is an existing industrial use on the proposed property, the traffic generated by this building is anticipated to be negligible. Therefore, no trip reductions from re-developing the property are considered relevant.

Using the trip rates provided in Table 3, the total number of person trips per hour generated by the proposed medical clinic are multiplied by a factor of 1.28, as per TIA standards, to account for typical North American auto occupancy values of approximately 1.15 and combined transit and non-motorized modal shares of less than 10%. The resulting total person trips per hour are summarized in Table 4.

Table 4: Warehouse Peak Hour Person Trips

Land Use	GFA (ft²)	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Medical Clinic	27,700	102	29	131	34	82	116

Table 5 summarizes the mode shares for the Merivale area 'Commercial' uses extracted from TRANS Trip Generation Manual 2020. The table also indicates the proposed mode shares for the medical clinic as the development is anticipated to have a greater transit and auto passenger mode shares than a typical commercial establishment as medical clinics typical have scheduled appointments, patrons can plan their trip ahead with ride sharing or transit. No pass-by trip reductions are considered applicable for this development.

Table 5: Merivale Mode Shares (TRANS 2020) and Proposed Clinic Mode Shares

Travel mode	AM Mode Share Merivale – Commercial	PM Mode Share Merivale - Commercial	AM/PM Proposed Mode Share
Auto Driver	71%	61%	50%
Auto Passenger	19%	16%	20%
Transit	1%	8%	15%
Cycling	0%	1%	3%
Pedestrian	9%	14%	12%
Total	100%	100%	100%

Table 6 summarizes the forecast mode shares and person trips for the proposed medical clinic development. The site is forecast to generate 131 and 116 AM and PM peak hour person trips, of which 66 and 58 'new' vehicle trips are to be added to the transportation network.

Table 6: Medical Clinic Peak Hour Trips Mode Shares Breakdown

Travel Mode	Mode Share	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
		IN (65%)	OUT (35%)	TOTAL	IN (24%)	OUT (76%)	TOTAL
Auto Driver	50%	51	14	66	17	41	58
Auto Passenger	20%	20	6	26	7	16	23
Transit	15%	16	4	20	5	12	17
Cycling	3%	3	1	4	1	2	3
Pedestrian	12%	12	4	16	4	10	14
Total Person Trips	100%	102	29	131	34	82	116
'New' Auto Driver Trips		51	14	66	17	41	58

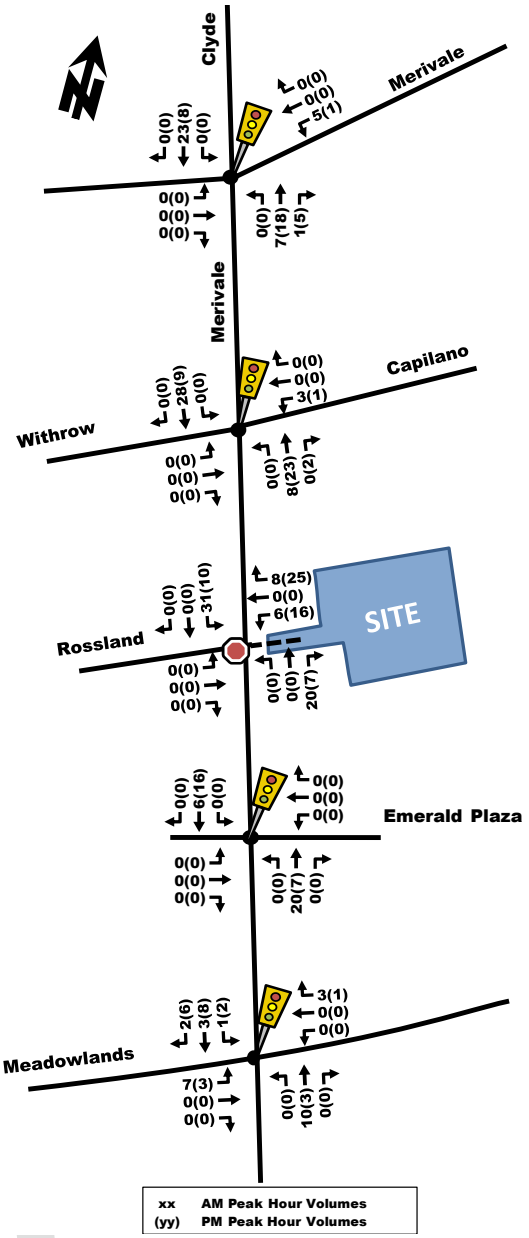
3.1.2. Trip Distribution and Assignment

Based on the 2011 OD Survey (Merivale district) and the location of adjacent arterial roadways and neighbourhoods, the distribution of site-generated traffic volumes was estimated as follows:

- 15% to/from the east via Capilano, Clyde, Baseline and Meadowlands
- 20% to/from the west via Baseline, West Hunt Club, Meadowlands and Withrow
- 45% to/from the north via Merivale-Clyde (Highway 417)
- 20% to/from the south via Merivale Road, West Hunt Club Road

The anticipated total 'new' auto trips for the proposed development from Table 6 were then assigned to the road network as shown in Figure 9. It is assumed that the proposed access provides for movements in all directions to and from Merivale Road as per existing conditions, resulting in 31 (10) trips using the southbound left turn during the respective peak hours. This represents a vehicle every 2 minutes using the southbound left turn bay into the site access during the morning peak hour.

Figure 9: Site-Generated Traffic Volumes – AM (PM) Peak Hours



3.2. Background Network Traffic

3.2.1. Transportation network plans

Refer to Section 2.1.2.1: Planned Conditions. The Baseline BRT corridor and station nearest Clyde Avenue are assumed to be outside of the study horizon.

3.2.2. Background Growth

The City's TRANS Regional Model forecasts were reviewed for the 2011 and 2031 horizons along Merivale Road (Appendix F). In general, growth was found to be essentially near-zero along Merivale Road and Clyde Avenue surrounding the proposed development.

Therefore, it is anticipated that background growth along the Merivale Road corridor will be captured through the addition of other nearby developments layered on individually as described in Section 3.2.3. Therefore, a 0% background annual growth rate has been applied to study area intersections.

3.2.3. Other Developments

Section 2.1.3.1 - Other Study Area Developments summarizes the other area development applications identified and found to have a transportation impact on the surrounding study area network. Appendix G provides the site generated traffic volumes extracted from their respective transportation studies.

Figure 10: 2023 Future Background Traffic Volumes

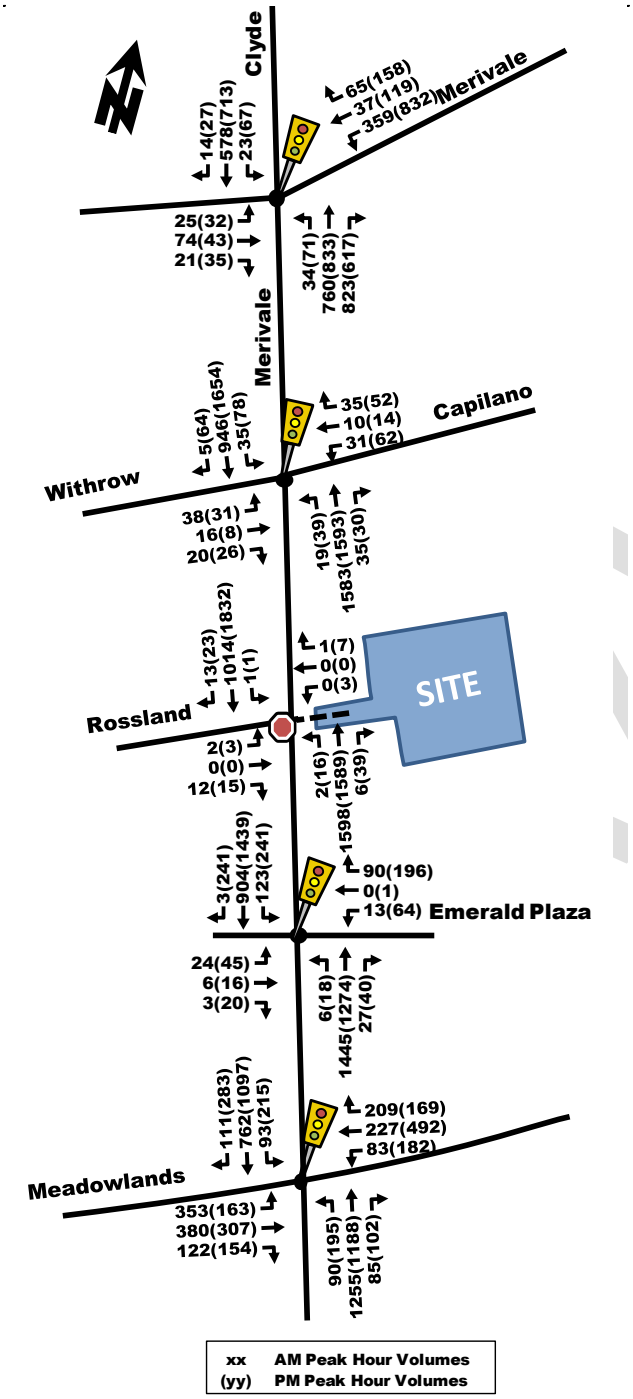
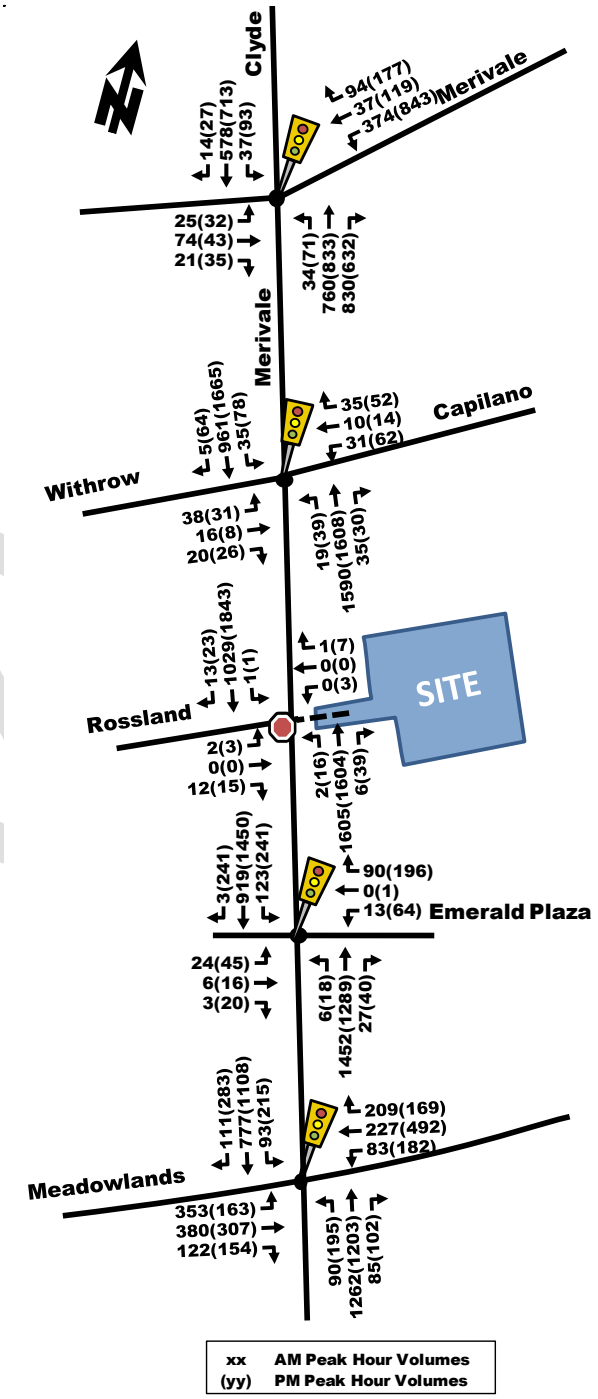


Figure 11: 2028 Future Background Traffic Volumes



The following development assumptions have been made regarding build out timelines:

- 1375 Clyde Avenue (Parsons, 2017) – Assumed full build-out by 2023 horizon.

- 1357 Baseline Road (Stantec, 2020) – Assumed full build-out by 2023 where site generated volumes correspond to the 'Without Baseline BRT Scenario' (Figure 10, **Appendix G**).
- 1500 Merivale Road (Novatech, 2021) – Assumed no development by 2023, 50% of build-out by 2028 horizon.
- 1509 Merivale Road (CGH, 2021) – Assumed full build-out by 2023 horizon.
- 56 Capilano Drive (ZBLA) – Not included within background traffic as the net impact of the re-development is anticipated to be negligible.

Figure 10 and **Figure 11** illustrate the AM and PM forecast background traffic for the 2023 and 2028 horizon years, respectively, assuming a 0% annual growth on study area intersections and individual layering of known other area developments.

3.3. Demand Rationalization

The forecast background traffic volumes (**Figure 10** and **Figure 11**) were imported into Synchro. The output intersection performance has been summarized in **Table 7** and **Table 8** for 2023 and 2028 background volumes respectively, with detailed output in **Appendix H**.

Table 7: 2023 Background Volume Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LoS	Max Delay (s) or v/c	Movement	Delay (s)	LoS	Max v/c
SIGNALIZED INTERSECTIONS						
Clyde/Merivale	C(E)	0.72(0.92)	WBL(WBL)	20.1(37.1)	B(C)	0.67(0.79)
Capilano/Merivale	B(B)	0.61(0.70)	NBT(SBT)	8.5(15.7)	A(B)	0.58(0.66)
Emerald Plaza/Merivale	B(C)	0.67(0.71)	NBT(SBT)	16.2(17.4)	B(B)	0.63(0.68)
Meadowland/Merivale	D(D)	0.88(0.84)	EBL(WBT)	34.4(37.2)	C(D)	0.77(0.82)
UNSIGNALIZED INTERSECTIONS						
Site – Rossland/Merivale	C(F)	16(51)	WB(WB)	--	--	--
Note: Analysis of intersections assumes a PHF of 1.00 and a saturation flow rate of 1800 veh/h/lane						

Table 8: 2028 Background Volume Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LoS	Max Delay (s) or v/c	Movement	Delay (s)	LoS	Max v/c
SIGNALIZED INTERSECTIONS						
Clyde/Merivale	C(E)	0.74(0.93)	WBL(WBL)	20.7(37.8)	B(C)	0.68(0.80)
Capilano/Merivale	B(C)	0.62(0.71)	NBT(SBT)	8.6(15.9)	A(B)	0.59(0.67)
Emerald Plaza/Merivale	B(C)	0.68(0.71)	NBT(SBT)	16.0(17.5)	B(B)	0.64(0.69)
Meadowland/Merivale	D(D)	0.88(0.84)	EBL(WBT)	34.4(37.6)	C(D)	0.78(0.83)
UNSIGNALIZED INTERSECTIONS						
Site – Rossland/Merivale	C(F)	17(59)	WB(WB)	--	--	--
Note: Analysis of intersections assumes a PHF of 1.00 and a saturation flow rate of 1800 veh/h/lane						

As shown in **Table 7** and **Table 8**, the future background intersection performance are anticipated to operate similar to, or better than, existing conditions given that a peak hour factor of 1.0 was used compared to 0.9 for existing (as per TIA guidelines). The only exception is the site access Rossland/Merivale intersection which is unsignalized. The added north-south background volumes on Merivale have reduced the gap for vehicles exiting the site or Rossland Avenue to perform their left turn maneuver, even though the intersection operates as overall very good. During the busiest times of the day, if a driver cannot find a gap to turn left, they may opt to turn right instead and perform a U-turn at the following intersection where it is allowed (such as

Merivale/Clyde) or simply change their route. The intersection performance shows that there is available capacity throughout the study area to accommodate the proposed development.

Figure 12: 2023 Total Projected Traffic Volumes

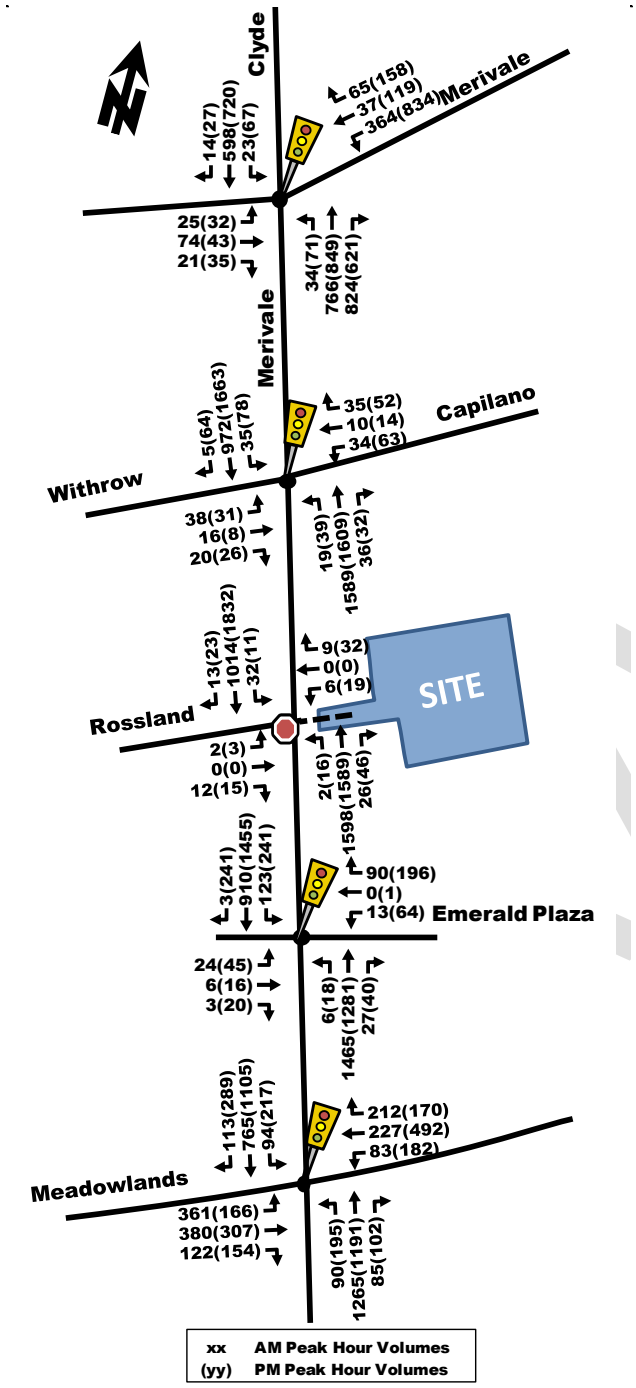
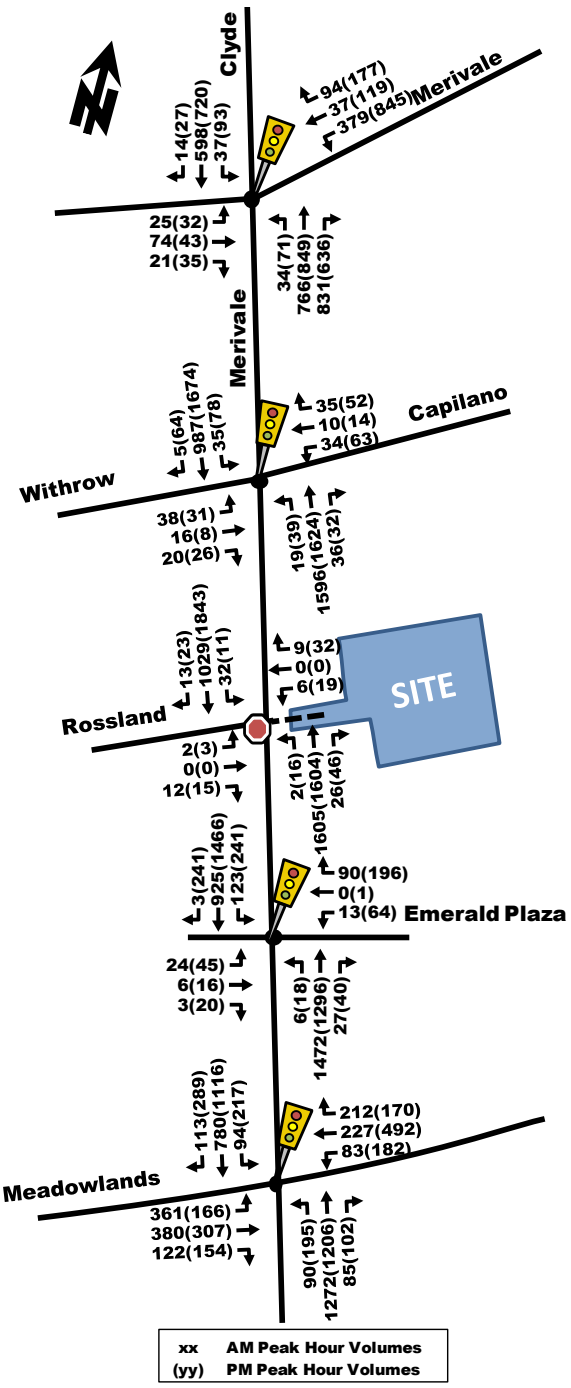


Figure 13: 2028 Total Projected Traffic Volumes



Given that there is projected background capacity along Merivale Road, no demand rationalization is proposed to modify either background volumes or development volumes.

The total projected future traffic volumes can be determined by superimposing the site-generated traffic volumes in **Figure 9**, onto the future background traffic volumes for the 2023 and 2028 horizon years. The total projected traffic volumes for 2023 and 2028 are illustrated in **Figure 12** and **Figure 13**

4.0 STRATEGY REPORT

4.1. Development Design

4.1.1. Design for Sustainable Modes

Location of Transit Facilities

There are existing bus stops on Merivale Road near the Capilano/Merivale and Rossland/Merivale intersections for northbound and southbound frequent transit Route #80 respectively, as shown in **Figure 6**. The site would be approximately 150 meters walk to the northbound stop and approximately 250 meters to the southbound stop, assuming transit users would cross at the Capilano/Merivale signalized intersection. Supplementary bus local routes are provided approximately 550 meters north for route #81 on Clyde Avenue and 650 meters south for routes #86 and #186 on Meadowlands Drive.

Pedestrian/Cycling Routes and Facilities

The site proposes a 1.5m sidewalk along the south side of the drive aisle connecting Merivale Road to the front door of the building, which reflects the available right of way for the drive aisle. A crosswalk is proposed from the front entrance to the driveway isle sidewalk, crossing the internal private driveway. These sidewalks will connect to existing sidewalk infrastructure on Merivale Road, which is provided on both sides of the roadway. All bus stop locations within an 800-meter walk are accessible via paved sidewalks.

Merivale Road and Meadowlands Drive are both denominated as spine routes, however neither of them has cycling facilities and it is assumed cyclists would share the road as mixed-user facilities. Desirable cycling routes can include the Nepean Trail Multi-Use Pathway (MUP) which provides connectivity to the Meadowlands Drive spine route (mixed-user facility). To the north, cyclists would need to use mixed facilities or local roads to travel 1.5kms to a branch of the Experimental Pathway MUP. It is understood that the future Baseline Road BRT Corridor could provide for future cycling infrastructure, however no formalized design has been confirmed.

Bicycle Parking

Bicycle parking has been proposed outdoors on bicycle racks fronting the site for patrons. The underground ground parking is anticipated to have a secure bicycle parking room intended for staff.

4.1.2. Circulation and Access

The site proposes an approximate 65m long private driveway throat with two-way vehicular traffic on a 6.1m wide road, thus adhering to private approach by-laws. This driveway throat connects to an internal driveway for surface parking to the north and a drive isle bordering the perimeter of the site to the south and east connecting to the underground parking ramp. The internal drive isles have a width of 6.7m and provide two-way circulation. The underground ramp gradient begins on a straightaway before the bend, which is generally considered preferable. The ramp grades have not been identified at this time, but it is expected that they will meet minimum standards. The latest site plan shows a ramp width of 5.5m. While the ramp details will be finalized during detailed design, a 16% ramp slope and 10% transition slope is expected.

Garbage pickup is proposed at ground level on the southwest quadrant of the site, with truck turning templates provided in **Appendix I**.

4.1.3. New Streets Network

Exempt, refer to **Table 2**.

4.2. Parking

The site is located in Area C, Schedule 1A, and is not within 600m walk to any rapid transit station within Schedule 2A or B. The proposed development remains beyond the 600m walking distance threshold to the

future Baseline BRT system. **Table 9** summarizes the vehicle parking minimum and maximums allowed within the parking by-law (N51).

Table 10 summarizes the bicycle parking requirements as per City of Ottawa Zoning By-Law-Part 4, sections 100-114.

Table 9: Vehicle Parking Space Supply

Land Use	GFA (m²)	Rate per 100 m²	Vehicle Spaces Required	
		MIN	MIN	PROPOSED
Medical Clinic (N51)	2,573	4	103	129

Table 10: Bicycle Parking Requirements

Land Use	GFA (m²)	Rate per 1,000 m²	Bike Spaces Required	
		MIN	MIN	PROPOSED PUBLIC USE
Medical Clinic	2,573	1	3	5

According to **Table 9** and **Table 10**, the vehicle and bicycle parking quantities are in conformance with the Parking By-Law requirements. A total of 72 at-grade vehicle parking spaces are proposed, catered predominantly to patients, while approximately 57 underground parking spaces catered predominantly to staff are proposed. A total of 5 at-grade outdoors bike parking stalls in the front of the building will be provided.

4.3. Boundary Street Design

4.3.1. Existing Conditions

The boundary street for the development is Merivale Road.

- *Merivale Road:*
  - 2 vehicle travel lane in each direction;
  - 1.5m sidewalk on both sides of road with 1.5m boulevard;
  - More than 3,000 vehicles per day;
  - Posted speed 60km/h (used 70km/h) with no parking allowed;
  - Classified an arterial mainstreet roadway;
  - Classified as a spine bike route; and,
  - Identified as a Truck Route.

The proposed site is not located within 600m of a rapid transit but is located within 300m of Elizabeth Wyn Wood Secondary School. Multi-modal Level of Service analysis for the subject road segments adjacent to the site is summarized in **Table 11** with detail analysis provided in **Appendix J**.

Table 11: MMLOS – Boundary Street Segments Existing and Future Proposed

Road Segment Level of Service (LoS)	Pedestrian PLoS		Bicycle (BLoS)		Transit (TLoS)		Truck (TkLoS)	
	PLOS	TARGET	BLOS	TARGET	TLOS	TARGET	TKLOS	TARGET
Merivale Road	E	A	F	C	D	D	A	D

Pedestrian: PLoS targets were not met due to the high target goal given the site's proximity to a school, the operating speeds, and types of sidewalk facilities. To achieve the PLoS target, the sidewalk would need to be widened to at least 2-meters wide with 2-meter boulevard separation and travel speeds would need to be reduced to 40 or less km/h. Given the arterial roadway designation, it is unlikely that speeds will be reduced.

Bicycle: BLoS targets were not met due to the lack of cycling infrastructure. Cyclists currently would have to share a lane with vehicles travelling 60km/h. Providing curbside bike lanes or physically separated bike lanes would meet the BLoS target on Merivale Road.

Transit: TLoS targets were met.

Truck: TkLoS targets were met.

4.4. Access Intersection Design

The 1545A Merivale Road proposal intends to maintain the existing site access arrangement as illustrated in **Figure 14**. The access forms the east leg of a 4-leg intersection which provides direct access to Rossland Avenue and the Shell Gas Station on the west side, and the 1545 Merivale and Ultramar Gas Station on the east side. Access across the median is provided by a depression measuring approximately 30m in length. Existing traffic counts noted low volumes crossing the median.

Figure 14: Existing 1545A Merivale / Rossland Avenue Intersection Arrangement

Although collision data from **Section 2.1.2** does not appear to show any significant collision patterns or a high incident of turning movement within historic data, it is acknowledged that an increase in turning movements to and from the site poses a risk to an increase in frequency of collisions at this location.

The following sub-sections discuss the proposed full-movement single access driveway to Merivale Road. Alternative access configurations to mitigate the left-turning demands at the site have also been discussed; however, these alternatives all have drawbacks such as loss of connectivity and access, required changes to roadway infrastructure (and costs associated) or require collaboration from adjacent sites. The alternative access configurations include:

- Right-in Right-out Access (RIRO), which would restrict access to the surrounding commercial properties and the community to the west. This alternative has not been pursued at this time due to its impacts to the site access, the surrounding commercial properties and the community to the west.
- Extension of turning bays and storage capacity which maintains the risks of turning into, and out of, the 1545 Merivale site while providing a mitigation to southbound rear-end collisions. However, this is

contingent on the ability to modify the northbound left turn storage at the Merivale/Capilano-Withrow intersection

- Provide a secondary access via an adjacent lot easement, which was explored and found not to be preferred by the proponent.

4.4.1. Location and Design of Access

The nearest intersecting street to the site access is located approximately 70m to the north at the Capilano/Merivale. This distance adheres to the By-law (No. 2003-447) Section 25(m)(ii), which suggests a separation between the site access and nearest intersection of 30m for a site with 100 to 150 parking spaces. However, within the same by-law, a separation of 30m from the site access to the nearest private approach is not met, with the Ultramar site access located approximately 15m north and the restaurant to the south having a driveway approximately 25m south. It is noteworthy that these three intersections currently exist, and the site is not proposing a new access to Merivale Road.

4.4.2. Intersection Control

The STOP-control condition will be maintained on Rossland Avenue and the site access, which have a very low number of vehicle movements compared to the through movements of Merivale Road. A traffic signal would not be warranted.

4.4.3. Intersection Design

A full movement access from the site to and from Merivale Road is proposed. This approach would maintain the existing intersection layout.

The analysis presented within Section 4.9.5 indicates the following relevant traffic operations which may affect the site access operations:

- The Merivale/Rossland NBL movement is being metered by the Meadowlands Drive intersection. Additionally, the NB queue likely blocks the existing storage bay. The northbound left-turn volumes are typically less than 50 vehicles in the peak hour, which could result in 2-to-3 vehicles in the queue assuming a typical worst-case storage requirement. The existing storage is approximately 50m with a 35m taper.
- The Merivale/Emerald Plaza SBL queue length can exceed 60m in the PM peak hour. The total available storage is approximately 125m with an estimate 21m taper.
- The site access is forecast to have high delays for the WB movement exiting the site in the PM peak hour (LOS 'F'). The WB movement during the AM peak hour is forecast to operate with a LOS 'D'

Per City comments, extending the existing southbound left turn storage lane by at least 15m to accommodate 2 left-turn vehicles was considered. To accomplish a longer SBL storage bay, storage capacity from the adjacent northbound left-turn (NBL) at Capilano/Merivale would need to be reduced. Based on the intersection capacity analysis and existing traffic volumes there appears the opportunity to reduce the available queue length at the Capilano/Merivale intersection

The minimum storage, parallel and taper lengths were reviewed from the Chapter 9 - Intersections, Table 9.17.2, Transportation Association of Canada. Assuming a design speed of 60 km/h, a minimum taper of 30m is required in each direction. Assuming an additional 15m of storage for the southbound left turn, the remaining available length for storage and taper in the northbound direction is approximately 50m. Therefore the northbound left turn at the Merivale/Withrow-Capilano intersection would only be provided a ~20m storage on initial feasibility analysis.

4.5. Transportation Demand Management

4.5.1. Context for TDM

A mixture of staff and patient trips are anticipated to the site. Patients will likely arrive scattered throughout the day, beginning before the peak hour, unlike staff who will likely arrive in the AM peak hour and depart in the PM peak hour.

Sections 3.1.1 and 3.1.2 describe how many trips are anticipated per travel mode and anticipates the likely locations that they will travel to and from based on the OD-Survey 2011 for Merivale. The site is located adjacent to transit stops for frequent route #80, making it a good candidate to promote transit use for staff trips. The availability of underground and secure bicycle parking can encourage cycling for staff to and from the development.

4.5.2. Need and Opportunity

The proposed development will predominantly be accessed by Merivale Road, which is currently operating near capacity. TDM measures could encourage the use of sustainable active mode shares, both to relieve stress on an already congested Merivale Road and to promote environmentally conscious ways of commuting. Such measures are described in more detail in Section 4.5.3 below, but can include, more aggressive Multi-Modal Levels of Service (MMLOS) as described in Section 4.3 and 4.9 and safe and efficient connectivity to public transit as described in Section 4.7, to name a few.

4.5.3. TDM Program

The TDM infrastructure and measures checklist have been completed and have been provided in Appendix K. Some of the TDM measures that are proposed include:

- The parking lot will be a controlled entry such that medical patrons would need to pay for parking. This can encourage transit or active mode use.
- Meets vehicle and bicycle parking by-laws
- Easy and direct connection to sidewalks on Merivale Road, including the proposed cross-walk internal to the site

4.6. Neighborhood Traffic Management

4.6.1. Adjacent Neighborhoods

Exempt, refer to Table 2.

4.7. Transit

4.7.1. Route Capacity

Approximately 20 ‘new’ two-way transit trips are projected for the AM and PM peak hours. The site will be located approximately 150 to 250 meters away from transit stops to frequent route #80. Route #80 operates at approximately 15-minute intervals with service from as early as 5 AM until midnight.

Given the high frequency of route #80 and the additional transit capacity on local transit routes on Meadowlands Drive and Clyde Avenue, there is expected sufficient capacity for route #80.

4.7.2. Transit Priority

Merivale Road is not part of a transit priority corridor.

4.8. Review of Network Concept

Exempt, the development is anticipated to produce less than 130 people trips total. Refer to Table 2.

4.9. Intersection Design

4.9.1. Intersection Control

See Section 4.4.2.

4.9.2. Intersection Design

For the purpose of this evaluation, the proposed existing access intersection as discussed in **Section 4.4** will be maintained and analyzed for future scenarios.

Multi-Modal Level of Service

As stated in the MMLOS Guidelines, only signalized intersections are considered for the intersection Level of Service measures. The MMLOS analysis is summarized in **Table 12**, with detailed analyses provided in **Appendix L**. Note, Merivale Road is classified an arterial main street from Baseline Road to West Hunt Club Road.

Table 12: MMLOS – Existing and Future Intersections

Intersection Level of Service (LoS)	Pedestrian PLoS		Bicycle (BLoS)		Transit (TLoS)		Truck (TkLoS)	
	PLOS	TARGET	BLOS	TARGET	TLOS	TARGET	TKLOS	TARGET
Clyde/Merivale	F	C	F	C	F	D	B	D
Capilano/Merivale	F	A	F	C	D	D	-	n/a
Emerald Plaza/Merivale	F	C	F	C	C	D	-	n/a
Meadowlands/Merivale	F	C	F	C	F	D	-	n/a

Pedestrian

- No intersection met the pedestrian minimum desirable target of PLoS 'A or C'. All intersections had a PLoS of 'F' predominantly based on the number of lanes that would need to be crossed for pedestrians crossing Merivale Road (note that the number of lanes was determined from dividing the crossing distance by 3.5m and not by actual visible lanes). No mitigation would lower the PLoS to a level close to the desired MMLOS target without significantly reducing the vehicle capacity.

Bicycle

- No intersection met the cyclist minimum desirable target of BLoS 'C' due to the lack of cycling facilities. Even if curb or pocket bike lanes were added, the desired targets could not be met unless 2-stage left-turn boxes were added.

Transit

- Transit TLoS targets were met at Capilano/Merivale and Emerald Plaza/Merivale due to modest intersection delays for north-south through movement.
- Clyde/Merivale and Meadowland/Merivale had certain movements used by buses which surpassed 30 second delays and triggers the TLoS of 'E' or worse, exceeding the desired TLoS target of 'D' or better. Possible transit priority measures, such as a queue jump could reduce bus delays and improve the TLoS, however Merivale Road is not classified as a transit priority corridor.

Truck

- Only Clyde/Merivale intersection has a truck route with possible turning movements. The TkLoS was met.

Existing Conditions

The existing intersection performance was analyzed in **Section 2.1.2**, **Table 1.**

Background Conditions

The background intersection performance was analyzed in **Section 3.3**, **Table 7** and **Table 8** for 2023 and 2028 respectively.

Future Conditions at Full-Buildout

The future projected full-buildout volumes are illustrated in **Figure 15**, which assumes the layering of site generated traffic volumes on to the 2023 and 2028 background volumes.

Figure 15: Full-Buildout Total Projected Peak Hour Traffic Volumes

4.9.3. 2023 Full-Buildout Horizon

Using the forecasted vehicular volumes from **Figure 15** for 2023 horizon and Synchro software, the projected traffic operations were calculated and are summarized in **Table 13**, with detailed result outputs provided in **Appendix M**.

Table 13: Full-Buildout Intersection Performance - 2023

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LoS	Max Delay or v/c	Movement	Delay (s)	LoS	Max v/c
SIGNALIZED INTERSECTIONS						
Clyde/Merivale	C(E)	0.73(0.92)	WBL(WBL)	20.6(37.3)	B(C)	0.68(0.79)
Capilano/Merivale	B(C)	0.62(0.71)	NBT(SBT)	8.7(16.0)	A(B)	0.59(0.67)
Emerald Plaza/Merivale	B(C)	0.69(0.71)	NBT(SBT)	16.1(17.4)	B(B)	0.65(0.69)
Meadowland/Merivale	D(D)	0.90(0.84)	EBL(WBT)	34.9(37.5)	C(D)	0.79(0.82)
UNSIGNALIZED INTERSECTIONS						
Site – Rossland/Merivale	D(F)	33(139)	WB(WB)	1(5)	A(A)	--
Note: Analysis of intersections assumes a PHF of 1.00 and a saturation flow rate of 1800 veh/h/lane						

As seen in Table 13, all signalized study area intersections are expected to operate very similarly to background conditions and within acceptable level of service.

The site access at Rossland/Merivale continues to operate well overall but has a critical movement exiting from the site trying to go southbound on Merivale which could experience delays of over 2-minutes in the PM peak hour. Those trying to leave the site to go southbound on Merivale have the option of waiting and going when a break is available, turning right instead and performing a U-turn where allowed or change their route altogether to avoid the anticipated delays.

4.9.4. 2028 Full-Buildout Horizon

Using the forecasted vehicular volumes from Figure 15 for 2028 horizon and Synchro software, the projected traffic operations were calculated and are summarized in Table 14, with detailed result outputs provided in Appendix N.

Table 14: Full-Buildout Intersection Performance - 2028

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LoS	Max Delay or v/c	Movement	Delay (s)	LoS	Max v/c
SIGNALIZED INTERSECTIONS						
Clyde/Merivale	C(E)	0.74(0.93)	WBL(WBL)	20.8(38.0)	B(D)	0.69(0.81)
Capilano/Merivale	B(C)	0.62(0.71)	NBT(SBT)	8.7(16.1)	A(B)	0.59(0.67)
Emerald Plaza/Merivale	B(C)	0.69(0.72)	NBT(SBT)	16.0(17.5)	B(B)	0.65(0.69)
Meadowland/Merivale	D(D)	0.90(0.84)	EBL(WBT)	34.9(37.9)	C(D)	0.79(0.83)
UNSIGNALIZED INTERSECTIONS						
Site – Rossland/Merivale	D(F)	34(199)	WB(WB)	1(6)	A(A)	--
Note: Analysis of intersections assumes a PHF of 1.00 and a saturation flow rate of 1800 veh/h/lane						

As shown in Table 14, the signalized intersections continue to operate similarly to background conditions and also to the 2023 horizon, with the exception of the site access at Rossland/Merivale, which shows some performance deterioration from the 2023 horizon, to an estimated possible 3-minute delay to exit westbound left. Similarly to horizon 2023, patrons leaving the site have the option of waiting to find a break to turn left towards Merivale southbound, can turn right and perform a legal U-turn where applicable or can change their route altogether.

Future Conditions Assuming TRANS Mode Shares

The TRANS mode shares project an increase of approximately 27 and 13 new two-way trips for the AM and PM peaks respectively, compared to target mode shares. Although this is normally considered a negligible increase

in traffic volumes as it represents less than one additional vehicle trip every 2 to 4 minutes for the PM and AM respectively, given that the site access has a critical sensitive movement, then only that intersection has been analyzed as signalized intersections are not anticipated to change in performance due to the minor increase in vehicular traffic.

After importing the site generated trips based on TRANS mode shares for Merivale to the Synchro model, the overall intersection performance continued to operate well, however the critical movement of westbound left-turns increased in delays to approximately 35 seconds (LoS E) for the AM peak hour and 253 seconds (LoS F) for the PM peak hour. Although an additional 1-minute delay if mode share targets are not met is relatively substantial, it is important to note that it only affects an approximate 25 drivers trying to exit the site in the PM peak hour. If delays become too great, it is anticipated that these drivers will adjust their routes and leave the site using a right-turn maneuver on to Merivale northbound.

4.9.5. Queueing Analysis

The following **Table 15** summarizes queuing implications of leaving the existing Site/Merivale intersection geometry versus reducing the Capilano/Merivale northbound left-turn to allow room for a southbound left-turn at the Site/Merivale intersection.

Table 15: Queueing Analysis for Site Access with and without a SBL Storage Lane

Movement	Weekday AM Peak (PM Peak) Queueing Analysis	
	Capacity	95th % Synchro
Existing Site/Merivale SBL	0 m	2 m (1 m)
Existing Capilano/Merivale NBL	50 m	5 m (8 m)
Modified Site/Merivale SBL	15 m	2 m (1 m)
Modified Capilano/Merivale NBL	20 m	5 m (8 m)

The allocation of a few meters of storage from the northbound left-turn at Capilano/Merivale to Site/Merivale southbound left-turns would likely improve safety for southbound left-turning vehicles by allowing them a shelter to queue outside of the through traffic on Merivale Road while waiting to turn on to the site. The northbound left-turn at Capilano/Merivale is anticipated to still have enough queueing storage if it was shortened. These modifications however would require reconstruction of the intersection approaches and would not provide any improvements to the westbound left-turn leaving the site.

5.0 FINDINGS AND RECOMMENDATIONS

Based on the results summarized herein the following findings and recommendations are provided:

Existing Conditions

- The existing site access is currently in use by three different properties us from Merivale Road. One is an Ultramar Gas Station to the north (1543 Merivale Road) which is to remain, a restaurant to the south which is currently not operating (1545B Merivale Road) which is also to remain, and the commercial/warehouse buildings which will be replaced by the proposed development (referred to as 1545A Merivale Road).
- The existing site access is provided via a shared easement with the Ultramar Gas Station, as only 4m of the access are within the 1545A Merivale property. The access provides for all movements, to, and from, Merivale Road.
- Bus stops for frequent transit route #80 are located approximately 150-to-250-meter walk from the subject site on Merivale Road. Additional local routes are available on Clyde Avenue and Meadowlands Drive.

- Historical collision records confirm elevated incident typical of major urban arterial corridors in the City. Of particular note, Clyde/Merivale and Meadowlands/Merivale experienced a high rate of collision with over 1 collision per million entering vehicles. The site access intersection though not showing high rates of collision has also been considered a sensitive location due to a potential increase in left-turning vehicles at an unsignalized intersection with heavy north-south through volumes.
- Existing study area intersections operate well overall, with LoS 'D' or better but most with critical movements LoS 'E' or better. The Meadowlands/Merivale intersection does experience additional congestion in the afternoon peak hour. The Site – Rossland/Merivale intersection is also shown to experience peak hour congestion for the stop-controlled movements.

Proposed Development

- The applicant is proposing the construction of a 27,700 ft^2 medical clinic, projected to be built by 2023.
- The development is projected to generate approximately 65 to 60 'new' vehicle trips during the weekday morning and afternoon peak hours respectively.
- The development is projected to generate approximately 20 'new' transit trips during the AM and PM peak hour periods, which is expected to be accommodated by existing frequent transit route #80.
- The applicant is proposing a sidewalk on the south side of the drive-aisle and a crosswalk to connect the drive isle sidewalk to the front entrance.
- The development proposes 129 vehicle parking spaces with 72 of them being at-grade and geared to patients, while the remaining 57 spaces are proposed underground for staff. Vehicle parking requirements adhere to the by-law.
- Bike parking is proposed outdoors with 5 spaces located at the front of the building.
- TDM measures include pay by the hour parking for patrons.

Future Conditions

- Peak hour traffic volumes from nearby adjacent developments were incorporated into the future traffic volume projections. A background growth rate of 0% on study area intersections was applied.
- The MMLOS road segment analysis demonstrated that Merivale Road does not currently meet PLoS targets given the high number of curbside vehicles and the narrow sidewalks and boulevard treatment. Bicycle BLoS targets were also not met given that cyclists must share the road with vehicles on a road with high posted speed limit. All other MMLOS road segment categories were met.
- The MMLOS intersection analysis showed that all truck target goals were met. Transit targets were met at Capilano Avenue and Emerald Plaza intersections with Merivale Road, the remaining did not due to anticipated approach delays on Merivale Road in the future.

  Bicycle targets were not met at any location given the lack of cycling facilities. Even if cycling facilities were added, the targets would not be met unless 2-stage left-turns were added given the number of lanes on Merivale Road.

  The pedestrian targets were not met at any intersection due to the quantity of lanes required to cross on Merivale Road.
- All signalized study area intersections were shown to operate acceptably by the 2028 horizon year including full buildout of the site and other area developments, even if the target mode shares are not met (i.e. the average Merivale mode share assumptions were applied).

- The Rossland-Site Access/Merivale unsignalized intersection is anticipated have critical left-turning movements with delays, particularly during the heaviest PM peak hour. Patrons can opt to turn right out of the site and perform a U-turn where appropriate or change their routing altogether.
- At this time, the site access is proposed to remain as-is without significant changes, as alternatives considered have significant drawbacks. The southbound left turn site traffic represents one vehicle every two minutes during the AM peak hour and one vehicle every 5 minutes during the PM peak hour.
- The site proposes a new sidewalk from the front door to Merivale Road along the new driveway access.

Based on the preceding report, the proposed development located at 1545A Merivale Road is recommended from a transportation perspective.

Prepared By:

Juan Lavin, E.I.T.

Reviewed By:

Jake Berube, P.Eng.

Appendix A:

Screening Form and Response to City Comments

PARSONS

1223 Michael Street, Suite 100, Ottawa, Ontario, K1J 7T2
P: +1 613.738.4160 l F: +1 613.739.7105 l www.parsons.com

City of Ottawa 2017 TIA Guidelines

TIA Screening Form

Date	31-May-22
Project	1545 Merivale Road
Project Number	908-979-10099

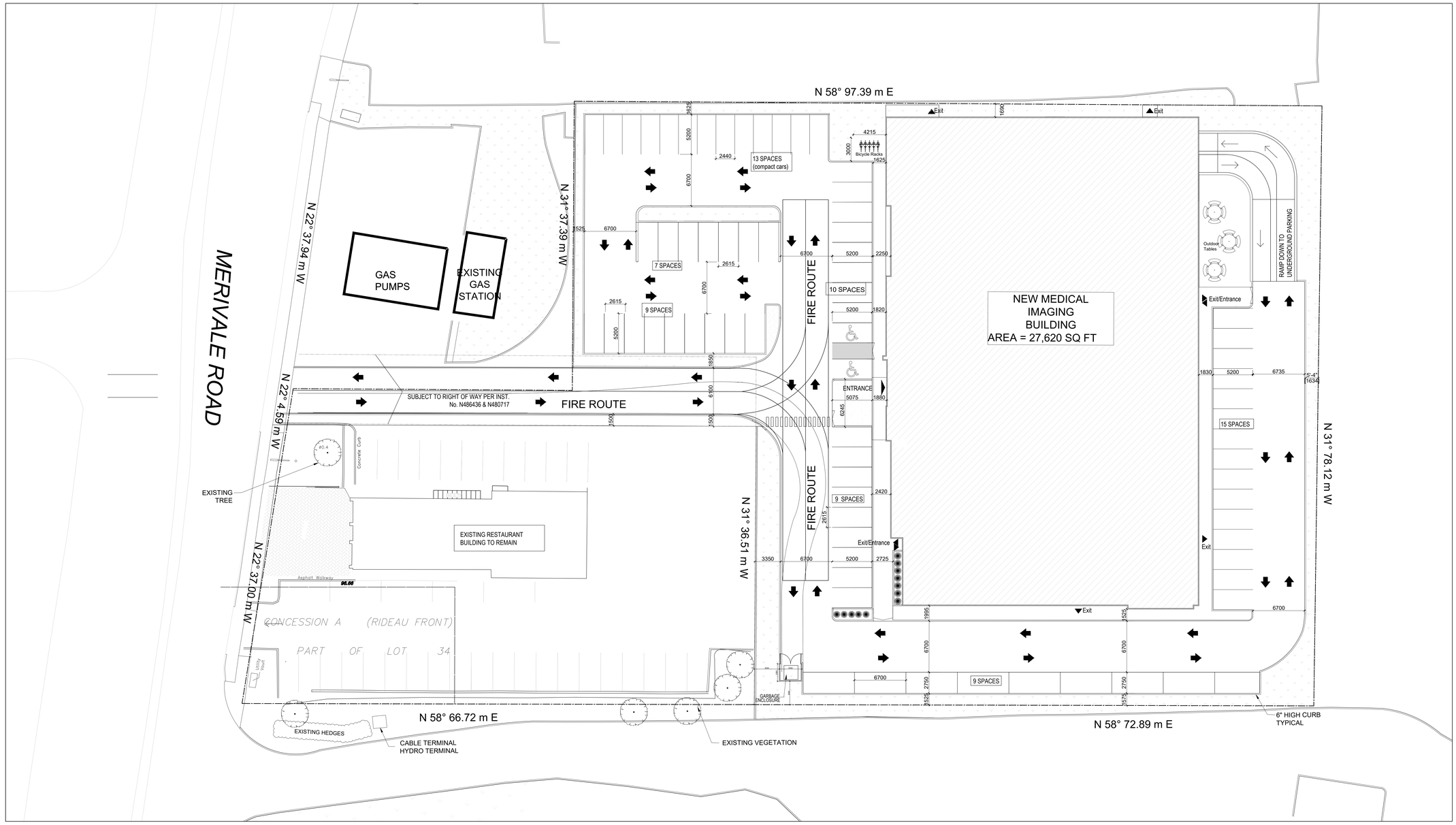
Results of Screening	Yes/No
Development Satisfies the Trip Generation Trigger	Yes
Development Satisfies the Location Trigger	Yes
Development Satisfies the Safety Trigger	Yes

Module 1.1 - Description of Proposed Development	
Municipal Address	1545 Merivale Road
Description of location	Property located east Merivale Road, south of the Capilano Drive intersection. Site is currently developed with an unoccupied restaurant and industrial building
Land Use	Medical Clinic
Development Size	25,000 sq. ft. / 2,350 m2
Number of Accesses and Locations	One Existing Access to Merivale Road
Development Phasing	One phase
Buildout Year	2023
Sketch Plan / Site Plan	See attached

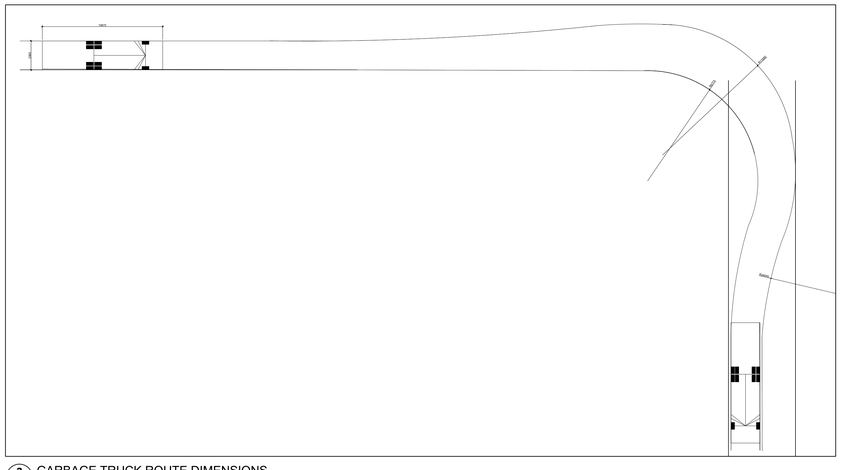
Module 1.2 - Trip Generation Trigger		
Land Use Type	Medical - Clinic (630)	Clinic
Development Size	2340	sq. m
Trip Generation Trigger Met?	Yes	
Note: Development anticipated to generate 92 AM peak hour vehicle trips and 82 PM peak hour vehicle trips based on a review of ITE land use 630: Clinic. This exceeds the threshold of 60 person-trips for a		

Module 1.3 - Location Triggers		
Development Proposes a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit, or Spine Bicycle Networks (See Sheet 3)	No	
Development is in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone. (See Sheet 3)	Yes	Merivale Main Street Secondary Plan and Traditional Main Street
Location Trigger Met?	Yes	

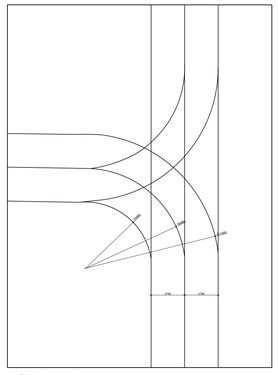
Module 1.4 - Safety Triggers		
Posted Speed Limit on any boundary road	<80	km/h
Horizontal / Vertical Curvature on a boundary street limits sight lines at a proposed driveway	No	
A proposed driveway is within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions) or within auxiliary lanes of an intersection;	Yes	85m to Merivale/Capilano and 150m to Merivale/Emerald Plaza. Within the double SB-LT lanes.
A proposed driveway makes use of an existing median break that serves an existing site	No	
There is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development	No	*Not to our current knowledge
The development includes a drive-thru facility	No	
Safety Trigger Met?	Yes	



1 SITE PLAN
A-100
SCALE = 1/16" = 1'-0"



3 GARBAGE TRUCK ROUTE DIMENSIONS
A-100
SCALE = 1/16" = 1'-0"



2 FIRE TRUCK ROUTE DIMENSIONS
A-100
SCALE = 1/16" = 1'-0"

PROJECT INFORMATION

PROJECT: NEW MEDICAL CLINIC BUILDING

MUNICIPAL ADDRESS: T, OTTAWA, ONTARIO

ZONING USE: AM10 - ARTERIAL MAINSTREET ZONE, MEDICAL FACILITY

PROPOSED CONSTRUCTION: NEW 1 - STOREY BUILDING

PROPOSED USE: MEDICAL CLINIC

BUILDING HEIGHT: ± 22'-0"

GROSS FLOOR AREA: 27, 620 SQ FT (2,566 m2)

PARKING STATISTICS:

STANDARD PARKING:
57 SPACES OF 2.6m W X 5.2m L
(8' - 7"W x 17' - 0"L)

COMPACT CAR PARKING:
13 SPACES OF 2.4m W X 5.2m L

ACCESSIBLE PARKING:
2 SPACES OF 3.66m W x 5.2m L
12'-0" W x 17'-0"L)

TOTAL PARKING SPACES:
AT GRADE: 72
UNDERGROUND: 57
TOTAL: 129

LANDSCAPING:
REQUIRED 15% OF PARKING AREA

TOTAL PARKING AREA: 3,633 m2
15% LANDSCAPING REQUIRED: 545m2

TOTAL LANDSCAPED AREAS PROVIDED: 1,080 m2

GENERAL NOTES:

1. REFER TO SURVEY BY FARLEY, SMITH AND DENIS SURVEYING LTD.
2. GRADING TO MATCH EXISTING UNLESS OTHERWISE INDICATED ON SITE PLAN. NEW GRADES TO TIE INTO EXISTING GRADES.
2. CURBS AND LANDSCAPING SHOWN OUTSIDE OF PROPERTY LINE AND IN EXISTING NATURAL ZONE ARE SHOWN FOR INFORMATION PURPOSES ONLY. SITE VERIFICATION OF ALL CONDITIONS REQUIRED.
3. REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR NEW LANDSCAPING AND TREE PRESERVATION.
4. REFER TO ENGINEERING DRAWINGS FOR EXTENT OF NEW ROAD DEVELOPMENT, SITE LIGHTING, AND MASTER SITE PLAN.
5. ALL NOTES ARE AS PER CITY/ PROVINCIAL STANDARDS, GUIDELINES, BY-LAWS AND DETAIL DRAWINGS.

APPROVED ☐ REFUSED ☐

THIS _____DAY OF_____, 20 _____

MANAGER DEVELOPMENT REVIEW CENTRAL, PLANNING, INFRASTRUCTURE AND ECONOMIC DEVELOPMENT DEPARTMENT, CITY OF OTTAWA

ALL NOTES ARE AS PER CITY/ PROVINCIAL STANDARDS, GUIDELINES, BY-LAWS AND DETAIL DRAWINGS.

CLIENT

MMI Merivale Medical Imagi

PROJECT NORTH

SEAL

CONSULTANTS - ARCHITECTS

(L+D) LALANDE + DOYLE ARCHITECTS
www.lplusd.com
Tel 613.233.2900
Fax 613.233.1008
159 Holland Ave
Ottawa, Ontario K1Y 0Y2

CONSULTANTS - STRUCTURAL/MECHANICAL/ELECTRICAL

ROBERT E. DAL

CONSULTANTS - CIVIL ENGINEERING

NOVATECH Logo placeholder

NOVATECH ENGINEERIN CONSULTANTS LT ENGINEERS & PLANNER

DATE	DESCRIPTION	ISSUE
21/09/2022	ISSUED FOR SITE PLAN APPROVAL	01

PROJECT NAME

MERIVALE MEDICAL IMAGING CLINIC

1545 Merivale Rd. Ottawa, On. K2G 3J

DRAWING TITLE

SITE PLAN - REVISED NEW CONSTRUCTION

DATE	PROJECT NO.
2022/09/20	20-021
SCALE	
AS NOTED	
DRAWN BY	DRAWING NO.
MD	A-100
REVIEWED BY	
LCL	

Appendix B:

Transit Route Maps

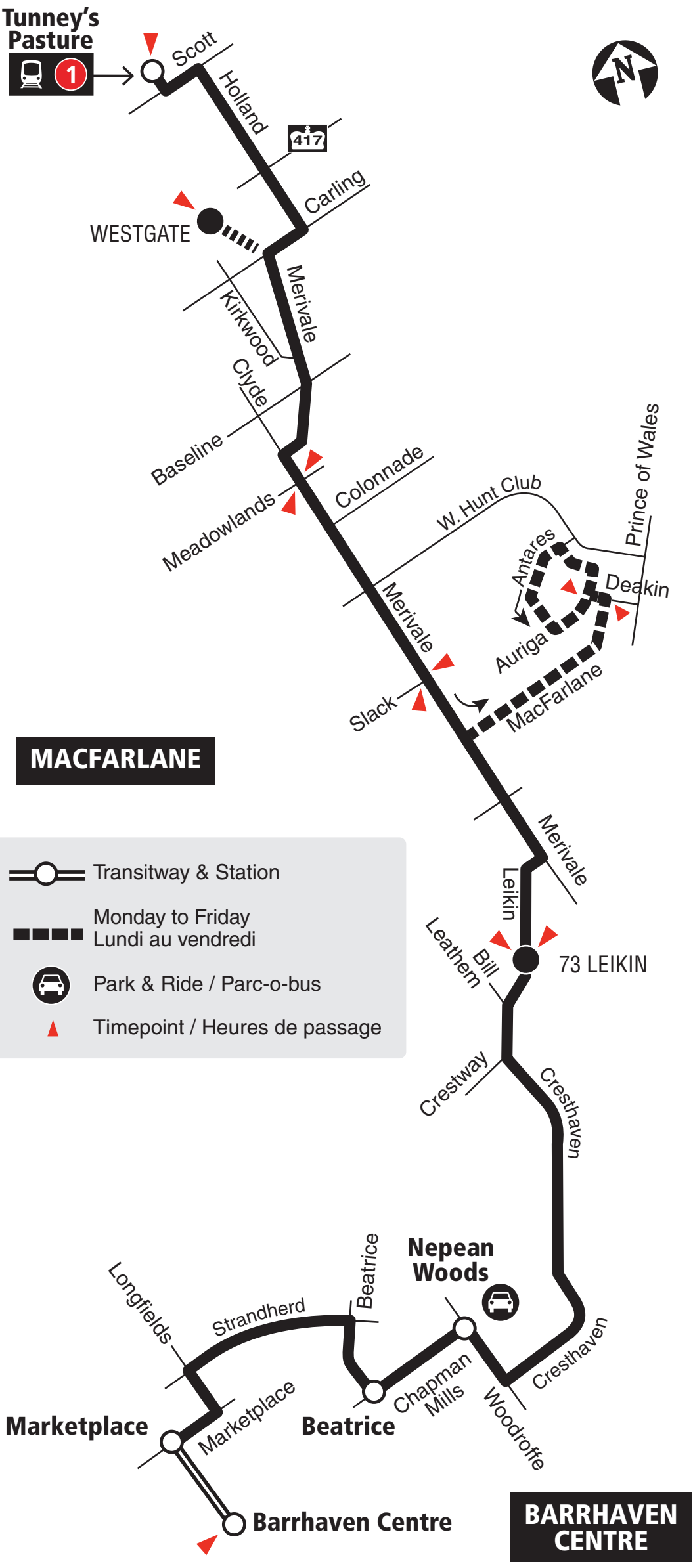
80

Fréquent

BARRHAVEN CENTRE
TUNNEY'S PASTURE

7 days a week / 7 jours par semaine
All day service
Service toute la journée

TUNNEY'S PASTURE



2018.12

Schedule / Horaire.....613-560-1000
Text / Texto 560560
plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

Customer Relations
Service à la clientèle **613-842-3600**

Lost and Found / Objets perdus..... **613-563-4011**

Security / Sécurité **613-741-2478**

Effective June 24, 2018
En vigueur 24 june 2018

OC Transpo

INFO 613-741-4390
octranspo.com

81

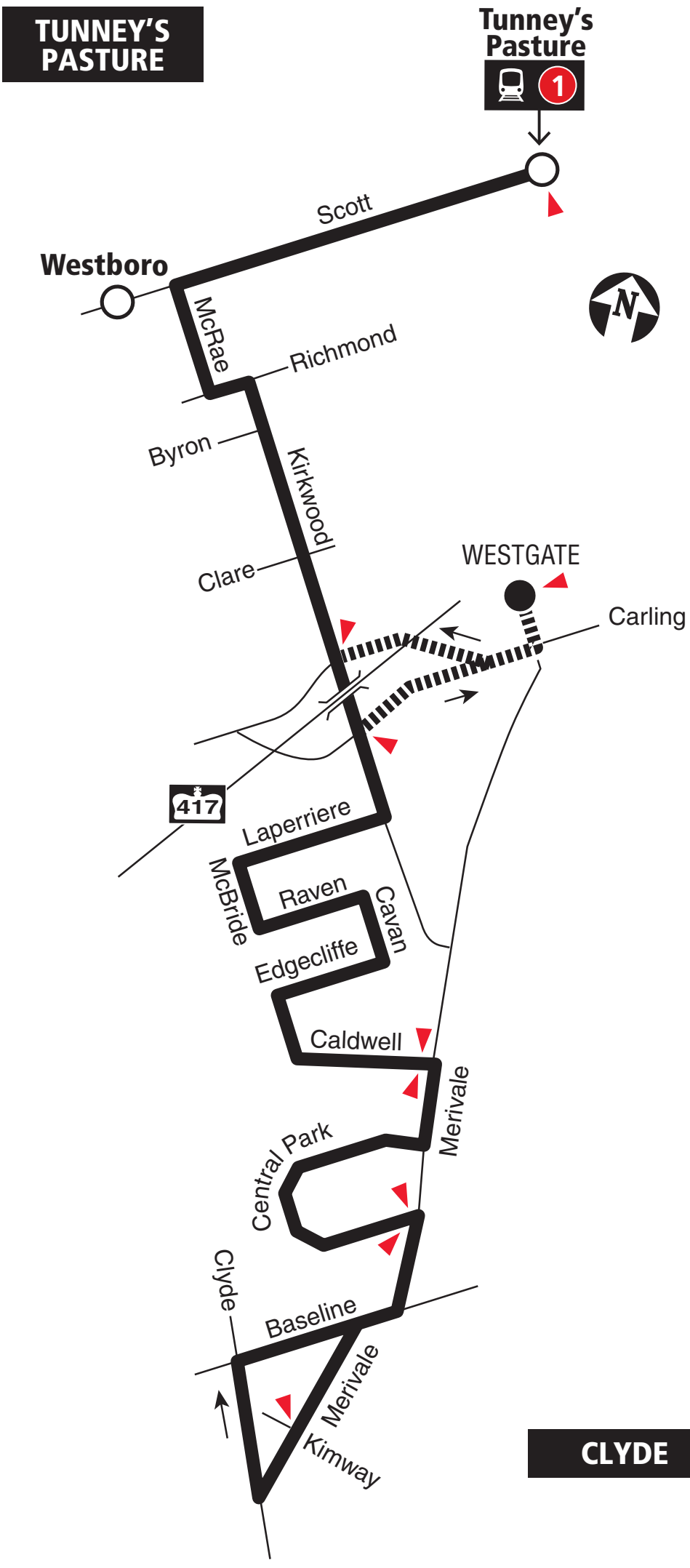
CLYDE

TUNNEY'S PASTURE

Local

7 days a week / 7 jours par semaine

No service in the evening on weekends
Aucun service le soir les fins de semaine



Station

Some trips / Quelques trajets

Timepoint / Heures de passage

2019.07

1

Future route after O-Train Line 1 is open
Trajet du circuit après l'ouverture de la Ligne 1 de l'O-Train

Lost and Found / Objets perdus..... **613-563-4011**
Security / Sécurité **613-741-2478**

OC Transpo

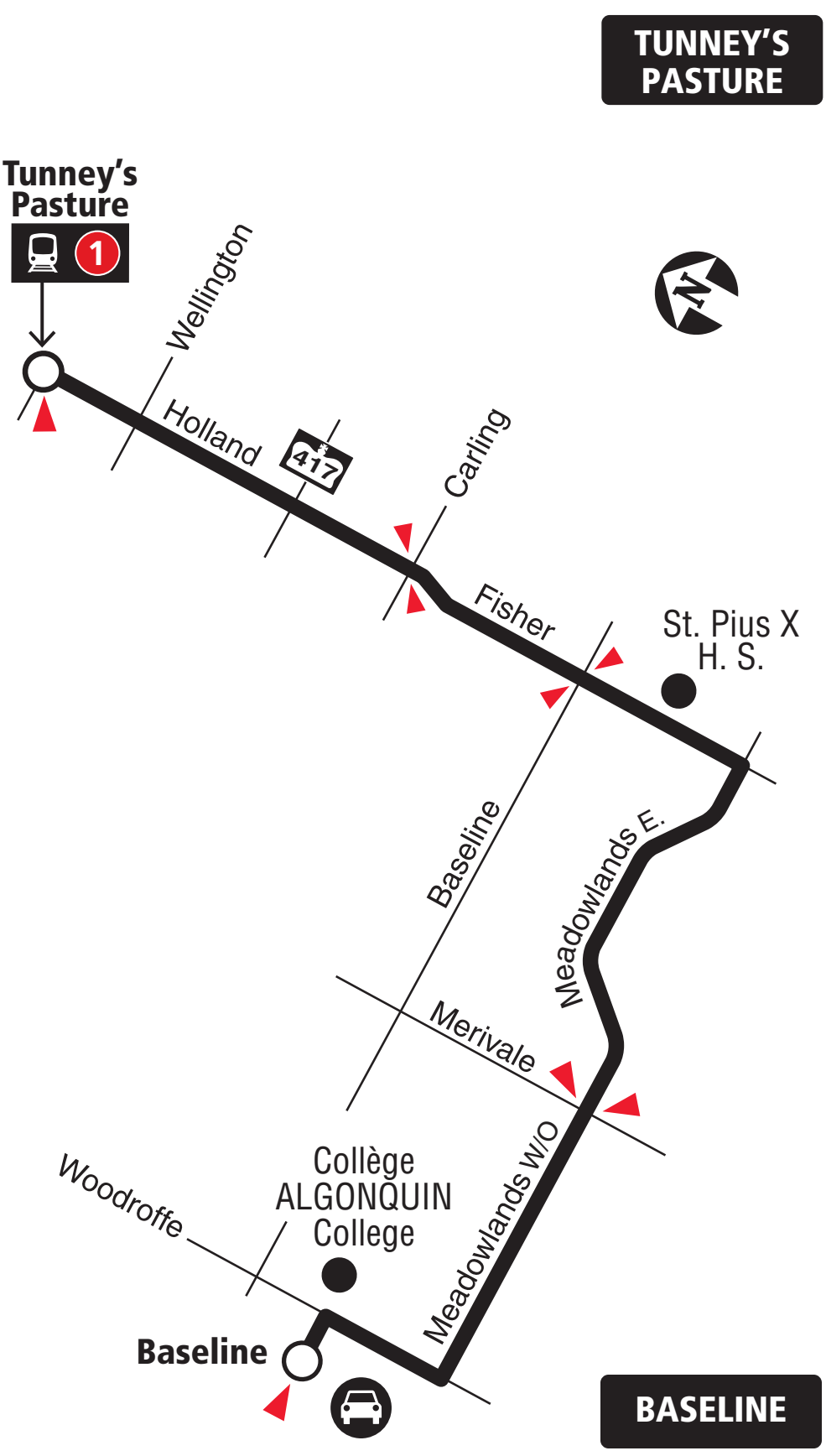
INFO 613-741-4390
octranspo.com

86 BASELINE

TUNNEY'S PASTURE

7 days a week / 7 jours par semaine

All day service
Service toute la journée



○	Station
	Park & Ride / Parc-o-bus
▲	Timepoint / Heures de passage

2019.07

Future route after O-Train Line 1 is open
Trajet du circuit après l'ouverture de la Ligne 1 de l'O-Train

Lost and Found / Objets perdus..... **613-563-4011**
Security / Sécurité **613-741-2478**

OC Transpo
INFO 613-741-4390
octranspo.com

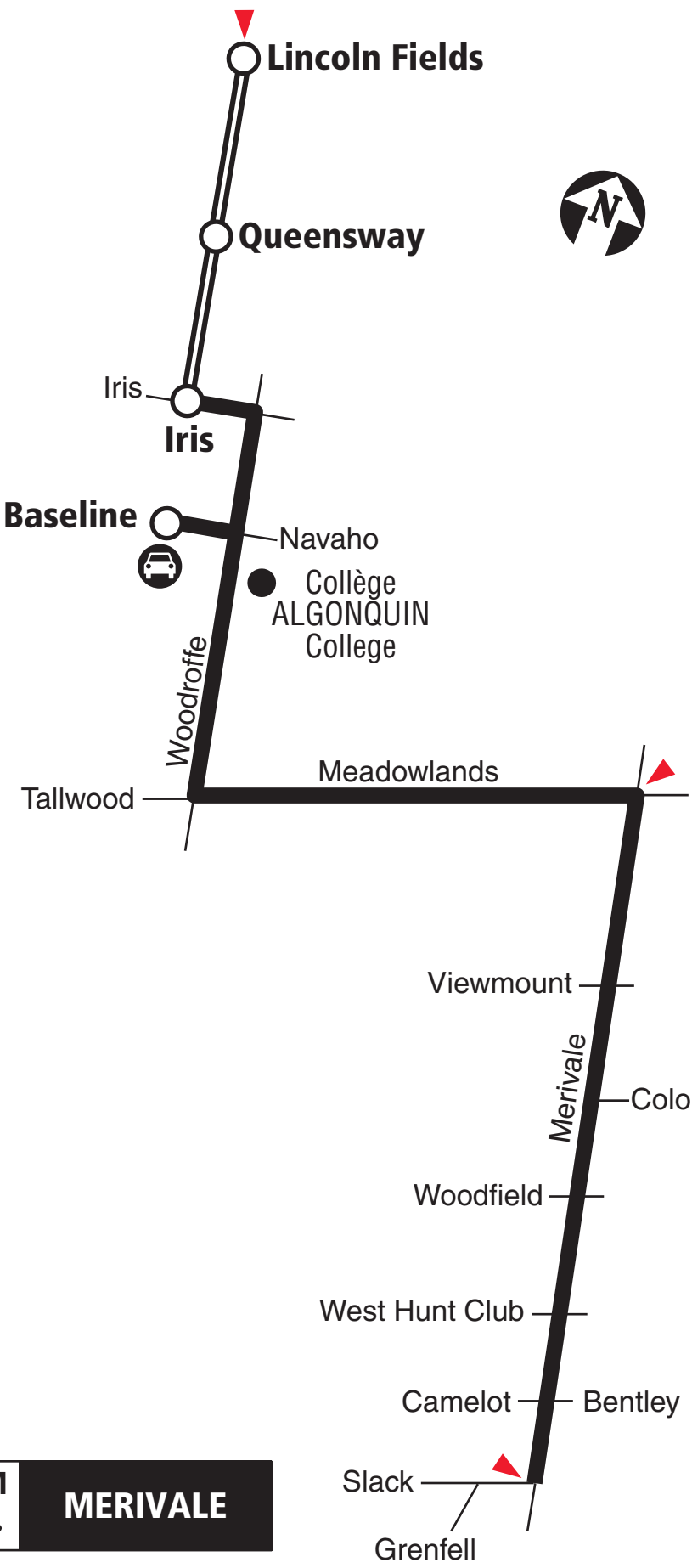
186

LINCOLN FIELDS
MERIVALE

Local

Monday to Friday / Lundi au vendredi
Peak periods only
Périodes de pointe seulement

PM ↑ LINCOLN FIELDS



AM ↓ MERIVALE

Transitway & Station
Park & Ride / Parc-o-bus
Timepoint / Heures de passage

2022.06

Schedule / Horaire 613-560-1000
Text / Texto* 560560
plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres
*Standard message rates may apply / Les tarifs réguliers de messagerie texte peuvent s'appliquer

Customer Service
Service à la clientèle **613-560-5000**

Lost and Found / Objets perdus..... **613-563-4011**

Security / Sécurité **613-741-2478**

Effective June 26, 2022
En vigueur 26 juin 2022

OC Transpo

INFO 613-560-5000
octranspo.com

Appendix C:

Traffic Data

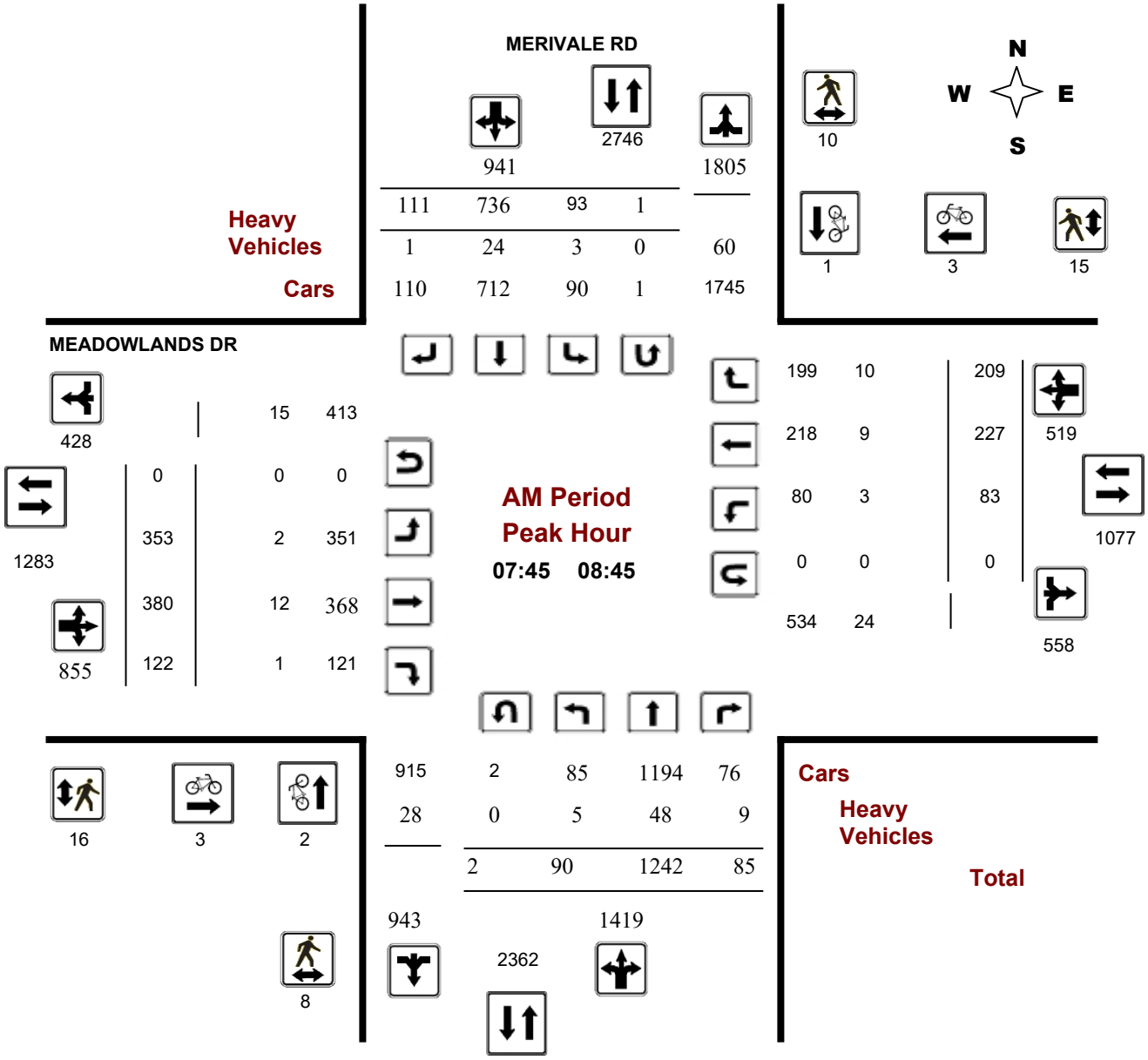
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MEADOWLANDS DR @ MERIVALE RD

Survey Date: Thursday, November 01, 2018 **WO No:** 38079

Start Time: 07:00 **Device:** Miovision



Comments

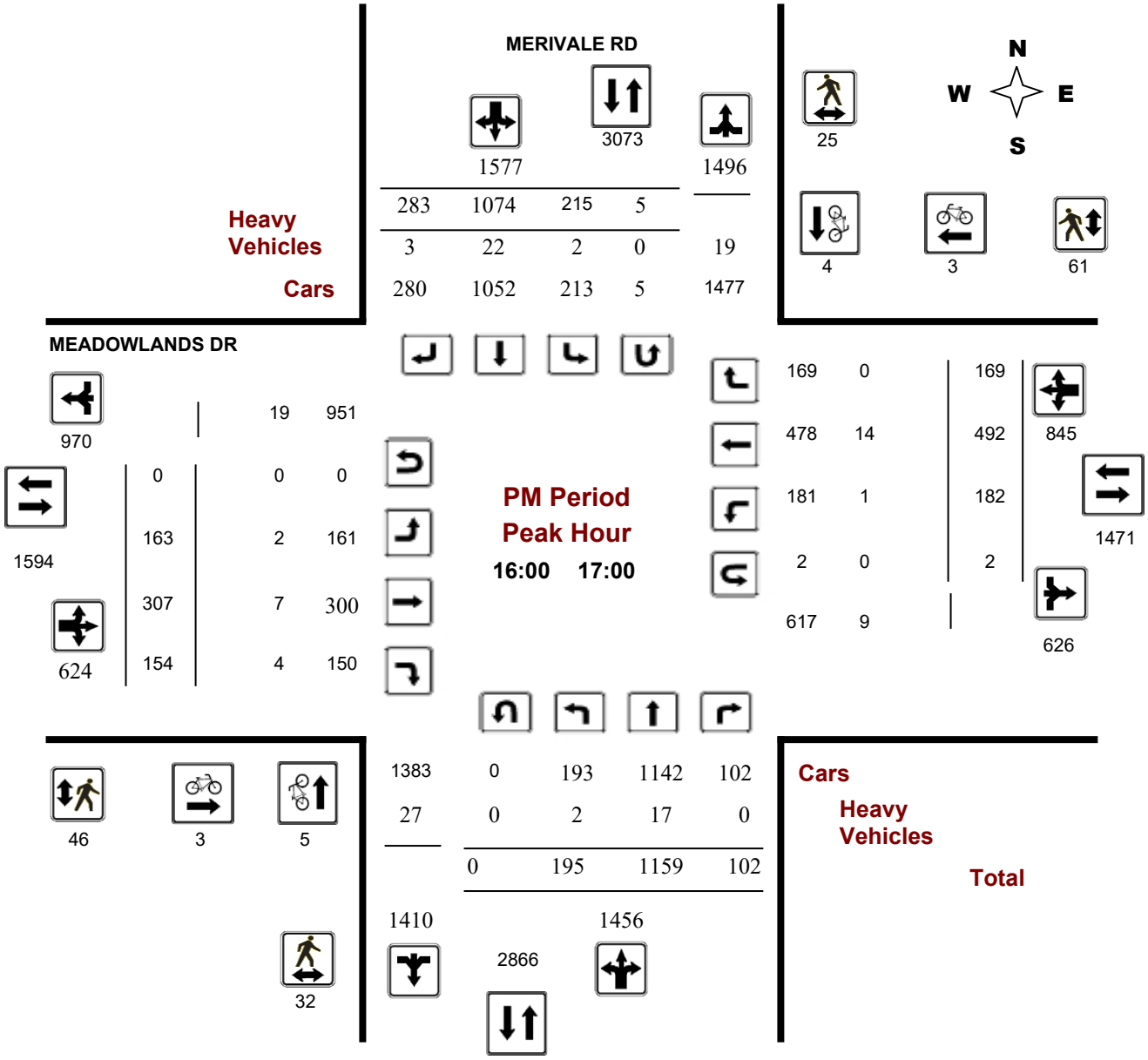
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MEADOWLANDS DR @ MERIVALE RD

Survey Date: Thursday, November 01, 2018 **WO No:** 38079

Start Time: 07:00 **Device:** Miovision



Comments

ACCURATE TRUSTED TRAFFIC DATA

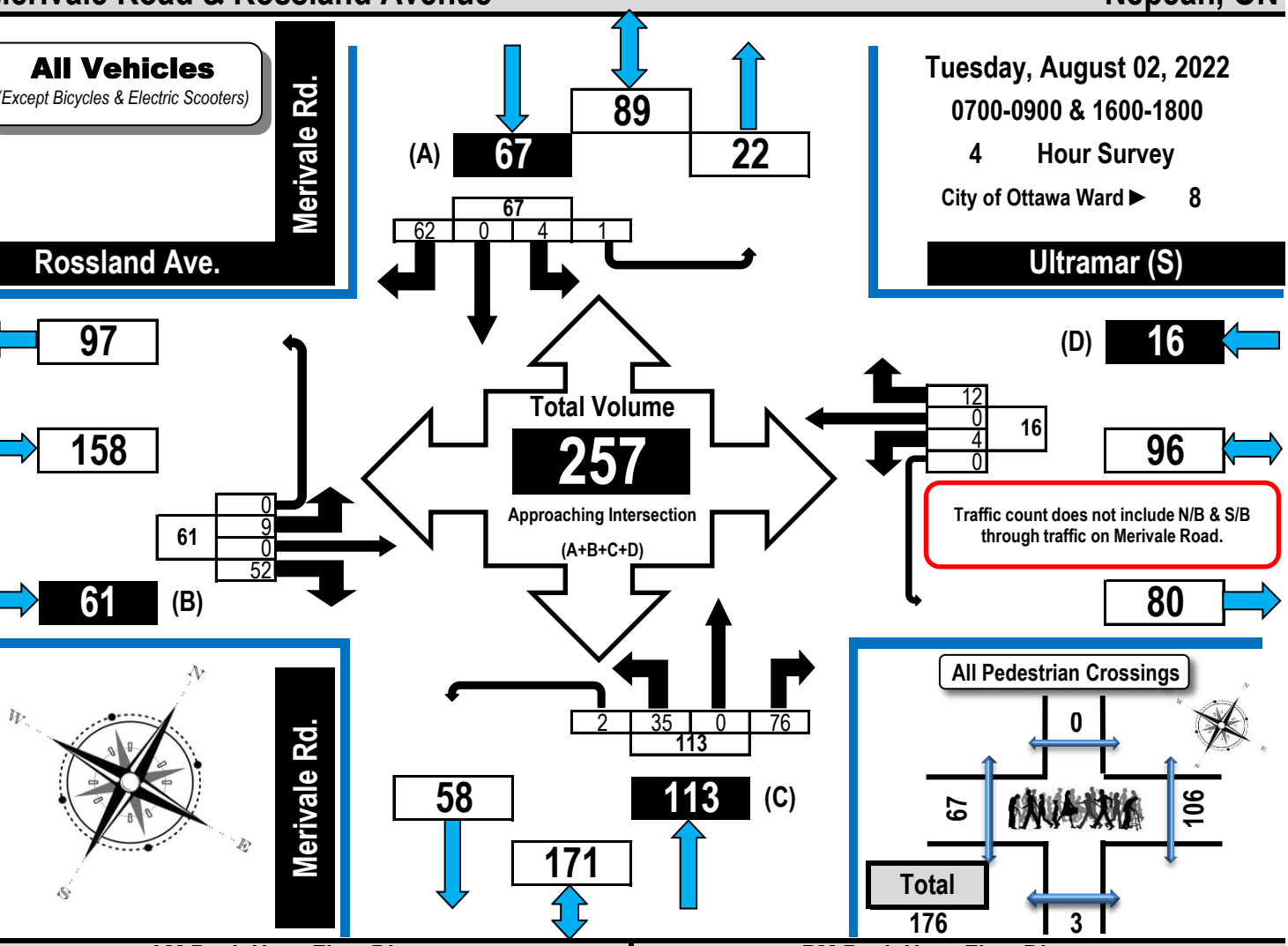
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

Merivale Road & Rossland Avenue — Nepean, ON

All Vehicles
(Except Bicycles & Electric Scooters)

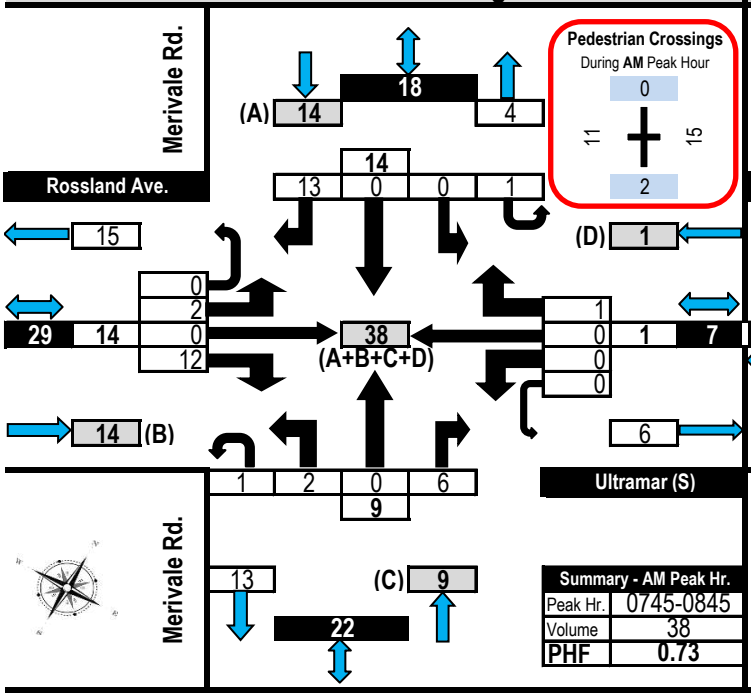
Tuesday, August 02, 2022
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 8

Merivale Rd. | Rossland Ave. | Ultramar (S)



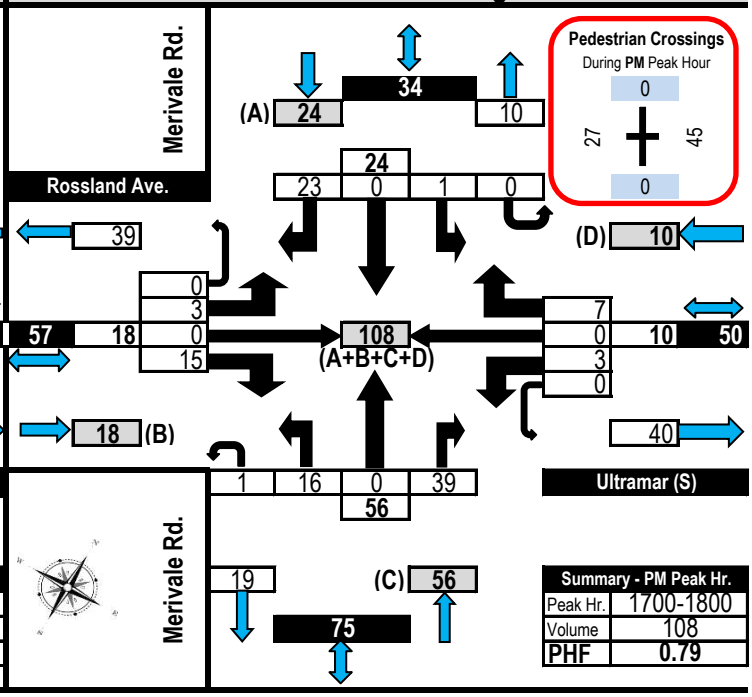
Merivale Rd.

AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0745-0845
Volume	38
PHF	0.73

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1700-1800
Volume	108
PHF	0.79

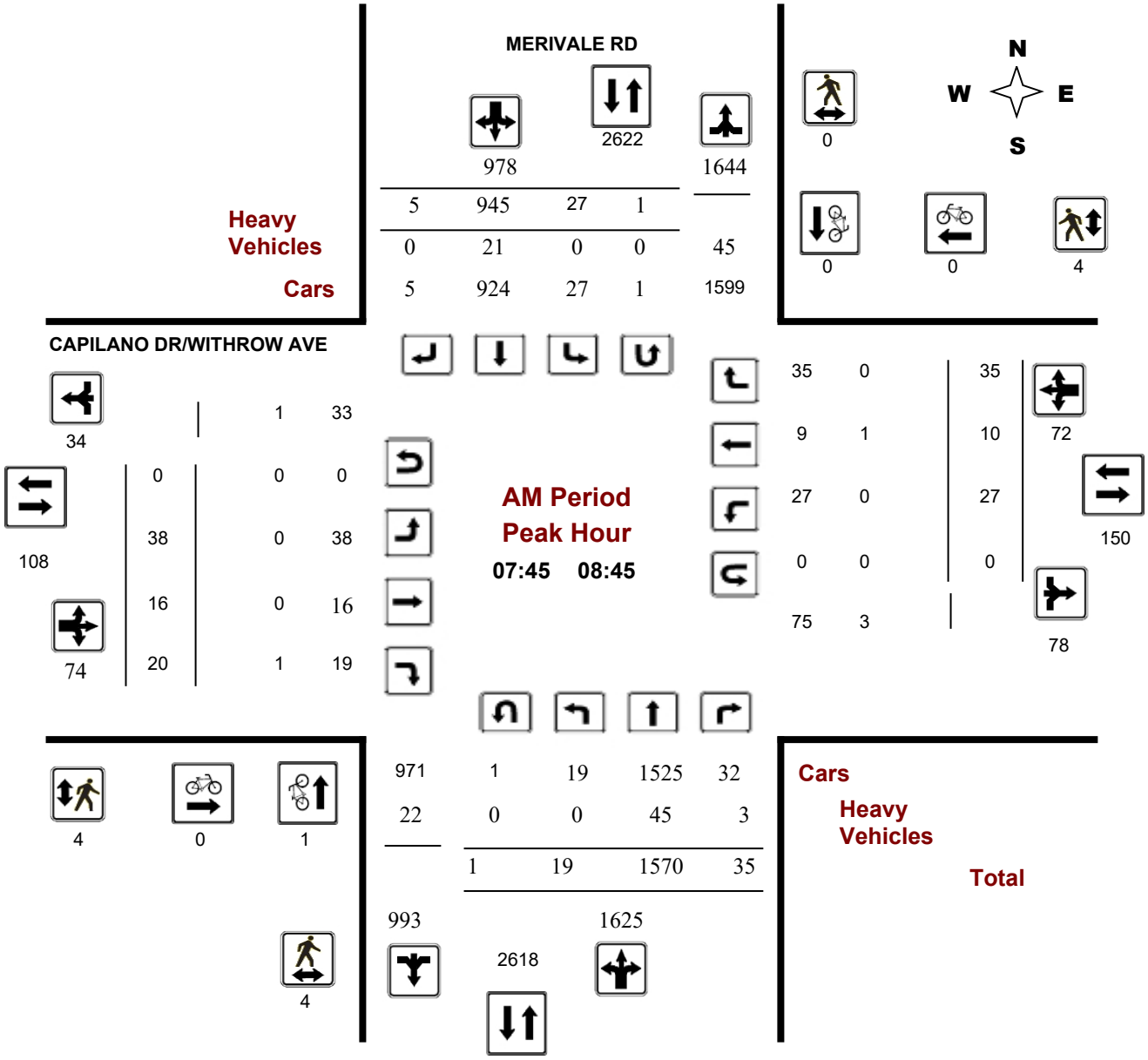
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MERIVALE RD @ CAPILANO DR/WITHROW AVE

Survey Date: Wednesday, February 21, 2018 **WO No:** 37551

Start Time: 07:00 **Device:** Miovision



Comments

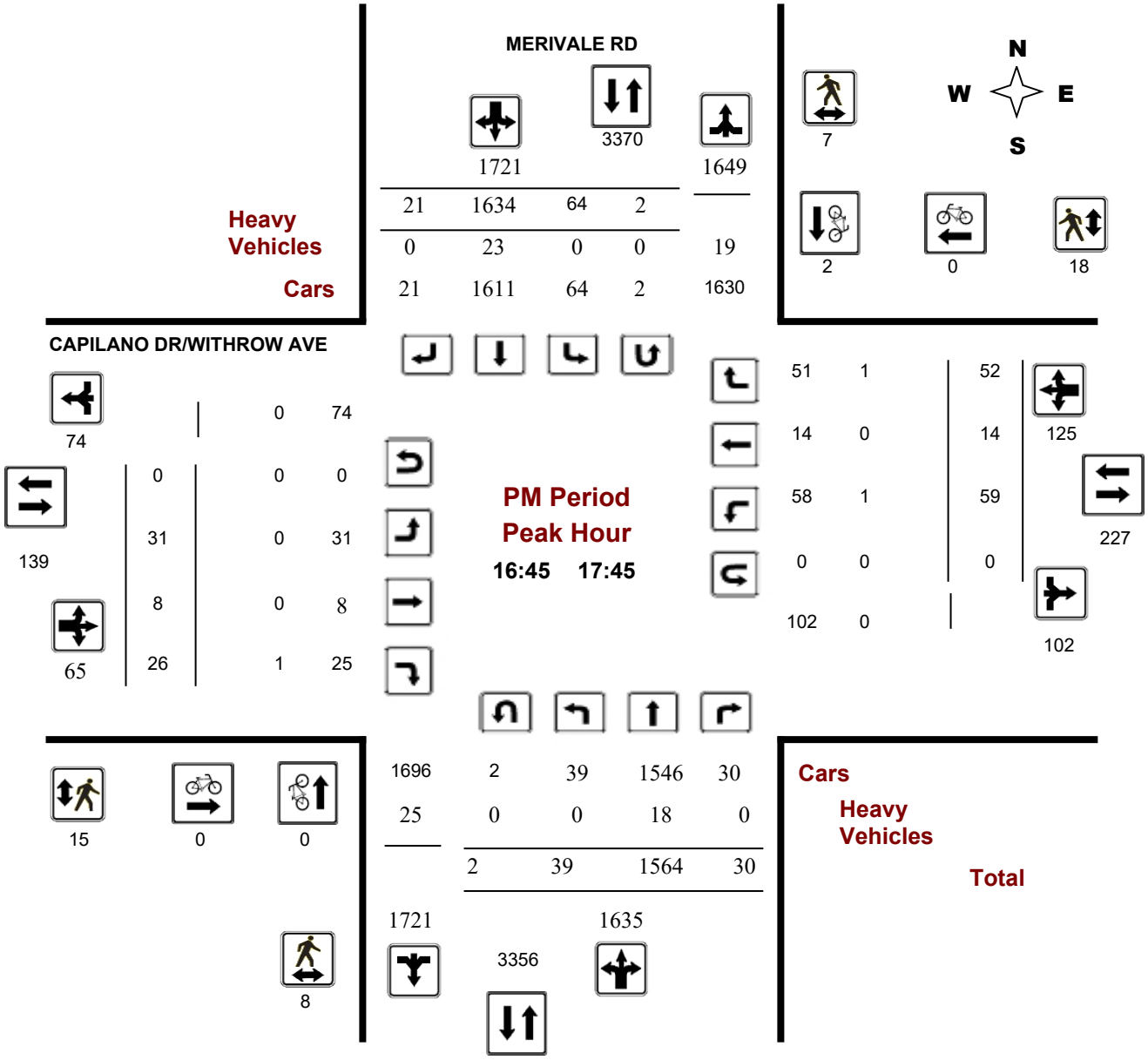
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MERIVALE RD @ CAPILANO DR/WITHROW AVE

Survey Date: Wednesday, February 21, 2018 **WO No:** 37551

Start Time: 07:00 **Device:** Miovision



Comments

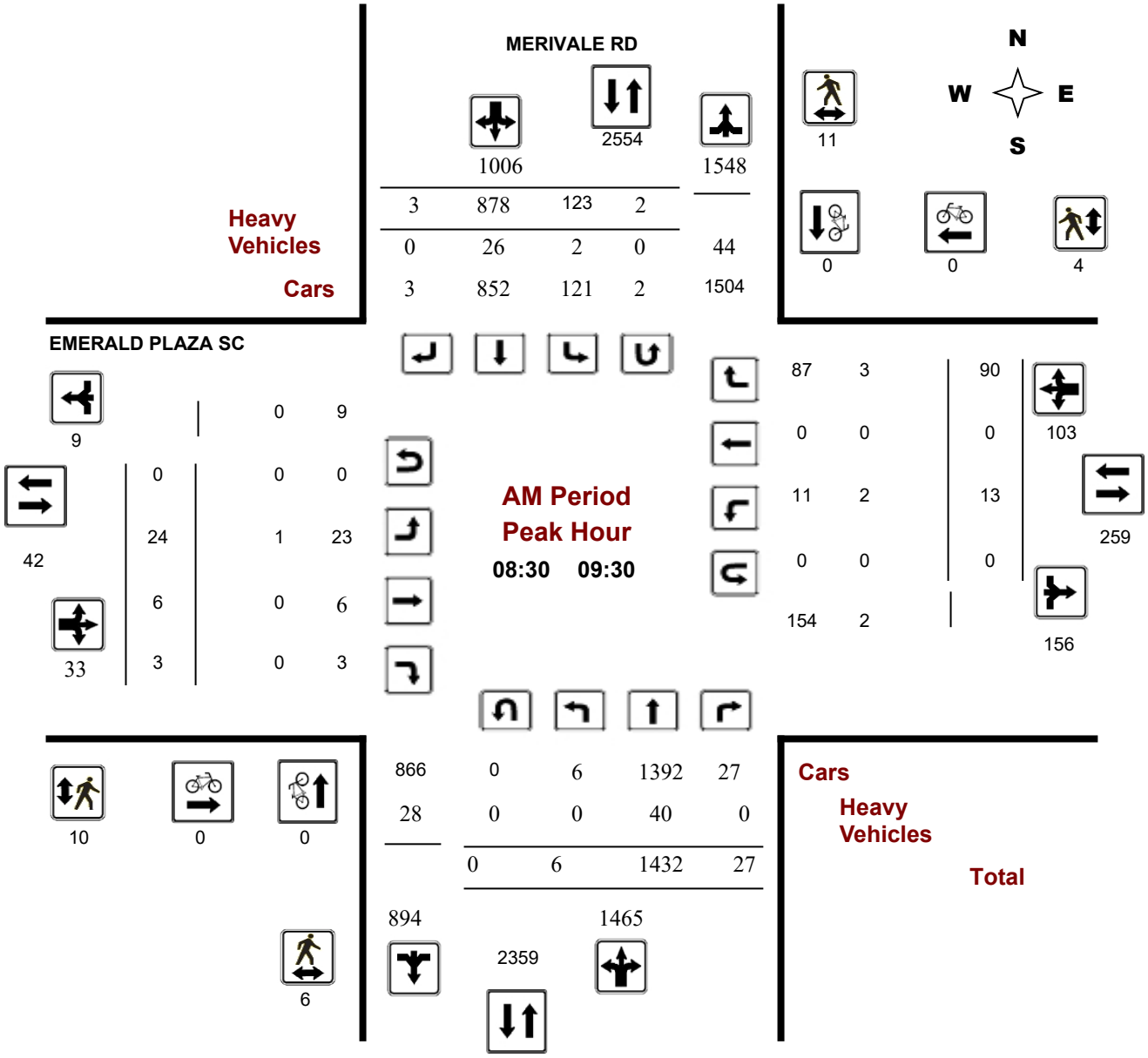
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MERIVALE RD @ EMERALD PLAZA SC

Survey Date: Monday, February 10, 2020 **WO No:** 39430

Start Time: 07:00 **Device:** Miovision



Comments

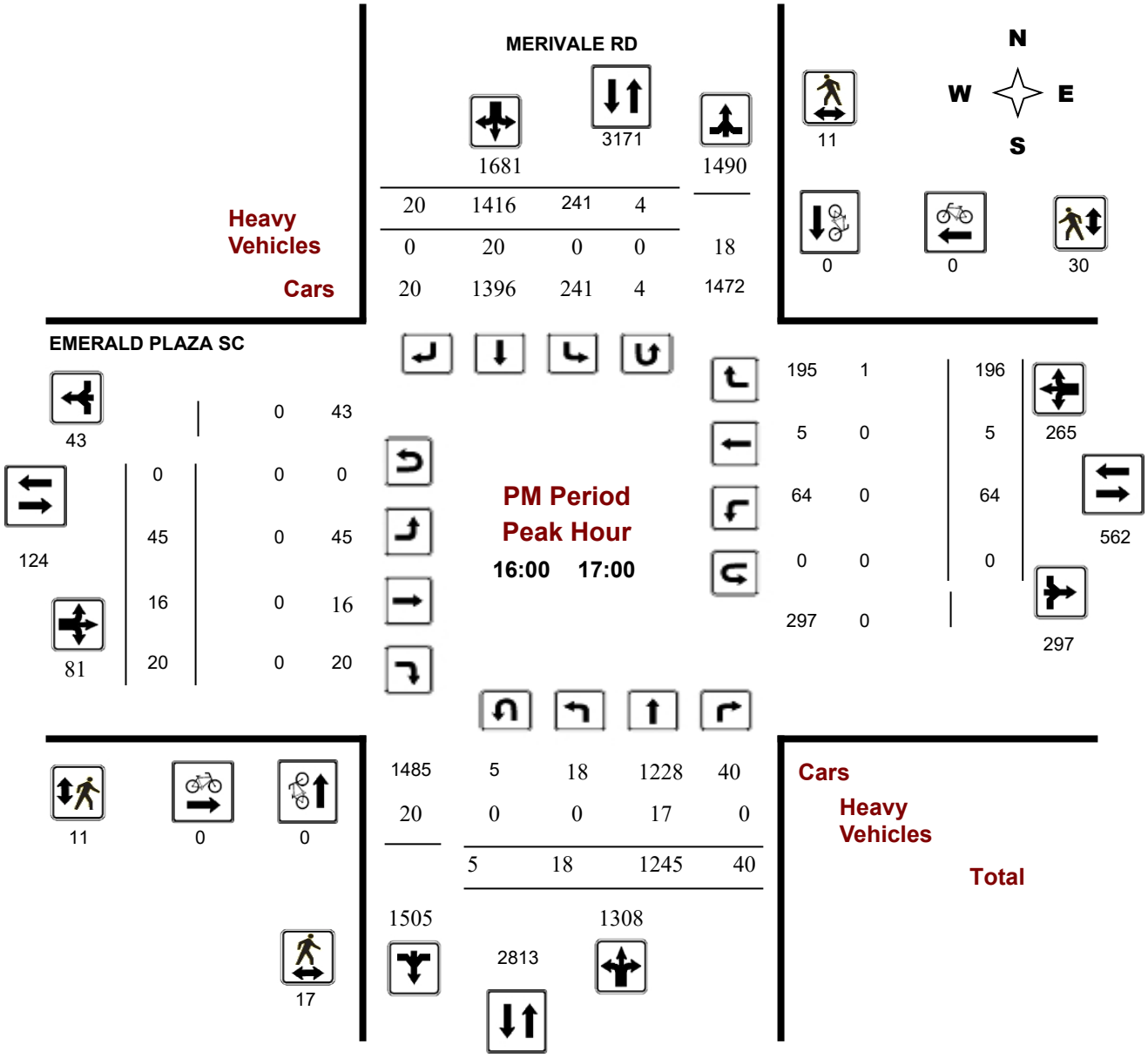
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MERIVALE RD @ EMERALD PLAZA SC

Survey Date: Monday, February 10, 2020 **WO No:** 39430

Start Time: 07:00 **Device:** Miovision



Comments

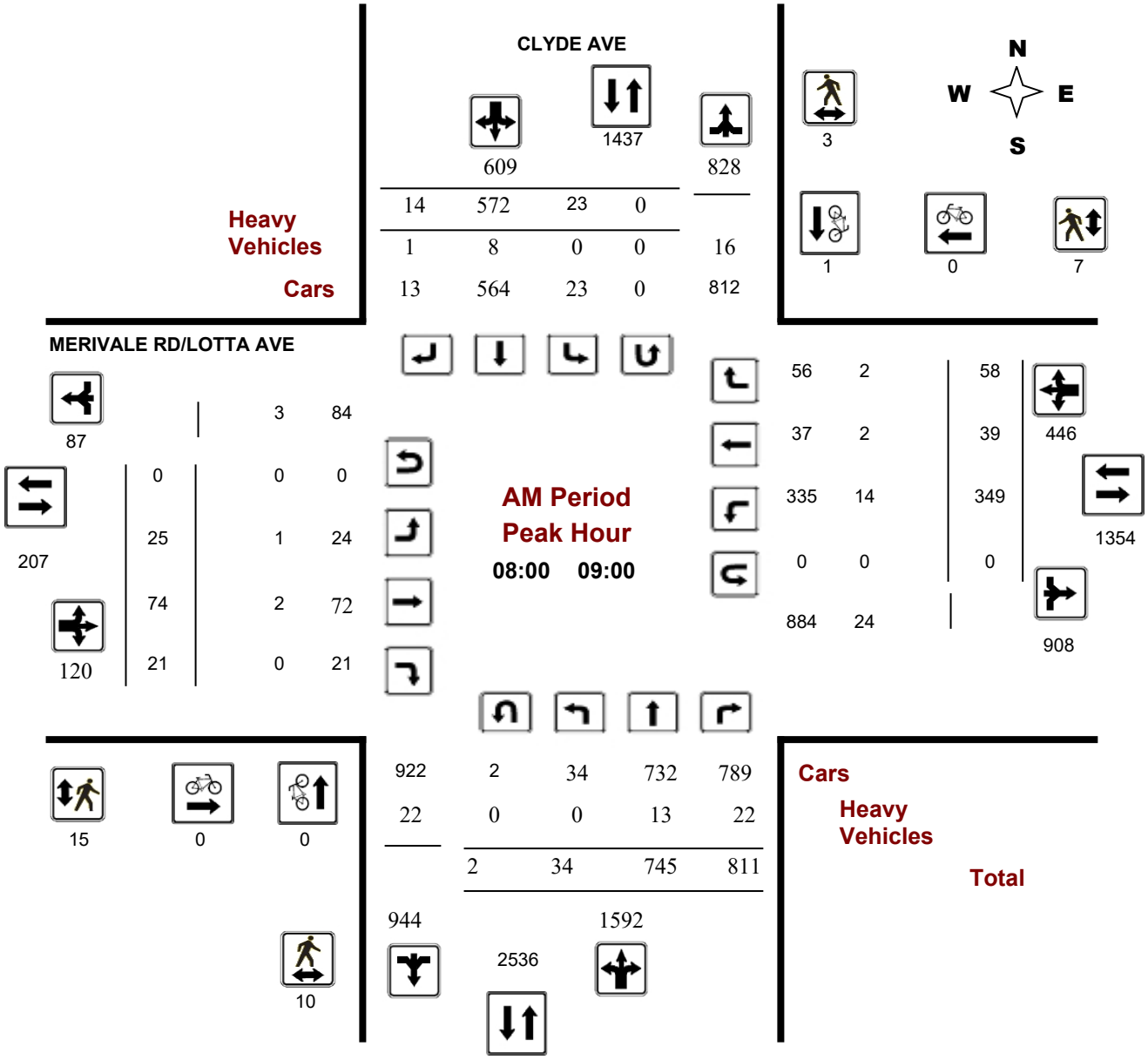
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MERIVALE RD/LOTTA AVE @ CLYDE AVE

Survey Date: Monday, February 10, 2020 **WO No:** 39436

Start Time: 07:00 **Device:** Miovision



Comments

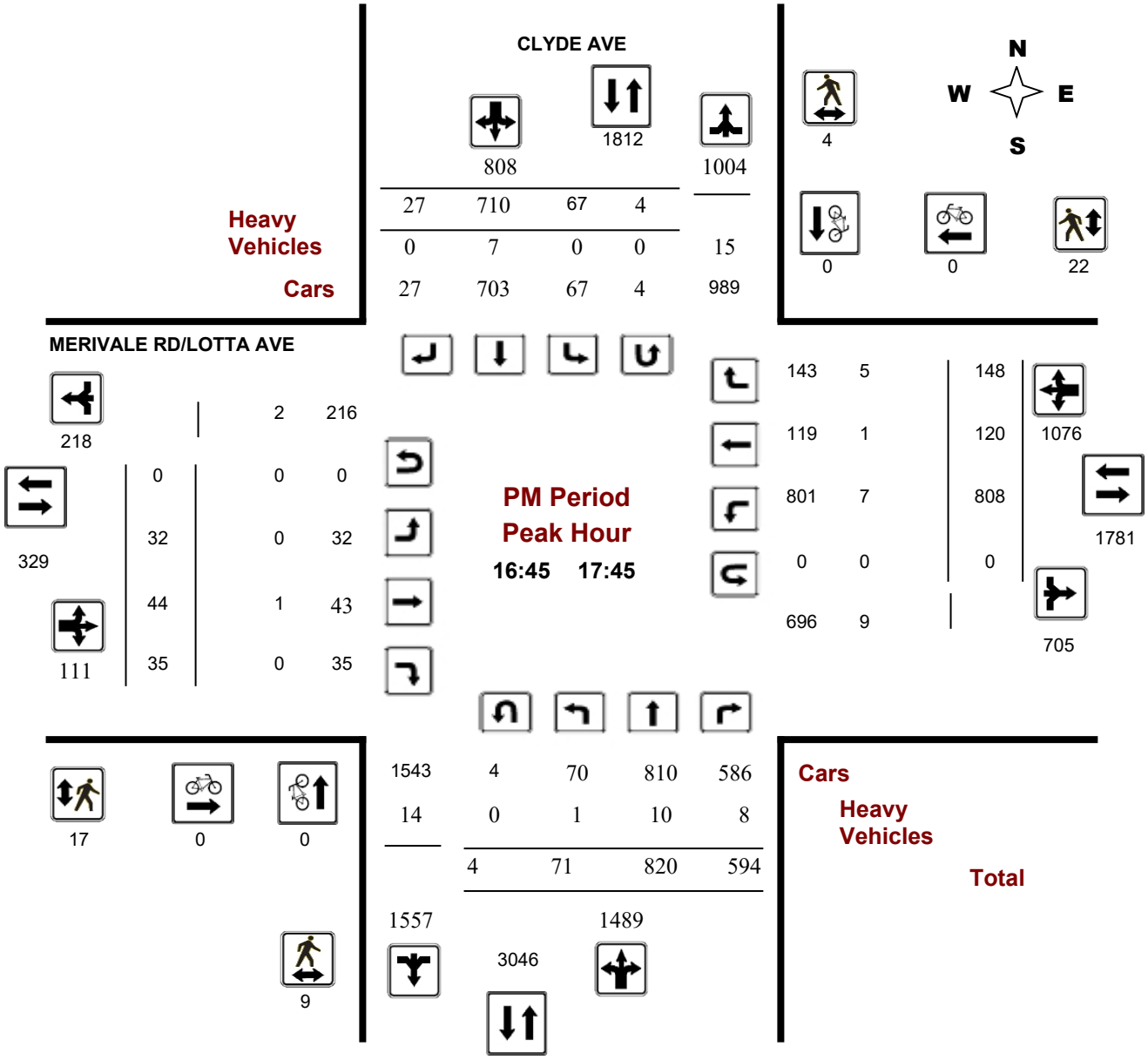
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

MERIVALE RD/LOTTA AVE @ CLYDE AVE

Survey Date: Monday, February 10, 2020 **WO No:** 39436

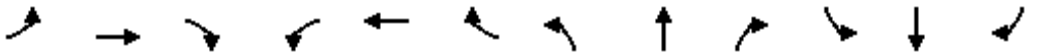
Start Time: 07:00 **Device:** Miovision



Comments

Appendix D:

Existing Synchro Analysis



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	74	21	335	37	56	34	745	811	23	572	14
Future Volume (vph)	25	74	21	335	37	56	34	745	811	23	572	14
Satd. Flow (prot)	1695	1716	0	3288	1608	0	1695	3390	1517	1695	3372	0
Flt Permitted	0.950			0.950			0.364			0.284		
Satd. Flow (perm)	1689	1716	0	3247	1608	0	641	3390	1481	506	3372	0
Satd. Flow (RTOR)		10			53				833		2	
Lane Group Flow (vph)	28	105	0	372	103	0	38	828	901	26	652	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	33.0	34.0		33.0	34.0		63.0	63.0	63.0	63.0	63.0	
Total Split (%)	25.4%	26.2%		25.4%	26.2%		48.5%	48.5%	48.5%	48.5%	48.5%	
Yellow Time (s)	3.0	3.0		3.7	3.7		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.8	3.8		2.5	2.5		2.3	2.3	2.3	2.3	2.3	
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)	6.8	6.8		6.2	6.2		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	7.7	15.0		19.9	32.3		76.1	76.1	76.1	76.1	76.1	
Actuated g/C Ratio	0.06	0.12		0.15	0.25		0.59	0.59	0.59	0.59	0.59	
v/c Ratio	0.28	0.51		0.74	0.23		0.10	0.42	0.74	0.09	0.33	
Control Delay	64.8	56.0		61.5	20.8		11.8	12.9	11.0	16.7	15.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	1.3	0.0	0.0	
Total Delay	64.8	56.0		61.5	20.8		11.8	12.9	12.3	16.7	15.9	
LOS	E	E		E	C		B	B	B	B	B	
Approach Delay		57.8			52.7			12.6			15.9	
Approach LOS		E			D			B			B	
Queue Length 50th (m)	7.0	23.7		47.5	10.8		3.4	38.3	29.3	2.6	40.7	
Queue Length 95th (m)	16.8	37.5		61.3	22.4		m2.2	27.1	279.5	9.9	73.6	
Internal Link Dist (m)		214.0			445.3			280.9			385.6	
Turn Bay Length (m)	40.0			95.0			85.0			80.0		
Base Capacity (vph)	341	366		677	446		375	1985	1212	296	1975	
Starvation Cap Reductn	0	0		0	0		0	0	140	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	0.08	0.29		0.55	0.23		0.10	0.42	0.84	0.09	0.33	

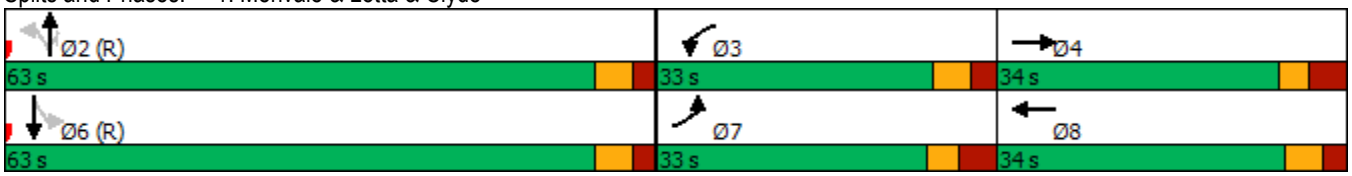
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 9 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

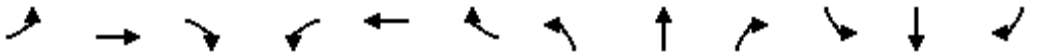
Maximum v/c Ratio: 0.74

Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Merivale & Lotta & Clyde





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	16	20	27	10	35	19	1570	35	27	924	5
Future Volume (vph)	38	16	20	27	10	35	19	1570	35	27	924	5
Satd. Flow (prot)	1695	1622	0	1695	1576	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.724			0.731			0.251			0.089		
Satd. Flow (perm)	1292	1622	0	1299	1576	0	447	3390	1472	159	3390	1471
Satd. Flow (RTOR)		22			39				86			86
Lane Group Flow (vph)	42	40	0	30	50	0	21	1744	39	30	1027	6
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	43.2	43.2		43.2	43.2		11.1	33.1	33.1	11.1	33.1	33.1
Total Split (s)	43.0	43.0		43.0	43.0		12.0	75.0	75.0	12.0	75.0	75.0
Total Split (%)	33.1%	33.1%		33.1%	33.1%		9.2%	57.7%	57.7%	9.2%	57.7%	57.7%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2		4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
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)	7.2	7.2		7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	15.4	15.4		15.4	15.4		101.0	98.7	98.7	101.1	98.7	98.7
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.76	0.76	0.78	0.76	0.76
v/c Ratio	0.27	0.19		0.20	0.23		0.05	0.68	0.03	0.16	0.40	0.01
Control Delay	53.0	27.4		50.4	20.0		4.2	7.2	0.2	5.9	9.1	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	27.4		50.4	20.0		4.2	7.2	0.2	5.9	9.1	0.0
LOS	D	C		D	C		A	A	A	A	A	A
Approach Delay		40.5			31.4			7.1			9.0	
Approach LOS		D			C			A			A	
Queue Length 50th (m)	10.5	4.4		7.4	2.7		0.3	14.7	0.0	0.7	62.1	0.0
Queue Length 95th (m)	17.6	12.4		13.6	11.8		m1.9	#276.1	m0.0	m5.4	88.6	m0.0
Internal Link Dist (m)		182.8			218.9			60.6			280.9	
Turn Bay Length (m)				35.0					15.0	100.0		
Base Capacity (vph)	355	462		357	462		404	2573	1138	193	2574	1138
Starvation Cap Reductn	0	0		0	0		0	61	0	0	0	0
Spillback Cap Reductn	16	0		0	20		0	8	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.09		0.08	0.11		0.05	0.69	0.03	0.16	0.40	0.01

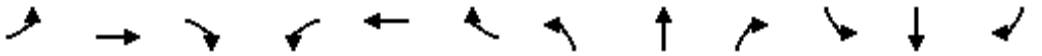
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 116 (89%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 68.4%	ICU Level of Service C
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Merivale & Withrow/Capilano



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	6	3	13	0	90	6	1432	27	123	878	3
Future Volume (vph)	24	6	3	13	0	90	6	1432	27	123	878	3
Satd. Flow (prot)	1695	1694	0	1695	1476	0	1695	3379	0	3288	3390	0
Flt Permitted	0.688			0.751			0.950			0.950		
Satd. Flow (perm)	1212	1694	0	1329	1476	0	1688	3379	0	3285	3390	0
Satd. Flow (RTOR)		3			108			2				
Lane Group Flow (vph)	27	10	0	14	100	0	7	1621	0	137	979	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5		11.7	31.2		11.7	31.2	
Total Split (s)	36.0	36.0		36.0	36.0		13.0	81.0		13.0	81.0	
Total Split (%)	27.7%	27.7%		27.7%	27.7%		10.0%	62.3%		10.0%	62.3%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.0	2.5		3.0	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.7	6.2		6.7	6.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	17.6	17.6		17.6	17.6		6.1	83.0		10.0	97.0	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.05	0.64		0.08	0.75	
v/c Ratio	0.16	0.04		0.08	0.34		0.09	0.75		0.54	0.39	
Control Delay	47.5	35.4		44.5	9.6		57.0	19.4		73.7	5.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1		0.0	0.0	
Total Delay	47.5	35.4		44.5	9.6		57.0	19.5		73.7	5.5	
LOS	D	D		D	A		E	B		E	A	
Approach Delay		44.2			13.9			19.7			13.9	
Approach LOS		D			B			B			B	
Queue Length 50th (m)	6.7	1.7		3.4	0.0		1.7	125.5		18.4	14.7	
Queue Length 95th (m)	13.8	6.1		8.5	12.6		m1.7	m96.7		#36.2	44.5	
Internal Link Dist (m)		58.9			208.4			286.8			128.3	
Turn Bay Length (m)										100.0		
Base Capacity (vph)	275	386		301	418		84	2188		252	2529	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	1		0	60		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.03		0.05	0.24		0.08	0.76		0.54	0.39	

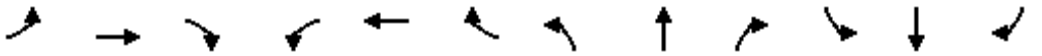
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 108 (83%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 76.2%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Emerald Plaza



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	353	380	122	83	227	209	90	1242	85	93	736	111
Future Volume (vph)	353	380	122	83	227	209	90	1242	85	93	736	111
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.378			0.506			0.255			0.067		
Satd. Flow (perm)	667	3390	1474	897	3390	1469	453	3390	1471	120	3390	1468
Satd. Flow (RTOR)			136			130			134			134
Lane Group Flow (vph)	392	422	136	92	252	232	100	1380	94	103	818	123
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	30.5	30.5	11.5	30.5	30.5	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (s)	23.0	33.0	33.0	23.0	33.0	33.0	11.0	63.0	63.0	11.0	63.0	63.0
Total Split (%)	17.7%	25.4%	25.4%	17.7%	25.4%	25.4%	8.5%	48.5%	48.5%	8.5%	48.5%	48.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.3	2.3	2.3	2.3	2.3	2.3
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	43.3	27.6	27.6	28.4	17.9	17.9	65.9	58.6	58.6	68.1	59.7	59.7
Actuated g/C Ratio	0.33	0.21	0.21	0.22	0.14	0.14	0.51	0.45	0.45	0.52	0.46	0.46
v/c Ratio	1.03	0.59	0.32	0.35	0.54	0.74	0.33	0.90	0.13	0.63	0.53	0.16
Control Delay	93.4	50.2	8.8	34.2	55.5	36.7	17.4	42.7	1.5	49.0	16.2	2.7
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	93.4	50.2	8.8	34.2	55.5	36.7	17.4	42.7	1.5	49.0	16.2	2.7
LOS	F	D	A	C	E	D	B	D	A	D	B	A
Approach Delay		62.1			44.5			38.6			17.8	
Approach LOS		E			D			D			B	
Queue Length 50th (m)	~92.3	55.0	0.0	17.5	32.7	25.8	10.2	159.5	0.0	12.4	31.9	0.1
Queue Length 95th (m)	#133.4	68.2	16.4	27.7	42.5	50.7	21.8	#220.9	3.8	#45.1	42.3	5.6
Internal Link Dist (m)		169.3			250.3			97.3			286.8	
Turn Bay Length (m)	100.0		120.0	130.0		105.0	85.0		95.0	140.0		175.0
Base Capacity (vph)	380	746	430	338	691	402	299	1528	736	164	1556	746
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	1.03	0.57	0.32	0.27	0.36	0.58	0.33	0.90	0.13	0.63	0.53	0.16

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 115 (88%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 39.6	Intersection LOS: D
Intersection Capacity Utilization 94.8%	ICU Level of Service F
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Merivale & Meadowlands

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Vol, veh/h	2	0	12	0	0	1	2	1585	6	1	988	13
Future Vol, veh/h	2	0	12	0	0	1	2	1585	6	1	988	13
Conflicting Peds, #/hr	0	0	2	2	0	0	11	0	15	15	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	12	0	0	1	2	1585	6	1	988	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1805	2618	514	2105	2621	811	1012	0	0	1606	0	0
Stage 1	1008	1008	-	1607	1607	-	-	-	-	-	-	-
Stage 2	797	1610	-	498	1014	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	50	24	505	29	24	322	681	-	-	403	-	-
Stage 1	258	316	-	109	163	-	-	-	-	-	-	-
Stage 2	346	162	-	523	314	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	48	23	499	27	23	318	675	-	-	398	-	-
Mov Cap-2 Maneuver	152	104	-	86	104	-	-	-	-	-	-	-
Stage 1	249	311	-	105	157	-	-	-	-	-	-	-
Stage 2	336	156	-	507	309	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.9	16.4	0.1	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	675	-	-	376	318	398	-	-
HCM Lane V/C Ratio	0.003	-	-	0.037	0.003	0.003	-	-
HCM Control Delay (s)	10.3	0.1	-	14.9	16.4	14.1	0	-
HCM Lane LOS	B	A	-	B	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	43	35	808	119	143	71	820	594	67	703	27
Future Volume (vph)	32	43	35	808	119	143	71	820	594	67	703	27
Satd. Flow (prot)	1695	1646	0	3288	1622	0	1695	3390	1517	1695	3362	0
Flt Permitted	0.950			0.950			0.179			0.130		
Satd. Flow (perm)	1689	1646	0	3250	1622	0	317	3390	1445	232	3362	0
Satd. Flow (RTOR)		28			42				568		3	
Lane Group Flow (vph)	36	87	0	898	291	0	79	911	660	74	811	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2		10.3	30.0	30.0	10.3	30.0	
Total Split (s)	44.0	34.0		44.0	34.0		12.0	41.0	41.0	12.0	41.0	
Total Split (%)	33.6%	26.0%		33.6%	26.0%		9.2%	31.3%	31.3%	9.2%	31.3%	
Yellow Time (s)	3.0	3.0		3.7	3.7		3.3	3.7	3.7	3.3	3.7	
All-Red Time (s)	3.8	3.8		2.5	2.5		2.0	2.3	2.3	2.0	2.3	
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)	6.8	6.8		6.2	6.2		5.3	6.0	6.0	5.3	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	
Act Effct Green (s)	8.3	16.8		37.3	51.1		54.4	47.7	47.7	54.2	47.6	
Actuated g/C Ratio	0.06	0.13		0.28	0.39		0.42	0.36	0.36	0.41	0.36	
v/c Ratio	0.34	0.37		0.96	0.44		0.38	0.74	0.74	0.42	0.66	
Control Delay	66.5	37.6		67.2	27.4		29.6	42.7	12.7	31.6	40.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	66.5	37.6		67.2	27.4		29.6	42.7	12.7	31.6	40.5	
LOS	E	D		E	C		C	D	B	C	D	
Approach Delay		46.1			57.5			30.1			39.7	
Approach LOS		D			E			C			D	
Queue Length 50th (m)	9.1	14.8		117.3	54.0		10.5	103.4	15.5	9.8	88.6	
Queue Length 95th (m)	19.9	27.4		#156.3	69.4		24.8	#169.7	79.6	23.5	#141.3	
Internal Link Dist (m)		214.0			445.3			280.9			385.6	
Turn Bay Length (m)	40.0			95.0			85.0			80.0		
Base Capacity (vph)	481	363		948	657		209	1233	887	177	1222	
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	0.07	0.24		0.95	0.44		0.38	0.74	0.74	0.42	0.66	

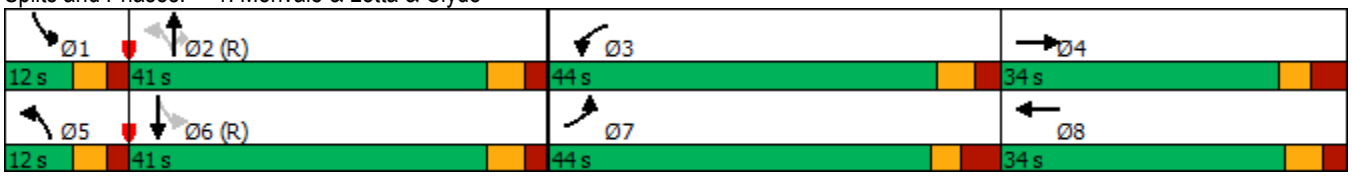
Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 131
Offset: 98 (75%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

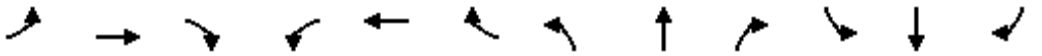
Maximum v/c Ratio: 0.96

Intersection Signal Delay: 41.3	Intersection LOS: D
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Merivale & Lotta & Clyde





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	8	26	59	14	52	39	1564	30	64	1634	64
Future Volume (vph)	31	8	26	59	14	52	39	1564	30	64	1634	64
Satd. Flow (prot)	1695	1556	0	1695	1550	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.709			0.732			0.058			0.068		
Satd. Flow (perm)	1256	1556	0	1295	1550	0	103	3390	1420	121	3390	1433
Satd. Flow (RTOR)		29			58				86			86
Lane Group Flow (vph)	34	38	0	66	74	0	43	1738	33	71	1816	71
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	43.2	43.2		43.2	43.2		11.1	33.1	33.1	11.1	33.1	33.1
Total Split (s)	44.0	44.0		44.0	44.0		14.0	72.0	72.0	14.0	72.0	72.0
Total Split (%)	33.8%	33.8%		33.8%	33.8%		10.8%	55.4%	55.4%	10.8%	55.4%	55.4%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2		4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
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)	7.2	7.2		7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	20.8	20.8		20.8	20.8		90.5	85.1	85.1	91.5	85.6	85.6
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.70	0.65	0.65	0.70	0.66	0.66
v/c Ratio	0.17	0.14		0.32	0.25		0.28	0.78	0.03	0.42	0.81	0.07
Control Delay	43.5	17.4		48.3	15.3		15.0	13.1	0.1	17.5	23.9	2.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1	0.0	0.0	0.2	0.0
Total Delay	43.5	17.4		48.3	15.3		15.0	13.2	0.1	17.5	24.1	2.4
LOS	D	B		D	B		B	B	A	B	C	A
Approach Delay		29.7			30.8			13.0			23.0	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	8.3	2.1		16.5	3.8		1.1	31.4	0.0	3.0	137.1	0.0
Queue Length 95th (m)	15.0	10.2		25.0	14.7		m4.9	#284.6	m0.0	15.9	#308.1	5.5
Internal Link Dist (m)		182.8			218.9			60.6			280.9	
Turn Bay Length (m)				35.0					15.0	100.0		
Base Capacity (vph)	355	461		366	480		169	2218	959	184	2231	972
Starvation Cap Reductn	0	0		0	0		0	42	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	50	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.08		0.18	0.15		0.25	0.80	0.03	0.39	0.83	0.07

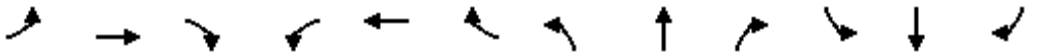
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 76 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 18.8	Intersection LOS: B
Intersection Capacity Utilization 81.5%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Merivale & Withrow/Capilano



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	16	20	64	1	196	18	1245	40	241	1416	241
Future Volume (vph)	45	16	20	64	1	196	18	1245	40	241	1416	241
Satd. Flow (prot)	1695	1605	0	1695	1478	0	1695	3367	0	3288	3302	0
Flt Permitted	0.255			0.731			0.950			0.950		
Satd. Flow (perm)	451	1605	0	1276	1478	0	1693	3367	0	3253	3302	0
Satd. Flow (RTOR)		22			165			4			23	
Lane Group Flow (vph)	50	40	0	71	219	0	20	1427	0	268	1841	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5		11.7	31.2		11.7	31.2	
Total Split (s)	36.0	36.0		36.0	36.0		17.0	77.0		17.0	77.0	
Total Split (%)	27.7%	27.7%		27.7%	27.7%		13.1%	59.2%		13.1%	59.2%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.0	2.5		3.0	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.7	6.2		6.7	6.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	15.8	15.8		15.8	15.8		7.1	78.4		16.4	95.5	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.05	0.60		0.13	0.73	
v/c Ratio	0.93	0.19		0.46	0.68		0.22	0.70		0.64	0.76	
Control Delay	157.3	27.9		60.5	25.1		61.2	8.1		59.1	12.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1		0.0	0.1	
Total Delay	157.3	27.9		60.5	25.1		61.2	8.2		59.1	12.9	
LOS	F	C		E	C		E	A		E	B	
Approach Delay		99.8			33.8			8.9			18.8	
Approach LOS		F			C			A			B	
Queue Length 50th (m)	~14.4	4.3		17.6	13.1		5.3	43.5		35.9	62.7	
Queue Length 95th (m)	25.8	13.4		29.0	34.7		m6.8	m41.2		m#56.2	#291.7	
Internal Link Dist (m)		58.9			208.4			286.8			128.3	
Turn Bay Length (m)										100.0		
Base Capacity (vph)	102	381		289	462		134	2032		416	2430	
Starvation Cap Reductn	0	0		0	0		0	0		0	56	
Spillback Cap Reductn	0	0		0	3		0	70		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.49	0.10		0.25	0.48		0.15	0.73		0.64	0.78	

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 65 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 100.8%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Emerald Plaza

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	307	154	182	492	169	195	1159	102	215	1074	283
Future Volume (vph)	163	307	154	182	492	169	195	1159	102	215	1074	283
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.187			0.428			0.104			0.071		
Satd. Flow (perm)	329	3390	1416	742	3390	1433	184	3390	1384	127	3390	1412
Satd. Flow (RTOR)			171			188			134			314
Lane Group Flow (vph)	181	341	171	202	547	188	217	1288	113	239	1193	314
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	30.5	30.5	11.5	30.5	30.5	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (s)	19.0	31.0	31.0	19.0	31.0	31.0	17.0	59.0	59.0	21.0	63.0	63.0
Total Split (%)	14.6%	23.8%	23.8%	14.6%	23.8%	23.8%	13.1%	45.4%	45.4%	16.2%	48.5%	48.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.3	2.3	2.3	2.3	2.3	2.3
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	36.1	23.8	23.8	36.0	23.7	23.7	65.7	53.5	53.5	72.2	56.8	56.8
Actuated g/C Ratio	0.28	0.18	0.18	0.28	0.18	0.18	0.51	0.41	0.41	0.56	0.44	0.44
v/c Ratio	0.82	0.55	0.43	0.68	0.89	0.45	0.93	0.92	0.17	0.93	0.81	0.40
Control Delay	62.5	51.9	10.0	47.3	69.0	9.9	72.6	48.3	3.0	74.8	35.0	7.8
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	62.5	51.9	10.0	47.3	69.0	9.9	72.6	48.3	3.0	74.8	35.0	7.8
LOS	E	D	A	D	E	A	E	D	A	E	D	A
Approach Delay		44.3			52.5			48.4			35.6	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	34.5	41.8	0.0	39.0	72.1	0.0	35.7	163.7	0.0	43.4	105.7	5.8
Queue Length 95th (m)	#65.1	57.5	19.2	60.2	#99.3	20.0	#87.6	#209.5	8.0	m#89.8	114.9	m32.2
Internal Link Dist (m)		169.3			250.3			97.3			286.8	
Turn Bay Length (m)	100.0		120.0	130.0		105.0	85.0		95.0	140.0		175.0
Base Capacity (vph)	222	638	405	298	638	422	234	1396	648	256	1486	795
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	0.82	0.53	0.42	0.68	0.86	0.45	0.93	0.92	0.17	0.93	0.80	0.39

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 61 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 44.1	Intersection LOS: D
Intersection Capacity Utilization 94.3%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Merivale & Meadowlands

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	15	3	0	7	16	1560	39	1	1809	23
Future Vol, veh/h	3	0	15	3	0	7	16	1560	39	1	1809	23
Conflicting Peds, #/hr	0	0	0	0	0	0	27	0	45	45	0	27
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	15	3	0	7	16	1560	39	1	1809	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2662	3526	943	2564	3518	845	1859	0	0	1644	0	0
Stage 1	1850	1850	-	1657	1657	-	-	-	-	-	-	-
Stage 2	812	1676	-	907	1861	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	11	6	264	13	6	306	321	-	-	390	-	-
Stage 1	77	123	-	102	154	-	-	-	-	-	-	-
Stage 2	339	150	-	297	121	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	7	3	258	7	3	294	314	-	-	375	-	-
Mov Cap-2 Maneuver	32	43	-	41	42	-	-	-	-	-	-	-
Stage 1	40	120	-	52	78	-	-	-	-	-	-	-
Stage 2	174	76	-	280	118	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.6	43.7	4	0
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	314	-	-	119	103	375	-	-
HCM Lane V/C Ratio	0.051	-	-	0.151	0.097	0.003	-	-
HCM Control Delay (s)	17.1	4	-	40.6	43.7	14.6	0	-
HCM Lane LOS	C	A	-	E	E	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.3	0	-	-

Appendix E:

Collision Data

Accident Year	Accident Date	Accident Time	Location	Environment_Condition	Light	Classification_of_Accident	Initial_Impact_Type	No__of_Pedestrians
2016	10/6/2016	12:43 PM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2016	10/15/2016	1:33 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	10/4/2016	9:43 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2016	10/5/2016	1:15 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	9/27/2016	12:12 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	10/21/2016	4:07 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	11/3/2016	3:58 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	11/6/2016	11:17 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	02 - Angle	0
2016	11/10/2016	9:25 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	02 - Non-fatal injury	05 - Turning movement	0
2016	11/13/2016	1:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2016	11/13/2016	12:28 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	11/14/2016	2:01 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2016	11/10/2016	1:46 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2016	11/18/2016	10:58 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	02 - Non-fatal injury	02 - Angle	0
2016	11/30/2016	3:15 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2016	11/30/2016	3:40 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2016	11/24/2016	11:00 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	11/25/2016	8:58 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	02 - Non-fatal injury	03 - Rear end	0
2016	12/3/2016	5:07 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2016	11/16/2016	5:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2016	12/8/2016	1:53 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2016	12/19/2016	1:39 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	12/8/2016	9:52 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	03 - Snow	07 - Dark	03 - P.D. only	07 - SMV other	0
2016	12/9/2016	5:35 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2016	1/27/2016	8:13 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2016	12/17/2016	5:34 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2016	12/24/2016	12:14 PM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	2/10/2016	2:54 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2016	12/26/2016	1:58 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	02 - Non-fatal injury	05 - Turning movement	0
2016	12/27/2016	7:08 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	04 - Freezing Rain	07 - Dark	03 - P.D. only	03 - Rear end	0
2016	2/12/2016	4:36 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2016	2/5/2016	8:44 AM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2016	12/29/2016	12:15 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	12/21/2016	4:19 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2016	12/21/2016	7:51 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2016	1/6/2016	4:15 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2016	2/18/2016	11:44 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	2/25/2016	8:24 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	04 - Freezing Rain	07 - Dark	02 - Non-fatal injury	05 - Turning movement	0
2016	1/6/2016	1:44 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	2/13/2016	3:08 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2016	2/13/2016	7:57 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2016	3/22/2016	12:49 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2016	2/26/2016	11:53 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	3/11/2016	11:21 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	3/26/2016	11:20 AM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2016	3/24/2016	12:27 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	04 - Freezing Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	3/28/2016	5:55 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2016	4/7/2016	11:54 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	02 - Non-fatal injury	07 - SMV other	0
2016	4/8/2016	4:45 PM	CAPILANO DR btwn WITHROW AVE & KERRY CRES (__3ZBOK5)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	4/8/2016	8:41 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	03 - Snow	07 - Dark	02 - Non-fatal injury	05 - Turning movement	0
2016	4/29/2016	1:29 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2016	5/15/2016	11:30 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	5/13/2016	5:34 AM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	03 - Dawn	02 - Non-fatal injury	03 - Rear end	0
2016	4/21/2016	11:43 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	5/9/2016	12:38 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2016	6/10/2016	10:20 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	5/30/2016	12:45 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2016	5/23/2016	7:47 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0

2016	6/2/2016	7:48 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2016	5/23/2016	12:34 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	02 - Non-fatal injury	05 - Turning movement	0
2016	6/4/2016	12:15 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2016	5/24/2016	5:59 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2016	6/11/2016	6:57 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	6/12/2016	3:45 PM	RITA AVE @ MERIVALE RD (0001750)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	6/13/2016	6:43 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	6/30/2016	3:31 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	0
2016	7/2/2016	2:20 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	7/13/2016	8:43 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	1/16/2016	4:25 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	02 - Rain	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2016	7/13/2016	3:39 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	7/22/2016	9:59 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	7/29/2016	5:29 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	1/18/2016	12:37 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2016	7/18/2016	2:45 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	8/16/2016	1:08 PM	MERIVALE RD @ ROSSLAND AVE (0001757)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	8/12/2016	10:00 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	8/12/2016	10:14 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	8/6/2016	10:23 AM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	02 - Non-fatal injury	02 - Angle	0
2016	8/9/2016	3:08 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	8/20/2016	12:30 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	8/22/2016	4:44 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	9/1/2016	6:03 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	9/3/2016	12:44 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	02 - Non-fatal injury	07 - SMV other	0
2016	9/17/2016	3:50 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	9/12/2016	6:07 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2016	9/15/2016	2:43 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	10/7/2017	11:53 AM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	10/14/2017	10:00 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	10/14/2017	12:27 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	10/7/2017	5:00 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	10/5/2017	10:58 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2017	10/8/2017	1:01 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	01 - Approaching	0
2017	10/11/2017	7:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2017	1/26/2017	2:34 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	07 - SMV other	0
2017	11/11/2017	3:18 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	11/12/2017	1:56 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2017	11/12/2017	8:12 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	02 - Non-fatal injury	02 - Angle	0
2017	10/27/2017	8:51 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2017	11/3/2017	6:03 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2017	11/7/2017	5:24 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	07 - Dark	02 - Non-fatal injury	07 - SMV other	1
2017	11/7/2017	8:50 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2017	11/8/2017	4:38 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	05 - Dusk	03 - P.D. only	04 - Sideswipe	0
2017	11/21/2017	5:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2017	11/16/2017	3:01 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2017	1/30/2017	6:20 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2017	11/24/2017	5:07 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2017	11/28/2017	7:59 PM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	01 - Clear	07 - Dark	03 - P.D. only	99 - Other	0
2017	11/29/2017	2:20 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2017	11/20/2017	12:50 PM	RITA AVE @ MERIVALE RD (0001750)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	2/2/2017	12:56 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2017	12/12/2017	8:12 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	03 - Snow	01 - Daylight	02 - Non-fatal injury	02 - Angle	0
2017	1/31/2017	8:44 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	12/16/2017	3:02 PM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	12/5/2017	6:08 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2017	12/6/2017	10:43 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2017	12/6/2017	3:20 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	12/7/2017	12:40 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0

2017	12/8/2017	4:45 PM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2017	12/18/2017	11:49 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	12/29/2017	6:49 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	03 - Snow	07 - Dark	03 - P.D. only	03 - Rear end	0
2017	12/20/2017	4:53 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2017	12/21/2017	12:04 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	02 - Non-fatal injury	07 - SMV other	1
2017	12/27/2017	5:07 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	02 - Non-fatal injury	07 - SMV other	0
2017	12/30/2017	9:29 AM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	2/6/2017	7:15 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	03 - Snow	07 - Dark	03 - P.D. only	03 - Rear end	0
2017	12/26/2017	1:39 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2017	12/26/2017	12:24 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2017	12/27/2017	11:03 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2017	12/22/2017	5:30 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	03 - Snow	07 - Dark	03 - P.D. only	07 - SMV other	0
2017	2/15/2017	5:58 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	03 - Snow	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2017	2/15/2017	9:00 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	03 - Snow	07 - Dark	03 - P.D. only	05 - Turning movement	0
2017	2/17/2017	1:42 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2017	2/18/2017	3:55 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2017	1/7/2017	12:36 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2017	3/8/2017	7:48 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2017	3/3/2017	2:30 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2017	3/17/2017	10:36 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	3/15/2017	5:36 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	3/10/2017	12:01 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2017	3/11/2017	9:43 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2017	3/26/2017	1:03 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	4/1/2017	2:21 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	4/4/2017	1:45 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	4/4/2017	1:46 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	02 - Rain	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2017	4/11/2017	10:11 AM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	02 - Rain	01 - Daylight	02 - Non-fatal injury	02 - Angle	0
2017	1/9/2017	6:33 PM	MERIVALE RD @ ROSSLAND AVE (0001757)	03 - Snow	07 - Dark	03 - P.D. only	02 - Angle	0
2017	4/15/2017	8:41 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	07 - Dark	02 - Non-fatal injury	05 - Turning movement	0
2017	4/27/2017	11:03 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	07 - Dark	02 - Non-fatal injury	02 - Angle	0
2017	4/28/2017	4:00 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	1/10/2017	5:30 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	03 - Snow	05 - Dusk	03 - P.D. only	05 - Turning movement	0
2017	4/21/2017	8:24 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2017	4/21/2017	9:43 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2017	4/23/2017	6:15 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2017	4/19/2017	10:21 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	4/21/2017	11:49 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2017	6/7/2017	5:38 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2017	5/31/2017	1:35 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2017	1/13/2017	4:02 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	0
2017	7/3/2017	1:06 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	07 - Dark	03 - P.D. only	03 - Rear end	0
2017	6/30/2017	11:30 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2017	6/30/2017	3:38 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	6/22/2017	1:51 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	6/26/2017	12:16 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	6/18/2017	10:46 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2017	6/23/2017	8:40 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2017	7/7/2017	4:30 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	02 - Rain	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2017	7/7/2017	4:58 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2017	7/17/2017	9:05 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2017	7/14/2017	5:00 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	7/11/2017	4:28 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	07 - SMV other	0
2017	8/22/2017	7:22 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	02 - Rain	01 - Daylight	03 - P.D. only	02 - Angle	0
2017	8/1/2017	2:58 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2017	8/15/2017	11:28 AM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	8/8/2017	10:12 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2017	8/21/2017	12:21 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	8/8/2017	8:12 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0

2017	8/16/2017	4:14 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2017	8/12/2017	6:15 PM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	8/24/2017	11:30 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	8/24/2017	5:08 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	8/28/2017	12:43 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2017	9/1/2017	3:29 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	9/11/2017	3:13 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2017	9/11/2017	10:47 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2017	9/3/2017	2:53 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	02 - Rain	01 - Daylight	03 - P.D. only	02 - Angle	0
2017	9/5/2017	4:17 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	9/7/2017	2:02 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	9/7/2017	2:30 PM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2017	9/8/2017	11:45 AM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	02 - Rain	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2017	9/29/2017	11:50 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2017	9/24/2017	3:30 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2018	9/29/2018	9:36 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	02 - Non-fatal injury	05 - Turning movement	0
2018	1/19/2018	12:00 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	1/19/2018	12:38 PM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	10/10/2018	12:15 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	10/10/2018	12:48 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	1/19/2018	1:19 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	1/19/2018	1:42 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2018	1/18/2018	7:40 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	03 - Dawn	03 - P.D. only	03 - Rear end	0
2018	10/17/2018	3:38 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	10/31/2018	6:54 PM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	01 - Clear	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2018	11/1/2018	12:04 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2018	10/17/2018	5:00 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2018	10/18/2018	11:48 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	0
2018	11/5/2018	2:52 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2018	10/19/2018	10:23 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	07 - Dark	03 - P.D. only	03 - Rear end	0
2018	10/19/2018	2:40 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	10/20/2018	11:30 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	10/26/2018	2:30 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	10/30/2018	5:07 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2018	1/22/2018	1:02 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	11/15/2018	2:29 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	11/16/2018	10:21 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	11/16/2018	9:01 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	03 - Snow	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2018	11/21/2018	1:55 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	02 - Rain	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2018	11/22/2018	10:30 AM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	11/23/2018	3:00 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2018	11/17/2018	3:26 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	11/17/2018	4:23 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2018	12/11/2018	12:04 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	11/24/2018	1:07 PM	MERIVALE RD btwn WITHROW AVE & RITA AVE (__3ZBOCB)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	11/24/2018	10:34 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2018	12/7/2018	5:19 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2018	11/28/2018	9:46 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	12/1/2018	1:15 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	12/20/2018	3:15 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	12/11/2018	5:57 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	03 - Snow	07 - Dark	03 - P.D. only	03 - Rear end	0
2018	12/21/2018	7:30 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	02 - Rain	07 - Dark	03 - P.D. only	05 - Turning movement	0
2018	12/21/2018	8:35 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	02 - Rain	07 - Dark	03 - P.D. only	03 - Rear end	0
2018	12/23/2018	4:04 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	05 - Dusk	02 - Non-fatal injury	05 - Turning movement	0
2018	12/30/2018	12:15 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	12/13/2018	7:49 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	03 - Dawn	03 - P.D. only	03 - Rear end	0
2018	12/13/2018	8:03 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	2/7/2018	5:13 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	03 - Snow	05 - Dusk	02 - Non-fatal injury	05 - Turning movement	0
2018	2/8/2018	1:06 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	03 - Snow	01 - Daylight	03 - P.D. only	04 - Sideswipe	0

2018	12/31/2018	1:10 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	2/2/2018	12:24 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2018	2/13/2018	6:33 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	03 - Dawn	03 - P.D. only	03 - Rear end	0
2018	2/13/2018	7:27 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2018	12/31/2018	7:36 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	07 - Dark	02 - Non-fatal injury	03 - Rear end	0
2018	2/5/2018	7:30 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	03 - Snow	03 - Dawn	03 - P.D. only	03 - Rear end	0
2018	2/5/2018	7:43 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2018	3/5/2018	2:00 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	3/5/2018	8:23 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	3/6/2018	5:30 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	1/5/2018	5:25 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2018	2/28/2018	11:13 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	3/8/2018	6:40 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	03 - Snow	07 - Dark	03 - P.D. only	03 - Rear end	0
2018	2/18/2018	6:00 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	05 - Dusk	03 - P.D. only	04 - Sideswipe	0
2018	3/21/2018	4:59 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2018	3/26/2018	6:24 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2018	1/7/2018	12:24 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	02 - Non-fatal injury	03 - Rear end	0
2018	4/6/2018	5:37 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	4/7/2018	4:58 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2018	3/11/2018	2:07 PM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	3/21/2018	9:09 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2018	3/23/2018	5:47 PM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	3/12/2018	11:19 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	03 - Snow	07 - Dark	03 - P.D. only	03 - Rear end	0
2018	3/12/2018	12:59 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	3/13/2018	1:15 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2018	5/8/2018	4:49 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	5/1/2018	11:07 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2018	5/1/2018	9:14 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	5/2/2018	7:32 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	0
2018	5/3/2018	2:41 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	5/5/2018	12:36 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	4/16/2018	5:34 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	02 - Non-fatal injury	02 - Angle	0
2018	5/25/2018	5:00 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	5/18/2018	4:44 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	5/11/2018	5:58 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2018	5/12/2018	3:30 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	5/8/2018	8:00 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2018	5/30/2018	3:20 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	5/22/2018	1:15 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	6/1/2018	11:32 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2018	6/8/2018	12:38 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2018	6/8/2018	2:37 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2018	6/6/2018	3:43 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	1/11/2018	8:52 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	6/23/2018	4:49 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	6/23/2018	6:18 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2018	6/15/2018	11:37 AM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	6/16/2018	11:26 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2018	7/7/2018	12:16 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2018	7/20/2018	8:08 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	7/14/2018	1:32 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2018	7/12/2018	5:51 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	7/11/2018	2:18 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	1/12/2018	3:16 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	6/28/2018	7:47 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2018	7/30/2018	10:02 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2018	7/30/2018	11:52 AM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2018	7/31/2018	3:38 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	8/1/2018	1:08 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0

2018	8/11/2018	7:20 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2018	8/8/2018	3:48 PM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2018	7/22/2018	12:39 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	7/23/2018	6:33 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	02 - Rain	01 - Daylight	03 - P.D. only	02 - Angle	0
2018	9/4/2018	3:55 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	8/21/2018	1:03 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	02 - Non-fatal injury	07 - SMV other	1
2018	8/24/2018	8:43 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2018	8/27/2018	5:38 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2018	8/28/2018	10:33 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2018	9/2/2018	2:32 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	8/29/2018	11:33 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2018	9/23/2018	10:12 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2018	9/23/2018	9:52 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	02 - Angle	0
2018	9/21/2018	11:02 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	03 - P.D. only	02 - Angle	0
2019	1/20/2019	5:35 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	03 - Snow	05 - Dusk	03 - P.D. only	02 - Angle	0
2019	9/6/2019	3:47 PM	MERIVALE RD btwn WITHROW AVE & RITA AVE (__3ZBOCB)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	8/21/2019	9:44 AM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	02 - Rain	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2019	9/2/2019	2:45 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2019	1/21/2019	3:21 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	9/23/2019	7:53 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2019	9/19/2019	4:39 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	9/26/2019	7:33 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	07 - Dark	02 - Non-fatal injury	03 - Rear end	0
2019	10/3/2019	9:39 AM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	10/4/2019	11:50 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	10/12/2019	12:41 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	10/12/2019	8:02 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2019	10/10/2019	8:24 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	10/19/2019	7:10 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2019	10/20/2019	11:40 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	0
2019	10/8/2019	7:45 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	10/9/2019	4:25 PM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	10/9/2019	9:35 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2019	10/3/2019	2:14 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2019	10/1/2019	2:30 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	1/23/2019	11:09 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	03 - Snow	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	10/21/2019	1:55 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	10/29/2019	3:00 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	11/1/2019	12:00 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	10/29/2019	7:49 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	02 - Non-fatal injury	03 - Rear end	0
2019	10/30/2019	4:36 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	01 - Daylight	02 - Non-fatal injury	02 - Angle	1
2019	1/22/2019	5:44 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2019	11/1/2019	9:45 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	03 - Snow	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	11/15/2019	2:57 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	11/21/2019	10:05 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	02 - Non-fatal injury	03 - Rear end	0
2019	11/22/2019	10:33 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2019	11/17/2019	2:58 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2019	11/18/2019	10:49 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	02 - Non-fatal injury	04 - Sideswipe	0
2019	11/16/2019	12:19 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	11/20/2019	8:24 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	02 - Non-fatal injury	02 - Angle	0
2019	11/23/2019	12:32 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2019	11/13/2019	11:49 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	02 - Non-fatal injury	05 - Turning movement	0
2019	12/4/2019	6:00 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	02 - Rain	07 - Dark	03 - P.D. only	03 - Rear end	0
2019	12/9/2019	11:44 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2019	11/28/2019	4:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2019	11/28/2019	4:57 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2019	1/25/2019	7:30 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2019	11/29/2019	9:00 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	12/7/2019	12:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	12/8/2019	12:02 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0

2019	12/9/2019	6:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	07 - Dark	03 - P.D. only	05 - Turning movement	0
2019	1/24/2019	5:19 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	05 - Dusk	02 - Non-fatal injury	03 - Rear end	0
2019	11/27/2019	6:40 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	02 - Rain	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2019	11/28/2019	11:57 AM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2019	11/26/2019	5:35 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2019	12/24/2019	10:45 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	12/24/2019	9:58 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	12/14/2019	5:31 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	07 - Dark	03 - P.D. only	05 - Turning movement	0
2019	12/14/2019	7:36 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	07 - Dark	03 - P.D. only	03 - Rear end	0
2019	12/28/2019	3:45 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	0
2019	12/28/2019	4:07 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	05 - Dusk	02 - Non-fatal injury	03 - Rear end	0
2019	12/20/2019	5:48 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	02 - Angle	0
2019	12/12/2019	6:50 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2019	12/19/2019	7:50 AM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	03 - Dawn	03 - P.D. only	03 - Rear end	0
2019	12/18/2019	1:30 PM	CAPILANO DR btwn WITHROW AVE & KERRY CRES (__3ZBOK5)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2019	1/30/2019	7:50 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	07 - Dark	03 - P.D. only	02 - Angle	0
2019	2/2/2019	6:20 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	03 - Snow	07 - Dark	03 - P.D. only	03 - Rear end	0
2019	2/17/2019	2:36 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2019	2/20/2019	12:35 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	3/12/2019	7:51 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	3/14/2019	1:01 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2019	3/15/2019	2:24 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	02 - Non-fatal injury	02 - Angle	0
2019	3/3/2019	11:42 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	3/24/2019	3:10 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2019	4/12/2019	3:26 PM	MERIVALE RD btwn WITHROW AVE & RITA AVE (__3ZBOCB)	01 - Clear	01 - Daylight	02 - Non-fatal injury	07 - SMV other	1
2019	4/13/2019	1:35 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	4/13/2019	4:46 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	4/9/2019	1:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	04 - Freezing Rain	01 - Daylight	03 - P.D. only	07 - SMV other	0
2019	5/3/2019	8:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2019	5/5/2019	8:26 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	02 - Non-fatal injury	02 - Angle	0
2019	5/2/2019	8:00 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	4/16/2019	2:15 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2019	5/8/2019	6:04 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2019	4/28/2019	12:45 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2019	4/30/2019	11:13 AM	MERIVALE RD btwn WITHROW AVE & RITA AVE (__3ZBOCB)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	4/17/2019	4:56 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	4/20/2019	3:15 PM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	4/26/2019	6:54 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2019	5/21/2019	4:53 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	5/21/2019	5:50 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	5/27/2019	8:20 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	5/17/2019	12:40 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	5/18/2019	4:09 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	01 - Fatal injury	05 - Turning movement	0
2019	5/30/2019	12:00 PM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2019	1/14/2019	2:45 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	6/15/2019	11:00 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	6/5/2019	4:00 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	6/13/2019	12:22 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	6/19/2019	4:15 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	02 - Rain	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	6/11/2019	8:53 AM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	1/17/2019	10:17 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	02 - Angle	0
2019	7/8/2019	2:35 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	6/27/2019	5:46 PM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	7/2/2019	9:18 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	1/17/2019	12:22 PM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2019	6/28/2019	2:57 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	02 - Rain	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2019	1/2/2019	8:26 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	7/10/2019	5:24 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2019	7/5/2019	6:12 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	02 - Rain	01 - Daylight	03 - P.D. only	03 - Rear end	0

2019	7/20/2019	1:43 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	7/23/2019	3:31 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2019	7/20/2019	6:50 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2019	7/21/2019	2:50 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	07 - SMV other	0
2019	8/14/2019	10:20 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2019	8/14/2019	12:08 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2019	8/11/2019	11:37 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2019	8/17/2019	12:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2020	1/23/2020	1:09 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	1/23/2020	1:52 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2020	1/24/2020	2:05 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2020	1/1/2020	1:49 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2020	1/5/2020	2:20 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2020	2/19/2020	5:09 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2020	2/10/2020	9:54 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	03 - Snow	01 - Daylight	03 - P.D. only	07 - SMV other	0
2020	2/12/2020	7:31 AM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	02 - Non-fatal injury	02 - Angle	0
2020	2/22/2020	10:40 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	2/12/2020	7:33 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2020	2/10/2020	8:12 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	03 - Snow	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	2/28/2020	11:00 AM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2020	2/29/2020	9:35 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	3/11/2020	9:00 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2020	4/15/2020	1:26 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	3/14/2020	4:23 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2020	4/30/2020	11:17 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2020	4/30/2020	12:33 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	02 - Rain	01 - Daylight	03 - P.D. only	02 - Angle	0
2020	5/22/2020	2:50 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	5/1/2020	9:16 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2020	5/14/2020	12:17 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	3/23/2020	11:21 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	3/23/2020	9:02 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	04 - Sideswipe	0
2020	1/10/2020	10:54 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2020	6/20/2020	10:31 AM	MERIVALE RD btwn CLYDE AVE & RITA AVE (__3ZA4H7)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	6/20/2020	12:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	6/22/2020	1:06 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	5/27/2020	1:06 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	0
2020	5/27/2020	9:30 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2020	5/28/2020	9:09 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	5/29/2020	11:55 AM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2020	5/30/2020	7:59 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2020	6/12/2020	1:28 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	6/15/2020	10:36 AM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2020	6/15/2020	2:00 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	7/1/2020	9:20 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2020	7/5/2020	5:18 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2020	6/5/2020	12:39 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2020	6/6/2020	12:00 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2020	6/18/2020	11:55 AM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2020	6/9/2020	5:44 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	6/9/2020	9:55 AM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2020	6/10/2020	6:08 PM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	8/9/2020	8:00 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	05 - Dusk	03 - P.D. only	02 - Angle	0
2020	7/31/2020	10:36 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	07 - Dark	03 - P.D. only	99 - Other	0
2020	7/23/2020	8:20 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2020	7/27/2020	8:56 AM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2020	8/4/2020	9:29 AM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2020	8/21/2020	3:12 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2020	8/21/2020	4:06 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	02 - Non-fatal injury	99 - Other	0
2020	9/16/2020	7:10 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0

2020	8/17/2020	11:11 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	0
2020	9/6/2020	3:00 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	8/31/2020	6:30 PM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	02 - Non-fatal injury	03 - Rear end	0
2020	9/10/2020	9:11 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2020	10/29/2020	1:05 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	1/3/2020	5:33 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	02 - Non-fatal injury	03 - Rear end	0
2020	10/1/2020	8:13 AM	MERIVALE RD @ EMERALD PLAZA SC (0005311)	01 - Clear	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2020	9/22/2020	2:22 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	10/3/2020	9:44 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2020	10/13/2020	5:11 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	05 - Dusk	03 - P.D. only	03 - Rear end	0
2020	10/13/2020	5:30 PM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	01 - Clear	01 - Daylight	02 - Non-fatal injury	04 - Sideswipe	0
2020	10/14/2020	1:00 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	11/16/2020	9:45 AM	MERIVALE RD btwn EMERALD PLAZA SC & MEADOWLANDS DR (__3ZA4HZB)	01 - Clear	01 - Daylight	03 - P.D. only	99 - Other	0
2020	11/12/2020	5:27 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	07 - Dark	02 - Non-fatal injury	03 - Rear end	0
2020	1/18/2020	6:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	03 - Snow	07 - Dark	02 - Non-fatal injury	03 - Rear end	0
2020	11/24/2020	2:54 PM	MERIVALE RD @ CAPILANO DR/WITHROW AVE (0009820)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	11/20/2020	12:04 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	11/15/2020	6:26 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	02 - Rain	07 - Dark	03 - P.D. only	05 - Turning movement	0
2020	11/4/2020	1:05 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	04 - Sideswipe	0
2020	1/18/2020	3:00 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	02 - Angle	0
2020	10/31/2020	3:00 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	12/15/2020	5:53 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	07 - Dark	03 - P.D. only	03 - Rear end	0
2020	12/17/2020	3:29 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	05 - Turning movement	0
2020	12/5/2020	3:30 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	12/24/2020	2:27 AM	MERIVALE RD @ ROSSLAND AVE (0001757)	01 - Clear	07 - Dark	02 - Non-fatal injury	05 - Turning movement	0
2020	12/24/2020	7:30 AM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	01 - Clear	03 - Dawn	03 - P.D. only	05 - Turning movement	0
2020	1/19/2020	7:11 AM	MEADOWLANDS DR @ MERIVALE RD (0000625)	03 - Snow	03 - Dawn	03 - P.D. only	03 - Rear end	0
2020	11/28/2020	2:16 PM	MERIVALE RD @ WEST HUNT CLUB RD (0000584)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	12/1/2020	6:19 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0
2020	12/18/2020	11:27 AM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	03 - P.D. only	03 - Rear end	0
2020	12/2/2020	2:29 PM	MERIVALE RD btwn ROSSLAND AVE & EMERALD PLAZA SC (__3ZA4HZA)	02 - Rain	01 - Daylight	03 - P.D. only	02 - Angle	0
2020	1/20/2020	2:50 PM	MERIVALE RD/LOTTA AVE @ CLYDE AVE (0001112)	01 - Clear	01 - Daylight	02 - Non-fatal injury	05 - Turning movement	0
2020	12/29/2020	4:50 PM	MEADOWLANDS DR @ MERIVALE RD (0000625)	01 - Clear	07 - Dark	03 - P.D. only	05 - Turning movement	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: MERIVALE RD @ ROSSLAND AVE

Traffic Control: Stop sign **Total Collisions:** 15

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-May-13, Fri,05:34	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Truck - tractor	Other motor vehicle	
2016-Aug-16, Tue,13:08	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Dec-24, Sat,12:14	Clear	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
					South	Stopped	Pick-up truck	Other motor vehicle	
2017-Jan-09, Mon,18:33	Snow	Angle	P.D. only	Ice	East	Unknown	Unknown	Other motor vehicle	0
					South	Going ahead	Municipal transit bus	Other motor vehicle	
2017-Aug-12, Sat,18:15	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-15, Tue,11:28	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-07, Thu,14:30	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-08, Fri,16:45	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Jan-19, Fri,12:38	Clear	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Aug-08, Wed,15:48	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: MERIVALE RD @ ROSSLAND AVE

Traffic Control: Stop sign **Total Collisions:** 15

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Dec-19, Thu,07:50	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Jun-09, Tue,09:55	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jun-18, Thu,11:55	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Jul-27, Mon,08:56	Clear	Turning movement	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Dec-24, Thu,02:27	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: MERIVALE RD btwn EMERALD PLAZA SC & ROSSLAND AVE

Traffic Control: No control **Total Collisions:** 13

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Oct-06, Thu,12:43	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Nov-28, Tue,19:59	Clear	Other	P.D. only	Dry	North	Going ahead	Pick-up truck	Debris falling off vehicle	0
					South	Stopped	Automobile, station wagon	Debris falling off vehicle	
					South	Going ahead	Pick-up truck	Other	
2017-Dec-16, Sat,15:02	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-11, Sun,14:07	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: MERIVALE RD btwn EMERALD PLAZA SC & ROSSLAND AVE

Traffic Control: No control **Total Collisions:** 13

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Mar-23, Fri,17:47	Clear	Rear end	P.D. only	Dry	South	Turning right	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-31, Wed,18:54	Clear	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-17, Thu,12:22	Clear	Angle	P.D. only	Dry	East	Reversing	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-20, Sat,15:15	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Passenger van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-27, Thu,17:46	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Oct-09, Wed,16:25	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Oct-13, Tue,17:30	Clear	Sideswipe	Non-fatal injury	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Changing lanes	Automobile, station wagon	Other motor vehicle	
2020-Dec-02, Wed,14:29	Rain	Angle	P.D. only	Wet	East	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Dec-24, Thu,07:30	Clear	Turning movement	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	

Location: MERIVALE RD btwn ROSSLAND AVE & WITHROW AVE

Traffic Control: No control **Total Collisions:** 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jun-01, Wed,14:00	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2016 **To:** December 31, 2020

Location: MERIVALE RD btwn ROSSLAND AVE & WITHROW AVE

Traffic Control: No control **Total Collisions:** 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jun-18, Sat,19:26	Clear	Angle	P.D. only	Dry	South	Unknown	Bicycle	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Cyclist	
2017-Sep-08, Fri,15:04	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Bicycle	Other motor vehicle	0
					South	Turning right	Passenger van	Cyclist	
2018-Feb-02, Fri,10:13	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-14, Wed,20:01	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-May-07, Tue,16:10	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-May-10, Fri,17:50	Clear	SMV other	Non-fatal injury	Dry	West	Turning right	Unknown	Pedestrian	1
2019-Jul-08, Mon,13:00	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Sep-20, Fri,20:36	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-27, Wed,16:00	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Appendix F:

TRANS Model Outputs, 2013 & 2031

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Baseline/Meadowlands

2011 Model - Basecase

N/A

User Initials: KN
Plot Prepared: Aug 17, 2022
EMME Scenario: 21713

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

100 200 300 400 500

Wading Pool - Agincourt

SKYLINE

CITY VIEW

ST CLAIRE GARDENS

ORCHARD PARK

PARKWOOD HILLS

STEWART FARM

The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and all risks arising from any incorrect, incomplete, or misleading information.

Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena and has been calibrated at a regional level.

As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

BaselineMeadowlands

2031 Model - Basecase

N/A

User Initials: KN
Plot Prepared: Aug 17, 2022
EMME Scenario: 21715

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

200 400 600 800

Appendix G:

Other Background Development Volumes

Figure 10 - Site Generated Traffic Volumes – Without Baseline BRT

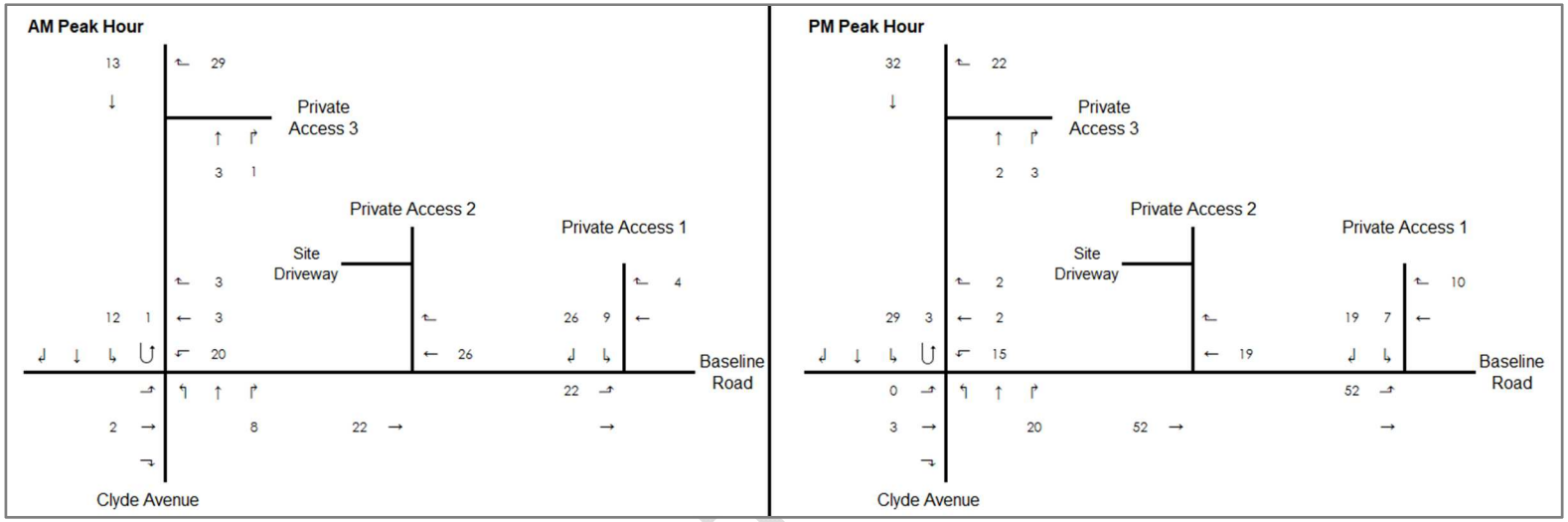


Figure 11 - Site Generated Traffic Volumes - With Baseline BRT

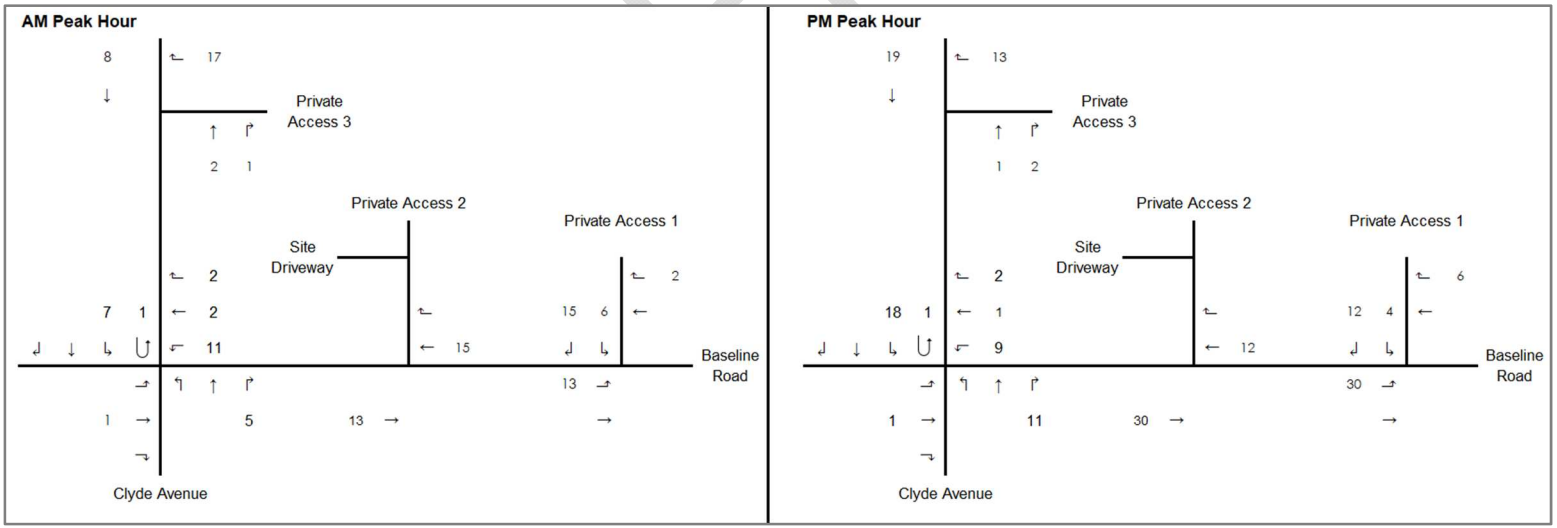
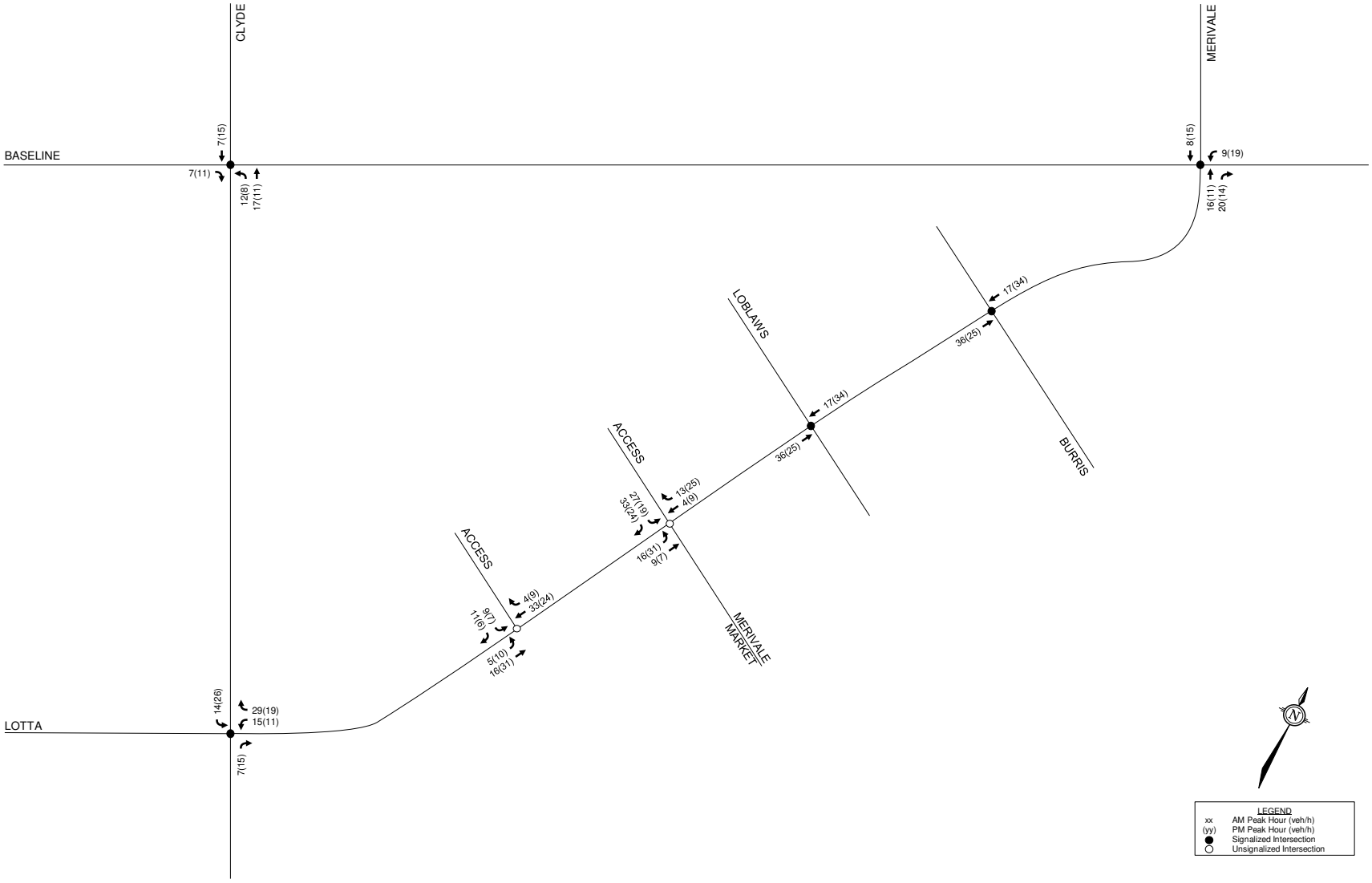


Figure 5: 2031 Proposed Site-Generated Traffic Volumes



As shown above, a total of 32 AM and 33 PM new peak hour two-way vehicle trips are projected as a result of the proposed development.

5.2 Trip Distribution

To understand the travel patterns of the subject development, the OD Survey has been reviewed to determine the travel patterns, applied based on the build-out of Merivale. Table 16 below summarizes the distributions.

Table 16: OD Survey Distribution - Merivale

To/From	% of Trips	Via
North	40%	5% Merivale Rd, 5% Clyde Ave, 30% Hwy 417
South	10%	Merivale Rd
East	25%	10% Baseline Rd, 10% Hwy 417, 5% Capilano Dr
West	25%	10% W Hunt Club Rd, 15% Hwy 417
Total	100%	-

5.3 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the study area road network. Figure 11 illustrates the new site generated volumes.

Figure 11: New Site Generated Auto Volumes

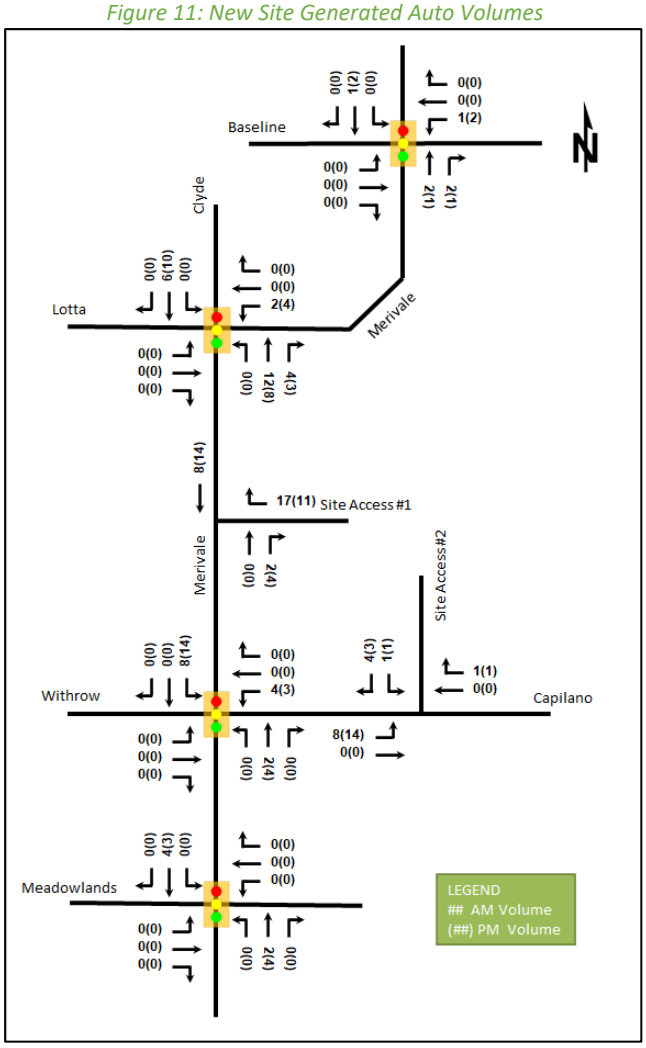
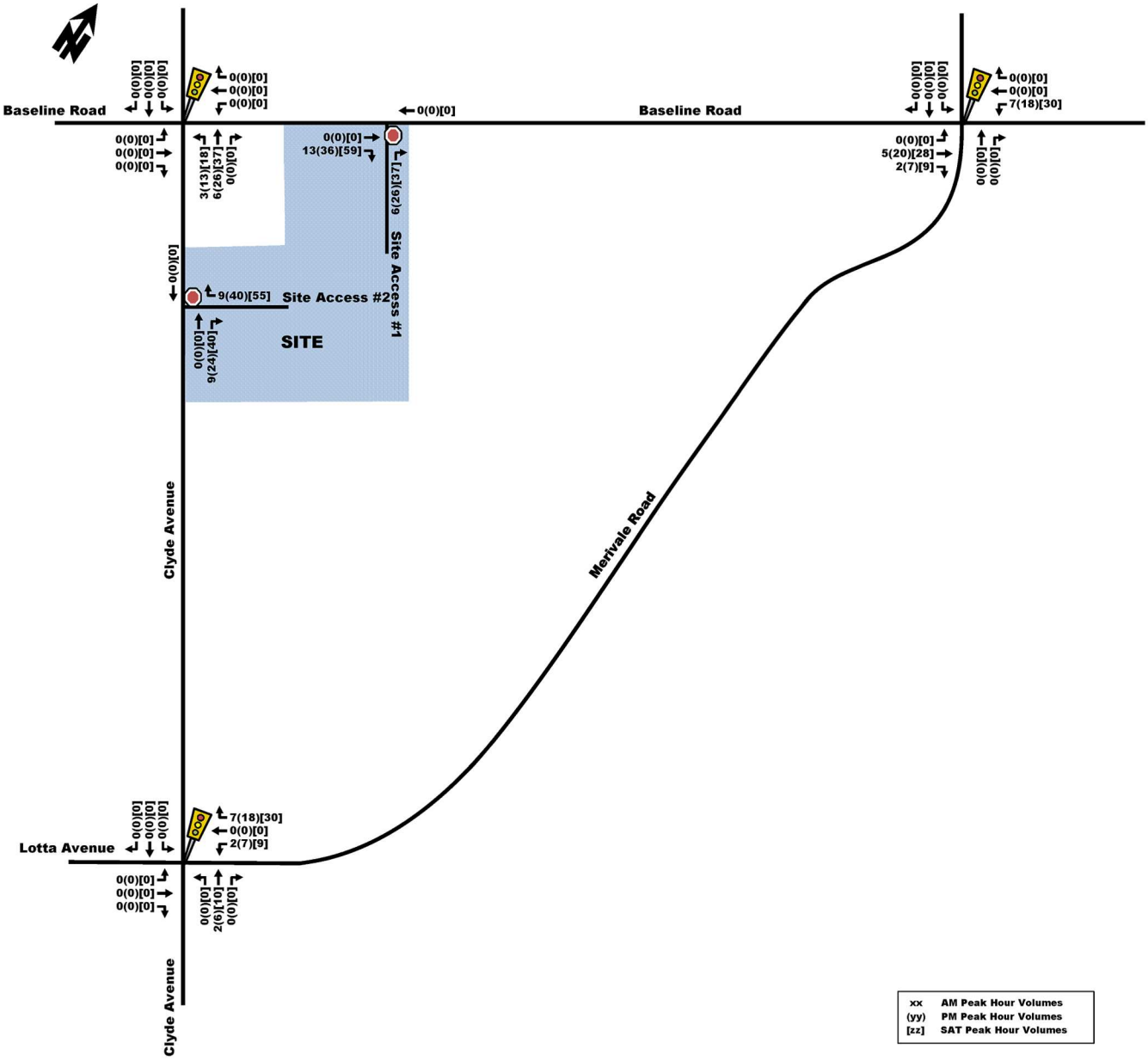


Figure 8: Site Generated Traffic Volumes (Full Build-Out)

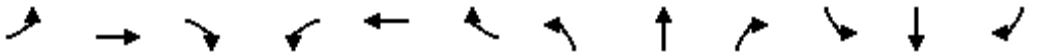


3.4. PROJECTED TRAFFIC VOLUMES

The background traffic volumes were combined with the site traffic to determine the weekday AM, PM, and Saturday peak hour total traffic forecasts. The future total traffic volumes for the 2020, and 2025 horizon years are shown in Figure 9, and Figure 10 respectively.

Appendix H:

Background Synchro Analysis



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	74	21	359	37	65	34	760	823	23	578	14
Future Volume (vph)	25	74	21	359	37	65	34	760	823	23	578	14
Satd. Flow (prot)	1695	1715	0	3288	1596	0	1695	3390	1517	1695	3372	0
Flt Permitted	0.950			0.950			0.396			0.315		
Satd. Flow (perm)	1689	1715	0	3247	1596	0	696	3390	1481	561	3372	0
Satd. Flow (RTOR)		10			62				823		2	
Lane Group Flow (vph)	25	95	0	359	102	0	34	760	823	23	592	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	33.0	34.0		33.0	34.0		63.0	63.0	63.0	63.0	63.0	
Total Split (%)	25.4%	26.2%		25.4%	26.2%		48.5%	48.5%	48.5%	48.5%	48.5%	
Yellow Time (s)	3.0	3.0		3.7	3.7		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.8	3.8		2.5	2.5		2.3	2.3	2.3	2.3	2.3	
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)	6.8	6.8		6.2	6.2		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	7.5	14.5		19.4	31.5		77.1	77.1	77.1	77.1	77.1	
Actuated g/C Ratio	0.06	0.11		0.15	0.24		0.59	0.59	0.59	0.59	0.59	
v/c Ratio	0.26	0.47		0.73	0.24		0.08	0.38	0.68	0.07	0.30	
Control Delay	64.4	54.5		61.8	18.2		13.7	12.4	8.2	15.8	15.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	1.1	0.0	0.0	
Total Delay	64.4	54.5		61.8	18.2		13.7	12.4	9.3	15.8	15.0	
LOS	E	D		E	B		B	B	A	B	B	
Approach Delay		56.6			52.1			10.9			15.0	
Approach LOS		E			D			B			B	
Queue Length 50th (m)	6.3	21.2		45.8	8.7		2.2	28.3	19.2	2.2	35.1	
Queue Length 95th (m)	15.3	34.0		59.6	20.2		m4.8	40.3	73.6	9.0	65.6	
Internal Link Dist (m)		214.0			445.3			280.9			385.6	
Turn Bay Length (m)	40.0			95.0			85.0			80.0		
Base Capacity (vph)	341	366		677	445		412	2010	1213	332	2000	
Starvation Cap Reductn	0	0		0	0		0	0	182	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	0.07	0.26		0.53	0.23		0.08	0.38	0.80	0.07	0.30	

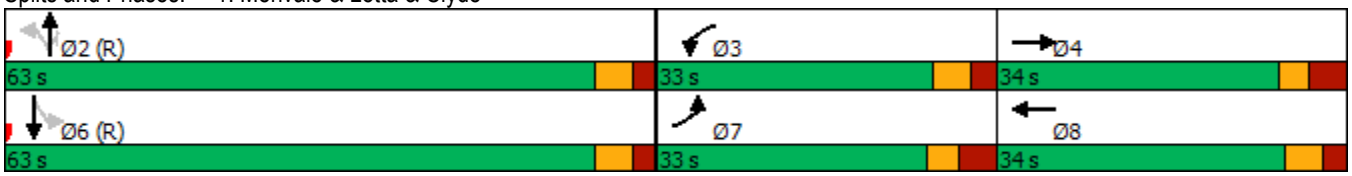
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 9 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

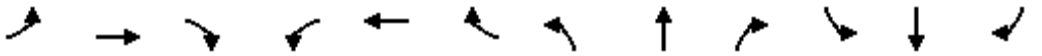
Maximum v/c Ratio: 0.73

Intersection Signal Delay: 20.5	Intersection LOS: C
Intersection Capacity Utilization 90.9%	ICU Level of Service E
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Merivale & Lotta & Clyde





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	16	20	31	10	35	19	1583	35	35	946	5
Future Volume (vph)	38	16	20	31	10	35	19	1583	35	35	946	5
Satd. Flow (prot)	1695	1621	0	1695	1576	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.728			0.734			0.283			0.115		
Satd. Flow (perm)	1299	1621	0	1304	1576	0	504	3390	1472	205	3390	1471
Satd. Flow (RTOR)		20			35				86			86
Lane Group Flow (vph)	38	36	0	31	45	0	19	1583	35	35	946	5
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	43.2	43.2		43.2	43.2		11.1	33.1	33.1	11.1	33.1	33.1
Total Split (s)	43.0	43.0		43.0	43.0		12.0	75.0	75.0	12.0	75.0	75.0
Total Split (%)	33.1%	33.1%		33.1%	33.1%		9.2%	57.7%	57.7%	9.2%	57.7%	57.7%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2		4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
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)	7.2	7.2		7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	15.3	15.3		15.3	15.3		101.0	98.8	98.8	102.4	101.2	101.2
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.76	0.76	0.79	0.78	0.78
v/c Ratio	0.25	0.17		0.20	0.21		0.04	0.61	0.03	0.15	0.36	0.00
Control Delay	52.3	27.4		50.7	20.4		4.7	7.0	0.2	6.7	7.4	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	27.4		50.7	20.4		4.7	7.0	0.2	6.7	7.4	0.0
LOS	D	C		D	C		A	A	A	A	A	A
Approach Delay		40.2			32.8			6.9			7.3	
Approach LOS		D			C			A			A	
Queue Length 50th (m)	9.4	3.9		7.7	2.4		0.4	22.0	0.0	0.8	13.6	0.0
Queue Length 95th (m)	16.3	11.4		14.0	11.2		m1.7	136.6	m0.0	m9.0	75.4	m0.0
Internal Link Dist (m)		182.8			218.9			60.6			280.9	
Turn Bay Length (m)				35.0					15.0	100.0		
Base Capacity (vph)	357	460		359	459		446	2575	1138	229	2639	1164
Starvation Cap Reductn	0	0		0	0		0	6	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	0.11	0.08		0.09	0.10		0.04	0.62	0.03	0.15	0.36	0.00

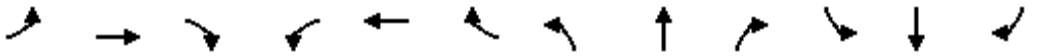
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 116 (89%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 8.6	Intersection LOS: A
Intersection Capacity Utilization 68.8%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Merivale & Withrow/Capilano



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	6	3	13	0	90	6	1445	27	123	904	3
Future Volume (vph)	24	6	3	13	0	90	6	1445	27	123	904	3
Satd. Flow (prot)	1695	1684	0	1695	1476	0	1695	3379	0	3288	3390	0
Flt Permitted	0.699			0.752			0.950			0.950		
Satd. Flow (perm)	1231	1684	0	1331	1476	0	1688	3379	0	3284	3390	0
Satd. Flow (RTOR)		3			118			2				
Lane Group Flow (vph)	24	9	0	13	90	0	6	1472	0	123	907	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5		11.7	31.2		11.7	31.2	
Total Split (s)	36.0	36.0		36.0	36.0		13.0	81.0		13.0	81.0	
Total Split (%)	27.7%	27.7%		27.7%	27.7%		10.0%	62.3%		10.0%	62.3%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.0	2.5		3.0	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.7	6.2		6.7	6.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	17.6	17.6		17.6	17.6		6.0	83.7		9.3	97.0	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.05	0.64		0.07	0.75	
v/c Ratio	0.14	0.04		0.07	0.30		0.08	0.68		0.52	0.36	
Control Delay	46.8	34.7		44.2	5.7		56.8	18.2		78.0	3.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.8	34.7		44.2	5.7		56.8	18.3		78.0	3.4	
LOS	D	C		D	A		E	B		E	A	
Approach Delay		43.5			10.6			18.4			12.3	
Approach LOS		D			B			B			B	
Queue Length 50th (m)	5.9	1.5		3.2	0.0		1.4	113.7		16.4	12.4	
Queue Length 95th (m)	12.4	5.9		8.3	7.6		m1.7	89.6		#31.3	20.4	
Internal Link Dist (m)		58.9			208.4			286.8			128.3	
Turn Bay Length (m)										100.0		
Base Capacity (vph)	279	384		302	426		83	2202		235	2529	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	25		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.02		0.04	0.21		0.07	0.68		0.52	0.36	

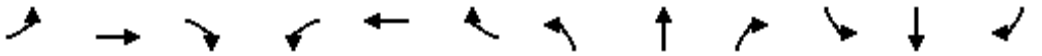
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 108 (83%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 16.1	Intersection LOS: B
Intersection Capacity Utilization 76.6%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Emerald Plaza



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	353	380	122	83	227	209	90	1255	85	93	762	111
Future Volume (vph)	353	380	122	83	227	209	90	1255	85	93	762	111
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.402			0.526			0.277			0.087		
Satd. Flow (perm)	709	3390	1474	932	3390	1469	492	3390	1471	155	3390	1468
Satd. Flow (RTOR)			130			130			134			134
Lane Group Flow (vph)	353	380	122	83	227	209	90	1255	85	93	762	111
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	30.5	30.5	11.5	30.5	30.5	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (s)	23.0	33.0	33.0	23.0	33.0	33.0	11.0	63.0	63.0	11.0	63.0	63.0
Total Split (%)	17.7%	25.4%	25.4%	17.7%	25.4%	25.4%	8.5%	48.5%	48.5%	8.5%	48.5%	48.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.3	2.3	2.3	2.3	2.3	2.3
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	44.0	28.5	28.5	26.8	16.9	16.9	66.3	58.7	58.7	67.1	59.1	59.1
Actuated g/C Ratio	0.34	0.22	0.22	0.21	0.13	0.13	0.51	0.45	0.45	0.52	0.45	0.45
v/c Ratio	0.88	0.51	0.29	0.33	0.52	0.69	0.28	0.82	0.12	0.53	0.49	0.15
Control Delay	60.5	47.5	7.9	33.6	55.8	32.1	16.5	37.0	1.0	34.2	20.2	5.3
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	60.5	47.5	7.9	33.6	55.8	32.1	16.5	37.0	1.0	34.2	20.2	5.3
LOS	E	D	A	C	E	C	B	D	A	C	C	A
Approach Delay		47.2			42.7			33.6			19.8	
Approach LOS		D			D			C			B	
Queue Length 50th (m)	75.0	45.7	0.0	14.7	29.7	19.5	10.2	146.6	0.0	5.5	70.4	5.4
Queue Length 95th (m)	#109.4	62.1	14.1	26.0	39.4	43.4	19.3	178.9	2.2	29.2	56.1	10.9
Internal Link Dist (m)		169.3			250.3			97.3			286.8	
Turn Bay Length (m)	100.0		120.0	130.0		105.0	85.0		95.0	140.0		175.0
Base Capacity (vph)	402	745	425	336	691	402	320	1535	739	174	1542	740
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	0.88	0.51	0.29	0.25	0.33	0.52	0.28	0.82	0.12	0.53	0.49	0.15

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 115 (88%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 34.4	Intersection LOS: C
Intersection Capacity Utilization 95.2%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Merivale & Meadowlands

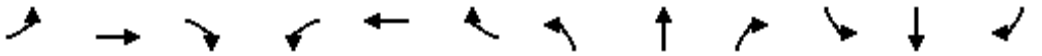
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Vol, veh/h	2	0	12	0	0	1	2	1598	6	1	1014	13
Future Vol, veh/h	2	0	12	0	0	1	2	1598	6	1	1014	13
Conflicting Peds, #/hr	0	0	2	2	0	0	11	0	15	15	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	12	0	0	1	2	1598	6	1	1014	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1837	2657	527	2131	2660	817	1038	0	0	1619	0	0
Stage 1	1034	1034	-	1620	1620	-	-	-	-	-	-	-
Stage 2	803	1623	-	511	1040	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	47	22	496	28	22	320	665	-	-	398	-	-
Stage 1	248	308	-	107	160	-	-	-	-	-	-	-
Stage 2	343	160	-	514	306	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	45	21	491	26	21	316	659	-	-	393	-	-
Mov Cap-2 Maneuver	147	101	-	84	101	-	-	-	-	-	-	-
Stage 1	239	303	-	103	153	-	-	-	-	-	-	-
Stage 2	332	153	-	498	301	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.2	16.4	0.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	659	-	-	368	316	393	-	-
HCM Lane V/C Ratio	0.003	-	-	0.038	0.003	0.003	-	-
HCM Control Delay (s)	10.5	0.1	-	15.2	16.4	14.2	0	-
HCM Lane LOS	B	A	-	C	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	43	35	832	119	158	71	833	617	67	713	27
Future Volume (vph)	32	43	35	832	119	158	71	833	617	67	713	27
Satd. Flow (prot)	1695	1646	0	3288	1614	0	1695	3390	1517	1695	3365	0
Flt Permitted	0.950			0.950			0.242			0.196		
Satd. Flow (perm)	1688	1646	0	3250	1614	0	428	3390	1445	350	3365	0
Satd. Flow (RTOR)		28			46				581		3	
Lane Group Flow (vph)	32	78	0	832	277	0	71	833	617	67	740	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2		10.3	30.0	30.0	10.3	30.0	
Total Split (s)	44.0	34.0		44.0	34.0		12.0	41.0	41.0	12.0	41.0	
Total Split (%)	33.6%	26.0%		33.6%	26.0%		9.2%	31.3%	31.3%	9.2%	31.3%	
Yellow Time (s)	3.0	3.0		3.7	3.7		3.3	3.7	3.7	3.3	3.7	
All-Red Time (s)	3.8	3.8		2.5	2.5		2.0	2.3	2.3	2.0	2.3	
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)	6.8	6.8		6.2	6.2		5.3	6.0	6.0	5.3	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	
Act Effct Green (s)	8.0	16.8		36.1	46.7		58.9	52.4	52.4	58.9	52.3	
Actuated g/C Ratio	0.06	0.13		0.28	0.36		0.45	0.40	0.40	0.45	0.40	
v/c Ratio	0.31	0.33		0.92	0.46		0.27	0.61	0.67	0.29	0.55	
Control Delay	65.9	35.5		61.6	28.2		26.3	38.0	8.5	27.0	36.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	65.9	35.5		61.6	28.2		26.3	38.0	8.5	27.0	36.5	
LOS	E	D		E	C		C	D	A	C	D	
Approach Delay		44.3			53.3			25.5			35.7	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	8.1	12.5		105.7	49.4		9.4	91.2	5.8	8.9	78.0	
Queue Length 95th (m)	18.4	24.7		#137.8	64.5		22.9	#147.1	50.7	21.8	118.3	
Internal Link Dist (m)		214.0			445.3			280.9			385.6	
Turn Bay Length (m)	40.0			95.0			85.0			80.0		
Base Capacity (vph)	481	363		948	605		262	1355	926	230	1345	
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	0.07	0.21		0.88	0.46		0.27	0.61	0.67	0.29	0.55	

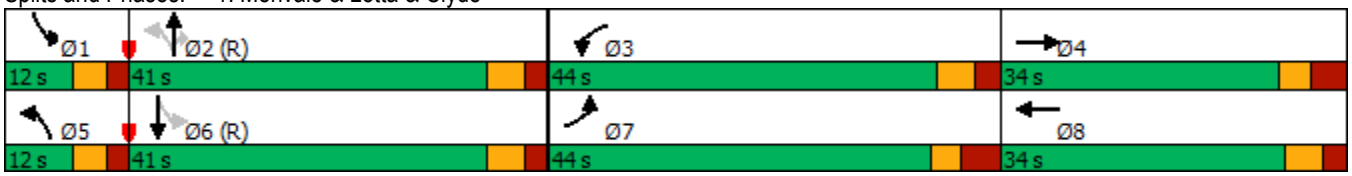
Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 131
Offset: 98 (75%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

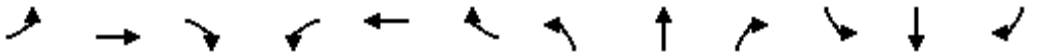
Maximum v/c Ratio: 0.92

Intersection Signal Delay: 37.1	Intersection LOS: D
Intersection Capacity Utilization 74.8%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Merivale & Lotta & Clyde





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	8	26	62	14	52	39	1593	30	78	1654	64
Future Volume (vph)	31	8	26	62	14	52	39	1593	30	78	1654	64
Satd. Flow (prot)	1695	1554	0	1695	1550	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.714			0.735			0.090			0.096		
Satd. Flow (perm)	1265	1554	0	1301	1550	0	161	3390	1420	171	3390	1433
Satd. Flow (RTOR)		26			52				86			86
Lane Group Flow (vph)	31	34	0	62	66	0	39	1593	30	78	1654	64
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	43.2	43.2		43.2	43.2		11.1	33.1	33.1	11.1	33.1	33.1
Total Split (s)	44.0	44.0		44.0	44.0		14.0	72.0	72.0	14.0	72.0	72.0
Total Split (%)	33.8%	33.8%		33.8%	33.8%		10.8%	55.4%	55.4%	10.8%	55.4%	55.4%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2		4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
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)	7.2	7.2		7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	20.7	20.7		20.7	20.7		93.5	89.3	89.3	95.6	90.4	90.4
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.72	0.69	0.69	0.74	0.70	0.70
v/c Ratio	0.15	0.13		0.30	0.23		0.20	0.68	0.03	0.36	0.70	0.06
Control Delay	43.1	17.6		47.6	15.4		7.1	10.4	0.1	12.0	20.2	1.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	43.1	17.6		47.6	15.4		7.1	10.5	0.1	12.0	20.2	1.7
LOS	D	B		D	B		A	B	A	B	C	A
Approach Delay		29.7			31.0			10.3			19.2	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	7.6	1.9		15.5	3.4		0.6	19.1	0.0	3.3	111.2	0.0
Queue Length 95th (m)	14.0	9.6		23.9	13.6		m3.6	#168.6	m0.0	13.9	#262.0	4.2
Internal Link Dist (m)		182.8			218.9			60.6			280.9	
Turn Bay Length (m)				35.0					15.0	100.0		
Base Capacity (vph)	358	458		368	476		209	2331	1003	223	2357	1022
Starvation Cap Reductn	0	0		0	0		0	119	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	19	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.07		0.17	0.14		0.19	0.72	0.03	0.35	0.71	0.06

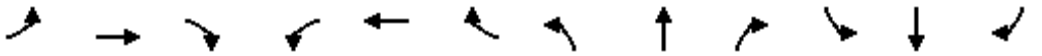
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 76 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 15.7	Intersection LOS: B
Intersection Capacity Utilization 83.0%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Merivale & Withrow/Capilano



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	16	20	64	1	196	18	1274	40	241	1439	241
Future Volume (vph)	45	16	20	64	1	196	18	1274	40	241	1439	241
Satd. Flow (prot)	1695	1605	0	1695	1478	0	1695	3367	0	3288	3302	0
Flt Permitted	0.378			0.734			0.950			0.950		
Satd. Flow (perm)	668	1605	0	1281	1478	0	1692	3367	0	3247	3302	0
Satd. Flow (RTOR)		20			174			4			23	
Lane Group Flow (vph)	45	36	0	64	197	0	18	1314	0	241	1680	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5		11.7	31.2		11.7	31.2	
Total Split (s)	36.0	36.0		36.0	36.0		17.0	77.0		17.0	77.0	
Total Split (%)	27.7%	27.7%		27.7%	27.7%		13.1%	59.2%		13.1%	59.2%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.0	2.5		3.0	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.7	6.2		6.7	6.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	18.0	18.0		18.0	18.0		7.0	78.6		14.0	93.3	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.05	0.60		0.11	0.72	
v/c Ratio	0.49	0.15		0.36	0.56		0.20	0.64		0.68	0.71	
Control Delay	66.0	25.6		53.5	15.2		63.3	11.7		63.2	12.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.1	
Total Delay	66.0	25.6		53.5	15.2		63.3	11.7		63.2	12.3	
LOS	E	C		D	B		E	B		E	B	
Approach Delay		48.0			24.6			12.4			18.7	
Approach LOS		D			C			B			B	
Queue Length 50th (m)	11.4	3.8		16.0	5.6		4.7	89.4		31.4	64.7	
Queue Length 95th (m)	21.7	12.3		26.6	25.4		m6.8	38.1		#56.7	94.9	
Internal Link Dist (m)		58.9			208.4			286.8			128.3	
Turn Bay Length (m)										100.0		
Base Capacity (vph)	151	379		290	469		134	2062		353	2376	
Starvation Cap Reductn	0	0		0	0		0	0		0	49	
Spillback Cap Reductn	0	0		0	1		0	38		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.30	0.09		0.22	0.42		0.13	0.65		0.68	0.72	

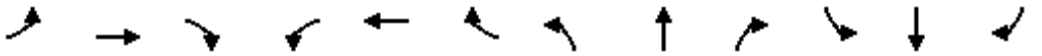
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 65 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 17.4	Intersection LOS: B
Intersection Capacity Utilization 101.5%	ICU Level of Service G
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Emerald Plaza



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	307	154	182	492	169	195	1188	102	215	1097	283
Future Volume (vph)	163	307	154	182	492	169	195	1188	102	215	1097	283
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.233			0.457			0.150			0.085		
Satd. Flow (perm)	409	3390	1416	790	3390	1433	266	3390	1384	152	3390	1412
Satd. Flow (RTOR)			154			169			134			283
Lane Group Flow (vph)	163	307	154	182	492	169	195	1188	102	215	1097	283
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	30.5	30.5	11.5	30.5	30.5	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (s)	19.0	31.0	31.0	19.0	31.0	31.0	17.0	59.0	59.0	21.0	63.0	63.0
Total Split (%)	14.6%	23.8%	23.8%	14.6%	23.8%	23.8%	13.1%	45.4%	45.4%	16.2%	48.5%	48.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.3	2.3	2.3	2.3	2.3	2.3
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	34.8	22.4	22.4	35.1	22.6	22.6	66.0	55.1	55.1	74.1	59.2	59.2
Actuated g/C Ratio	0.27	0.17	0.17	0.27	0.17	0.17	0.51	0.42	0.42	0.57	0.46	0.46
v/c Ratio	0.71	0.53	0.42	0.61	0.84	0.44	0.77	0.83	0.15	0.81	0.71	0.36
Control Delay	50.8	52.1	10.3	43.4	65.1	10.2	38.1	39.8	2.1	57.1	29.5	7.9
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	50.8	52.1	10.3	43.4	65.1	10.2	38.1	39.8	2.1	57.1	29.5	7.9
LOS	D	D	B	D	E	B	D	D	A	E	C	A
Approach Delay		41.4			49.4			37.0			29.4	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	30.7	37.5	0.0	34.7	64.0	0.0	23.2	145.4	0.0	43.5	79.5	7.5
Queue Length 95th (m)	#51.2	52.0	18.1	54.4	83.2	19.1	#54.6	174.3	5.5	m#76.2	105.9	30.4
Internal Link Dist (m)		169.3			250.3			97.3			286.8	
Turn Bay Length (m)	100.0		120.0	130.0		105.0	85.0		95.0	140.0		175.0
Base Capacity (vph)	237	638	391	304	638	407	259	1440	664	269	1545	798
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	0.69	0.48	0.39	0.60	0.77	0.42	0.75	0.82	0.15	0.80	0.71	0.35

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 61 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 37.2	Intersection LOS: D
Intersection Capacity Utilization 95.1%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Merivale & Meadowlands

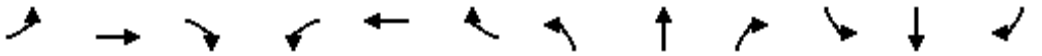
Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	15	3	0	7	16	1589	39	1	1832	23
Future Vol, veh/h	3	0	15	3	0	7	16	1589	39	1	1832	23
Conflicting Peds, #/hr	0	0	0	0	0	0	27	0	45	45	0	27
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	15	3	0	7	16	1589	39	1	1832	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2700	3578	955	2604	3570	859	1882	0	0	1673	0	0
Stage 1	1873	1873	-	1686	1686	-	-	-	-	-	-	-
Stage 2	827	1705	-	918	1884	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	10	5	259	12	6	300	315	-	-	380	-	-
Stage 1	74	120	-	98	149	-	-	-	-	-	-	-
Stage 2	332	145	-	292	118	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	5	2	253	6	2	289	308	-	-	366	-	-
Mov Cap-2 Maneuver	24	37	-	34	36	-	-	-	-	-	-	-
Stage 1	31	117	-	41	62	-	-	-	-	-	-	-
Stage 2	140	60	-	275	115	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	49.8	50.5	4.8	0
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	308	-	-	98	89	366	-	-
HCM Lane V/C Ratio	0.052	-	-	0.184	0.112	0.003	-	-
HCM Control Delay (s)	17.3	4.8	-	49.8	50.5	14.9	0	-
HCM Lane LOS	C	A	-	E	F	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	0.4	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	74	21	374	37	94	34	760	830	37	578	14
Future Volume (vph)	25	74	21	374	37	94	34	760	830	37	578	14
Satd. Flow (prot)	1695	1715	0	3288	1573	0	1695	3390	1517	1695	3372	0
Flt Permitted	0.950			0.950			0.395			0.314		
Satd. Flow (perm)	1689	1715	0	3247	1573	0	695	3390	1481	559	3372	0
Satd. Flow (RTOR)		10			89				830		2	
Lane Group Flow (vph)	25	95	0	374	131	0	34	760	830	37	592	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	33.0	34.0		33.0	34.0		63.0	63.0	63.0	63.0	63.0	
Total Split (%)	25.4%	26.2%		25.4%	26.2%		48.5%	48.5%	48.5%	48.5%	48.5%	
Yellow Time (s)	3.0	3.0		3.7	3.7		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.8	3.8		2.5	2.5		2.3	2.3	2.3	2.3	2.3	
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)	6.8	6.8		6.2	6.2		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	7.5	14.5		20.0	32.2		76.4	76.4	76.4	76.4	76.4	
Actuated g/C Ratio	0.06	0.11		0.15	0.25		0.59	0.59	0.59	0.59	0.59	
v/c Ratio	0.26	0.47		0.74	0.29		0.08	0.38	0.68	0.11	0.30	
Control Delay	64.4	54.5		61.4	15.6		13.7	12.5	8.4	16.7	15.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	1.2	0.0	0.0	
Total Delay	64.4	54.5		61.4	15.6		13.7	12.5	9.6	16.7	15.3	
LOS	E	D		E	B		B	B	A	B	B	
Approach Delay		56.6			49.6			11.1			15.4	
Approach LOS		E			D			B			B	
Queue Length 50th (m)	6.3	21.2		47.7	9.1		2.2	29.8	19.6	3.8	35.5	
Queue Length 95th (m)	15.3	34.0		61.5	22.2		m4.6	38.9	74.1	13.0	66.3	
Internal Link Dist (m)		214.0			445.3			280.9			385.6	
Turn Bay Length (m)	40.0			95.0			85.0			80.0		
Base Capacity (vph)	341	366		677	464		408	1993	1212	328	1983	
Starvation Cap Reductn	0	0		0	0		0	0	184	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	0.07	0.26		0.55	0.28		0.08	0.38	0.81	0.11	0.30	

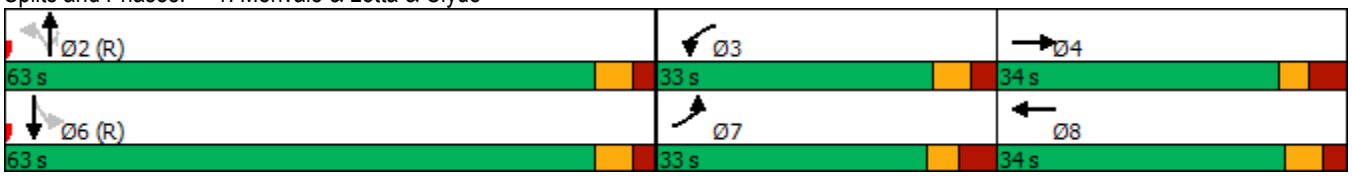
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 9 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

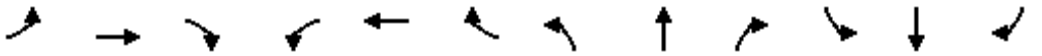
Maximum v/c Ratio: 0.74

Intersection Signal Delay: 20.7	Intersection LOS: C
Intersection Capacity Utilization 91.3%	ICU Level of Service F
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Merivale & Lotta & Clyde





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	16	20	31	10	35	19	1590	35	35	961	5
Future Volume (vph)	38	16	20	31	10	35	19	1590	35	35	961	5
Satd. Flow (prot)	1695	1621	0	1695	1576	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.728			0.734			0.278			0.114		
Satd. Flow (perm)	1299	1621	0	1304	1576	0	495	3390	1472	203	3390	1471
Satd. Flow (RTOR)		20			35				86			86
Lane Group Flow (vph)	38	36	0	31	45	0	19	1590	35	35	961	5
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	43.2	43.2		43.2	43.2		11.1	33.1	33.1	11.1	33.1	33.1
Total Split (s)	43.0	43.0		43.0	43.0		12.0	75.0	75.0	12.0	75.0	75.0
Total Split (%)	33.1%	33.1%		33.1%	33.1%		9.2%	57.7%	57.7%	9.2%	57.7%	57.7%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2		4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
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)	7.2	7.2		7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	15.3	15.3		15.3	15.3		101.0	98.8	98.8	102.4	101.2	101.2
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.76	0.76	0.79	0.78	0.78
v/c Ratio	0.25	0.17		0.20	0.21		0.04	0.62	0.03	0.15	0.36	0.00
Control Delay	52.3	27.4		50.7	20.4		4.7	7.0	0.2	6.6	7.5	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	27.4		50.7	20.4		4.7	7.0	0.2	6.6	7.5	0.0
LOS	D	C		D	C		A	A	A	A	A	A
Approach Delay		40.2			32.8			6.8			7.4	
Approach LOS		D			C			A			A	
Queue Length 50th (m)	9.4	3.9		7.7	2.4		0.4	21.4	0.0	0.8	13.5	0.0
Queue Length 95th (m)	16.3	11.4		14.0	11.2		m1.7	141.1	m0.0	m9.0	78.3	m0.0
Internal Link Dist (m)		182.8			218.9			60.6			280.9	
Turn Bay Length (m)				35.0					15.0	100.0		
Base Capacity (vph)	357	460		359	459		439	2575	1138	228	2639	1164
Starvation Cap Reductn	0	0		0	0		0	6	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	0.11	0.08		0.09	0.10		0.04	0.62	0.03	0.15	0.36	0.00

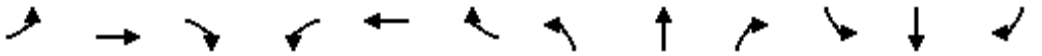
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 116 (89%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 8.6	Intersection LOS: A
Intersection Capacity Utilization 69.0%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Merivale & Withrow/Capilano



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	6	3	13	0	90	6	1452	27	123	919	3
Future Volume (vph)	24	6	3	13	0	90	6	1452	27	123	919	3
Satd. Flow (prot)	1695	1684	0	1695	1476	0	1695	3379	0	3288	3390	0
Flt Permitted	0.699			0.752			0.950			0.950		
Satd. Flow (perm)	1231	1684	0	1331	1476	0	1688	3379	0	3284	3390	0
Satd. Flow (RTOR)		3			118			2				
Lane Group Flow (vph)	24	9	0	13	90	0	6	1479	0	123	922	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5		11.7	31.2		11.7	31.2	
Total Split (s)	36.0	36.0		36.0	36.0		13.0	81.0		13.0	81.0	
Total Split (%)	27.7%	27.7%		27.7%	27.7%		10.0%	62.3%		10.0%	62.3%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.0	2.5		3.0	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.7	6.2		6.7	6.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	17.6	17.6		17.6	17.6		6.0	83.7		9.3	97.0	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.05	0.64		0.07	0.75	
v/c Ratio	0.14	0.04		0.07	0.30		0.08	0.68		0.52	0.36	
Control Delay	46.8	34.7		44.2	5.7		57.7	18.3		78.0	3.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.8	34.7		44.2	5.7		57.7	18.3		78.0	3.4	
LOS	D	C		D	A		E	B		E	A	
Approach Delay		43.5			10.6			18.5			12.2	
Approach LOS		D			B			B			B	
Queue Length 50th (m)	5.9	1.5		3.2	0.0		1.4	113.9		16.3	12.5	
Queue Length 95th (m)	12.4	5.9		8.3	7.6		m1.7	89.7		#31.7	20.4	
Internal Link Dist (m)		58.9			208.4			286.8			128.3	
Turn Bay Length (m)										100.0		
Base Capacity (vph)	279	384		302	426		83	2202		235	2529	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	27		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.02		0.04	0.21		0.07	0.68		0.52	0.36	

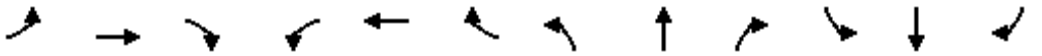
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 108 (83%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 16.0	Intersection LOS: B
Intersection Capacity Utilization 76.8%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Emerald Plaza



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	353	380	122	83	227	209	90	1262	85	93	777	111
Future Volume (vph)	353	380	122	83	227	209	90	1262	85	93	777	111
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.400			0.526			0.270			0.086		
Satd. Flow (perm)	705	3390	1474	932	3390	1469	479	3390	1471	153	3390	1468
Satd. Flow (RTOR)			130			130			134			134
Lane Group Flow (vph)	353	380	122	83	227	209	90	1262	85	93	777	111
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	30.5	30.5	11.5	30.5	30.5	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (s)	23.0	33.0	33.0	23.0	33.0	33.0	11.0	63.0	63.0	11.0	63.0	63.0
Total Split (%)	17.7%	25.4%	25.4%	17.7%	25.4%	25.4%	8.5%	48.5%	48.5%	8.5%	48.5%	48.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.3	2.3	2.3	2.3	2.3	2.3
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	43.9	28.4	28.4	26.8	16.9	16.9	66.3	58.8	58.8	67.1	59.2	59.2
Actuated g/C Ratio	0.34	0.22	0.22	0.21	0.13	0.13	0.51	0.45	0.45	0.52	0.46	0.46
v/c Ratio	0.88	0.51	0.29	0.33	0.52	0.69	0.29	0.82	0.12	0.54	0.50	0.15
Control Delay	60.9	47.6	7.9	33.6	55.8	32.1	16.6	37.2	1.0	34.8	19.9	5.1
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	60.9	47.6	7.9	33.6	55.8	32.1	16.6	37.2	1.0	34.8	19.9	5.1
LOS	E	D	A	C	E	C	B	D	A	C	B	A
Approach Delay		47.4			42.7			33.8			19.7	
Approach LOS		D			D			C			B	
Queue Length 50th (m)	75.2	45.7	0.0	14.7	29.7	19.5	10.2	147.4	0.0	5.3	72.3	5.6
Queue Length 95th (m)	#109.8	62.1	14.1	26.0	39.4	43.4	19.3	180.4	2.2	29.4	55.9	10.8
Internal Link Dist (m)		169.3			250.3			97.3			286.8	
Turn Bay Length (m)	100.0		120.0	130.0		105.0	85.0		95.0	140.0		175.0
Base Capacity (vph)	401	744	424	336	691	402	314	1536	740	173	1543	741
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	0.88	0.51	0.29	0.25	0.33	0.52	0.29	0.82	0.11	0.54	0.50	0.15

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 115 (88%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 34.4	Intersection LOS: C
Intersection Capacity Utilization 95.4%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Merivale & Meadowlands

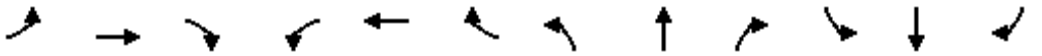
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Vol, veh/h	2	0	12	0	0	1	2	1605	6	1	1029	13
Future Vol, veh/h	2	0	12	0	0	1	2	1605	6	1	1029	13
Conflicting Peds, #/hr	0	0	2	2	0	0	11	0	15	15	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	12	0	0	1	2	1605	6	1	1029	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1856	2679	534	2146	2682	821	1053	0	0	1626	0	0
Stage 1	1049	1049	-	1627	1627	-	-	-	-	-	-	-
Stage 2	807	1630	-	519	1055	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	45	22	491	27	22	318	657	-	-	396	-	-
Stage 1	243	303	-	106	159	-	-	-	-	-	-	-
Stage 2	341	158	-	508	301	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	43	21	486	25	21	314	651	-	-	391	-	-
Mov Cap-2 Maneuver	144	100	-	83	100	-	-	-	-	-	-	-
Stage 1	234	298	-	102	152	-	-	-	-	-	-	-
Stage 2	330	151	-	492	296	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.3	16.5	0.2	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	651	-	-	363	314	391	-	-
HCM Lane V/C Ratio	0.003	-	-	0.039	0.003	0.003	-	-
HCM Control Delay (s)	10.5	0.2	-	15.3	16.5	14.2	0	-
HCM Lane LOS	B	A	-	C	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	43	35	843	119	177	71	833	632	93	713	27
Future Volume (vph)	32	43	35	843	119	177	71	833	632	93	713	27
Satd. Flow (prot)	1695	1646	0	3288	1607	0	1695	3390	1517	1695	3365	0
Flt Permitted	0.950			0.950			0.251			0.177		
Satd. Flow (perm)	1689	1646	0	3250	1607	0	444	3390	1445	316	3365	0
Satd. Flow (RTOR)		28			52				595		3	
Lane Group Flow (vph)	32	78	0	843	296	0	71	833	632	93	740	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2		10.3	30.0	30.0	10.3	30.0	
Total Split (s)	44.0	34.0		44.0	34.0		12.0	41.0	41.0	12.0	41.0	
Total Split (%)	33.6%	26.0%		33.6%	26.0%		9.2%	31.3%	31.3%	9.2%	31.3%	
Yellow Time (s)	3.0	3.0		3.7	3.7		3.3	3.7	3.7	3.3	3.7	
All-Red Time (s)	3.8	3.8		2.5	2.5		2.0	2.3	2.3	2.0	2.3	
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)	6.8	6.8		6.2	6.2		5.3	6.0	6.0	5.3	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	
Act Effct Green (s)	8.0	16.8		36.3	46.9		57.0	49.3	49.3	59.2	52.1	
Actuated g/C Ratio	0.06	0.13		0.28	0.36		0.44	0.38	0.38	0.45	0.40	
v/c Ratio	0.31	0.33		0.93	0.49		0.27	0.65	0.69	0.42	0.55	
Control Delay	65.9	35.5		62.5	28.4		26.4	39.9	9.0	30.1	36.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	65.9	35.5		62.5	28.4		26.4	39.9	9.0	30.1	36.6	
LOS	E	D		E	C		C	D	A	C	D	
Approach Delay		44.3			53.7			26.5			35.8	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	8.1	12.5		107.5	53.0		9.4	93.0	6.1	12.5	78.0	
Queue Length 95th (m)	18.4	24.7		#140.9	68.6		22.9	#147.1	52.4	28.4	118.3	
Internal Link Dist (m)		214.0			445.3			280.9			385.6	
Turn Bay Length (m)	40.0			95.0			85.0			80.0		
Base Capacity (vph)	481	363		948	608		262	1275	915	223	1341	
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	0.07	0.21		0.89	0.49		0.27	0.65	0.69	0.42	0.55	

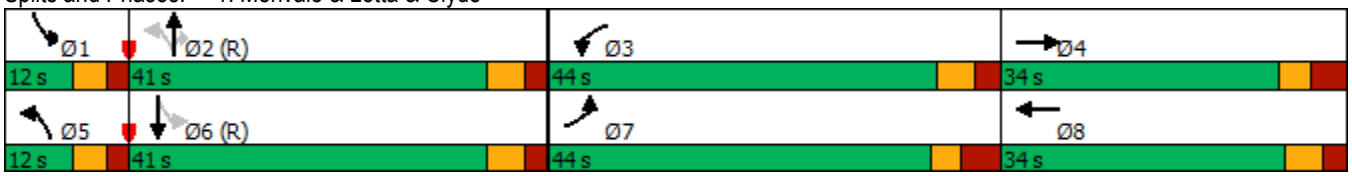
Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 131
Offset: 98 (75%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

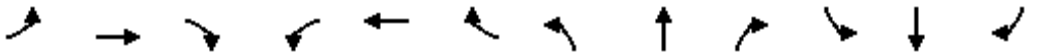
Maximum v/c Ratio: 0.93

Intersection Signal Delay: 37.8	Intersection LOS: D
Intersection Capacity Utilization 76.4%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Merivale & Lotta & Clyde





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	8	26	62	14	52	39	1608	30	78	1665	64
Future Volume (vph)	31	8	26	62	14	52	39	1608	30	78	1665	64
Satd. Flow (prot)	1695	1554	0	1695	1550	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.714			0.735			0.088			0.094		
Satd. Flow (perm)	1265	1554	0	1301	1550	0	157	3390	1420	168	3390	1433
Satd. Flow (RTOR)		26			52				86			86
Lane Group Flow (vph)	31	34	0	62	66	0	39	1608	30	78	1665	64
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	43.2	43.2		43.2	43.2		11.1	33.1	33.1	11.1	33.1	33.1
Total Split (s)	44.0	44.0		44.0	44.0		14.0	72.0	72.0	14.0	72.0	72.0
Total Split (%)	33.8%	33.8%		33.8%	33.8%		10.8%	55.4%	55.4%	10.8%	55.4%	55.4%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2		4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
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)	7.2	7.2		7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	20.7	20.7		20.7	20.7		93.5	89.4	89.4	95.6	90.4	90.4
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.72	0.69	0.69	0.74	0.70	0.70
v/c Ratio	0.15	0.13		0.30	0.23		0.21	0.69	0.03	0.37	0.71	0.06
Control Delay	43.1	17.6		47.6	15.4		7.1	10.7	0.1	12.2	20.3	1.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	43.1	17.6		47.6	15.4		7.1	10.8	0.1	12.2	20.3	1.7
LOS	D	B		D	B		A	B	A	B	C	A
Approach Delay		29.7			31.0			10.5			19.3	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	7.6	1.9		15.5	3.4		0.5	18.8	0.0	3.3	112.9	0.0
Queue Length 95th (m)	14.0	9.6		23.9	13.6		m3.5	#199.1	m0.0	13.9	#265.1	4.2
Internal Link Dist (m)		182.8			218.9			60.6			280.9	
Turn Bay Length (m)				35.0					15.0	100.0		
Base Capacity (vph)	358	458		368	476		207	2333	1004	221	2357	1022
Starvation Cap Reductn	0	0		0	0		0	120	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	20	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.07		0.17	0.14		0.19	0.73	0.03	0.35	0.71	0.06

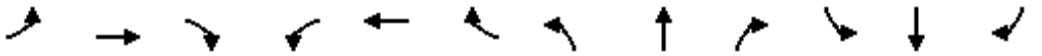
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 76 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 15.9	Intersection LOS: B
Intersection Capacity Utilization 83.3%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Merivale & Withrow/Capilano



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	16	20	64	1	196	18	1289	40	241	1450	241
Future Volume (vph)	45	16	20	64	1	196	18	1289	40	241	1450	241
Satd. Flow (prot)	1695	1605	0	1695	1478	0	1695	3367	0	3288	3305	0
Flt Permitted	0.378			0.734			0.950			0.950		
Satd. Flow (perm)	668	1605	0	1281	1478	0	1692	3367	0	3248	3305	0
Satd. Flow (RTOR)		20			172			4			23	
Lane Group Flow (vph)	45	36	0	64	197	0	18	1329	0	241	1691	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5		11.7	31.2		11.7	31.2	
Total Split (s)	36.0	36.0		36.0	36.0		17.0	77.0		17.0	77.0	
Total Split (%)	27.7%	27.7%		27.7%	27.7%		13.1%	59.2%		13.1%	59.2%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.0	2.5		3.0	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.7	6.2		6.7	6.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	18.0	18.0		18.0	18.0		7.0	78.8		13.8	93.3	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.05	0.61		0.11	0.72	
v/c Ratio	0.49	0.15		0.36	0.56		0.20	0.65		0.69	0.71	
Control Delay	66.0	25.6		53.5	15.6		63.2	11.9		63.5	12.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.1	
Total Delay	66.0	25.6		53.5	15.6		63.2	11.9		63.5	12.3	
LOS	E	C		D	B		E	B		E	B	
Approach Delay		48.0			24.9			12.6			18.7	
Approach LOS		D			C			B			B	
Queue Length 50th (m)	11.4	3.8		16.0	6.0		4.8	88.7		31.3	65.5	
Queue Length 95th (m)	21.7	12.3		26.6	26.0		m6.8	38.1		#56.8	95.3	
Internal Link Dist (m)		58.9			208.4			286.8			128.3	
Turn Bay Length (m)										100.0		
Base Capacity (vph)	151	379		290	468		134	2062		349	2378	
Starvation Cap Reductn	0	0		0	0		0	0		0	49	
Spillback Cap Reductn	0	0		0	2		0	42		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.30	0.09		0.22	0.42		0.13	0.66		0.69	0.73	

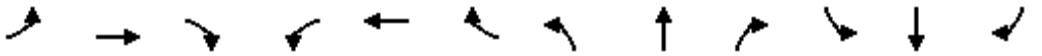
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 65 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 101.8%	ICU Level of Service G
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Emerald Plaza



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	307	154	182	492	169	195	1203	102	215	1108	283
Future Volume (vph)	163	307	154	182	492	169	195	1203	102	215	1108	283
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.233			0.457			0.145			0.082		
Satd. Flow (perm)	409	3390	1416	790	3390	1433	257	3390	1384	146	3390	1412
Satd. Flow (RTOR)			154			169			134			283
Lane Group Flow (vph)	163	307	154	182	492	169	195	1203	102	215	1108	283
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	30.5	30.5	11.5	30.5	30.5	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (s)	19.0	31.0	31.0	19.0	31.0	31.0	17.0	59.0	59.0	21.0	63.0	63.0
Total Split (%)	14.6%	23.8%	23.8%	14.6%	23.8%	23.8%	13.1%	45.4%	45.4%	16.2%	48.5%	48.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.3	2.3	2.3	2.3	2.3	2.3
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	34.7	22.4	22.4	35.0	22.6	22.6	66.2	55.1	55.1	74.2	59.1	59.1
Actuated g/C Ratio	0.27	0.17	0.17	0.27	0.17	0.17	0.51	0.42	0.42	0.57	0.45	0.45
v/c Ratio	0.71	0.53	0.42	0.61	0.84	0.44	0.77	0.84	0.15	0.82	0.72	0.36
Control Delay	51.2	52.1	10.3	43.6	65.1	10.2	39.1	40.4	2.1	58.0	29.8	8.0
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	51.2	52.1	10.3	43.6	65.1	10.2	39.1	40.4	2.1	58.0	29.8	8.0
LOS	D	D	B	D	E	B	D	D	A	E	C	A
Approach Delay		41.5			49.4			37.6			29.8	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	30.9	37.5	0.0	34.9	64.0	0.0	23.0	147.1	0.0	44.1	77.4	7.6
Queue Length 95th (m)	#51.2	52.0	18.1	54.4	83.2	19.1	#56.6	177.6	5.5	m#77.3	106.8	30.6
Internal Link Dist (m)		169.3			250.3			97.3			286.8	
Turn Bay Length (m)	100.0		120.0	130.0		105.0	85.0		95.0	140.0		175.0
Base Capacity (vph)	235	638	391	303	638	407	257	1438	664	267	1541	796
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	0.69	0.48	0.39	0.60	0.77	0.42	0.76	0.84	0.15	0.81	0.72	0.36

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 61 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 37.6	Intersection LOS: D
Intersection Capacity Utilization 95.6%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Merivale & Meadowlands

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Vol, veh/h	3	0	15	3	0	7	16	1604	39	1	1843	23
Future Vol, veh/h	3	0	15	3	0	7	16	1604	39	1	1843	23
Conflicting Peds, #/hr	0	0	0	0	0	0	27	0	45	45	0	27
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	15	3	0	7	16	1604	39	1	1843	23

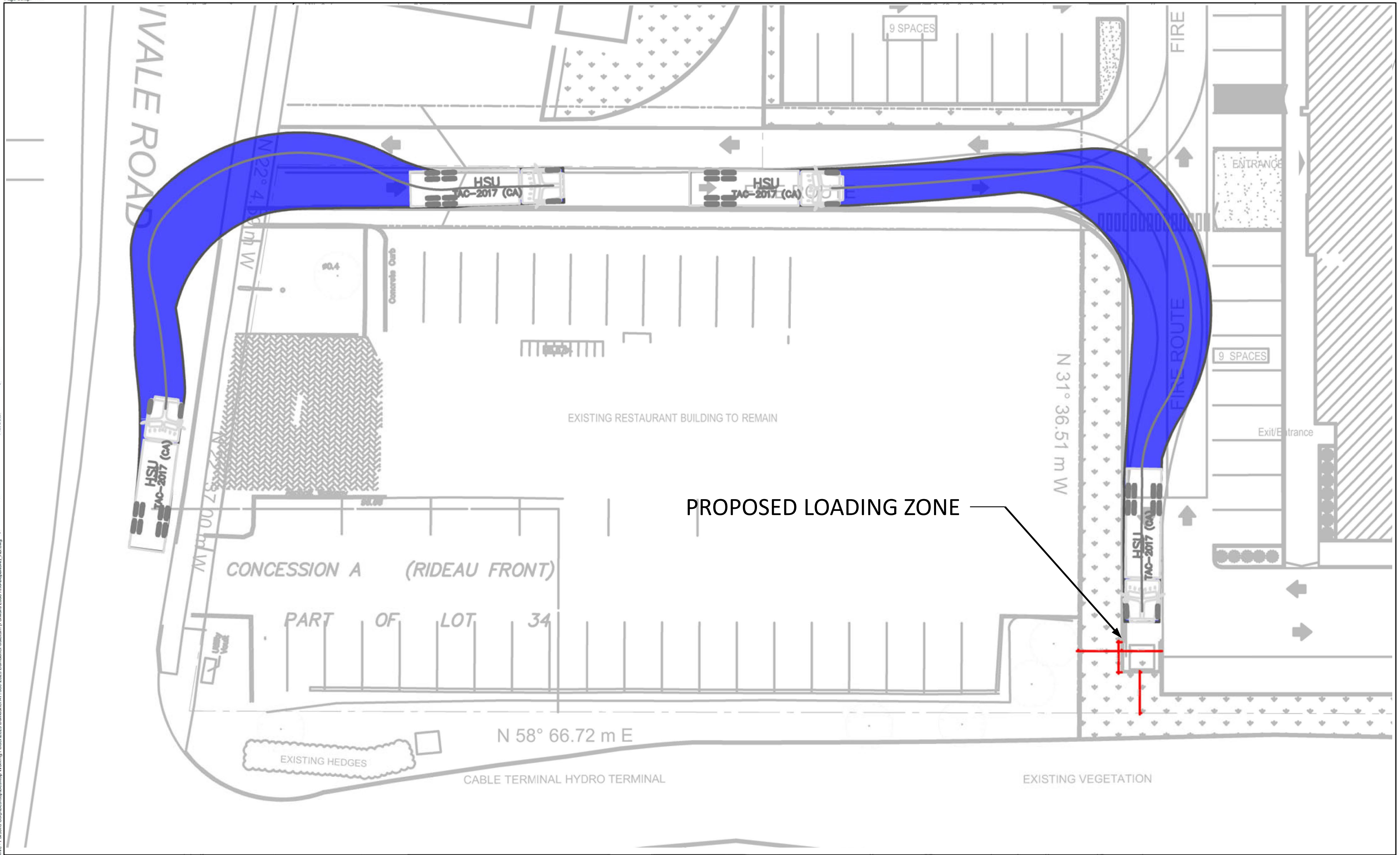
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2718	3604	960	2625	3596	867	1893	0	0	1688	0	0
Stage 1	1884	1884	-	1701	1701	-	-	-	-	-	-	-
Stage 2	834	1720	-	924	1895	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	10	5	257	12	5	296	312	-	-	375	-	-
Stage 1	73	118	-	95	146	-	-	-	-	-	-	-
Stage 2	329	143	-	290	117	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	5	2	251	5	2	285	305	-	-	361	-	-
Mov Cap-2 Maneuver	21	32	-	28	32	-	-	-	-	-	-	-
Stage 1	26	115	-	34	52	-	-	-	-	-	-	-
Stage 2	118	50	-	273	114	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	55.4	59.4	5.4	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	305	-	-	89	76	361	-	-
HCM Lane V/C Ratio	0.052	-	-	0.202	0.132	0.003	-	-
HCM Control Delay (s)	17.5	5.4	-	55.4	59.4	15	0	-
HCM Lane LOS	C	A	-	F	F	C	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.4	0	-	-

Appendix I:

Truck Turning Movements



PARSONS

N

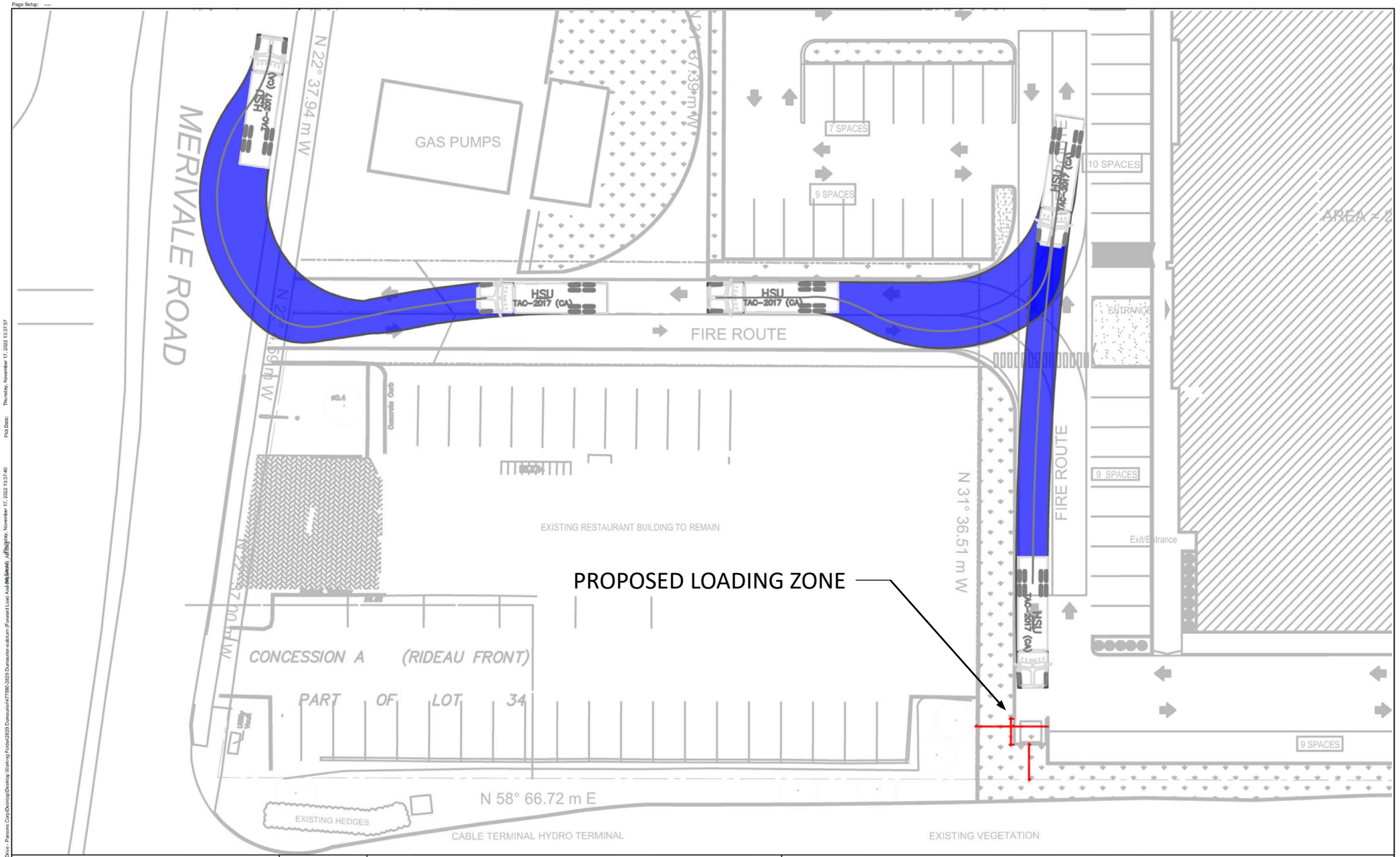
Legend

HSU

Not to Scale

Drawing Description	HSU Movement In to Garbage Loading Bay
Client	1545A Merivale Road
Date	11-28-2022
Figure Number	1
Project Number	478377
Project Description	

NOTE: The location of utilities is approximate only; the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.



PARSONS®

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

N

Legend

HSU

Not to Scale

Drawing Description: HSU Movement Out of Garbage Loading Bay		
Client: 1545A Merivale Road	Date: 11-28-2022	Figure Number: 2
Project Number: 478377	Project Description:	

Appendix J:

MMLOS Analysis for Adjacent Road Segments

Multi-Modal Level of Service - Segments Form

Consultant	**Parsons**	**Project**	**478377**
Scenario	**1545A Merivale Road**	**Date**	**26-Oct-22**
Comments			

SEGMENTS		**Street A**	Merivale Rd	Section	Mitigation	Section	Section	Section	Section	Section	Section
			1	2	3	4	5	6	7	8	9
Pedestrian	Sidewalk Width Boulevard Width		1.5 m 0.5 - 2 m		≥ 2 m > 2 m						
	Avg Daily Curb Lane Traffic Volume		> 3000		> 3000						
	Operating Speed On-Street Parking		> 60 km/h no		≤ 30 km/h no						
	Exposure to Traffic PLoS	**-**	**E**	-	**A**	-	-	-	-	-	-
	Effective Sidewalk Width										
	Pedestrian Volume										
	Crowding PLoS		-	-	-	-	-	-	-	-	-
	Level of Service		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Bicycle	Type of Cycling Facility	**F**	Mixed Traffic		Curbside Bike Lane						
	Number of Travel Lanes		4-5 lanes total		2 ea. dir. (w median)						
	Operating Speed		≥ 60 km/h		>50 to 70 km/h						
	# of Lanes & Operating Speed LoS		**F**	-	**C**	-	-	-	-	-	-
	Bike Lane (+ Parking Lane) Width				≥ 1.8 m						
	Bike Lane Width LoS		-	-	**A**	-	-	-	-	-	-
	Bike Lane Blockages				Rare						
	Blockage LoS		-	-	**A**	-	-	-	-	-	-
	Median Refuge Width (no median = < 1.8 m)		< 1.8 m refuge		< 1.8 m refuge						
	No. of Lanes at Unsignalized Crossing		≤ 3 lanes		≤ 3 lanes						
	Sidestreet Operating Speed		>40 to 50 km/h		>40 to 50 km/h						
	Unsignalized Crossing - Lowest LoS		**B**	-	**B**	-	-	-	-	-	-
	Level of Service		**F**	**-**	**C**	**-**	**-**	**-**	**-**	**-**	**-**
Transit	Facility Type	**D**	Mixed Traffic								
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≥ 0.8								
	Level of Service		**D**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Truck	Truck Lane Width	**A**	> 3.7 m								
	Travel Lanes per Direction		> 1								
	Level of Service		**A**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Appendix K:

Transportation Demand Management (TDM)

TDM-Supportive Development Design and Infrastructure Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑ building located as close as possible based on parcel
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑ entrance straight line to road and aisle
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑ modern design
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☑ not within 600m, but does provide sidewalk connectivity to Merivale and transit routes
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑ Direct sidewalk from entrance to Merivale Road

	TDM-supportive design & infrastructure measures: *Non-residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑ Sidewalks to meet City Standards
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑ Sidewalks to meet City Standards
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☑ Internal sidewalk connects to existing facilities on Merivale Road
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☑ Sidewalk connects to Merivale which has transit routes
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☐
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑ Bike racks proposed outdoors on northwest end of building
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑ meets bike parking minimums
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑ all horizontal parking
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	☐
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☑ Less than 50 bike parking spaces
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	☐
	2.3	**Shower & change facilities**	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	☐
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☐
	2.4	**Bicycle repair station**	
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐

	TDM-supportive design & infrastructure measures: *Non-residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	4.2	**Carpool parking**	
BASIC	4.2.1	Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	☐
BETTER	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☐ Car parking meets bylaw
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	☑ underground parking proposed for staff. Surface parking proposed as hourly paid rate.
	7.	**OTHER**	
	7.1	**On-site amenities to minimize off-site trips**	
BETTER	7.1.1	Provide on-site amenities to minimize mid-day or mid-commute errands	☐

TDM Measures Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users

BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance

★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		1. TDM PROGRAM MANAGEMENT	
		1.1 Program coordinator	
BASIC	★	1.1.1 Designate an internal coordinator, or contract with an external coordinator	☐
		1.2 Travel surveys	
BETTER		1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
		2. WALKING AND CYCLING	
		2.1 Information on walking/cycling routes & destinations	
BASIC		2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances	☐
		2.2 Bicycle skills training	
		Commuter travel	
BETTER	★	2.2.1 Offer on-site cycling courses for commuters, or subsidize off-site courses	☐
		2.3 Valet bike parking	
		Visitor travel	
BETTER		2.3.1 Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		3.	**TRANSIT**	
		3.1	**Transit information**	
BASIC		3.1.1	Display relevant transit schedules and route maps at entrances	☐
BASIC		3.1.2	Provide online links to OC Transpo and STO information	☐
BETTER		3.1.3	Provide real-time arrival information display at entrances	☐
		3.2	**Transit fare incentives**	
			Commuter travel	
BETTER		3.2.1	Offer preloaded PRESTO cards to encourage commuters to use transit	☐
BETTER	★	3.2.2	Subsidize or reimburse monthly transit pass purchases by employees	☐
			Visitor travel	
BETTER		3.2.3	Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	☐
		3.3	**Enhanced public transit service**	
			Commuter travel	
BETTER		3.3.1	Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	☐
			Visitor travel	
BETTER		3.3.2	Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	☐
		3.4	**Private transit service**	
			Commuter travel	
BETTER		3.4.1	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	☐
			Visitor travel	
BETTER		3.4.2	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		4.	**RIDESHARING**	
		4.1	**Ridematching service**	
			Commuter travel	
BASIC	★	4.1.1	Provide a dedicated ridematching portal at OttawaRideMatch.com	☐
		4.2	**Carpool parking price incentives**	
			Commuter travel	
BETTER		4.2.1	Provide discounts on parking costs for registered carpools	☐
		4.3	**Vanpool service**	
			Commuter travel	
BETTER		4.3.1	Provide a vanpooling service for long-distance commuters	☐
		5.	**CARSHARING & BIKESHARING**	
		5.1	**Bikeshare stations & memberships**	
BETTER		5.1.1	Contract with provider to install on-site bikeshare station for use by commuters and visitors	☐
			Commuter travel	
BETTER		5.1.2	Provide employees with bikeshare memberships for local business travel	☐
		5.2	**Carshare vehicles & memberships**	
			Commuter travel	
BETTER		5.2.1	Contract with provider to install on-site carshare vehicles and promote their use by tenants	☐
BETTER		5.2.2	Provide employees with carshare memberships for local business travel	☐
		6.	**PARKING**	
		6.1	**Priced parking**	
			Commuter travel	
BASIC	★	6.1.1	Charge for long-term parking (daily, weekly, monthly)	☐
BASIC		6.1.2	Unbundle parking cost from lease rates at multi-tenant sites	☐
			Visitor travel	
BETTER		6.1.3	Charge for short-term parking (hourly)	☑ Paid hourly parking proposed

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		7. TDM MARKETING & COMMUNICATIONS	
		7.1 Multimodal travel information	
		Commuter travel	
BASIC	★	7.1.1 Provide a multimodal travel option information package to new/relocating employees and students	☐
		Visitor travel	
BETTER	★	7.1.2 Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	☐
		7.2 Personalized trip planning	
		Commuter travel	
BETTER	★	7.2.1 Offer personalized trip planning to new/relocating employees	☐
		7.3 Promotions	
		Commuter travel	
BETTER		7.3.1 Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	☐
		8. OTHER INCENTIVES & AMENITIES	
		8.1 Emergency ride home	
		Commuter travel	
BETTER	★	8.1.1 Provide emergency ride home service to non-driving commuters	☐
		8.2 Alternative work arrangements	
		Commuter travel	
BASIC	★	8.2.1 Encourage flexible work hours	☐
BETTER		8.2.2 Encourage compressed workweeks	☐
BETTER	★	8.2.3 Encourage telework	☐
		8.3 Local business travel options	
		Commuter travel	
BASIC	★	8.3.1 Provide local business travel options that minimize the need for employees to bring a personal car to work	☐
		8.4 Commuter incentives	
		Commuter travel	
BETTER		8.4.1 Offer employees a taxable, mode-neutral commuting allowance	☐
		8.5 On-site amenities	
		Commuter travel	
BETTER		8.5.1 Provide on-site amenities/services to minimize mid-day or mid-commute errands	☐

Appendix L:

MMLOS Analysis for Signalized Intersections

Multi-Modal Level of Service - Intersections Form

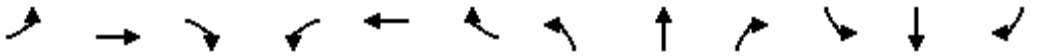
Consultant	Parsons	**Project**	478377
Scenario	1545A Merivale Road	**Date**	Oct. 26, 2022
Comments			

Unlocked Rows for Replicating

INTERSECTIONS		Clyde/Merivale				Capilano/Merivale				Emerald Plaza/Merivale				Meadowland/Merivale			
Crossing Side		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Pedestrian	Lanes	7	8	7	7	10+	9	7	6	8	8	7	7	8	8	7	7
	Median	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m	No Median - 2.4 m
	Conflicting Left Turns	Protected	Protected	Protected/ Permissive	Protected/ Permissive	Permissive	Permissive	Protected/ Permissive	Protected/ Permissive	Permissive	Permissive	Protected	Protected	Protected/ Permissive	Protected/ Permissive	Protected/ Permissive	Protected/ Permissive
	Conflicting Right Turns	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control	Permissive or yield control
	Right Turns on Red (RToR) ?	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed	RTOR allowed
	Ped Signal Leading Interval?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Right Turn Channel	No Channel	Conventional with Receiving Lane	Conventional with Receiving Lane	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	No Channel	Conv'tl without Receiving Lane	Conventional with Receiving Lane	Conv'tl without Receiving Lane	Conventional with Receiving Lane
	Corner Radius	10-15m	>25m	>25m	10-15m	5-10m	5-10m	5-10m	5-10m	10-15m	10-15m	10-15m	10-15m	15-25m	15-25m	15-25m	15-25m
	Crosswalk Type	Std transverse markings	Std transverse markings	Std transverse markings	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Std transverse markings	Std transverse markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings	Zebra stripe hi-vis markings
	PETSI Score	**12**	**-6**	**2**	**4**	**-41**	**-25**	**8**	**21**	**-9**	**-9**	**12**	**12**	**-7**	**-10**	**9**	**6**
	Ped. Exposure to Traffic LoS	**F**	**F**	**F**	**F**	**#N/A**	**#N/A**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**
	Cycle Length	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130
	Effective Walk Time	27	27	24	24	36	36	27	27	29	29	25	25	24	24	32	32
	Average Pedestrian Delay	**41**	**41**	**43**	**43**	**34**	**34**	**41**	**41**	**39**	**39**	**42**	**42**	**43**	**43**	**37**	**37**
	Pedestrian Delay LoS	**E**	**E**	**E**	**E**	**D**	**D**	**E**	**E**	**D**	**D**	**E**	**E**	**E**	**E**	**D**	**D**
	Level of Service	**F**	**F**	**F**	**F**	**#N/A**	**#N/A**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**	**F**
		F				**#N/A**				**F**				**F**			
Approach From		NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST
Bicycle	Bicycle Lane Arrangement on Approach	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic
	Right Turn Lane Configuration	≤ 50 m	> 50 m	≤ 50 m	≤ 50 m	> 50 m	≤ 50 m	≤ 50 m	≤ 50 m	≤ 50 m	≤ 50 m	≤ 50 m	≤ 50 m	> 50 m	> 50 m	> 50 m	> 50 m
	Right Turning Speed	≤ 25 km/h	>25 km/h	>25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	≤ 25 km/h	>25 km/h	>25 km/h	>25 km/h	>25 km/h
	Cyclist relative to RT motorists	**D**	**F**	**E**	**D**	**F**	**D**	**D**	**D**	**D**	**D**	**D**	**D**	**F**	**F**	**F**	**F**
	Separated or Mixed Traffic	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**	**Mixed Traffic**
	Left Turn Approach	≥ 2 lanes crossed	≥ 2 lanes crossed	One lane crossed	One lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	One lane crossed	One lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	One lane crossed	One lane crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed	≥ 2 lanes crossed
	Operating Speed	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h	≥ 60 km/h	≥ 60 km/h	> 40 to ≤ 50 km/h	> 40 to ≤ 50 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h	≥ 60 km/h
	Left Turning Cyclist	**F**	**F**	**F**	**F**	**F**	**F**	**D**	**D**	**F**	**F**	**D**	**D**	**F**	**F**	**F**	**F**
	Level of Service	**F**	**F**	**F**	**F**	**F**	**F**	**D**	**D**	**F**	**F**	**D**	**D**	**F**	**F**	**F**	**F**
		F				**F**				**F**				**F**			
Transit	Average Signal Delay	> 40 sec	> 40 sec	≤ 10 sec		≤ 20 sec	≤ 30 sec			≤ 20 sec	≤ 20 sec			> 40 sec	≤ 40 sec	> 40 sec	> 40 sec
	Level of Service	**F**	**F**	**B**	**-**	**C**	**D**	**-**	**-**	**C**	**C**	**-**	**-**	**F**	**E**	**F**	**F**
		F				**D**				**C**				**F**			
Truck	Effective Corner Radius	10 - 15 m	> 15 m	> 15 m	10 - 15 m	< 10 m	< 10 m	< 10 m	< 10 m	10 - 15 m	10 - 15 m	10 - 15 m	10 - 15 m	> 15 m	> 15 m	> 15 m	> 15 m
	Number of Receiving Lanes on Departure from Intersection		≥ 2	≥ 2	≥ 2			≥ 2	≥ 2			≥ 2	≥ 2			≥ 2	≥ 2
	Level of Service	**-**	**A**	**A**	**B**	**-**	**-**	**D**	**D**	**-**	**-**	**B**	**B**	**-**	**-**	**A**	**A**
		B				**D**				**B**				**A**			
Auto	Volume to Capacity Ratio																
	Level of Service	**-**				**-**				**-**				**-**			

Appendix M:

Future 2023 Synchro Analysis



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	74	21	364	37	65	34	767	824	23	601	14
Future Volume (vph)	25	74	21	364	37	65	34	767	824	23	601	14
Satd. Flow (prot)	1695	1715	0	3288	1596	0	1695	3390	1517	1695	3375	0
Flt Permitted	0.950			0.950			0.384			0.311		
Satd. Flow (perm)	1689	1715	0	3247	1596	0	676	3390	1481	553	3375	0
Satd. Flow (RTOR)		10			62				824		2	
Lane Group Flow (vph)	25	95	0	364	102	0	34	767	824	23	615	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	33.0	34.0		33.0	34.0		63.0	63.0	63.0	63.0	63.0	
Total Split (%)	25.4%	26.2%		25.4%	26.2%		48.5%	48.5%	48.5%	48.5%	48.5%	
Yellow Time (s)	3.0	3.0		3.7	3.7		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.8	3.8		2.5	2.5		2.3	2.3	2.3	2.3	2.3	
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)	6.8	6.8		6.2	6.2		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	7.5	14.5		19.6	31.8		76.8	76.8	76.8	76.8	76.8	
Actuated g/C Ratio	0.06	0.11		0.15	0.24		0.59	0.59	0.59	0.59	0.59	
v/c Ratio	0.26	0.47		0.73	0.23		0.09	0.38	0.68	0.07	0.31	
Control Delay	64.4	54.5		61.6	18.0		13.7	12.6	8.2	16.0	15.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	1.1	0.0	0.0	
Total Delay	64.4	54.5		61.6	18.0		13.7	12.6	9.3	16.0	15.3	
LOS	E	D		E	B		B	B	A	B	B	
Approach Delay		56.6			52.0			11.0			15.3	
Approach LOS		E			D			B			B	
Queue Length 50th (m)	6.3	21.2		46.5	8.7		2.2	28.7	18.8	2.3	36.9	
Queue Length 95th (m)	15.3	34.0		60.2	20.1		m4.7	40.3	73.8	9.0	68.6	
Internal Link Dist (m)		214.0			445.3			280.9			385.6	
Turn Bay Length (m)	40.0			95.0			85.0			80.0		
Base Capacity (vph)	341	366		677	447		399	2003	1212	326	1995	
Starvation Cap Reductn	0	0		0	0		0	0	182	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	0.07	0.26		0.54	0.23		0.09	0.38	0.80	0.07	0.31	

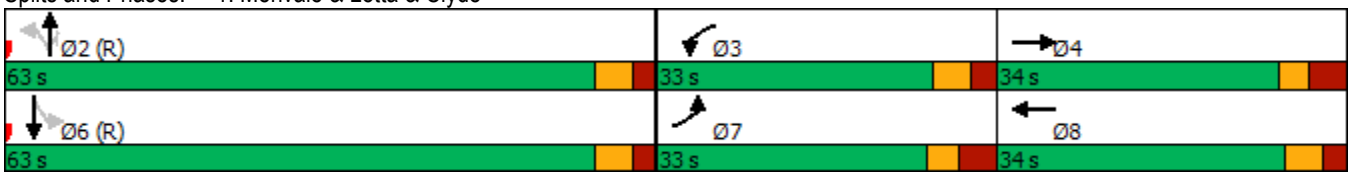
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 9 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

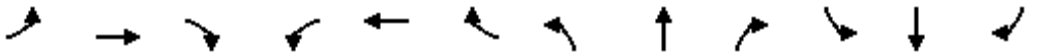
Maximum v/c Ratio: 0.73

Intersection Signal Delay: 20.6	Intersection LOS: C
Intersection Capacity Utilization 90.9%	ICU Level of Service E
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Merivale & Lotta & Clyde





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	16	20	34	10	35	19	1591	35	35	974	5
Future Volume (vph)	38	16	20	34	10	35	19	1591	35	35	974	5
Satd. Flow (prot)	1695	1621	0	1695	1576	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.728			0.734			0.273			0.114		
Satd. Flow (perm)	1299	1621	0	1304	1576	0	486	3390	1472	203	3390	1471
Satd. Flow (RTOR)		20			35				86			86
Lane Group Flow (vph)	38	36	0	34	45	0	19	1591	35	35	974	5
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	43.2	43.2		43.2	43.2		11.1	33.1	33.1	11.1	33.1	33.1
Total Split (s)	43.0	43.0		43.0	43.0		12.0	75.0	75.0	12.0	75.0	75.0
Total Split (%)	33.1%	33.1%		33.1%	33.1%		9.2%	57.7%	57.7%	9.2%	57.7%	57.7%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2		4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
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)	7.2	7.2		7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	15.3	15.3		15.3	15.3		101.0	98.8	98.8	102.4	101.2	101.2
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.76	0.76	0.79	0.78	0.78
v/c Ratio	0.25	0.17		0.22	0.21		0.04	0.62	0.03	0.15	0.37	0.00
Control Delay	52.3	27.4		51.4	20.4		4.7	7.1	0.1	6.6	7.4	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	27.4		51.4	20.4		4.7	7.1	0.1	6.6	7.4	0.0
LOS	D	C		D	C		A	A	A	A	A	A
Approach Delay		40.2			33.8			7.0			7.3	
Approach LOS		D			C			A			A	
Queue Length 50th (m)	9.4	3.9		8.4	2.4		0.4	23.3	0.0	0.8	14.2	0.0
Queue Length 95th (m)	16.3	11.4		15.0	11.2		m1.7	134.4	m0.0	m8.8	76.7	m0.0
Internal Link Dist (m)		182.8			218.9			60.6			280.9	
Turn Bay Length (m)				35.0					15.0	100.0		
Base Capacity (vph)	357	460		359	459		432	2575	1138	228	2639	1164
Starvation Cap Reductn	0	0		0	0		0	13	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	0.11	0.08		0.09	0.10		0.04	0.62	0.03	0.15	0.37	0.00

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 116 (89%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 8.7	Intersection LOS: A
Intersection Capacity Utilization 69.0%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Merivale & Withrow/Capilano

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	6	3	13	0	90	6	1465	27	123	910	3
Future Volume (vph)	24	6	3	13	0	90	6	1465	27	123	910	3
Satd. Flow (prot)	1695	1684	0	1695	1476	0	1695	3379	0	3288	3390	0
Flt Permitted	0.699			0.752			0.950			0.950		
Satd. Flow (perm)	1231	1684	0	1331	1476	0	1688	3379	0	3284	3390	0
Satd. Flow (RTOR)		3			117			2				
Lane Group Flow (vph)	24	9	0	13	90	0	6	1492	0	123	913	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5		11.7	31.2		11.7	31.2	
Total Split (s)	36.0	36.0		36.0	36.0		13.0	81.0		13.0	81.0	
Total Split (%)	27.7%	27.7%		27.7%	27.7%		10.0%	62.3%		10.0%	62.3%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.0	2.5		3.0	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.7	6.2		6.7	6.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	17.6	17.6		17.6	17.6		6.0	83.7		9.3	97.0	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.05	0.64		0.07	0.75	
v/c Ratio	0.14	0.04		0.07	0.30		0.08	0.69		0.52	0.36	
Control Delay	46.8	34.7		44.2	5.9		56.8	18.3		77.7	3.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.8	34.7		44.2	5.9		56.8	18.3		77.7	3.5	
LOS	D	C		D	A		E	B		E	A	
Approach Delay		43.5			10.7			18.5			12.3	
Approach LOS		D			B			B			B	
Queue Length 50th (m)	5.9	1.5		3.2	0.0		1.5	114.1		16.3	12.6	
Queue Length 95th (m)	12.4	5.9		8.3	7.8		m1.7	91.1		#31.4	21.0	
Internal Link Dist (m)		58.9			208.4			286.8			128.3	
Turn Bay Length (m)										100.0		
Base Capacity (vph)	279	384		302	425		83	2202		235	2529	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	28		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.02		0.04	0.21		0.07	0.69		0.52	0.36	

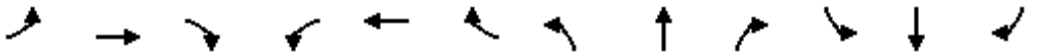
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 108 (83%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 16.1	Intersection LOS: B
Intersection Capacity Utilization 77.2%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Emerald Plaza



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	360	380	122	83	227	212	90	1265	85	94	765	113
Future Volume (vph)	360	380	122	83	227	212	90	1265	85	94	765	113
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.400			0.526			0.276			0.084		
Satd. Flow (perm)	705	3390	1474	932	3390	1469	490	3390	1471	150	3390	1468
Satd. Flow (RTOR)			130			130			134			134
Lane Group Flow (vph)	360	380	122	83	227	212	90	1265	85	94	765	113
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	30.5	30.5	11.5	30.5	30.5	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (s)	23.0	33.0	33.0	23.0	33.0	33.0	11.0	63.0	63.0	11.0	63.0	63.0
Total Split (%)	17.7%	25.4%	25.4%	17.7%	25.4%	25.4%	8.5%	48.5%	48.5%	8.5%	48.5%	48.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.3	2.3	2.3	2.3	2.3	2.3
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	44.0	28.5	28.5	26.8	16.9	16.9	66.1	58.6	58.6	67.1	59.1	59.1
Actuated g/C Ratio	0.34	0.22	0.22	0.21	0.13	0.13	0.51	0.45	0.45	0.52	0.45	0.45
v/c Ratio	0.90	0.51	0.29	0.33	0.52	0.70	0.28	0.83	0.12	0.55	0.50	0.15
Control Delay	62.8	47.5	7.9	33.6	55.8	32.9	16.5	37.5	1.0	35.4	20.3	5.4
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	62.8	47.5	7.9	33.6	55.8	32.9	16.5	37.5	1.0	35.4	20.3	5.4
LOS	E	D	A	C	E	C	B	D	A	D	C	A
Approach Delay		48.3			43.0			34.1			20.0	
Approach LOS		D			D			C			B	
Queue Length 50th (m)	77.3	45.8	0.0	14.8	29.7	20.3	10.1	147.9	0.0	5.4	70.3	5.5
Queue Length 95th (m)	#114.1	62.1	14.1	26.0	39.4	44.3	19.3	181.1	2.2	29.7	56.5	11.4
Internal Link Dist (m)		169.3			250.3			97.3			286.8	
Turn Bay Length (m)	100.0		120.0	130.0		105.0	85.0		95.0	140.0		175.0
Base Capacity (vph)	402	744	425	336	691	402	319	1532	738	172	1541	740
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	0.90	0.51	0.29	0.25	0.33	0.53	0.28	0.83	0.12	0.55	0.50	0.15

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 115 (88%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 34.9	Intersection LOS: C
Intersection Capacity Utilization 95.9%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Merivale & Meadowlands

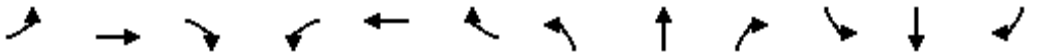
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	12	6	0	9	2	1598	26	32	1014	13
Future Vol, veh/h	2	0	12	6	0	9	2	1598	26	32	1014	13
Conflicting Peds, #/hr	0	0	2	2	0	0	11	0	15	15	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	12	6	0	9	2	1598	26	32	1014	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1899	2739	527	2203	2732	827	1038	0	0	1639	0	0
Stage 1	1096	1096	-	1630	1630	-	-	-	-	-	-	-
Stage 2	803	1643	-	573	1102	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	42	20	496	25	20	315	665	-	-	391	-	-
Stage 1	228	287	-	106	158	-	-	-	-	-	-	-
Stage 2	343	156	-	472	286	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	34	15	491	20	15	311	659	-	-	386	-	-
Mov Cap-2 Maneuver	129	77	-	78	89	-	-	-	-	-	-	-
Stage 1	219	229	-	101	151	-	-	-	-	-	-	-
Stage 2	322	149	-	371	229	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.7	33.3	0.2	1.8
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	659	-	-	350	142	386	-	-
HCM Lane V/C Ratio	0.003	-	-	0.04	0.106	0.083	-	-
HCM Control Delay (s)	10.5	0.2	-	15.7	33.3	15.2	1.4	-
HCM Lane LOS	B	A	-	C	D	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0.3	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	43	35	833	119	158	71	851	622	67	721	27
Future Volume (vph)	32	43	35	833	119	158	71	851	622	67	721	27
Satd. Flow (prot)	1695	1646	0	3288	1614	0	1695	3390	1517	1695	3365	0
Flt Permitted	0.950			0.950			0.238			0.187		
Satd. Flow (perm)	1688	1646	0	3250	1614	0	421	3390	1445	334	3365	0
Satd. Flow (RTOR)		28			46				573		3	
Lane Group Flow (vph)	32	78	0	833	277	0	71	851	622	67	748	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2		10.3	30.0	30.0	10.3	30.0	
Total Split (s)	44.0	34.0		44.0	34.0		12.0	41.0	41.0	12.0	41.0	
Total Split (%)	33.6%	26.0%		33.6%	26.0%		9.2%	31.3%	31.3%	9.2%	31.3%	
Yellow Time (s)	3.0	3.0		3.7	3.7		3.3	3.7	3.7	3.3	3.7	
All-Red Time (s)	3.8	3.8		2.5	2.5		2.0	2.3	2.3	2.0	2.3	
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)	6.8	6.8		6.2	6.2		5.3	6.0	6.0	5.3	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	
Act Effct Green (s)	8.0	16.8		36.1	46.7		58.9	52.3	52.3	58.8	52.3	
Actuated g/C Ratio	0.06	0.13		0.28	0.36		0.45	0.40	0.40	0.45	0.40	
v/c Ratio	0.31	0.33		0.92	0.46		0.28	0.63	0.68	0.30	0.56	
Control Delay	65.9	35.5		61.7	28.2		26.4	38.3	9.2	27.3	36.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	65.9	35.5		61.7	28.2		26.4	38.3	9.2	27.3	36.6	
LOS	E	D		E	C		C	D	A	C	D	
Approach Delay		44.3			53.3			26.0			35.8	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	8.1	12.5		105.9	49.4		9.4	93.8	8.0	8.9	79.1	
Queue Length 95th (m)	18.4	24.7		#138.1	64.5		22.9	#152.5	56.4	21.8	119.8	
Internal Link Dist (m)		214.0			445.3			280.9			385.6	
Turn Bay Length (m)	40.0			95.0			85.0			80.0		
Base Capacity (vph)	481	363		948	605		259	1354	921	224	1345	
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	0.07	0.21		0.88	0.46		0.27	0.63	0.68	0.30	0.56	

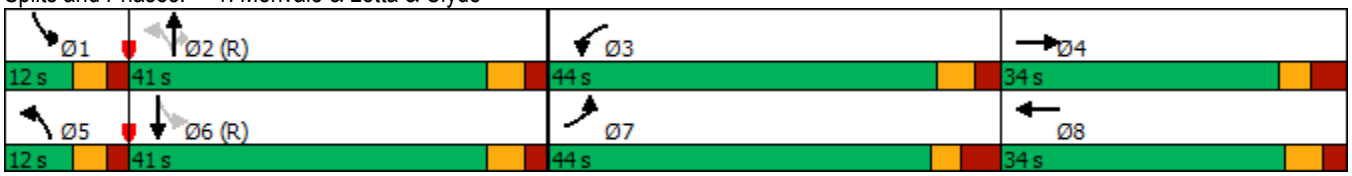
Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 131
Offset: 98 (75%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

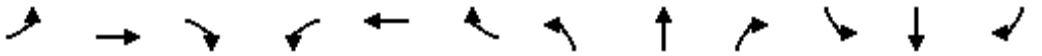
Maximum v/c Ratio: 0.92

Intersection Signal Delay: 37.3	Intersection LOS: D
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Merivale & Lotta & Clyde





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	8	26	63	14	52	39	1616	32	78	1663	64
Future Volume (vph)	31	8	26	63	14	52	39	1616	32	78	1663	64
Satd. Flow (prot)	1695	1554	0	1695	1550	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.714			0.735			0.088			0.092		
Satd. Flow (perm)	1265	1554	0	1301	1550	0	157	3390	1420	164	3390	1433
Satd. Flow (RTOR)		26			52				86			86
Lane Group Flow (vph)	31	34	0	63	66	0	39	1616	32	78	1663	64
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	43.2	43.2		43.2	43.2		11.1	33.1	33.1	11.1	33.1	33.1
Total Split (s)	44.0	44.0		44.0	44.0		14.0	72.0	72.0	14.0	72.0	72.0
Total Split (%)	33.8%	33.8%		33.8%	33.8%		10.8%	55.4%	55.4%	10.8%	55.4%	55.4%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2		4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
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)	7.2	7.2		7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	20.7	20.7		20.7	20.7		93.5	89.3	89.3	95.6	90.4	90.4
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.72	0.69	0.69	0.74	0.70	0.70
v/c Ratio	0.15	0.13		0.30	0.23		0.21	0.69	0.03	0.38	0.71	0.06
Control Delay	43.0	17.6		47.7	15.4		7.1	10.9	0.1	12.4	20.3	1.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	43.0	17.6		47.7	15.4		7.1	11.0	0.1	12.4	20.3	1.7
LOS	D	B		D	B		A	B	A	B	C	A
Approach Delay		29.7			31.2			10.7			19.3	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	7.5	1.9		15.7	3.4		0.6	20.4	0.0	3.3	113.0	0.0
Queue Length 95th (m)	14.0	9.6		24.3	13.6		m3.6	#250.2	m0.1	13.9	#264.5	4.2
Internal Link Dist (m)		182.8			218.9			60.6			280.9	
Turn Bay Length (m)				35.0					15.0	100.0		
Base Capacity (vph)	358	458		368	476		207	2332	1003	219	2357	1022
Starvation Cap Reductn	0	0		0	0		0	114	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	22	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.07		0.17	0.14		0.19	0.73	0.03	0.36	0.71	0.06

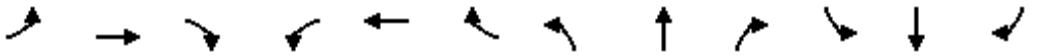
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 76 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 16.0	Intersection LOS: B
Intersection Capacity Utilization 83.3%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Merivale & Withrow/Capilano



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	16	20	64	1	196	18	1281	40	241	1455	241
Future Volume (vph)	45	16	20	64	1	196	18	1281	40	241	1455	241
Satd. Flow (prot)	1695	1605	0	1695	1478	0	1695	3367	0	3288	3305	0
Flt Permitted	0.378			0.734			0.950			0.950		
Satd. Flow (perm)	668	1605	0	1281	1478	0	1692	3367	0	3248	3305	0
Satd. Flow (RTOR)		20			173			4			22	
Lane Group Flow (vph)	45	36	0	64	197	0	18	1321	0	241	1696	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5		11.7	31.2		11.7	31.2	
Total Split (s)	36.0	36.0		36.0	36.0		17.0	77.0		17.0	77.0	
Total Split (%)	27.7%	27.7%		27.7%	27.7%		13.1%	59.2%		13.1%	59.2%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.0	2.5		3.0	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.7	6.2		6.7	6.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	18.0	18.0		18.0	18.0		7.0	78.9		13.7	93.3	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.05	0.61		0.11	0.72	
v/c Ratio	0.49	0.15		0.36	0.56		0.20	0.65		0.70	0.71	
Control Delay	66.0	25.6		53.5	15.4		63.0	11.4		64.1	12.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.1	
Total Delay	66.0	25.6		53.5	15.4		63.0	11.4		64.1	12.3	
LOS	E	C		D	B		E	B		E	B	
Approach Delay		48.0			24.8			12.1			18.8	
Approach LOS		D			C			B			B	
Queue Length 50th (m)	11.4	3.8		16.0	5.8		4.7	85.6		31.5	66.1	
Queue Length 95th (m)	21.7	12.3		26.6	25.7		m6.8	38.6		#56.9	96.3	
Internal Link Dist (m)		58.9			208.4			286.8			128.3	
Turn Bay Length (m)										100.0		
Base Capacity (vph)	151	379		290	469		134	2062		346	2378	
Starvation Cap Reductn	0	0		0	0		0	0		0	49	
Spillback Cap Reductn	0	0		0	2		0	44		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.30	0.09		0.22	0.42		0.13	0.65		0.70	0.73	

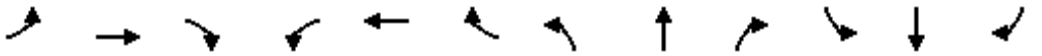
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 65 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 17.4	Intersection LOS: B
Intersection Capacity Utilization 101.9%	ICU Level of Service G
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Emerald Plaza



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	307	154	182	492	170	195	1191	102	217	1105	289
Future Volume (vph)	166	307	154	182	492	170	195	1191	102	217	1105	289
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.232			0.460			0.146			0.083		
Satd. Flow (perm)	407	3390	1416	795	3390	1433	259	3390	1384	148	3390	1412
Satd. Flow (RTOR)			154			170			134			289
Lane Group Flow (vph)	166	307	154	182	492	170	195	1191	102	217	1105	289
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	30.5	30.5	11.5	30.5	30.5	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (s)	19.0	31.0	31.0	19.0	31.0	31.0	17.0	59.0	59.0	21.0	63.0	63.0
Total Split (%)	14.6%	23.8%	23.8%	14.6%	23.8%	23.8%	13.1%	45.4%	45.4%	16.2%	48.5%	48.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.3	2.3	2.3	2.3	2.3	2.3
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	34.9	22.5	22.5	35.1	22.6	22.6	66.0	54.9	54.9	74.1	59.0	59.0
Actuated g/C Ratio	0.27	0.17	0.17	0.27	0.17	0.17	0.51	0.42	0.42	0.57	0.45	0.45
v/c Ratio	0.72	0.52	0.41	0.61	0.84	0.44	0.77	0.83	0.15	0.83	0.72	0.36
Control Delay	51.7	52.0	10.3	43.3	65.1	10.2	39.0	40.2	2.1	58.2	29.9	8.0
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	51.7	52.0	10.3	43.3	65.1	10.2	39.0	40.2	2.1	58.2	29.9	8.0
LOS	D	D	B	D	E	B	D	D	A	E	C	A
Approach Delay		41.7			49.3			37.4			29.8	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	31.4	37.5	0.0	34.8	64.0	0.0	23.2	145.7	0.0	44.5	78.7	7.5
Queue Length 95th (m)	#52.9	52.0	18.1	54.4	83.2	19.1	#56.2	175.0	5.5	m#78.1	106.7	31.1
Internal Link Dist (m)		169.3			250.3			97.3			286.8	
Turn Bay Length (m)	100.0		120.0	130.0		105.0	85.0		95.0	140.0		175.0
Base Capacity (vph)	237	638	391	305	638	408	257	1435	662	268	1540	799
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	0.70	0.48	0.39	0.60	0.77	0.42	0.76	0.83	0.15	0.81	0.72	0.36

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 61 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 37.5	Intersection LOS: D
Intersection Capacity Utilization 95.5%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Merivale & Meadowlands

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	15	19	0	32	16	1589	46	11	1832	23
Future Vol, veh/h	3	0	15	19	0	32	16	1589	46	11	1832	23
Conflicting Peds, #/hr	0	0	0	0	0	0	27	0	45	45	0	27
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	15	19	0	32	16	1589	46	11	1832	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2720	3605	955	2627	3593	863	1882	0	0	1680	0	0
Stage 1	1893	1893	-	1689	1689	-	-	-	-	-	-	-
Stage 2	827	1712	-	938	1904	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	10	5	259	~ 12	5	298	315	-	-	377	-	-
Stage 1	72	117	-	97	148	-	-	-	-	-	-	-
Stage 2	332	144	-	284	115	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	5	2	253	~ 6	2	287	308	-	-	363	-	-
Mov Cap-2 Maneuver	22	30	-	31	33	-	-	-	-	-	-	-
Stage 1	28	114	-	37	57	-	-	-	-	-	-	-
Stage 2	118	55	-	267	112	-	-	-	-	-	-	-

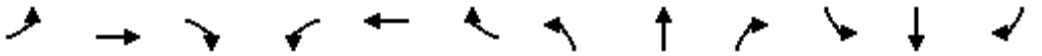
Approach	EB	WB	NB	SB
HCM Control Delay, s	53.4	138.9	5.1	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	308	-	-	92	70	363	-	-
HCM Lane V/C Ratio	0.052	-	-	0.196	0.729	0.03	-	-
HCM Control Delay (s)	17.3	5.1	-	53.4	138.9	15.2	0	-
HCM Lane LOS	C	A	-	F	F	C	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	3.3	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Appendix N:

Future 2028 Synchro Analysis



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	74	21	379	37	94	34	767	831	37	601	14
Future Volume (vph)	25	74	21	379	37	94	34	767	831	37	601	14
Satd. Flow (prot)	1695	1715	0	3288	1573	0	1695	3390	1517	1695	3375	0
Flt Permitted	0.950			0.950			0.383			0.310		
Satd. Flow (perm)	1689	1715	0	3247	1573	0	674	3390	1481	552	3375	0
Satd. Flow (RTOR)		10			89				831		2	
Lane Group Flow (vph)	25	95	0	379	131	0	34	767	831	37	615	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	33.0	34.0		33.0	34.0		63.0	63.0	63.0	63.0	63.0	
Total Split (%)	25.4%	26.2%		25.4%	26.2%		48.5%	48.5%	48.5%	48.5%	48.5%	
Yellow Time (s)	3.0	3.0		3.7	3.7		3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	3.8	3.8		2.5	2.5		2.3	2.3	2.3	2.3	2.3	
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)	6.8	6.8		6.2	6.2		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	None		None	None		C-Min	C-Min	C-Min	C-Min	C-Min	
Act Effct Green (s)	7.5	14.5		20.2	32.3		76.3	76.3	76.3	76.3	76.3	
Actuated g/C Ratio	0.06	0.11		0.16	0.25		0.59	0.59	0.59	0.59	0.59	
v/c Ratio	0.26	0.47		0.74	0.29		0.09	0.39	0.69	0.11	0.31	
Control Delay	64.4	54.5		61.5	15.5		13.7	12.7	8.4	16.8	15.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	1.2	0.0	0.0	
Total Delay	64.4	54.5		61.5	15.5		13.7	12.7	9.6	16.8	15.6	
LOS	E	D		E	B		B	B	A	B	B	
Approach Delay		56.6			49.7			11.1			15.6	
Approach LOS		E			D			B			B	
Queue Length 50th (m)	6.3	21.2		48.4	9.1		2.2	30.5	19.3	3.8	37.5	
Queue Length 95th (m)	15.3	34.0		62.3	22.1		m4.5	38.7	74.3	13.1	69.2	
Internal Link Dist (m)		214.0			445.3			280.9			385.6	
Turn Bay Length (m)	40.0			95.0			85.0			80.0		
Base Capacity (vph)	341	366		677	465		395	1989	1212	323	1980	
Starvation Cap Reductn	0	0		0	0		0	0	184	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	0.07	0.26		0.56	0.28		0.09	0.39	0.81	0.11	0.31	

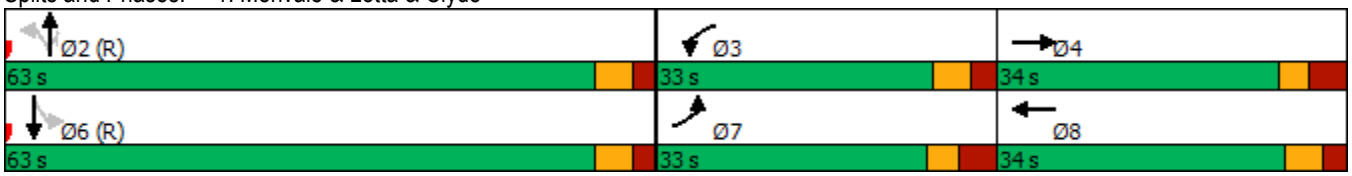
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 9 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

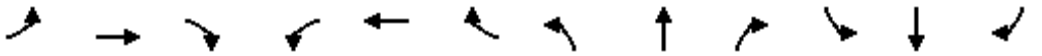
Maximum v/c Ratio: 0.74

Intersection Signal Delay: 20.8	Intersection LOS: C
Intersection Capacity Utilization 91.4%	ICU Level of Service F
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Merivale & Lotta & Clyde





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	16	20	34	10	35	19	1598	35	35	989	5
Future Volume (vph)	38	16	20	34	10	35	19	1598	35	35	989	5
Satd. Flow (prot)	1695	1621	0	1695	1576	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.728			0.734			0.268			0.112		
Satd. Flow (perm)	1299	1621	0	1304	1576	0	477	3390	1472	200	3390	1471
Satd. Flow (RTOR)		20			35				86			86
Lane Group Flow (vph)	38	36	0	34	45	0	19	1598	35	35	989	5
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	43.2	43.2		43.2	43.2		11.1	33.1	33.1	11.1	33.1	33.1
Total Split (s)	43.0	43.0		43.0	43.0		12.0	75.0	75.0	12.0	75.0	75.0
Total Split (%)	33.1%	33.1%		33.1%	33.1%		9.2%	57.7%	57.7%	9.2%	57.7%	57.7%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2		4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
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)	7.2	7.2		7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	15.3	15.3		15.3	15.3		101.0	98.8	98.8	102.4	101.2	101.2
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.76	0.76	0.79	0.78	0.78
v/c Ratio	0.25	0.17		0.22	0.21		0.04	0.62	0.03	0.16	0.37	0.00
Control Delay	52.3	27.4		51.4	20.4		4.6	7.2	0.2	6.5	7.5	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	27.4		51.4	20.4		4.6	7.2	0.2	6.5	7.5	0.0
LOS	D	C		D	C		A	A	A	A	A	A
Approach Delay		40.2			33.8			7.0			7.4	
Approach LOS		D			C			A			A	
Queue Length 50th (m)	9.4	3.9		8.4	2.4		0.4	22.7	0.0	0.8	14.2	0.0
Queue Length 95th (m)	16.3	11.4		15.0	11.2		m1.6	138.8	m0.0	m8.9	79.5	m0.0
Internal Link Dist (m)		182.8			218.9			60.6			280.9	
Turn Bay Length (m)				35.0					15.0	100.0		
Base Capacity (vph)	357	460		359	459		426	2575	1138	226	2639	1164
Starvation Cap Reductn	0	0		0	0		0	12	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	0.11	0.08		0.09	0.10		0.04	0.62	0.03	0.15	0.37	0.00

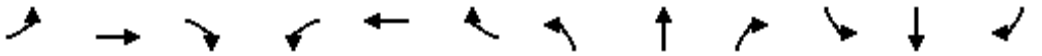
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 116 (89%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 8.7	Intersection LOS: A
Intersection Capacity Utilization 69.2%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Merivale & Withrow/Capilano



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	6	3	13	0	90	6	1472	27	123	925	3
Future Volume (vph)	24	6	3	13	0	90	6	1472	27	123	925	3
Satd. Flow (prot)	1695	1684	0	1695	1476	0	1695	3379	0	3288	3390	0
Flt Permitted	0.699			0.752			0.950			0.950		
Satd. Flow (perm)	1231	1684	0	1331	1476	0	1688	3379	0	3284	3390	0
Satd. Flow (RTOR)		3			116			2				
Lane Group Flow (vph)	24	9	0	13	90	0	6	1499	0	123	928	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5		11.7	31.2		11.7	31.2	
Total Split (s)	36.0	36.0		36.0	36.0		13.0	81.0		13.0	81.0	
Total Split (%)	27.7%	27.7%		27.7%	27.7%		10.0%	62.3%		10.0%	62.3%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.0	2.5		3.0	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.7	6.2		6.7	6.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	17.6	17.6		17.6	17.6		6.0	83.7		9.3	97.0	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.05	0.64		0.07	0.75	
v/c Ratio	0.14	0.04		0.07	0.30		0.08	0.69		0.52	0.37	
Control Delay	46.8	34.7		44.2	6.0		56.8	18.3		77.7	3.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.8	34.7		44.2	6.0		56.8	18.3		77.7	3.4	
LOS	D	C		D	A		E	B		E	A	
Approach Delay		43.5			10.8			18.4			12.1	
Approach LOS		D			B			B			B	
Queue Length 50th (m)	5.9	1.5		3.2	0.0		1.5	114.4		16.4	12.7	
Queue Length 95th (m)	12.4	5.9		8.3	8.0		m1.7	91.3		#31.6	21.0	
Internal Link Dist (m)		58.9			208.4			286.8			128.3	
Turn Bay Length (m)										100.0		
Base Capacity (vph)	279	384		302	424		83	2202		235	2529	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	1		0	30		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.02		0.04	0.21		0.07	0.69		0.52	0.37	

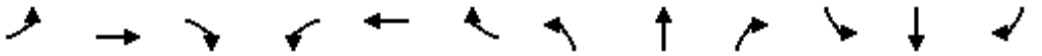
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 108 (83%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 16.0	Intersection LOS: B
Intersection Capacity Utilization 77.4%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Emerald Plaza



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	360	380	122	83	227	212	90	1272	85	94	780	113
Future Volume (vph)	360	380	122	83	227	212	90	1272	85	94	780	113
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.402			0.526			0.269			0.082		
Satd. Flow (perm)	709	3390	1474	932	3390	1469	478	3390	1471	146	3390	1468
Satd. Flow (RTOR)			130			130			134			134
Lane Group Flow (vph)	360	380	122	83	227	212	90	1272	85	94	780	113
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	30.5	30.5	11.5	30.5	30.5	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (s)	23.0	33.0	33.0	23.0	33.0	33.0	11.0	63.0	63.0	11.0	63.0	63.0
Total Split (%)	17.7%	25.4%	25.4%	17.7%	25.4%	25.4%	8.5%	48.5%	48.5%	8.5%	48.5%	48.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.3	2.3	2.3	2.3	2.3	2.3
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	43.9	28.4	28.4	26.8	16.9	16.9	66.2	58.7	58.7	67.3	59.2	59.2
Actuated g/C Ratio	0.34	0.22	0.22	0.21	0.13	0.13	0.51	0.45	0.45	0.52	0.46	0.46
v/c Ratio	0.90	0.51	0.29	0.33	0.52	0.70	0.29	0.83	0.12	0.55	0.51	0.15
Control Delay	63.5	47.6	7.9	33.7	55.8	32.9	16.5	37.7	1.0	36.2	19.9	5.2
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	63.5	47.6	7.9	33.7	55.8	32.9	16.5	37.7	1.0	36.2	19.9	5.2
LOS	E	D	A	C	E	C	B	D	A	D	B	A
Approach Delay		48.6			43.0			34.2			19.8	
Approach LOS		D			D			C			B	
Queue Length 50th (m)	77.6	46.0	0.0	14.8	29.7	20.3	10.1	148.6	0.0	5.4	72.0	5.6
Queue Length 95th (m)	#113.6	62.1	14.1	26.0	39.4	44.3	19.3	182.6	2.2	30.0	56.4	11.3
Internal Link Dist (m)		169.3			250.3			97.3			286.8	
Turn Bay Length (m)	100.0		120.0	130.0		105.0	85.0		95.0	140.0		175.0
Base Capacity (vph)	401	739	423	336	691	402	314	1532	738	171	1544	741
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	0.90	0.51	0.29	0.25	0.33	0.53	0.29	0.83	0.12	0.55	0.51	0.15

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 115 (88%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 34.9	Intersection LOS: C
Intersection Capacity Utilization 96.1%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Merivale & Meadowlands

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	12	6	0	9	2	1605	26	32	1029	13
Future Vol, veh/h	2	0	12	6	0	9	2	1605	26	32	1029	13
Conflicting Peds, #/hr	0	0	2	2	0	0	11	0	15	15	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	12	6	0	9	2	1605	26	32	1029	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1918	2761	534	2218	2754	831	1053	0	0	1646	0	0
Stage 1	1111	1111	-	1637	1637	-	-	-	-	-	-	-
Stage 2	807	1650	-	581	1117	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	41	19	491	24	19	313	657	-	-	389	-	-
Stage 1	223	283	-	105	157	-	-	-	-	-	-	-
Stage 2	341	155	-	467	281	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	33	14	486	19	14	309	651	-	-	384	-	-
Mov Cap-2 Maneuver	126	76	-	77	88	-	-	-	-	-	-	-
Stage 1	213	225	-	100	150	-	-	-	-	-	-	-
Stage 2	320	148	-	364	223	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.9	33.8	0.2	1.8
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	651	-	-	345	140	384	-	-
HCM Lane V/C Ratio	0.003	-	-	0.041	0.107	0.083	-	-
HCM Control Delay (s)	10.5	0.2	-	15.9	33.8	15.2	1.4	-
HCM Lane LOS	B	A	-	C	D	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	43	35	844	119	177	71	851	637	93	721	27
Future Volume (vph)	32	43	35	844	119	177	71	851	637	93	721	27
Satd. Flow (prot)	1695	1646	0	3288	1607	0	1695	3390	1517	1695	3365	0
Flt Permitted	0.950			0.950			0.246			0.169		
Satd. Flow (perm)	1689	1646	0	3250	1607	0	435	3390	1445	302	3365	0
Satd. Flow (RTOR)		28			52				587		3	
Lane Group Flow (vph)	32	78	0	844	296	0	71	851	637	93	748	0
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2		10.3	30.0	30.0	10.3	30.0	
Total Split (s)	44.0	34.0		44.0	34.0		12.0	41.0	41.0	12.0	41.0	
Total Split (%)	33.6%	26.0%		33.6%	26.0%		9.2%	31.3%	31.3%	9.2%	31.3%	
Yellow Time (s)	3.0	3.0		3.7	3.7		3.3	3.7	3.7	3.3	3.7	
All-Red Time (s)	3.8	3.8		2.5	2.5		2.0	2.3	2.3	2.0	2.3	
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)	6.8	6.8		6.2	6.2		5.3	6.0	6.0	5.3	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	
Act Effct Green (s)	8.0	16.8		36.3	46.9		57.0	49.3	49.3	59.2	52.1	
Actuated g/C Ratio	0.06	0.13		0.28	0.36		0.44	0.38	0.38	0.45	0.40	
v/c Ratio	0.31	0.33		0.93	0.49		0.28	0.67	0.70	0.43	0.56	
Control Delay	65.9	35.5		62.5	28.4		26.5	40.2	9.7	30.5	36.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	65.9	35.5		62.5	28.4		26.5	40.2	9.7	30.5	36.7	
LOS	E	D		E	C		C	D	A	C	D	
Approach Delay		44.3			53.6			27.1			36.0	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	8.1	12.5		107.7	53.0		9.4	95.5	8.3	12.5	79.1	
Queue Length 95th (m)	18.4	24.7		#141.4	68.6		22.9	#152.5	58.6	28.4	119.8	
Internal Link Dist (m)		214.0			445.3			280.9			385.6	
Turn Bay Length (m)	40.0			95.0			85.0			80.0		
Base Capacity (vph)	481	363		948	609		259	1274	909	218	1340	
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	0.07	0.21		0.89	0.49		0.27	0.67	0.70	0.43	0.56	

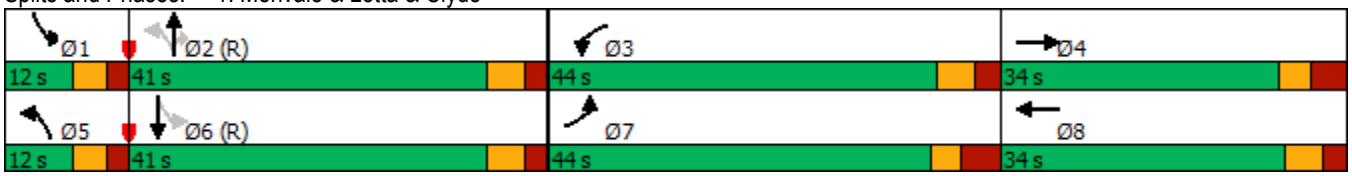
Intersection Summary
Cycle Length: 131
Actuated Cycle Length: 131
Offset: 98 (75%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

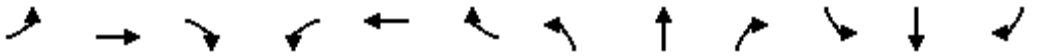
Maximum v/c Ratio: 0.93

Intersection Signal Delay: 38.0	Intersection LOS: D
Intersection Capacity Utilization 76.9%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Merivale & Lotta & Clyde





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	8	26	63	14	52	39	1631	32	78	1674	64
Future Volume (vph)	31	8	26	63	14	52	39	1631	32	78	1674	64
Satd. Flow (prot)	1695	1554	0	1695	1550	0	1695	3390	1517	1695	3390	1517
Flt Permitted	0.714			0.735			0.086			0.090		
Satd. Flow (perm)	1265	1554	0	1301	1550	0	153	3390	1420	161	3390	1433
Satd. Flow (RTOR)		26			52				86			86
Lane Group Flow (vph)	31	34	0	63	66	0	39	1631	32	78	1674	64
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	43.2	43.2		43.2	43.2		11.1	33.1	33.1	11.1	33.1	33.1
Total Split (s)	44.0	44.0		44.0	44.0		14.0	72.0	72.0	14.0	72.0	72.0
Total Split (%)	33.8%	33.8%		33.8%	33.8%		10.8%	55.4%	55.4%	10.8%	55.4%	55.4%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.2	4.2		4.2	4.2		2.4	2.4	2.4	2.4	2.4	2.4
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)	7.2	7.2		7.2	7.2		6.1	6.1	6.1	6.1	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	20.7	20.7		20.7	20.7		93.5	89.4	89.4	95.5	90.4	90.4
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.72	0.69	0.69	0.73	0.70	0.70
v/c Ratio	0.15	0.13		0.30	0.23		0.21	0.70	0.03	0.38	0.71	0.06
Control Delay	43.0	17.6		47.7	15.4		7.2	11.0	0.1	12.6	20.4	1.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	43.0	17.6		47.7	15.4		7.2	11.1	0.1	12.6	20.5	1.7
LOS	D	B		D	B		A	B	A	B	C	A
Approach Delay		29.7			31.2			10.8			19.5	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	7.5	1.9		15.7	3.4		0.6	20.3	0.0	3.3	114.3	0.0
Queue Length 95th (m)	14.0	9.6		24.3	13.6		m3.6	#254.3	m0.1	13.9	#267.6	4.2
Internal Link Dist (m)		182.8			218.9			60.6			280.9	
Turn Bay Length (m)				35.0					15.0	100.0		
Base Capacity (vph)	358	458		368	476		205	2333	1004	216	2357	1022
Starvation Cap Reductn	0	0		0	0		0	114	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	24	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.07		0.17	0.14		0.19	0.74	0.03	0.36	0.72	0.06

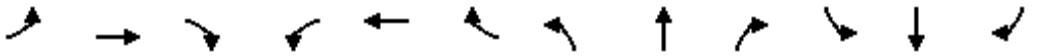
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 76 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 16.1	Intersection LOS: B
Intersection Capacity Utilization 83.6%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Merivale & Withrow/Capilano



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	16	20	64	1	196	18	1296	40	241	1466	241
Future Volume (vph)	45	16	20	64	1	196	18	1296	40	241	1466	241
Satd. Flow (prot)	1695	1605	0	1695	1478	0	1695	3371	0	3288	3305	0
Flt Permitted	0.378			0.734			0.950			0.950		
Satd. Flow (perm)	668	1605	0	1281	1478	0	1692	3371	0	3248	3305	0
Satd. Flow (RTOR)		20			172			4			22	
Lane Group Flow (vph)	45	36	0	64	197	0	18	1336	0	241	1707	0
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	35.5	35.5		35.5	35.5		11.7	31.2		11.7	31.2	
Total Split (s)	36.0	36.0		36.0	36.0		17.0	77.0		17.0	77.0	
Total Split (%)	27.7%	27.7%		27.7%	27.7%		13.1%	59.2%		13.1%	59.2%	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		3.0	2.5		3.0	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5		6.5	6.5		6.7	6.2		6.7	6.2	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)	18.0	18.0		18.0	18.0		7.0	79.1		13.5	93.3	
Actuated g/C Ratio	0.14	0.14		0.14	0.14		0.05	0.61		0.10	0.72	
v/c Ratio	0.49	0.15		0.36	0.56		0.20	0.65		0.71	0.72	
Control Delay	66.0	25.6		53.5	15.6		62.9	11.5		64.6	12.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.1	
Total Delay	66.0	25.6		53.5	15.6		62.9	11.6		64.6	12.4	
LOS	E	C		D	B		E	B		E	B	
Approach Delay		48.0			24.9			12.2			18.9	
Approach LOS		D			C			B			B	
Queue Length 50th (m)	11.4	3.8		16.0	6.0		4.8	84.3		31.4	66.7	
Queue Length 95th (m)	21.7	12.3		26.6	26.0		m6.8	38.6		#56.9	#97.4	
Internal Link Dist (m)		58.9			208.4			286.8			128.3	
Turn Bay Length (m)										100.0		
Base Capacity (vph)	151	379		290	468		134	2064		341	2378	
Starvation Cap Reductn	0	0		0	0		0	0		0	48	
Spillback Cap Reductn	0	0		0	2		0	47		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.30	0.09		0.22	0.42		0.13	0.66		0.71	0.73	

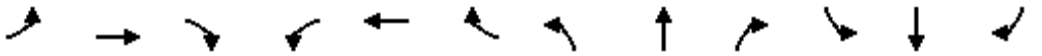
Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 65 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 17.5	Intersection LOS: B
Intersection Capacity Utilization 102.2%	ICU Level of Service G
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Emerald Plaza



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	307	154	182	492	170	195	1206	102	217	1116	289
Future Volume (vph)	166	307	154	182	492	170	195	1206	102	217	1116	289
Satd. Flow (prot)	1695	3390	1517	1695	3390	1517	1695	3390	1517	1695	3390	1517
Flt Permitted	0.232			0.460			0.142			0.079		
Satd. Flow (perm)	407	3390	1416	795	3390	1433	252	3390	1384	141	3390	1412
Satd. Flow (RTOR)			154			170			134			289
Lane Group Flow (vph)	166	307	154	182	492	170	195	1206	102	217	1116	289
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	11.5	30.5	30.5	11.5	30.5	30.5	11.0	38.0	38.0	11.0	38.0	38.0
Total Split (s)	19.0	31.0	31.0	19.0	31.0	31.0	17.0	59.0	59.0	21.0	63.0	63.0
Total Split (%)	14.6%	23.8%	23.8%	14.6%	23.8%	23.8%	13.1%	45.4%	45.4%	16.2%	48.5%	48.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	2.3	2.3	2.3	2.3	2.3	2.3
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)	6.5	6.5	6.5	6.5	6.5	6.5	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	34.8	22.5	22.5	35.0	22.6	22.6	66.0	54.9	54.9	74.2	59.0	59.0
Actuated g/C Ratio	0.27	0.17	0.17	0.27	0.17	0.17	0.51	0.42	0.42	0.57	0.45	0.45
v/c Ratio	0.72	0.52	0.41	0.61	0.84	0.44	0.78	0.84	0.15	0.83	0.73	0.36
Control Delay	52.1	52.0	10.3	43.5	65.1	10.2	40.3	40.8	2.1	59.2	30.2	8.1
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	52.1	52.0	10.3	43.5	65.1	10.2	40.3	40.8	2.1	59.2	30.2	8.1
LOS	D	D	B	D	E	B	D	D	A	E	C	A
Approach Delay		41.8			49.3			38.1			30.1	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	31.5	37.5	0.0	34.9	64.0	0.0	23.0	147.7	0.0	45.1	78.3	7.5
Queue Length 95th (m)	#52.9	52.0	18.1	54.4	83.2	19.1	#57.8	178.3	5.5	m#78.3	107.5	30.8
Internal Link Dist (m)		169.3			250.3			97.3			286.8	
Turn Bay Length (m)	100.0		120.0	130.0		105.0	85.0		95.0	140.0		175.0
Base Capacity (vph)	236	638	391	304	638	408	254	1433	662	265	1538	798
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	0.70	0.48	0.39	0.60	0.77	0.42	0.77	0.84	0.15	0.82	0.73	0.36

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 61 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 37.9	Intersection LOS: D
Intersection Capacity Utilization 96.0%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Merivale & Meadowlands

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	15	19	0	32	16	1604	46	11	1843	23
Future Vol, veh/h	3	0	15	19	0	32	16	1604	46	11	1843	23
Conflicting Peds, #/hr	0	0	0	0	0	0	27	0	45	45	0	27
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	15	19	0	32	16	1604	46	11	1843	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2738	3631	960	2648	3619	870	1893	0	0	1695	0	0
Stage 1	1904	1904	-	1704	1704	-	-	-	-	-	-	-
Stage 2	834	1727	-	944	1915	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	10	5	257	~ 11	5	295	312	-	-	372	-	-
Stage 1	71	115	-	95	145	-	-	-	-	-	-	-
Stage 2	329	142	-	282	114	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	4	2	251	~ 5	2	284	305	-	-	358	-	-
Mov Cap-2 Maneuver	18	24	-	25	29	-	-	-	-	-	-	-
Stage 1	23	112	-	30	46	-	-	-	-	-	-	-
Stage 2	96	45	-	265	111	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	63.5	199	5.7	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	305	-	-	79	58	358	-	-
HCM Lane V/C Ratio	0.052	-	-	0.228	0.879	0.031	-	-
HCM Control Delay (s)	17.5	5.7	-	63.5	199	15.4	0	-
HCM Lane LOS	C	A	-	F	F	C	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.8	4	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon