

## Engineering

- Land/Site Development
- Municipal Infrastructure
- Environmental/Water Resources
- Traffic/Transportation
- Recreational

## Planning

- Land/Site Development
- Planning Application Management
- Municipal Planning
- Urban Design
- Expert Witness (LPAT)
- Wireless Industry

## Landscape Architecture

- Streetscapes & Public Amenities
- Open Space, Parks & Recreation
- Community & Residential
- Commercial & Institutional
- Environmental Restoration

# Proposed Residential Development 1500 Merivale Road, Ottawa Transportation Impact Assessment



**Proposed Residential Development  
1500 Merivale Road  
Transportation Impact Assessment**

Prepared By:

**NOVATECH**  
Suite 200, 240 Michael Cowpland Drive  
Ottawa, Ontario  
K2M 1P6

September 2021

Novatech File: 121009  
Ref: R-2021-016

September 16, 2021

City of Ottawa  
Planning and Growth Management Department  
110 Laurier Ave. W., 4<sup>th</sup> Floor,  
Ottawa, Ontario K1P 1J1

**Attention: Mr. Mike Giampa**  
**Senior Engineer, Infrastructure Applications**

Dear Mr. Giampa:

**Reference: 1500 Merivale Road**  
**Transportation Impact Assessment**  
**Novatech File No. 121009**

---

We are pleased to submit the following Transportation Impact Assessment, in support of a Site Plan Control application at 1500 Merivale Road, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2017).

If you have any questions or comments regarding this report, please feel free to contact Brad Byvelds, or the undersigned.

Yours truly,

**NOVATECH**



Joshua Audia, B.Sc.  
E.I.T. | Transportation/Traffic



## **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<sup>1</sup> or registered<sup>2</sup> 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 this 16<sup>th</sup> day of September, 2021.  
(City)

Name: Brad Byvelds, P.Eng.  
(Please Print)

Professional Title: Project Coordinator, Transportation/Traffic

*B. Byvelds*

Signature of Individual certifier that s/he meets the above four criteria

<b>Office Contact Information (Please Print)</b>	
Address:	240 Michael Cowpland Drive, Suite 200
City / Postal Code:	Ottawa, ON, K2M 1P6
Telephone / Extension:	613-254-9643 x 286
E-Mail Address:	b.byvelds@novatech-eng.com

**TABLE OF CONTENTS**

**EXECUTIVE SUMMARY ..... I**

**1.0 SCREENING ..... 1**

    1.1 INTRODUCTION ..... 1

    1.2 PROPOSED DEVELOPMENT ..... 1

    1.3 SCREENING FORM ..... 2

**2.0 SCOPING ..... 2**

    2.1 EXISTING CONDITIONS ..... 2

        2.1.1 Roadways ..... 2

        2.1.2 Intersections ..... 3

        2.1.3 Driveways ..... 5

        2.1.4 Pedestrian and Cycling Facilities ..... 6

        2.1.5 Transit ..... 6

        2.1.6 Area Traffic Management ..... 7

        2.1.7 Existing Traffic Volumes ..... 7

        2.1.8 Collision Records ..... 9

    2.2 PLANNED CONDITIONS ..... 14

        2.2.1 Planned Transit and Roadway Projects ..... 14

        2.2.2 Other Area Developments ..... 15

    2.3 STUDY AREA AND TIME PERIODS ..... 15

    2.4 EXEMPTIONS REVIEW ..... 15

**3.0 FORECASTING ..... 17**

    3.1 DEVELOPMENT-GENERATED TRAVEL DEMAND ..... 17

        3.1.1 Trip Generation ..... 17

        3.1.2 Trip Distribution ..... 20

        3.1.3 Trip Assignment ..... 21

    3.2 BACKGROUND TRAFFIC ..... 21

        3.2.1 Other Area Developments ..... 21

        3.2.2 General Background Growth Rate ..... 22

    3.3 FUTURE TRAFFIC CONDITIONS ..... 23

    3.4 DEMAND RATIONALIZATION ..... 23

        3.4.1 Existing Intersection Operations ..... 23

        3.4.2 2031/2038 Background Intersection Operations ..... 32

**4.0 ANALYSIS ..... 34**

    4.1 DEVELOPMENT DESIGN ..... 34

        4.1.1 Design for Sustainable Modes ..... 34

        4.1.2 Circulation and Access ..... 35

    4.2 PARKING ..... 35

    4.3 BOUNDARY STREETS ..... 36

    4.4 ACCESS INTERSECTIONS ..... 37

        4.4.1 Access Design ..... 37

        4.4.2 Access Operations ..... 38

    4.5 TRANSPORTATION DEMAND MANAGEMENT ..... 38

        4.5.1 Context for TDM ..... 38

        4.5.2 Need and Opportunity ..... 39

        4.5.3 TDM Program ..... 39

    4.6 TRANSIT ..... 39

    4.7 INTERSECTION DESIGN ..... 44

4.7.1 Intersection MMLOS Review.....44  
 4.7.2 2031 Total Intersection Operations .....46  
 4.7.3 2038 Total Intersection Operations .....48  
**5.0 CONCLUSIONS AND RECOMMENDATIONS .....49**

**Figures**

Figure 1: Site Location ..... 1  
 Figure 2: OC Transpo Bus Stop Locations ..... 7  
 Figure 3: Existing Traffic Volumes..... 8  
 Figure 4: Baseline Road Planned BRT Corridor Modifications ..... 14  
 Figure 5: 2031 Proposed Site-Generated Traffic Volumes ..... 24  
 Figure 6: 2038 Proposed Site-Generated Traffic Volumes ..... 25  
 Figure 7: 2031/2038 Other Area Development-Generated Traffic Volumes..... 26  
 Figure 8: 2031/2038 Background Traffic Volumes..... 27  
 Figure 9: 2031 Total Traffic Volumes ..... 28  
 Figure 10: 2038 Total Traffic Volumes ..... 29

**Tables**

Table 1: Reported Collisions ..... 9  
 Table 2: TIA Exemptions ..... 16  
 Table 3: Proposed Development Mode Shares ..... 18  
 Table 4: Proposed Residential – Peak Period Trip Generation..... 18  
 Table 5: Proposed Residential – Peak Period Trips by Mode Share ..... 18  
 Table 6: Proposed Residential – Peak Hour Trips by Mode Share ..... 19  
 Table 7: Proposed Commercial – Peak Hour Trip Generation..... 19  
 Table 8: Proposed Commercial – Peak Hour Trips by Mode Share..... 19  
 Table 9: Proposed Development – Trip Generation Estimates ..... 20  
 Table 10: Existing Traffic Operations ..... 30  
 Table 11: Existing Queues ..... 30  
 Table 12: 2031/2038 Background – Traffic Operations ..... 32  
 Table 13: 2031/2038 Background – Queues ..... 32  
 Table 14: Parking Requirements..... 35  
 Table 15: Segment MMLOS Summary..... 36  
 Table 16: Access Intersection Operations ..... 38  
 Table 17: Unit Breakdown by Phase ..... 38  
 Table 18: Existing and Projected Transit Utilization..... 40  
 Table 19: Intersection MMLOS Summary..... 44  
 Table 20: 2031 Total – Traffic Operations ..... 47  
 Table 21: 2031 Total – Queues..... 47  
 Table 22: 2038 Total – Traffic Operations ..... 48  
 Table 23: 2038 Total – Queues..... 49

**Appendices**

- Appendix A: Proposed Site Plan
- Appendix B: TIA Screening Form
- Appendix C: OC Transpo Route Maps
- Appendix D: Traffic Count Data
- Appendix E: Collision Records
- Appendix F: Relevant Excerpts of *TRANS Trip Generation Manual* (WSP, 2020)
- Appendix G: Table 14-1 of the *ITE Trip Generation Handbook, 5<sup>th</sup> Edition*
- Appendix H: Other Area Developments
- Appendix I: Strategic Long-Range Model and Intersection Growth Rate Figures
- Appendix J: Signal Timing Plans
- Appendix K: Existing Synchro Analysis
- Appendix L: Background Synchro Analysis
- Appendix M: Transportation Demand Management Checklists
- Appendix N: MMLOS Analysis
- Appendix O: Total Synchro Analysis



## EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared for the property located at 1500 Merivale Road, in support of a Site Plan Control application. The subject site is approximately 14.4 acres in area and was most recently occupied by the CJOH-TV television station until 2010. The CKQB-FM radio station at 1504 Merivale Road currently uses a driveway through the subject site for parking access.

At full buildout, the proposed development will consist of 1,967 dwellings and approximately 12,150 ft<sup>2</sup> GFA of ground-floor retail, and will be built in ten phases. A total of 2,008 parking spaces will be provided in three levels of underground parking. Access to the proposed development will be provided via two driveways to Merivale Road. Phase 1 of the proposed development is anticipated to be completed in 2023. For the purposes of this report, the ultimate development is assumed to be built out by 2038.

The study area for this report includes the boundary roadways Baseline Road, Merivale Road, and Clyde Avenue, as well as the signalized intersections at Baseline Road/Merivale Road, Baseline Road/Clyde Avenue, Clyde Avenue/Merivale Road/Lotta Avenue, Merivale Road/Burris Lane, and Merivale Road/Loblaws Plaza. The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. Analysis will be completed for the 2031 midpoint year and 2038 build-out year. Due to the extended build-out period, a 5-year horizon has not been analyzed.

The conclusions and recommendations of this TIA can be summarized as follows:

### Forecasting

- At 50% buildout, the proposed development is estimated to generate 431 person trips (including 118 vehicle trips) during the AM peak hour, and 451 person trips (including 131 vehicle trips) during the PM peak hour.
- At 100% buildout, the proposed development is estimated to generate 858 person trips (including 187 vehicle trips) during the AM peak hour, and 891 person trips (including 219 vehicle trips) during the PM peak hour.

### Development Design and Parking

- Concrete sidewalks will connect to the existing pedestrian facilities on the south side of Baseline Road, north side of Merivale Road, and the east side of Clyde Avenue. Within the site, sidewalks will be provided on the outside of the internal crescent roadway that connects to Merivale Road. An on-site pathway for cyclists and pedestrians will be provided between Clyde Avenue and Baseline Road.
- A total of 497 bicycle spaces will be provided in select landscaped areas outdoors, and 1,189 bicycle spaces will be provided in secure or sheltered areas in the underground parking garage.
- Residents of every building of the proposed development will be within 400m of bus stops on one or more of the boundary streets (i.e. Baseline Road, Merivale Road, or Clyde Avenue).

- All required TDM-supportive design and infrastructure measures are met by the proposed development.
- Pick-ups and drop-offs will occur curbside on the internal crescent roadway. Garbage collection will also take place at collection points near each parking garage entrance along the internal crescent roadway. The internal crescent will also form the on-site fire route.
- The proposed number of vehicle and bicycle parking spaces meet the requirements outlined in the City's ZBL.

### Boundary Streets

- The results of the segment multi-modal level of service (MMLOS) analysis can be summarized as follows:
  - Merivale Road and Clyde Avenue do not meet the target pedestrian level of service (PLOS);
  - Merivale Road and Clyde Avenue do not meet the target bicycle level of service (BLOS);
  - Merivale Road achieves a transit level of service (TLOS) E and Clyde Avenue achieves a TLOS D, however no targets are identified;
  - Merivale Road and Clyde Avenue both meet the target truck level of service (TkLOS).
- Both Merivale Road and Clyde Avenue do not meet the target PLOS A. The best possible PLOS for both streets is a PLOS D, which can be achieved by providing a 2.0m-wide sidewalk with a minimum boulevard width of 2.0m. This is identified for the City's consideration.
- Both Merivale Road and Clyde Avenue do not meet the target BLOS C. The target can be achieved through the implementation of curbside bike lanes with a minimum width of 1.2m. This is identified for the City's consideration.

### Access Intersections

- The proposed accesses to Merivale Road meet all relevant requirements of the City's *Private Approach By-Law*, and meets the minimum clear throat length and corner clearance requirements outlined in the Transportation Association of Canada's *Geometric Design Guide for Canadian Roads*.
- There are no operational concerns anticipated at the proposed accesses to the development, as they will operate at an Auto LOS C or better during the peak hours.

### Transportation Demand Management

- A review of the City's *TDM Measures Checklist* has been conducted by the proponent, who has committed to providing the following TDM measures:
  - Display local area maps with walking/cycling access routes and key destinations at major entrances;
  - Display relevant transit schedules and route maps at entrances;
  - Contract with provider to install on-site carshare vehicles and promote their use by residents;
  - Unbundle parking cost from monthly rent;
  - Provide a multimodal travel option information package to new residents.

Transit

- The ultimate development is anticipated to generate 480 transit trips (including 150 inbound trips and 330 outbound trips) during the AM peak hour, and 428 transit trips (including 247 inbound trips and 181 outbound trips) during the PM peak hour.
- The ultimate development is not anticipated to have a significant impact on the existing operations of OC Routes 50, 80, 81, or 88.

Intersection MMLoS

- The results of the intersection MMLoS analysis can be summarized as follows:
  - No study area intersections meet the target PLOS;
  - No study area intersections meet the target BLOS;
  - Baseline Road/Merivale Road and Baseline Road/Clyde Avenue do not meet the target TLOS;
  - Baseline Road/Merivale Road and Baseline Road/Clyde Avenue meet the target TkLOS, while Clyde Avenue/Merivale Road/Lotta Avenue, Merivale Road/Burriss Lane, and Merivale Road/Loblaws Plaza do not;
  - Clyde Avenue/Merivale Road/Lotta Avenue, Merivale Road/Burriss Lane, and Merivale Road/Loblaws Plaza meet the target vehicular level of service (Auto LOS), while Baseline Road/Merivale Road and Baseline Road/Clyde Avenue do not.
- Pedestrian Level of Service (PLOS)
  - All approaches at all study area intersections do not meet the target PLOS A. Approaches at Baseline Road/Merivale Road and Baseline Road/Clyde Avenue are anticipated to improve as part of the road modifications associated with the future Baseline Road BRT corridor. The north, south, and east approaches of Clyde Avenue/Merivale Road/Lotta Avenue, and the north and south approaches of Merivale Road/Burriss Lane and Merivale Road/Loblaws Plaza meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. This is identified for the City's consideration.
- Bicycle Level of Service (BLOS)
  - All approaches at Baseline Road/Merivale Road and Baseline Road/Clyde Avenue do not meet the target BLOS A. Based on the Baseline Road BRT functional design, these intersections will include full segregated cycling facilities on each approach, along with a protected intersection design to facilitate left turns off-road. This will improve all approaches to the target BLOS A.
  - The north, south, and east approaches at Clyde Avenue/Merivale Road/Lotta Avenue do not meet the target BLOS C. To achieve the target, curbside bike lanes or cycle tracks would be required at these approaches, along with two-stage left-turn bike boxes. This is identified for the City's consideration.
  - The north and south approaches at Merivale Road/Burriss Lane and Merivale Road/Loblaws Plaza do not meet the target BLOS B. To achieve the target, two-stage left-turn bike boxes would be required, including right turn on red (RTOR) restrictions at the east/west approaches. This is identified for the City's consideration.

- Transit Level of Service (TLOS)
  - All approaches at Baseline Road/Merivale Road and Baseline Road/Clyde Avenue do not meet the target TLOS A. The planned modifications on Baseline Road are anticipated to significantly improve transit operations along Baseline Road. It is also anticipated that the planned transit priority measures on Merivale Road per the 2031 Network Concept will also improve transit operations along that roadway.
- Truck Level of Service (TkLOS)
  - The north approach at Clyde Avenue/Merivale Road/Lotta Avenue do not meet the target TkLOS D. The receiving lane on Lotta Avenue is approximately 8m in width, before narrowing downstream of the intersection. Therefore, no recommendations are identified.
  - The north and south approaches at Merivale Road/Burris Lane do not meet the target TkLOS D. Since the TkLOS represents the ability for trucks to turn right onto Burris Lane or an access to Loblaws Plaza, no recommendations are identified. It should be noted that accesses designed for loading trucks to Loblaws Plaza are provided elsewhere.
  - The north and south approaches at Merivale Road/Loblaws Plaza do not meet the target TkLOS D. Since loading truck accesses to the Loblaws Plaza and Merivale Market shopping centres are provided elsewhere on their respective sites, no recommendations are identified.

#### Existing Intersection Operations

- During the AM peak hour, the following movements are identified as over-capacity:
  - Baseline Road/Merivale Road
    - Southbound left turn, eastbound left turn, eastbound through, and westbound through movements;
  - Baseline Road/Clyde Avenue
    - Northbound through/right turn, eastbound left turn, and eastbound through movements.
- During the PM peak hour, the following movements are identified as over-capacity:
  - Baseline Road/Merivale Road
    - Southbound left turn, eastbound left turn, westbound left turn, and westbound through movements;
  - Baseline Road/Clyde Avenue
    - Northbound through/right turn, southbound left turn, eastbound left turn, and westbound through movements;
  - Clyde Avenue/Merivale Road/Lotta Avenue
    - Westbound left turn movement.
- During the AM peak hour, the Synchro analysis does not identify any average (50<sup>th</sup>-percentile) or maximum (95<sup>th</sup>-percentile) queue lengths for turning movements that exceed the storage length provided for those movements, and does not identify any queue lengths for any movements that extend through upstream intersections.

- During the PM peak hour, the average and maximum queue lengths for the westbound left turn movement at Clyde Avenue/Merivale Road/Lotta Avenue exceed the storage length of the auxiliary left turn lane. This queueing is not anticipated to interfere with the ability of westbound through or right turning vehicles to complete their manoeuvres, as the dual westbound left turn lanes include one auxiliary lane and one continuous lane on Merivale Road.

#### 2038 Background Intersection Operations

- Traffic throughout the study area could be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate times of travel for drivers, and alternate routes of travel. It is assumed that the Baseline Road BRT corridor will increase the transit modal share and decrease the auto modal share by 2031.
- As congestion increases within the study area, some motorists may alter their travel times to occur outside of the peak hours and/or alter their routes to other roadways within proximity of the study area.
- During the AM peak hour, the following volume reductions are required to meet the target Auto LOS E:
  - Baseline Road/Merivale Road
    - Southbound left turn: reduction of 40 vehicles required;
    - Eastbound left turn: reduction of 40 vehicles required;
    - Westbound through/right turn: reduction of 100 vehicles required.
- During the PM peak hour, the following volume reductions are required to meet the target Auto LOS E:
  - Baseline Road/Merivale Road
    - Southbound left turn: reduction of 90 vehicles required;
    - Southbound through/right turn: reduction of 10 vehicles required;
    - Eastbound left turn: reduction of 60 vehicles required;
    - Westbound through/right turn: reduction of 140 vehicles required.
  - Baseline Road/Clyde Avenue
    - Northbound left turn: reduction of 10 vehicles required;
    - Northbound through/right turn: reduction of 70 vehicles required;
    - Southbound left turn: reduction of 60 vehicles required;
    - Eastbound left turn: reduction of 30 vehicles required;
    - Westbound through/right turn: reduction of 360 vehicles required.

#### 2038 Total Intersection Operations

- Traffic generated by the proposed development is anticipated to have marginal operational effects on most movements within the study area. The most significant impact identified is the westbound left turn movement at Baseline Road/Merivale Road, as the maximum queue length for this movement is anticipated to exceed the storage length shown in the Baseline Road BRT functional design. Based on this functional design, it is anticipated that the westbound left turn lane can be extended further to accommodate the maximum queue without impacting the planned median bus lanes on Baseline Road.

## 1.0 SCREENING

### 1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared for the property located at 1500 Merivale Road, in support of a Site Plan Control application. The subject site (See **Figure 1**) is approximately 14.4 acres in area and was most recently occupied by the CJOH-TV television station until 2010. The CKQB-FM radio station at 1504 Merivale Road currently uses a driveway through the subject site for parking access.

The subject site is surrounded by the following:

- Baseline Road and commercial land uses to the north,
- Merivale Road, and commercial or residential land uses to the south,
- The Loblaws Plaza Shopping Centre and other commercial land uses to the east, and
- Clyde Avenue and commercial or residential land uses to the west.

**Figure 1: Site Location**



### 1.2 Proposed Development

On Schedule B of the City of Ottawa’s Official Plan, the subject site is designated as ‘General Urban Area,’ with frontage onto Baseline Road, Clyde Avenue, and Merivale Road, all of which have an Arterial Mainstreet designation. The property is zoned ‘Arterial Mainstreet’ (AM10[2217] H(34)).

At full buildout, the proposed development will consist of 1,967 dwellings and approximately 12,150 ft<sup>2</sup> GFA of ground-floor retail, and will be built in ten phases. A total of 2,008 parking spaces will be provided in three levels of underground parking. Access to the proposed development will be provided via two driveways to Merivale Road. Phase 1 of the proposed development is anticipated to be completed in 2023. For the purposes of this report, the ultimate development is assumed to be built out by 2038.

The proposed site plan is included in **Appendix A**.

### 1.3 Screening Form

The City's 2017 TIA Guidelines identify three triggers for completing a TIA report, including trip generation, location, and safety. The criteria for each trigger are outlined in the City's TIA Screening Form, which is included in **Appendix B**. The trigger results are as follows:

- Trip Generation Trigger – The development is expected to generate over 60 person trips/peak hour; further assessment **is required** based on this trigger.
- Location Triggers – The development proposes new driveways to a Spine Cycling Route (Merivale Road) and is located in a Design Priority Area; further assessment **is required** based on this trigger.
- Safety Triggers – There is a documented history of traffic operations/safety concerns on the boundary streets within 500m of the development; further assessment **is required** based on this trigger.

## 2.0 SCOPING

### 2.1 Existing Conditions

#### 2.1.1 Roadways

All roadways within the study area fall under the jurisdiction of the City of Ottawa.

Merivale Road is an arterial roadway that generally runs on a north-south alignment between Prince of Wales Drive and Island Park Drive. Within the study area, it has a five-lane undivided urban cross-section (two through lanes in each direction and a two-way left turn lane), concrete sidewalks on both sides, and a posted speed limit of 60 km/h. Merivale Road is classified as a truck route allowing full loads. Street parking is restricted. The OP identifies a ROW protection of 44.5m between Baseline Road and West Hunt Club Road.

Baseline Road is an arterial roadway that generally runs on an east-west alignment between Robertson Road and Prince of Wales Drive (where it continues as Heron Road). Within the study area, it has a four-lane divided urban cross-section (two through lanes in each direction), concrete sidewalks on both sides, and a posted speed limit of 60 km/h. Along the site frontage there are additional left turn lanes in each direction for the signalized intersections at Clyde Avenue and 1357 Baseline Road. The street is classified as a truck route allowing full loads. The OP identifies a ROW protection of 44.5m between the Greenbelt Boundary and Prince of Wales Drive.

Clyde Avenue is an arterial roadway that generally runs on a north-south alignment between Maitland Avenue and Merivale Road. North of Maitland Avenue it continues as a local street. Within the study area, it has a five-lane undivided urban cross-section (two through lanes in each direction and a two-way left turn lane), concrete sidewalks on both sides, and a posted speed limit of 60 km/h. Clyde Avenue between Baseline Road and Merivale Road is classified as a truck route allowing full loads. The OP identifies a ROW protection of 34m between Baseline Road and Merivale Road.

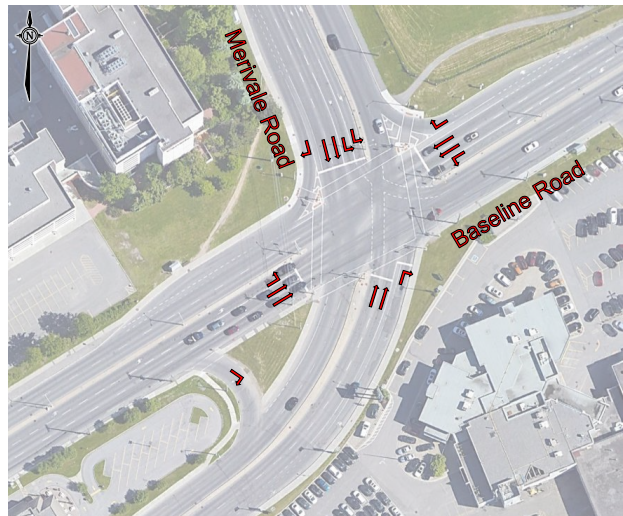
Lotta Avenue is a collector roadway that generally runs on an east-west alignment between Merivale Road and its terminus in the west. Within the study area, it has a two-lane undivided rural cross-section but becomes urban with sidewalks as it approaches Merivale Road. It has a posted speed limit of 40 km/h and has painted speed limit markings for traffic entering the subdivision from Merivale Road/Clyde Avenue. Street parking is restricted. The OP identifies a ROW protection of 24m between Cordova Street and Merivale Road.

Burris Lane is a local street that generally runs on a north-south alignment between Merivale Road and Eleanor Drive. Within the study area, it has a two-lane undivided urban cross-section, concrete sidewalks on both sides and a posted speed limit of 40 km/h.

### 2.1.2 Intersections

#### Baseline Road/Merivale Road

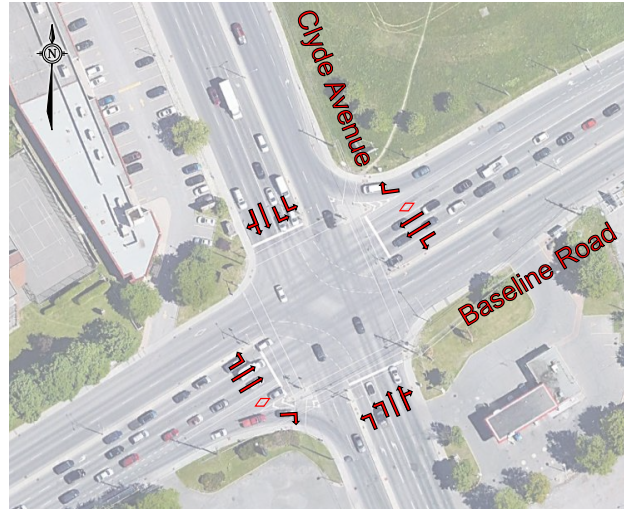
- Signalized four-legged intersection
- Northbound left turns are restricted
- Northbound Approach (Merivale Road): two through lanes, one pocket bike lane, and one right turn lane
- Southbound Approach (Merivale Road): two left turn lanes, two through lanes, one bike lane, and one right turn channelized lane
- Eastbound Approach (Baseline Road): one left turn lane, two through lanes, and one right turn channel
- Westbound Approach (Baseline Road): one left turn lane, two through lanes, one pocket bike lane, and one right turn channelized lane
- Zebra-striped crosswalks are provided on all approaches (not shown in aerial)





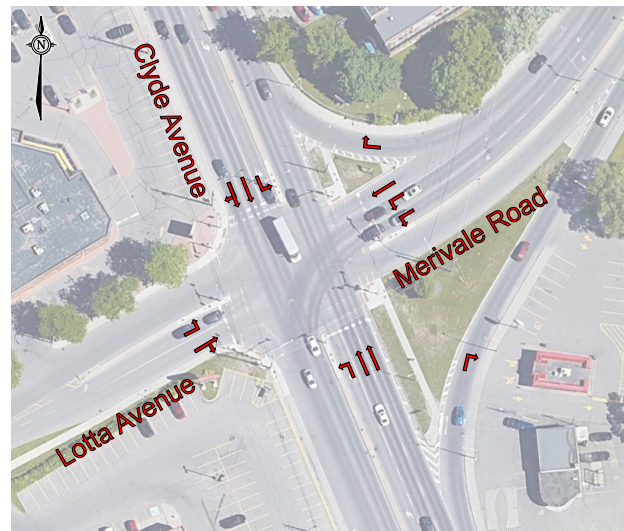
Baseline Road/Clyde Avenue

- Signalized four-legged intersection
- Northbound/Southbound Approaches (Clyde Avenue): two left turn lanes, one through lane, and one shared through/right turn lane
- Eastbound Approach (Baseline Road): one left turn lane, two through lanes, one pocket bike lane, one transit-only through lane, one channelized right turn lane
- Westbound Approach (Baseline Road): one left turn lane, two through lanes, one transit-only through lane, one bike lane, and one right turn channelized lane
- Standard crosswalks are provided on all approaches



Clyde Avenue/Merivale Road/Lotta Avenue

- Signalized four-legged intersection
- Northbound Approach (Merivale Road): one left turn lane, two through lanes, and one channelized right turn lane
- Southbound Approach (Clyde Avenue): one left turn lane, one through lane, and one shared through/right turn lane
- Eastbound Approach (Lotta Avenue): one left turn lane and one shared through/right turn lane
- Westbound Approach (Merivale Road): two left turn lanes, one through lane, and one channelized right turn lane
- Standard crosswalks are provided on all approaches



Merivale Road/Burris Lane/Civic #1454

- Signalized four-legged intersection
- Northbound and Southbound Approaches (Merivale Road): one left turn lane, one through lane, and one shared through/right turn lane
- Eastbound/Westbound Approaches (Burris Lane and Civic #1454): one left turn lane and one shared through/right turn lane
- Standard crosswalks are provided on all approaches



Merivale Road/

Loblaws Plaza (Civic #1460)/Civic #1465

- Signalized four-legged intersection
- Northbound and Southbound Approaches (Merivale Road): one left turn lane, one through lane, and one shared through/right turn lane
- Eastbound/Westbound Approaches (Civic #1460 and Civic #1465): one left turn lane and one shared through/right turn lane
- Standard crosswalks are provided on all approaches



**2.1.3 Driveways**

In accordance with the 2017 TIA Guidelines, a review of adjacent driveways along the boundary roads are provided as follows:

**Baseline Road, North Side:**

- One right-in only and one signalized driveway to a commercial development at 1357 Baseline Road
- One signalized driveway to an office development at 1339 Baseline Road

**Baseline Road, South Side:**

- One RIRO commercial driveway for 1432 Baseline Road
- Two RIRO commercial driveways for 1375 Clyde Avenue
- One RIRO commercial driveway for 1384 Baseline Road
- One RIRO commercial driveway for 1500 Merivale Road (site)
- One RIRO commercial driveway for 1374 Baseline Road
- One RIRO commercial driveway for 1500 Merivale Road (site)
- One signalized commercial driveway for 1460 Merivale Road

**Clyde Avenue, West Side:**

- Two RIRO commercial driveways for 1442 Baseline Road
- One RIRO and one full access driveway to commercial developments at 1370 Clyde and 5 Starwood
- Full movement intersection at Starwood Road

**Clyde Avenue, East Side**

- Two RIRO commercial driveways for 1432 Baseline Road
- One RIRO commercial driveway for 1375 Clyde Avenue
- One all-movement commercial driveway for 1377 Clyde Avenue
- Two commercial driveways (one entering, one exiting) for 1383 Clyde Avenue
- One commercial driveway for 1500 Merivale Road (site)

**Merivale Road, West Side:**

- Two commercial driveways (one signalized) for 1460/1454 Merivale Road
- Full movement intersection at Kimway Crescent (site)
- Two commercial driveways for 1480 Merivale Road
- One commercial driveway for 1486 Merivale Road
- One commercial driveway for 1500 Merivale Road (site)

**Merivale Road, East Side:**

- One signalized and one unsignalized all-movement commercial driveway for 1465 Merivale Road
- Two all-movement institutional driveways (church) for 7 Gilbey Drive
- RIRO intersection at Gilbey Drive
- Two all-movement commercial driveways for 1485 Merivale Road
- Two all-movement commercial driveways for 1487 Merivale Road
- One commercial driveway for 1493 Merivale Road
- One right-in, right-out, left in driveway for 1499 Merivale Road
- Two RIRO driveways for 1503 Merivale Road
- One RIRO driveway for 1507 Merivale Road

**2.1.4 Pedestrian and Cycling Facilities**

Sidewalks are provided on both sides of Baseline Road, Merivale Road, Clyde Avenue, and Burris Lane. There is a multi-use pathway on the east side of Merivale Road north of Baseline Road, connecting to the experimental farm pathway.

In the City of Ottawa's primary cycling network, Baseline Road, Merivale Avenue, and Clyde Avenue are classified as Spine Routes and Burris Lane is a local route. Baseline Road is also classified as a Cross-Town Bikeway. There are bicycle lanes running along Merivale Road north of Baseline Road and on the north side of Baseline Road between Clyde Avenue and the signalized access to 1357 Baseline Road.

**2.1.5 Transit**

There are numerous bus stops (See **Figure 2**) near the subject site. The closest stops to the site are stops #4484 and #4043 along Baseline Road, stops #4488 and #4489 along Merivale Road, and stop #4821 along Clyde Avenue. There are several additional stops along these roadways, many within 400m of the site. These transit stops provide access to transit routes #50, #80, #81, and #88.

Route #50 travels between Lincoln Fields and Tunney's Pasture on 30-minute headways, Monday-Saturday.

Route #80 travels between Barrhaven Centre and Tunney's Pasture on 15-minute headways with all-day service, 7-days per week.

Route #81 travels between Tunney's Pasture and Clyde Avenue on 30-minute headways with all-day service, 7-days per week (no evening service on weekends).

Route #88 travels between Terry Fox and Hurdman Transit Station on 10-minute headways during peak hours. It operates with all-day service, 7-days per week.

Figure 2: OC Transpo Bus Stop Locations



OC Transpo Route information is included in **Appendix C**.

### 2.1.6 Area Traffic Management

There are no Area Traffic Management (ATM) studies within the study area that have been completed or are currently in progress. There are painted speed limit markings on Lotta Avenue.

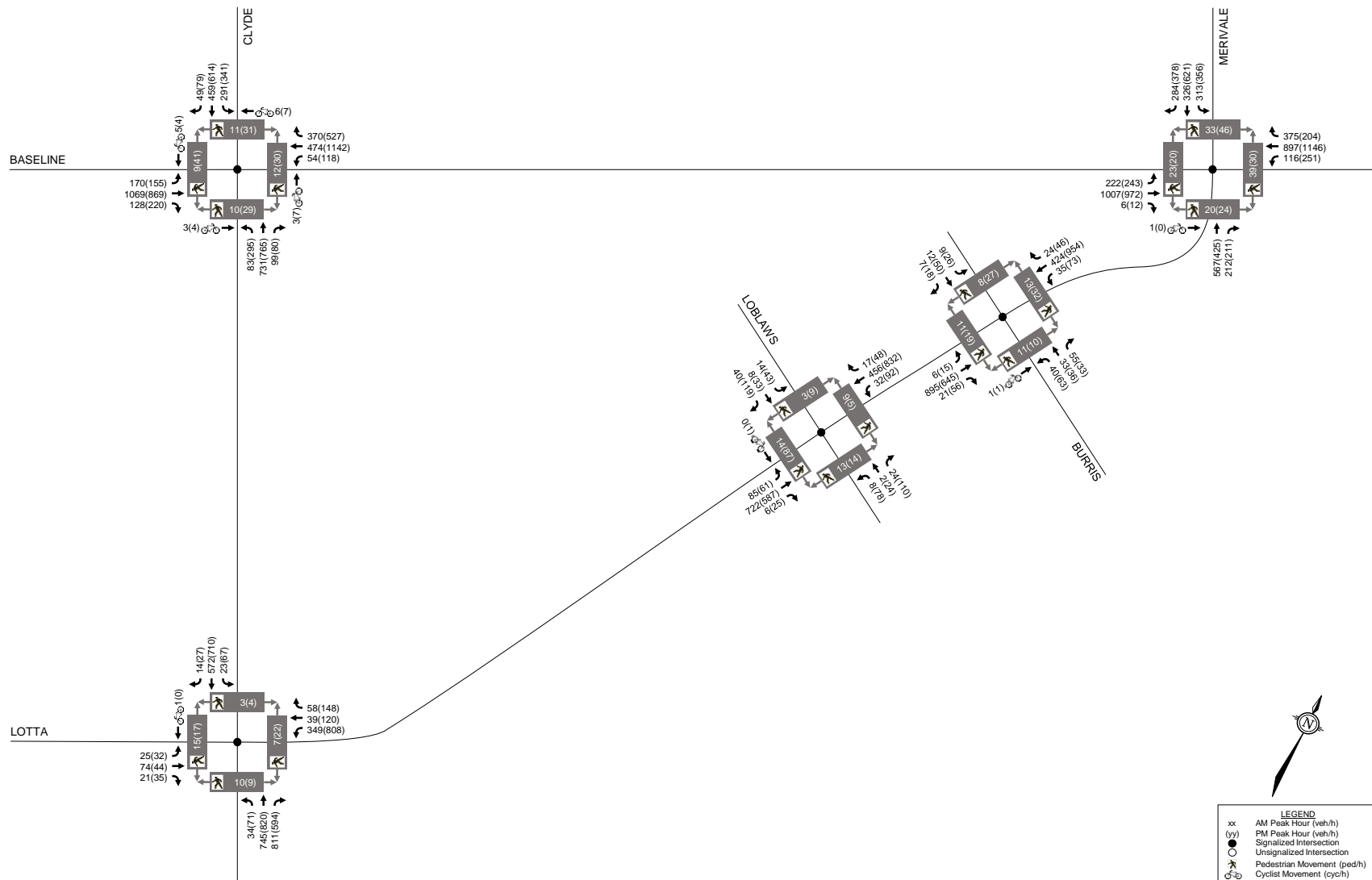
### 2.1.7 Existing Traffic Volumes

Weekday traffic counts completed by the City of Ottawa were used to determine the existing pedestrian, cyclist, and vehicular traffic volumes at the study area intersections. These counts were completed on the dates listed below:

- Baseline Road/Merivale Road February 9, 2016
- Baseline Road/Clyde Avenue August 21, 2019
- Clyde Avenue/Merivale Road/Lotta Avenue February 10, 2020
- Merivale Road/Burris Lane January 15, 2019
- Merivale Road/Loblaws Plaza February 21, 2018

Observed weekday AM and PM peak hour traffic volumes at the study area intersections are shown in **Figure 3**. Peak hour summary sheets of the above traffic counts are included in **Appendix D**.

Figure 3: Existing Traffic Volumes



### 2.1.8 Collision Records

Historical collision data from the last five years were obtained from the City’s Public Works and Service Department for the study area intersections. Copies of the collision summary reports are included in **Appendix E**.

The collision data have been evaluated to identify collision patterns. **Table 1** summarizes the number of collisions at each intersection from January 1, 2015 to December 31, 2019. During the five-year period there were no reported fatal collisions in the analyzed area.

**Table 1: Reported Collisions**

Intersection/ Street Segment	Impact Types					Total
	Angle	Sideswipe	Rear End	Turning Movement	SMV <sup>(1)</sup> / Other	
Baseline Road/ Merivale Road	6	22	66	6	5	<b>105</b>
Baseline Road/ Clyde Avenue	14	23	75	9	5	<b>126</b>
Clyde Avenue/ Merivale Road/Lotta Avenue	7	18	58	21	7	<b>111</b>
Merivale Road/ Burris Lane	5	3	7	3	2	<b>20</b>
Merivale Road/ Loblaws Plaza	3	-	3	3	-	<b>9</b>
Clyde Avenue/ Starwood Road	6	1	-	3	-	<b>10</b>
Merivale Road/ Gilbey Drive	1	-	-	1	-	<b>2</b>
Clyde Avenue between Clyde Avenue and Starwood Road	6	6	1	6	4	<b>23</b>
Clyde Avenue between Starwood Road and Lotta Avenue	1	1	4	1	1	<b>8</b>
Merivale Road between Clyde Avenue and Gilbey Drive	4	1	8	8	1	<b>22</b>

1. SMV = Single Motor Vehicle

#### Baseline Road/Merivale Road

Nineteen of the one hundred and five collisions caused an injury. Eighty-two collisions occurred in clear conditions, ten in rain conditions, eight in snow conditions, three in freezing rain, one in drifting snow, and one in strong wind. None of the collisions involved pedestrians or cyclists.

Of the **sixty-six rear-end** impacts at this intersection:

- Eighteen occurred in poor driving conditions;
- Sixteen occurred at the northbound approach;
- Ten occurred at the southbound approach;
- Twenty-one occurred at the eastbound approach; and,
- Nineteen occurred at the westbound approach.

High traffic volumes create the potential for more collisions of this type. The horizontal curvature on the northbound approach may be contributing to these collisions.

Of the **six angle** impacts at this intersection:

- None occurred in poor driving conditions;
- Three involved a northbound vehicle and an eastbound vehicle; and,
- Three involved a northbound vehicle and a westbound vehicle.

Of the **twenty-two sideswipe** impacts at this intersection:

- One occurred in poor driving conditions;
- Four occurred at the northbound approach;
- Three occurred at the southbound approach;
- Eleven occurred at the eastbound approach; and,
- Four occurred at the westbound approach.

High traffic volumes and multiple lanes create the potential for more collisions of this type.

Of the **six turning movement** impacts at this intersection:

- One occurred in poor driving conditions;
- Two were between a southbound through vehicle and a northbound left turning vehicle;
- Three were between an eastbound through vehicle and a westbound left turning vehicle; and,
- One was between a westbound left turning vehicle and an eastbound right turning vehicle.

#### Baseline Road/Clyde Avenue

Nineteen of the one hundred and twenty-six collisions caused an injury. One hundred and three collisions occurred in clear conditions, nine in rain conditions, ten in snow conditions, and four in freezing rain. None of the collisions involved pedestrians and one involved a cyclist.

Of the **seventy-five rear-end** impacts at this intersection:

- Eleven occurred in poor driving conditions;
- Twenty-three occurred at the northbound approach;
- Eleven occurred at the southbound approach;
- Sixteen occurred at the eastbound approach; and,
- Twenty-five occurred at the westbound approach.

High traffic volumes create the potential for more collisions of this type. The multiple accesses along the northbound approach and the nearby access on the eastbound approach may be contributing to collisions on those approaches. With a downhill grade of 3-4% along the westbound approach, consideration could be given to extending the westbound amber interval to accommodate the required deceleration time.

Of the **fourteen angle** impacts at this intersection:

- Three occurred in poor driving conditions;
- Five involved a northbound vehicle and a westbound vehicle;
- Seven involved a southbound vehicle and a westbound vehicle; and,
- Two involved a southbound vehicle and an eastbound vehicle.

Extending the amber interval on the westbound approach may reduce the likelihood of angle impacts involving this approach.

Of the **twenty-three sideswipe** impacts at this intersection:

- Seven occurred in poor driving conditions;
- Six occurred at the northbound approach;
- Five occurred at the southbound approach;
- Two occurred at the eastbound approach; and,
- Ten occurred at the westbound approach.

High traffic volumes and multiple lanes create the potential for more collisions of this type. The multiple accesses along the northbound approach and the nearby access on the eastbound approach may be contributing to collisions on those approaches. Extending the amber interval on the westbound approach may reduce the likelihood of sideswipe collisions that are rear-end avoidance maneuvers.

Of the **nine turning movement** impacts at this intersection:

- Two occurred in poor driving conditions;
- One was between a southbound through vehicle and a northbound left turning vehicle;
- One was between a northbound right turning vehicle and a northbound through vehicle;
- One was between a northbound through vehicle and a southbound left turning vehicle;
- Four were between an eastbound through or right turning vehicle and a westbound left turning vehicle; and,
- Two were between a westbound right turning vehicle and an eastbound left turning vehicle.

#### Merivale Road/Clyde Avenue/Lotta Avenue

Thirteen of the one hundred and eleven collisions caused an injury. Ninety collisions occurred in clear conditions, twelve in rain conditions, and nine in snow conditions. None of the collisions involved pedestrians or cyclists.

Of the **fifty-eight rear-end** impacts at this intersection:

- Thirteen occurred in poor driving conditions;
- Twenty-nine occurred at the northbound approach;
- Twenty-three occurred at the southbound approach;
- Three occurred at the eastbound approach; and,
- Three occurred at the westbound approach.

High traffic volumes create the potential for more collisions of this type. The multiple accesses along the northbound approach may be contributing to collisions on that approach.

Of the **seven angle** impacts at this intersection:

- Two occurred in poor driving conditions;
- Four involved a northbound vehicle and a westbound vehicle;
- Two involved a southbound vehicle and a westbound vehicle; and,
- One involved a southbound vehicle and an eastbound vehicle.

Of the **eighteen sideswipe** impacts at this intersection:

- One occurred in poor driving conditions;
- Ten occurred at the northbound approach;
- Three occurred at the southbound approach;
- Two occurred at the eastbound approach; and,
- Three occurred at the westbound approach.



High traffic volumes and multiple lanes create the potential for more collisions of this type. The multiple accesses along the northbound approach may be contributing to collisions on that approach.

Of the **twenty-one turning movement** impacts at this intersection:

- Three occurred in poor driving conditions;
- Six were between a southbound through vehicle and a northbound left turning vehicle;
- One was between a northbound right turning vehicle and a northbound vehicle;
- Twelve were between a northbound through vehicle and a southbound left turning vehicle;
- One was between two southbound left turning vehicles; and,
- One was between a northbound U-turn vehicle and a southbound through vehicle.

With heavy through volumes on the northbound and southbound approaches, there may be insufficient gaps during the northbound and southbound left turn phases.

#### Merivale Road/Burriss Lane

Seven of the twenty collisions caused an injury. Fourteen collisions occurred in clear conditions and six in rain conditions. Two of the collisions involved pedestrians and none involved cyclists.

Of the **seven rear-end** impacts at this intersection:

- Five occurred in poor driving conditions;
- Four occurred at the northbound approach;
- Two occurred at the eastbound approach; and,
- One occurred at the westbound approach.

#### Merivale Road/Loblaws Plaza

None of the nine collisions caused an injury. Eight collisions occurred in clear conditions and one in rain conditions. None of the collisions involved pedestrians or cyclists.

#### Clyde Avenue/Starwood Road

None of the ten collisions caused an injury. Five collisions occurred in clear conditions, three in rain conditions, one in snow conditions, and one in freezing rain conditions. None of the collisions involved pedestrians or cyclists.

Of the **six angle** impacts at this intersection:

- Three occurred in poor driving conditions;
- Two involved a northbound vehicle and an eastbound vehicle; and,
- Four involved a southbound vehicle and an eastbound vehicle.

#### Merivale Road/Gilbey Drive

One of the two collisions caused an injury. Both collisions occurred in clear conditions and neither of the collisions involved pedestrians or cyclists.

#### Clyde Avenue between Clyde Avenue and Starwood Road

Six of the twenty-three collisions caused an injury. Eighteen collisions occurred in clear conditions, two in rain conditions, and three in snow conditions. One of the collisions involved a pedestrian and one involved a cyclist.

Of the **six angle** impacts in this segment:

- One occurred in poor driving conditions;
- Three involved a northbound vehicle and a westbound vehicle; and,
- Three involved a southbound vehicle and an eastbound vehicle.

Of the **six sideswipe** impacts in this segment:

- One occurred in poor driving conditions;
- Four occurred between northbound vehicles; and,
- Two occurred between southbound vehicles.

Of the **six turning movement** impacts in this segment:

- Two occurred in poor driving conditions;
- One was between a southbound through vehicle and a northbound left turning vehicle;
- Two were between a northbound right turning vehicle and a northbound through vehicle; and,
- Three were between a northbound through vehicle and a southbound left turning vehicle.

#### Clyde Avenue between Starwood Road and Lotta Avenue

One of the eight collisions caused an injury. Five collisions occurred in clear conditions, two in rain conditions, and one in snow conditions. None of the collisions involved a pedestrian or a cyclist.

#### Merivale Avenue between Clyde Avenue and Gilbey Drive

Three of the twenty-two collisions caused an injury. Seventeen collisions occurred in clear conditions, three in rain conditions, and two in snow conditions. None of the collisions involved a pedestrian and one involved a cyclist. Due to the road alignment in this area (northeast-southwest), some of the collisions appear to take Merivale as north-south, while others take Merivale as east-west. Northbound and eastbound have been taken as the same direction while southbound and westbound have been taken as the same direction.

Of the **eight rear-end** impacts in this segment:

- Two occurred in poor driving conditions;
- Seven occurred between northbound/eastbound vehicles; and,
- One occurred between southbound vehicles.

There are several accesses on the east side that may be contributing to the northbound collisions.

Of the **eight turning movement** impacts in this segment:

- Two occurred in poor driving conditions;
- Six were between a northbound/eastbound right turning vehicle and a northbound/eastbound through vehicle;
- One was between a northbound through vehicle and a southbound left turning vehicle; and,
- One was between an eastbound U-turning vehicle and an eastbound through vehicle.

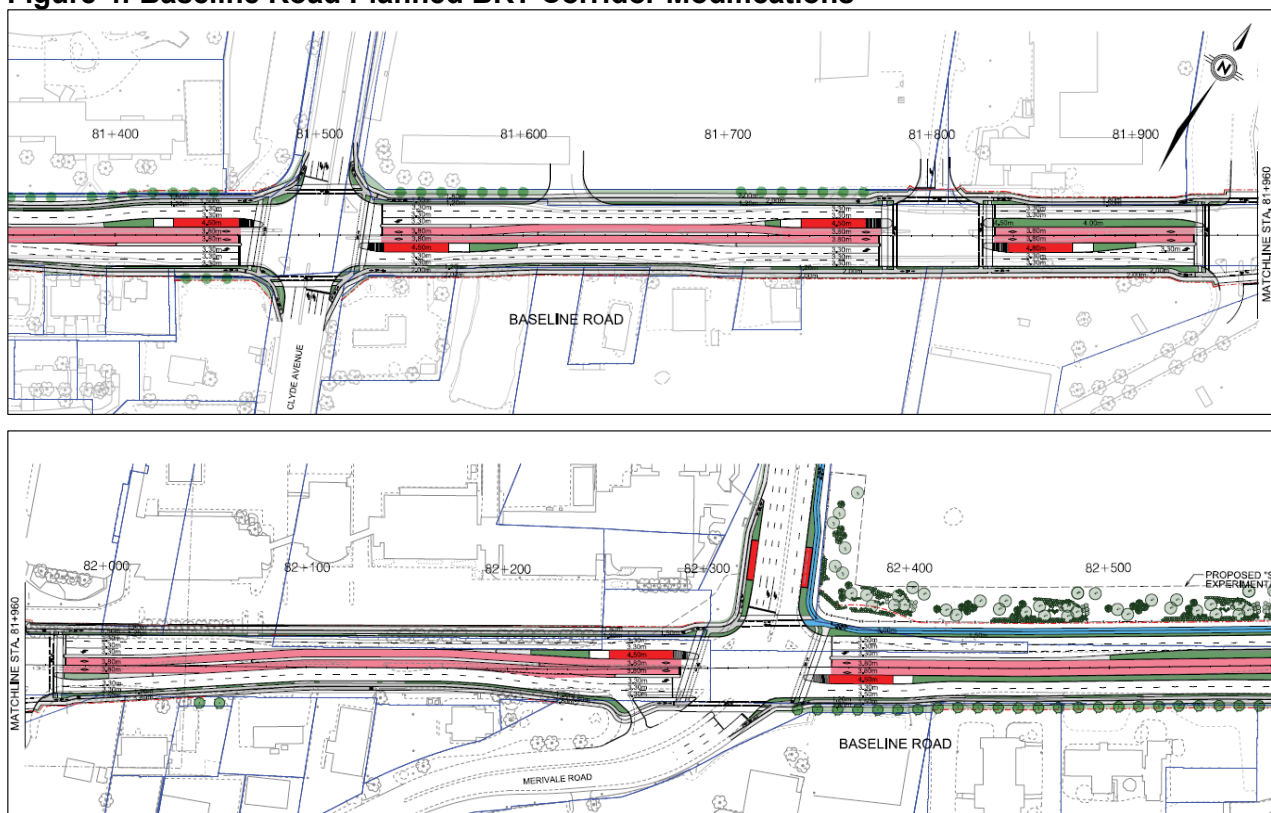
There are several accesses on the east side that are contributing to the northbound collisions.

## 2.2 Planned Conditions

### 2.2.1 Planned Transit and Roadway Projects

The City's TMP's Rapid Transit and Transit Priority Network identifies Baseline/Heron/Walkley/St Laurent for at-grade Bus Rapid Transit (BRT) connecting Baseline Station to Heron Station (Affordable) and Bayshore Station to St. Laurent Station (Concept). This BRT will provide improved transit access to employment, commercial and institutional land uses and service connecting to major rapid transit lines. An Environmental Project Report for the Baseline Road BRT Corridor has been completed and included plans to provide centre running BRT along Heron/Baseline. A functional design of the proposed modifications to Baseline Road within the study area is shown in **Figure 4**. It is understood that the project is subject to availability of funding from higher levels of government and no funding commitment is yet in place.

**Figure 4: Baseline Road Planned BRT Corridor Modifications**



The City's TMP identifies peak period bus lanes (peak direction only) and transit signal priority along Merivale Road between Carling Avenue and Baseline Road. This project is within the Affordable Network and will be achieved by reallocating existing traffic lanes. The TMP also identifies (Network Concept) road widening to provide exclusive bus lanes and transit signal priority along Merivale Road between Baseline Road and Slack Road. The Network Concept will not be implemented until after 2031.

The City's 2013 Transportation Master Plan (TMP) does not identify any roadway projects within the study area in its Affordable Road Network.

### 2.2.2 Other Area Developments

In proximity of the proposed development, there are multiple other developments that are approved, or in the approval process. Other developments in the area include:

- 300 Central Park Drive – A Community Transportation Study/Transportation Impact Study (CTS/TIS, Delcan 2011) was prepared in support of a mixed-use development consisting of 740 high-rise apartment units, 180,000 ft<sup>2</sup> of retail space, and 48,000 ft<sup>2</sup> of office space. The study estimated that full development would generate 709 and 816 two-way vehicle trips during the AM and PM peak hours, respectively. Buildout of the development is anticipated prior to buildout of the subject site.
- 1356 Clyde Avenue – Redevelopment of two commercial strip malls as 458 residential units, 32,776 ft<sup>2</sup> of office space, and 18,740 ft<sup>2</sup> of ground floor retail is proposed. The redevelopment will be completed in two phases (by 2022 and by 2026). A TIA (Parsons 2021) estimated that full redevelopment would generate 93 and 0 new two-way vehicle trips in 2026 during the AM and PM peak hours, respectively.
- 1357 Baseline Road – A TIA (Stantec 2020) was prepared for the development of 402 residential units and 5,500 ft<sup>2</sup> of retail area with buildout out expected in 2022. The TIA estimated that the site would generate 90 and 111 two-way vehicle trips during the AM and PM peak hours, respectively, without Baseline BRT and 53 and 66 two-way vehicle trips during the AM and PM peak hours, respectively, with Baseline BRT.
- 1375 Clyde – A TIS (Parsons 2017) was prepared for the expansion of the existing retail building and to add a self-storage facility and a restaurant. Buildout was planned in 2020. The TIA estimated that the site would generate 47 and 93 net new two-way vehicle trips during the AM and PM peak hours, respectively.

### 2.3 Study Area and Time Periods

The study area for this report includes the boundary roadways Baseline Road, Merivale Road, and Clyde Avenue as well as the following intersections:

- Baseline Road/Merivale Road
- Baseline Road/Clyde Avenue
- Clyde Avenue/Merivale Road/Lotta Avenue
- Merivale Road/Burris Lane
- Merivale Road/Loblaws Plaza

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the ‘worst case’ combination of site generated traffic and adjacent street traffic. Analysis will be completed for the 2031 midpoint year and 2038 build-out year. Due to the extended build-out period, a 5-year horizon has not been analyzed.

### 2.4 Exemptions Review

This module reviews possible exemptions from the final Transportation Impact Assessment, as outlined in the *2017 TIA Guidelines*. The applicable exemptions for this site are shown in **Table 2**.

**Table 2: TIA Exemptions**

Module	Element	Exemption Criteria	Status
<b>Design Review Component</b>			
<b>4.1</b> Development Design	4.1.2 Circulation and Access	• Only required for site plans	Not Exempt
	4.1.3 New Street Networks	• Only required for plans of subdivision	Exempt
<b>4.2</b> Parking	4.2.1 Parking Supply	• Only required for site plans	Not Exempt
	4.2.2 Spillover Parking	• Only required for site plans where parking supply is 15% below unconstrained demand	Exempt
<b>Network Impact Component</b>			
<b>4.5</b> Transportation Demand Management	<i>All elements</i>	• Not required for non-residential site plans expected to have fewer than 60 employees and/or students on location at any given time	Not Exempt
<b>4.6</b> Neighbourhood 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	Exempt
<b>4.8</b> Network Concept	<i>All elements</i>	• Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by the established zoning	Exempt

As the proposed development will conform to the existing zoning and does not rely on local or collector streets for access, Module 4.2.2 – Spillover Parking, Module 4.6 – Neighbourhood Traffic Management, and Module 4.8 – Network Concept are exempt from the analysis.

Based on the foregoing, the following modules will be included in the TIA report:

**Design Review Component**

- Module 4.1: Development Design
- Module 4.2: Parking
- Module 4.3: Boundary Streets
- Module 4.4: Access Design

**Network Impact Component**

- Module 4.5: Transportation Demand Management
- Module 4.7: Transit
- Module 4.9: Intersection Design

### 3.0 FORECASTING

#### 3.1 Development-Generated Travel Demand

##### 3.1.1 Trip Generation

The proposed development will include a total of 1,967 mid-rise dwellings and 12,150 ft<sup>2</sup> of ground-floor commercial space at ultimate buildout. For the purposes of this study, it is assumed that 1,000 dwellings and 6,100 ft<sup>2</sup> (i.e. approximately 50% of the ultimate total) will be occupied by the midpoint year 2031.

The *TRANS Trip Generation Manual Summary Report*, prepared in October 2020 by WSP, includes data to estimate the trip generation and mode shares for residential uses, divided into single-family detached housing, low-rise multifamily housing (one or two storeys), and high-rise multifamily housing (three or more storeys). Relevant excerpts of the *TRANS Trip Generation Manual* are included in **Appendix F**.

The *TRANS Trip Generation Manual* identifies the subject site as being located within the Merivale district, and Schedule 2A of the City's *Zoning By-Law (ZBL)* identifies the subject site as being located within 600m of a rapid transit corridor (Baseline Road between Navaho Drive and Fisher Avenue). Developments within 600m of a rapid transit corridor can be considered Transit-Oriented Development (TOD). In TOD zones, the transit share is assumed to increase significantly compared to any TRANS O-D district. The City has outlined sustainable mode share targets for transit-oriented developments, which can be summarized as follows:

- Auto Driver: 15% during peak periods;
- Auto Passenger: 5% during peak periods;
- Transit: 65% during peak periods;
- Non-Auto (Active): 15% during peak periods.

Per discussions with City staff, a blend of the mode shares observed for the Merivale district and the TOD mode share targets have been developed as the assumed mode shares of the proposed development. The *TRANS Trip Generation Manual* identifies the following residential and commercial mode shares for the Merivale district.

##### Residential Mode Shares

- Auto Driver: 41% AM, 41% PM
- Auto Passenger: 6% AM, 11% PM
- Transit: 42% AM, 33% PM
- Cyclist: 2% AM, 2% PM
- Pedestrian: 8% AM, 13% PM

##### Commercial Mode Shares

- Auto Driver: 71% AM, 61% PM
- Auto Passenger: 19% AM, 16% PM
- Transit: 1% AM, 8% PM
- Cyclist: 0% AM, 1% PM
- Pedestrian: 9% AM, 14% PM

Per discussions with City staff, a blend of the residential mode shares observed for the Merivale district and the TOD mode share targets have been developed as the assumed mode shares of the proposed development. Compared to the Merivale district mode shares, the auto driver share has been decreased, and the transit share has been increased. It is anticipated that the transit share will progressively improve over time, after the completion of the Baseline Road BRT. Therefore, the transit share for the ultimate development has been assumed to be higher than at the midpoint year 2031.

Compared to the commercial mode shares observed for the Merivale district, the auto driver share has been decreased, and the transit and pedestrian shares have been increased, given the subject site's proximity to transit stops and other retail/commercial sites.

The assumed mode shares for the proposed residential and commercial uses are summarized in **Table 3**.

**Table 3: Proposed Development Mode Shares**

Mode	Proposed Residential				Proposed Commercial			
	2031		2038		2031		2038	
	AM	PM	AM	PM	AM	PM	AM	PM
Auto Driver	30%	30%	24%	25%	40%	40%	40%	40%
Auto Passenger	5%	6%	4%	5%	15%	15%	15%	15%
Transit	48%	44%	55%	50%	20%	20%	20%	20%
Cyclist	5%	5%	5%	5%	5%	5%	5%	5%
Pedestrian	12%	15%	12%	15%	20%	20%	20%	20%

**3.1.1.1 Proposed Residential Trip Generation**

For the High-Rise Multifamily Housing land use, the process of converting the trip generation estimates from peak period to peak hour is shown in the following tables. The estimated number of person trips generated by the proposed dwellings for the AM and PM peak periods are shown in **Table 4**. A breakdown of these trips by modal share is shown in **Table 5**.

**Table 4: Proposed Residential – Peak Period Trip Generation**

Land Use	TRANS Rate	Phase of Development	Units	AM Peak Period (ppp <sup>(1)</sup> )			PM Peak Period (ppp)		
				IN	OUT	TOT	IN	OUT	TOT
High-Rise Multifamily	AM: 0.80	Midpoint (2031)	1,000	248	552	800	522	378	900
	PM: 0.90	Ultimate (2038)	1,967	488	1,086	1,574	1,027	743	1,770

1. ppp: Person Trips per Peak Period

**Table 5: Proposed Residential – Peak Period Trips by Mode Share**

Travel Mode	Mode Share		AM Peak Period			PM Peak Period		
	AM	PM	IN	OUT	TOT	IN	OUT	TOT
<b>2031 Residential Trips</b>			<b>248</b>	<b>552</b>	<b>800</b>	<b>522</b>	<b>378</b>	<b>900</b>
Auto Driver	30%	30%	75	165	240	157	113	270
Auto Passenger	5%	6%	12	28	40	31	23	54
Transit	48%	44%	119	265	384	230	166	396
Cyclist	5%	5%	12	28	40	26	19	45
Pedestrian	12%	15%	30	66	96	78	57	135
<b>2038 Residential Trips</b>			<b>488</b>	<b>1,086</b>	<b>1,574</b>	<b>1,027</b>	<b>743</b>	<b>1,770</b>
Auto Driver	24%	25%	117	261	378	257	187	444
Auto Passenger	4%	5%	20	43	63	51	37	88
Transit	55%	50%	269	597	866	514	371	885
Cyclist	5%	5%	24	55	79	51	37	88
Pedestrian	12%	15%	58	130	188	154	111	265

Table 4 of the *TRANS Trip Generation Manual* includes adjustment factors to convert the estimated number of trips generated for each mode from peak period to peak hour. A breakdown of the peak hour trips by mode is shown in **Table 6**.

**Table 6: Proposed Residential – Peak Hour Trips by Mode Share**

Travel Mode	Adj. Factor		AM Peak Hour			PM Peak Hour		
	AM	PM	IN	OUT	TOT	IN	OUT	TOT
<i>Midpoint of Development (2031)</i>								
Auto Driver	0.48	0.44	36	79	115	69	50	119
Auto Passenger	0.48	0.44	6	13	19	14	10	24
Transit	0.55	0.47	65	146	211	108	78	186
Cyclist	0.58	0.48	7	16	23	13	9	22
Pedestrian	0.58	0.52	17	38	55	41	29	70
<b>Peak Hour Person Trips</b>			<b>131</b>	<b>292</b>	<b>423</b>	<b>245</b>	<b>176</b>	<b>421</b>
<i>Ultimate Development (2038)</i>								
Auto Driver	0.48	0.44	56	125	181	113	82	195
Auto Passenger	0.48	0.44	9	21	30	23	16	39
Transit	0.55	0.47	148	329	477	241	175	416
Cyclist	0.58	0.48	14	31	45	25	18	43
Pedestrian	0.58	0.52	34	76	110	80	58	138
<b>Peak Hour Person Trips</b>			<b>261</b>	<b>582</b>	<b>843</b>	<b>482</b>	<b>349</b>	<b>831</b>

From the previous tables, the proposed residential dwellings are estimated to generate 423 AM peak hour person trips and 421 PM peak hour person trips in the midpoint year 2031, and 843 AM peak hour person trips and 831 PM peak hour person trips in the ultimate buildout year 2038.

**3.1.1.2 Proposed Commercial Trip Generation**

Since the commercial uses are not known at this time, trips generated by the proposed commercial component have been estimated using the Shopping Centre land use rates included in the *ITE Trip Generation, 10<sup>th</sup> Edition*. The estimated number of person trips generated by the proposed ground-floor commercial areas are shown in **Table 7**. A breakdown of these trips by modal share is shown in **Table 8**.

**Table 7: Proposed Commercial – Peak Hour Trip Generation**

Land Use	ITE Code	Phase of Development	GFA	AM Peak Hour (pph <sup>(1)</sup> )			PM Peak Hour (pph)		
				IN	OUT	TOT	IN	OUT	TOT
Shopping Center	820	Midpoint (2031)	6,100 ft <sup>2</sup>	5	3	8	15	15	30
		Ultimate (2038)	12,150 ft <sup>2</sup>	9	6	15	29	31	60

1. pph: Person Trips per Hour – calculated using an ITE Trip to Person Trip Factor of 1.28, consistent with the 2017 TIA Guidelines

**Table 8: Proposed Commercial – Peak Hour Trips by Mode Share**

Travel Mode	Mode Share		AM Peak Hour			PM Peak Hour		
	AM	PM	IN	OUT	TOT	IN	OUT	TOT
<b>2031 Commercial Trips</b>			<b>5</b>	<b>3</b>	<b>8</b>	<b>15</b>	<b>15</b>	<b>30</b>
Auto Driver	40%	40%	2	1	3	6	6	12
Auto Passenger	15%	15%	1	0	1	2	2	4
Transit	20%	20%	1	1	2	3	3	6
Cyclist	5%	5%	0	0	0	1	1	2
Pedestrian	20%	20%	1	1	2	3	3	6



Travel Mode	Mode Share		AM Peak Hour			PM Peak Hour		
	AM	PM	IN	OUT	TOT	IN	OUT	TOT
<b>2038 Commercial Trips</b>			<b>9</b>	<b>6</b>	<b>15</b>	<b>29</b>	<b>31</b>	<b>60</b>
Auto Driver	40%	40%	3	3	6	12	12	24
Auto Passenger	15%	15%	1	1	2	4	5	9
Transit	20%	20%	2	1	3	6	6	12
Cyclist	5%	5%	1	0	1	1	2	3
Pedestrian	20%	20%	2	1	3	6	6	12

From the previous tables, the proposed commercial uses are estimated to generate 8 AM peak hour person trips and 30 PM peak hour person trips in the midpoint year 2031, and 15 AM peak hour person trips and 60 PM peak hour person trips in the ultimate buildout year 2038. To maintain a conservative analysis, it has been assumed that the proposed commercial areas of the development are assumed to generate exclusively external trips (i.e. no pass-by or internally capture trips).

### 3.1.1.3 Summary of Trip Generation Estimates

The number of trips generated by the proposed residential and commercial uses shown in **Table 6** and **Table 8** have been added together, and are shown in **Table 9**.

**Table 9: Proposed Development – Trip Generation Estimates**

Travel Mode	AM Peak Hour			PM Peak Hour		
	IN	OUT	TOT	IN	OUT	TOT
<b>Midpoint (2031) Total Trips</b>	<b>136</b>	<b>295</b>	<b>431</b>	<b>260</b>	<b>191</b>	<b>451</b>
Auto Driver	38	80	118	75	56	131
Auto Passenger	7	13	20	16	12	28
Transit	66	147	213	111	81	192
Cyclist	7	16	23	14	10	24
Pedestrian	18	39	57	44	32	76
<b>Ultimate (2038) Total Trips</b>	<b>270</b>	<b>588</b>	<b>858</b>	<b>511</b>	<b>380</b>	<b>891</b>
Auto Driver	59	128	187	125	94	219
Auto Passenger	10	22	32	27	21	48
Transit	150	330	480	247	181	428
Cyclist	15	31	46	26	20	46
Pedestrian	36	77	113	86	64	150

At 50% buildout, the proposed development is estimated to generate 431 person trips (including 118 vehicle trips) during the AM peak hour and 451 person trips (including 131 vehicle trips) during the PM peak hour. At 100% buildout, the proposed development is estimated to generate 858 person trips (including 187 vehicle trips) during the AM peak hour and 891 person trips (including 219 vehicle trips) during the PM peak hour.

### 3.1.2 Trip Distribution

The assumed distribution of trips generated by the proposed development have been derived from existing traffic pattern within the study area and logical trip routing. Site-generated residential trips are anticipated to follow the traffic patterns associated with the typical commute (i.e. departing the study area during the AM peak and arriving during the PM peak), and site-generated commercial trips are anticipated to follow the two-way traffic patterns of the midday peak hour. The distribution of site-generated trips can be described as follows.

Residential Distribution**40% to/from the north**

- 20% via Clyde Avenue
- 20% via Merivale Road

**25% to/from the east**

- 25% via Baseline Road

Commercial Distribution**40% to/from the north**

- 20% via Clyde Avenue
- 20% via Merivale Road

**20% to/from the east**

- 20% via Baseline Road

**20% to/from the south**

- 20% via Merivale Road

**15% to/from the west**

- 15% via Baseline Road

**20% to/from the south**

- 20% via Merivale Road

**20% to/from the west**

- 20% via Baseline Road

### 3.1.3 Trip Assignment

It is anticipated that, based on the layout of the proposed development, a majority of trips to/from the subject site will utilize the easterly access. Three of the four parking ramps, which will access nearly all of the parking on-site, are nearer to the easterly access. Therefore, 75% of vehicle trips have been assigned to the easterly access and 25% have been assigned to the westerly access. This 75%/25% split has been applied to all trips regardless of their origin or destination.

As the proposed easterly access to Merivale Road is located opposite to the westerly access to the Merivale Market shopping centre, traffic at this access has been estimated using first principles. For the purposes of this analysis, the westerly access is assumed to serve approximately 100 parking spaces. Per Table 14-1 of the *ITE Trip Generation Handbook, 5<sup>th</sup> Edition* (included in **Appendix G**), the typical AM and PM peak hour volumes generated by a retail/commercial land use, as a percentage of the total number of parking stalls provided, can be summarized as follows:

- AM Inbound Trips: 10% to 30% of parking stalls;
- AM Outbound Trips: 10% to 20% of parking stalls;
- PM Inbound Trips: 30% to 60% of parking stalls;
- PM Outbound Trips: 40% to 65% of parking stalls.

Based on the above, the westerly Merivale Market access is estimated to facilitate approximately 30 inbound trips and 20 outbound trips are anticipated during the AM peak hour, and approximately 60 inbound trips and 65 outbound trips are anticipated during the PM peak hour. For simplicity, these trips are assumed to be distributed equally to the west and east on Merivale Road.

## 3.2 Background Traffic

### 3.2.1 Other Area Developments

A review of other area development traffic has been conducted, per the developments listed in Section 2.2.2. Traffic generated by these developments have been considered in this analysis and added to the future background traffic volumes, as they are currently under construction, approved, or in the approval process. Relevant excerpts of the traffic studies associated with the developments below are included in **Appendix H**.

### 300 Central Park Drive

This mixed-use development will consist of 740 high-rise apartments, 180,000 ft<sup>2</sup> of retail space, and 48,000 ft<sup>2</sup> of office space. The CTS/TIS (prepared by Delcan in 2011) did not identify a buildout year, and estimated the development would generate 709 and 816 two-way vehicle trips during the AM and PM peak hours, respectively. Traffic generated by this site have been added to the 2031 and 2038 background traffic volumes.

### 1356 Clyde Avenue

This mixed-use development will consist of 458 residential units, 18,740 ft<sup>2</sup> of retail space, and 32,776 ft<sup>2</sup> of office space, and will replace two existing commercial strip malls. The TIA (prepared by Parsons in 2021) identified an ultimate buildout year of 2026, and estimated the development would generate a net additional 93 two-way vehicle trips during the AM peak hour, and no additional vehicle trips during the PM peak hour. The net additional traffic generated by this site have been added to the 2031 and 2038 background traffic volumes.

### 1357 Baseline Road

This mixed-use development will consist of 402 residential units and 5,500 ft<sup>2</sup> of retail space. The TIA (prepared by Stantec in 2020) identified a buildout year of 2022, and estimated the development would generate 53 and 66 two-way vehicle trips during the AM and PM peak hours, respectively (in the scenario where the Baseline Road is implemented). Traffic generated by this site have been added to the 2031 and 2038 background traffic volumes.

### 1375 Clyde Avenue

This development will involve the expansion of the existing 16,000 ft<sup>2</sup> retail space with an additional 12,000 ft<sup>2</sup> of retail and a 4,500 ft<sup>2</sup> restaurant. The TIS (prepared by Parsons in 2017) identified a buildout year of 2020, and estimated the development would generate a net additional 47 and 93 new two-way vehicle trips during the AM and PM peak hours, respectively. The net additional traffic generated by this site have been added to the 2031 and 2038 background traffic volumes.

## **3.2.2 General Background Growth Rate**

A review of snapshots of the City's *Strategic Long-Range Model* and *Intersection Traffic Growth Rates (2000-2016)* has been conducted. Both resources are included in **Appendix I**. Comparing snapshots of the 2011 and 2031 AM peak hour traffic volumes, the *Strategic Long-Range Model* suggests little to no growth on all arterial roadways. The *Intersection Traffic Growth Rates* figures, which determine growth rates based on total vehicular volumes entering the intersection, identify the following growth rates between 2000 and 2016.

- Baseline Road/Merivale Road
  - AM Peak Hour: negative growth between -0.2% and -2% per annum;
  - PM Peak Hour: positive growth between +0.2% and +2% per annum.
- Baseline Road/Clyde Avenue
  - AM Peak Hour: negative growth between -0.2% and -2% per annum;
  - PM Peak Hour: positive growth between +0.2% and +2% per annum.
- Clyde Avenue/Merivale Road/Lotta Avenue
  - AM Peak Hour: negative growth between -0.2% and -2% per annum;
  - PM Peak Hour: negative growth between -0.2% and -2% per annum.

It is anticipated that background growth along the study area roadways will be captured through the addition of traffic generated by other area developments, as described in the previous section. Therefore, no background growth rates have been applied to any study area roadways.

To maintain a conservative analysis, no reductions in east-west traffic volumes have been made on Baseline Road, which is anticipated to have median BRT and changed lane geometry by the midpoint year 2031.

### 3.3 Future Traffic Conditions

The figures listed below present the following future traffic conditions:

- Proposed site-generated traffic volumes in 2031 are shown in **Figure 5**;
- Proposed site-generated traffic volumes in 2038 are shown in **Figure 6**;
- Other area development-generated traffic volumes in 2031/2038 are shown in **Figure 7**;
- Background traffic volumes in 2031/2038 are shown in **Figure 8**;
- Total traffic volumes in 2031 are shown in **Figure 9**.
- Total traffic volumes in 2038 are shown in **Figure 10**.

### 3.4 Demand Rationalization

A review of the existing and background intersection operations has been conducted to determine if and when traffic volumes exceed capacity within the study area. The intersection parameters used in the analysis are consistent with the *2017 TIA Guidelines* (Saturated Flow Rate: 1,800 vphpl, Peak Hour Factor: 0.9 in existing conditions and 1.0 in future conditions).

Per Exhibit 22 of the *Multi-Modal Level of Service (MMLoS) Guidelines* (produced by IBI Group in October 2015), the target vehicular level of service (Auto LOS) for the Arterial Mainstreet designation is an Auto LOS D, which equates to a vehicle-to-capacity (v/c) ratio of 0.90 or better. This target applies to all study area intersections in existing conditions. The target Auto LOS for all intersections within 600m of a rapid transit station is an Auto LOS E, which equates to a v/c ratio of 1.00 or better. This target applies to all study area intersections in future conditions, as the Baseline Road BRT is assumed to be implemented by 2031.

Intersection and lane geometry for future conditions are consistent with the planned roadway modifications shown in **Figure 4**. Signal timing plans were obtained from the City, and are included in **Appendix J**.

#### 3.4.1 Existing Intersection Operations

Intersection capacity analysis has been conducted for the existing traffic conditions. The results of the analysis are summarized in **Table 10** and **Table 11** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix K**.

Figure 5: 2031 Proposed Site-Generated Traffic Volumes

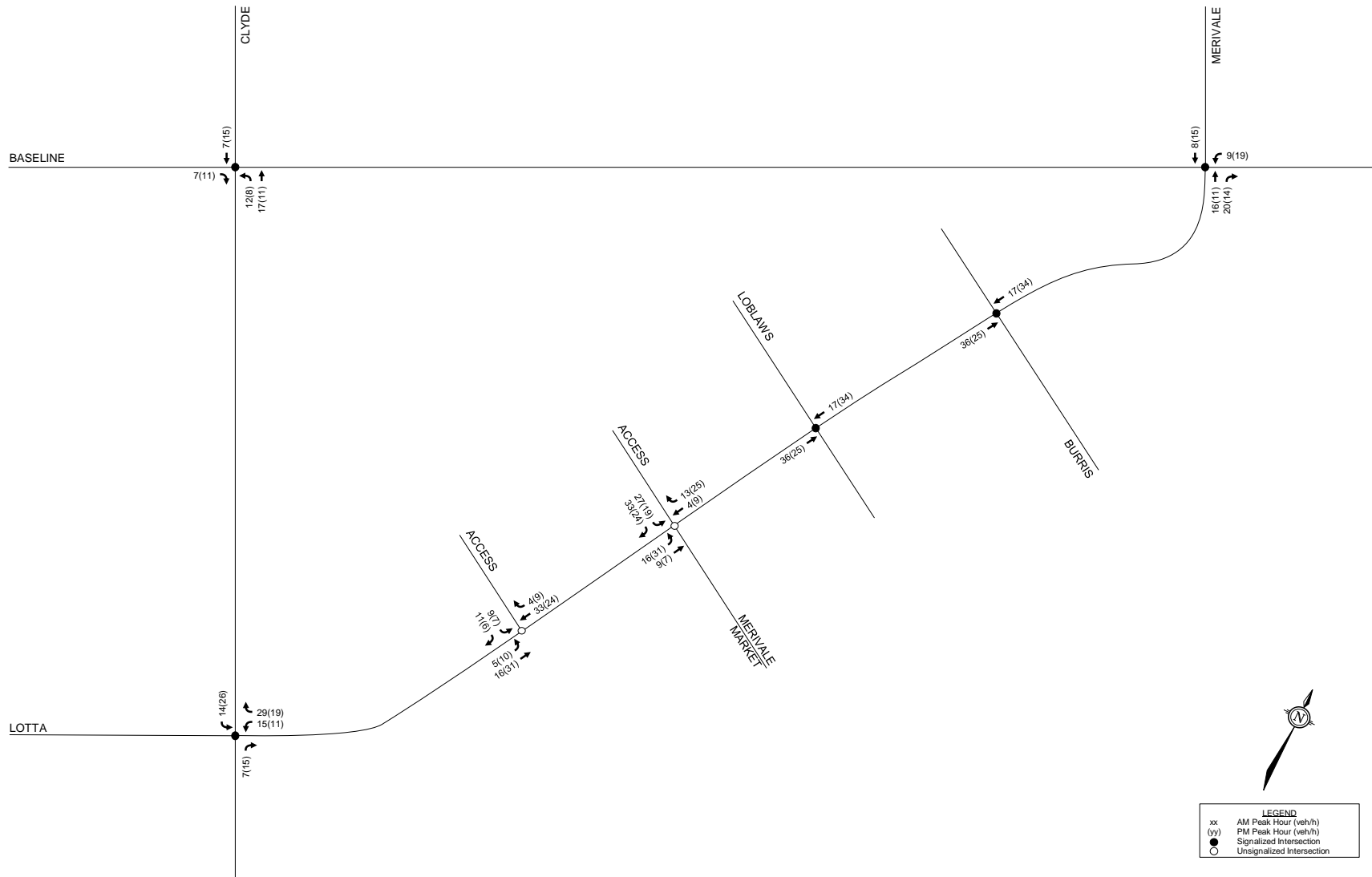


Figure 6: 2038 Proposed Site-Generated Traffic Volumes

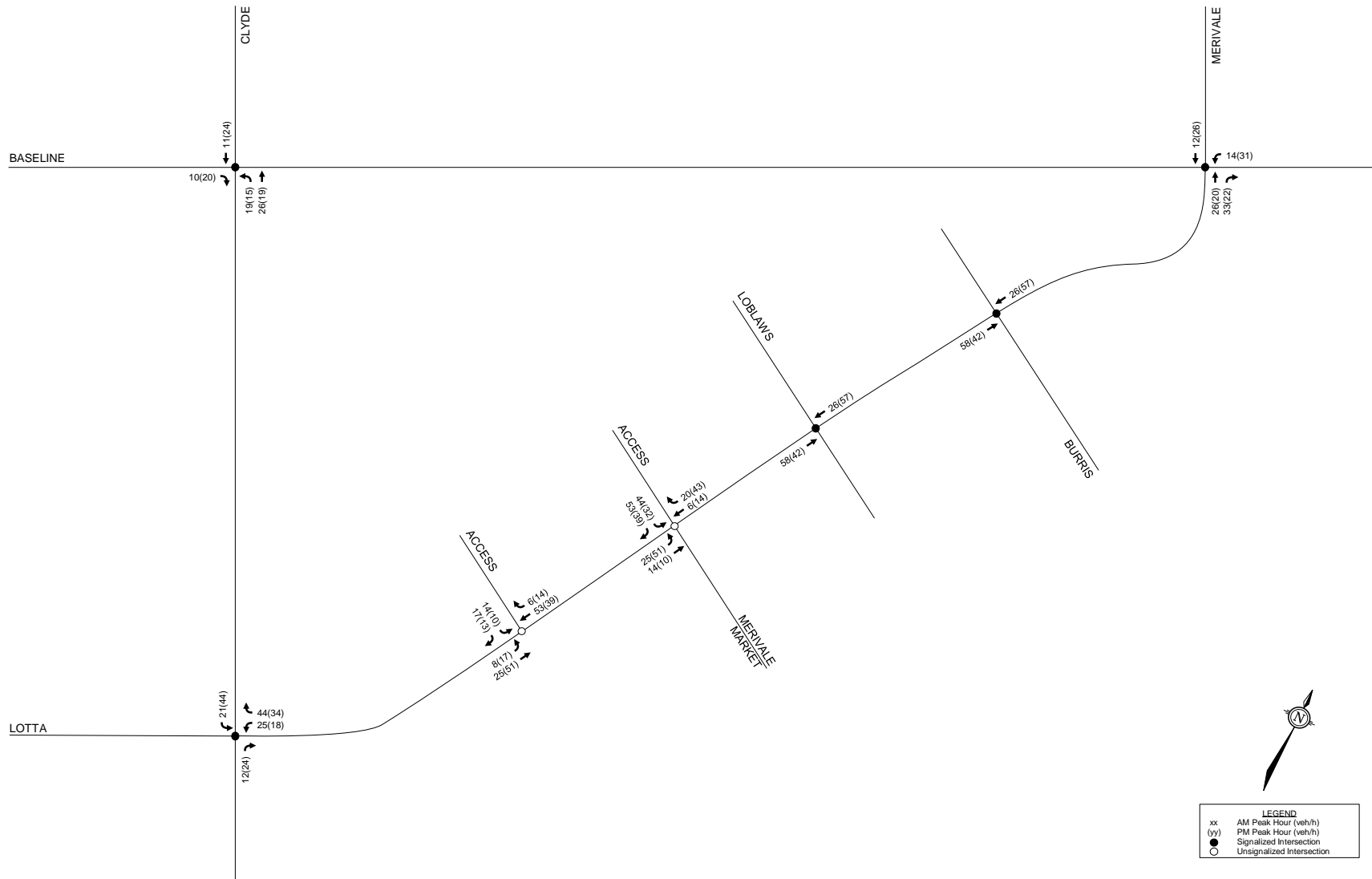


Figure 7: 2031/2038 Other Area Development-Generated Traffic Volumes

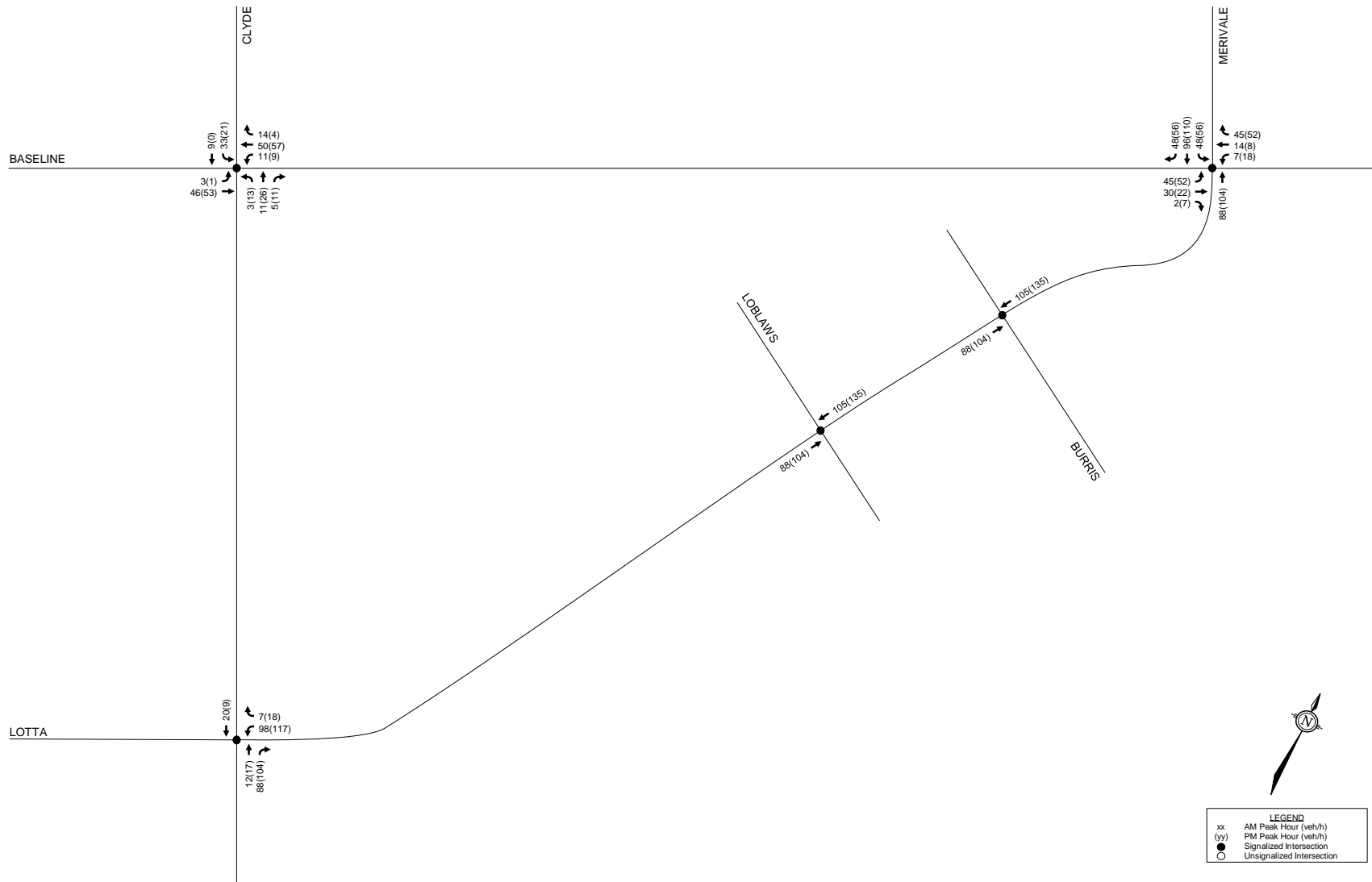
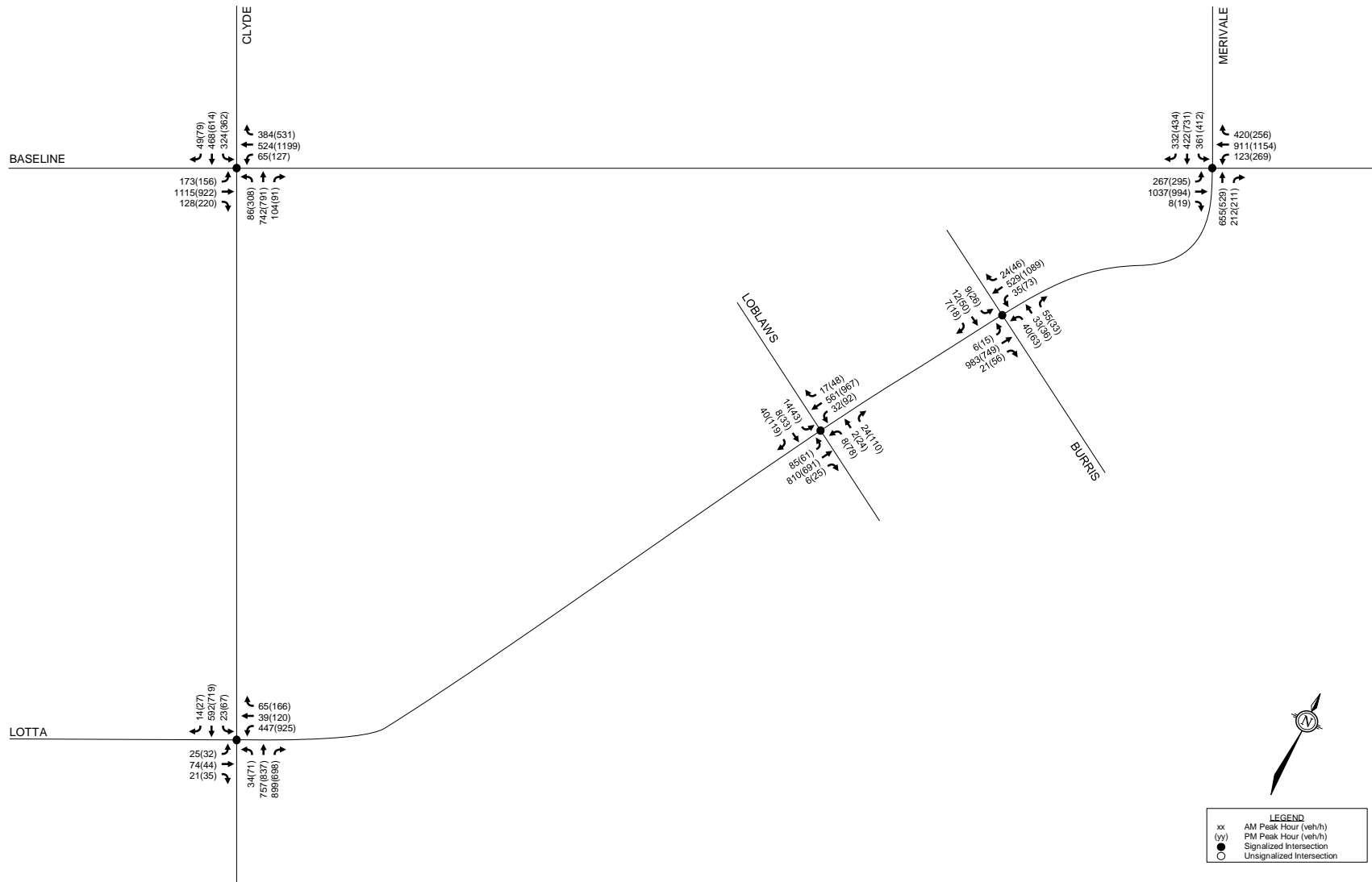


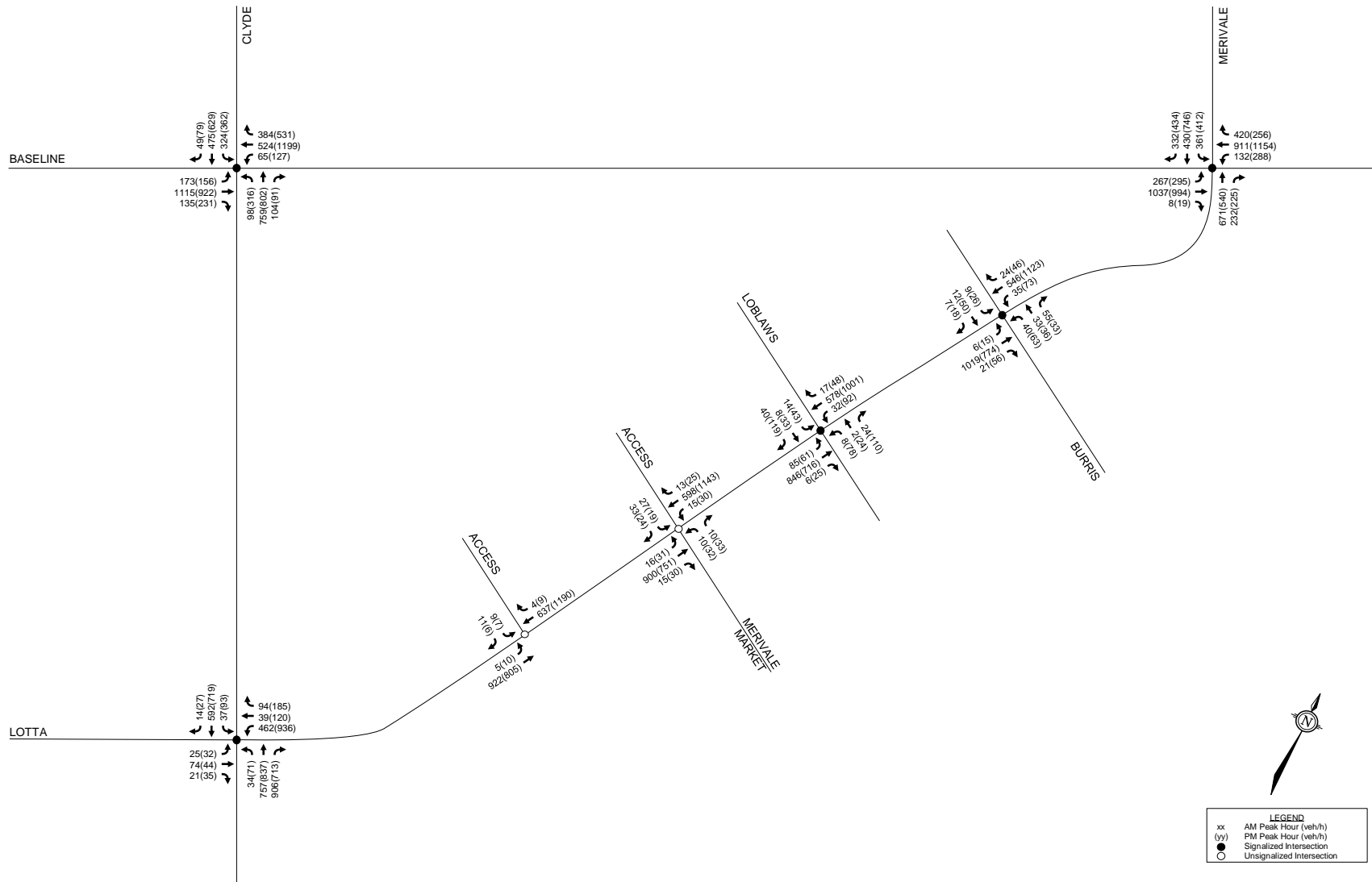
Figure 8: 2031/2038 Background Traffic Volumes



**LEGEND**  
 xx AM Peak Hour (veh/h)  
 (yy) PM Peak Hour (veh/h)  
 ● Signalized Intersection  
 ○ Unsignalized Intersection

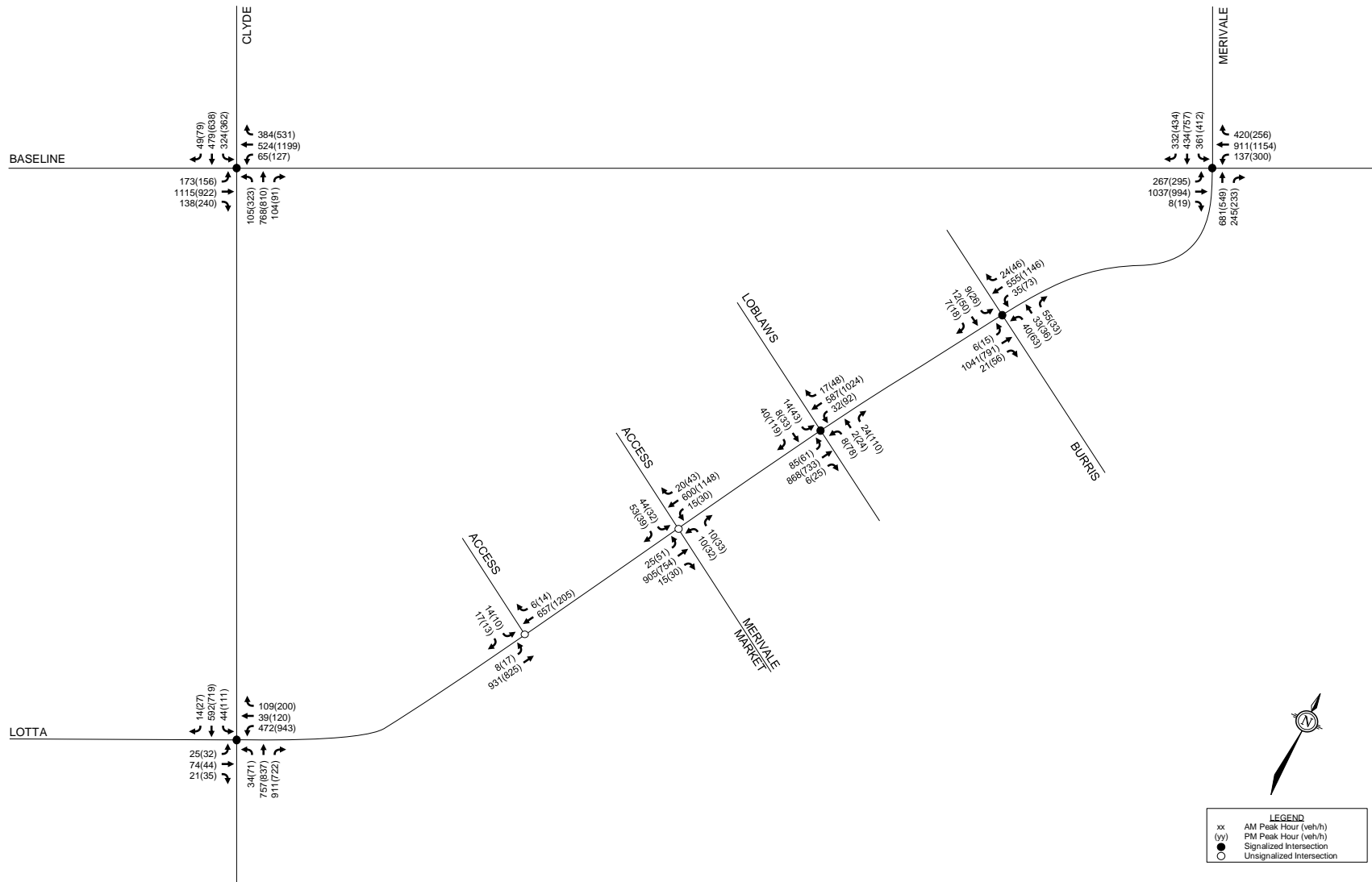


Figure 9: 2031 Total Traffic Volumes



**LEGEND**  
 xx AM Peak Hour (veh/h)  
 (yy) PM Peak Hour (veh/h)  
 ● Signalized Intersection  
 ○ Unsignalized Intersection

Figure 10: 2038 Total Traffic Volumes



**LEGEND**  
 xx AM Peak Hour (veh/h)  
 (yy) PM Peak Hour (veh/h)  
 ● Signalized Intersection  
 ○ Unsignalized Intersection

Table 10: Existing Traffic Operations

Intersection	Period	Critical Movements			Intersection		
		Max v/c	LOS	Mvmt	v/c	Delay	LOS
Baseline Road/ Merivale Road	AM	1.08	F	SBL	0.93	53 sec	E
		1.01	F	EBL			
		0.98	E	EBT			
		0.96	E	WBT			
	PM	1.21	F	SBL	0.91	67 sec	E
		1.19	F	EBL			
1.21		F	WBL				
Baseline Road/ Clyde Avenue	AM	0.96	E	NBT	0.84	58 sec	D
		1.12	F	EBL			
		1.03	F	EBT			
	PM	1.06	F	NBT/R	1.06	69 sec	F
		1.00	E	SBL			
		1.12	F	EBL			
Clyde Avenue/ Merivale Road/Lotta Avenue	AM	0.74	C	WBL	0.70	21 sec	B
	PM	0.91	E	WBL	0.78	42 sec	C
Merivale Road/ Burriss Lane	AM	0.44	A	NBT/R	0.41	4 sec	A
	PM	0.48	A	SBT/R	0.44	9 sec	A
Merivale Road/ Loblaws Plaza	AM	0.33	A	NBT/R	0.31	9 sec	A
	PM	0.56	A	SBT/R	0.50	10 sec	A

Table 11: Existing Queues

Intersection	Mvmt	Storage/ Spacing <sup>(1)</sup>	AM Peak			PM Peak		
			v/c [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)	v/c [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)
Baseline Road/ Merivale Road	SBL	125m	1.08 [F]	~43	#70	1.21 [F]	~63	#93
	EBL	110m	1.01 [F]	~58	m#61	1.19 [F]	~82	#134
	EBT	330m	0.98 [E]	98	m#137	0.82 [D]	130	155
	WBL	200m	0.67 [B]	27	45	1.21 [F]	~87	#139
	WBT	320m	0.96 [E]	112	#151	0.95 [E]	165	#208
Baseline Road/ Clyde Avenue	NBL	75m	0.38 [A]	10	17	0.87 [D]	35	#64
	NBT/R	230m	0.96 [E]	103	#142	1.06 [F]	~129	#160
	SBL	100m	0.81 [D]	36	#54	1.00 [E]	47	#77
	SBT/R	480m	0.51 [A]	51	69	0.87 [D]	91	#119
	EBL	115m	1.12 [F]	~47	#89	1.12 [F]	~46	#88
	EBT	260m	1.03 [F]	~155	#201	0.81 [D]	109	133
	WBL	75m	0.45 [A]	10	m13	0.85 [D]	31	#63
	WBT	270m	0.54 [A]	62	m68	1.07 [F]	~174	#213
Clyde Avenue/ Merivale Road/ Lotta Avenue	WBR	270m	0.64 [B]	62	m74	0.85 [D]	71	#134
	NBT	275m	0.41 [A]	51	90	0.73 [C]	98	#154
	SBT/R	140m	0.32 [A]	37	68	0.65 [B]	105	m#130
	WBL	95m	0.74 [C]	46	59	0.91 [E]	115	#132

1. Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection for through lanes  
m: volume for the 95<sup>th</sup> percentile queue is metered by an upstream signal  
#: volume for the 95<sup>th</sup> percentile cycle exceeds capacity  
~: approach is above capacity

From the previous tables, multiple movements at Baseline Road/Merivale Road and Baseline Road/Clyde Avenue do not meet the target Auto LOS D during both peak hours, and the westbound left turn movement at Clyde Avenue/Merivale Road/Lotta Avenue does not meet the target during the PM peak hour.

During the AM peak hour, the Synchro analysis does not identify any average (50<sup>th</sup>-percentile) or maximum (95<sup>th</sup>-percentile) queue lengths for turning movements that exceed the storage length provided for those movements, and does not identify any queue lengths for any movements that extend through upstream intersections.

During the PM peak hour, the average and maximum queue lengths for the westbound left turn movement at Clyde Avenue/Merivale Road/Lotta Avenue exceed the storage length of the auxiliary left turn lane. This queuing is not anticipated to interfere with the ability of westbound through or right turning vehicles to complete their manoeuvres, as the dual westbound left turn lanes include one auxiliary lane and one continuous lane on Merivale Road.

The approximate required reduction in volumes to meet the target Auto LOS for each over-capacity movement is included below.

#### AM Peak Hour

- Baseline Road/Merivale Road
  - Southbound left turn (v/c: 1.08): reduction of 60 vehicles required;
  - Eastbound left turn (v/c: 1.01): reduction of 30 vehicles required;
  - Eastbound through (v/c: 0.98): reduction of 90 vehicles required;
  - Westbound through (v/c: 0.96): reduction of 50 vehicles required.
- Baseline Road/Clyde Avenue
  - Northbound through/right turn (v/c: 0.96): reduction of 100 vehicles required;
  - Eastbound left turn (v/c: 1.12): reduction of 20 vehicles required;
  - Eastbound through (v/c: 1.03): reduction of 100 vehicles required.

#### PM Peak Hour

- Baseline Road/Merivale Road
  - Southbound left turn (v/c: 1.21): reduction of 100 vehicles required;
  - Eastbound left turn (v/c: 1.19): reduction of 70 vehicles required;
  - Westbound left turn (v/c: 1.21): reduction of 70 vehicles required;
  - Westbound through (v/c: 0.95): reduction of 50 vehicles required.
- Baseline Road/Clyde Avenue
  - Northbound through/right turn (v/c: 1.06): reduction of 150 vehicles required;
  - Southbound left turn (v/c: 1.00): reduction of 40 vehicles required;
  - Eastbound left turn (v/c: 1.12): reduction of 30 vehicles required;
  - Westbound through (v/c: 1.07): reduction of 180 vehicles required.
- Clyde Avenue/Merivale Road/Lotta Avenue
  - Westbound left turn (v/c: 0.91): reduction of 30 vehicles required.

### 3.4.2 2031/2038 Background Intersection Operations

Intersection capacity analysis has been conducted for the background traffic conditions. Signal timing plans at Baseline Road/Merivale Road and Baseline Road/Clyde Avenue have been optimized to reflect the planned changes on Baseline Road. The results of the analysis are summarized in **Table 12** and **Table 13** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix L**.

**Table 12: 2031/2038 Background – Traffic Operations**

Intersection	Period	Critical Movements			Intersection		
		Max v/c	LOS	Mvmt	v/c	Delay	LOS
Baseline Road/ Merivale Road	AM	1.11	F	SBL	1.06	66 sec	F
		1.14	F	EBL			
		1.08	F	WBT/R			
	PM	1.26	F	SBL	1.07	82 sec	F
		1.01	F	SBT/R			
		1.25	F	EBL			
Baseline Road/ Clyde Avenue	AM	0.96	E	NBT/R	0.88	54 sec	D
	PM	1.02	F	NBL			
		1.08	F	NBT/R			
		1.19	F	SBL			
		1.19	F	EBL			
1.27	F	WBT/R					
Clyde Avenue/ Merivale Road/Lotta Avenue	AM	0.78	C	WBL	0.72	22 sec	C
	PM	0.92	E	WBL	0.79	37 sec	C
Merivale Road/ Burris Lane	AM	0.44	A	NBT/R	0.41	5 sec	A
	PM	0.49	A	SBT/R	0.46	9 sec	A
Merivale Road/ Loblaws Plaza	AM	0.33	A	NBT/R	0.31	7 sec	A
	PM	0.51	A	SBT/R	0.46	9 sec	A

**Table 13: 2031/2038 Background – Queues**

Intersection	Mvmt	Storage/ Spacing <sup>(1)</sup>	AM Peak			PM Peak		
			v/c [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)	v/c [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)
Baseline Road/ Merivale Road	SBL	125m	1.11 [F]	~54	#83	1.26 [F]	~68	#98
	SBT/R	250m	0.65 [B]	68	89	1.01 [F]	~148	#194
	EBL	50m	1.14 [F]	~78	m#93	1.25 [F]	~92	m#102
	WBL	115m	0.78 [C]	31	#58	0.97 [E]	69	#120
	WBT/R	320m	1.08 [F]	~194	#233	1.11 [F]	~214	#254
Baseline Road/ Clyde Avenue	NBL	75m	0.51 [A]	11	20	1.02 [F]	~42	#70
	NBT/R	230m	0.96 [E]	111	#149	1.08 [F]	~131	#169
	SBL	100m	0.88 [D]	43	#66	1.19 [F]	~57	#86
	SBT/R	480m	0.48 [A]	55	71	0.85 [D]	88	#111
	EBL	85m	0.90 [D]	44	#83	1.19 [F]	~48	#89
	EBT/R	260m	0.91 [E]	156	#195	0.87 [D]	139	167
	WBL	165m	0.77 [C]	16	m17	0.78 [C]	29	m30
WBT/R	270m	0.80 [C]	100	m102	1.27 [F]	~291	m#267	
Clyde Avenue/ Merivale Road/ Lotta Avenue	NBT	275m	0.38 [A]	47	83	0.63 [B]	89	#134
	SBT/R	140m	0.30 [A]	35	64	0.56 [A]	76	108
	WBL	95m	0.78 [C]	52	66	0.92 [E]	119	#139

1. Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection for through lanes

From the previous tables, multiple movements at Baseline Road/Merivale Road do not meet the target Auto LOS E during both peak hours, and multiple movements at Baseline Road/Clyde Avenue does not meet the target during the PM peak hour.

During the AM peak hour, the average and maximum queue lengths of the eastbound left turn movement at Baseline Road/Merivale Road exceed the storage length provided for this movement. Based on the Baseline Road BRT roadway modifications shown in **Figure 4**, this is a result of the eastbound left turn lane being shortened from approximately 110m to approximately 50m.

During the PM peak hour, the average and maximum queue lengths of the eastbound left turn movement at Baseline Road/Merivale Road and the westbound left turn movement at Clyde Avenue/Merivale Road/Lotta Avenue exceed their respective storage lengths. Additionally, the maximum queue lengths of the westbound left turn movement at Baseline Road/Merivale Road and the eastbound left turn movement at Baseline Road/Clyde Avenue also exceed their respective storage lengths, but are anticipated to be contained within the taper of those auxiliary lanes. The average and maximum queue lengths of the westbound through/right turn movement at Baseline Road/Clyde Avenue extends to the upstream signalized access to the Laurentian Place shopping centre.

The approximate required reduction in volumes to meet the target Auto LOS for each over-capacity movement is included below.

#### AM Peak Hour

- Baseline Road/Merivale Road
  - Southbound left turn (v/c: 1.11): reduction of 40 vehicles required;
  - Eastbound left turn (v/c: 1.14): reduction of 40 vehicles required;
  - Westbound through/right turn (v/c: 1.08): reduction of 100 vehicles required.

#### PM Peak Hour

- Baseline Road/Merivale Road
  - Southbound left turn (v/c: 1.26): reduction of 90 vehicles required;
  - Southbound through/right turn (v/c: 1.01): reduction of 10 vehicles required;
  - Eastbound left turn (v/c: 1.25): reduction of 60 vehicles required;
  - Westbound through/right turn (v/c: 1.11): reduction of 140 vehicles required.
- Baseline Road/Clyde Avenue
  - Northbound left turn (v/c: 1.02): reduction of 10 vehicles required;
  - Northbound through/right turn (v/c: 1.08): reduction of 70 vehicles required;
  - Southbound left turn (v/c: 1.19): reduction of 60 vehicles required;
  - Eastbound left turn (v/c: 1.19): reduction of 30 vehicles required;
  - Westbound through/right turn (v/c: 1.27): reduction of 360 vehicles required.

Traffic throughout the study area could be displaced or alleviated through a combination of increase use of non-auto modes of transportation, alternate time to travel for drivers using the study area roadways to make use of off-peak capacity, and alternate routes for travel. A further description of each option is summarized as follows.

### Increased Use of Non-Auto Modes

It is assumed that the Baseline Road BRT Corridor project will be completed by 2031. These measures will provide more reliable transit between Baseline Station and Heron Station (as outlined in the Affordable Network). This is anticipated to increase the transit modal share and decrease the auto modal share, and could reduce traffic volumes within the study area. As stated in Section 3.2.2, no reduction in east-west traffic volumes on Baseline Road is assumed, in order to maintain a conservative analysis.

### Alternate Travel Times

As congestion increases within the study area, some motorists may alter their travel to occur outside of the peak hours. This shift in travel times may result in a reduction of peak hour traffic volumes.

### Alternate Routes of Travel

As congestion increases within the study area, some motorists may choose alternate routes of travel outside the study area. Alternative north-south routes outside of the study area include Greenbank Road, Woodroffe Avenue, Fisher Avenue, and Prince of Wales Drive. Alternative east-west routes outside of the study area include Carling Avenue, Highway 417, Meadowlands Drive, and West Hunt Club Road. A review of the alternate routes in proximity of the study area is considered outside the scope of this study.

## **4.0 ANALYSIS**

### **4.1 Development Design**

#### **4.1.1 Design for Sustainable Modes**

Concrete sidewalks will connect to the existing pedestrian facilities on the south side of Baseline Road, north side of Merivale Road, and the east side of Clyde Avenue. Within the site, sidewalks will be provided on the outside of the internal crescent roadway that connects to Merivale Road. An on-site pathway for cyclists and pedestrians will be provided between Clyde Avenue and Baseline Road.

A total of 497 bicycle parking spaces will be provided in select landscaped areas outdoors, and 1,189 bicycle parking spaces will be provided in secure or sheltered areas in the underground parking garage. The total number of bicycle parking spaces and the bicycle parking requirements per the City's ZBL is reviewed in Section 6.2.

The nearest bus stops to the subject site are discussed in Section 2.1.5 and shown in **Figure 2**. OC Transpo's service design guidelines for peak period service is to provide service within a five-minute (400m) walk of home, work, or school for 95% of urban residents. Residents of every building of the proposed development will be within 400m of bus stops on one or more of the boundary streets (i.e. Baseline Road, Merivale Road, or Clyde Avenue).

A review of the City's *Transportation Demand Management (TDM)-Supportive Development Design and Infrastructure Checklist* has been conducted. All required TDM-supportive design and infrastructure measures in the TDM checklist are met. A copy of this checklist is included in **Appendix M**. In addition to the required measures, the proposed development also meets the following 'basic' or 'better' measures as defined in the *TDM-Supportive Development Design and Infrastructure Checklist*.

- Locate building close to the street, and do not locate parking areas between the street and building entrances;
- Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations;
- Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort;
- Provide safe, direct, and attractive walking routes from building entrances to nearby transit stops;
- Provide lighting, landscaping, and benches along walking and cycling routes between building entrances and streets, sidewalks, and trails.

#### 4.1.2 Circulation and Access

Pick-ups and drop-offs will occur curbside on the internal crescent roadway. Garbage collection will also take place at collection points near each parking garage entrance along the internal crescent roadway. The internal crescent will also form the on-site fire route.

#### 4.2 Parking

The subject site is located in Area C of Schedule 1 and Schedule 1A of the City’s ZBL, and is completely located within 600m of the rapid transit corridor shown in Schedule 2A of the City’s ZBL. Per Sections 101(5)(d), 102(5), and 103(1) of the ZBL, the minimum vehicle parking requirements are therefore calculated using the rates for Area X, and the maximum vehicle parking requirements are calculated using the rates for Area C.

The vehicle and bicycle parking requirements for the proposed development, as identified in Sections 101, 102, 103, and 111 of the ZBL, are summarized in **Table 14**.

**Table 14: Parking Requirements**

Land Use	Rate	Units/GFA	Required
<i>Minimum Vehicle Parking Requirements</i>			
Apartment, Mid-Rise	0.5 spaces per unit (residents)	1,967 units	984
	0.1 per unit up to a max of 30 spaces per building (visitors) <sup>(1)</sup>		122
Retail Store	1.25 spaces per 100 m <sup>2</sup> GFA <sup>(1)</sup>	1,129 m <sup>2</sup>	17
<b>Minimum Required</b>			<b>1,123</b>
<b>Total Parking Proposed</b>			<b>2,008</b>
<i>Maximum Vehicle Parking Requirements</i>			
Apartment, Mid-Rise	1.75 spaces per dwelling unit	1,967 units	3,442
	(combined total of resident and visitor parking)		
Retail Store	4.0 spaces per 100 m <sup>2</sup> GFA	1,129 m <sup>2</sup>	45
<b>Maximum Permitted</b>			<b>3,487</b>
<b>Total Parking Proposed</b>			<b>2,008</b>
<i>Minimum Bicycle Parking Requirements</i>			
Apartment, Mid-Rise	0.5 per dwelling unit	1,967 units	984
Retail Store	1.0 per 250 m <sup>2</sup> GFA	1,129 m <sup>2</sup>	5
<b>Minimum Required</b>			<b>989</b>
<b>Total Bicycle Parking Proposed</b>			<b>1,686</b>

1. The development is considered to include five buildings: Building A (Phase 1, 115 units and 169 m<sup>2</sup> of retail), Building B (Phases 2-4, 551 units and 223 m<sup>2</sup> of retail), Building C (Phase 5, 221 units and 169 m<sup>2</sup> of retail), Building D (Phases 6-9, 793 units and 197 m<sup>2</sup> of retail), and Building E (Phase 10, 287 units and 371 m<sup>2</sup> of retail).



Based on the previous table, the proposed number of vehicle and bicycle parking spaces meet the requirements of the ZBL.

Section 111(12) of the ZBL identifies that, where the number of bicycle parking spaces required for a single residential building exceeds 50 spaces, a minimum of 25% of the required total must be located within a building or structure, a secure area, or bicycle lockers. As the proposed development provides the majority of bicycle parking spaces indoors (i.e. 497 surface bicycle parking spaces and 1,189 underground bicycle parking spaces), this requirement is met.

### 4.3 Boundary Streets

This section provides a review of the boundary streets Baseline Road, Merivale Road, and Clyde Avenue. The MMLOS Guidelines produced by IBI Group in October 2015 were used to evaluate the levels of service for each alternative mode of transportation on Merivale Road and Clyde Avenue. Per the 2017 TIA Guidelines, an MMLOS review is not required for any streets where a complete streets concept has been developed. This applies to Baseline Road, based on the transit priority measures functional design shown in **Figure 4**. Along the subject site’s frontage to Baseline Road, the proposed development is not anticipated to affect the proposed facilities on the south side of Baseline Road, which include a 2.0m sidewalk, 2.0m cycle track, and 1.2m of additional boulevard width.

Schedule B of the City’s Official Plan identifies the boundary streets as Arterial Mainstreets. However, Merivale Road and Clyde Avenue have been evaluated further using the targets outlined for the ‘Within 600m of a rapid transit station’ policy area, due to the subject site’s proximity to the future Baseline Road BRT. Merivale Road and Clyde Avenue have been evaluated based on existing conditions.

A detailed MMLOS review of the boundary streets is included in **Appendix N**. A summary of the results of the segment MMLOS analysis for Merivale Road and Clyde Avenue are provided in **Table 15**.

**Table 15: Segment MMLOS Summary**

Segment	PLOS		BLOS		TLOS		TkLOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Merivale Road	F	A	F	C	E	-	A	D
Clyde Avenue	F		F		D		A	

The results of the segment MMLOS analysis can be summarized as follows:

- Merivale Road and Clyde Avenue do not meet the target pedestrian level of service (PLOS);
- Merivale Road and Clyde Avenue do not meet the target bicycle level of service (BLOS);
- Merivale Road achieves a transit level of service (TLOS) E and Clyde Avenue achieves a TLOS D, however no targets are identified;
- Merivale Road and Clyde Avenue both meet the target truck level of service (TkLOS).

Both Merivale Road and Clyde Avenue do not meet the target PLOS A. Per Exhibit 4 of the MMLOS Guidelines, the best possible PLOS for both streets is a PLOS D (based on the operating speed and traffic volumes), which can be achieved by providing a 2.0m-wide sidewalk with a minimum boulevard width of 2.0m. This is identified for the City’s consideration.

Both Merivale Road and Clyde Avenue do not meet the target BLOS C. Per Exhibit 11 of the MMLoS Guidelines, the target can be achieved through the implementation of curbside bike lanes with a minimum width of 1.2m. This is identified for the City's consideration.

#### 4.4 Access Intersections

##### 4.4.1 Access Design

The proposed development includes two full-movement accesses to Merivale Road. Full-height curb and sidewalks will be reinstated where required on Merivale Road and Clyde Avenue, and curbs will be depressed and continuous across the proposed accesses to Merivale Road. The design of the proposed accesses have been evaluated using the provisions of the City's *Private Approach By-Law (PABL)* and the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*.

Section 25(a) of the PABL identifies that a minimum of 35m of frontage to a roadway is required to provide two two-way private approaches. This requirement is met, as the subject site has approximately 200m of frontage to Merivale Road.

Section 25(c) of the PABL identifies a maximum width requirement of 9.0m for any two-way private approach, as measured at the street line. Since the two proposed accesses are approximately 6.7m to 6.9m in width at the ROW, this requirement is met.

Section 25(m)(ii) of the PABL identifies that, for a property that abuts or is within 46m of an arterial roadway, there are minimum distance requirements between a private approach and the nearest intersecting street line, and between the nearest limits of two private approaches to the same property, based on the land use and the number of parking spaces provided. For apartment buildings with 300 or more parking spaces, a minimum distance of 60m is required. The westerly access is proposed to be located approximately 160m east of Clyde Avenue, the easterly access is proposed to be located approximately 280m west of Burris Lane, and the two accesses are approximately 178m apart. Therefore, this requirement is met.

Section 25(p) of the PABL identifies a minimum separation requirement of 3m between a private approach and the nearest property line, as measured at the street line. Since the two proposed accesses are approximately 40m or further from each property line, this requirement is met.

Section 25(u) of the PABL identifies a requirement that any private approach serving a parking area with more than 50 parking spaces shall not have a grade exceeding 2% for the first 9m inside the property line. This requirement is met by the proposed accesses.

TAC's *Geometric Design Guide for Canadian Roads* identifies minimum clear throat length requirements for accesses based on the land use, development size, and class of roadway. For apartment developments with over 200 units, TAC identifies a minimum clear throat length of 40m for any accesses to arterial roadways. At the westerly access, a clear throat length of approximately 40m is available prior to the drive aisle toward the westernmost parking garage ramp. At the easterly access, a clear throat length of approximately 15m is available prior to the nearest parallel parking space in the outbound direction and 50m is available prior to the nearest parallel parking space in the inbound direction. As the required clear throat length is available on the inbound direction of the east access, queues spilling back onto Merivale Road are not anticipated. Based on the foregoing, the clear throat length at both accesses is not anticipated to create a safety concern along Merivale Road.

TAC's *Geometric Design Guide* also identifies minimum corner clearance requirements between a private approach and an existing intersection. For signalized intersections and full-movement accesses to arterial roadways, the *Geometric Design Guide* identifies a minimum corner clearance requirement of 70m. This requirement is met, as each proposed access is approximately 120m from the nearest intersections at Clyde Avenue and Loblaw's Plaza.

#### 4.4.2 Access Operations

Analysis of the access intersection operations have been conducted in Synchro, with the results summarized in **Table 16**. The intersection parameters used in the analysis are consistent with the *2017 TIA Guidelines* (Saturated Flow Rate: 1,800 vphpl, Peak Hour Factor: 1.0 for future conditions).

**Table 16: Access Intersection Operations**

Access	AM Peak Hour			PM Peak Hour		
	Delay	LOS	Mvmt	Delay	LOS	Mvmt
<b>2031 Access Operations</b>						
East Site Access	16 sec	C	WBL/T/R	16 sec	C	EBL/T/R
West Site Access	13 sec	B	EBL/R	15 sec	B	EBL/R
<b>2038 Access Operations</b>						
East Site Access	16 sec	C	WBL/T/R	18 sec	C	EBL/T/R
West Site Access	13 sec	B	EBL/R	14 sec	B	EBL/R

Based on the foregoing, both accesses are anticipated to operate with an acceptable vehicular level of service in both years of analysis, operating as an Auto LOS C or better.

#### 4.5 Transportation Demand Management

##### 4.5.1 Context for TDM

The ultimate proposed development will be built in ten phases. The residential unit and ground-floor commercial area breakdown of each phase is summarized in **Table 17**.

**Table 17: Unit Breakdown by Phase**

Phase	Residential Unit Type					Total	Commercial Total
	Townhome	Studio	1-bedroom	2-bedroom	3-bedroom		
1	7	-	68	25	15	<b>115</b>	1,815 ft <sup>2</sup>
2	8	9	218	27	14	<b>276</b>	1,115 ft <sup>2</sup>
3	-	-	18	45	-	<b>63</b>	-
4	-	6	171	27	8	<b>212</b>	1,290 ft <sup>2</sup>
5	-	-	181	29	11	<b>221</b>	1,815 ft <sup>2</sup>
6	-	32	132	33	24	<b>221</b>	610 ft <sup>2</sup>
7	8	-	119	35	-	<b>162</b>	-
8	6	16	153	23	-	<b>198</b>	-
9	-	-	170	42	-	<b>212</b>	1,505 ft <sup>2</sup>
10	-	-	190	89	8	<b>287</b>	4,000 ft <sup>2</sup>
<b>Total</b>	<b>29</b>	<b>63</b>	<b>1,420</b>	<b>375</b>	<b>80</b>	<b>1,967</b>	<b>12,150 ft<sup>2</sup></b>

#### 4.5.2 Need and Opportunity

The subject site is located in the General Urban Area, but has frontage onto Baseline Road, Merivale Road, and Clyde Avenue, all of which also have an Arterial Mainstreet designation per Schedule B of the City's Official Plan. As first discussed in Section 3.1.1 and shown in **Table 3**, the mode shares for the proposed development are assumed to have a lower driver share and higher transit share than the surveyed mode shares of the Merivale region, as outlined in the *TRANS Trip Generation Manual*. These changes were applied to reflect the future BRT corridor on Baseline Road, which will include continuous median bus lanes.

Comparing the typical residential driver share for the Merivale region (41% during both peak hours) and the assumed driver shares for the proposed development (30% during both peak hours in 2031, and 24% to 25% during the peak hours in 2038), failure to meet these assumed driver share targets would equate to the following increases in two-way traffic volumes generated by the proposed residences:

##### 50% Buildout (2031)

- AM Peak Hour: an additional 46 vehicle trips (increasing from 115 to 161 vehicle trips);
- PM Peak Hour: an additional 46 vehicle trips (increasing from 119 to 165 vehicle trips).

##### Ultimate Buildout (2038)

- AM Peak Hour: an additional 148 vehicle trips (increasing from 181 to 329 vehicle trips);
- PM Peak Hour: an additional 138 vehicle trips (increasing from 195 to 333 vehicle trips).

As shown in Sections 3.4.1 and 3.4.2, there are existing peak hour congestion issues within the study area, particularly at intersections with Baseline Road, and these issues are anticipated to continue in the future. A failure to meet the proposed mode share targets by the proposed development may marginally increase congestion. However, the proposed development will be located in close proximity to multiple transit stops, will connect to existing pedestrian and cycling networks, adjacent to multiple commercial areas, and is relatively proximal to other amenities such as parks.

#### 4.5.3 TDM Program

A review of the City's *TDM Measures Checklist* has been conducted by the proponent, who has committed to providing the following TDM measures. A copy of the checklists is included in **Appendix M**.

- Display local area maps with walking/cycling access routes and key destinations at major entrances;
- Display relevant transit schedules and route maps at entrances;
- Contract with provider to install on-site carshare vehicles and promote their use by residents;
- Unbundle parking cost from monthly rent;
- Provide a multimodal travel option information package to new residents.

#### 4.6 Transit

Based on the trip generation presented in Section 3.1.1, the proposed development is anticipated to generate the following number of transit trips.

- 50% Buildout (2031)
  - 213 transit trips during the AM peak hour (66 in, 147 out);
  - 192 transit trips during the PM peak hour (111 in, 81 out).
- Ultimate Buildout (2038)
  - 480 transit trips during the AM peak hour (150 in, 330 out);
  - 428 transit trips during the PM peak hour (247 in, 181 out).

The distribution of transit trips to/from the development has been estimated based on origin-destination data from the *TRANS O-D Survey Report*. The destinations of trips from the Merivale district to all TRANS O-D districts during the AM peak period were used to develop the following transit distribution:

- 10% to/from the north via Route 50 (Lincoln Fields to Tunney’s Pasture);
- 20% to/from the north via Route 80 (Barrhaven Centre to Tunney’s Pasture);
- 10% to/from the north via Route 81 (Merivale/Kimway to Tunney’s Pasture);
- 15% to/from the south via Route 80 (Barrhaven Centre to Tunney’s Pasture);
- 25% to/from the east via Route 88 (Hurdman to Terry Fox);
- 20% to/from the west via Route 88 (Hurdman to Terry Fox).

Winter 2020 (January 5 to March 7) transit utilization data within the study area was obtained from OC Transpo, and is included in **Appendix C**. This period is considered the most recent ‘normal’ ridership period, before ridership was impacted by the ongoing COVID-19 pandemic. Average peak period (6:00am to 9:00am and 3:00pm to 6:00pm) boarding, alighting, and bus load at departure information was obtained for stops #4037, #4043, #4484, #4487, #4488, #4489, #4821, #6937, #7494, and #7495.

Existing and projected boarding and alighting information is summarized in **Table 18**. Any zero (0) values in the table indicate a measured average boarding or alighting value of zero, rather than an absence of data. Any dash (-) values indicate the stop is not served in a given direction and time period. Peak period boarding and alighting data have been divided by three to convert to peak hour boardings and alightings.

**Table 18: Existing and Projected Transit Utilization**

Stop	Location	Route	Direction	Boarding (tph) <sup>(1)</sup>			Alighting (tph) <sup>(1)</sup>		
				Existing	Site	Total	Existing	Site	Total
<b>AM Peak Hour</b>									
#4037	Merivale/Ad. 1460	80	NB	3	33	36	1	11	12
#4043	Baseline/ Laurentian Place	81	EB	1	8	9	0	0	0
		88	EB	8	83	91	9	30	39
#4484		88	WB	6	66	72	9	38	47
#4487	Merivale/Ad. 1460	80	SB	5	0	5	2	0	2
		81	WB	0	0	0	0	0	0
#4488	Merivale/Gilbey	80	SB	0	25	25	0	15	15
		81	EB	0	8	8	0	0	0
#4489		80	NB	1	33	34	0	11	11
#4821	Clyde/Merivale	81	EB	0	8	8	0	0	0
#6937	Merivale/Kimway	80	SB	1	25	26	1	15	16
		81	EB	0	8	8	0	0	0
		81	WB	0	0	0	0	15	15
#7494	Clyde/Maitland	50	WB	0	33	33	0	15	15
#7495	Clyde/Baseline	50	EB	-	-	-	-	-	-

Stop	Location	Route	Direction	Boarding (tph) <sup>(1)</sup>			Alighting (tph) <sup>(1)</sup>		
				Existing	Site	Total	Existing	Site	Total
<b>PM Peak Hour</b>									
#4037	Merivale/Ad. 1460	80	NB	10	18	28	12	19	31
#4043	Baseline/ Laurentian Place	81	EB	3	5	8	1	0	1
		88	EB	16	45	61	22	49	71
#4484		88	WB	22	36	58	21	62	83
#4487	Merivale/Ad. 1460	80	SB	6	0	6	7	0	7
		81	WB	1	0	1	5	0	5
#4488	Merivale/Gilbey	80	SB	1	14	15	1	25	26
		81	EB	1	5	6	1	0	1
#4489		80	NB	1	18	19	1	19	20
#4821	Clyde/Merivale	81	EB	0	5	5	0	0	0
#6937	Merivale/Kimway	80	SB	1	14	15	0	25	25
		81	EB	2	5	7	0	0	0
		81	WB	0	0	0	1	25	26
#7494	Clyde/Maitland	50	WB	-	-	-	-	-	-
#7495	Clyde/Baseline	50	EB	3	18	21	1	25	26

1. tph: transit trips per hour

While it is recognized that the Baseline Road BRT will change the bus stop locations along the Baseline Road corridor, this analysis considers existing stops only. It is anticipated that service along the corridor (effectively OC Route 88) will be more frequent once the BRT is operational; however, this analysis assumes headways to be approximately 10 minutes in the peak hours to remain conservative.

OC Routes 80 and 81 are served by multiple bus stops within the study area, and therefore the average bus load at departure of stops further downstream account for site-generated transit trips boarding at the stop(s) further upstream, and vice versa. OC Route 81 begins and ends at stop #6937, and therefore this stop is served by Route 81 in both directions. Since stop #6937 is a timepoint, all riders that alight Route 81 in the study area are assumed to alight at this stop.

The order of bus stops in the study area can be summarized as follows:

**OC Route 50**

- to Lincoln Fields: #7494
- to Tunney’s Pasture: #7495

**OC Route 80**

- to Barrhaven Centre: #4487, #6937, #4488
- to Tunney’s Pasture: #4489, #4037

**OC Route 81**

- Both directions: #4487, #6937 (timepoint), #4488, #4821, #4043

**OC Route 88**

- to Terry Fox: #4484
- to Hurdman: #4043

A discussion of the site-generated impact to each route during the weekday peak hours is included below.

Route 50 (to Lincoln Fields)

At stop #7494, the development is projected to generate an additional 33 AM boarding trips and 15 AM alighting trips. The stop is not served during the PM peak hour. As Route 50 runs on approximately 30-minute intervals, this equates to 17 AM boardings and eight alightings per bus.

The existing average bus load at departure at stop #7494 is seven riders during the AM peak hour. Accounting for the above trips, the average bus load at departure is estimated to increase to 24 riders during the AM peak hour. The additional site-generated trips are not anticipated to require more frequent service at this stop.

*Route 50 (to Tunney's Pasture)*

At stop #7495, the development is projected to generate an additional 18 PM boarding trips and 25 PM alighting trips. The stop is not served during the AM peak hour. As Route 50 runs on approximately 30-minute intervals, this equates nine PM boardings and 13 PM alightings per bus.

The existing average bus load at departure at stop #7495 is three riders during the PM peak hour. Accounting for the above trips, the average bus load at departure is estimated to increase to 12 riders during the PM peak hour. The additional site-generated trips are not anticipated to require more frequent service at this stop.

*Route 80 (to Barrhaven Centre)*

At stop #4487, the development is not projected to generate any additional trips. At stops #6937 and #4488, the development is projected to generate 25 AM boarding trips, 15 AM alighting trips, 14 PM boarding trips, and 25 PM alighting trips at each stop. As Route 80 runs on approximately 15-minute intervals, this equates to six AM boardings, four AM alightings, four PM boardings, and six PM alightings per bus at stops #6937 and #4488.

The existing average bus loads at departure are 22 riders during the AM peak hour and 16 riders during the PM peak hour at stops #4487, #6937, and #4488. Accounting for the above trips, the average bus load at departure is estimated to increase to 30 riders during the AM peak hour and 28 riders during both the PM peak hour at stop #4487, 32 riders during the AM peak hour and 26 riders during the PM peak hour at stop #6937, and 34 riders during the AM peak hour and 24 riders during the PM peak hour at stop #4488. The additional increase generated by the development are not anticipated to require more frequent service at these stops.

*Route 80 (to Tunney's Pasture)*

At stops #4489 and #4037, the development is projected to generate 33 AM boarding trips, 11 AM alighting trips, 18 PM boarding trips, and 19 PM alighting trips at each stop. As Route 80 runs on approximately 15-minute intervals, this equates to eight AM boardings, three AM alightings, five PM boardings, and five PM alightings per bus at stops #4489 and #4037.

The existing average bus loads at departure are eight to nine riders during the AM peak hour and 18 riders during the PM peak hour at stops #4489 and #4037. Accounting for the above trips, the average bus load at departure is estimated to increase to 20 riders during the AM peak hour and 28 riders during the PM peak hour at stop #4489, and 26 riders during the AM peak hour and 28 riders during the PM peak hour at stop #4037. The additional increase generated by the development are not anticipated to require more frequent service at these stops.

*Route 81 (to Merivale/Kimway)*

At stop #4487, the development is not projected to generate any additional trips. At stop #6937, the development is projected to generate 15 AM alighting trips and 25 PM alighting trips. Any riders boarding Route 81 at stop #6937 are discussed in the next section. As Route 81 runs on approximately 30-minute intervals, this equates to eight AM alightings and 13 PM alightings per bus. Since stop #6937 is a timepoint, it is assumed that any riders that would have alighted at other downstream stops will choose to alight at stop #6937 instead.

The existing average bus load at departure at stops #4487 and #6937 are zero riders during the AM and PM peak hours. Accounting for the above trips, the average bus load at departure is estimated to increase to eight riders during the AM peak hour and 13 riders during the PM peak hour at stop #4487. As discussed above, all of these riders are anticipated to alight at stop #6937. The additional increase generated by the development are not anticipated to require more frequent service at these stops.

Route 81 (to Tunney's Pasture)

At stops #6937, #4488, #4821, and #4043, the development is projected to generate eight AM boarding trips and five PM boarding trips at each stop. As Route 81 runs on approximately 30-minute intervals, this equates to four AM boardings and three PM boardings per bus.

The existing average bus load at departure at stops #6937, #4488, #4821, and #4043 are zero riders during the AM peak hour and zero to three riders during the PM peak hour. Accounting for the above trips, the average bus load at departure is estimated to increase to four riders during the AM peak hour and four riders during the PM peak hour at stop #6937, eight riders during the AM peak hour and seven riders during the PM peak hour at #4488, 12 riders during the AM peak hour and ten riders during the PM peak hour at #4821, and 16 riders during the AM peak hour and 13 riders during the PM peak hour at #4043. The additional trips generated by the development are not anticipated to require more frequent service at this stop.

Route 88 (to Terry Fox)

At stop #4484, the development is projected to generate 66 AM boarding trips, 38 AM alighting trips, 36 PM boarding trips, and 62 PM alighting trips. As Route 88 runs on approximately 10-minute intervals, this equates to 11 AM boardings, six AM alightings, six PM boardings, and 11 PM alightings per bus.

The existing average bus load at departure at stop #4484 is 28 riders during the AM peak hour and 35 riders during the PM peak hour. Accounting for the above trips, the average bus load at departure is estimated to increase to 39 riders during the AM peak hour and 41 riders during the PM peak hour. The additional trips generated by the development are not anticipated to require more frequent service at this stop, although more frequent service is anticipated after completion of the Baseline Road BRT corridor.

Route 88 (to Hurdman)

At stop #4043, the development is projected to generate 83 AM boarding trips, 30 AM alighting trips, 45 PM boarding trips, and 49 PM alighting trips. As Route 88 runs on approximately 10-minute intervals, this equates to 14 AM boardings, five AM alightings, eight PM boardings, and eight PM alightings per bus.

The existing average bus load at departure at stop #4043 is 26 riders during the AM peak hour and 24 riders during the PM peak hour. Accounting for the above trips, the average bus load at departure is estimated to increase to 40 riders during the AM peak hour and 32 riders during the PM peak hour. The additional trips generated by the development are not anticipated to require more frequent service at this stop, although more frequent service is anticipated after completion of the Baseline Road BRT corridor.

Based on the foregoing, the proposed development at ultimate buildout is not anticipated to have a significant impact on the existing operations of OC Routes 50, 80, 81, or 88.



## 4.7 Intersection Design

### 4.7.1 Intersection MMLOS Review

This section provides a review of the MMLOS of the signalized study area intersections, using complete streets principles. All intersections have been evaluated against the PLOS, BLOS, TLOS, and TkLOS targets for intersections within 600m of a rapid transit station, consistent with Section 4.3, as these targets are typically more stringent. However, since all intersections have been evaluated based on existing conditions, the target Auto LOS is based on the Arterial Mainstreet target, consistent with the discussions in Section 3.4. The full intersection MMLOS analysis is included in **Appendix N**. A summary of the results is shown in **Table 19**.

**Table 19: Intersection MMLOS Summary**

Intersection	PLOS		BLOS		TLOS		TkLOS		Auto LOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Baseline Road/ Merivale Road	F	A	F	A	F	A	B	D	E	D
Baseline Road/ Clyde Avenue	F	A	F	A	F	A	B	D	F	D
Clyde Avenue/ Merivale Road/Lotta Avenue	F	A	F	C	F	-	E	D	C	D
Merivale Road/ Burriss Lane	F	A	F	B	B	-	F	D	A	D
Merivale Road/ Loblaws Plaza	F	A	F	C	C	-	F	D	A	D

The results of the intersection MMLOS analysis can be summarized as follows:

- No study area intersections meet the target PLOS or BLOS;
- Baseline Road/Merivale Road and Baseline Road/Clyde Avenue do not meet the target TLOS;
- Baseline Road/Merivale Road and Baseline Road/Clyde Avenue meet the target TkLOS, while Clyde Avenue/Merivale Road/Lotta Avenue, Merivale Road/Burriss Lane, and Merivale Road/Loblaws Plaza do not;
- Clyde Avenue/Merivale Road/Lotta Avenue, Merivale Road/Burriss Lane, and Merivale Road/Loblaws Plaza meet the target Auto LOS, while Baseline Road/Merivale Road and Baseline Road/Clyde Avenue do not.

The following includes further discussion for each intersection.

#### Baseline Road/Merivale Road

The intersection does not meet the target PLOS A, BLOS A, TLOS A, or Auto LOS D.

All approaches do not meet the target PLOS A, and have a cross-section equivalent to eight lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes. Based on Exhibit 5 of the 2017 Addendum to the MMLOS Guidelines, any approach with a cross-section equivalent to four or more lanes crossed cannot achieve a PLOS A. Based on the Baseline Road BRT functional design, the future intersection will include shorter crossing distances at all approaches and median refuges at the east and west approaches. This will increase pedestrians' level of comfort at this intersection.

All approaches do not meet the target BLOS A. Based on the Baseline Road BRT functional design, the future intersection will include fully segregated cycling facilities on each approach, along with a protected intersection design to facilitate left turns off-road. This will improve all approaches to the target BLOS A.

All approaches do not meet the target TLOS A. The planned modifications on Baseline Road are anticipated to significantly improve transit operations for the east and west approaches. It is anticipated that the planned transit priority measures proposed in the 2031 Network Concept of the 2013 TMP for Merivale Road will also improve transit operations. No other recommendations are identified.

#### Baseline Road/Clyde Avenue

The intersection does not meet the target PLOS A, BLOS A, TLOS A, or Auto LOS D.

All approaches do not meet the target PLOS A, and have a cross-section equivalent to nine lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes. Based on the Baseline Road BRT functional design, the future intersection will include shorter crossing distances at all approaches and median refuges at the east and west approaches. This will increase pedestrians' level of comfort at this intersection.

All approaches do not meet the target BLOS A. Based on the Baseline Road BRT functional design, the future intersection will include fully segregated cycling facilities on each approach, along with a protected intersection design to facilitate left turns off-road. This will improve all approaches to the target BLOS A.

All approaches do not meet the target TLOS A. The planned modifications on Baseline Road are anticipated to significantly improve transit operations for the east and west approaches, however delays at the north and south approaches are not anticipated to improve in future conditions.

#### Clyde Avenue/Merivale Road/Lotta Avenue

The intersection does not meet the target PLOS A, BLOS C, or TkLOS D.

All approaches do not meet the target PLOS A, and have a cross-section equivalent to seven lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes. The north, south, and east approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks (greater than 400,000 vehicle/pedestrian conflicts over an eight-hour period). This is identified for the City's consideration.

The north, south, and east approaches do not meet the target BLOS C. Based on Exhibit 12 of the MMLoS Guidelines, the target BLOS would require curbside bike lanes or cycle tracks at these approaches, as well as two-stage left-turn bike boxes for northbound, southbound, and westbound cyclists. This is identified for the City's consideration.

The north approach does not meet the target TkLOS D. The receiving lane on Lotta Avenue is approximately 8m in width before narrowing downstream of the intersection. Therefore, no recommendations are identified.

Merivale Road/Burris Lane

The intersection does not meet the target PLOS A, BLOS B, or TkLOS D.

All approaches do not meet the target PLOS A, and have a cross-section equivalent to four lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without removing auxiliary lanes or reducing the number of travel lanes. The north and south approaches meet the City's threshold for zebra-striped crosswalks. This is identified for the City's consideration.

The north and south approaches do not meet the target BLOS B based on left turn characteristics. Based on Exhibit 12 of the MMLOS Guidelines, bike boxes would be required to meet the target BLOS. These would be provided at the front of the eastbound and westbound through/right turn lanes and would require a restriction of right turns on red (RTOR). It is not anticipated that the operations at this intersection would be significantly impacted, and therefore this is identified for the City's consideration.

The north and south approaches do not meet the target TkLOS D. Since this represents the ability for trucks to turn right onto Burris Lane (i.e. a roadway linking Merivale Road with a residential neighbourhood) or an access to Loblaws Plaza, no recommendations are identified. It should be noted that accesses designed for loading trucks to Loblaws Plaza are provided elsewhere.

Merivale Road/Loblaws Plaza

The intersection does not meet the target PLOS A, BLOS C, or TkLOS D.

All approaches do not meet the target PLOS A, and have a cross-section equivalent to four lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without removing auxiliary lanes or reducing the number of travel lanes. The north and south approaches meet the City's threshold for zebra-striped crosswalks. This is identified for the City's consideration.

The north and south approaches do not meet the target BLOS B based on left turn characteristics. Based on Exhibit 12 of the MMLOS Guidelines, bike boxes would be required to meet the target BLOS. These would be provided at the front of the eastbound and westbound through/right turn lanes and would require a RTOR restriction. It is not anticipated that the operations at this intersection would be significantly impacted, and therefore this is identified for the City's consideration.

The north and south approaches do not meet the target TkLOS D. Since loading truck accesses to the Loblaws Plaza and Merivale Market shopping centres are provided elsewhere on their respective sites, no recommendations are identified.

#### 4.7.2 2031 Total Intersection Operations

Intersection capacity analysis has been conducted for the 2031 total traffic conditions. Signal timing plans at Baseline Road/Merivale Road and Baseline Road/Clyde Avenue have been optimized to reflect the planned changes on Baseline Road. The results of the analysis are summarized in **Table 20** and **Table 21** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix O**.

Table 20: 2031 Total – Traffic Operations

Intersection	Period	Critical Movements			Intersection		
		Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
Baseline Road/ Merivale Road	AM	1.11	F	SBL	1.06	67 sec	F
		1.14	F	EBL			
		1.08	F	WBT/R			
	PM	1.26	F	SBL	1.08	84 sec	F
		1.03	F	SBT/R			
		1.25	F	EBL			
		1.04	F	WBL			
		1.11	F	WBT/R			
Baseline Road/ Clyde Avenue	AM	0.98	E	NBT/R	0.90	55 sec	D
	PM	1.04	F	NBL			
		1.09	F	NBT/R			
		1.19	F	SBL			
		1.19	F	EBL			
		1.29	F	WBT/R			
Clyde Avenue/ Merivale Road/Lotta Avenue	AM	0.79	C	WBL	0.74	23 sec	C
	PM	0.92	E	WBL			
Merivale Road/ Burris Lane	AM	0.45	A	NBT/R	0.42	5 sec	A
	PM	0.51	A	SBT/R			
Merivale Road/ Loblaws Plaza	AM	0.34	A	NBT/R	0.32	7 sec	A
	PM	0.53	A	SBT/R			

Table 21: 2031 Total – Queues

Intersection	Mvmt	Storage/ Spacing <sup>(1)</sup>	AM Peak			PM Peak		
			v/c [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)	v/c [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)
Baseline Road/ Merivale Road	SBL	125m	1.11 [F]	~54	#83	1.26 [F]	~68	#98
	SBT/R	250m	0.66 [B]	70	90	1.03 [F]	~160	#199
	EBL	50m	1.14 [F]	~78	m#92	1.25 [F]	~92	m#100
	WBL	115m	0.82 [D]	34	#64	1.04 [F]	~79	#132
	WBT/R	320m	1.08 [F]	~194	#233	1.11 [F]	~214	#254
Baseline Road/ Clyde Avenue	NBL	75m	0.57 [A]	13	22	1.04 [F]	~45	#73
	NBT/R	230m	0.98 [E]	115	#155	1.09 [F]	~134	#173
	SBL	100m	0.88 [D]	43	#66	1.19 [F]	~57	#86
	SBT/R	480m	0.49 [A]	56	72	0.86 [D]	91	#118
	EBL	85m	0.90 [D]	44	#83	1.19 [F]	~48	#89
	EBT/R	260m	0.92 [E]	157	#197	0.87 [D]	141	169
	WBL	165m	0.80 [C]	16	m17	0.78 [C]	30	m30
	WBT/R	270m	0.82 [D]	102	m104	1.29 [F]	~293	m#265
Clyde Avenue/ Merivale Road/ Lotta Avenue	NBT	275m	0.38 [A]	47	83	0.68 [B]	91	#134
	SBT/R	140m	0.31 [A]	36	64	0.57 [A]	77	109
	WBL	95m	0.79 [C]	54	69	0.92 [E]	119	#142

1. Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection for through lanes  
 m: volume for the 95<sup>th</sup> percentile queue is metered by an upstream signal  
 #: volume for the 95<sup>th</sup> percentile cycle exceeds capacity  
 ~: approach is above capacity

Comparing the previous tables and the 2031/2038 background conditions, traffic generated by the proposed development is anticipated to have marginal operational effects on most movements within the study area.

The most significant impact identified is the westbound left turn movement at Baseline Road/Merivale Road, as the maximum queue length for this movement is anticipated to exceed the storage length shown in the Baseline Road BRT functional design (included in **Figure 4**). Based on this functional design, it is anticipated that the westbound left turn lane can be extended further to accommodate the maximum queue without impacting the median bus lanes on Baseline Road.

**4.7.3 2038 Total Intersection Operations**

Intersection capacity analysis has been conducted for the 2038 total traffic conditions. Signal timing plans at Baseline Road/Merivale Road and Baseline Road/Clyde Avenue have been optimized to reflect the planned changes on Baseline Road. The results of the analysis are summarized in **Table 22** and **Table 23** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix O**.

**Table 22: 2038 Total – Traffic Operations**

Intersection	Period	Critical Movements			Intersection		
		Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
Baseline Road/ Merivale Road	AM	1.11	F	SBL	1.06	68 sec	F
		1.14	F	EBL			
		1.08	F	WBT/R			
	PM	1.26	F	SBL	1.08	86 sec	F
		1.04	F	SBT/R			
		1.25	F	EBL			
		1.09	F	WBL			
		1.11	F	WBT/R			
Baseline Road/ Clyde Avenue	AM	0.99	E	NBT/R	0.90	56 sec	D
	PM	1.07	F	NBL	1.22	114 sec	F
		1.11	F	NBT/R			
		1.19	F	SBL			
		1.19	F	EBL			
		1.29	F	WBT/R			
Clyde Avenue/ Merivale Road/Lotta Avenue	AM	0.80	C	WBL	0.74	23 sec	C
	PM	0.92	E	WBL	0.81	38 sec	D
Merivale Road/ Burriss Lane	AM	0.46	A	NBT/R	0.44	6 sec	A
	PM	0.52	A	SBT/R	0.48	9 sec	A
Merivale Road/ Loblaws Plaza	AM	0.35	A	NBT/R	0.33	7 sec	A
	PM	0.54	A	SBT/R	0.49	9 sec	A

**Table 23: 2038 Total – Queues**

Intersection	Mvmt	Storage/ Spacing <sup>(1)</sup>	AM Peak			PM Peak		
			v/c [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)	v/c [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)
Baseline Road/ Merivale Road	SBL	125m	1.11 [F]	~54	#83	1.26 [F]	~68	#98
	SBT/R	250m	0.66 [B]	71	91	1.04 [F]	~163	#203
	EBL	50m	1.14 [F]	~78	m#91	1.25 [F]	~92	m#99
	WBL	115m	0.85 [D]	35	#68	1.09 [F]	~86	#139
	WBT/R	320m	1.08 [F]	~194	#233	1.11 [F]	~214	#254
Baseline Road/ Clyde Avenue	NBL	75m	0.61 [B]	14	23	1.07 [F]	~47	#75
	NBT/R	230m	0.99 [E]	116	#157	1.11 [F]	~137	#175
	SBL	100m	0.88 [D]	43	#66	1.19 [F]	~57	#86
	SBT/R	480m	0.49 [A]	57	73	0.87 [D]	92	#121
	EBL	85m	0.90 [D]	44	#83	1.19 [F]	~48	#89
	EBT/R	260m	0.92 [E]	158	#198	0.88 [D]	142	171
	WBL	165m	0.80 [C]	16	m17	0.78 [C]	30	m30
WBT/R	270m	0.82 [D]	103	m104	1.29 [F]	~293	m#264	
Clyde Avenue/ Merivale Road/ Lotta Avenue	NBT	275m	0.38 [A]	48	83	0.70 [B]	93	#134
	SBT/R	140m	0.31 [A]	36	64	0.57 [A]	77	109
	WBL	95m	0.80 [C]	56	70	0.92 [E]	119	#144

1. Indicates the storage length for auxiliary lanes or the spacing to the nearest upstream intersection for through lanes  
m: volume for the 95<sup>th</sup> percentile queue is metered by an upstream signal  
#: volume for the 95<sup>th</sup> percentile cycle exceeds capacity  
~: approach is above capacity

Comparing the 2031 and 2038 total conditions, traffic generated by the ultimate development is anticipated to have marginal operational effects on all movements within the study area. As discussed in the previous section, it is anticipated that the westbound left turn lane can be extended further to accommodate the maximum queue without impacting the median bus lanes on Baseline Road.

### 5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the foregoing, the conclusions and recommendations of this TIA can be summarized as follows:

#### Forecasting

- At 50% buildout, the proposed development is estimated to generate 431 person trips (including 118 vehicle trips) during the AM peak hour, and 451 person trips (including 131 vehicle trips) during the PM peak hour.
- At 100% buildout, the proposed development is estimated to generate 858 person trips (including 187 vehicle trips) during the AM peak hour, and 891 person trips (including 219 vehicle trips) during the PM peak hour.

#### Development Design and Parking

- Concrete sidewalks will connect to the existing pedestrian facilities on the south side of Baseline Road, north side of Merivale Road, and the east side of Clyde Avenue. Within the site, sidewalks will be provided on the outside of the internal crescent roadway that connects to Merivale Road. An on-site pathway for cyclists and pedestrians will be provided between Clyde Avenue and Baseline Road.

- A total of 497 bicycle spaces will be provided in select landscaped areas outdoors, and 1,189 bicycle spaces will be provided in secure or sheltered areas in the underground parking garage.
- Residents of every building of the proposed development will be within 400m of bus stops on one or more of the boundary streets (i.e. Baseline Road, Merivale Road, or Clyde Avenue).
- All required TDM-supportive design and infrastructure measures are met by the proposed development.
- Pick-ups and drop-offs will occur curbside on the internal crescent roadway. Garbage collection will also take place at collection points near each parking garage entrance along the internal crescent roadway. The internal crescent will also form the on-site fire route.
- The proposed number of vehicle and bicycle parking spaces meet the requirements outlined in the City's ZBL.

#### Boundary Streets

- The results of the segment multi-modal level of service (MMLOS) analysis can be summarized as follows:
  - Merivale Road and Clyde Avenue do not meet the target pedestrian level of service (PLOS);
  - Merivale Road and Clyde Avenue do not meet the target bicycle level of service (BLOS);
  - Merivale Road achieves a transit level of service (TLOS) E and Clyde Avenue achieves a TLOS D, however no targets are identified;
  - Merivale Road and Clyde Avenue both meet the target truck level of service (TkLOS).
- Both Merivale Road and Clyde Avenue do not meet the target PLOS A. The best possible PLOS for both streets is a PLOS D, which can be achieved by providing a 2.0m-wide sidewalk with a minimum boulevard width of 2.0m. This is identified for the City's consideration.
- Both Merivale Road and Clyde Avenue do not meet the target BLOS C. The target can be achieved through the implementation of curbside bike lanes with a minimum width of 1.2m. This is identified for the City's consideration.

#### Access Intersections

- The proposed accesses to Merivale Road meet all relevant requirements of the City's *Private Approach By-Law*, and meets the minimum clear throat length and corner clearance requirements outlined in the Transportation Association of Canada's *Geometric Design Guide for Canadian Roads*.
- There are no operational concerns anticipated at the proposed accesses to the development, as they will operate at an Auto LOS C or better during the peak hours.

### Transportation Demand Management

- A review of the City's *TDM Measures Checklist* has been conducted by the proponent, who has committed to providing the following TDM measures:
  - Display local area maps with walking/cycling access routes and key destinations at major entrances;
  - Display relevant transit schedules and route maps at entrances;
  - Contract with provider to install on-site carshare vehicles and promote their use by residents;
  - Unbundle parking cost from monthly rent;
  - Provide a multimodal travel option information package to new residents.

### Transit

- The ultimate development is anticipated to generate 480 transit trips (including 150 inbound trips and 330 outbound trips) during the AM peak hour, and 428 transit trips (including 247 inbound trips and 181 outbound trips) during the PM peak hour.
- The ultimate development is not anticipated to have a significant impact on the existing operations of OC Routes 50, 80, 81, or 88.

### Intersection MMLOS

- The results of the intersection MMLOS analysis can be summarized as follows:
  - No study area intersections meet the target PLOS;
  - No study area intersections meet the target BLOS;
  - Baseline Road/Merivale Road and Baseline Road/Clyde Avenue do not meet the target TLOS;
  - Baseline Road/Merivale Road and Baseline Road/Clyde Avenue meet the target TkLOS, while Clyde Avenue/Merivale Road/Lotta Avenue, Merivale Road/Burris Lane, and Merivale Road/Loblaws Plaza do not;
  - Clyde Avenue/Merivale Road/Lotta Avenue, Merivale Road/Burris Lane, and Merivale Road/Loblaws Plaza meet the target vehicular level of service (Auto LOS), while Baseline Road/Merivale Road and Baseline Road/Clyde Avenue do not.
- Pedestrian Level of Service (PLOS)
  - All approaches at all study area intersections do not meet the target PLOS A. Approaches at Baseline Road/Merivale Road and Baseline Road/Clyde Avenue are anticipated to improve as part of the road modifications associated with the future Baseline Road BRT corridor. The north, south, and east approaches of Clyde Avenue/Merivale Road/Lotta Avenue, and the north and south approaches of Merivale Road/Burris Lane and Merivale Road/Loblaws Plaza meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. This is identified for the City's consideration.
- Bicycle Level of Service (BLOS)
  - All approaches at Baseline Road/Merivale Road and Baseline Road/Clyde Avenue do not meet the target BLOS A. Based on the Baseline Road BRT functional design, these intersections will include full segregated cycling facilities on each approach, along with a protected intersection design to facilitate left turns off-road. This will improve all approaches to the target BLOS A.



- The north, south, and east approaches at Clyde Avenue/Merivale Road/Lotta Avenue do not meet the target BLOS C. To achieve the target, curbside bike lanes or cycle tracks would be required at these approaches, along with two-stage left-turn bike boxes. This is identified for the City's consideration.
- The north and south approaches at Merivale Road/Burris Lane and Merivale Road/Loblaws Plaza do not meet the target BLOS B. To achieve the target, two-stage left-turn bike boxes would be required, including right turn on red (RTOR) restrictions at the east/west approaches. This is identified for the City's consideration.
- Transit Level of Service (TLOS)
  - All approaches at Baseline Road/Merivale Road and Baseline Road/Clyde Avenue do not meet the target TLOS A. The planned modifications on Baseline Road are anticipated to significantly improve transit operations along Baseline Road. It is also anticipated that the planned transit priority measures on Merivale Road per the 2031 Network Concept will also improve transit operations along that roadway.
- Truck Level of Service (TkLOS)
  - The north approach at Clyde Avenue/Merivale Road/Lotta Avenue do not meet the target TkLOS D. The receiving lane on Lotta Avenue is approximately 8m in width, before narrowing downstream of the intersection. Therefore, no recommendations are identified.
  - The north and south approaches at Merivale Road/Burris Lane do not meet the target TkLOS D. Since the TkLOS represents the ability for trucks to turn right onto Burris Lane or an access to Loblaws Plaza, no recommendations are identified. It should be noted that accesses designed for loading trucks to Loblaws Plaza are provided elsewhere.
  - The north and south approaches at Merivale Road/Loblaws Plaza do not meet the target TkLOS D. Since loading truck accesses to the Loblaws Plaza and Merivale Market shopping centres are provided elsewhere on their respective sites, no recommendations are identified.

#### Existing Intersection Operations

- During the AM peak hour, the following movements are identified as over-capacity:
  - Baseline Road/Merivale Road
    - Southbound left turn, eastbound left turn, eastbound through, and westbound through movements;
  - Baseline Road/Clyde Avenue
    - Northbound through/right turn, eastbound left turn, and eastbound through movements.
- During the PM peak hour, the following movements are identified as over-capacity:
  - Baseline Road/Merivale Road
    - Southbound left turn, eastbound left turn, westbound left turn, and westbound through movements;
  - Baseline Road/Clyde Avenue
    - Northbound through/right turn, southbound left turn, eastbound left turn, and westbound through movements;

- Clyde Avenue/Merivale Road/Lotta Avenue
  - Westbound left turn movement.
- During the AM peak hour, the Synchro analysis does not identify any average (50<sup>th</sup>-percentile) or maximum (95<sup>th</sup>-percentile) queue lengths for turning movements that exceed the storage length provided for those movements, and does not identify any queue lengths for any movements that extend through upstream intersections.
- During the PM peak hour, the average and maximum queue lengths for the westbound left turn movement at Clyde Avenue/Merivale Road/Lotta Avenue exceed the storage length of the auxiliary left turn lane. This queueing is not anticipated to interfere with the ability of westbound through or right turning vehicles to complete their manoeuvres, as the dual westbound left turn lanes include one auxiliary lane and one continuous lane on Merivale Road.

### 2038 Background Intersection Operations

- Traffic throughout the study area could be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate times of travel for drivers, and alternate routes of travel. It is assumed that the Baseline Road BRT corridor will increase the transit modal share and decrease the auto modal share by 2031.
- As congestion increases within the study area, some motorists may alter their travel times to occur outside of the peak hours and/or alter their routes to other roadways within proximity of the study area.
- During the AM peak hour, the following volume reductions are required to meet the target Auto LOS E:
  - Baseline Road/Merivale Road
    - Southbound left turn: reduction of 40 vehicles required;
    - Eastbound left turn: reduction of 40 vehicles required;
    - Westbound through/right turn: reduction of 100 vehicles required.
- During the PM peak hour, the following volume reductions are required to meet the target Auto LOS E:
  - Baseline Road/Merivale Road
    - Southbound left turn: reduction of 90 vehicles required;
    - Southbound through/right turn: reduction of 10 vehicles required;
    - Eastbound left turn: reduction of 60 vehicles required;
    - Westbound through/right turn: reduction of 140 vehicles required.
  - Baseline Road/Clyde Avenue
    - Northbound left turn: reduction of 10 vehicles required;
    - Northbound through/right turn: reduction of 70 vehicles required;
    - Southbound left turn: reduction of 60 vehicles required;
    - Eastbound left turn: reduction of 30 vehicles required;
    - Westbound through/right turn: reduction of 360 vehicles required.

2038 Total Intersection Operations

- Traffic generated by the proposed development is anticipated to have marginal operational effects on most movements within the study area. The most significant impact identified is the westbound left turn movement at Baseline Road/Merivale Road, as the maximum queue length for this movement is anticipated to exceed the storage length shown in the Baseline Road BRT functional design. Based on this functional design, it is anticipated that the westbound left turn lane can be extended further to accommodate the maximum queue without impacting the planned median bus lanes on Baseline Road.

Based on the foregoing, the proposed development can be recommended from a transportation perspective.

**NOVATECH**

Prepared by:



Joshua Audia, B.Sc.  
E.I.T.,  
Transportation/Traffic

Reviewed by:



Brad Byvelde, P.Eng.  
Project Coordinator,  
Transportation/Traffic

## **APPENDIX A**

---

Proposed Site Plan



## **APPENDIX B**

---

TIA Screening Form

## City of Ottawa 2017 TIA Guidelines Screening Form

### 1. Description of Proposed Development

Municipal Address	<b>1500 Merivale Road</b>
Description of Location	<b>Located north of Merivale Road, south of Baseline Road, east of Clyde Avenue, and west of the commercial/retail plaza at 1460 Merivale Road</b>
Land Use Classification	<b>Residential apartments with ground-floor commercial</b>
Development Size (units)	<b>1,967 dwellings</b>
Development Size (m <sup>2</sup> )	<b>1,129 m<sup>2</sup> (12,150 ft<sup>2</sup>) GFA ground-floor commercial</b>
Number of Accesses and Locations	<b>Two proposed accesses to Merivale Road</b>
Phase of Development	<b>10 phases (approx. 190 to 200 dwellings per phase)</b>
Buildout Year	<b>Phase 1 buildout year: 2023 Ultimate buildout year: 2038</b>

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

### 2. Trip Generation Trigger

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

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

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

**If the proposed development size is greater than the sizes identified above, the Trip Generation Trigger is satisfied.**

### 3. Location Triggers

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

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

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

### 4. Safety Triggers

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

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

### 5. Summary

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

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



## **APPENDIX C**

---

OC Transpo Route Maps



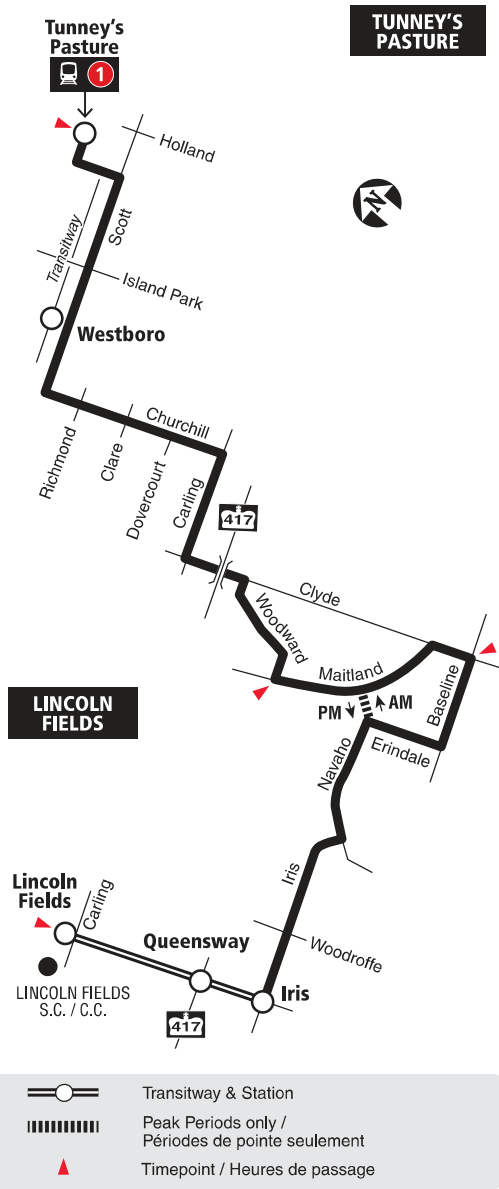
# 50

## LINCOLN FIELDS TUNNEY'S PASTURE

Local

Monday to Saturday / Lundi au samedi

No service Sat. eve. or all day Sunday / Aucun service le soir le sam. ou toute la journée dimanche



2019.06

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

Customer Service  
 Service à la clientèle ..... **613-842-3600**  
 Lost and Found / Objets perdus..... **613-563-4011**  
 Security / Sécurité ..... **613-741-2478**

**Effective April 24, 2017**  
**En vigueur 24 avril 2017**

# 80

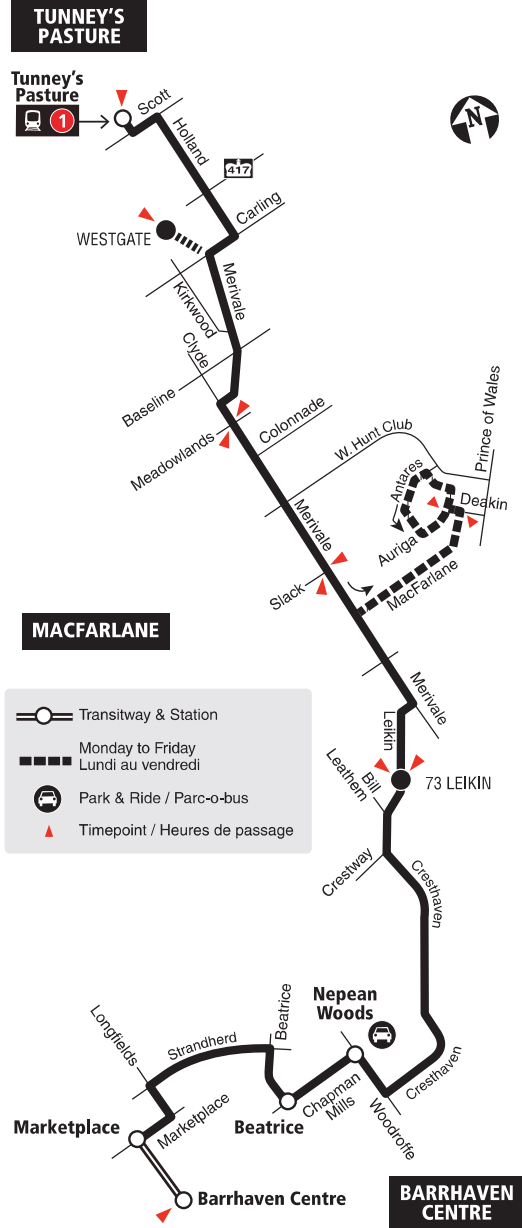
## BARRHAVEN CENTRE TUNNEY'S PASTURE

*Fréquent*

**7 days a week / 7 jours par semaine**

All day service

Service toute la journée



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 juin 2018**



INFO 613-741-4390  
octranspo.com



# 88

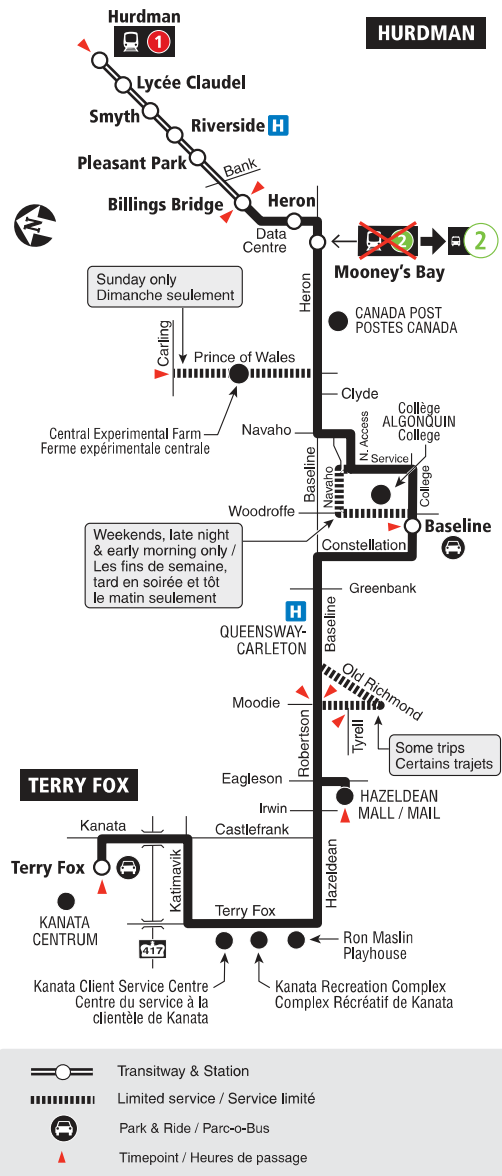
## HURDMAN TERRY FOX

*Fréquent*

**7 days a week / 7 jours par semaine**

All day service

Service toute la journée



2020.05



**Schedule / Horaire..... 613-560-1000**

**Text / Texto ..... 560560**

*plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres*

Customer Service

Service à la clientèle ..... **613-741-4390**

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

Security / Sécurité ..... **613-741-2478**

**Effective May 3, 2020**

**En vigueur 3 mai 2020**



**INFO 613-741-4390**  
octranspo.com



## Joshua Audia

**Subject:** FW: Request for Transit Data (1500 Merivale TIA)

**From:** Rathwell, Graham <graham.rathwell@ottawa.ca>

**Sent:** Thursday, June 3, 2021 9:32 AM

**To:** Joshua Audia <j.audia@novatech-eng.com>

**Subject:** RE: Request for Transit Data (1500 Merivale TIA)

Good morning Josh,

Thank you for your patience as we assembled the data. The requested data is provided in the table below for the period of January 5 - March 7 2020, which is last 'normal' ridership period before the effects of the pandemic began. Please note the following:

- Cells with a zero (0) value indicate a measured average value of zero activity based on available APC data.
- Cells with a dash (-) value indicate that the stop is not served in the given direction and time period. In this case, Route 50 does not serve stop #7495 in the AM or stop #7494 in the PM peak as it operates on a special peak-period and peak-direction pattern that does not include these stops.
- Stop #6937 (Merivale / Kimway) is the start/end point of Route 81, which is why it is served by Route 81 in both directions.

### Winter 2020 (5 Jan 2020 - 7 Mar 2020)

Stop No.	Location	Route	Dir	AM			PM			24-HR		
				Boardings	Alightings	Avg Load at Departure	Boardings	Alightings	Avg Load at Departure	Boardings	Alightings	Avg Load at Departure
4043	Baseline / Laurentian Place	88	EB	23	27	26	47	65	24	138	246	25
		81	EB	2	0	0	10	1	3	32	2	2
4484	Baseline / Laurentian Place	88	WB	18	27	28	66	63	35	230	185	30
6937	Merivale / Kimway	81	WB	0	0	0	0	4	0	0	28	0
		81	EB	0	0	0	5	0	1	15	0	0
		80	SB	3	2	22	1	0	16	7	2	16
4037	Merivale / Ad. 1460	80	NB	8	4	9	30	36	18	97	79	12
4487	Merivale / Ad. 1460	81	WB	0	0	0	1	14	0	3	30	0
		80	SB	16	6	22	17	22	16	76	81	16

4488	Merivale / Gilbey	81	EB	0	0	0	1	1	1	1	1	0
		80	SB	0	0	22	2	1	16	3	10	16
4489	Merivale / Gilbey	80	NB	1	0	8	4	1	18	11	8	12
7494	Clyde / Maitland	50	WB	0	0	7	-	-	-	1	1	5
7495	Clyde / Baseline	50	EB	-	-	-	9	2	3	16	13	3
4821	Clyde / Merivale	81	EB	0	0	0	0	0	0	4	0	0

Please let me know if there are any questions about the data, or if I can provide any additional information.

Best,

**Graham Rathwell**

Transit Planner, Network Service Design  
Service Planning Branch  
Transportation Services Department  
OC Transpo | City of Ottawa





## **APPENDIX D**

---

### Traffic Count Data

## Turning Movement Count - Peak Hour Diagram

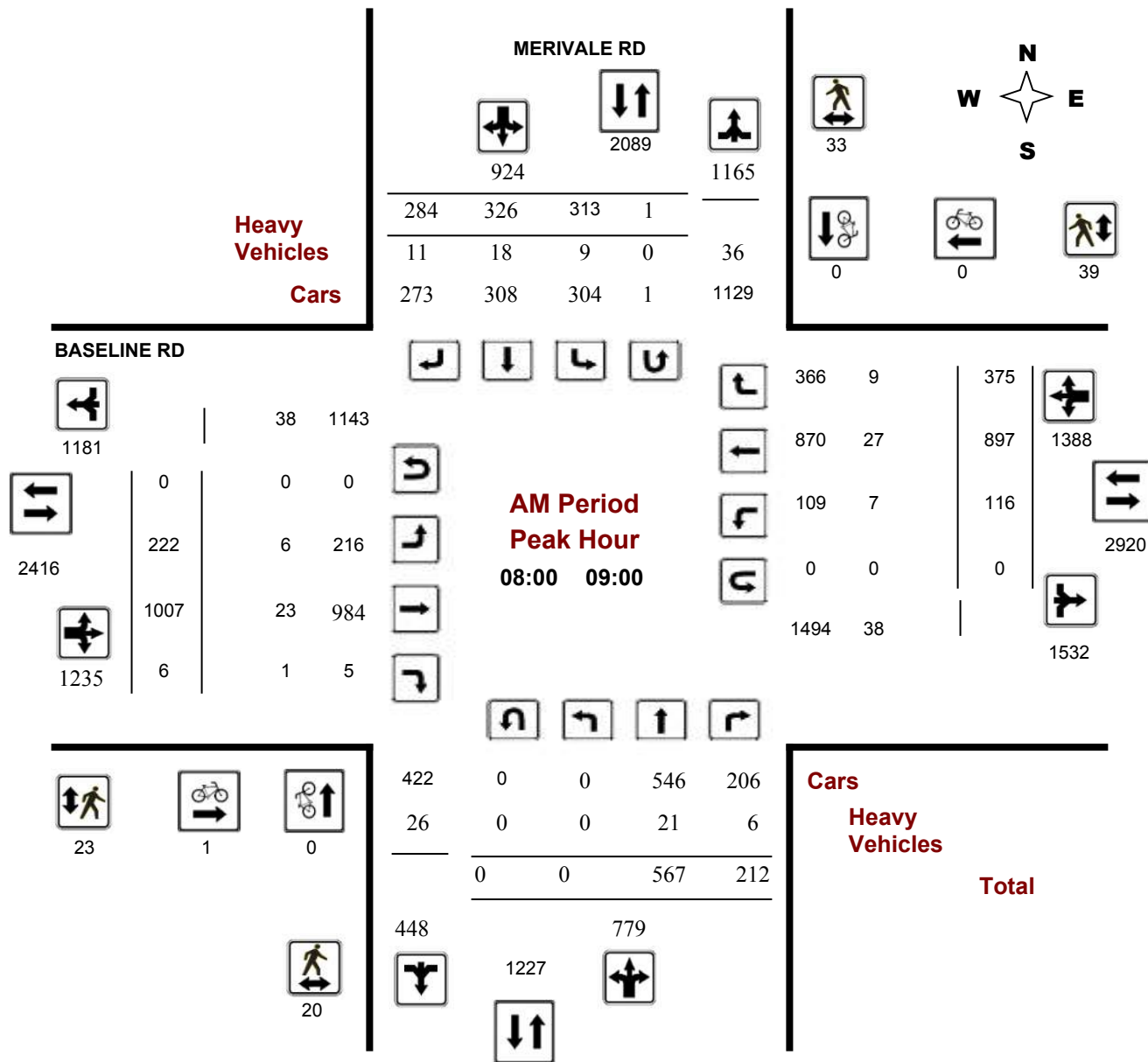
### BASELINE RD @ MERIVALE RD

**Survey Date:** Tuesday, February 09, 2016

**Start Time:** 07:00

**WO No:** 35707

**Device:** Miovision



## Turning Movement Count - Peak Hour Diagram

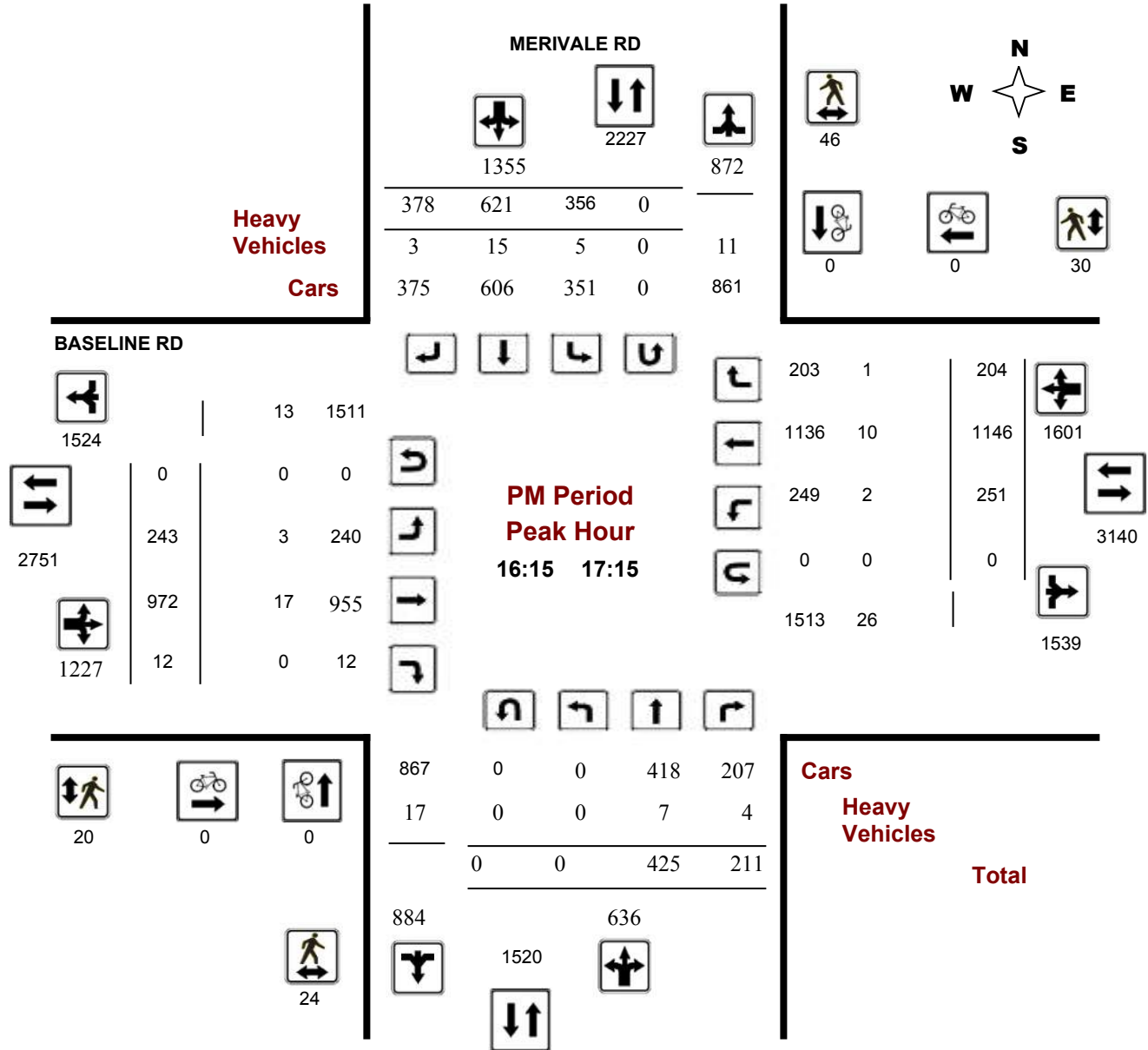
### BASELINE RD @ MERIVALE RD

**Survey Date:** Tuesday, February 09, 2016

**Start Time:** 07:00

**WO No:** 35707

**Device:** Miovision





# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

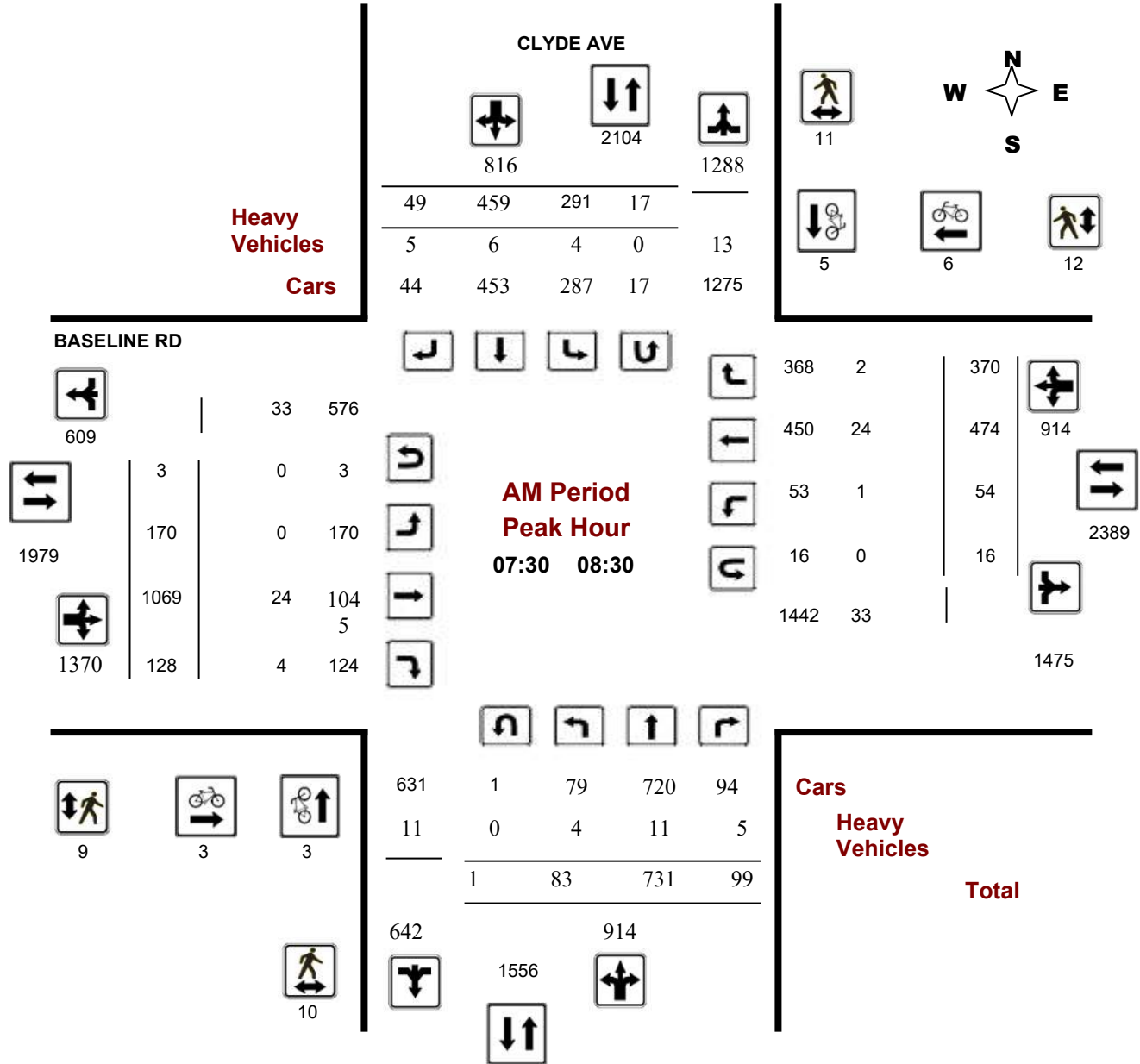
### BASELINE RD @ CLYDE AVE

**Survey Date:** Wednesday, August 21, 2019

**Start Time:** 07:00

**WO No:** 38720

**Device:** Miovision





# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

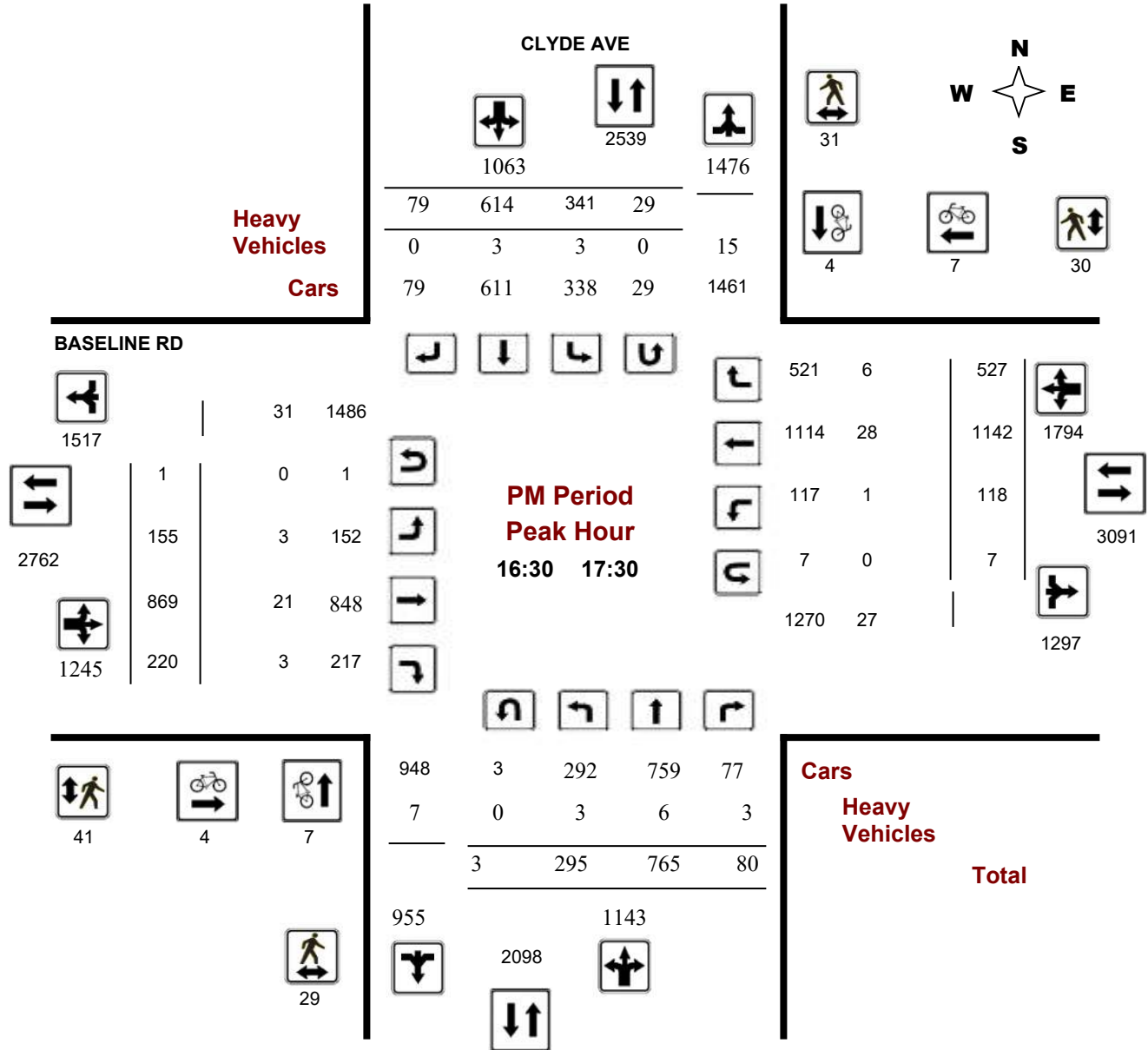
### BASELINE RD @ CLYDE AVE

**Survey Date:** Wednesday, August 21, 2019

**Start Time:** 07:00

**WO No:** 38720

**Device:** Miovision





# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

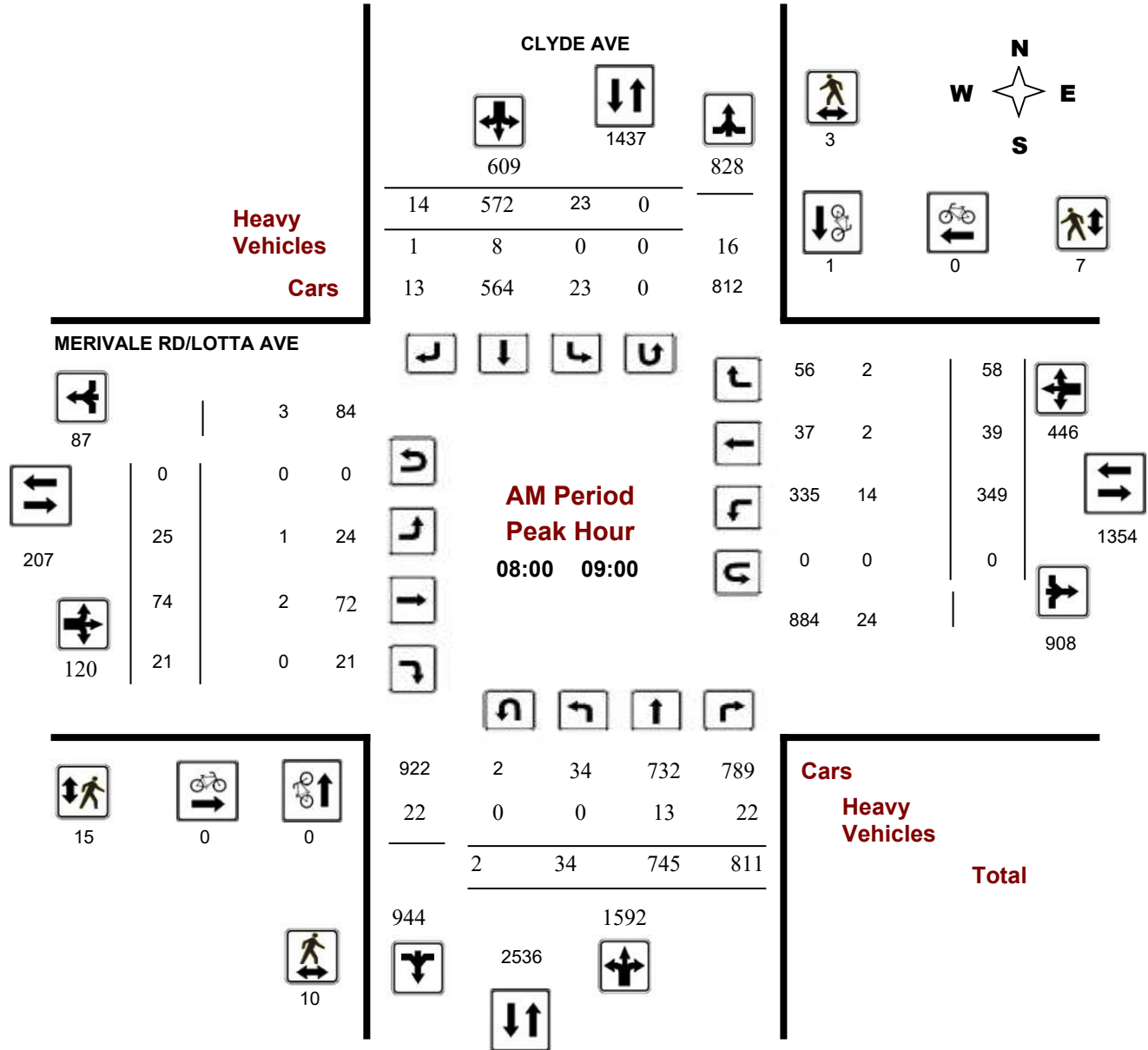
### MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Survey Date:** Monday, February 10, 2020

**Start Time:** 07:00

**WO No:** 39436

**Device:** Miovision





# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

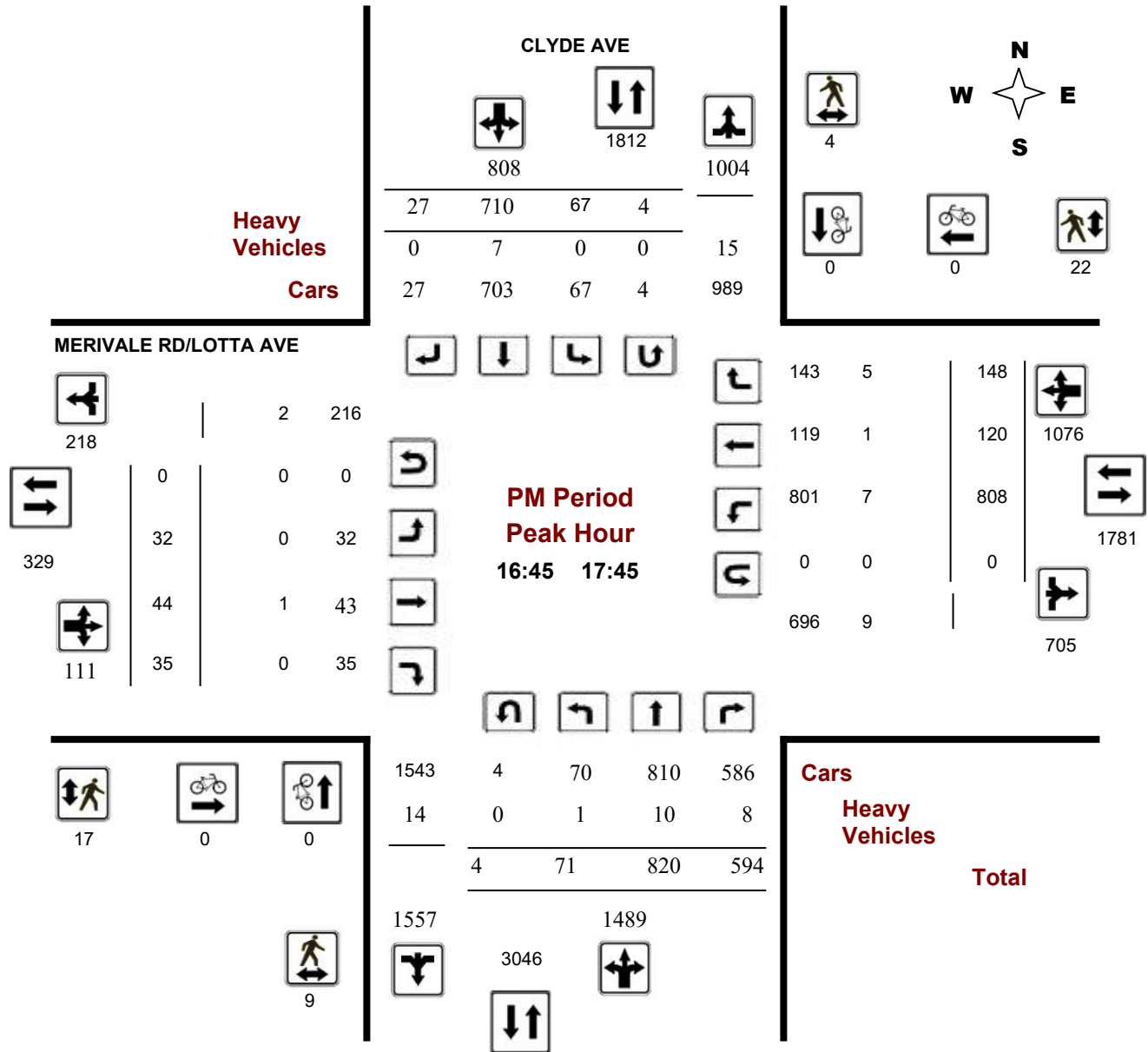
### MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Survey Date:** Monday, February 10, 2020

**Start Time:** 07:00

**WO No:** 39436

**Device:** Miovision



**Comments**



# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

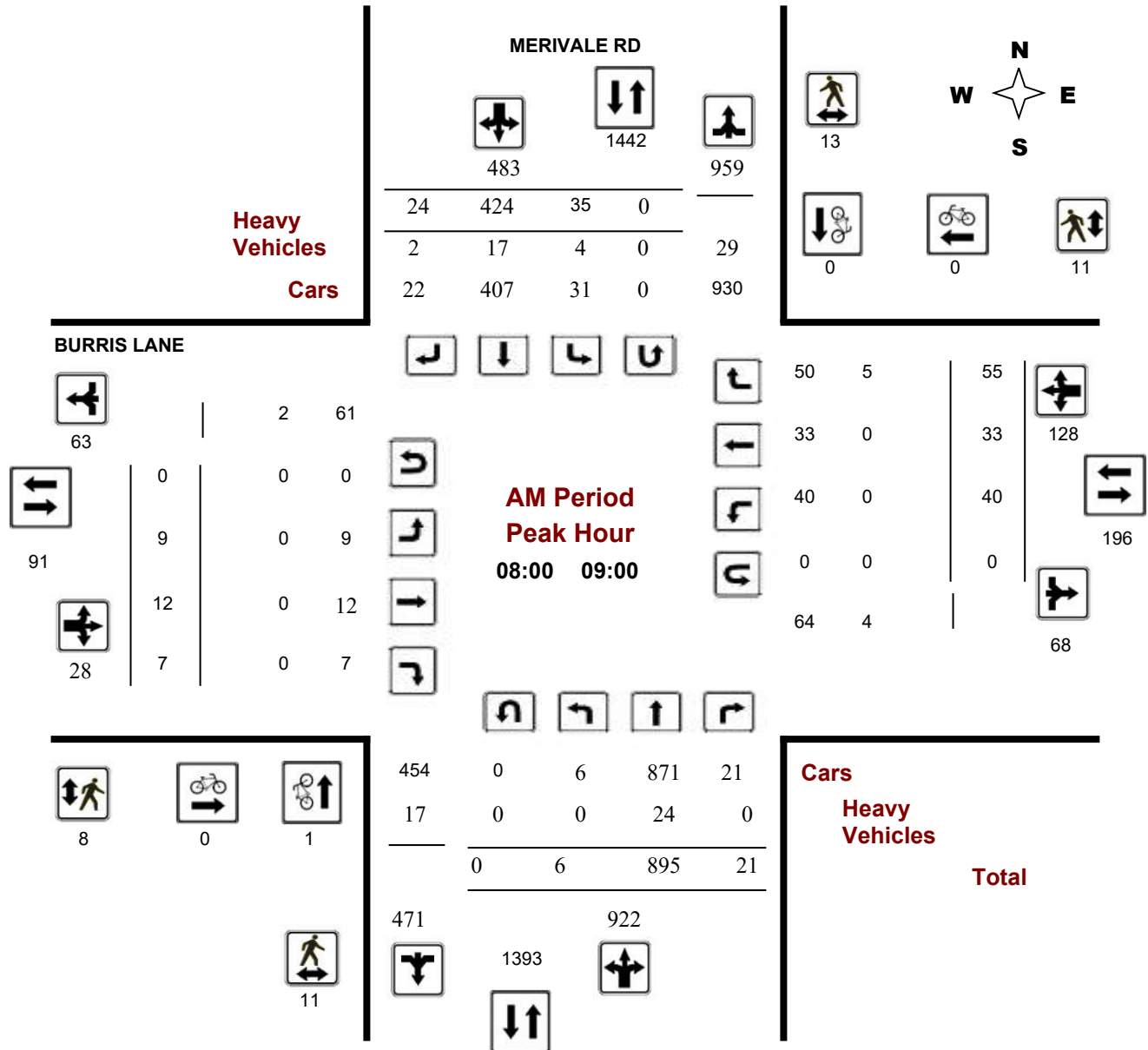
### BURRIS LANE @ MERIVALE RD

**Survey Date:** Tuesday, January 15, 2019

**Start Time:** 07:00

**WO No:** 38251

**Device:** Miovision





## Turning Movement Count - Peak Hour Diagram

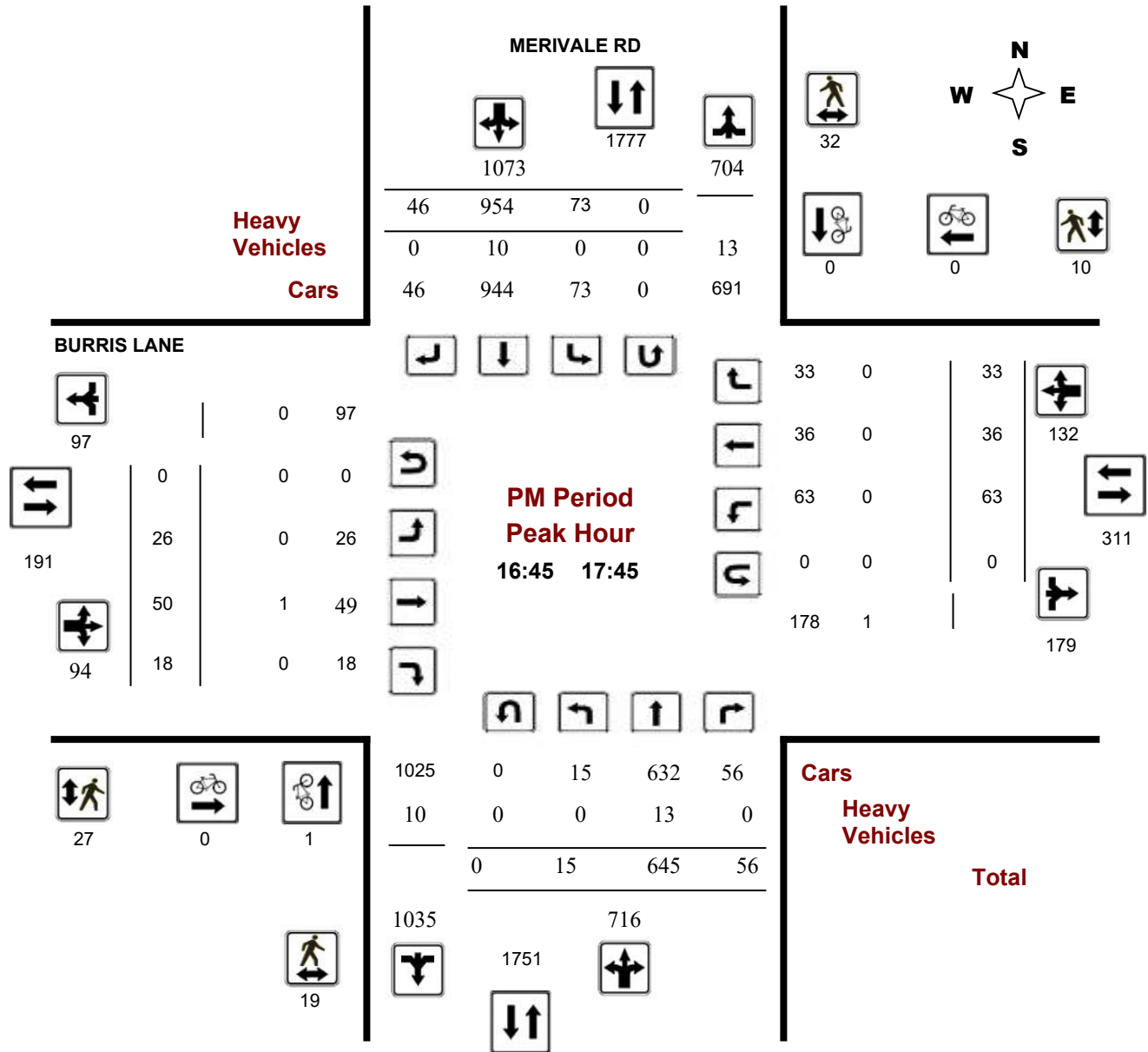
### BURRIS LANE @ MERIVALE RD

**Survey Date:** Tuesday, January 15, 2019

**Start Time:** 07:00

**WO No:** 38251

**Device:** Miovision





# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

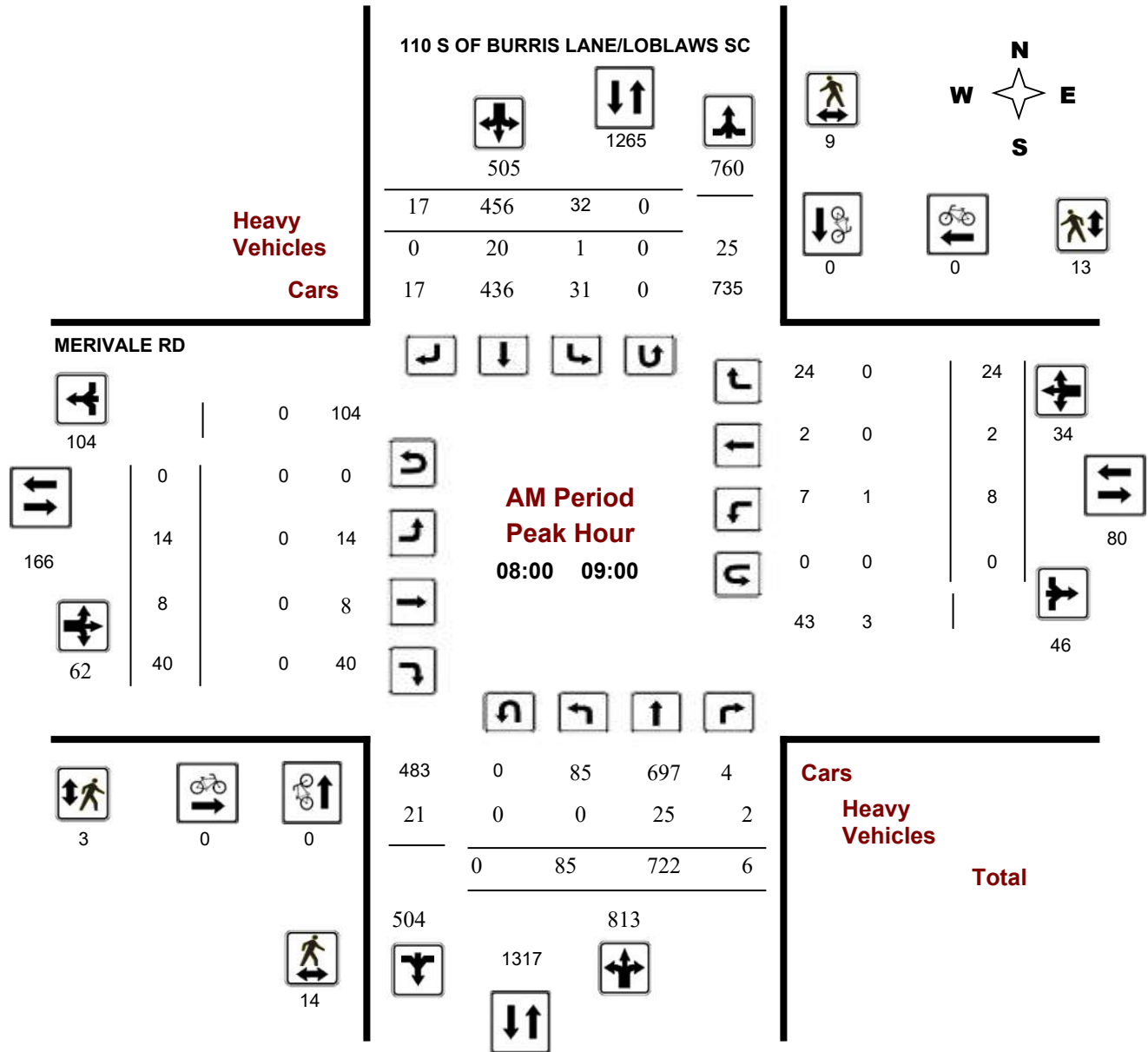
### MERIVALE RD @ 110 S OF BURRIS LANE/LOBLAWS SC

**Survey Date:** Wednesday, February 21, 2018

**Start Time:** 07:00

**WO No:** 37557

**Device:** Miovision



**Comments**



# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

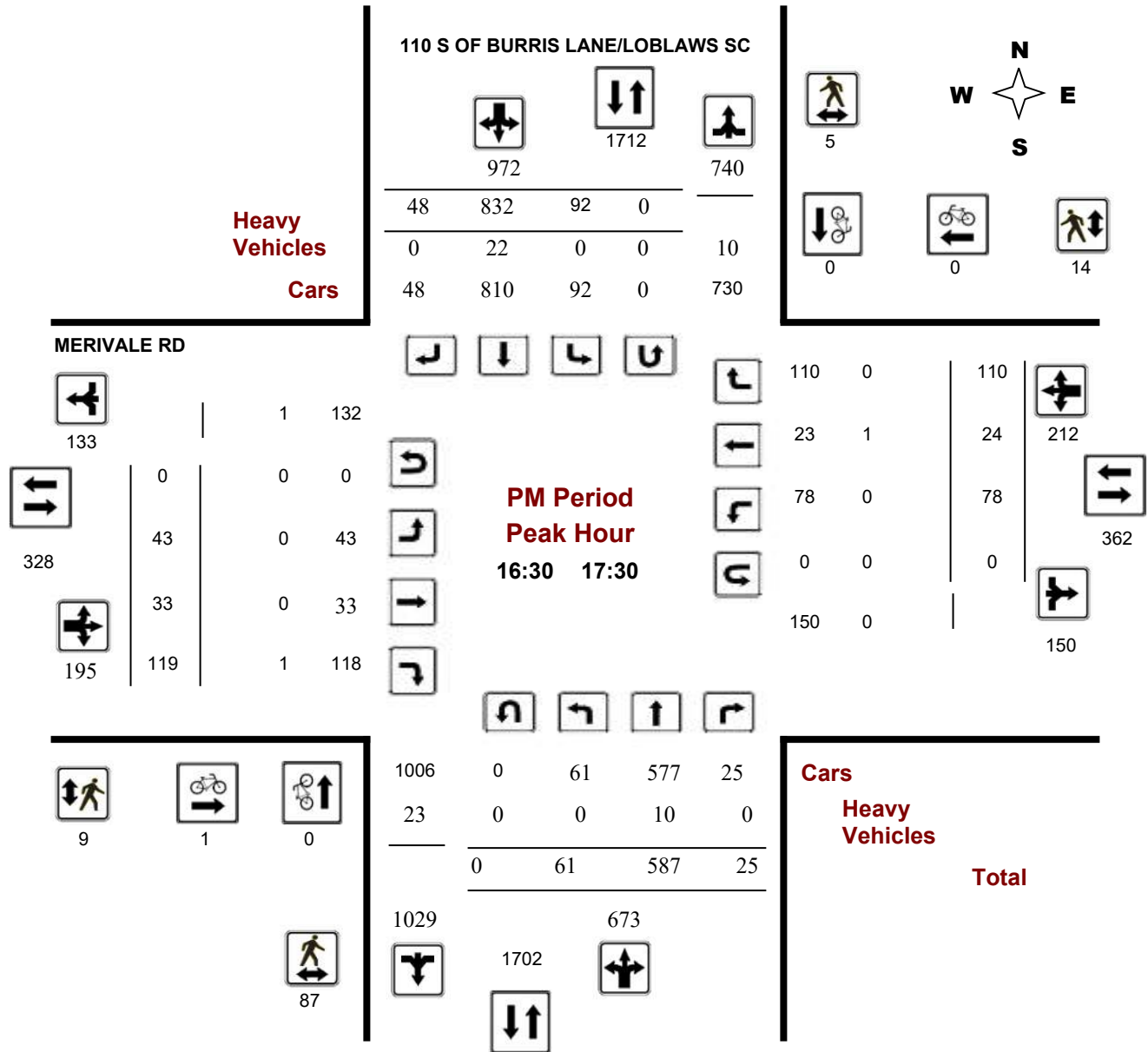
### MERIVALE RD @ 110 S OF BURRIS LANE/LOBLAWS SC

**Survey Date:** Wednesday, February 21, 2018

**Start Time:** 07:00

**WO No:** 37557

**Device:** Miovision



## **APPENDIX E**

---

### Collision Records



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015    **To:** December 31, 2019

**Location:** BASELINE RD @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 126

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-02, Fri,10:30	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Jan-20, Tue,11:00	Clear	Rear end	Non-fatal injury	Ice	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jan-25, Sun,20:25	Clear	Rear end	P.D. only	Ice	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2015-Jan-28, Wed,13:45	Clear	Sideswipe	P.D. only	Dry	West	Overtaking	Unknown	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Feb-06, Fri,09:35	Clear	Angle	P.D. only	Loose snow	West	Slowing or stopping	Passenger van	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2015-Feb-08, Sun,13:06	Clear	Rear end	P.D. only	Ice	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Mar-03, Tue,18:27	Snow	Angle	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Mar-11, Wed,00:00	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-Mar-14, Sat,19:17	Freezing Rain	Sideswipe	P.D. only	Wet	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2015-Mar-17, Tue,17:11	Clear	Sideswipe	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2015-Mar-20, Fri,09:15	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 126

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Mar-31, Tue,16:21	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Passenger van	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	
2015-Apr-15, Wed,09:58	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2015-May-08, Fri,19:52	Clear	Rear end	Non-fatal injury	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jun-08, Mon,17:47	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2015-Jun-20, Sat,15:50	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jun-20, Sat,17:55	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Jul-03, Fri,16:04	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Aug-31, Mon,12:09	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2015-Oct-29, Thu,12:54	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Truck - open	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Dec-05, Sat,23:12	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Dec-11, Fri,18:00	Rain	Rear end	P.D. only	Wet	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, 2015 To: December 31, 2019

**Location:** BASELINE RD @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 126

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Jan-09, Sat,09:45	Rain	Rear end	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2016-Jan-16, Sat,22:50	Snow	Turning movement	P.D. only	Loose snow	North	Going ahead	Passenger van	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Mar-26, Sat,20:29	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
					North	Turning left	Passenger van	Other motor vehicle	
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Mar-26, Sat,21:04	Clear	Rear end	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-29, Tue,12:53	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Apr-10, Sun,10:40	Clear	Rear end	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2016-Apr-13, Wed,17:19	Clear	Sideswipe	P.D. only	Dry	West	Overtaking	Pick-up truck	Other motor vehicle	0
					West	Stopped	Tow truck	Other motor vehicle	
2016-Apr-25, Mon,17:13	Clear	Rear end	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-May-07, Sat,14:45	Clear	Turning movement	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-May-25, Wed,19:33	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	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 126

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Jun-30, Thu,15:45	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jun-30, Thu,17:02	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	
2016-Jul-28, Thu,14:05	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Aug-24, Wed,15:30	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Sep-03, Sat,11:50	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Sep-30, Fri,08:20	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-Oct-11, Tue,13:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Oct-14, Fri,17:30	Clear	Rear end	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Passenger van	Other motor vehicle	
2016-Oct-19, Wed,16:55	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Oct-26, Wed,20:00	Clear	Rear end	P.D. only	Dry	North	Turning right	Police vehicle	Other motor vehicle	0
					North	Turning right	Police vehicle	Other motor vehicle	
2016-Nov-09, Wed,17:55	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	





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 126

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Nov-28, Mon,17:17	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Concrete guide rail	0
2016-Nov-30, Wed,16:22	Rain	Sideswipe	P.D. only	Wet	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2016-Dec-10, Sat,11:35	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2016-Dec-11, Sun,16:05	Snow	Rear end	Non-fatal injury	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Dec-20, Tue,19:35	Clear	Angle	P.D. only	Slush	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Feb-10, Fri,08:51	Clear	Rear end	P.D. only	Ice	North	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-11, Sat,14:30	Clear	Rear end	P.D. only	Packed snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-13, Mon,20:44	Clear	Rear end	Non-fatal injury	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Municipal transit bus	Other motor vehicle	
2017-Feb-16, Thu,07:00	Snow	Sideswipe	P.D. only	Packed snow	West	Changing lanes	Passenger van	Skidding/sliding	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2017-Feb-16, Thu,08:30	Snow	Rear end	P.D. only	Ice	West	Slowing or stopping	Pick-up truck	Skidding/sliding	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Feb-16, Thu,08:45	Clear	Rear end	P.D. only	Slush	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 126

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Feb-16, Thu,16:49	Clear	Rear end	Non-fatal injury	Packed snow	West	Slowing or stopping	Passenger van	Skidding/sliding	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-24, Fri,12:07	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-May-05, Fri,09:22	Rain	Angle	P.D. only	Wet	East	Slowing or stopping	Pick-up truck	Skidding/sliding	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-May-22, Mon,14:46	Rain	Rear end	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-May-30, Tue,12:01	Clear	Turning movement	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2017-May-30, Tue,23:52	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Curb	0
2017-Jul-11, Tue,15:20	Rain	Sideswipe	P.D. only	Wet	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Jul-20, Thu,12:40	Clear	Rear end	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-14, Mon,20:00	Clear	Angle	P.D. only	Dry	West	Merging	Automobile, station wagon	Other motor vehicle	0
					South	Making "U" turn	Automobile, station wagon	Other motor vehicle	
2017-Aug-24, Thu,14:02	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	
2017-Sep-14, Thu,14:22	Clear	Angle	Non-fatal injury	Dry	West	Turning right	Passenger van	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2017-Sep-18, Mon,08:55	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	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 126

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Sep-21, Thu,13:45	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-24, Sun,14:04	Clear	Rear end	P.D. only	Dry	East	Merging	Unknown	Other motor vehicle	0
					East	Going ahead	Municipal transit bus	Other motor vehicle	
2017-Nov-08, Wed,23:06	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Unknown	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Nov-17, Fri,13:00	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Unknown	Other motor vehicle	
2017-Dec-06, Wed,16:29	Clear	Rear end	P.D. only	Dry	East	Changing lanes	Passenger van	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Dec-10, Sun,01:28	Snow	Sideswipe	P.D. only	Slush	West	Going ahead	Automobile, station wagon	Skidding/sliding	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Dec-11, Mon,15:06	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	
2017-Dec-11, Mon,17:19	Clear	Rear end	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-23, Sat,22:24	Snow	Turning movement	Non-fatal injury	Packed snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Dec-27, Wed,13:20	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Jan-18, Thu,19:44	Clear	Sideswipe	Non-fatal injury	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 126

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Feb-01, Thu,11:08	Clear	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-01, Thu,13:45	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Police vehicle	Other motor vehicle	
2018-Mar-21, Wed,16:21	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	School bus	Other motor vehicle	
2018-Mar-25, Sun,12:25	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Apr-03, Tue,22:01	Freezing Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Apr-16, Mon,09:47	Freezing Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-May-13, Sun,11:17	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-May-15, Tue,12:25	Clear	Rear end	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Jun-11, Mon,09:30	Clear	Rear end	P.D. only	Dry	North	Going ahead	Motorcycle	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-25, Mon,16:11	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-11, Wed,21:31	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 126

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Jul-21, Sat,17:59	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Aug-03, Fri,15:43	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-31, Fri,12:20	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-28, Fri,13:54	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	
2018-Oct-29, Mon,11:03	Clear	Sideswipe	P.D. only	Wet	East	Changing lanes	Passenger van	Other motor vehicle	0
					East	Overtaking	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-01, Thu,08:05	Rain	Rear end	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-05, Mon,14:36	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-09, Fri,12:47	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-17, Sat,14:35	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Nov-22, Thu,19:11	Snow	Rear end	P.D. only	Slush	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Dec-12, Wed,15:28	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 126

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Jan-17, Thu,11:00	Clear	Rear end	P.D. only	Packed snow	South	Slowing or stopping	Passenger van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-20, Sun,20:05	Snow	Rear end	P.D. only	Packed snow	West	Unknown	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-07, Thu,21:05	Freezing Rain	Rear end	Non-fatal injury	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Feb-11, Mon,07:06	Clear	Other	Non-fatal injury	Dry	South	Reversing	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-15, Fri,21:27	Clear	Angle	P.D. only	Loose snow	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-22, Fri,13:14	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-Mar-03, Sun,14:35	Clear	Rear end	Non-fatal injury	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-21, Tue,01:18	Clear	SMV other	P.D. only	Dry	West	Turning right	Motorcycle	Skidding/sliding	0
2019-May-22, Wed,07:30	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Jun-02, Sun,13:10	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jun-19, Wed,17:30	Clear	Rear end	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jul-04, Thu,14:41	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	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 126

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Jul-10, Wed,08:30	Clear	Sideswipe	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Truck - closed	Other motor vehicle	
2019-Jul-26, Fri,14:31	Clear	Angle	P.D. only	Dry	West	Turning right	Truck - open	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-01, Thu,00:29	Clear	Other	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Pole (utility, power)	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-16, Fri,07:50	Clear	Turning movement	P.D. only	Dry	West	Turning right	Unknown	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Aug-28, Wed,16:30	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-Aug-29, Thu,18:15	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Sep-01, Sun,14:10	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2019-Sep-04, Wed,15:34	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Sep-23, Mon,16:00	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Sep-25, Wed,15:52	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-25, Fri,19:21	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-11, Mon,20:14	Snow	Angle	P.D. only	Loose snow	West	Turning right	Unknown	Other motor vehicle	0
					South	Making "U" turn	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 126

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Nov-14, Thu,14:50	Clear	Sideswipe	P.D. only	Wet	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-27, Wed,16:30	Rain	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2019-Dec-17, Tue,13:20	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	

**Location:** BASELINE RD @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 105

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-05, Mon,14:06	Snow	SMV other	P.D. only	Ice	West	Going ahead	Pick-up truck	Skidding/sliding	0
2015-Jan-09, Fri,17:00	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jan-18, Sun,02:31	Clear	Angle	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jan-30, Fri,12:52	Clear	Rear end	P.D. only	Slush	West	Going ahead	Truck - closed	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Feb-23, Mon,08:48	Clear	Rear end	P.D. only	Wet	North	Changing lanes	Truck - tank	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Mar-09, Mon,18:01	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Mar-27, Fri,08:15	Freezing Rain	Rear end	P.D. only	Ice	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 105

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jun-19, Fri,16:55	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jul-02, Thu,16:52	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Aug-11, Tue,15:40	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Passenger van	Other motor vehicle	
2015-Sep-01, Tue,11:34	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2015-Sep-06, Sun,18:13	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2015-Sep-06, Sun,21:10	Clear	Sideswipe	P.D. only	Dry	South	Turning left	Unknown	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Sep-27, Sun,17:24	Clear	Sideswipe	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Pick-up truck	Other motor vehicle	
2015-Oct-03, Sat,17:23	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2015-Oct-04, Sun,12:29	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2015-Oct-16, Fri,12:08	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Nov-30, Mon,10:54	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	
2015-Dec-15, Tue,17:57	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 105

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-04, Mon,16:41	Clear	Rear end	P.D. only	Ice	West	Slowing or stopping	Passenger van	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-Feb-13, Sat,16:52	Strong wind	Rear end	P.D. only	Ice	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Feb-17, Wed,16:49	Snow	Rear end	P.D. only	Packed snow	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2016-Mar-06, Sun,09:14	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2016-Mar-08, Tue,16:25	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Apr-01, Fri,18:17	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Pick-up truck	Other motor vehicle	
2016-Apr-20, Wed,16:41	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Apr-21, Thu,13:00	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Slowing or stopping	Pick-up truck	Other motor vehicle	
2016-Jul-09, Sat,10:06	Rain	Rear end	P.D. only	Wet	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Slowing or stopping	Passenger van	Other motor vehicle	
2016-Jul-22, Fri,16:39	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jul-27, Wed,16:55	Clear	Rear end	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 105

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Aug-05, Fri,11:36	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Pick-up truck	Other motor vehicle	
2016-Sep-07, Wed,10:03	Rain	Other	P.D. only	Wet	South	Reversing	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2016-Sep-19, Mon,13:43	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Oct-26, Wed,09:16	Clear	Angle	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					East	Going ahead	Delivery van	Other motor vehicle	
2016-Nov-10, Thu,20:50	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Dec-02, Fri,14:58	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-09, Fri,09:35	Clear	Rear end	P.D. only	Ice	South	Slowing or stopping	Delivery van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Dec-13, Tue,23:19	Clear	Turning movement	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Jan-04, Wed,17:00	Freezing Rain	Rear end	P.D. only	Ice	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Feb-06, Mon,11:19	Clear	Rear end	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Feb-09, Thu,12:12	Clear	Rear end	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015    **To:** December 31, 2019

**Location:** BASELINE RD @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 105

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Feb-12, Sun,12:49	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2017-Mar-09, Thu,17:30	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	
2017-Apr-19, Wed,11:13	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-May-02, Tue,17:38	Clear	Rear end	P.D. only	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2017-May-13, Sat,13:54	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2017-May-25, Thu,18:30	Rain	Rear end	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Unknown	Other motor vehicle	
2017-Jun-07, Wed,09:11	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2017-Jun-11, Sun,15:00	Clear	Sideswipe	P.D. only	Dry	South	Turning left	Passenger van	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Jun-19, Mon,16:30	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Unknown	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jun-29, Thu,18:09	Rain	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jul-23, Sun,13:07	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 105

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Jul-29, Sat,12:00	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-09, Sat,17:57	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2017-Sep-18, Mon,16:30	Clear	Rear end	P.D. only	Dry	East	Turning left	Unknown	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Sep-22, Fri,12:34	Clear	Turning movement	P.D. only	Dry	North	Turning left	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-25, Mon,10:00	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2017-Sep-29, Fri,14:21	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Truck - tractor	Other motor vehicle	
2017-Oct-06, Fri,19:49	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Oct-11, Wed,12:17	Clear	SMV other	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Curb	0
2017-Oct-24, Tue,08:43	Rain	Rear end	P.D. only	Wet	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-25, Wed,21:33	Clear	Rear end	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Oct-28, Sat,15:47	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Unknown	Other motor vehicle	0
					West	Stopped	Unknown	Other motor vehicle	
2017-Nov-22, Wed,17:37	Clear	Rear end	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 105

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Nov-24, Fri,07:27	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-01, Fri,16:57	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-12, Tue,13:00	Snow	Rear end	Non-fatal injury	Slush	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Dec-13, Wed,18:26	Snow	Sideswipe	P.D. only	Slush	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2017-Dec-30, Sat,23:43	Drifting Snow	Rear end	Non-fatal injury	Ice	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-16, Tue,08:12	Snow	Rear end	P.D. only	Slush	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Delivery van	Other motor vehicle	
2018-Mar-06, Tue,17:45	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-29, Thu,15:05	Rain	Rear end	Non-fatal injury	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-12, Sat,12:30	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-30, Wed,11:09	Clear	Sideswipe	Non-fatal injury	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-17, Tue,16:53	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Aug-14, Tue,23:36	Clear	SMV other	P.D. only	Dry	West	Unknown	Passenger van	Curb	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 105

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Aug-18, Sat,05:38	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-26, Sun,20:07	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Unknown	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-10, Mon,17:24	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Passenger van	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-19, Wed,18:58	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-25, Thu,16:20	Clear	Sideswipe	P.D. only	Dry	North	Turning right	Unknown	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Nov-13, Tue,08:07	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Nov-22, Thu,15:56	Clear	Rear end	Non-fatal injury	Dry	South	Turning left	Delivery van	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
					South	Turning left	Passenger van	Other motor vehicle	
2018-Dec-11, Tue,09:43	Snow	Rear end	P.D. only	Loose snow	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Dec-14, Fri,16:40	Rain	Turning movement	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-21, Fri,18:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 105

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jan-03, Thu,07:00	Clear	Sideswipe	P.D. only	Slush	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-11, Mon,15:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-15, Fri,13:25	Clear	Angle	P.D. only	Wet	North	Going ahead	Unknown	Other motor vehicle	0
					West	Going ahead	Passenger van	Other motor vehicle	
2019-Apr-05, Fri,17:44	Clear	Rear end	P.D. only	Dry	South	Turning right	Unknown	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Apr-07, Sun,10:17	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-26, Fri,17:45	Clear	Rear end	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-06, Thu,17:55	Clear	Sideswipe	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-04, Thu,12:00	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-11, Thu,17:30	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2019-Jul-13, Sat,15:30	Clear	Rear end	P.D. only	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-23, Tue,18:00	Clear	Rear end	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-15, Thu,13:14	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Pick-up truck	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 105

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Aug-29, Thu,13:30	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2019-Oct-10, Thu,14:44	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-15, Tue,20:24	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Unknown	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-01, Fri,16:45	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-18, Mon,10:28	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Dec-19, Thu,08:00	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	
2019-Dec-30, Mon,10:55	Freezing Rain	SMV other	P.D. only	Ice	East	Slowing or stopping	Automobile, station wagon	Pole (utility, power)	0

**Location:** BASELINE RD btwn ST. HELEN'S PL & CLYDE AVE

**Traffic Control:** No control

**Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-04, Sun,13:21	Rain	SMV unattended vehicle	Non-fatal injury	Ice	East	Going ahead	Automobile, station wagon	Unattended vehicle	0
2015-Feb-11, Wed,19:04	Snow	Angle	P.D. only	Slush	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Mar-29, Sun,17:00	Clear	Angle	P.D. only	Dry	South	Turning left	Passenger van	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jul-22, Wed,06:56	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Bicycle	Other motor vehicle	0
					North	Turning right	Pick-up truck	Cyclist	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD btwn ST. HELEN'S PL & CLYDE AVE

**Traffic Control:** No control

**Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Sep-14, Mon,08:30	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Passenger van	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2015-Sep-21, Mon,06:05	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Curb	0
2015-Sep-29, Tue,18:06	Rain	Rear end	P.D. only	Wet	West	Slowing or stopping	Delivery van	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Apr-08, Fri,16:34	Clear	Sideswipe	P.D. only	Dry	East	Pulling away from shoulder or curb	Municipal transit bus	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2016-Apr-18, Mon,21:01	Rain	SMV other	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Ran off road	0
2016-Jun-01, Wed,15:16	Clear	Sideswipe	Non-fatal injury	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Sep-02, Fri,20:19	Clear	Other	Non-fatal injury	Dry	West	Going ahead	Bicycle	Other motor vehicle	0
					East	Turning right	Passenger van	Cyclist	
2016-Sep-06, Tue,14:10	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Slowing or stopping	Passenger van	Other motor vehicle	
2016-Oct-30, Sun,19:06	Clear	Turning movement	Fatal injury	Dry	West	Going ahead	Motorcycle	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Dec-21, Wed,09:59	Clear	Sideswipe	P.D. only	Wet	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Truck - closed	Other motor vehicle	
2018-Sep-26, Wed,15:23	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BASELINE RD btwn ST. HELEN'S PL & CLYDE AVE

**Traffic Control:** No control

**Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Oct-27, Sat,14:30	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-27, Wed,17:46	Rain	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Dec-01, Sun,16:49	Clear	Rear end	P.D. only	Dry	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

**Location:** BURRIS LANE @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 20

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-28, Wed,18:49	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Apr-20, Mon,14:30	Rain	Rear end	P.D. only	Wet	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Aug-26, Wed,17:22	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Aug-26, Wed,17:45	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Sep-14, Mon,05:50	Rain	Rear end	Non-fatal injury	Wet	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Nov-22, Sun,15:27	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015    **To:** December 31, 2019

**Location:** BURRIS LANE @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 20

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Oct-20, Thu,12:43	Rain	Rear end	Non-fatal injury	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-18, Thu,19:55	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Delivery van	Other motor vehicle	
2018-Feb-14, Wed,18:54	Clear	SMV other	Non-fatal injury	Wet	East	Turning right	Passenger van	Pedestrian	1
2018-Feb-18, Sun,15:34	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Feb-25, Sun,21:07	Clear	Angle	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-15, Thu,14:20	Clear	Sideswipe	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-10, Wed,15:34	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	
2018-Nov-02, Fri,17:48	Rain	Turning movement	P.D. only	Wet	North	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Feb-18, Mon,13:25	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-Jun-05, Wed,10:56	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-02, Fri,18:27	Clear	SMV other	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Pedestrian	1
2019-Sep-26, Thu,09:09	Clear	Rear end	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Unknown	Unknown	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** BURRIS LANE @ MERIVALE RD

**Traffic Control:** Traffic signal

**Total Collisions:** 20

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Oct-08, Tue, 12:59	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	
2019-Nov-29, Fri, 10:40	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** CLYDE AVE @ STARWOOD RD

**Traffic Control:** Stop sign

**Total Collisions:** 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Feb-24, Wed, 22:51	Freezing Rain	Angle	P.D. only	Wet	East	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2016-Oct-24, Mon, 15:43	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Oct-26, Wed, 21:26	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2018-Apr-25, Wed, 12:04	Rain	Angle	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-27, Sat, 19:24	Rain	Turning movement	P.D. only	Slush	North	Overtaking	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Passenger van	Other motor vehicle	
2019-Apr-17, Wed, 12:30	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-30, Tue, 16:35	Clear	Angle	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-15, Sat, 14:28	Rain	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** CLYDE AVE @ STARWOOD RD

**Traffic Control:** Stop sign

**Total Collisions:** 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Aug-14, Wed,09:16	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	
2019-Dec-31, Tue,13:26	Snow	Angle	P.D. only	Slush	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** CLYDE AVE btwn BASELINE RD & NE/OT BOUNDARY

**Traffic Control:** No control

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Feb-09, Tue,09:05	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Truck - closed	Skidding/sliding	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2016-Jun-04, Sat,19:26	Clear	Angle	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	

**Location:** CLYDE AVE btwn CLYDE AVE & STARWOOD RD

**Traffic Control:** No control

**Total Collisions:** 23

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-09, Fri,08:20	Clear	Turning movement	P.D. only	Slush	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jan-16, Fri,12:10	Clear	Angle	P.D. only	Wet	East	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2015-Jan-30, Fri,09:55	Snow	SMV other	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Ran off road	0
2015-Feb-27, Fri,12:43	Clear	Angle	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Mar-31, Tue,14:50	Clear	Other	P.D. only	Dry	South	Reversing	Truck - closed	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** CLYDE AVE btwn CLYDE AVE & STARWOOD RD

**Traffic Control:** No control

**Total Collisions:** 23

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Apr-15, Wed,11:31	Clear	Angle	P.D. only	Dry	East	Turning left	Passenger van	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2015-Jun-01, Mon,15:18	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	
2015-Jul-31, Fri,16:00	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Aug-07, Fri,17:50	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Bicycle	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Cyclist	
2017-Mar-25, Sat,14:06	Clear	Angle	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jul-26, Wed,18:37	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Nov-08, Wed,21:30	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Nov-13, Mon,13:40	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Changing lanes	Pick-up truck	Other motor vehicle	
2018-Jan-02, Tue,11:32	Snow	Turning movement	P.D. only	Loose snow	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-04, Thu,13:11	Snow	Angle	P.D. only	Slush	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-26, Mon,09:01	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Apr-26, Fri,14:12	Rain	Turning movement	Non-fatal injury	Wet	North	Turning left	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** CLYDE AVE btwn CLYDE AVE & STARWOOD RD

**Traffic Control:** No control

**Total Collisions:** 23

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jun-01, Sat,17:41	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-09, Tue,22:10	Clear	SMV other	Non-fatal injury	Dry	South	Changing lanes	Automobile, station wagon	Pedestrian	1
2019-Sep-20, Fri,11:25	Clear	SMV other	P.D. only	Dry	East	Turning right	Tow truck	Ran off road	0
2019-Nov-04, Mon,16:40	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	
2019-Nov-27, Wed,21:04	Rain	Sideswipe	Non-fatal injury	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-19, Thu,12:30	Clear	Rear end	Non-fatal injury	Slush	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	

**Location:** CLYDE AVE btwn MAITLAND AVE & BASELINE RD

**Traffic Control:** No control

**Total Collisions:** 12

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Aug-14, Fri,09:45	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	
2015-Nov-13, Fri,12:29	Rain	Angle	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2016-Feb-17, Wed,18:08	Snow	Turning movement	P.D. only	Slush	North	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2016-Aug-12, Fri,16:32	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Sep-10, Sat,15:00	Clear	SMV other	P.D. only	Wet	North	Turning right	Automobile, station wagon	Skidding/sliding	0





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** CLYDE AVE btwn MAITLAND AVE & BASELINE RD

**Traffic Control:** No control

**Total Collisions:** 12

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Sep-24, Sun,01:30	Clear	SMV other	Fatal injury	Dry	South	Going ahead	Automobile, station wagon	Pedestrian	1
2017-Nov-14, Tue,21:25	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Feb-07, Wed,11:18	Snow	Turning movement	P.D. only	Loose snow	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Feb-11, Sun,17:34	Snow	Rear end	P.D. only	Slush	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-04, Thu,19:15	Clear	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-25, Wed,14:43	Clear	Sideswipe	P.D. only	Dry	South	Other	Automobile, station wagon	Other motor vehicle	0
					South	Other	Automobile, station wagon	Other motor vehicle	
2019-Nov-26, Tue,19:05	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	

**Location:** CLYDE AVE btwn STARWOOD RD & LOTTA AVE

**Traffic Control:** No control

**Total Collisions:** 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Feb-14, Sat,14:03	Snow	Rear end	P.D. only	Packed snow	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Dec-04, Fri,17:24	Clear	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Feb-12, Fri,10:35	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
					South	Stopped	Pick-up truck	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** CLYDE AVE btwn STARWOOD RD & LOTTA AVE

**Traffic Control:** No control

**Total Collisions:** 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Jul-08, Sun,18:19	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	
2018-Jul-25, Wed,08:01	Rain	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-28, Sun,12:45	Rain	Turning movement	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2019-Apr-24, Wed,14:02	Clear	Angle	P.D. only	Dry	West	Turning left	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-27, Wed,20:45	Clear	SMV unattended vehicle	P.D. only	Dry	South	Reversing	Automobile, station wagon	Unattended vehicle	0

**Location:** GILBEY DR @ MERIVALE RD

**Traffic Control:** Stop sign

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-May-26, Fri,20:47	Clear	Turning movement	Non-fatal injury	Wet	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-05, Tue,18:15	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** MERIVALE RD @ 110 S OF BURRIS LANE/LOBLAWS SC

**Traffic Control:** Traffic signal

**Total Collisions:** 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Apr-02, Thu,17:01	Clear	Rear end	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD @ 110 S OF BURRIS LANE/LOBLAWS SC

**Traffic Control:** Traffic signal

**Total Collisions:** 9

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-06, Wed,14:01	Clear	Turning movement	P.D. only	Loose snow	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-19, Sat,17:52	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2016-Jul-25, Mon,10:19	Clear	Angle	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2018-Mar-04, Sun,12:34	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-17, Thu,15:00	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-14, Thu,19:59	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	
2019-May-03, Fri,15:44	Rain	Turning movement	P.D. only	Wet	South	Turning left	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-20, Fri,14:55	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	

**Location:** MERIVALE RD @ CAPILANO DR/WITHROW AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 42

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-04, Wed,16:14	Clear	SMV other	P.D. only	Loose snow	North	Unknown	Unknown	Pole (utility, power)	0
2015-Feb-04, Wed,19:30	Snow	Rear end	P.D. only	Slush	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015    **To:** December 31, 2019

**Location:** MERIVALE RD @ CAPILANO DR/WITHROW AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 42

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-18, Wed,19:00	Clear	Rear end	P.D. only	Dry	South	Turning left	Passenger van	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Feb-26, Thu,16:35	Clear	Rear end	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Mar-15, Sun,16:48	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	
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2015-Mar-21, Sat,16:19	Clear	Angle	P.D. only	Wet	East	Turning right	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Apr-22, Wed,14:39	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2015-Apr-22, Wed,16:35	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	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-May-08, Fri,19:55	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-May-19, Tue,18:09	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jun-11, Thu,14:41	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	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jun-16, Tue,09:00	Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Delivery van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD @ CAPILANO DR/WITHROW AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 42

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jun-27, Sat,12:50	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2015-Aug-11, Tue,15:13	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Sep-01, Tue,20:21	Clear	Turning movement	P.D. only	Dry	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Sep-07, Mon,20:09	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Sep-07, Mon,21:09	Rain	Rear end	P.D. only	Wet	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Tow truck	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Sep-25, Fri,14:30	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	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jan-30, Mon,18:20	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-11, Tue,10:11	Rain	Angle	Non-fatal injury	Wet	West	Turning right	Passenger van	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2017-Apr-27, Thu,23:03	Clear	Angle	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2017-Sep-03, Sun,14:53	Rain	Angle	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD @ CAPILANO DR/WITHROW AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 42

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Oct-07, Sat,11:53	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Passenger van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-21, Thu,12:04	Clear	SMV other	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Pedestrian	1
2017-Dec-30, Sat,09:29	Snow	Rear end	P.D. only	Packed snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-02, Fri,12:24	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-06, Tue,17:30	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	
2018-Apr-06, Fri,17:37	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Jun-06, Wed,15:43	Clear	Rear end	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-08, Fri,12:38	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jun-15, Fri,11:37	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-02, Sun,14:32	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-20, Sun,17:35	Snow	Angle	P.D. only	Loose snow	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD @ CAPILANO DR/WITHROW AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 42

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Jan-22, Tue,17:44	Clear	Turning movement	P.D. only	Loose snow	North	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-24, Thu,17:19	Clear	Rear end	Non-fatal injury	Slush	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Apr-13, Sat,16:46	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-21, Tue,17:50	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2019-Sep-23, Mon,19:53	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	
2019-Sep-26, Thu,19:33	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	
2019-Oct-09, Wed,21:35	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Oct-21, Mon,13:55	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-29, Tue,15:00	Clear	Sideswipe	P.D. only	Dry	South	Unknown	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** MERIVALE RD btwn BURRIS LANE & OT/NE BOUNDARY

**Traffic Control:** No control

**Total Collisions:** 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Feb-21, Sat,12:31	Snow	Sideswipe	P.D. only	Slush	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD btwn BURRIS LANE & OT/NE BOUNDARY

**Traffic Control:** No control

**Total Collisions:** 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Aug-13, Thu,19:40	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Oct-09, Fri,15:09	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Nov-04, Wed,18:53	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Mar-01, Tue,12:40	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Feb-01, Wed,11:49	Clear	Rear end	P.D. only	Dry	South	Going ahead	Passenger van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-29, Fri,21:40	Clear	Turning movement	P.D. only	Packed snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Truck - dump	Other motor vehicle	
2018-Jan-31, Wed,17:32	Freezing Rain	Turning movement	P.D. only	Slush	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-05, Wed,11:44	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Oct-04, Thu,15:38	Clear	Angle	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-20, Thu,10:17	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

**Location:** MERIVALE RD btwn CLYDE AVE & GILBEY DR

**Traffic Control:** No control

**Total Collisions:** 22

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
---------------	-------------	-------------	----------------	----------------	----------	-------------------	--------------	-------------	---------





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD btwn CLYDE AVE & GILBEY DR

**Traffic Control:** No control

**Total Collisions:** 22

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jun-18, Thu,16:11	Clear	Turning movement	P.D. only	Dry	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Motorcycle	Other motor vehicle	
2015-Aug-15, Sat,20:12	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Nov-13, Fri,12:24	Rain	Turning movement	P.D. only	Wet	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Dec-21, Mon,18:46	Rain	SMV other	P.D. only	Wet	East	Going ahead	Pick-up truck	Curb	0
2016-Feb-15, Mon,12:48	Clear	Turning movement	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-May-19, Thu,15:16	Clear	Angle	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Mar-17, Fri,20:04	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Mar-30, Thu,13:54	Clear	Turning movement	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-11, Tue,14:46	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Truck and trailer	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2018-Jan-02, Tue,14:01	Snow	Rear end	P.D. only	Ice	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-May-27, Sun,15:15	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jun-14, Thu,18:59	Rain	Turning movement	P.D. only	Wet	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD btwn CLYDE AVE & GILBEY DR

**Traffic Control:** No control

**Total Collisions:** 22

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-12, Mon,12:30	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-19, Mon,18:54	Snow	Rear end	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Apr-05, Fri,10:35	Clear	Angle	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-03, Wed,14:46	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-09, Tue,12:37	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Bicycle	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Cyclist	
2019-Jul-21, Sun,12:10	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	
2019-Jul-21, Sun,17:27	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-18, Sun,13:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Changing lanes	Automobile, station wagon	Other motor vehicle	
2019-Nov-16, Sat,17:24	Clear	Rear end	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Unknown	Other motor vehicle	
2019-Dec-22, Sun,14:17	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

**Location:** MERIVALE RD btwn CLYDE AVE & RITA AVE

**Traffic Control:** No control

**Total Collisions:** 27

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
---------------	-------------	-------------	----------------	----------------	----------	-------------------	--------------	-------------	---------



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD btwn CLYDE AVE & RITA AVE

**Traffic Control:** No control

**Total Collisions:** 27

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-16, Fri,12:22	Clear	Rear end	Non-fatal injury	Wet	South	Going ahead	Passenger van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jun-19, Fri,15:17	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-Jun-24, Wed,18:58	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2015-Aug-28, Fri,14:21	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2016-Feb-12, Fri,16:36	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2016-Sep-01, Thu,18:03	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Dec-21, Wed,19:51	Clear	Rear end	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Mar-03, Fri,14:30	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-04, Tue,13:46	Rain	Turning movement	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jul-07, Fri,16:30	Rain	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD btwn CLYDE AVE & RITA AVE

**Traffic Control:** No control

**Total Collisions:** 27

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Sep-07, Thu,14:02	Rain	Rear end	P.D. only	Wet	South	Going ahead	Passenger van	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-08, Fri,11:45	Rain	Rear end	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-12, Mon,12:59	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	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-13, Tue,13:15	Clear	Angle	P.D. only	Loose snow	East	Reversing	Snow plow	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-May-05, Sat,12:36	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-30, Wed,15:20	Clear	Rear end	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-30, Mon,11:52	Clear	Rear end	Non-fatal injury	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-10, Wed,12:15	Clear	Rear end	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2018-Nov-21, Wed,13:55	Rain	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Skidding/sliding	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD btwn CLYDE AVE & RITA AVE

**Traffic Control:** No control

**Total Collisions:** 27

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Dec-31, Mon,19:36	Clear	Rear end	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Municipal transit bus	Other motor vehicle	
2019-Jan-30, Wed,19:50	Clear	Angle	P.D. only	Loose snow	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-30, Thu,12:00	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-11, Tue,08:53	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Aug-21, Wed,09:44	Rain	Rear end	Non-fatal injury	Wet	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Oct-03, Thu,09:39	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	
2019-Nov-28, Thu,11:57	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	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-04, Wed,18:00	Rain	Rear end	P.D. only	Wet	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

**Location:** MERIVALE RD btwn GILBEY DR & KIMWAY CRES

**Traffic Control:** No control

**Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
---------------	-------------	-------------	----------------	----------------	----------	-------------------	--------------	-------------	---------



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD btwn GILBEY DR & KIMWAY CRES

**Traffic Control:** No control

**Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Apr-13, Mon,15:03	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Stopped	Municipal transit bus	Other motor vehicle	
2016-Dec-07, Wed,19:25	Clear	Sideswipe	P.D. only	Dry	West	Turning left	Truck and trailer	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Aug-20, Tue,16:05	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** MERIVALE RD btwn KIMWAY CRES & LOBLAWS SC

**Traffic Control:** No control

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Feb-21, Sat,13:39	Snow	Rear end	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Sep-03, Thu,12:46	Clear	Turning movement	Non-fatal injury	Dry	East	Overtaking	Motorcycle	Other motor vehicle	0
					East	Turning left	Delivery van	Other motor vehicle	

**Location:** MERIVALE RD btwn LOBLAWS SC & BURRIS LANE

**Traffic Control:** No control

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Feb-07, Wed,16:04	Snow	Rear end	P.D. only	Packed snow	South	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					South	Stopped	Municipal transit bus	Other motor vehicle	
2018-May-17, Thu,10:13	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD btwn OT/NE BOUNDARY & MERIVALE RD

**Traffic Control:** No control

**Total Collisions:** 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-03, Sat,20:10	Snow	Sideswipe	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2015-Jun-11, Thu,19:26	Clear	Sideswipe	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Going ahead	Motorcycle	Other motor vehicle	
2015-Jul-28, Tue,14:35	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Overtaking	Pick-up truck	Other motor vehicle	
2016-Oct-25, Tue,16:03	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Nov-24, Thu,09:13	Snow	Rear end	P.D. only	Loose snow	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Jan-02, Tue,13:25	Snow	Rear end	P.D. only	Loose snow	South	Slowing or stopping	Passenger van	Curb	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Pick-up truck	Other motor vehicle	
2019-Oct-10, Thu,08:01	Clear	Turning movement	Non-fatal injury	Dry	North	Turning right	Truck - open	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	

**Location:** MERIVALE RD btwn WITHROW AVE & RITA AVE

**Traffic Control:** No control

**Total Collisions:** 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Apr-10, Fri,16:24	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-24, Sat,13:07	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	
					North	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD btwn WITHROW AVE & RITA AVE

**Traffic Control:** No control

**Total Collisions:** 5

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Apr-12, Fri,15:26	Clear	SMV other	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Pedestrian	1
2019-Apr-30, Tue,11:13	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	
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Sep-06, Fri,15:47	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 111

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-09, Fri,08:00	Clear	Turning movement	P.D. only	Slush	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jan-15, Thu,15:30	Clear	Turning movement	P.D. only	Slush	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jan-21, Wed,14:47	Clear	Rear end	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2015-Jan-23, Fri,16:58	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2015-Jan-23, Fri,17:13	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Feb-01, Sun,21:15	Clear	SMV other	P.D. only	Packed snow	North	Going ahead	Pick-up truck	Debris on road	0





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015    **To:** December 31, 2019

**Location:** MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 111

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Feb-13, Fri,14:29	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Apr-30, Thu,09:45	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	
2015-Apr-30, Thu,12:59	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2015-May-05, Tue,12:50	Clear	Rear end	P.D. only	Dry	South	Going ahead	Police vehicle	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-May-05, Tue,19:01	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jun-29, Mon,18:06	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jul-11, Sat,16:01	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Passenger van	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2015-Jul-19, Sun,13:39	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Passenger van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jul-31, Fri,12:25	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	Pick-up truck	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Aug-18, Tue,17:26	Clear	Rear end	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 111

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Aug-19, Wed,18:12	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Oct-16, Fri,09:07	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Oct-19, Mon,17:07	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Oct-21, Wed,18:34	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Oct-28, Wed,21:24	Rain	SMV other	P.D. only	Wet	West	Turning left	Automobile, station wagon	Skidding/sliding	0
2015-Nov-01, Sun,11:36	Clear	Rear end	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Pick-up truck	Other motor vehicle	
2015-Nov-09, Mon,18:55	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Jan-18, Mon,12:37	Clear	Turning movement	P.D. only	Wet	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2016-Feb-13, Sat,15:08	Clear	Turning movement	Non-fatal injury	Wet	North	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Feb-18, Thu,11:44	Snow	Rear end	P.D. only	Loose snow	North	Turning right	Passenger van	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2016-May-24, Tue,17:59	Clear	Rear end	Non-fatal injury	Dry	North	Turning right	Passenger van	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Jun-30, Thu,15:31	Clear	Other	P.D. only	Dry	West	Reversing	Truck - closed	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015    **To:** December 31, 2019

**Location:** MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 111

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jul-13, Wed,15:39	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Jul-29, Fri,17:29	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	
2016-Aug-22, Mon,16:44	Clear	Rear end	P.D. only	Dry	South	Going ahead	Passenger van	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2016-Sep-17, Sat,15:50	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Sep-27, Tue,12:12	Clear	Rear end	P.D. only	Dry	East	Merging	Automobile, station wagon	Other motor vehicle	0
					East	Merging	Automobile, station wagon	Other motor vehicle	
2016-Oct-21, Fri,16:07	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Nov-18, Fri,10:58	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Nov-24, Thu,11:00	Snow	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Nov-30, Wed,15:15	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2016-Dec-08, Thu,21:52	Snow	SMV other	P.D. only	Ice	West	Going ahead	Passenger van	Curb	0
2016-Dec-19, Mon,13:39	Clear	Rear end	P.D. only	Packed snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Dec-21, Wed,16:19	Clear	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015    **To:** December 31, 2019

**Location:** MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 111

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Jan-07, Sat,00:36	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2017-Jan-31, Tue,08:44	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-06, Mon,19:15	Snow	Rear end	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	
2017-Feb-15, Wed,21:00	Snow	Turning movement	P.D. only	Loose snow	South	Turning left	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Feb-18, Sat,15:55	Clear	Turning movement	P.D. only	Dry	South	Turning left	Unknown	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Apr-21, Fri,21:43	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2017-May-31, Wed,13:35	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	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jun-18, Sun,10:46	Clear	Turning movement	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jun-26, Mon,12:16	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2017-Jun-30, Fri,15:38	Rain	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	
2017-Jul-11, Tue,16:28	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Curb	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 111

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Jul-14, Fri,17:00	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Aug-01, Tue,14:58	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-Aug-21, Mon,12:21	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2017-Aug-22, Tue,19:22	Rain	Angle	P.D. only	Wet	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-28, Mon,12:43	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	
2017-Sep-11, Mon,15:13	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2017-Sep-24, Sun,15:30	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Changing lanes	Passenger van	Other motor vehicle	
2017-Oct-07, Sat,17:00	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Nov-16, Thu,15:01	Clear	Angle	P.D. only	Dry	West	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-06, Wed,10:43	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Passenger van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-06, Wed,15:20	Clear	Rear end	P.D. only	Dry	East	Turning right	Delivery van	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2017-Dec-26, Tue,12:24	Clear	Sideswipe	P.D. only	Slush	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 111

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Dec-26, Tue,13:39	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2017-Dec-27, Wed,11:03	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Delivery van	Other motor vehicle	
2018-Jan-05, Fri,17:25	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-22, Mon,13:02	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-08, Thu,13:06	Snow	Sideswipe	P.D. only	Loose snow	North	Merging	Automobile, station wagon	Other motor vehicle	0
					North	Merging	Automobile, station wagon	Other motor vehicle	
2018-Feb-18, Sun,18:00	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Mar-21, Wed,21:09	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Apr-07, Sat,16:58	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-01, Tue,09:14	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-18, Fri,16:44	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-23, Sat,16:49	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	
2018-Jun-28, Thu,19:47	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 111

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Jul-12, Thu,17:51	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	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-14, Sat,13:32	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	
2018-Jul-23, Mon,18:33	Rain	Angle	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-28, Tue,22:33	Clear	Sideswipe	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-04, Tue,15:55	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Oct-18, Thu,11:48	Clear	Other	P.D. only	Dry	West	Reversing	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-20, Sat,11:30	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2018-Oct-26, Fri,14:30	Clear	Rear end	P.D. only	Dry	North	Going ahead	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-30, Tue,17:07	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	
2018-Nov-05, Mon,14:52	Clear	Rear end	Non-fatal injury	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 111

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Nov-16, Fri,09:01	Snow	Turning movement	P.D. only	Loose snow	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-24, Sat,10:34	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-07, Fri,17:19	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	
2018-Dec-11, Tue,12:04	Snow	Rear end	P.D. only	Slush	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-21, Fri,19:30	Rain	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-21, Fri,20:35	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-02, Sat,18:20	Snow	Rear end	P.D. only	Slush	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Turning left	Unknown	Skidding/sliding	
2019-Feb-20, Wed,12:35	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-24, Sun,15:10	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Apr-16, Tue,14:15	Clear	Rear end	Non-fatal injury	Dry	West	Turning right	Pick-up truck	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Apr-17, Wed,16:56	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	





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 111

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Apr-26, Fri,18:54	Clear	Rear end	P.D. only	Wet	North	Unknown	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-28, Sun,12:45	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-May-02, Thu,08:00	Clear	Rear end	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-May-17, Fri,12:40	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	
					South	Stopped	Pick-up truck	Other motor vehicle	
2019-May-21, Tue,16:53	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	
2019-Jul-05, Fri,18:12	Rain	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	
2019-Jul-20, Sat,13:43	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-21, Sun,14:50	Clear	SMV other	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Curb	0
2019-Oct-08, Tue,07:45	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Oct-12, Sat,12:41	Clear	Rear end	P.D. only	Dry	West	Turning left	Passenger van	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Nov-20, Wed,08:24	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2015 To: December 31, 2019

**Location:** MERIVALE RD/LOTTA AVE @ CLYDE AVE

**Traffic Control:** Traffic signal

**Total Collisions:** 111

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Nov-22, Fri,10:33	Clear	Rear end	Non-fatal injury	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Nov-26, Tue,17:35	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-Nov-29, Fri,09:00	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-24, Tue,09:58	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	

## **APPENDIX F**

---

Relevant Excerpts of *TRANS Trip Generation Manual* (WSP, 2020)

to make use of this resource while considering the local land use context and trip characteristics for all travel modes through local and regional data.

**Table 2: Person-Trip Conversion Factor**

Factor	Application	Apply To	Period	Value
Person-Trip Conversion Factor	Vehicle to person-trip conversion, to normalize the measure of trip rates to account for all modes. Applicable to the ITE trip generation rates, which are mainly reported as vehicle trip rates.	Vehicle trip rates	All	1.28

## 3 RESIDENTIAL TRIP GENERATION RATES

### 3.1 Development of Residential Trip Rates

The residential trip generation rates in this manual are reflect the number of **person-trips per household** during the **peak period**. The morning peak period is from 7:00 AM to 9:30 AM, while the afternoon peak period is from 3:30 PM to 6:00 PM.

A geographic review of trip generation rates found that rates varied by dwelling type but not significantly by the geographic sectors and districts used in the 2009 TRANS Trip Generation Study<sup>1</sup>. As such, residential trip generation rates in this manual are defined for the following three dwelling types:

- Single-Family Detached Housing
- Multifamily Housing (Low-Rise)
- Multifamily Housing (High-Rise)

Low-rise housing refers to any building that houses multiple families that is two storeys or less (e.g. semi-detached homes, townhouses). High-rise housing refers to any building that houses multiple families that is three or more storeys (e.g. apartments and condo buildings). These dwelling types are from the TRANS Origin-Destination Survey but are organized to be equivalent to the categories of the ITE *Trip Generation Manual* and local generator surveys.

---

<sup>1</sup> While person trip rates were not found to vary significantly with geographic area, location does have an impact on mode share as discussed in Section 4.2. As a result, vehicular trip rates do vary by geography as reflected in previous versions of the manual. The variation by dwelling type, in part, reflects differences in the number of persons per dwelling.

### 3.2 Recommended Residential Trip Generation Rates

A blended trip rate was developed from the three data sources through application of a rank-sum weighting process, considering the strengths and weaknesses of each dataset for the dwelling type in question. The recommended blended **residential person-trip rates** are presented in **Table 3**. All rates represent person-trips per dwelling unit and are to be applied to the **AM or PM peak period**.

**Table 3: Recommended Residential Person-trip Rates**

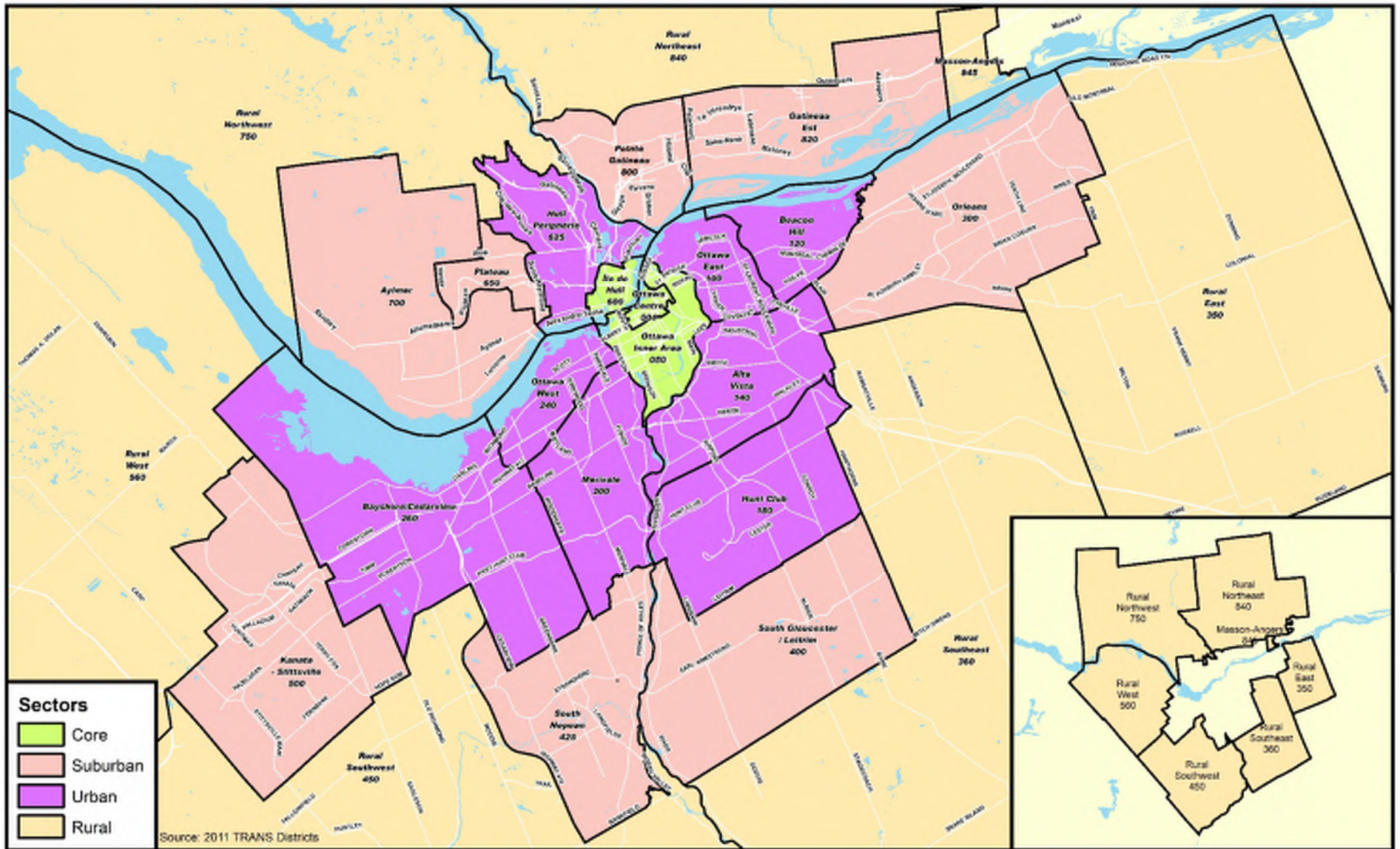
ITE Land Use Code	Dwelling Unit Type	Period	Person-Trip Rate
210	Single-detached	AM	2.05
		PM	2.48
220	Multi-Unit (Low-Rise)	AM	1.35
		PM	1.58
221 & 222	Multi-Unit (High-Rise)	AM	0.80
		PM	0.90

### 3.3 Adjustment Factors – Peak Period to Peak Hour

The various trip generation data sources require some adjustment to standardize the data for developing robust blended trip rates. The peak period conversion factor in **Table 4** may be used where applicable to develop trip generation rate estimates in the desired format.

**Table 4: Adjustment Factors for Residential Trip Generation Rates**

Factor	Application	Apply To	Period	Value
Peak Period Conversion Factor	<b>Peak period to peak hour conversion.</b> Because the 2020 TRANS Trip Generation Study reports trip generation rates by peak period, factors must be applied if the practitioner requires peak hour rates. In practice, the conversion to peak hour trip rates should occur <b>after</b> the application of modal shares.	Person-trip rates per peak period	AM	0.50
			PM	0.44
		Vehicle trip rates per peak period	AM	0.48
			PM	0.44
		Transit trip rates per peak period	AM	0.55
			PM	0.47
		Cycling trip rates per peak period	AM	0.58
			PM	0.48
		Walking trip rates per peak period	AM	0.58
			PM	0.52



**Figure 1: National Capital Region by Sector**

**Table 8: Residential Mode Share for High-Rise Multifamily Housing**

District	Period	Mode				
		Auto Driver	Auto Pass.	Transit	Cycling	Walking
Ottawa Centre	AM	18%	2%	26%	1%	52%
	PM	17%	9%	21%	1%	52%
Ottawa Inner Area	AM	26%	6%	28%	5%	34%
	PM	25%	8%	21%	6%	39%
Île de Hull	AM	27%	3%	37%	12%	21%
	PM	26%	8%	27%	11%	28%
Ottawa East	AM	39%	7%	38%	2%	13%
	PM	40%	14%	28%	3%	15%
Beacon Hill	AM	48%	9%	30%	3%	10%
	PM	52%	16%	28%	0%	4%
Alta Vista	AM	38%	12%	42%	2%	7%
	PM	45%	16%	28%	2%	9%
Hunt Club	AM	39%	6%	44%	1%	9%
	PM	44%	11%	35%	2%	9%
Merivale	AM	41%	6%	42%	2%	8%
	PM	41%	11%	33%	2%	13%
Ottawa West	AM	28%	11%	41%	3%	16%
	PM	33%	11%	26%	7%	23%
Bayshore/Cedarview	AM	40%	12%	38%	2%	8%
	PM	40%	15%	33%	1%	11%
Hull Périphérie	AM	48%	11%	30%	1%	10%
	PM	47%	15%	23%	3%	13%
Orleans	AM	54%	7%	29%	0%	10%
	PM	61%	13%	21%	0%	6%
South Gloucester / Leitrim	AM	50%	15%	25%	1%	9%
	PM	53%	17%	21%	1%	9%
South Nepean	AM	58%	6%	30%	2%	4%
	PM	54%	15%	25%	0%	7%
Kanata - Stittsville	AM	43%	26%	28%	0%	4%
	PM	55%	19%	21%	0%	5%
Plateau	AM	53%	9%	35%	3%	1%
	PM	65%	7%	25%	2%	1%
Aylmer	AM	45%	17%	25%	0%	13%
	PM	31%	21%	23%	4%	20%
Pointe Gatineau	AM	44%	15%	24%	3%	14%
	PM	52%	15%	20%	2%	11%
Gatineau Est	AM	53%	10%	25%	0%	12%
	PM	61%	10%	25%	0%	4%
Masson-Angers	AM	63%	15%	19%	0%	3%
	PM	64%	18%	16%	0%	1%
Other Rural Districts	AM	63%	15%	19%	0%	3%
	PM	64%	18%	16%	0%	1%

## 5 RESIDENTIAL DIRECTIONAL SPLITS

After calculating the total person trips generated by the development and applying the appropriate modal shares, directional factors can be applied to estimate the number of inbound and outbound trips by vehicle. The vehicle trip directional splits were developed for both the AM and PM peak periods<sup>2</sup>. The vehicle trip directional splits, as shown in **Table 9**, have been developed for the NCR based on a review of the local trip generator surveys as well as the latest published data in the *ITE Trip Generation Manual* (10<sup>th</sup> Edition).

**Table 9: Recommended Vehicle Trip Directional Splits (Peak Period)**

ITE Land Use Code	Dwelling Unit Type	Period	Inbound	Outbound
210	Single-detached	AM	30%	70%
		PM	62%	38%
220	Multi-Unit (Low-Rise)	AM	30%	70%
		PM	56%	44%
221 & 222	Multi-Unit (High-Rise)	AM	31%	69%
		PM	58%	42%

## 6 NON-RESIDENTIAL MODE SHARE

Mode shares were developed for three types of non-residential development: schools (elementary and high school); employment generators; and commercial (retail) generators. These mode shares were developed through data provided by the Ville de Gatineau from local school surveys as well as the TRANS Origin-Destination Survey. The non-residential mode shares presented below are limited and do not capture all development types. For data on the travel characteristics associated with colleges and universities, transportation terminals, and sports and entertainment venues in the National Capital Region, practitioners should refer to the various reports for the *TRANS Special Generators Survey* (2013), which are posted on the TRANS website. For other development types, practitioners may need to carry out their own local generator data collection where necessary.

---

<sup>2</sup> A directional split for active transportation was calculated based on the local generator surveys for low-rise and mid-rise land uses. The splits are mostly in-line with the vehicle directional splits, which could be used as a rough assumption for areas with lower vehicle mode share.



District	Mode				
	Auto Driver	Auto Pass.	Transit	Cycling	Walking
Masson-Angers	89%	3%	2%	1%	6%
Rural Districts	85%	5%	9%	1%	1%

### 6.3 Commercial Generators

All trips classified as “shopping, household maintenance” from the 2011 TRANS Origin-Destination Survey were analyzed to define the mode share for trips to commercial establishments. **Table 13** provides the mode share by district during the AM and PM peak periods for commercial generator trips. These mode shares do not include restaurant or recreation trips. Although the mode shares were calculated for trips to the generator, for most commercial developments, a similar mode share would apply for trips from the generator. In general, the sample size for shopping trips during the AM peak period tends to be low, and the results should be used with caution, particularly for districts with lower retail activity. Where the sample size for a district was less than the pre-defined cut-off, the mode share for the wider area has been applied.

**Table 13: Commercial Generator Mode Share by District**

District	Period	Mode				
		Auto Driver	Auto Pass.	Transit	Cycling	Walking
Ottawa Centre	AM	28%	3%	48%	1%	20%
	PM	19%	12%	30%	2%	37%
Ottawa Inner Area	AM	39%	2%	16%	3%	40%
	PM	22%	4%	12%	4%	58%
Île de Hull	AM	34%	2%	30%	2%	32%
	PM	22%	7%	18%	3%	50%
Ottawa East	AM	57%	10%	15%	1%	17%
	PM	55%	18%	11%	1%	15%
Beacon Hill	AM	67%	12%	8%	0%	14%
	PM	59%	18%	7%	1%	13%
Alta Vista	AM	64%	9%	12%	1%	14%
	PM	60%	20%	9%	0%	11%
Hunt Club	AM	70%	6%	7%	0%	17%
	PM	65%	19%	8%	1%	7%
Merivale	AM	71%	19%	1%	0%	9%
	PM	61%	16%	8%	1%	14%
Ottawa West	AM	55%	11%	11%	0%	23%
	PM	50%	16%	11%	5%	18%
Bayshore/Cedarview	AM	64%	15%	4%	0%	17%
	PM	62%	20%	6%	1%	11%
Hull Périphérie	AM	77%	8%	5%	0%	10%
	PM	60%	12%	9%	5%	14%

## APPENDIX G

---

Table 14-1 of the *ITE Trip Generation Handbook, 5<sup>th</sup> Edition*

**Table 14-1 Typical Peak-Hour Volumes as a Percentage of the Total Parking Stalls**

Type of Activity	A.M. Peak Hour		P.M. Peak Hour	
	In	Out	In	Out
Hotel-motel	30 - 50	30 - 50	30 - 60	10 - 30
Residential	5 - 10	30 - 50	30 - 50	10 - 30
Office	40 - 70	5 - 15	5 - 20	40 - 70
Medical Office	40 - 60	10 - 20	10 - 30	60 - 80
Hospital				
Visitor	30 - 40	40 - 50	40 - 60	50 - 75
Employee	60 - 75	5 - 10	10 - 15	60 - 75
Retail-commercial	10 - 30	10 - 20	30 - 60	40 - 65
Central business district	40 - 60	10 - 20	10 - 30	40 - 60
Airport — All Traffic*	40 - 65	30 - 50	70 - 90	70 - 90
Short-term (0-3 hr)	50 - 75	80 - 100	90 - 100	90 - 100
Mid-term (4-24 hr)	10 - 30	5 - 10	10 - 30	10 - 30
Long-term (more than 24 hr)	5 - 10	5 - 10	5 - 10	5 - 10
Special events	Before event—(In)		After event—(Out)	
	80 - 100		85 - 200**	

\*Parking and bypass (loading-unloading).

\*\*Maximum assumes a 30-min departure.

Source: Adapted from Robert A. Weant and Herbert S. Levinson, *Parking*, Westport, Conn.: Eno Foundation for Transportation, Inc., 1990. Adapted from Robert W. Crommelin, *Entrance-Exit Design and Control for Major Parking Facilities*, a seminar presentation (Encino, Calif., 1972); and Anthony P. Chest, Mary S. Smith, and Sam Bhuyan, *Parking Structures Planning, Design, Construction, Maintenance and Repair* (New York: Van Nostrand Reinhold, 1989).

on the type of generator served, user characteristics (employee, shopper, etc.), and parking capacity. Volumes are typically expressed as a ratio of the number of vehicles to the number of parking stalls in the facility. Table 14-1 gives peak-hour ratios for a number of activities.

The number of vehicles that can enter (acceptance rate) or leave a parking facility, per lane, is related to the angle of approach (sharp turns have less capacity than straight-in runs), whether any control is used, the familiarity of the driver with the facility, the freedom of internal circulation (for entry), the amount of vehicular traffic on the streets (for exit) and the degree of conflict with pedestrians crossing the driveway. In general, for a self-parking facility with no control, the capacity per lane ranges up to 800 vph. One engineer has recommended a design value of 400 vph.<sup>5</sup> Guidelines have been developed for considering capacities related to control methods, and also to street traffic (but not pedestrian sidewalk conflicts).<sup>6</sup>

**Table 14-2 Vehicle Acceptance Rates of Large Parking Areas**

Approach to Entrance	Number of Studies	Average Acceptance Rates Vehicles per Hour per Lane	
		Unfamiliar Entrance <sup>1</sup>	Familiar Entrance <sup>2</sup>
Straight approach (no turn movement)	20	850	1,100
90° right turn	15	750	1,000
90° left turn	24	830	900
Oblique angle, right	8	650	1,000
Oblique angle, left	4	720	<sup>3</sup>

<sup>1</sup> Includes racetracks, stadiums, and other facilities not frequently visited by the same individuals.

<sup>2</sup> Includes industrial plants, military bases, and other facilities where the same drivers enter daily.

<sup>3</sup> No data available.

Source: A.A. Carter, Jr. "Vehicle Acceptance Rates of Parking Areas," *Public Roads* (Oct. 1959).

<sup>5</sup> R.T. Hintersteiner, "Parking Control Guidelines for the Design of Parking Facility Portals," *ITE Journal* (Jan. 1989), p. 28-31.

<sup>6</sup> J.M. Frantzeskakis, "Traffic Flow Analysis for Dimensioning Entrances-Exits and Reservoir Space for Off Street Parking," *ITE Journal* (May 1981), pp. 16-24.

## **APPENDIX H**

---

Other Area Developments

Figure 6: 'New' Site-Generated Traffic Volumes

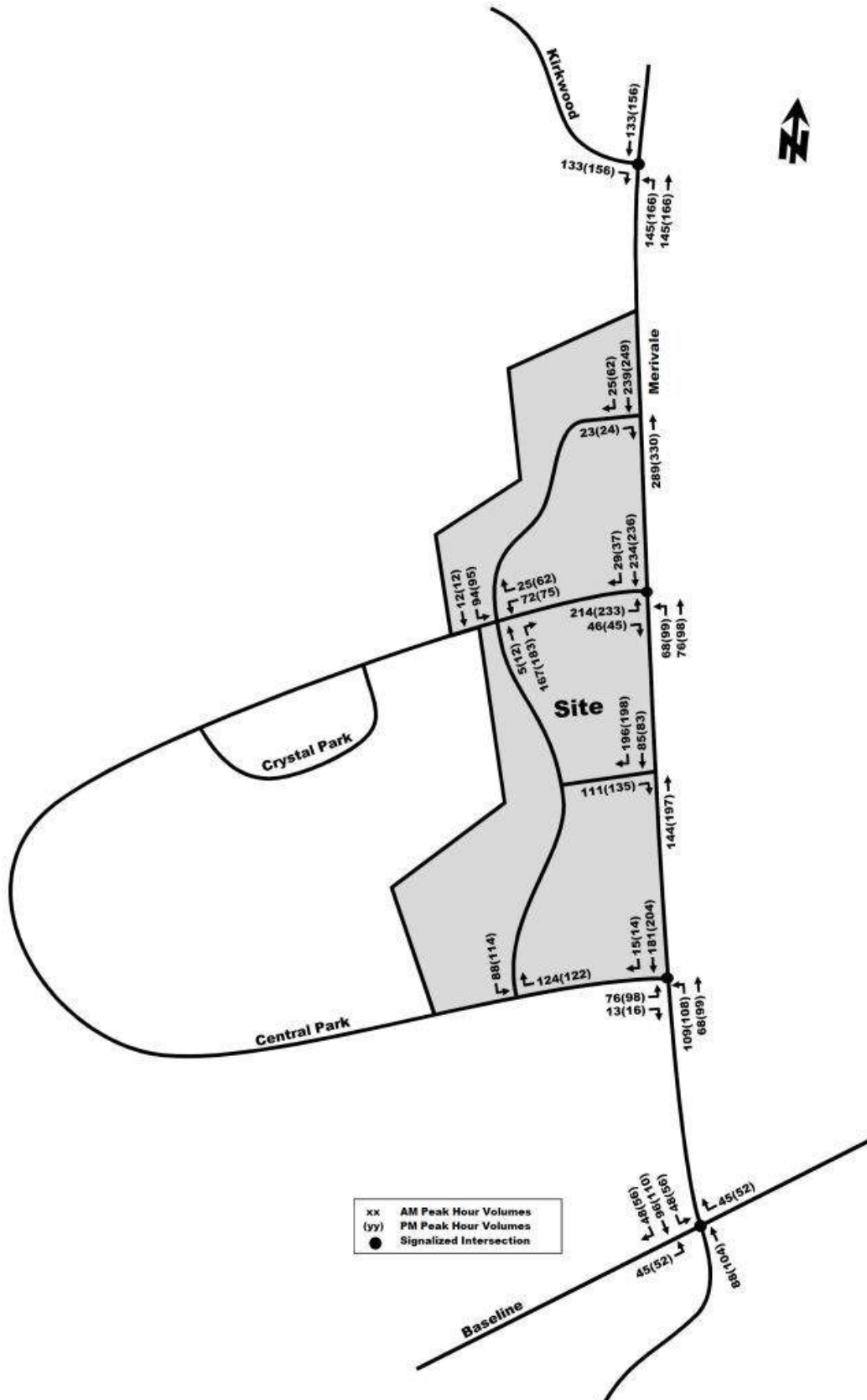
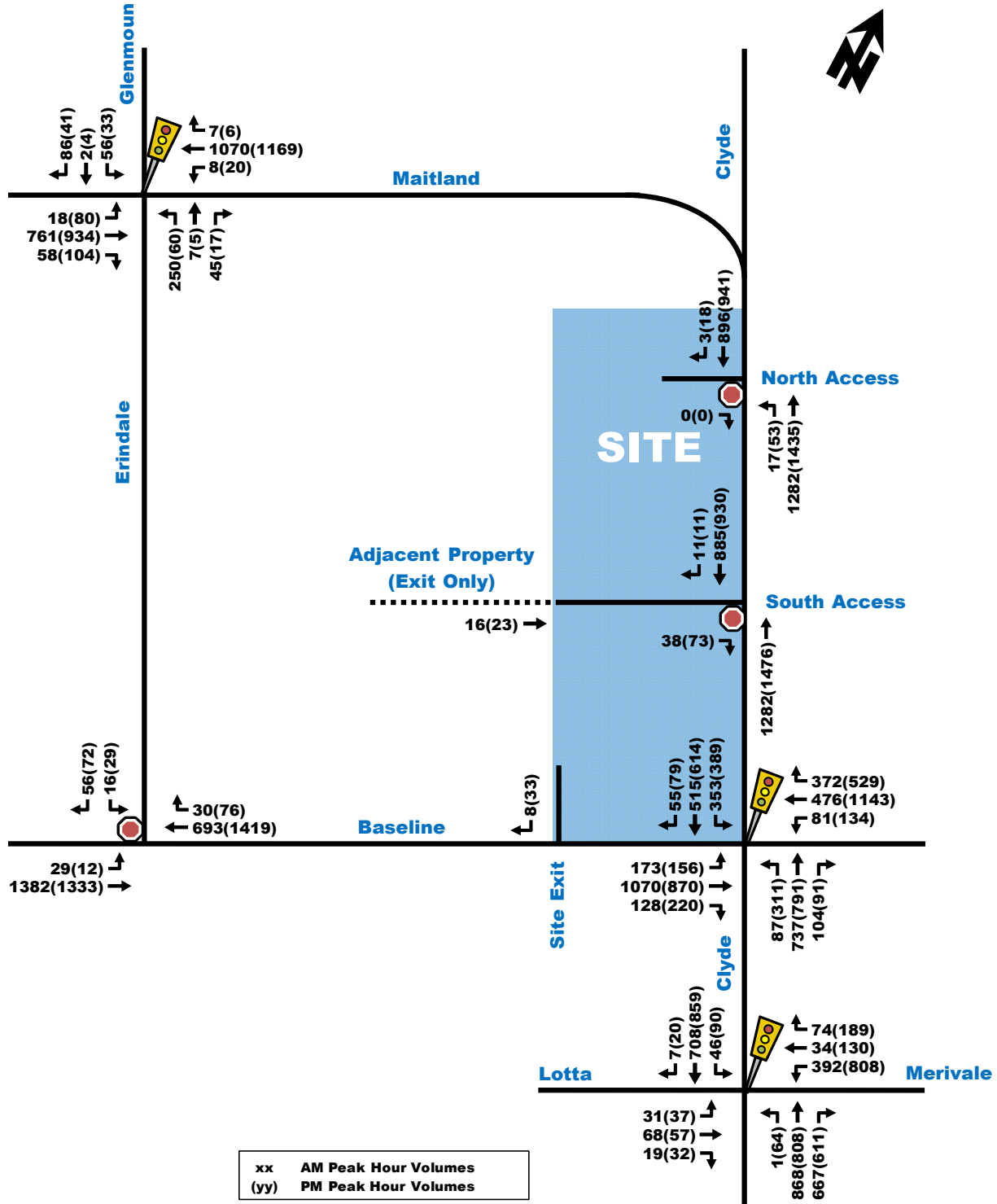
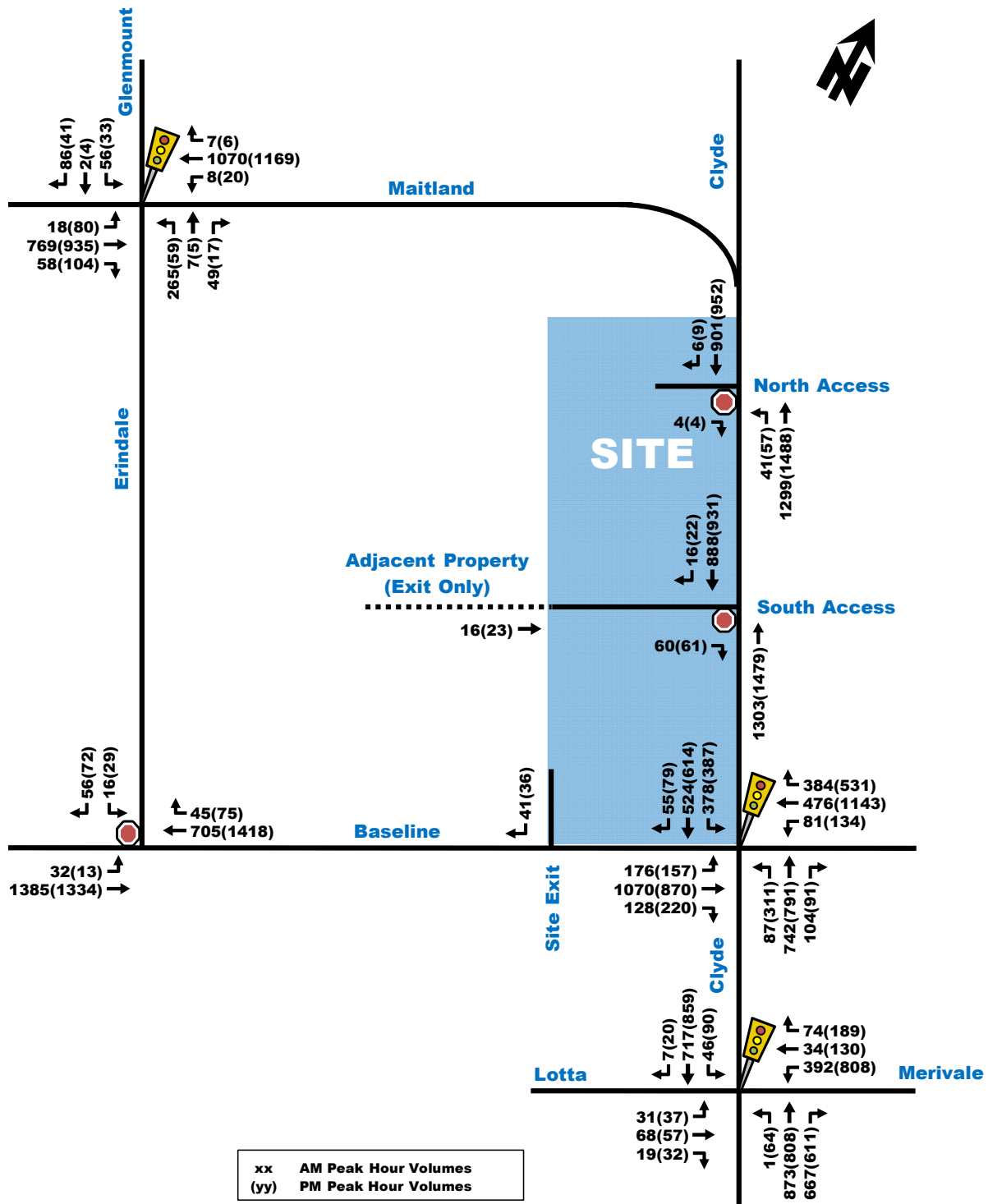


Figure 15: 2026 Phase 2 Future Background Traffic Volumes



Similarly, the total projected 2026 traffic volumes are illustrated in Figure 17 below, where the volumes were derived by superimposing the site-generated traffic volumes projected for horizon year 2026 (Figure 10) onto the future background 2026 traffic volumes (Figure 15).

Figure 17: Total Projected 2026 Traffic Volumes



# 1357 BASELINE ROAD TRANSPORTATION IMPACT ASSESSMENT

Forecasting

January 17, 2020

Figure 10 - Site Generated Traffic Volumes – Without Baseline BRT

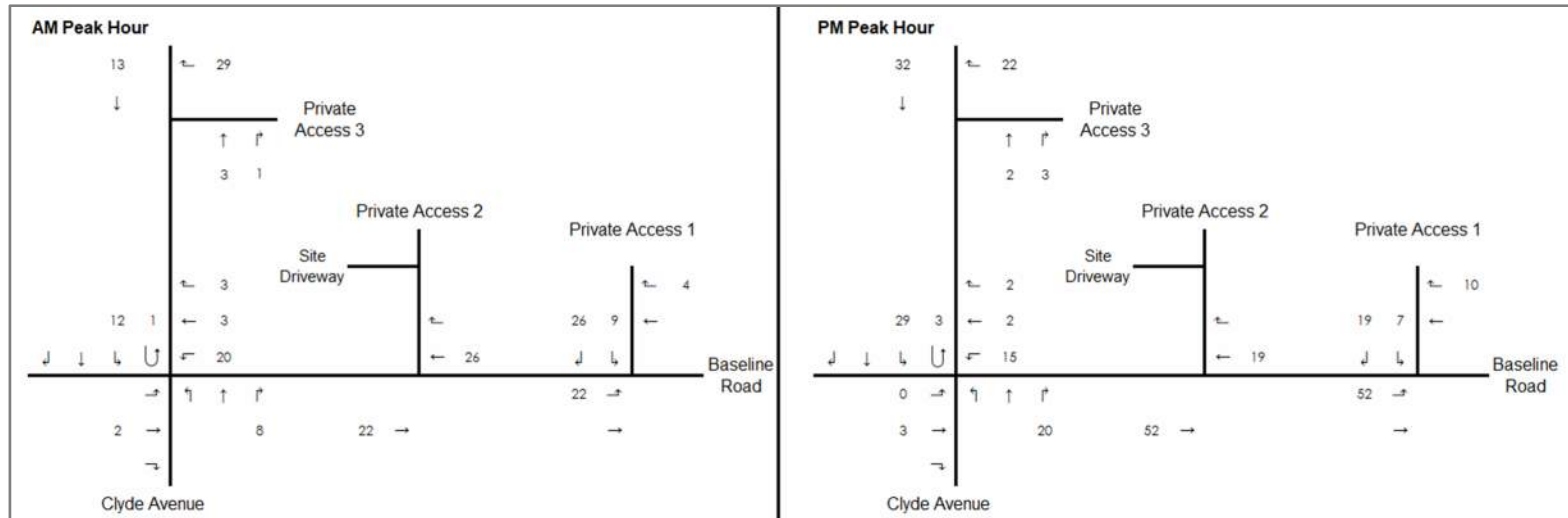


Figure 11 - Site Generated Traffic Volumes - With Baseline BRT

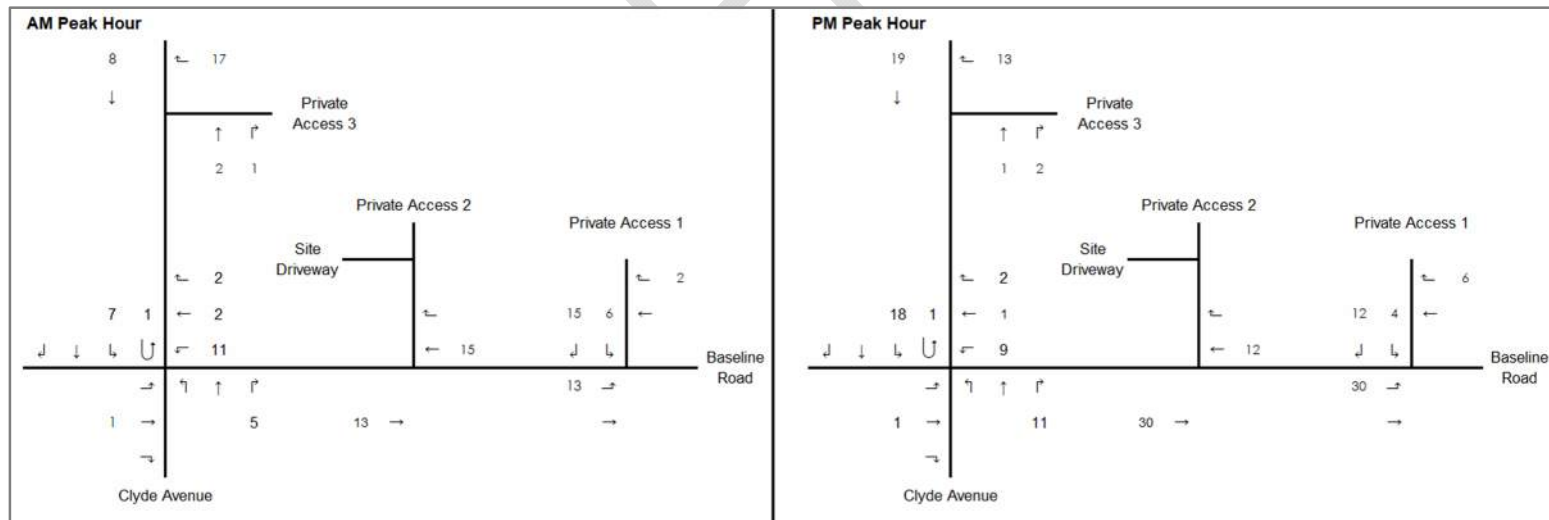
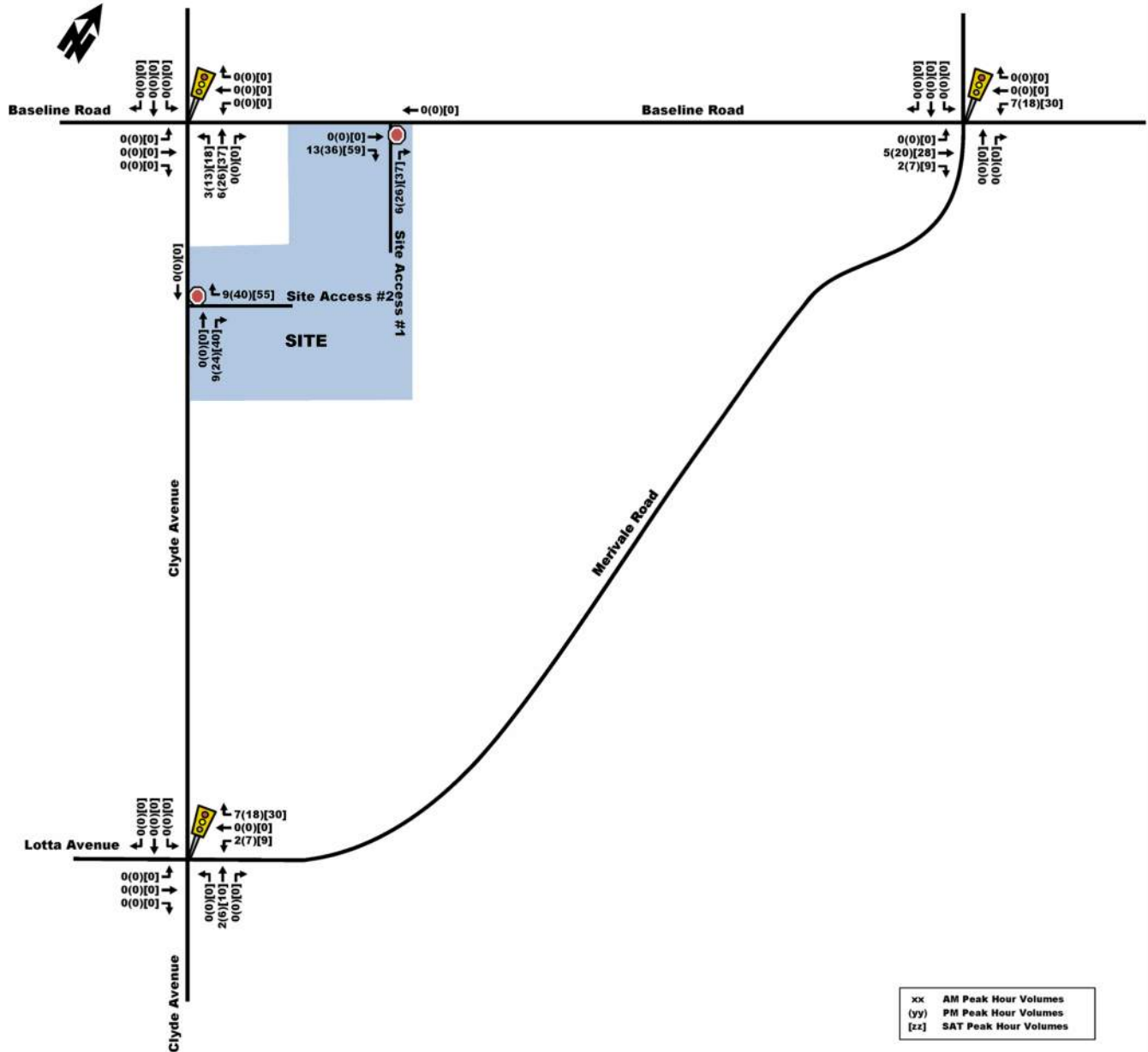




Figure 8: Site Generated Traffic Volumes (Full Build-Out)



### 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 I**

---

Strategic Long-Range Model and Intersection Growth Rate Figures

# TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

## AM Peak Hour Total Traffic Volume

Baseline/Merivale/Clyde

2011 Model - Basecase

N/A

User Initials: TIMW

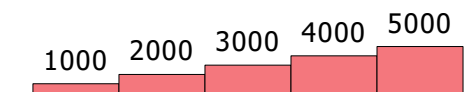
Plot Prepared: Feb 2, 2020

EMME Scenario: 21711



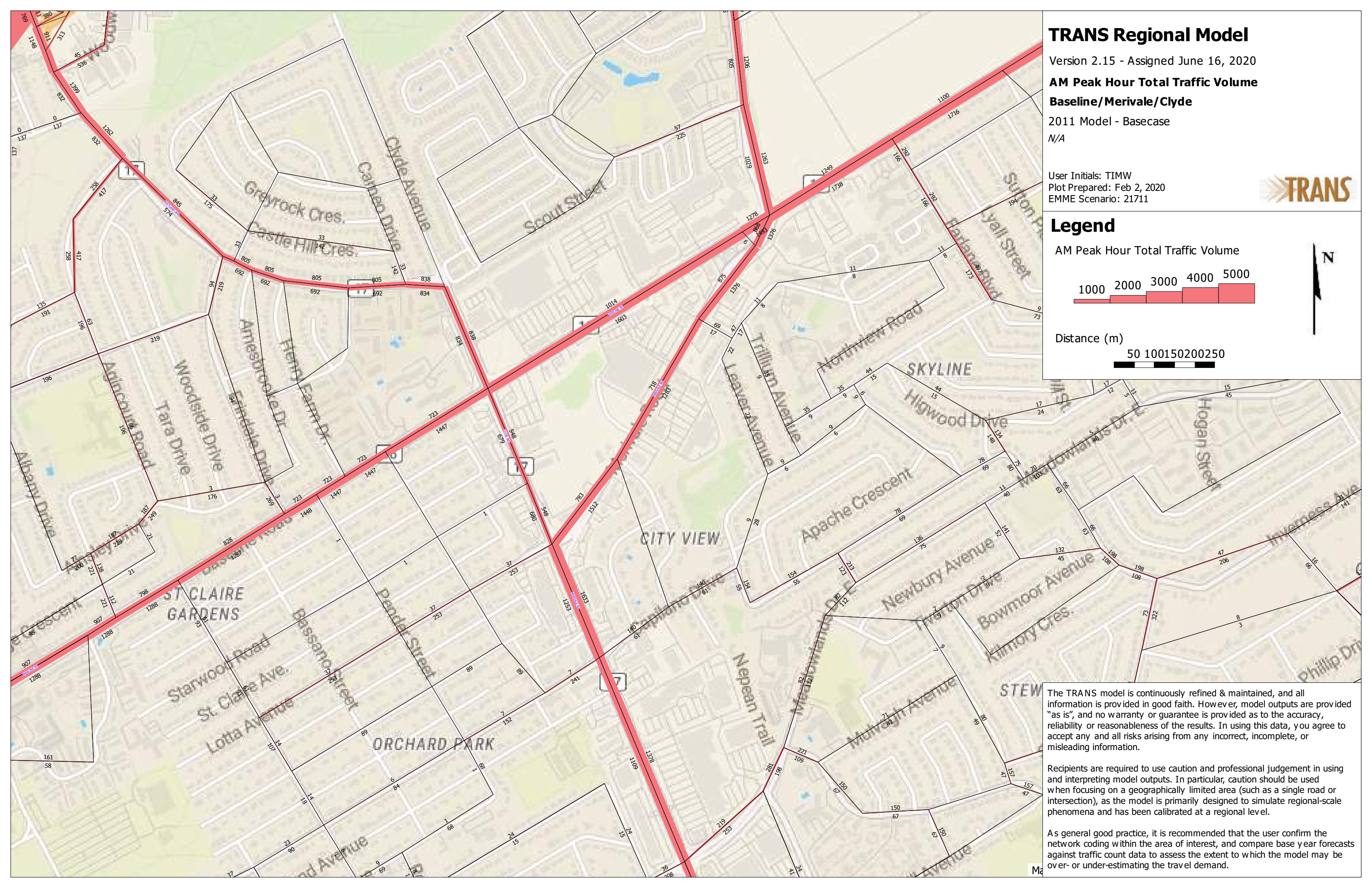
## Legend

AM Peak Hour Total Traffic Volume



Distance (m)

50 100 150 200 250



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

Baseline/Merivale/Clyde

2031 Model - Basecase

N/A

User Initials: TIMW

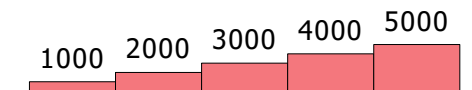
Plot Prepared: Feb 2, 2020

EMME Scenario: 21711



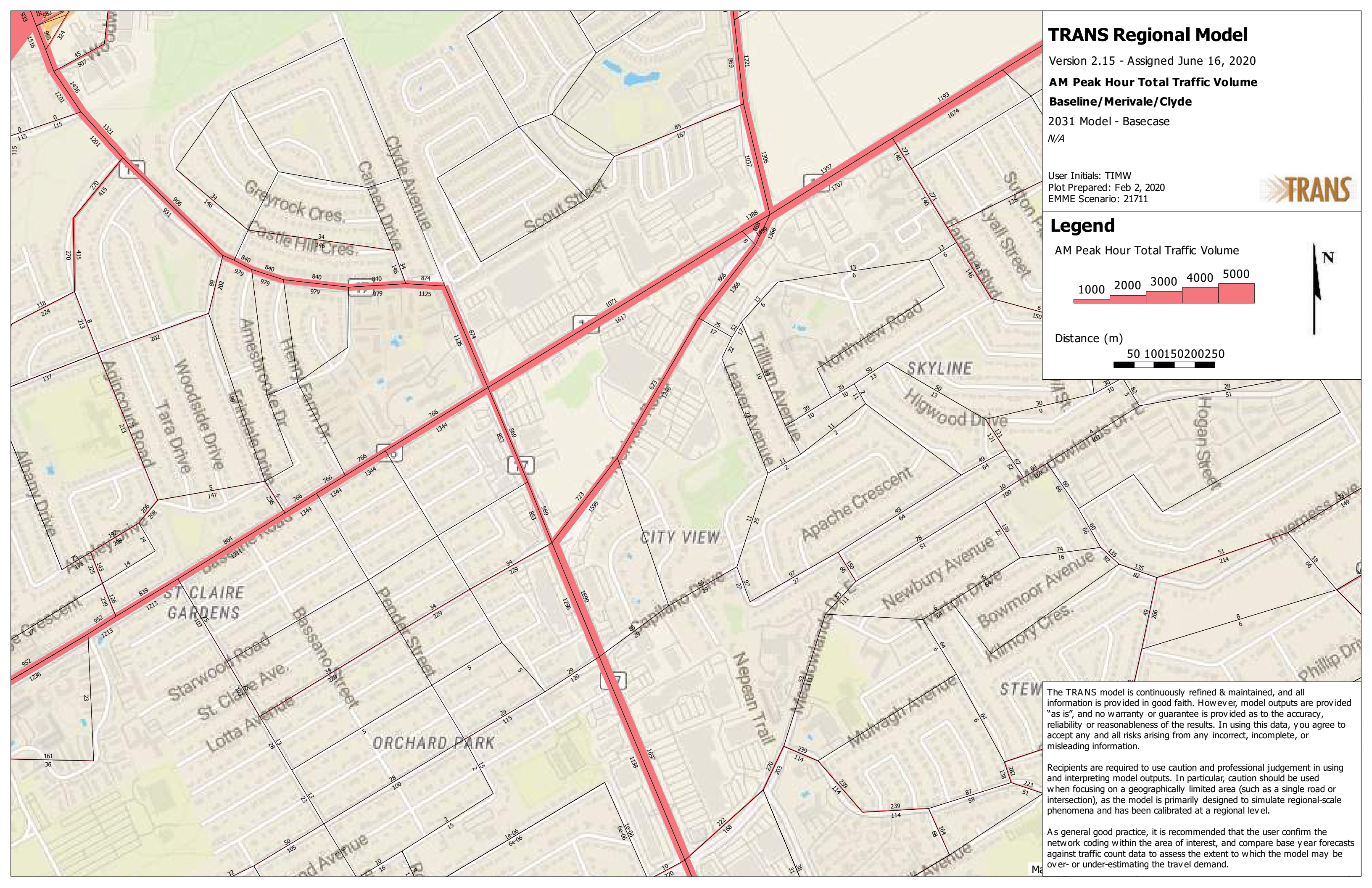
## Legend

AM Peak Hour Total Traffic Volume



Distance (m)

50 100 150 200 250



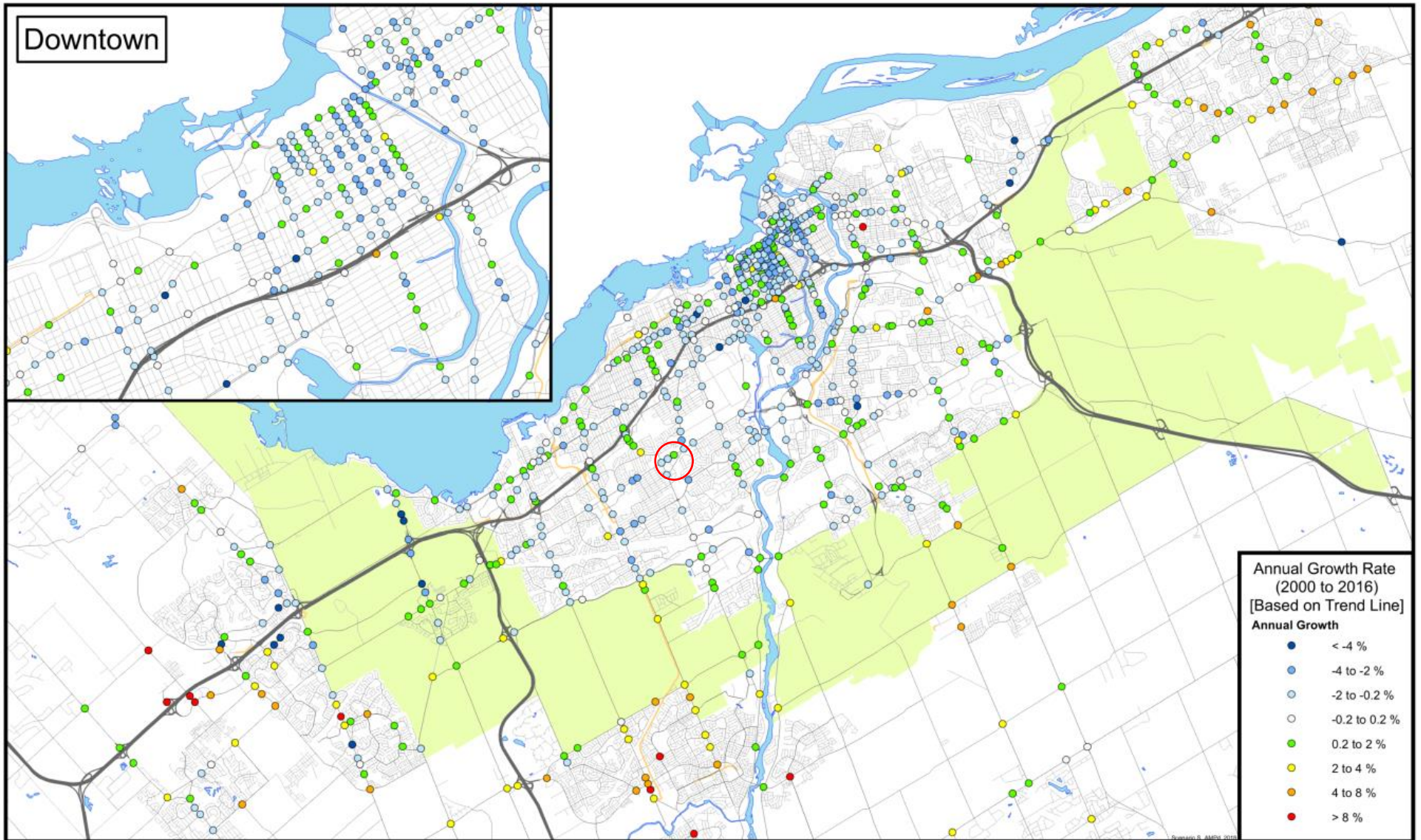
The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and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

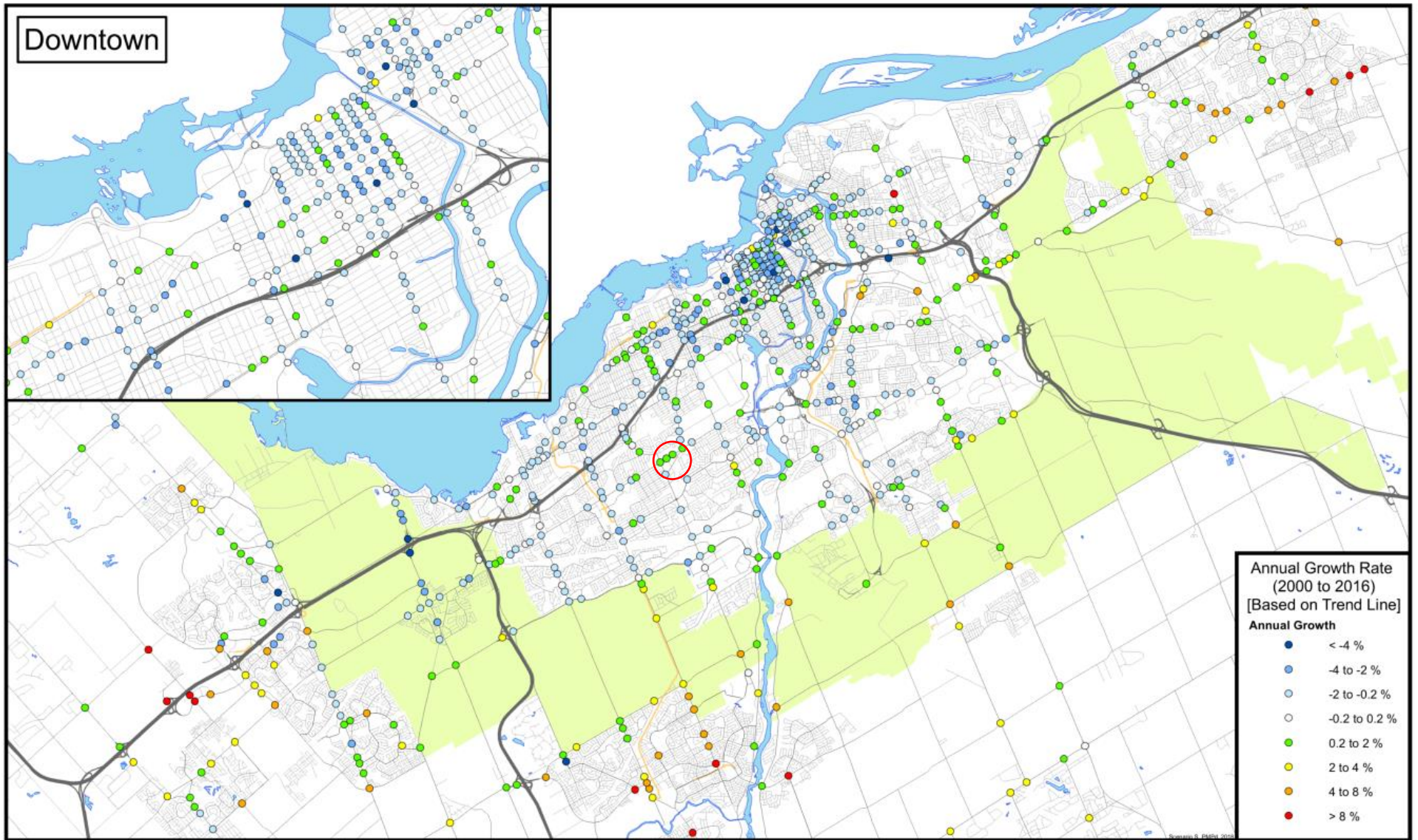
# INTERSECTION TRAFFIC GROWTH RATE, AM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016



# INTERSECTION TRAFFIC GROWTH RATE, PM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016



## **APPENDIX J**

---

### Signal Timing Plans

# Traffic Signal Timing

City of Ottawa, Transportation Services Department

## Traffic Signal Operations Unit

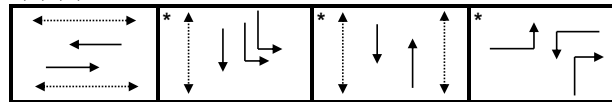
<b>Intersection:</b>	Main: Baseline	Side: Merivale
<b>Controller:</b>	MS3200	<b>TSD:</b> 5190
<b>Author:</b>	Matthew Anderson	<b>Date:</b> 04-Mar-2021

### Existing Timing Plans†

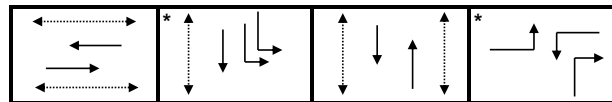
	Plan						Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Weekend 5	Late PM 13	Walk	DW	A+R
<b>Cycle</b>	120	120	140	110	120	130			
<b>Offset</b>	45	88	19	11	88	19			
EB Thru	43	42	60	47	42	50	7	27	3.7+3.4
WB Thru	43	42	60	47	42	50	7	27	3.7+3.4
SB Left (fp)	18	18	20	14	16	17	-	-	3.7+2.8
NB Thru	35	35	35	35	35	35	7	21	3.7+2.9
SB Thru	53	53	55	49	49	52	7	21	3.7+2.9
EB Left (fp)	24	25	25	14	27	28	-	-	3.7+3.4
WB Left (fp)	24	25	25	14	27	28	-	-	3.7+3.4
NB Right	24	25	25	14	27	28	-	-	3.7+3.4

### Phasing Sequence‡

Plan: 1, 2, 4, 5, 13



Plan: 3



**Notes:**

- 1) In plan 1, if the NS pedestrian phases are not actuated, the NS thru phases will force off 8 seconds early. All unused time will be dedicated to the coordinated
- 2) In plans 1, 2, 4, 5 & 13, the SB Thru has a minimum recall of 10 seconds green and the NB Thru has a maximum recall.
- 3) In plans 2, 3, 5 & 13, all unused time will be dedicated to the east-west left-turn phases (i.e. floating force off).
- 4) In plan 3, the NS movements have ped recalls.
- 5) The NB Left Turn is prohibited

### Schedule

Weekday		Saturday		Sunday	
Time	Plan	Time	Plan	Time	Plan
0:15	4	0:15	4	0:15	4
6:30	1	8:30	5	8:30	2
9:30	2	19:00	2	11:30	5
15:00	3	23:30	4	17:30	2
17:30	13			23:30	4
18:30	2				
23:30	4				

### NOTES

†: Time for each direction includes amber and all red intervals  
‡: Start of first phase should be used as reference point for offset  
Asterisk (\*) Indicates actuated phase  
(fp): Fully Protected Left Turn  
◄.....► Pedestrian signal

Cost is \$59.96 (\$53.06 + HST)



# Traffic Signal Timing

City of Ottawa, Transportation Services Department

## Traffic Signal Operations Unit

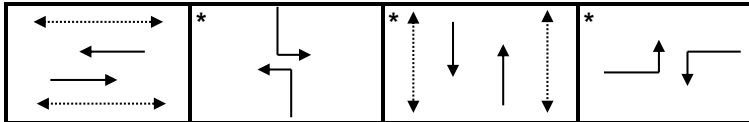
<b>Intersection:</b>	<i>Main:</i> Baseline	<i>Side:</i> Clyde
<b>Controller:</b>	<b>MS 3200</b>	<b>TSD: 5055</b>
<b>Author:</b>	Matthew Anderson	<b>Date:</b> 03-Mar-2021

### Existing Timing Plans†

	Plan					Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Weekend 5	Walk	DW	A+R
<b>Cycle</b>	120	120	130	110	120			
<b>Offset</b>	19	82	53	X	82			
EB Thru	41	42	51	34	35	7	21	3.7+2.7
WB Thru	41	42	51	34	35	7	21	3.7+2.7
NB Left (fp)	21	20	21	18	24	-	-	3.3+3.3
SB Left (fp)	21	20	21	18	24	-	-	3.3+3.3
NB Thru	40	40	40	40	43	7	26	3.3+3.6
SB Thru	40	40	40	40	43	7	26	3.3+3.6
EB Left (fp)	18	18	18	18	18	-	-	3.7+2.8
WB Left (fp)	18	18	18	18	18	-	-	3.7+2.8

### Phasing Sequence‡

Plan: All



### Schedule

Weekday		Saturday		Sunday	
Time	Plan	Time	Plan	Time	Plan
0:15	4	0:15	4	0:15	4
6:30	1	8:30	5	8:30	2
9:30	2	19:00	2	11:30	5
15:00	3	23:30	4	17:30	2
18:30	2			23:30	4
23:30	4				

### Notes

- †: Time for each direction includes amber and all red intervals
- ‡: Start of first phase should be used as reference point for offset
- Asterisk (\*) Indicates actuated phase
- (fp): Fully Protected Left Turn
- ◄-----► Pedestrian signal

Cost is \$59.96 (\$53.06 + HST)

# Traffic Signal Timing

City of Ottawa, Transportation Services Department

## Traffic Operations Unit

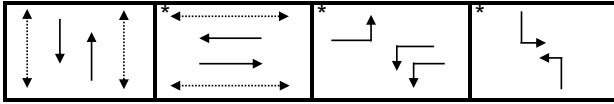
<b>Intersection:</b>	<i>Main:</i> Merivale / Clyde	<i>Side:</i> Merivale / Lotta
<b>Controller:</b>	ATC 3	<b>TSD:</b> 5507
<b>Author:</b>	Matthew Anderson	<b>Date:</b> 03-Mar-21

### Existing Timing Plans<sup>†</sup>

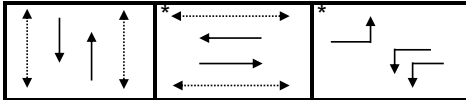
Plan	Plan						Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Weekend 5	AM Heavy 21	Walk	DW	A+R
<b>Cycle</b>	110	110	130	85	130	130			
<b>Offset</b>	70	76	98	69	60	9			
NB Thru	48	41	40	35	54	63	7	17	3.7+2.3
SB Thru	48	41	40	35	54	63	7	17	3.7+2.3
EB Thru	34	34	34	34	34	34	7	20	3.0+3.8
WB Thru	34	34	34	34	34	34	7	20	3.7+2.5
EB Left (fp)	28	23	44	16	30	33	-	-	3.0+3.8
WB Left (fp)	28	23	44	16	30	33	-	-	3.7+2.5
NB Left	-	12	12	-	12	-	-	-	3.7+2.3
SB Left	-	12	12	-	12	-	-	-	3.7+2.3

### Phasing Sequence<sup>‡</sup>

Plans: 2, 3, 5



Plans: 1, 4, 21



- NOTES:**
- 1) In plans 1, 4, and 21, if the pedestrian phase is not actuated, the EB Thru movement is forced off after 12s of green.
  - 2) In plans 2, 3, and 5, if the pedestrian phase is not actuated, the EB Thru movement is forced off after 17s of green.

### Schedule

Weekday		Saturday		Sunday	
Time	Plan	Time	Plan	Time	Plan
0:15	4	0:15	4	0:15	4
6:00	1	8:00	2	9:30	2
7:00	21	9:30	5	10:00	5
9:30	2	18:00	2	17:30	2
15:00	3	22:30	4	22:30	4
18:30	2				
22:00	4				

### Notes

- †: Time for each direction includes amber and all red intervals  
‡: Start of first phase should be used as reference point for offset  
Asterisk (\*) Indicates actuated phase  
(fp): Fully Protected Left Turn

←.....→ Pedestrian signal

Cost is \$59.96 (\$53.06 + HST)

# Traffic Signal Timing

City of Ottawa, Transportation Services Department

## Traffic Signal Operations Unit

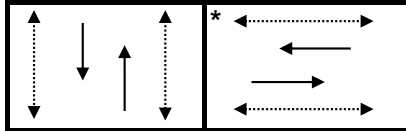
<b>Intersection:</b>	<i>Main:</i> Merivale	<i>Side:</i> Burris
<b>Controller:</b>	<b>MS 3200</b>	<b>TSD: 5583</b>
<b>Author:</b>	Matthew Anderson	<b>Date:</b> 03-Mar-2021

### Existing Timing Plans†

	Plan						Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Weekend 5	Late PM 13	Walk	DW	A+R
<b>Cycle</b>	60	60	65	60	60	65			
<b>Offset</b>	35	0	27	X	30	32			
NB Thru	31	31	36	31	31	36	7	13	3.7+2.2
SB Thru	31	31	36	31	31	36	7	13	3.7+2.2
EB Thru	29	29	29	29	29	29	7	15	3.0+3.2
WB Thru	29	29	29	29	29	29	7	15	3.0+3.2

### Phasing Sequence‡

Plan: All



### Schedule

Weekday		Saturday		Sunday	
Time	Plan	Time	Plan	Time	Plan
0:15	4	0:15	4	0:15	4
6:30	1	8:30	5	8:30	2
9:30	2	19:00	2	11:30	5
15:00	3	23:30	4	17:30	2
17:30	13			23:30	4
18:30	2				
23:30	4				

### NOTES

- †: Time for each direction includes amber and all red intervals
- ‡: Start of first phase should be used as reference point for offset
- Asterisk (\*) Indicates actuated phase
- (fp): Fully Protected Left Turn
- ◄.....► Pedestrian signal

Cost is \$59.96 (\$53.06 + HST)

# Traffic Signal Timing

City of Ottawa, Transportation Services Department

## Traffic Signal Operations Unit

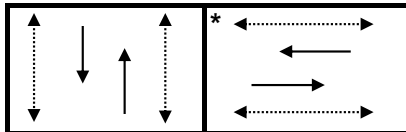
<b>Intersection:</b>	<u>Main:</u> Merivale	<u>Side:</u>	Loblaws SC
<b>Controller:</b>	<u>MS 3200</u>	<b>TSD:</b>	<u>5582</u>
<b>Author:</b>	<u>Matthew Anderson</u>	<b>Date:</b>	<u>03-Mar-2021</u>

### Existing Timing Plans†

	Plan						Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Weekend 5	Late PM 13	Walk	DW	A+R
<b>Cycle</b>	60	60	65	60	60	65			
<b>Offset</b>	32	0	35	X	30	40			
<b>NB Thru</b>	28	28	33	28	28	33	7	14	3.7+2.5
<b>SB Thru</b>	28	28	33	28	28	33	7	14	3.7+2.5
<b>EB Thru</b>	32	32	32	32	32	32	7	19	3.0+3.2
<b>WB Thru</b>	32	32	32	32	32	32	7	19	3.0+3.2

### Phasing Sequence‡

Plan: All



### Schedule

Weekday		Saturday		Sunday	
Time	Plan	Time	Plan	Time	Plan
0:15	4	0:15	4	0:15	4
6:30	1	8:30	5	8:30	2
9:30	2	19:00	2	11:30	5
15:00	3	23:30	4	17:30	2
17:30	13			23:30	4
18:30	2				
23:30	4				

### NOTES

- †: Time for each direction includes amber and all red intervals
- ‡: Start of first phase should be used as reference point for offset
- Asterisk (\*) Indicates actuated phase
- (fp): Fully Protected Left Turn
- ◄-----► Pedestrian signal

Cost is \$59.96 (\$53.06 + HST)
























## **APPENDIX K**

---

Existing Synchro Analysis

1: Merivale & Baseline  
AM Peak Hour

1500 Merivale Road  
Existing Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	1007	6	116	897	375	0	567	212	313	326	284
Future Volume (vph)	222	1007	6	116	897	375	0	567	212	313	326	284
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		35.0	200.0		40.0	0.0		70.0	125.0		45.0
Storage Lanes	1		1	1		1	0		1	2		1
Taper Length (m)	30.0			40.0			10.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99		0.97	1.00		0.95			0.94	0.97		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1734	3502	1390	1685	3468	1551	0	3435	1551	3364	3402	1537
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1719	3502	1343	1677	3468	1480	0	3435	1457	3247	3402	1474
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			156			228			96			316
Link Speed (k/h)		60			60			60				60
Link Distance (m)		174.4			682.4			320.1				406.0
Travel Time (s)		10.5			40.9			19.2				24.4
Confl. Peds. (#/hr)	33		20	20		33	23		39	39		23
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	2%	15%	6%	3%	3%	0%	4%	3%	3%	5%	4%
Adj. Flow (vph)	247	1119	7	129	997	417	0	630	236	348	362	316
Shared Lane Traffic (%)												
Lane Group Flow (vph)	247	1119	7	129	997	417	0	630	236	348	362	316
Enter Blocked Intersection	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			5.0				9.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1		2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1		30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1		1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA	Perm	Prot	NA	Perm		NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6		8	1	7	4	4

1: Merivale & Baseline  
AM Peak Hour

1500 Merivale Road  
Existing Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0		10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	12.1	41.1	41.1	12.1	41.1	41.1		34.6	12.1	11.5	34.6	34.6
Total Split (s)	24.0	43.0	43.0	24.0	43.0	43.0		35.0	24.0	18.0	53.0	53.0
Total Split (%)	20.0%	35.8%	35.8%	20.0%	35.8%	35.8%		29.2%	20.0%	15.0%	44.2%	44.2%
Maximum Green (s)	16.9	35.9	35.9	16.9	35.9	35.9		28.4	16.9	11.5	46.4	46.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	3.4		2.9	3.4	2.8	2.9	2.9
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
Total Lost Time (s)	7.1	7.1	7.1	7.1	7.1	7.1		6.6	7.1	6.5	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lag	Lead	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max		Max	None	None	Min	Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		21.0			21.0	21.0
Pedestrian Calls (#/hr)		20	20		30	30		30			20	20
Act Effct Green (s)	16.9	39.0	39.0	13.8	35.9	35.9		28.4	41.7	11.5	46.4	46.4
Actuated g/C Ratio	0.14	0.32	0.32	0.12	0.30	0.30		0.24	0.35	0.10	0.39	0.39
v/c Ratio	1.01	0.98	0.01	0.67	0.96	0.69		0.78	0.41	1.08	0.28	0.41
Control Delay	88.6	58.7	0.0	67.3	61.8	23.1		44.4	20.4	124.1	26.0	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	88.6	58.7	0.0	67.3	61.8	23.1		44.4	20.4	124.1	26.0	4.4
LOS	F	E	A	E	E	C		D	C	F	C	A
Approach Delay		63.8			51.8			37.8			52.6	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	~57.8	98.3	0.0	27.1	111.8	36.3		68.1	19.7	~43.4	28.0	0.0
Queue Length 95th (m)	m#61.1	m#137.0	m0.0	44.8	#150.6	70.8		65.6	32.2	#70.4	38.6	15.9
Internal Link Dist (m)		150.4			658.4			296.1			382.0	
Turn Bay Length (m)	110.0		35.0	200.0		40.0			70.0	125.0		45.0
Base Capacity (vph)	244	1138	541	237	1037	602		812	617	322	1315	763
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	1.01	0.98	0.01	0.54	0.96	0.69		0.78	0.38	1.08	0.28	0.41

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 45 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.08  
 Intersection Signal Delay: 52.9 Intersection LOS: D  
 Intersection Capacity Utilization 96.8% ICU Level of Service F  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Merivale & Baseline



2: Clyde & Baseline  
AM Peak Hour

1500 Merivale Road  
Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	1069	128	54	474	370	83	731	99	291	459	49
Future Volume (vph)	170	1069	128	54	474	370	83	731	99	291	459	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	115.0		30.0	75.0		0.0	75.0		0.0	100.0		0.0
Storage Lanes	1		1	1		1	2		0	2		0
Taper Length (m)	40.0			25.0			50.0			55.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	0.95
Ped Bike Factor	0.99		0.97	1.00		0.97	0.99	1.00		0.99	1.00	
Fr <sub>t</sub>			0.850			0.850		0.982			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3502	1537	1751	3402	1567	3300	3416	0	3397	3419	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1756	3502	1495	1747	3402	1519	3275	3416	0	3376	3419	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			291		12			9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		458.5			301.4			153.1			307.3	
Travel Time (s)		27.5			18.1			9.2			18.4	
Confl. Peds. (#/hr)	11		10	10		11	9		12	12		9
Confl. Bikes (#/hr)			3			6			3			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	4%	2%	5%	2%	5%	2%	5%	2%	2%	10%
Adj. Flow (vph)	189	1188	142	60	527	411	92	812	110	323	510	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	189	1188	142	60	527	411	92	922	0	323	564	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			11.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	



2: Clyde & Baseline  
AM Peak Hour

1500 Merivale Road  
Existing Traffic

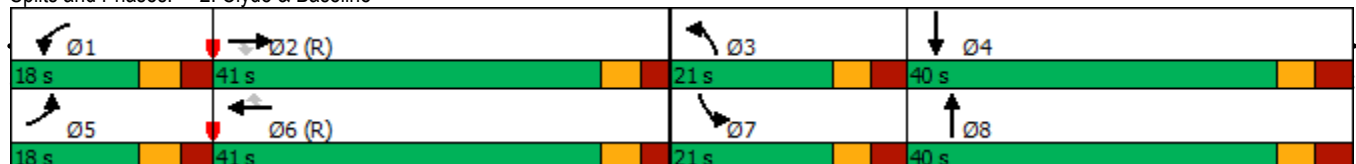


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.5	34.4	34.4	11.5	34.4	34.4	11.6	39.9		11.6	39.9	
Total Split (s)	18.0	41.0	41.0	18.0	41.0	41.0	21.0	40.0		21.0	40.0	
Total Split (%)	15.0%	34.2%	34.2%	15.0%	34.2%	34.2%	17.5%	33.3%		17.5%	33.3%	
Maximum Green (s)	11.5	34.6	34.6	11.5	34.6	34.6	14.4	33.1		14.4	33.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.7	2.7	2.8	2.7	2.7	3.3	3.6		3.3	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.4	6.4	6.5	6.4	6.4	6.6	6.9		6.6	6.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		26.0			26.0	
Pedestrian Calls (#/hr)		10	10		10	10		10			10	
Act Effct Green (s)	11.5	39.4	39.4	9.2	34.6	34.6	8.7	33.4		14.0	38.8	
Actuated g/C Ratio	0.10	0.33	0.33	0.08	0.29	0.29	0.07	0.28		0.12	0.32	
v/c Ratio	1.12	1.03	0.24	0.45	0.54	0.64	0.38	0.96		0.81	0.51	
Control Delay	153.3	75.7	5.1	29.3	37.4	26.3	57.3	63.4		68.5	34.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	153.3	75.7	5.1	29.3	37.4	26.3	57.3	63.4		68.5	34.6	
LOS	F	E	A	C	D	C	E	E		E	C	
Approach Delay		78.7			32.3			62.9			46.9	
Approach LOS		E			C			E			D	
Queue Length 50th (m)	~47.1	~155.3	0.0	10.1	61.7	62.4	10.0	103.1		35.6	51.0	
Queue Length 95th (m)	#89.1	#200.5	11.2	m12.8	m67.6	m73.7	17.3	#142.1		#54.2	68.9	
Internal Link Dist (m)		434.5			277.4			129.1			283.3	
Turn Bay Length (m)	115.0		30.0	75.0			75.0			100.0		
Base Capacity (vph)	169	1150	595	167	980	645	396	960		407	1110	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.12	1.03	0.24	0.36	0.54	0.64	0.23	0.96		0.79	0.51	

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 19 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.12  
 Intersection Signal Delay: 58.2 Intersection LOS: E  
 Intersection Capacity Utilization 91.8% ICU Level of Service F  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clyde & Baseline



3: Merivale & Lotta & Clyde  
AM Peak Hour

1500 Merivale Road  
Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	74	21	349	39	58	34	745	811	23	572	14
Future Volume (vph)	25	74	21	349	39	58	34	745	811	23	572	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	95.0		40.0	80.0		0.0	95.0		0.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	25.0			10.0			30.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	0.99		0.98		0.98	0.99		0.98	1.00	1.00	
Frt		0.967				0.850			0.850		0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1717	1762	0	3332	1790	1537	1768	3502	1567	1768	3478	0
Flt Permitted	0.950			0.950			0.363			0.283		
Satd. Flow (perm)	1710	1762	0	3262	1790	1512	667	3502	1530	526	3478	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				82			832			2
Link Speed (k/h)		40			60			60			60	
Link Distance (m)		226.4			200.1			492.8			259.9	
Travel Time (s)		20.4			12.0			29.6			15.6	
Confl. Peds. (#/hr)	3		10	10		3	15		7	7		15
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	4%	3%	1%	4%	5%	4%	1%	2%	2%	1%	2%	8%
Adj. Flow (vph)	28	82	23	388	43	64	38	828	901	26	636	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	105	0	388	43	64	38	828	901	26	652	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	Right
Median Width(m)		5.0			9.0			5.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			5.0			5.0	
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	6	6	

3: Merivale & Lotta & Clyde  
AM Peak Hour

1500 Merivale Road  
Existing Traffic

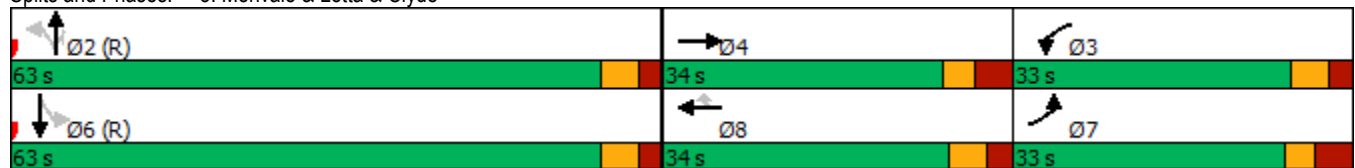


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.8	33.8		11.2	33.2	33.2	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	33.0	34.0		33.0	34.0	34.0	63.0	63.0	63.0	63.0	63.0	63.0
Total Split (%)	25.4%	26.2%		25.4%	26.2%	26.2%	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%
Maximum Green (s)	26.2	27.2		26.8	27.8	27.8	57.0	57.0	57.0	57.0	57.0	57.0
Yellow Time (s)	3.0	3.0		3.7	3.7	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	2.5	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
Total Lost Time (s)	6.8	6.8		6.2	6.2	6.2	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0	20.0	17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)		10			10	10	10	10	10	10	10	10
Act Effct Green (s)	14.0	14.8		20.4	26.3	26.3	75.8	75.8	75.8	75.8	75.8	75.8
Actuated g/C Ratio	0.11	0.11		0.16	0.20	0.20	0.58	0.58	0.58	0.58	0.58	0.58
v/c Ratio	0.15	0.50		0.74	0.12	0.17	0.10	0.41	0.73	0.08	0.32	0.32
Control Delay	50.9	55.6		61.2	45.2	6.2	16.5	17.1	6.4	16.7	15.9	15.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	55.6		61.2	45.2	6.2	16.5	17.1	6.4	16.7	15.9	15.9
LOS	D	E		E	D	A	B	B	A	B	B	B
Approach Delay		54.6			52.7			11.6				15.9
Approach LOS		D			D			B				B
Queue Length 50th (m)	5.6	21.8		45.6	9.8	0.0	3.6	50.8	6.4	2.4	37.4	37.4
Queue Length 95th (m)	13.4	34.4		58.5	17.9	7.4	11.9	89.6	55.3	9.1	67.7	67.7
Internal Link Dist (m)		202.4			176.1			468.8				235.9
Turn Bay Length (m)	35.0			95.0		40.0	80.0			95.0		
Base Capacity (vph)	346	376		686	415	413	388	2042	1239	306	2029	2029
Starvation Cap Reductn	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
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.28		0.57	0.10	0.15	0.10	0.41	0.73	0.08	0.32	0.32

Intersection Summary





















Area Type: Other  
 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: 21.1  
 Intersection LOS: C  
 Intersection Capacity Utilization 90.1%  
 ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 3: Merivale & Lotta & Clyde



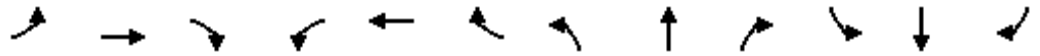
4: Merivale & Burris  
AM Peak Hour

1500 Merivale Road  
Existing Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	12	7	40	33	55	6	895	21	35	424	24
Future Volume (vph)	9	12	7	40	33	55	6	895	21	35	424	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	20.0		0.0	30.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			15.0			25.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99	0.99		0.99	0.99		0.99	1.00		1.00	1.00	
Fr		0.943			0.907			0.997			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1741	0	1768	1665	0	1768	3456	0	1624	3391	0
Flt Permitted	0.694			0.744			0.470			0.255		
Satd. Flow (perm)	1280	1741	0	1373	1665	0	870	3456	0	434	3391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			42			5			12	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		63.4			84.6			135.9			320.1	
Travel Time (s)		4.6			6.1			8.2			19.2	
Confl. Peds. (#/hr)	13		11	11		13	8		11	11		8
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	3%	1%	10%	4%	10%
Adj. Flow (vph)	10	13	8	44	37	61	7	994	23	39	471	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	21	0	44	98	0	7	1017	0	39	498	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	L NA	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

4: Merivale & Burris  
AM Peak Hour

1500 Merivale Road  
Existing Traffic

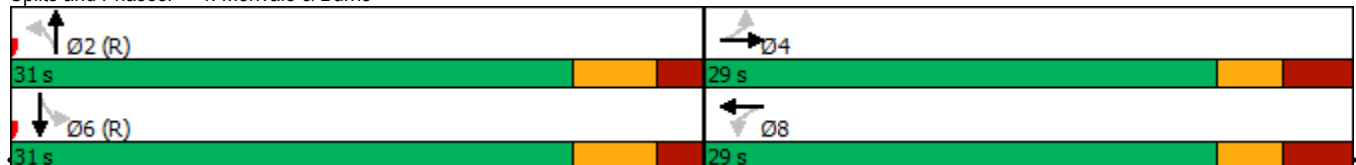


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		25.9	25.9		25.9	25.9	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	22.8	22.8		22.8	22.8		25.1	25.1		25.1	25.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		5.9	5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)	12.4	12.4		12.4	12.4		39.9	39.9		39.9	39.9	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.66	0.66		0.66	0.66	
v/c Ratio	0.04	0.06		0.16	0.26		0.01	0.44		0.13	0.22	
Control Delay	16.6	13.3		18.9	13.3		2.7	3.3		3.9	2.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.6	13.3		18.9	13.3		2.7	3.3		3.9	2.5	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		14.3			15.1			3.3			2.6	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	0.9	1.1		3.9	5.0		0.1	6.3		1.0	6.8	
Queue Length 95th (m)	2.9	4.1		7.9	11.0		m0.4	11.9		m4.0	15.5	
Internal Link Dist (m)		39.4			60.6			111.9			296.1	
Turn Bay Length (m)				20.0			30.0			60.0		
Base Capacity (vph)	486	666		521	658		578	2300		289	2260	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.03		0.08	0.15		0.01	0.44		0.13	0.22	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 35 (58%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.44  
 Intersection Signal Delay: 4.2  
 Intersection LOS: A  
 Intersection Capacity Utilization 53.1%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Burris



5: Merivale & Loblaws  
AM Peak Hour

1500 Merivale Road  
Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	8	40	8	2	24	85	722	6	32	456	17
Future Volume (vph)	14	8	40	8	2	24	85	722	6	32	456	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	75.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			10.0			0.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99	0.98		0.99	0.98		1.00	1.00		0.99	1.00	
Fr <sub>t</sub>		0.875			0.860			0.999			0.995	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1600	0	1624	1574	0	1768	3423	0	1734	3387	0
Fl <sub>t</sub> Permitted	0.738			0.722			0.457			0.342		
Satd. Flow (perm)	1365	1600	0	1223	1574	0	849	3423	0	621	3387	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			27			2				7
Link Speed (k/h)		50			50			60				60
Link Distance (m)		83.9			84.5			175.3				135.9
Travel Time (s)		6.0			6.1			10.5				8.2
Confl. Peds. (#/hr)	9		14	14		9	3		13	13		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	10%	1%	1%	1%	4%	30%	3%	5%	1%
Adj. Flow (vph)	16	9	44	9	2	27	94	802	7	36	507	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	53	0	9	29	0	94	809	0	36	526	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0				4.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane								Yes				
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

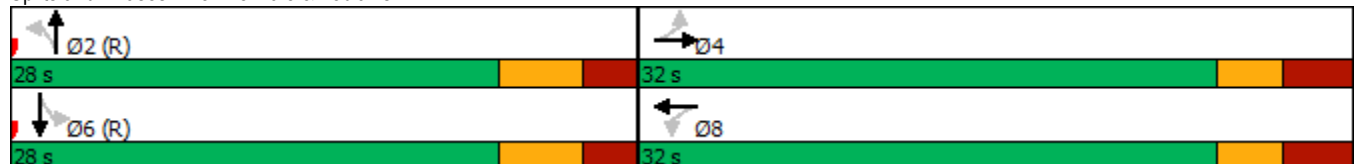


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		27.2	27.2		27.2	27.2	
Total Split (s)	32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		46.7%	46.7%		46.7%	46.7%	
Maximum Green (s)	25.8	25.8		25.8	25.8		21.8	21.8		21.8	21.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)	13.2	13.2		13.2	13.2		43.4	43.4		43.4	43.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.72	0.72		0.72	0.72	
v/c Ratio	0.05	0.14		0.03	0.08		0.15	0.33		0.08	0.21	
Control Delay	15.6	7.3		15.1	7.0		9.2	7.5		14.4	11.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.6	7.3		15.1	7.0		9.2	7.5		14.4	11.0	
LOS	B	A		B	A		A	A		B	B	
Approach Delay		9.2			8.9			7.7			11.3	
Approach LOS		A			A			A			B	
Queue Length 50th (m)	1.4	0.8		0.8	0.2		3.4	17.7		3.6	30.6	
Queue Length 95th (m)	3.4	5.0		2.4	3.5		16.0	50.1		9.3	39.8	
Internal Link Dist (m)		59.9			60.5			151.3			111.9	
Turn Bay Length (m)							75.0			50.0		
Base Capacity (vph)	586	713		525	692		614	2476		449	2452	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.03	0.07		0.02	0.04		0.15	0.33		0.08	0.21	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 32 (53%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.33  
 Intersection Signal Delay: 9.1  
 Intersection Capacity Utilization 58.4%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service B

Splits and Phases: 5: Merivale & Loblaws



1: Merivale & Baseline  
PM Peak Hour

1500 Merivale Road  
Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	972	12	251	1146	204	0	425	211	356	621	378
Future Volume (vph)	243	972	12	251	1146	204	0	425	211	356	621	378
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		35.0	200.0		40.0	0.0		70.0	125.0		45.0
Storage Lanes	1		1	1		1	0		1	2		1
Taper Length (m)	30.0			40.0			10.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99		0.96	0.99		0.93			0.94	0.96		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1751	3502	1582	1768	3537	1582	0	3502	1567	3397	3468	1582
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1734	3502	1517	1757	3537	1475	0	3502	1479	3265	3468	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134			134			83			281
Link Speed (k/h)		60			60			60				60
Link Distance (m)		174.4			682.4			320.1				406.0
Travel Time (s)		10.5			40.9			19.2				24.4
Confl. Peds. (#/hr)	46		24	24		46	20		30	30		20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%	0%	2%	2%	2%	3%	1%
Adj. Flow (vph)	270	1080	13	279	1273	227	0	472	234	396	690	420
Shared Lane Traffic (%)												
Lane Group Flow (vph)	270	1080	13	279	1273	227	0	472	234	396	690	420
Enter Blocked Intersection	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			5.0				9.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1		2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1		30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1		1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA	Perm	Prot	NA	Perm		NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6		8	1	7	4	4
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0		10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	12.1	41.1	41.1	12.1	41.1	41.1		34.6	12.1	11.5	34.6	34.6
Total Split (s)	25.0	60.0	60.0	25.0	60.0	60.0		35.0	25.0	20.0	55.0	55.0
Total Split (%)	17.9%	42.9%	42.9%	17.9%	42.9%	42.9%		25.0%	17.9%	14.3%	39.3%	39.3%
Maximum Green (s)	17.9	52.9	52.9	17.9	52.9	52.9		28.4	17.9	13.5	48.4	48.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	3.4		2.9	3.4	2.8	2.9	2.9
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
Total Lost Time (s)	7.1	7.1	7.1	7.1	7.1	7.1		6.6	7.1	6.5	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lag	Lead	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max		Ped	None	None	Ped	Ped
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		21.0			21.0	21.0
Pedestrian Calls (#/hr)		20	20		30	30		30			20	20
Act Effct Green (s)	18.2	52.9	52.9	18.2	52.9	52.9		28.1	45.8	13.5	48.1	48.1
Actuated g/C Ratio	0.13	0.38	0.38	0.13	0.38	0.38		0.20	0.33	0.10	0.34	0.34
v/c Ratio	1.19	0.82	0.02	1.21	0.95	0.35		0.67	0.42	1.21	0.58	0.60
Control Delay	171.2	45.3	0.1	178.8	58.1	14.1		57.1	22.7	171.5	40.0	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	171.2	45.3	0.1	178.8	58.1	14.1		57.1	22.7	171.5	40.0	15.6
LOS	F	D	A	F	E	B		E	C	F	D	B
Approach Delay		69.8			71.4			45.7			67.8	
Approach LOS		E			E			D			E	
Queue Length 50th (m)	~82.3	129.6	0.0	~86.5	165.1	15.7		59.2	26.9	~63.3	75.7	27.6
Queue Length 95th (m)	#134.4	155.2	0.0	#139.1	#207.6	35.0		76.4	47.1	#93.3	93.7	59.4
Internal Link Dist (m)		150.4			658.4			296.1			382.0	
Turn Bay Length (m)	110.0		35.0	200.0		40.0			70.0	125.0		45.0
Base Capacity (vph)	227	1323	656	230	1336	640		710	551	327	1198	708
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	1.19	0.82	0.02	1.21	0.95	0.35		0.66	0.42	1.21	0.58	0.59

**Intersection Summary**

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 19 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 66.6

Intersection LOS: E

Intersection Capacity Utilization 104.5%

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.



2: Clyde & Baseline  
PM Peak Hour

1500 Merivale Road  
Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	869	220	118	1142	527	295	765	80	341	614	79
Future Volume (vph)	155	869	220	118	1142	527	295	765	80	341	614	79
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	115.0		30.0	75.0		0.0	75.0		0.0	100.0		0.0
Storage Lanes	1		1	1		1	2		0	2		0
Taper Length (m)	40.0			25.0			50.0			55.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	0.95
Ped Bike Factor	0.99		0.95	0.99		0.94	0.97	1.00		0.98	0.99	
Fr t			0.850			0.850		0.986			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1751	3468	1567	1768	3468	1567	3431	3460	0	3431	3452	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1738	3468	1482	1750	3468	1475	3335	3460	0	3376	3452	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			286		8			10	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		458.5			301.4			153.1			307.3	
Travel Time (s)		27.5			18.1			9.2			18.4	
Confl. Peds. (#/hr)	31		29	29		31	41		30	30		41
Confl. Bikes (#/hr)			4			7			7			4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	2%	1%	3%	2%	1%	1%	4%	1%	1%	1%
Adj. Flow (vph)	172	966	244	131	1269	586	328	850	89	379	682	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	966	244	131	1269	586	328	939	0	379	770	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			11.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	

2: Clyde & Baseline  
PM Peak Hour

1500 Merivale Road  
Existing Traffic

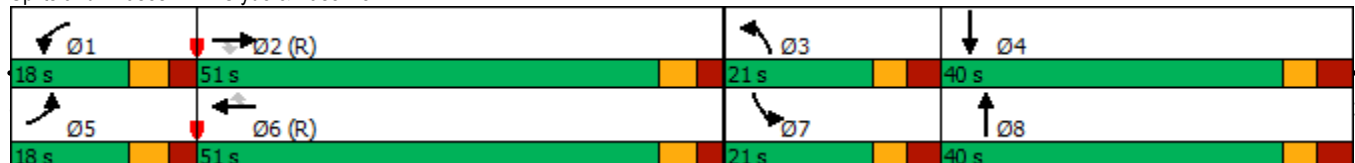


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.5	34.4	34.4	11.5	34.4	34.4	11.6	39.9		11.6	39.9	
Total Split (s)	18.0	51.0	51.0	18.0	51.0	51.0	21.0	40.0		21.0	40.0	
Total Split (%)	13.8%	39.2%	39.2%	13.8%	39.2%	39.2%	16.2%	30.8%		16.2%	30.8%	
Maximum Green (s)	11.5	44.6	44.6	11.5	44.6	44.6	14.4	33.1		14.4	33.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.7	2.7	2.8	2.7	2.7	3.3	3.6		3.3	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.4	6.4	6.5	6.4	6.4	6.6	6.9		6.6	6.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		26.0			26.0	
Pedestrian Calls (#/hr)		30	30		30	30		30			30	
Act Effct Green (s)	11.5	44.7	44.7	11.4	44.6	44.6	14.3	33.1		14.4	33.2	
Actuated g/C Ratio	0.09	0.34	0.34	0.09	0.34	0.34	0.11	0.25		0.11	0.26	
v/c Ratio	1.12	0.81	0.40	0.85	1.07	0.85	0.87	1.06		1.00	0.87	
Control Delay	160.2	45.2	15.2	99.8	87.0	32.4	95.1	70.4		103.0	57.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	160.2	45.2	15.2	99.8	87.0	32.4	95.1	70.4		103.0	57.1	
LOS	F	D	B	F	F	C	F	E		F	E	
Approach Delay		54.2			71.7			76.8			72.2	
Approach LOS		D			E			E			E	
Queue Length 50th (m)	~46.4	108.7	16.8	30.9	~173.9	71.4	34.7	~128.6		46.8	90.9	
Queue Length 95th (m)	#88.0	133.1	37.6	#63.1	#212.6	#133.6	#64.2	#160.4		#76.5	#119.2	
Internal Link Dist (m)		434.5			277.4			129.1			283.3	
Turn Bay Length (m)	115.0		30.0	75.0			75.0			100.0		
Base Capacity (vph)	154	1193	603	156	1189	693	380	886		380	889	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	1.12	0.81	0.40	0.84	1.07	0.85	0.86	1.06		1.00	0.87	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 53 (41%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.12  
 Intersection Signal Delay: 68.8      Intersection LOS: E  
 Intersection Capacity Utilization 101.3%      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.

Splits and Phases: 2: Clyde & Baseline



3: Merivale & Lotta & Clyde  
PM Peak Hour

1500 Merivale Road  
Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	44	35	808	120	148	71	820	594	67	710	27
Future Volume (vph)	32	44	35	808	120	148	71	820	594	67	710	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	95.0		40.0	80.0		0.0	95.0		0.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	25.0			10.0			30.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	0.99		0.98		0.98			0.95		1.00	
Frt		0.934				0.850			0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1701	0	3431	1861	1551	1751	3502	1567	1768	3511	0
Flt Permitted	0.950			0.950			0.169			0.124		
Satd. Flow (perm)	1760	1701	0	3365	1861	1524	311	3502	1493	231	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				164			568			3
Link Speed (k/h)		40			60			60				60
Link Distance (m)		226.4			200.1			492.8				259.9
Travel Time (s)		20.4			12.0			29.6				15.6
Confl. Peds. (#/hr)	4		9	9		4	17		22	22		17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	1%	1%	1%	3%	2%	2%	2%	1%	1%	1%
Adj. Flow (vph)	36	49	39	898	133	164	79	911	660	74	789	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	88	0	898	133	164	79	911	660	74	819	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	Right
Median Width(m)		5.0			9.0			5.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			5.0			5.0	
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1		30.5
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1		1.8
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt		NA
Protected Phases	7	4		3	8		5	2		1		6
Permitted Phases						8	2		2	6		
Detector Phase	7	4		3	8	8	5	2	2	1		6
Switch Phase												

3: Merivale & Lotta & Clyde  
PM Peak Hour

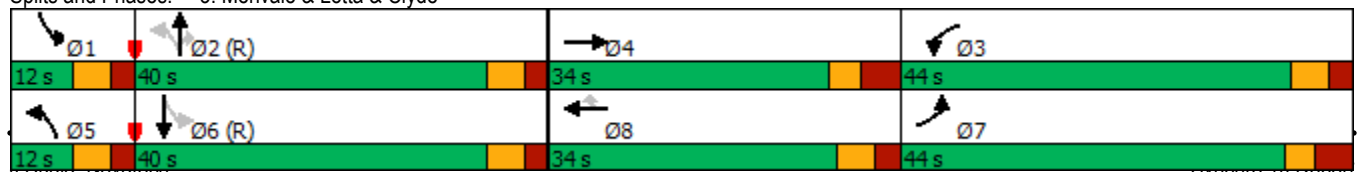
1500 Merivale Road  
Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2	33.2	11.0	30.0	30.0	11.0	30.0	
Total Split (s)	44.0	34.0		44.0	34.0	34.0	12.0	40.0	40.0	12.0	40.0	
Total Split (%)	33.8%	26.2%		33.8%	26.2%	26.2%	9.2%	30.8%	30.8%	9.2%	30.8%	
Maximum Green (s)	37.2	27.2		37.8	27.8	27.8	6.0	34.0	34.0	6.0	34.0	
Yellow Time (s)	3.0	3.0		3.7	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	2.5	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	0.0	
Total Lost Time (s)	6.8	6.8		6.2	6.2	6.2	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0	20.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)		10			10	10		20	20		10	
Act Effct Green (s)	26.8	16.8		37.3	32.4	32.4	52.2	46.5	46.5	52.0	46.4	
Actuated g/C Ratio	0.21	0.13		0.29	0.25	0.25	0.40	0.36	0.36	0.40	0.36	
v/c Ratio	0.10	0.36		0.91	0.29	0.33	0.39	0.73	0.73	0.43	0.65	
Control Delay	35.2	37.0		58.5	39.4	11.1	31.4	42.6	12.4	43.9	56.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	35.2	37.0		58.5	39.4	11.1	31.4	42.6	12.4	43.9	56.6	
LOS	D	D		E	D	B	C	D	B	D	E	
Approach Delay		36.5			49.9			30.0			55.6	
Approach LOS		D			D			C			E	
Queue Length 50th (m)	6.3	13.8		115.0	26.9	6.7	10.2	97.9	14.8	15.7	105.1	
Queue Length 95th (m)	13.8	25.3		#131.9	41.7	16.4	23.1	#154.0	70.5	m21.7	m#130.1	
Internal Link Dist (m)		202.4			176.1			468.8			235.9	
Turn Bay Length (m)	35.0			95.0		40.0	80.0			95.0		
Base Capacity (vph)	537	378		1012	535	555	201	1253	898	172	1256	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.07	0.23		0.89	0.25	0.30	0.39	0.73	0.73	0.43	0.65	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 98 (75%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 42.3  
 Intersection LOS: D  
 Intersection Capacity Utilization 74.3%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Merivale & Lotta & Clyde



4: Merivale & Burris  
PM Peak Hour

1500 Merivale Road  
Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	50	18	63	36	33	15	645	56	73	954	46
Future Volume (vph)	26	50	18	63	36	33	15	645	56	73	954	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	20.0		0.0	30.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			15.0			25.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.97	0.99		0.98	0.98		0.99	1.00		1.00	1.00	
Frt		0.961			0.928			0.988			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1763	0	1768	1694	0	1768	3453	0	1768	3502	0
Flt Permitted	0.707			0.708			0.218			0.344		
Satd. Flow (perm)	1282	1763	0	1298	1694	0	403	3453	0	637	3502	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			37			18			10	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		63.4			84.6			135.9			320.1	
Travel Time (s)		4.6			6.1			8.2			19.2	
Confl. Peds. (#/hr)	32		19	19		32	27		10	10		27
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%	2%	1%	1%	1%	1%
Adj. Flow (vph)	29	56	20	70	40	37	17	717	62	81	1060	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	76	0	70	77	0	17	779	0	81	1111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	L NA	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

4: Merivale & Burris  
PM Peak Hour

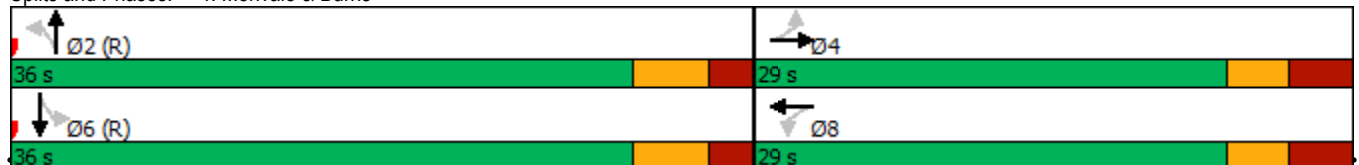
1500 Merivale Road  
Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		25.9	25.9		25.9	25.9	
Total Split (s)	29.0	29.0		29.0	29.0		36.0	36.0		36.0	36.0	
Total Split (%)	44.6%	44.6%		44.6%	44.6%		55.4%	55.4%		55.4%	55.4%	
Maximum Green (s)	22.8	22.8		22.8	22.8		30.1	30.1		30.1	30.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		5.9	5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	10	10		30	30		20	20		20	20	
Act Effct Green (s)	14.8	14.8		14.8	14.8		42.5	42.5		42.5	42.5	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.65	0.65		0.65	0.65	
v/c Ratio	0.10	0.18		0.24	0.19		0.06	0.34		0.19	0.48	
Control Delay	17.6	14.8		20.3	11.4		8.8	6.6		10.4	9.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.6	14.8		20.3	11.4		8.8	6.6		10.4	9.6	
LOS	B	B		C	B		A	A		B	A	
Approach Delay		15.6			15.6			6.7			9.7	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	2.8	5.5		7.1	3.9		0.6	18.1		2.9	26.5	
Queue Length 95th (m)	6.6	11.4		12.7	10.1		m3.0	32.2		12.9	63.9	
Internal Link Dist (m)		39.4			60.6			111.9			296.1	
Turn Bay Length (m)				20.0			30.0			60.0		
Base Capacity (vph)	449	631		455	618		263	2265		416	2294	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.12		0.15	0.12		0.06	0.34		0.19	0.48	

Intersection Summary

Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 27 (42%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.48  
 Intersection Signal Delay: 9.3  
 Intersection LOS: A  
 Intersection Capacity Utilization 68.4%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Burris



5: Merivale & Loblaws  
PM Peak Hour

1500 Merivale Road  
Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	33	119	78	24	110	61	587	25	92	832	48
Future Volume (vph)	43	33	119	78	24	110	61	587	25	92	832	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	75.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			10.0			0.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	0.94		0.95	0.99		1.00	1.00		0.99	1.00	
Fr <sub>t</sub>		0.883			0.877			0.994			0.992	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1545	0	1768	1603	0	1768	3476	0	1768	3438	0
Fl <sub>t</sub> Permitted	0.662			0.650			0.235			0.373		
Satd. Flow (perm)	1228	1545	0	1147	1603	0	436	3476	0	689	3438	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51			122			8			11	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		83.9			84.5			175.3			135.9	
Travel Time (s)		6.0			6.1			10.5			8.2	
Confl. Peds. (#/hr)	5		87	87		5	9		14	14		9
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	4%	1%	1%	2%	1%	1%	3%	1%
Adj. Flow (vph)	48	37	132	87	27	122	68	652	28	102	924	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	169	0	87	149	0	68	680	0	102	977	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane								Yes				
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	



5: Merivale & Loblaws  
PM Peak Hour

1500 Merivale Road  
Existing Traffic

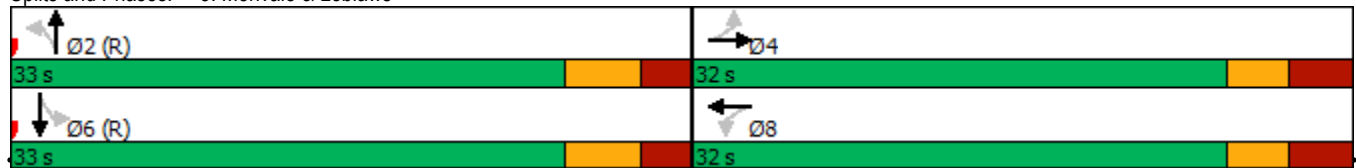


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		27.2	27.2		27.2	27.2	
Total Split (s)	32.0	32.0		32.0	32.0		33.0	33.0		33.0	33.0	
Total Split (%)	49.2%	49.2%		49.2%	49.2%		50.8%	50.8%		50.8%	50.8%	
Maximum Green (s)	25.8	25.8		25.8	25.8		26.8	26.8		26.8	26.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	60	60		10	10		10	10		10	10	
Act Effct Green (s)	19.5	19.5		19.5	19.5		33.1	33.1		33.1	33.1	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.51	0.51		0.51	0.51	
v/c Ratio	0.13	0.34		0.25	0.26		0.31	0.38		0.29	0.56	
Control Delay	14.3	12.2		16.5	5.3		16.2	11.7		6.9	7.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.3	12.2		16.5	5.3		16.2	11.7		6.9	7.0	
LOS	B	B		B	A		B	B		A	A	
Approach Delay		12.7			9.4			12.1			7.0	
Approach LOS		B			A			B			A	
Queue Length 50th (m)	3.2	8.2		6.1	1.8		4.3	23.4		7.9	46.4	
Queue Length 95th (m)	8.6	18.8		13.9	10.4		m13.2	58.8		3.3	10.2	
Internal Link Dist (m)		59.9			60.5			151.3			111.9	
Turn Bay Length (m)							75.0			50.0		
Base Capacity (vph)	487	644		455	709		221	1774		351	1757	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.26		0.19	0.21		0.31	0.38		0.29	0.56	

Intersection Summary

Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 35 (54%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.56  
 Intersection Signal Delay: 9.5  
 Intersection LOS: A  
 Intersection Capacity Utilization 84.5%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Merivale & Loblaws



1: Merivale & Baseline  
AM Peak Hour

1500 Merivale Road  
Existing Traffic (demand rationalization)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	917	6	116	847	375	0	567	212	253	326	284
Future Volume (vph)	192	917	6	116	847	375	0	567	212	253	326	284
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		35.0	200.0		40.0	0.0		70.0	125.0		45.0
Storage Lanes	1		1	1		1	0		1	2		1
Taper Length (m)	30.0			40.0			10.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99		0.97	0.99		0.95			0.94	0.97		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1734	3502	1390	1685	3468	1551	0	3435	1551	3364	3402	1537
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1718	3502	1343	1676	3468	1480	0	3435	1457	3247	3402	1474
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			156			242			96			316
Link Speed (k/h)		60			60			60				60
Link Distance (m)		174.4			682.4			320.1				406.0
Travel Time (s)		10.5			40.9			19.2				24.4
Confl. Peds. (#/hr)	33		20	20		33	23		39	39		23
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	2%	15%	6%	3%	3%	0%	4%	3%	3%	5%	4%
Adj. Flow (vph)	213	1019	7	129	941	417	0	630	236	281	362	316
Shared Lane Traffic (%)												
Lane Group Flow (vph)	213	1019	7	129	941	417	0	630	236	281	362	316
Enter Blocked Intersection	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			5.0				9.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1		2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1		30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1		1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA	Perm	Prot	NA	Perm		NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6		8	1	7	4	4

1: Merivale & Baseline  
AM Peak Hour

1500 Merivale Road  
Existing Traffic (demand rationalization)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0		10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	12.1	41.1	41.1	12.1	41.1	41.1		34.6	12.1	11.5	34.6	34.6
Total Split (s)	24.0	43.0	43.0	24.0	43.0	43.0		35.0	24.0	18.0	53.0	53.0
Total Split (%)	20.0%	35.8%	35.8%	20.0%	35.8%	35.8%		29.2%	20.0%	15.0%	44.2%	44.2%
Maximum Green (s)	16.9	35.9	35.9	16.9	35.9	35.9		28.4	16.9	11.5	46.4	46.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	3.4		2.9	3.4	2.8	2.9	2.9
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
Total Lost Time (s)	7.1	7.1	7.1	7.1	7.1	7.1		6.6	7.1	6.5	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lag	Lead	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max		Max	None	None	Min	Min
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		21.0			21.0	21.0
Pedestrian Calls (#/hr)		20	20		30	30		30			20	20
Act Effct Green (s)	16.5	39.0	39.0	13.8	36.3	36.3		28.4	41.7	11.5	46.4	46.4
Actuated g/C Ratio	0.14	0.32	0.32	0.12	0.30	0.30		0.24	0.35	0.10	0.39	0.39
v/c Ratio	0.89	0.90	0.01	0.67	0.90	0.68		0.78	0.41	0.87	0.28	0.41
Control Delay	76.4	53.1	0.0	67.3	52.5	21.1		44.4	20.4	80.1	26.0	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	76.4	53.1	0.0	67.3	52.5	21.1		44.4	20.4	80.1	26.0	4.4
LOS	E	D	A	E	D	C		D	C	F	C	A
Approach Delay		56.8			45.0			37.8			34.7	
Approach LOS		E			D			D			C	
Queue Length 50th (m)	48.7	90.4	0.0	27.1	103.3	33.1		68.1	19.7	31.4	28.0	0.0
Queue Length 95th (m)	m#56.5	m#141.5	m0.0	44.8	#136.8	67.2		65.6	32.2	#52.9	38.6	15.9
Internal Link Dist (m)		150.4			658.4			296.1			382.0	
Turn Bay Length (m)	110.0		35.0	200.0		40.0			70.0	125.0		45.0
Base Capacity (vph)	244	1138	541	237	1049	616		812	617	322	1315	763
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.87	0.90	0.01	0.54	0.90	0.68		0.78	0.38	0.87	0.28	0.41

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 45 (38%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 44.7 Intersection LOS: D  
 Intersection Capacity Utilization 93.3% 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: 1: Merivale & Baseline



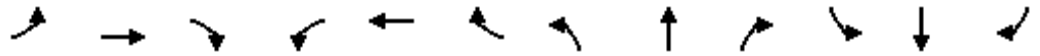
2: Clyde & Baseline  
AM Peak Hour

1500 Merivale Road  
Existing Traffic (demand rationalization)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	969	128	54	474	370	83	631	99	291	459	49
Future Volume (vph)	150	969	128	54	474	370	83	631	99	291	459	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	115.0		30.0	75.0		0.0	75.0		0.0	100.0		0.0
Storage Lanes	1		1	1		1	2		0	2		0
Taper Length (m)	40.0			25.0			50.0			55.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	0.95
Ped Bike Factor	0.99		0.97	1.00		0.97	0.99	1.00		0.99	1.00	
Fr <sub>t</sub>			0.850			0.850		0.980			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3502	1537	1751	3402	1567	3300	3406	0	3397	3419	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1756	3502	1495	1746	3402	1519	3275	3406	0	3373	3419	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			155			305		14			9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		458.5			301.4			153.1			307.3	
Travel Time (s)		27.5			18.1			9.2			18.4	
Confl. Peds. (#/hr)	11		10	10		11	9		12	12		9
Confl. Bikes (#/hr)			3			6			3			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	2%	4%	2%	5%	2%	5%	2%	5%	2%	2%	10%
Adj. Flow (vph)	167	1077	142	60	527	411	92	701	110	323	510	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	1077	142	60	527	411	92	811	0	323	564	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			11.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	

2: Clyde & Baseline  
AM Peak Hour

1500 Merivale Road  
Existing Traffic (demand rationalization)

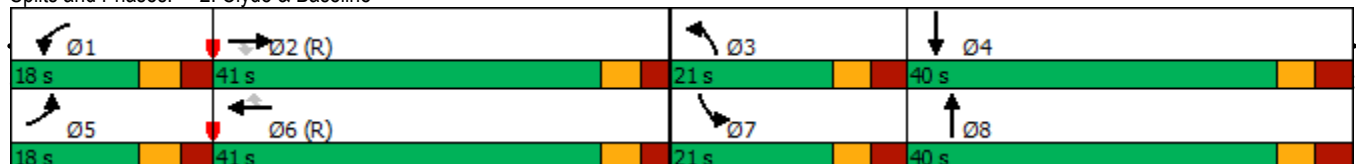


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.5	34.4	34.4	11.5	34.4	34.4	11.6	39.9		11.6	39.9	
Total Split (s)	18.0	41.0	41.0	18.0	41.0	41.0	21.0	40.0		21.0	40.0	
Total Split (%)	15.0%	34.2%	34.2%	15.0%	34.2%	34.2%	17.5%	33.3%		17.5%	33.3%	
Maximum Green (s)	11.5	34.6	34.6	11.5	34.6	34.6	14.4	33.1		14.4	33.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.7	2.7	2.8	2.7	2.7	3.3	3.6		3.3	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.4	6.4	6.5	6.4	6.4	6.6	6.9		6.6	6.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		26.0			26.0	
Pedestrian Calls (#/hr)		10	10		10	10		10			10	
Act Effct Green (s)	12.6	41.0	41.0	9.2	35.1	35.1	8.7	31.9		14.0	37.2	
Actuated g/C Ratio	0.10	0.34	0.34	0.08	0.29	0.29	0.07	0.27		0.12	0.31	
v/c Ratio	0.90	0.90	0.23	0.45	0.53	0.62	0.38	0.89		0.81	0.53	
Control Delay	98.8	50.3	5.0	30.9	37.7	25.8	57.3	54.2		68.5	35.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	98.8	50.3	5.0	30.9	37.7	25.8	57.3	54.2		68.5	35.7	
LOS	F	D	A	C	D	C	E	D		E	D	
Approach Delay		51.5			32.4			54.5			47.6	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	36.8	~124.7	0.0	10.7	61.5	60.6	10.0	86.5		35.6	51.0	
Queue Length 95th (m)	#76.9	#173.6	11.2	m13.6	m71.3	m77.2	17.3	#111.1		#54.2	68.9	
Internal Link Dist (m)		434.5			277.4			129.1			283.3	
Turn Bay Length (m)	115.0		30.0	75.0			75.0			100.0		
Base Capacity (vph)	185	1197	613	167	995	660	396	949		407	1066	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.90	0.90	0.23	0.36	0.53	0.62	0.23	0.85		0.79	0.53	

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 19 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 46.8      Intersection LOS: D  
 Intersection Capacity Utilization 87.0%      ICU Level of Service E  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clyde & Baseline



1: Merivale & Baseline  
PM Peak Hour

1500 Merivale Road  
Existing Traffic (demand rationalization)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	972	12	181	1096	204	0	425	211	256	621	378
Future Volume (vph)	173	972	12	181	1096	204	0	425	211	256	621	378
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		35.0	200.0		40.0	0.0		70.0	125.0		45.0
Storage Lanes	1		1	1		1	0		1	2		1
Taper Length (m)	30.0			40.0			10.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99		0.96	0.99		0.93			0.94	0.96		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1751	3502	1582	1768	3537	1582	0	3502	1567	3397	3468	1582
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1733	3502	1517	1757	3537	1475	0	3502	1479	3265	3468	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134			134			83			283
Link Speed (k/h)		60			60			60				60
Link Distance (m)		174.4			682.4			320.1				406.0
Travel Time (s)		10.5			40.9			19.2				24.4
Confl. Peds. (#/hr)	46		24	24		46	20		30	30		20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%	0%	2%	2%	2%	3%	1%
Adj. Flow (vph)	192	1080	13	201	1218	227	0	472	234	284	690	420
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	1080	13	201	1218	227	0	472	234	284	690	420
Enter Blocked Intersection	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			5.0				9.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1		2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1		30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1		1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA	Perm	Prot	NA	Perm		NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6		8	1	7	4	4
Switch Phase												

1: Merivale & Baseline  
PM Peak Hour

1500 Merivale Road  
Existing Traffic (demand rationalization)

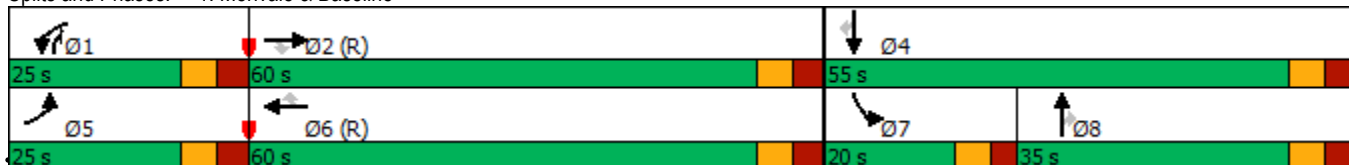


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0		10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	12.1	41.1	41.1	12.1	41.1	41.1		34.6	12.1	11.5	34.6	34.6
Total Split (s)	25.0	60.0	60.0	25.0	60.0	60.0		35.0	25.0	20.0	55.0	55.0
Total Split (%)	17.9%	42.9%	42.9%	17.9%	42.9%	42.9%		25.0%	17.9%	14.3%	39.3%	39.3%
Maximum Green (s)	17.9	52.9	52.9	17.9	52.9	52.9		28.4	17.9	13.5	48.4	48.4
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7		3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	3.4		2.9	3.4	2.8	2.9	2.9
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
Total Lost Time (s)	7.1	7.1	7.1	7.1	7.1	7.1		6.6	7.1	6.5	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lag	Lead	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max		Ped	None	None	Ped	Ped
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		21.0			21.0	21.0
Pedestrian Calls (#/hr)		20	20		30	30		30			20	20
Act Effct Green (s)	17.6	53.4	53.4	17.8	53.5	53.5		28.1	45.4	13.5	48.1	48.1
Actuated g/C Ratio	0.13	0.38	0.38	0.13	0.38	0.38		0.20	0.32	0.10	0.34	0.34
v/c Ratio	0.88	0.81	0.02	0.90	0.90	0.35		0.67	0.43	0.87	0.58	0.59
Control Delay	95.2	44.7	0.1	97.9	51.1	14.0		57.1	22.8	87.8	40.0	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	95.2	44.7	0.1	97.9	51.1	14.0		57.1	22.8	87.8	40.0	15.4
LOS	F	D	A	F	D	B		E	C	F	D	B
Approach Delay		51.8			51.7			45.7			42.4	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	48.5	129.6	0.0	51.0	154.2	15.7		59.2	26.9	37.4	75.7	27.1
Queue Length 95th (m)	#87.3	155.2	0.0	#92.1	#192.1	35.0		76.4	47.1	#59.7	93.7	58.8
Internal Link Dist (m)		150.4			658.4			296.1			382.0	
Turn Bay Length (m)	110.0		35.0	200.0		40.0			70.0	125.0		45.0
Base Capacity (vph)	226	1334	661	229	1352	646		710	550	327	1198	709
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.85	0.81	0.02	0.88	0.90	0.35		0.66	0.43	0.87	0.58	0.59

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 19 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 48.3  
 Intersection LOS: D  
 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: 1: Merivale & Baseline



2: Clyde & Baseline  
PM Peak Hour

1500 Merivale Road  
Existing Traffic (demand rationalization)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	869	220	118	962	527	295	615	80	301	614	79
Future Volume (vph)	125	869	220	118	962	527	295	615	80	301	614	79
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	115.0		30.0	75.0		0.0	75.0		0.0	100.0		0.0
Storage Lanes	1		1	1		1	2		0	2		0
Taper Length (m)	40.0			25.0			50.0			55.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	0.95	0.97	0.95	0.95
Ped Bike Factor	0.99		0.95	0.99		0.94	0.97	0.99		0.98	0.99	
Fr			0.850			0.850		0.983			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1751	3468	1567	1768	3468	1567	3431	3444	0	3431	3452	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1734	3468	1482	1750	3468	1475	3335	3444	0	3361	3452	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			304			10		10	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		458.5			301.4			153.1			307.3	
Travel Time (s)		27.5			18.1			9.2			18.4	
Confl. Peds. (#/hr)	31		29	29		31	41		30	30		41
Confl. Bikes (#/hr)			4			7			7			4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	2%	1%	3%	2%	1%	1%	4%	1%	1%	1%
Adj. Flow (vph)	139	966	244	131	1069	586	328	683	89	334	682	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	966	244	131	1069	586	328	772	0	334	770	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			11.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6						
Detector Phase	5	2	2	1	6	6	3	8		7	4	



2: Clyde & Baseline  
PM Peak Hour

1500 Merivale Road  
Existing Traffic (demand rationalization)

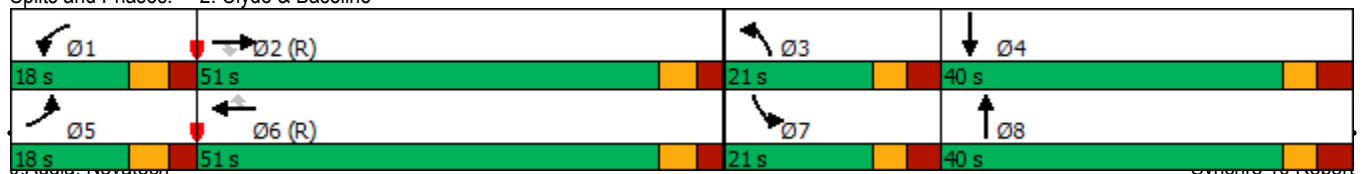


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	11.5	34.4	34.4	11.5	34.4	34.4	11.6	39.9		11.6	39.9	
Total Split (s)	18.0	51.0	51.0	18.0	51.0	51.0	21.0	40.0		21.0	40.0	
Total Split (%)	13.8%	39.2%	39.2%	13.8%	39.2%	39.2%	16.2%	30.8%		16.2%	30.8%	
Maximum Green (s)	11.5	44.6	44.6	11.5	44.6	44.6	14.4	33.1		14.4	33.1	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.7	2.7	2.8	2.7	2.7	3.3	3.6		3.3	3.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.4	6.4	6.5	6.4	6.4	6.6	6.9		6.6	6.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		21.0	21.0		21.0	21.0		26.0			26.0	
Pedestrian Calls (#/hr)		30	30		30	30		30			30	
Act Effct Green (s)	11.8	45.7	45.7	11.5	45.4	45.4	14.3	32.0		14.4	32.1	
Actuated g/C Ratio	0.09	0.35	0.35	0.09	0.35	0.35	0.11	0.25		0.11	0.25	
v/c Ratio	0.88	0.79	0.40	0.84	0.88	0.82	0.87	0.90		0.88	0.90	
Control Delay	103.6	44.0	15.1	97.8	49.9	29.1	95.0	31.8		81.1	60.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	103.6	44.0	15.1	97.8	49.9	29.1	95.0	31.8		81.1	60.6	
LOS	F	D	B	F	D	C	F	C		F	E	
Approach Delay		44.9			46.6			50.6			66.8	
Approach LOS		D			D			D			E	
Queue Length 50th (m)	33.1	108.7	16.8	30.9	125.5	66.4	32.3	93.0		40.6	90.9	
Queue Length 95th (m)	#68.4	133.1	37.6	#63.1	#160.5	#121.9	#64.2	#73.2		#63.9	#119.2	
Internal Link Dist (m)		434.5			277.4			129.1			283.3	
Turn Bay Length (m)	115.0		30.0	75.0			75.0			100.0		
Base Capacity (vph)	158	1218	613	158	1210	712	380	884		380	886	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.88	0.79	0.40	0.83	0.88	0.82	0.86	0.87		0.88	0.87	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 53 (41%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 51.2 Intersection LOS: D  
 Intersection Capacity Utilization 92.1% 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: 2: Clyde & Baseline



3: Merivale & Lotta & Clyde  
PM Peak Hour

1500 Merivale Road  
Existing Traffic (demand rationalization)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	44	35	778	120	148	71	820	594	67	710	27
Future Volume (vph)	32	44	35	778	120	148	71	820	594	67	710	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	95.0		40.0	80.0		0.0	95.0		0.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	25.0			10.0			30.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	0.99		0.98		0.98			0.95		1.00	
Frt		0.934				0.850			0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1701	0	3431	1861	1551	1751	3502	1567	1768	3511	0
Flt Permitted	0.950			0.950			0.174			0.131		
Satd. Flow (perm)	1760	1701	0	3365	1861	1524	321	3502	1493	244	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				164			568			3
Link Speed (k/h)		40			60			60				60
Link Distance (m)		226.4			200.1			492.8				259.9
Travel Time (s)		20.4			12.0			29.6				15.6
Confl. Peds. (#/hr)	4		9	9		4	17		22	22		17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	1%	1%	1%	3%	2%	2%	2%	1%	1%	1%
Adj. Flow (vph)	36	49	39	864	133	164	79	911	660	74	789	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	88	0	864	133	164	79	911	660	74	819	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	Right
Median Width(m)		5.0			9.0			5.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			5.0			5.0	
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1		30.5
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1		1.8
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt		NA
Protected Phases	7	4		3	8		5	2		1		6
Permitted Phases						8	2		2	6		
Detector Phase	7	4		3	8	8	5	2	2	1		6
Switch Phase												

3: Merivale & Lotta & Clyde  
PM Peak Hour

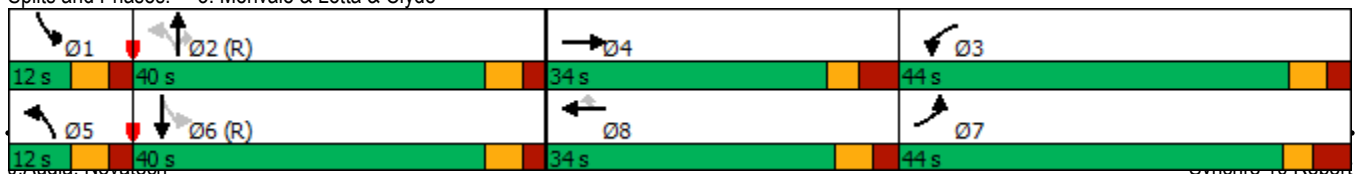
1500 Merivale Road  
Existing Traffic (demand rationalization)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2	33.2	11.0	30.0	30.0	11.0	30.0	
Total Split (s)	44.0	34.0		44.0	34.0	34.0	12.0	40.0	40.0	12.0	40.0	
Total Split (%)	33.8%	26.2%		33.8%	26.2%	26.2%	9.2%	30.8%	30.8%	9.2%	30.8%	
Maximum Green (s)	37.2	27.2		37.8	27.8	27.8	6.0	34.0	34.0	6.0	34.0	
Yellow Time (s)	3.0	3.0		3.7	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	2.5	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	0.0	
Total Lost Time (s)	6.8	6.8		6.2	6.2	6.2	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0	20.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)		10			10	10		20	20		10	
Act Effct Green (s)	26.5	16.8		36.4	31.8	31.8	53.2	47.5	47.5	52.9	47.4	
Actuated g/C Ratio	0.20	0.13		0.28	0.24	0.24	0.41	0.37	0.37	0.41	0.36	
v/c Ratio	0.10	0.36		0.90	0.29	0.33	0.38	0.71	0.73	0.42	0.64	
Control Delay	35.4	37.0		58.2	39.8	11.4	30.7	41.7	12.2	43.0	55.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	35.4	37.0		58.2	39.8	11.4	30.7	41.7	12.2	43.0	55.9	
LOS	D	D		E	D	B	C	D	B	D	E	
Approach Delay		36.6			49.5			29.3			54.8	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	6.4	13.8		110.7	26.8	6.9	9.9	95.8	14.5	15.4	104.7	
Queue Length 95th (m)	13.8	25.3		#103.4	41.9	16.7	23.1	#154.0	70.5	m#21.7	m#129.6	
Internal Link Dist (m)		202.4			176.1			468.8			235.9	
Turn Bay Length (m)	35.0			95.0		40.0	80.0			95.0		
Base Capacity (vph)	537	378		1004	526	549	206	1279	905	178	1281	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.07	0.23		0.86	0.25	0.30	0.38	0.71	0.73	0.42	0.64	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 98 (75%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 41.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 73.4%  
 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: 3: Merivale & Lotta & Clyde

























## **APPENDIX L**

---

### Background Synchro Analysis

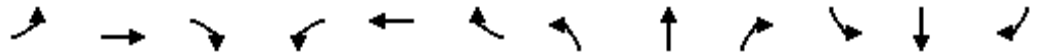
1: Merivale & Baseline  
AM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	1037	8	123	911	420	0	655	212	361	422	332
Future Volume (vph)	267	1037	8	123	911	420	0	655	212	361	422	332
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		35.0	115.0		0.0	0.0		70.0	125.0		0.0
Storage Lanes	1		1	1		0	0		1	2		0
Taper Length (m)	45.0			60.0			10.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor	0.99		0.93	0.99	0.98				0.91	0.95	0.96	
Frt			0.850		0.953				0.850		0.934	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1734	3502	1390	1685	3229	0	0	3435	1551	3364	3071	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1717	3502	1288	1660	3229	0	0	3435	1419	3195	3071	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		61				83		155	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		174.4			682.4			320.1			406.0	
Travel Time (s)		10.5			40.9			19.2			24.4	
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Confl. Bikes (#/hr)			1									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	15%	6%	3%	3%	0%	4%	3%	3%	5%	4%
Adj. Flow (vph)	267	1037	8	123	911	420	0	655	212	361	422	332
Shared Lane Traffic (%)												
Lane Group Flow (vph)	267	1037	8	123	1331	0	0	655	212	361	754	0
Enter Blocked Intersection	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			5.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2			2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru			Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5			30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8			1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA			NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases			2						8			
Detector Phase	5	2	2	1	6			8	1	7	4	

1: Merivale & Baseline  
AM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

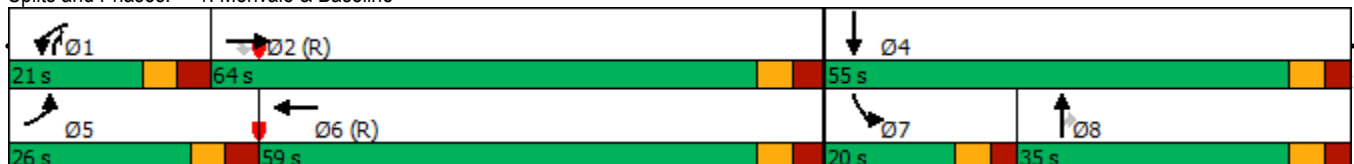


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0			10.0	5.0	5.0	10.0	
Minimum Split (s)	12.1	41.1	41.1	12.1	41.1			34.6	12.1	11.5	34.6	
Total Split (s)	26.0	64.0	64.0	21.0	59.0			35.0	21.0	20.0	55.0	
Total Split (%)	18.6%	45.7%	45.7%	15.0%	42.1%			25.0%	15.0%	14.3%	39.3%	
Maximum Green (s)	18.9	56.9	56.9	13.9	51.9			28.4	13.9	13.5	48.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7			3.7	3.7	3.7	3.7	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4			2.9	3.4	2.8	2.9	
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)	7.1	7.1	7.1	7.1	7.1			6.6	7.1	6.5	6.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag	Lead	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max			Max	None	None	Min	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		27.0	27.0		27.0			21.0			21.0	
Pedestrian Calls (#/hr)		20	20		30			30			20	
Act Effct Green (s)	18.9	57.7	57.7	13.1	51.9			28.4	41.0	13.5	48.4	
Actuated g/C Ratio	0.14	0.41	0.41	0.09	0.37			0.20	0.29	0.10	0.35	
v/c Ratio	1.14	0.72	0.01	0.78	1.08			0.94	0.44	1.11	0.65	
Control Delay	143.7	14.5	0.0	93.1	89.3			77.2	23.6	140.4	33.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	143.7	14.5	0.0	93.1	89.3			77.2	23.6	140.4	33.2	
LOS	F	B	A	F	F			E	C	F	C	
Approach Delay		40.7			89.6			64.1			67.9	
Approach LOS		D			F			E			E	
Queue Length 50th (m)	~77.6	98.6	0.0	31.0	~193.5			87.4	23.6	~54.2	68.3	
Queue Length 95th (m)	m#92.9	m103.0	m0.0	#58.4	#233.3			#120.4	43.4	#83.1	88.5	
Internal Link Dist (m)		150.4			658.4			296.1			382.0	
Turn Bay Length (m)	50.0		35.0	115.0					70.0	125.0		
Base Capacity (vph)	234	1443	609	167	1235			696	494	324	1163	
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	1.14	0.72	0.01	0.74	1.08			0.94	0.43	1.11	0.65	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 66 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.14  
 Intersection Signal Delay: 66.3  
 Intersection LOS: E  
 Intersection Capacity Utilization 114.6%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Merivale & Baseline



2: Clyde & Baseline  
AM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	1115	128	65	524	384	86	742	104	324	468	49
Future Volume (vph)	173	1115	128	65	524	384	86	742	104	324	468	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	85.0		30.0	165.0		0.0	75.0		0.0	100.0		0.0
Storage Lanes	1		0	1		0	2		0	2		0
Taper Length (m)	55.0			40.0			50.0			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	0.95	0.97	0.95	0.95
Ped Bike Factor	0.98	0.99		0.99	0.96		0.95	0.99		0.97	0.99	
Fr t		0.985			0.937			0.982			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3412	0	1751	3105	0	3300	3394	0	3397	3402	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1731	3412	0	1728	3105	0	3129	3394	0	3286	3402	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			142			11			8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		458.5			301.4			153.1			307.3	
Travel Time (s)		27.5			18.1			9.2			18.4	
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Confl. Bikes (#/hr)			3			6			3			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	4%	2%	5%	2%	5%	2%	5%	2%	2%	10%
Adj. Flow (vph)	173	1115	128	65	524	384	86	742	104	324	468	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	1243	0	65	908	0	86	846	0	324	517	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			11.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	

2: Clyde & Baseline  
AM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

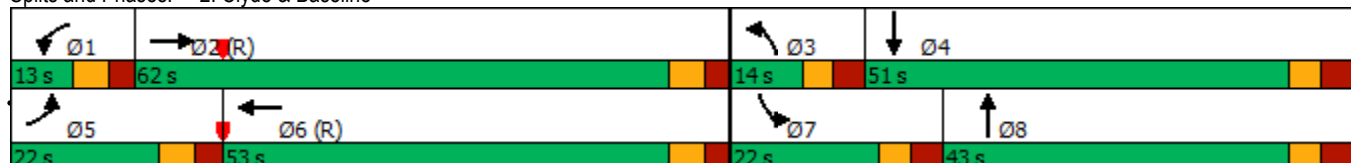


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.5	34.4		11.5	34.4		11.6	39.9		11.6	39.9	
Total Split (s)	22.0	62.0		13.0	53.0		14.0	43.0		22.0	51.0	
Total Split (%)	15.7%	44.3%		9.3%	37.9%		10.0%	30.7%		15.7%	36.4%	
Maximum Green (s)	15.5	55.6		6.5	46.6		7.4	36.1		15.4	44.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.7		2.8	2.7		3.3	3.6		3.3	3.6	
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	6.4		6.5	6.4		6.6	6.9		6.6	6.9	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		21.0			21.0			26.0			26.0	
Pedestrian Calls (#/hr)		10			10			10			10	
Act Effct Green (s)	15.3	55.6		6.7	47.0		7.2	36.0		15.3	44.1	
Actuated g/C Ratio	0.11	0.40		0.05	0.34		0.05	0.26		0.11	0.32	
v/c Ratio	0.90	0.91		0.77	0.80		0.51	0.96		0.88	0.48	
Control Delay	104.3	50.8		103.1	22.1		75.3	72.6		85.4	39.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	104.3	50.8		103.1	22.1		75.3	72.6		85.4	39.9	
LOS	F	D		F	C		E	E		F	D	
Approach Delay		57.3			27.5			72.8			57.4	
Approach LOS		E			C			E			E	
Queue Length 50th (m)	44.2	155.5		15.8	99.5		11.1	111.3		42.5	55.1	
Queue Length 95th (m)	#83.1	#194.8		m17.3	m101.5		19.5	#149.1		#65.5	71.0	
Internal Link Dist (m)		434.5			277.4			129.1			283.3	
Turn Bay Length (m)	85.0			165.0			75.0			100.0		
Base Capacity (vph)	195	1361		84	1137		174	883		373	1077	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.89	0.91		0.77	0.80		0.49	0.96		0.87	0.48	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 53.8      Intersection LOS: D  
 Intersection Capacity Utilization 100.3%      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: 2: Clyde & Baseline





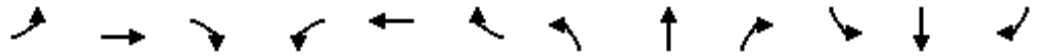
3: Merivale & Lotta & Clyde  
AM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	74	21	447	39	65	34	757	899	23	592	14
Future Volume (vph)	25	74	21	447	39	65	34	757	899	23	592	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	95.0		40.0	80.0		0.0	95.0		0.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	25.0			10.0			30.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	0.99		0.98		0.98	0.99		0.98	1.00	1.00	
Fr t		0.967				0.850			0.850		0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1717	1762	0	3332	1790	1537	1768	3502	1567	1768	3482	0
Flt Permitted	0.950			0.950			0.384			0.310		
Satd. Flow (perm)	1710	1762	0	3261	1790	1512	705	3502	1530	575	3482	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				82			848			2
Link Speed (k/h)		40			60			60				60
Link Distance (m)		226.4			200.1			492.8				259.9
Travel Time (s)		20.4			12.0			29.6				15.6
Confl. Peds. (#/hr)	3		10	10		3	15		7	7		15
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	1%	4%	5%	4%	1%	2%	2%	1%	2%	8%
Adj. Flow (vph)	25	74	21	447	39	65	34	757	899	23	592	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	95	0	447	39	65	34	757	899	23	606	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	Right
Median Width(m)		5.0			9.0			5.0				4.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			5.0				5.0
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1		30.5
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1		1.8
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm		NA
Protected Phases	7	4		3	8			2				6
Permitted Phases						8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	6		6

3: Merivale & Lotta & Clyde  
AM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

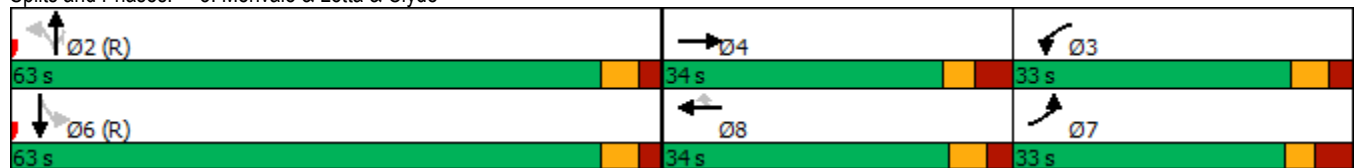


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.8	33.8		11.2	33.2	33.2	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	33.0	34.0		33.0	34.0	34.0	63.0	63.0	63.0	63.0	63.0	63.0
Total Split (%)	25.4%	26.2%		25.4%	26.2%	26.2%	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%
Maximum Green (s)	26.2	27.2		26.8	27.8	27.8	57.0	57.0	57.0	57.0	57.0	57.0
Yellow Time (s)	3.0	3.0		3.7	3.7	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	2.5	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
Total Lost Time (s)	6.8	6.8		6.2	6.2	6.2	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0	20.0	17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)		10			10	10	10	10	10	10	10	10
Act Effct Green (s)	14.9	14.5		22.4	27.0	27.0	74.2	74.2	74.2	74.2	74.2	74.2
Actuated g/C Ratio	0.11	0.11		0.17	0.21	0.21	0.57	0.57	0.57	0.57	0.57	0.57
v/c Ratio	0.13	0.47		0.78	0.11	0.17	0.08	0.38	0.73	0.07	0.30	0.30
Control Delay	49.0	54.1		61.2	44.8	6.4	17.1	17.5	6.2	17.3	16.5	16.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	54.1		61.2	44.8	6.4	17.1	17.5	6.2	17.3	16.5	16.5
LOS	D	D		E	D	A	B	B	A	B	B	B
Approach Delay		53.0			53.6			11.5			16.5	
Approach LOS		D			D			B			B	
Queue Length 50th (m)	4.9	19.5		52.4	8.8	0.0	3.3	46.7	4.9	2.2	35.4	
Queue Length 95th (m)	11.9	31.2		66.4	16.6	7.8	11.1	82.5	49.1	8.6	63.9	
Internal Link Dist (m)		202.4			176.1			468.8			235.9	
Turn Bay Length (m)	35.0			95.0		40.0	80.0			95.0		
Base Capacity (vph)	348	376		687	425	421	402	1997	1237	328	1987	
Starvation Cap Reductn	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
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.25		0.65	0.09	0.15	0.08	0.38	0.73	0.07	0.30	

Intersection Summary























Area Type: Other  
 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: 0.78  
 Intersection Signal Delay: 22.0  
 Intersection LOS: C  
 Intersection Capacity Utilization 95.8%  
 ICU Level of Service F  
 Analysis Period (min) 15

Splits and Phases: 3: Merivale & Lotta & Clyde



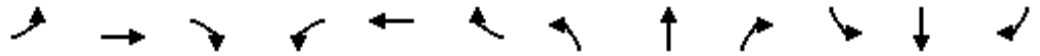
4: Merivale & Burris  
AM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Traffic Volume (vph)	9	12	7	40	33	55	6	983	21	35	529	24
Future Volume (vph)	9	12	7	40	33	55	6	983	21	35	529	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	20.0		0.0	30.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			15.0			25.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99	0.99		0.99	0.99		0.99	1.00		1.00	1.00	
Fr		0.945			0.906			0.997			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1746	0	1768	1663	0	1768	3456	0	1624	3397	0
Flt Permitted	0.700			0.745			0.445			0.259		
Satd. Flow (perm)	1291	1746	0	1375	1663	0	824	3456	0	441	3397	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			43			4			9	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		63.4			84.6			135.9			320.1	
Travel Time (s)		4.6			6.1			8.2			19.2	
Confl. Peds. (#/hr)	13		11	11		13	8		11	11		8
Confl. Bikes (#/hr)									1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	3%	1%	10%	4%	10%
Adj. Flow (vph)	9	12	7	40	33	55	6	983	21	35	529	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	19	0	40	88	0	6	1004	0	35	553	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

4: Merivale & Burris  
AM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

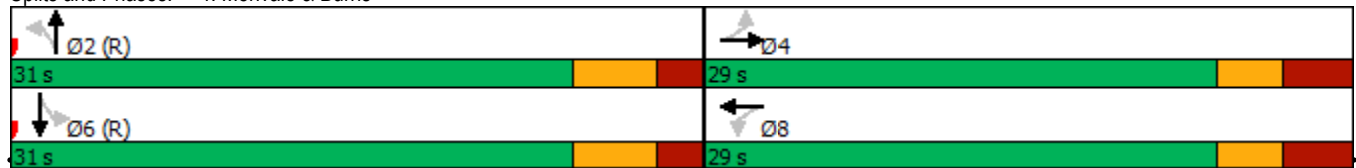


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		25.9	25.9		25.9	25.9	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	22.8	22.8		22.8	22.8		25.1	25.1		25.1	25.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		5.9	5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)	12.4	12.4		12.4	12.4		39.9	39.9		39.9	39.9	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.66	0.66		0.66	0.66	
v/c Ratio	0.03	0.05		0.14	0.23		0.01	0.44		0.12	0.24	
Control Delay	16.4	13.5		18.7	12.1		2.5	3.2		9.1	6.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.4	13.5		18.7	12.1		2.5	3.2		9.1	6.7	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		14.4			14.2			3.2			6.8	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	0.8	1.0		3.5	4.0		0.1	5.7		1.2	10.7	
Queue Length 95th (m)	2.7	3.9		7.4	9.8		m0.3	10.9		7.0	28.1	
Internal Link Dist (m)		39.4			60.6			111.9			296.1	
Turn Bay Length (m)				20.0			30.0			60.0		
Base Capacity (vph)	490	667		522	658		548	2300		293	2263	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.03		0.08	0.13		0.01	0.44		0.12	0.24	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 35 (58%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 55  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.44  
 Intersection Signal Delay: 5.4  
 Intersection LOS: A  
 Intersection Capacity Utilization 53.1%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Burris

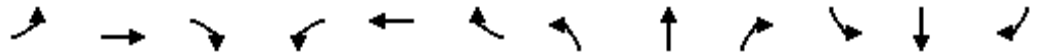


5: Merivale & Loblaws  
AM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	8	40	8	2	24	85	810	6	32	561	17
Future Volume (vph)	14	8	40	8	2	24	85	810	6	32	561	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	75.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			10.0			0.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99	0.98		0.99	0.98		1.00	1.00		0.99	1.00	
Fr t		0.875			0.862			0.999			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1600	0	1624	1578	0	1768	3424	0	1734	3390	0
Flt Permitted	0.740			0.726			0.434			0.339		
Satd. Flow (perm)	1369	1600	0	1230	1578	0	806	3424	0	616	3390	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			24			1				6
Link Speed (k/h)		50			50			60				60
Link Distance (m)		83.9			84.5			175.3				135.9
Travel Time (s)		6.0			6.1			10.5				8.2
Confl. Peds. (#/hr)	9		14	14		9	3		13	13		3
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	10%	1%	1%	1%	4%	30%	3%	5%	1%
Adj. Flow (vph)	14	8	40	8	2	24	85	810	6	32	561	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	48	0	8	26	0	85	816	0	32	578	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane								Yes				
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

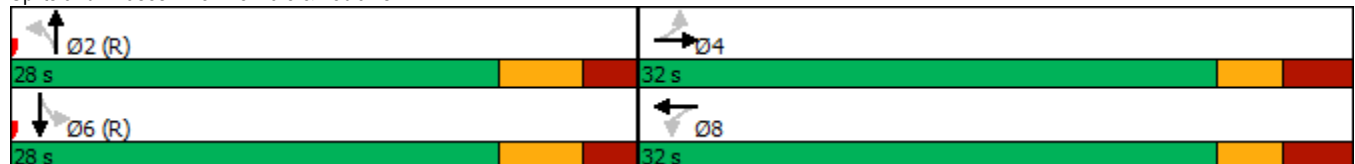


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		27.2	27.2		27.2	27.2	
Total Split (s)	32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		46.7%	46.7%		46.7%	46.7%	
Maximum Green (s)	25.8	25.8		25.8	25.8		21.8	21.8		21.8	21.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	10	10		10	10		10	10		10	10	
Act Effct Green (s)	13.2	13.2		13.2	13.2		43.4	43.4		43.4	43.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.72	0.72		0.72	0.72	
v/c Ratio	0.05	0.13		0.03	0.07		0.15	0.33		0.07	0.24	
Control Delay	15.5	7.3		15.1	7.2		9.2	7.6		6.3	4.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.5	7.3		15.1	7.2		9.2	7.6		6.3	4.5	
LOS	B	A		B	A		A	A		A	A	
Approach Delay		9.1			9.1			7.7			4.6	
Approach LOS		A			A			A			A	
Queue Length 50th (m)	1.2	0.7		0.7	0.2		3.0	18.0		0.9	8.0	
Queue Length 95th (m)	3.2	4.7		2.3	3.3		14.7	50.6		3.4	15.2	
Internal Link Dist (m)		59.9			60.5			151.3			111.9	
Turn Bay Length (m)							75.0			50.0		
Base Capacity (vph)	588	710		528	692		583	2477		445	2453	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.07		0.02	0.04		0.15	0.33		0.07	0.24	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 32 (53%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.33  
 Intersection Signal Delay: 6.6  
 Intersection Capacity Utilization 61.0%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service B

Splits and Phases: 5: Merivale & Loblaws



1: Merivale & Baseline  
PM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	994	19	269	1154	256	0	529	211	412	731	434
Future Volume (vph)	295	994	19	269	1154	256	0	529	211	412	731	434
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		35.0	115.0		0.0	0.0		70.0	125.0		0.0
Storage Lanes	1		1	1		0	0		1	2		0
Taper Length (m)	45.0			60.0			10.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor	0.99		0.92	0.98	0.98				0.90	0.93	0.96	
Frt			0.850		0.973				0.850		0.944	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1751	3502	1582	1768	3388	0	0	3502	1567	3397	3175	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1733	3502	1448	1735	3388	0	0	3502	1410	3153	3175	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		22				83			95
Link Speed (k/h)		60			60			60				60
Link Distance (m)		174.4			682.4			320.1				406.0
Travel Time (s)		10.5			40.9			19.2				24.4
Confl. Peds. (#/hr)	60		60	60		60	60		60	60		60
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%	0%	2%	2%	2%	3%	1%
Adj. Flow (vph)	295	994	19	269	1154	256	0	529	211	412	731	434
Shared Lane Traffic (%)												
Lane Group Flow (vph)	295	994	19	269	1410	0	0	529	211	412	1165	0
Enter Blocked Intersection	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			5.0				9.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2			2	1	1		2
Detector Template	Left	Thru	Right	Left	Thru			Thru	Right	Left		Thru
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5			30.5	6.1	6.1		30.5
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8			1.8	6.1	6.1		1.8
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA	Perm	Prot	NA			NA	pm+ov	Prot		NA
Protected Phases	5	2		1	6			8	1	7		4
Permitted Phases			2						8			
Detector Phase	5	2	2	1	6			8	1	7		4
Switch Phase												

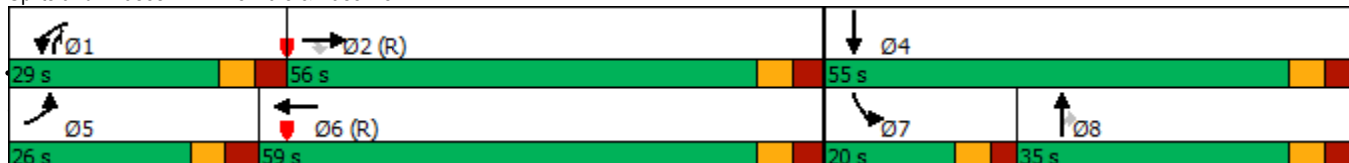


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0			10.0	5.0	5.0	10.0	
Minimum Split (s)	12.1	41.1	41.1	12.1	41.1			34.6	12.1	11.5	34.6	
Total Split (s)	26.0	56.0	56.0	29.0	59.0			35.0	29.0	20.0	55.0	
Total Split (%)	18.6%	40.0%	40.0%	20.7%	42.1%			25.0%	20.7%	14.3%	39.3%	
Maximum Green (s)	18.9	48.9	48.9	21.9	51.9			28.4	21.9	13.5	48.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7			3.7	3.7	3.7	3.7	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4			2.9	3.4	2.8	2.9	
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)	7.1	7.1	7.1	7.1	7.1			6.6	7.1	6.5	6.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag	Lead	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max			Ped	None	None	Ped	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		27.0	27.0		27.0			21.0			21.0	
Pedestrian Calls (#/hr)		20	20		30			30			20	
Act Effct Green (s)	18.9	48.9	48.9	21.9	51.9			28.4	49.8	13.5	48.4	
Actuated g/C Ratio	0.14	0.35	0.35	0.16	0.37			0.20	0.36	0.10	0.35	
v/c Ratio	1.25	0.81	0.03	0.97	1.11			0.75	0.36	1.26	1.01	
Control Delay	179.1	18.6	0.1	106.3	101.9			59.8	18.9	188.8	69.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	179.1	18.6	0.1	106.3	101.9			59.8	18.9	188.8	69.4	
LOS	F	B	A	F	F			E	B	F	E	
Approach Delay		54.6			102.6			48.1			100.6	
Approach LOS		D			F			D			F	
Queue Length 50th (m)	~91.9	99.6	0.0	69.1	~214.4			67.3	21.1	~67.6	~148.4	
Queue Length 95th (m)	m#101.6	m92.3	m0.0	#120.0	#254.2			86.0	38.8	#97.9	#193.5	
Internal Link Dist (m)		150.4			658.4			296.1			382.0	
Turn Bay Length (m)	50.0		35.0	115.0					70.0	125.0		
Base Capacity (vph)	236	1223	592	276	1269			710	579	327	1159	
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	1.25	0.81	0.03	0.97	1.11			0.75	0.36	1.26	1.01	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 77 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.26  
 Intersection Signal Delay: 82.6  
 Intersection LOS: F  
 Intersection Capacity Utilization 118.8%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Merivale & Baseline





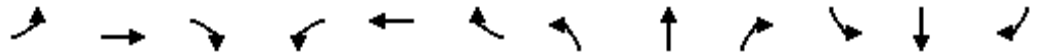
2: Clyde & Baseline  
PM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	922	220	127	1199	531	308	791	91	362	614	79
Future Volume (vph)	156	922	220	127	1199	531	308	791	91	362	614	79
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	85.0		30.0	165.0		0.0	75.0		0.0	100.0		0.0
Storage Lanes	1		0	1		0	2		0	2		0
Taper Length (m)	55.0			40.0			50.0			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	0.95	0.97	0.95	0.95
Ped Bike Factor	0.99	0.98		0.98	0.97		0.95	0.99		0.96	0.99	
Frt		0.971			0.954			0.985			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1751	3307	0	1768	3213	0	3431	3440	0	3431	3441	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1737	3307	0	1736	3213	0	3264	3440	0	3302	3441	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			61			8			9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		458.5			301.4			153.1			307.3	
Travel Time (s)		27.5			18.1			9.2			18.4	
Confl. Peds. (#/hr)	60		60	60		60	60		60	60		60
Confl. Bikes (#/hr)			4			7			7			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	2%	1%	3%	2%	1%	1%	4%	1%	1%	1%
Adj. Flow (vph)	156	922	220	127	1199	531	308	791	91	362	614	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	1142	0	127	1730	0	308	882	0	362	693	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			11.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	

2: Clyde & Baseline  
PM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

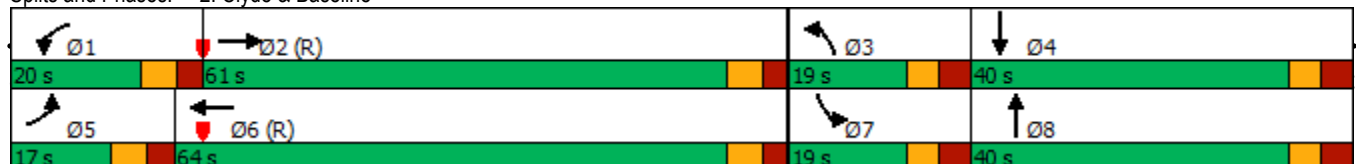


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.5	34.4		11.5	34.4		11.6	39.9		11.6	39.9	
Total Split (s)	17.0	61.0		20.0	64.0		19.0	40.0		19.0	40.0	
Total Split (%)	12.1%	43.6%		14.3%	45.7%		13.6%	28.6%		13.6%	28.6%	
Maximum Green (s)	10.5	54.6		13.5	57.6		12.4	33.1		12.4	33.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.7		2.8	2.7		3.3	3.6		3.3	3.6	
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	6.4		6.5	6.4		6.6	6.9		6.6	6.9	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		21.0			21.0			26.0			26.0	
Pedestrian Calls (#/hr)		30			30			30			30	
Act Effct Green (s)	10.5	55.3		12.8	57.6		12.4	33.1		12.4	33.1	
Actuated g/C Ratio	0.08	0.40		0.09	0.41		0.09	0.24		0.09	0.24	
v/c Ratio	1.19	0.87		0.78	1.27		1.02	1.08		1.19	0.85	
Control Delay	192.1	46.4		89.8	154.2		117.9	103.6		167.9	61.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	192.1	46.4		89.8	154.2		117.9	103.6		167.9	61.0	
LOS	F	D		F	F		F	F		F	E	
Approach Delay		63.9			149.8			107.3			97.7	
Approach LOS		E			F			F			F	
Queue Length 50th (m)	~47.8	138.6		29.4	~290.8		~41.8	~130.8		~57.3	88.4	
Queue Length 95th (m)	#89.1	166.8		m30.4	m#265.5		#70.1	#169.0		#86.4	#110.5	
Internal Link Dist (m)		434.5			277.4			129.1			283.3	
Turn Bay Length (m)	85.0			165.0			75.0			100.0		
Base Capacity (vph)	131	1319		170	1357		303	819		303	820	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.19	0.87		0.75	1.27		1.02	1.08		1.19	0.85	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 2 (1%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.27  
 Intersection Signal Delay: 109.6  
 Intersection LOS: F  
 Intersection Capacity Utilization 123.7%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clyde & Baseline



3: Merivale & Lotta & Clyde  
PM Peak Hour

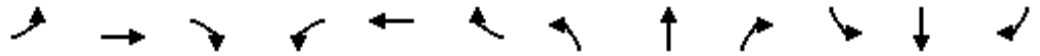
1500 Merivale Road  
2031/2038 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	44	35	925	120	166	71	837	698	67	719	27
Future Volume (vph)	32	44	35	925	120	166	71	837	698	67	719	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	95.0		40.0	80.0		0.0	95.0		0.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	25.0			10.0			30.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	0.99		0.98		0.98	0.99		0.95		1.00	
Frt		0.934				0.850			0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1701	0	3431	1861	1551	1751	3502	1567	1768	3511	0
Flt Permitted	0.950			0.950			0.223			0.177		
Satd. Flow (perm)	1760	1701	0	3364	1861	1524	407	3502	1493	329	3511	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				166			653			3
Link Speed (k/h)		40			60			60				60
Link Distance (m)		226.4			200.1			492.8				259.9
Travel Time (s)		20.4			12.0			29.6				15.6
Confl. Peds. (#/hr)	4		9	9		4	17		22	22		17
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	1%	1%	1%	3%	2%	2%	2%	1%	1%	1%
Adj. Flow (vph)	32	44	35	925	120	166	71	837	698	67	719	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	79	0	925	120	166	71	837	698	67	746	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	Right
Median Width(m)		5.0			9.0			5.0				4.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			5.0				5.0
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1		30.5
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1		1.8
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt		NA
Protected Phases	7	4		3	8		5	2		1		6
Permitted Phases						8	2		2	6		
Detector Phase	7	4		3	8	8	5	2	2	1		6
Switch Phase												

3: Merivale & Lotta & Clyde  
PM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

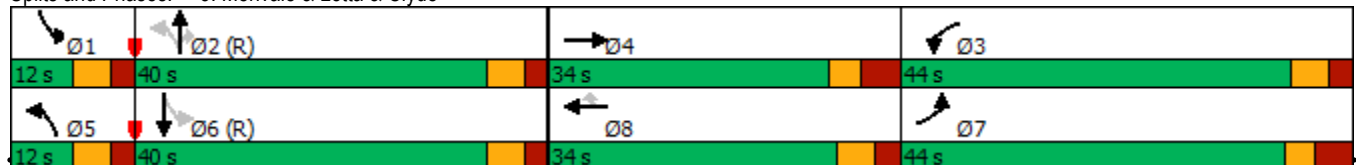


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2	33.2	11.0	30.0	30.0	11.0	30.0	
Total Split (s)	44.0	34.0		44.0	34.0	34.0	12.0	40.0	40.0	12.0	40.0	
Total Split (%)	33.8%	26.2%		33.8%	26.2%	26.2%	9.2%	30.8%	30.8%	9.2%	30.8%	
Maximum Green (s)	37.2	27.2		37.8	27.8	27.8	6.0	34.0	34.0	6.0	34.0	
Yellow Time (s)	3.0	3.0		3.7	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	2.5	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	0.0	
Total Lost Time (s)	6.8	6.8		6.2	6.2	6.2	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0		7.0	7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		20.0		20.0	20.0	20.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)		10		10	10	10		20	20		10	
Act Effct Green (s)	27.5	16.8		38.2	29.3	29.3	54.7	49.1	49.1	54.5	49.0	
Actuated g/C Ratio	0.21	0.13		0.29	0.23	0.23	0.42	0.38	0.38	0.42	0.38	
v/c Ratio	0.09	0.32		0.92	0.29	0.35	0.30	0.63	0.72	0.32	0.56	
Control Delay	34.3	35.1		59.6	39.8	11.6	28.5	39.7	9.4	29.2	38.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.3	35.1		59.6	39.8	11.6	28.5	39.7	9.4	29.2	38.0	
LOS	C	D		E	D	B	C	D	A	C	D	
Approach Delay		34.9			51.1			26.0			37.2	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	5.5	11.7		118.8	23.6	7.2	9.3	88.7	7.1	8.8	76.3	
Queue Length 95th (m)	12.7	22.7		#138.9	37.3	17.3	21.3	#134.1	54.6	20.3	108.4	
Internal Link Dist (m)		202.4			176.1			468.8			235.9	
Turn Bay Length (m)	35.0			95.0		40.0	80.0			95.0		
Base Capacity (vph)	542	378		1026	496	528	241	1322	970	211	1325	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.21		0.90	0.24	0.31	0.29	0.63	0.72	0.32	0.56	

Intersection Summary























Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 98 (75%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 36.8  
 Intersection LOS: D  
 Intersection Capacity Utilization 79.6%  
 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.

Splits and Phases: 3: Merivale & Lotta & Clyde



4: Merivale & Burris  
PM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	50	18	63	36	33	15	749	56	73	1089	46
Future Volume (vph)	26	50	18	63	36	33	15	749	56	73	1089	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	20.0		0.0	30.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			15.0			25.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.97	0.99		0.98	0.98		0.99	1.00		1.00	1.00	
Fr <sub>t</sub>		0.960			0.928			0.990			0.994	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1761	0	1768	1694	0	1768	3460	0	1768	3506	0
Fl <sub>t</sub> Permitted	0.712			0.713			0.210			0.332		
Satd. Flow (perm)	1291	1761	0	1307	1694	0	388	3460	0	615	3506	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			33			16			9	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		63.4			84.6			135.9			320.1	
Travel Time (s)		4.6			6.1			8.2			19.2	
Confl. Peds. (#/hr)	32		19	19		32	27		10	10		27
Confl. Bikes (#/hr)									1			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%	2%	1%	1%	1%	1%
Adj. Flow (vph)	26	50	18	63	36	33	15	749	56	73	1089	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	68	0	63	69	0	15	805	0	73	1135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

4: Merivale & Burris  
PM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

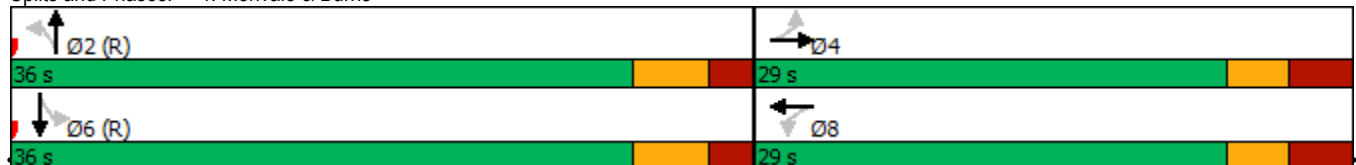


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		25.9	25.9		25.9	25.9	
Total Split (s)	29.0	29.0		29.0	29.0		36.0	36.0		36.0	36.0	
Total Split (%)	44.6%	44.6%		44.6%	44.6%		55.4%	55.4%		55.4%	55.4%	
Maximum Green (s)	22.8	22.8		22.8	22.8		30.1	30.1		30.1	30.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		5.9	5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	10	10		30	30		20	20		20	20	
Act Effct Green (s)	14.8	14.8		14.8	14.8		42.5	42.5		42.5	42.5	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.65	0.65		0.65	0.65	
v/c Ratio	0.09	0.16		0.21	0.17		0.06	0.35		0.18	0.49	
Control Delay	17.3	14.6		19.8	11.3		8.7	6.4		10.3	9.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.3	14.6		19.8	11.3		8.7	6.4		10.3	9.8	
LOS	B	B		B	B		A	A		B	A	
Approach Delay		15.4			15.4			6.5			9.8	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	2.5	4.9		6.3	3.5		0.5	15.4		2.6	27.3	
Queue Length 95th (m)	6.1	10.4		11.7	9.4		m2.7	32.1		11.8	66.0	
Internal Link Dist (m)		39.4			60.6			111.9			296.1	
Turn Bay Length (m)				20.0			30.0			60.0		
Base Capacity (vph)	452	629		458	615		254	2269		402	2296	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.11		0.14	0.11		0.06	0.35		0.18	0.49	

Intersection Summary

Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 27 (42%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.49  
 Intersection Signal Delay: 9.1  
 Intersection LOS: A  
 Intersection Capacity Utilization 72.3%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

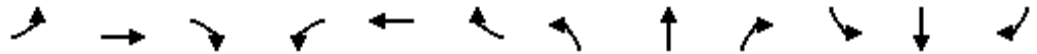
Splits and Phases: 4: Merivale & Burris



5: Merivale & Loblaws  
PM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	33	119	78	24	110	61	691	25	92	967	48
Future Volume (vph)	43	33	119	78	24	110	61	691	25	92	967	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	75.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			10.0			0.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	0.94		0.95	0.99		1.00	1.00		0.99	1.00	
Fr <sub>t</sub>		0.883			0.877			0.995			0.993	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1545	0	1768	1603	0	1768	3481	0	1768	3441	0
Fl <sub>t</sub> Permitted	0.671			0.660			0.231			0.361		
Satd. Flow (perm)	1245	1545	0	1164	1603	0	429	3481	0	667	3441	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			108			7			9	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		83.9			84.5			175.3			135.9	
Travel Time (s)		6.0			6.1			10.5			8.2	
Confl. Peds. (#/hr)	5		87	87		5	9		14	14		9
Confl. Bikes (#/hr)			1									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	4%	1%	1%	2%	1%	1%	3%	1%
Adj. Flow (vph)	43	33	119	78	24	110	61	691	25	92	967	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	152	0	78	134	0	61	716	0	92	1015	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane								Yes				
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

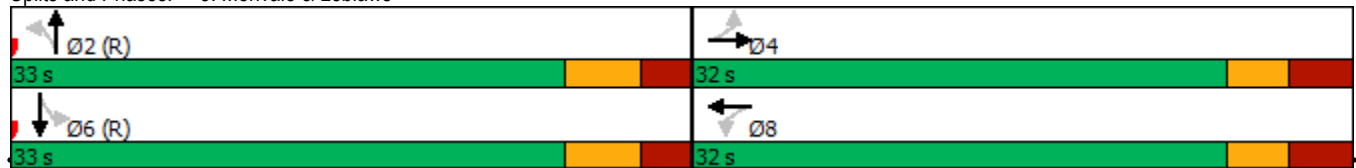


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		27.2	27.2		27.2	27.2	
Total Split (s)	32.0	32.0		32.0	32.0		33.0	33.0		33.0	33.0	
Total Split (%)	49.2%	49.2%		49.2%	49.2%		50.8%	50.8%		50.8%	50.8%	
Maximum Green (s)	25.8	25.8		25.8	25.8		26.8	26.8		26.8	26.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	60	60		10	10		10	10		10	10	
Act Effct Green (s)	19.5	19.5		19.5	19.5		37.6	37.6		37.6	37.6	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.58	0.58		0.58	0.58	
v/c Ratio	0.12	0.31		0.22	0.24		0.25	0.36		0.24	0.51	
Control Delay	14.1	12.2		15.9	5.4		15.2	11.3		6.0	6.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.1	12.2		15.9	5.4		15.2	11.3		6.0	6.0	
LOS	B	B		B	A		B	B		A	A	
Approach Delay		12.6			9.3			11.6			6.0	
Approach LOS		B			A			B			A	
Queue Length 50th (m)	2.9	7.5		5.4	1.7		4.3	27.8		7.0	48.7	
Queue Length 95th (m)	7.9	17.4		12.6	9.9		m10.9	58.5		m2.9	9.8	
Internal Link Dist (m)		59.9			60.5			151.3			111.9	
Turn Bay Length (m)							75.0			50.0		
Base Capacity (vph)	494	639		462	701		248	2016		386	1994	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.24		0.17	0.19		0.25	0.36		0.24	0.51	

Intersection Summary

Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 35 (54%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.51  
 Intersection Signal Delay: 8.8  
 Intersection LOS: A  
 Intersection Capacity Utilization 88.4%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.























Splits and Phases: 5: Merivale & Loblaws





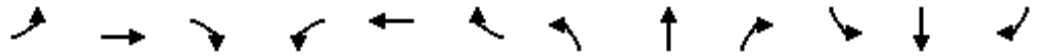
1: Merivale & Baseline  
AM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic (demand rationalization)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	1037	8	123	811	420	0	655	212	321	422	332
Future Volume (vph)	227	1037	8	123	811	420	0	655	212	321	422	332
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		35.0	115.0		0.0	0.0		70.0	125.0		0.0
Storage Lanes	1		1	1		0	0		1	2		0
Taper Length (m)	45.0			60.0			10.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor	0.99		0.93	0.99	0.98				0.91	0.95	0.96	
Fr			0.850		0.949				0.850		0.934	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1734	3502	1390	1685	3210	0	0	3435	1551	3364	3071	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1715	3502	1288	1660	3210	0	0	3435	1419	3195	3071	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		75				83		155	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		174.4			682.4			320.1			406.0	
Travel Time (s)		10.5			40.9			19.2			24.4	
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Confl. Bikes (#/hr)			1									
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	15%	6%	3%	3%	0%	4%	3%	3%	5%	4%
Adj. Flow (vph)	227	1037	8	123	811	420	0	655	212	321	422	332
Shared Lane Traffic (%)												
Lane Group Flow (vph)	227	1037	8	123	1231	0	0	655	212	321	754	0
Enter Blocked Intersection	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			5.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2			2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru			Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5			30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8			1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA			NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases			2						8			
Detector Phase	5	2	2	1	6			8	1	7	4	

1: Merivale & Baseline  
AM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic (demand rationalization)

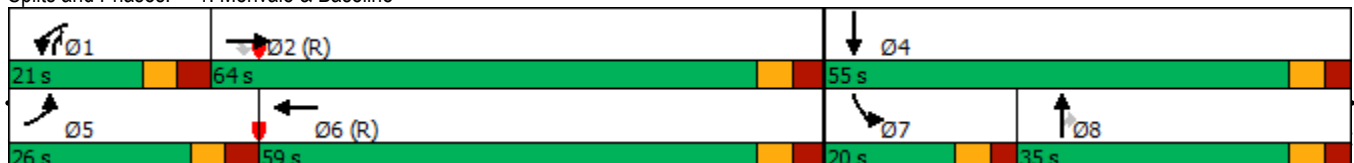


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0			10.0	5.0	5.0	10.0	
Minimum Split (s)	12.1	41.1	41.1	12.1	41.1			34.6	12.1	11.5	34.6	
Total Split (s)	26.0	64.0	64.0	21.0	59.0			35.0	21.0	20.0	55.0	
Total Split (%)	18.6%	45.7%	45.7%	15.0%	42.1%			25.0%	15.0%	14.3%	39.3%	
Maximum Green (s)	18.9	56.9	56.9	13.9	51.9			28.4	13.9	13.5	48.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7			3.7	3.7	3.7	3.7	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4			2.9	3.4	2.8	2.9	
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)	7.1	7.1	7.1	7.1	7.1			6.6	7.1	6.5	6.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag	Lead	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max			Max	None	None	Min	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		27.0	27.0		27.0			21.0			21.0	
Pedestrian Calls (#/hr)		20	20		30			30			20	
Act Effct Green (s)	18.9	57.7	57.7	13.1	51.9			28.4	41.0	13.5	48.4	
Actuated g/C Ratio	0.14	0.41	0.41	0.09	0.37			0.20	0.29	0.10	0.35	
v/c Ratio	0.97	0.72	0.01	0.78	1.00			0.94	0.44	0.99	0.65	
Control Delay	101.1	14.5	0.0	93.1	65.5			77.2	23.6	110.1	33.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	101.1	14.5	0.0	93.1	65.5			77.2	23.6	110.1	33.2	
LOS	F	B	A	F	E			E	C	F	C	
Approach Delay		29.9			68.0			64.1			56.1	
Approach LOS		C			E			E			E	
Queue Length 50th (m)	53.8	98.6	0.0	31.0	156.8			87.4	23.6	42.8	68.3	
Queue Length 95th (m)	m#69.2	m103.0	m0.0	#58.4	#203.5			#120.4	43.4	#71.1	88.5	
Internal Link Dist (m)		150.4			658.4			296.1			382.0	
Turn Bay Length (m)	50.0		35.0	115.0					70.0	125.0		
Base Capacity (vph)	234	1443	609	167	1237			696	494	324	1163	
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	0.97	0.72	0.01	0.74	1.00			0.94	0.43	0.99	0.65	

Intersection Summary

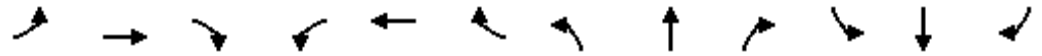
Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 66 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay: 53.9 Intersection LOS: D  
 Intersection Capacity Utilization 108.2% 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: 1: Merivale & Baseline



1: Merivale & Baseline  
PM Peak Hour

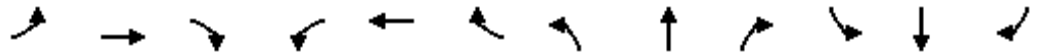
1500 Merivale Road  
2031/2038 Background Traffic (demand rationalization)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	994	19	269	1014	256	0	529	211	322	721	434
Future Volume (vph)	235	994	19	269	1014	256	0	529	211	322	721	434
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		35.0	115.0		0.0	0.0		70.0	125.0		0.0
Storage Lanes	1		1	1		0	0		1	2		0
Taper Length (m)	45.0			60.0			10.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor	0.99		0.92	0.98	0.98				0.90	0.93	0.96	
Frt			0.850		0.970				0.850		0.944	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1751	3502	1582	1768	3372	0	0	3502	1567	3397	3174	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1729	3502	1448	1735	3372	0	0	3502	1410	3153	3174	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		25				83			98
Link Speed (k/h)		60			60			60				60
Link Distance (m)		174.4			682.4			320.1				406.0
Travel Time (s)		10.5			40.9			19.2				24.4
Confl. Peds. (#/hr)	60		60	60		60	60		60	60		60
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%	0%	2%	2%	2%	3%	1%
Adj. Flow (vph)	235	994	19	269	1014	256	0	529	211	322	721	434
Shared Lane Traffic (%)												
Lane Group Flow (vph)	235	994	19	269	1270	0	0	529	211	322	1155	0
Enter Blocked Intersection	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			5.0				9.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2			2	1	1		2
Detector Template	Left	Thru	Right	Left	Thru			Thru	Right	Left		Thru
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5			30.5	6.1	6.1		30.5
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8			1.8	6.1	6.1		1.8
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA	Perm	Prot	NA			NA	pm+ov	Prot		NA
Protected Phases	5	2		1	6			8	1	7		4
Permitted Phases			2						8			
Detector Phase	5	2	2	1	6			8	1	7		4
Switch Phase												

1: Merivale & Baseline  
PM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic (demand rationalization)



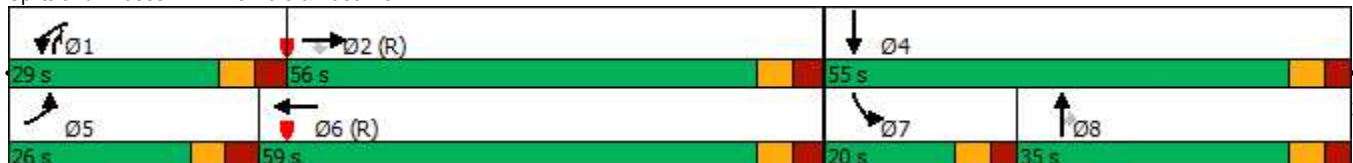
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0			10.0	5.0	5.0	10.0	
Minimum Split (s)	12.1	41.1	41.1	12.1	41.1			34.6	12.1	11.5	34.6	
Total Split (s)	26.0	56.0	56.0	29.0	59.0			35.0	29.0	20.0	55.0	
Total Split (%)	18.6%	40.0%	40.0%	20.7%	42.1%			25.0%	20.7%	14.3%	39.3%	
Maximum Green (s)	18.9	48.9	48.9	21.9	51.9			28.4	21.9	13.5	48.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7			3.7	3.7	3.7	3.7	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4			2.9	3.4	2.8	2.9	
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)	7.1	7.1	7.1	7.1	7.1			6.6	7.1	6.5	6.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag	Lead	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max			Ped	None	None	Ped	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		27.0	27.0		27.0			21.0			21.0	
Pedestrian Calls (#/hr)		20	20		30			30			20	
Act Effct Green (s)	18.9	48.9	48.9	21.9	51.9			28.4	49.8	13.5	48.4	
Actuated g/C Ratio	0.14	0.35	0.35	0.16	0.37			0.20	0.36	0.10	0.35	
v/c Ratio	1.00	0.81	0.03	0.97	1.00			0.75	0.36	0.98	0.99	
Control Delay	108.4	20.7	0.1	106.3	69.1			59.8	18.9	108.5	66.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	108.4	20.7	0.1	106.3	69.1			59.8	18.9	108.5	66.8	
LOS	F	C	A	F	E			E	B	F	E	
Approach Delay		36.9			75.6			48.1			75.9	
Approach LOS		D			E			D			E	
Queue Length 50th (m)	56.2	105.3	0.0	69.1	~168.6			67.3	21.1	42.9	144.6	
Queue Length 95th (m)	m#73.7	m112.5	m0.0	#120.0	#214.7			86.0	38.8	#71.2	#190.0	
Internal Link Dist (m)		150.4			658.4			296.1			382.0	
Turn Bay Length (m)	50.0		35.0	115.0					70.0	125.0		
Base Capacity (vph)	236	1223	592	276	1265			710	579	327	1161	
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	1.00	0.81	0.03	0.97	1.00			0.75	0.36	0.98	0.99	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 77 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay: 62.0  
 Intersection Capacity Utilization 108.6%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service G

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

Splits and Phases: 1: Merivale & Baseline



2: Clyde & Baseline  
PM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic (demand rationalization)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	922	220	127	839	531	298	721	91	302	614	79
Future Volume (vph)	126	922	220	127	839	531	298	721	91	302	614	79
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	85.0		30.0	165.0		0.0	75.0		0.0	100.0		0.0
Storage Lanes	1		0	1		0	2		0	2		0
Taper Length (m)	55.0			40.0			50.0			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	0.95	0.97	0.95	0.95
Ped Bike Factor	0.99	0.98		0.98	0.96		0.95	0.99		0.96	0.99	
Fr <sub>t</sub>		0.971			0.942			0.983			0.983	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1751	3307	0	1768	3148	0	3431	3429	0	3431	3441	0
Fl <sub>t</sub> Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1727	3307	0	1736	3148	0	3264	3429	0	3289	3441	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			122			9			9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		458.5			301.4			153.1			307.3	
Travel Time (s)		27.5			18.1			9.2			18.4	
Confl. Peds. (#/hr)	60		60	60		60	60		60	60		60
Confl. Bikes (#/hr)			4			7			7			4
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	2%	1%	3%	2%	1%	1%	4%	1%	1%	1%
Adj. Flow (vph)	126	922	220	127	839	531	298	721	91	302	614	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	1142	0	127	1370	0	298	812	0	302	693	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			11.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	

2: Clyde & Baseline  
PM Peak Hour

1500 Merivale Road  
2031/2038 Background Traffic (demand rationalization)

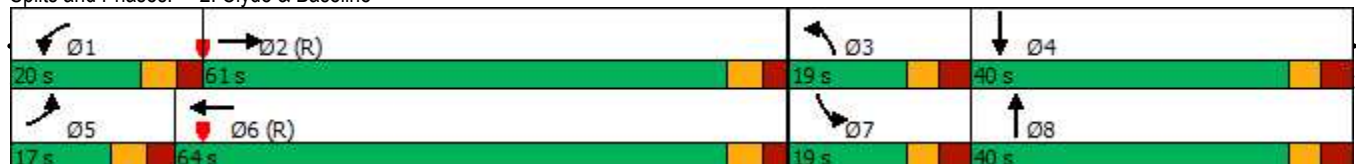


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.5	34.4		11.5	34.4		11.6	39.9		11.6	39.9	
Total Split (s)	17.0	61.0		20.0	64.0		19.0	40.0		19.0	40.0	
Total Split (%)	12.1%	43.6%		14.3%	45.7%		13.6%	28.6%		13.6%	28.6%	
Maximum Green (s)	10.5	54.6		13.5	57.6		12.4	33.1		12.4	33.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.7		2.8	2.7		3.3	3.6		3.3	3.6	
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	6.4		6.5	6.4		6.6	6.9		6.6	6.9	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		21.0			21.0			26.0			26.0	
Pedestrian Calls (#/hr)		30			30			30			30	
Act Effct Green (s)	10.5	55.3		12.8	57.6		12.4	33.1		12.4	33.1	
Actuated g/C Ratio	0.08	0.40		0.09	0.41		0.09	0.24		0.09	0.24	
v/c Ratio	0.96	0.87		0.78	1.00		0.98	0.99		1.00	0.85	
Control Delay	132.5	46.4		88.3	41.8		110.6	82.4		113.8	61.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	132.5	46.4		88.3	41.8		110.6	82.4		113.8	61.0	
LOS	F	D		F	D		F	F		F	E	
Approach Delay		55.0			45.8			90.0			77.0	
Approach LOS		D			D			F			E	
Queue Length 50th (m)	32.6	138.6		29.5	~176.2		39.7	108.6		40.3	88.4	
Queue Length 95th (m)	#70.0	166.8		m30.4	m#177.6		#67.1	#148.8		#68.1	#110.5	
Internal Link Dist (m)		434.5			277.4			129.1			283.3	
Turn Bay Length (m)	85.0			165.0			75.0			100.0		
Base Capacity (vph)	131	1319		170	1366		303	817		303	820	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.96	0.87		0.75	1.00		0.98	0.99		1.00	0.85	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 2 (1%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay: 64.6  
 Intersection LOS: E  
 Intersection Capacity Utilization 109.7%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clyde & Baseline



## **APPENDIX M**

---

### Transportation Demand Management Checklists

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

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

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



TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		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 <i>Official Plan policy 4.3.10</i> )	<input checked="" type="checkbox"/>
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 <i>Official Plan policy 4.3.10</i> )	<input checked="" type="checkbox"/>
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 <i>Official Plan policy 4.3.11</i> )	<input checked="" type="checkbox"/>
BASIC	1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	<input checked="" type="checkbox"/>
BASIC	1.2.7 Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	<input type="checkbox"/>
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	<input type="checkbox"/>
<b>1.3 Amenities for walking &amp; cycling</b>		
BASIC	1.3.1 Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	<input checked="" type="checkbox"/>
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)	<input type="checkbox"/>

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

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

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

**TDM-Supportive Development Design and Infrastructure Checklist:**  
*Residential Developments (multi-family or condominium)*

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

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>1. WALKING &amp; CYCLING: ROUTES</b>		
<b>1.1 Building location &amp; access points</b>		
BASIC	1.1.1 Locate building close to the street, and do not locate parking areas between the street and building entrances	<input checked="" type="checkbox"/> - buildings will be located close to the proposed internal streets
BASIC	1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	<input checked="" type="checkbox"/>
BASIC	1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	<input checked="" type="checkbox"/>
<b>1.2 Facilities for walking &amp; cycling</b>		
REQUIRED	1.2.1 Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations <i>(see Official Plan policy 4.3.3)</i>	<input checked="" type="checkbox"/>
REQUIRED	1.2.2 Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible <i>(see Official Plan policy 4.3.12)</i>	<input checked="" type="checkbox"/>

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

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>2. WALKING &amp; CYCLING: END-OF-TRIP FACILITIES</b>		
<b>2.1 Bicycle parking</b>		
REQUIRED	2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see <i>Official Plan policy 4.3.6</i> )	<input checked="" type="checkbox"/>
REQUIRED	2.1.2 Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (see <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
REQUIRED	2.1.3 Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
BASIC	2.1.4 Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	<input type="checkbox"/>
<b>2.2 Secure bicycle parking</b>		
REQUIRED	2.2.1 Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
BETTER	2.2.2 Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	<input type="checkbox"/>
<b>2.3 Bicycle repair station</b>		
BETTER	2.3.1 Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	<input type="checkbox"/>
<b>3. TRANSIT</b>		
<b>3.1 Customer amenities</b>		
BASIC	3.1.1 Provide shelters, lighting and benches at any on-site transit stops	<input type="checkbox"/>
BASIC	3.1.2 Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	<input type="checkbox"/>
BETTER	3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>4. RIDESHARING</b>		
<b>4.1 Pick-up &amp; drop-off facilities</b>		
BASIC	4.1.1 Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	<input type="checkbox"/>
<b>5. CARSHARING &amp; BIKESHARING</b>		
<b>5.1 Carshare parking spaces</b>		
BETTER	5.1.1 Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses (see <i>Zoning By-law Section 94</i> )	<input type="checkbox"/>
<b>5.2 Bikeshare station location</b>		
BETTER	5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	<input type="checkbox"/>
<b>6. PARKING</b>		
<b>6.1 Number of parking spaces</b>		
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	<input checked="" type="checkbox"/>
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	<input type="checkbox"/>
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 <i>Zoning By-law Section 104</i> )	<input type="checkbox"/>
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 <i>Zoning By-law Section 111</i> )	<input type="checkbox"/>
<b>6.2 Separate long-term &amp; short-term parking areas</b>		
BETTER	6.2.1 Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	<input type="checkbox"/>



**TDM Measures Checklist:**  
*Residential Developments (multi-family, condominium or subdivision)*

<b>Legend</b>	
<b>BASIC</b>	The measure is generally feasible and effective, and in most cases would benefit the development and its users
<b>BETTER</b>	The measure could maximize support for users of sustainable modes, and optimize development performance
★	The measure is one of the most dependably effective tools to encourage the use of sustainable modes

TDM measures: <i>Residential developments</i>		Check if proposed & add descriptions
<b>1. TDM PROGRAM MANAGEMENT</b>		
<b>1.1 Program coordinator</b>		
BASIC	★	1.1.1 Designate an internal coordinator, or contract with an external coordinator <input type="checkbox"/>
<b>1.2 Travel surveys</b>		
BETTER		1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress <input type="checkbox"/>
<b>2. WALKING AND CYCLING</b>		
<b>2.1 Information on walking/cycling routes &amp; destinations</b>		
BASIC		2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances ( <i>multi-family, condominium</i> ) <input checked="" type="checkbox"/>
<b>2.2 Bicycle skills training</b>		
BETTER		2.2.1 Offer on-site cycling courses for residents, or subsidize off-site courses <input type="checkbox"/>

TDM measures: <i>Residential developments</i>		Check if proposed & add descriptions
<b>3. TRANSIT</b>		
<b>3.1 Transit information</b>		
BASIC	3.1.1 Display relevant transit schedules and route maps at entrances ( <i>multi-family, condominium</i> )	<input checked="" type="checkbox"/>
BETTER	3.1.2 Provide real-time arrival information display at entrances ( <i>multi-family, condominium</i> )	<input type="checkbox"/>
<b>3.2 Transit fare incentives</b>		
BASIC ★	3.2.1 Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	<input type="checkbox"/>
BETTER	3.2.2 Offer at least one year of free monthly transit passes on residence purchase/move-in	<input type="checkbox"/>
<b>3.3 Enhanced public transit service</b>		
BETTER ★	3.3.1 Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels ( <i>subdivision</i> )	<input type="checkbox"/>
<b>3.4 Private transit service</b>		
BETTER	3.4.1 Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	<input type="checkbox"/>
<b>4. CARSHARING &amp; BIKESHARING</b>		
<b>4.1 Bikeshare stations &amp; memberships</b>		
BETTER	4.1.1 Contract with provider to install on-site bikeshare station ( <i>multi-family</i> )	<input type="checkbox"/>
BETTER	4.1.2 Provide residents with bikeshare memberships, either free or subsidized ( <i>multi-family</i> )	<input type="checkbox"/>
<b>4.2 Carshare vehicles &amp; memberships</b>		
BETTER	4.2.1 Contract with provider to install on-site carshare vehicles and promote their use by residents	<input checked="" type="checkbox"/>
BETTER	4.2.2 Provide residents with carshare memberships, either free or subsidized	<input type="checkbox"/>
<b>5. PARKING</b>		
<b>5.1 Priced parking</b>		
BASIC ★	5.1.1 Unbundle parking cost from purchase price ( <i>condominium</i> )	<input type="checkbox"/>
BASIC ★	5.1.2 Unbundle parking cost from monthly rent ( <i>multi-family</i> )	<input checked="" type="checkbox"/>

TDM measures: <i>Residential developments</i>		Check if proposed & add descriptions
<b>6. TDM MARKETING &amp; COMMUNICATIONS</b>		
<b>6.1 Multimodal travel information</b>		
<b>BASIC</b> ★	6.1.1 Provide a multimodal travel option information package to new residents	<input checked="" type="checkbox"/>
<b>6.2 Personalized trip planning</b>		
<b>BETTER</b> ★	6.2.1 Offer personalized trip planning to new residents	<input type="checkbox"/>

## **APPENDIX N**

---

MMLOS Analysis

## Segment MMLOS Analysis

This section provides a review of the boundary streets Merivale Road and Clyde Avenue, using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines*, produced by IBI Group in October 2015, were used to evaluate the levels of service for each alternative mode of transportation on the boundary streets, based on the targets for areas 'within 600m of a rapid transit station.'

Exhibit 4 of the MMLOS Guidelines has been used to evaluate the segment pedestrian level of service (PLOS) of the boundary streets. Exhibit 22 of the MMLOS Guidelines suggest a target PLOS A for all roadways within 600m of a rapid transit station. The results of the segment PLOS analysis are summarized in **Table 1**.

Exhibit 11 of the MMLOS Guidelines has been used to evaluate the segment bicycle level of service (BLOS) of the boundary streets. Within 600m of a rapid transit station, Exhibit 22 of the MMLOS Guidelines suggest a target BLOS C for arterial roadways with a Spine Cycling Route designation. The results of the segment BLOS analysis are summarized in **Table 2**.

Exhibit 15 of the MMLOS Guidelines has been used to evaluate the segment transit level of service (TLOS) of the boundary streets. While Merivale Road and Clyde Avenue do not have TLOS targets along the site's frontage, they have been evaluated for TLOS as there is currently transit service on both roadways. The results of the segment TLOS analysis are summarized in **Table 3**.

Exhibit 20 of the MMLOS Guidelines has been used to evaluate the segment truck level of service (TkLOS) of the boundary streets. Within 600m of a rapid transit station, Exhibit 22 of the MMLOS Guidelines suggest a target TkLOS D for arterial roadways with a truck route designation. The results of the segment TkLOS analysis are summarized in **Table 4**.

Table 1: PLOS Segment Analysis

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed <sup>(1)</sup>	PLOS
<b>Merivale Road (north side, Clyde Avenue to Loblaws Plaza)</b>					
2.0m	0m	> 3,000 vpd	No	70 km/h	F
<b>Merivale Road (south side, Clyde Avenue to Loblaws Plaza)</b>					
2.0m	0m	> 3,000 vpd	No	70 km/h	F
<b>Clyde Avenue (east side, Baseline Road to Merivale Road)</b>					
2.0m	0m	> 3,000 vpd	No	70 km/h	F
<b>Clyde Avenue (west side, Baseline Road to Merivale Road)</b>					
2.0m	0m	> 3,000 vpd	No	70 km/h	F

1. Operating speed taken as the speed limit plus 10 km/h.

Table 2: BLOS Segment Analysis

Road Class	Type of Route	Type of Bikeway	Travel Lanes	Posted Speed	BLOS
<b>Merivale Road (Clyde Avenue to Loblaws Plaza)</b>					
Arterial	Spine Route	Mixed Traffic	4	60 km/h	F
<b>Clyde Avenue (Baseline Road to Merivale Road)</b>					
Arterial	Spine Route	Mixed Traffic	4	60 km/h	F

Table 3: TLOS Segment Analysis

Facility Type	Exposure to Congestion Delay, Friction, and Incidents			TLOS
	Congestion	Friction	Incident Potential	
<b>Merivale Road (Clyde Avenue to Loblaws Plaza)</b>				
Mixed Traffic – Moderate Parking/Driveway Friction	Yes	Medium	Medium	E
<b>Clyde Avenue (Baseline Road to Merivale Road)</b>				
Mixed Traffic – Limited Parking/Driveway Friction	Yes	Low	Medium	D

Table 4: TkLOS Segment Analysis

Curb Lane Width	Number of Travel Lanes Per Direction	TkLOS
<b>Merivale Road (Clyde Avenue to Loblaws Plaza)</b>		
> 3.7m	2	A
<b>Clyde Avenue (Baseline Road to Merivale Road)</b>		
> 3.7m	2	A

## Intersection MMLOS Analysis

The following is a review of the MMLOS of the signalized intersections within the study area, using complete streets principles. All of these intersections have been evaluated using the MMLOS targets for intersections within 600m of a rapid transit station, and are based on existing conditions.

Exhibit 5 of the Addendum to the MMLOS Guidelines has been used to evaluate the existing PLOS at the intersections listed above. Exhibit 22 of the MMLOS Guidelines suggests a target PLOS A for all roadways within 600m of a rapid transit station. The results of the intersection PLOS analysis are summarized in **Table 5** through **Table 9**.

Exhibit 12 of the MMLOS Guidelines has been used to evaluate the existing BLOS at the intersections listed above. Within 600m of a rapid transit station, Exhibit 22 of the MMLOS Guidelines suggests a target BLOS A for Crosstown Bikeways (Baseline Road), a target BLOS B for Local Cycling Routes (Burriss Lane), a target BLOS C for Spine Cycling Routes (Merivale Road, Clyde Avenue), and a target BLOS D for roadways with no cycling route designation (Lotta Avenue, Loblaw's Plaza). The results of the intersection BLOS analysis are summarized in **Table 10**.

Exhibit 16 of the MMLOS Guidelines has been used to evaluate the existing TLOS at the intersections listed above. Exhibit 22 of the MMLOS Guidelines identifies a target TLOS A for Rapid Transit Corridors (Baseline Road), a target TLOS D for Transit Priority Corridors with Isolated Measures (Merivale Road north of Baseline Road), and does not identify a target TLOS for roadways without a Rapid Transit or Transit Priority designation (Clyde Avenue, Lotta Avenue, Burriss Lane, Loblaw's Plaza). The TLOS has been evaluated for every approach that is currently used by transit. The results of the intersection TLOS analysis are summarized in **Table 11**.

Exhibit 21 of the MMLOS Guidelines has been used to evaluate the existing TkLOS at the intersections listed above. Within 600m of a rapid transit station, Exhibit 22 of the MMLOS Guidelines identifies a target TkLOS D for arterial truck routes (Baseline Road, Merivale Road, Clyde Avenue south of Baseline Road), and does not identify a target TkLOS for the other study area roadways. The results of the intersection TkLOS analysis are summarized in **Table 12**.

**Table 5: PLOS Intersection Analysis – Baseline Road/Merivale Road**

CRITERIA	North Approach		South Approach		East Approach		West Approach	
<b>PETSI SCORE</b>								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	-10	No	6	No	-10	No	23
Lanes Crossed (3.5m Lane Width)	10 +		9		10 +		8	
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Protected	0	Protected	0	Protected	0	No Left Turn/Prohibited	0
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Perm + Prot	-5	Permissive or Yield	-5
Right Turn on Red	N/A	0	RTOR Allowed	-3	N/A	0	N/A	0
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 10m to 15m	-6	> 10m to 15m	-6	> 10m to 15m	-6	> 10m to 15m	-6
Parallel Right Turn Channel	Conventional without Receiving	0	Conventional without Receiving	0	No Right Turn Channel	-4	Conventional with Receiving	-3
Perpendicular Radius	> 10m to 15m	-6	N/A	0	> 10m to 15m	-6	> 10m to 15m	-6
Perpendicular Right Turn Channel	Conventional with Receiving	-3	N/A	0	Conventional without Receiving	0	Conventional without Receiving	0
<i>CROSSING TREATMENT</i>								
Treatment	Zebra Stripe	-4	Zebra Stripe	-4	Zebra Stripe	-4	Zebra Stripe	-4
	<b>PETSI SCORE</b>	<b>-36</b>		<b>-14</b>		<b>-37</b>		<b>-3</b>
	<b>LOS</b>	<b>F</b>		<b>F</b>		<b>F</b>		<b>F</b>
<b>DELAY SCORE</b>								
Cycle Length		140		140		140		140
Pedestrian Walk Time		25.9		25.9		7.4		27.4
	<b>DELAY SCORE</b>	<b>46.5</b>		<b>46.5</b>		<b>62.8</b>		<b>45.3</b>
	<b>LOS</b>	<b>E</b>		<b>E</b>		<b>F</b>		<b>E</b>
	<b>OVERALL</b>	<b>F</b>		<b>F</b>		<b>F</b>		<b>F</b>

**Table 6: PLOS Intersection Analysis – Baseline Road/Clyde Avenue**

CRITERIA	North Approach		South Approach		East Approach		West Approach	
<b>PETSI SCORE</b>								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	6	No	6	No	-10	No	-10
Lanes Crossed (3.5m Lane Width)	9		9		10 +		10 +	
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Protected	0	Protected	0	Protected	0	Protected	0
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	N/A	0	N/A	0
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 10m to 15m	-6	> 10m to 15m	-6	> 10m to 15m	-6	> 10m to 15m	-6
Parallel Right Turn Channel	Conventional without Receiving	0	Conventional without Receiving	0	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	> 10m to 15m	-6	> 10m to 15m	-6
Perpendicular Right Turn Channel	N/A	0	N/A	0	Conventional without Receiving	0	Conventional without Receiving	0
<i>CROSSING TREATMENT</i>								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
	<b>PETSI SCORE</b>	<b>-17</b>		<b>-17</b>		<b>-40</b>		<b>-40</b>
	<b>LOS</b>	<b>F</b>		<b>F</b>		<b>F</b>		<b>F</b>
<b>DELAY SCORE</b>								
Cycle Length		130		130		130		130
Pedestrian Walk Time		23.6		23.6		7.1		7.1
	<b>DELAY SCORE</b>	<b>43.5</b>		<b>43.5</b>		<b>58.1</b>		<b>58.1</b>
	<b>LOS</b>	<b>E</b>		<b>E</b>		<b>E</b>		<b>E</b>
	<b>OVERALL</b>	<b>F</b>		<b>F</b>		<b>F</b>		<b>F</b>



**Table 7: PLOS Intersection Analysis – Clyde Avenue/Merivale Road/Lotta Avenue**

CRITERIA	North Approach		South Approach		East Approach		West Approach	
<b>PETSI SCORE</b>								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	23	No	39	No	39	No	39
Lanes Crossed (3.5m Lane Width)	8		7		7			
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Protected	0	Protected	0	Perm + Prot	-8	Perm + Prot	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	N/A	0	N/A	0	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 25m	-9	> 10m to 15m	-6	> 25m	-9	> 10m to 15m	-6
Parallel Right Turn Channel	Conventional without Receiving	0	No Right Turn Channel	-4	Conventional with Receiving	-3	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	> 25m	-9	> 25m	-9	N/A	0
Perpendicular Right Turn Channel	N/A	0	Conventional with Receiving	-3	Conventional without Receiving	0	N/A	0
<i>CROSSING TREATMENT</i>								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
	<b>PETSI SCORE</b>	<b>-3</b>		<b>3</b>		<b>-4</b>		<b>4</b>
	<b>LOS</b>	<b>F</b>		<b>F</b>		<b>F</b>		<b>F</b>
<b>DELAY SCORE</b>								
Cycle Length		130		130		130		130
Pedestrian Walk Time		7.8		7.2		17.0		17.0
	<b>DELAY SCORE</b>	<b>57.4</b>		<b>58.0</b>		<b>49.1</b>		<b>49.1</b>
	<b>LOS</b>	<b>E</b>		<b>E</b>		<b>E</b>		<b>E</b>
	<b>OVERALL</b>	<b>F</b>		<b>F</b>		<b>F</b>		<b>F</b>

**Table 8: PLOS Intersection Analysis – Merivale Road/Burris Lane**

CRITERIA	North Approach		South Approach		East Approach		West Approach	
<b>PETSI SCORE</b>								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	55	No	72	No	88	No	88
Lanes Crossed (3.5m Lane Width)	6		5		4			
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Permissive	-8	Permissive	-8	Permissive	-8	Permissive	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 5m to 10m	-5	> 5m to 10m	-5	> 5m to 10m	-5	> 5m to 10m	-5
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0
<i>CROSSING TREATMENT</i>								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
	<b>PETSI SCORE</b>	<b>21</b>		<b>38</b>		<b>54</b>		<b>54</b>
	<b>LOS</b>	<b>F</b>		<b>E</b>		<b>D</b>		<b>D</b>
<b>DELAY SCORE</b>								
Cycle Length		65		65		60		60
Pedestrian Walk Time		7.8		7.8		12.1		12.1
	<b>DELAY SCORE</b>	<b>25.2</b>		<b>25.2</b>		<b>19.1</b>		<b>19.1</b>
	<b>LOS</b>	<b>C</b>		<b>C</b>		<b>B</b>		<b>B</b>
	<b>OVERALL</b>	<b>F</b>		<b>E</b>		<b>D</b>		<b>D</b>

**Table 9: PLOS Intersection Analysis – Merivale Road/Loblaws Plaza**

CRITERIA	North Approach		South Approach		East Approach		West Approach	
<b>PETSI SCORE</b>								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	55	No	39	No	72	No	72
Lanes Crossed (3.5m Lane Width)	6		7		5		5	
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Permissive	-8	Permissive	-8	Permissive	-8	Permissive	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 3m to 5m	-4	> 3m to 5m	-4	> 10m to 15m	-6	> 5m to 10m	-5
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0
<i>CROSSING TREATMENT</i>								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
	<b>PETSI SCORE</b>	<b>22</b>		<b>6</b>		<b>37</b>		<b>38</b>
	<b>LOS</b>	<b>F</b>		<b>F</b>		<b>E</b>		<b>E</b>
<b>DELAY SCORE</b>								
Cycle Length		65		65		60		60
Pedestrian Walk Time		6.8		6.8		7.8		7.8
	<b>DELAY SCORE</b>	<b>26.1</b>		<b>26.1</b>		<b>22.7</b>		<b>22.7</b>
	<b>LOS</b>	<b>C</b>		<b>C</b>		<b>C</b>		<b>C</b>
	<b>OVERALL</b>	<b>F</b>		<b>F</b>		<b>E</b>		<b>E</b>

Table 10: BLOS Intersection Analysis

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
<b>Baseline Road/Merivale Road</b>				
North Approach	Pocket Lane	Right Turn Lane Characteristics	Right turn lane introduced to the right; lane > 50m, turning speed $\leq$ 30 km/h	<b>D</b>
		Left Turn Accommodation	Dual left turn lanes	<b>F</b>
South Approach	Pocket Lane	Right Turn Lane Characteristics	Right turn lane introduced to the right; length > 50m, turning speed $\leq$ 30 km/h	<b>D</b>
		Left Turn Accommodation	No left turns	-
East Approach	Pocket Lane	Right Turn Lane Characteristics	Right turn lane introduced to the right; lane $\leq$ 50m, turning speed $\leq$ 25 km/h	<b>B</b>
		Left Turn Accommodation	Two lanes crossed, $\geq$ 50 km/h	<b>F</b>
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane < 50m, turning speed $\leq$ 25 km/h	<b>D</b>
		Left Turn Accommodation	Two lanes crossed, $\geq$ 50 km/h	<b>F</b>
<b>Baseline Road/Clyde Avenue</b>				
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	<b>A</b>
		Left Turn Accommodation	Dual left turn lanes	<b>F</b>
South Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	<b>A</b>
		Left Turn Accommodation	Dual left turn lanes	<b>F</b>
East Approach	Pocket Lane	Right Turn Lane Characteristics	Bike lane shifts to the left of the right turn lane, turning speed $\leq$ 25 km/h	<b>D</b>
		Left Turn Accommodation	Three lanes crossed, $\geq$ 50 km/h	<b>F</b>
West Approach	Pocket Lane	Right Turn Lane Characteristics	Right turn lane introduced to the right; lane $\leq$ 50m, turning speed $\leq$ 25 km/h	<b>B</b>
		Left Turn Accommodation	Two lanes crossed, $\geq$ 50 km/h	<b>F</b>
<b>Clyde Avenue/Merivale Road/Lotta Avenue</b>				
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	<b>A</b>
		Left Turn Accommodation	Two lanes crossed, $\geq$ 50 km/h	<b>F</b>
South Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane > 50m	<b>F</b>
		Left Turn Accommodation	Two lanes crossed, $\geq$ 50 km/h	<b>F</b>
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane < 50m, turning speed $\leq$ 25 km/h	<b>D</b>
		Left Turn Accommodation	Dual left turn lanes	<b>F</b>
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	<b>A</b>
		Left Turn Accommodation	One lane crossed, $\leq$ 40 km/h	<b>B</b>

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
<b>Merivale Road/Burris Lane</b>				
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	Two lanes crossed, $\geq 50$ km/h	F
South Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	Two lanes crossed, $\geq 50$ km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	One lane crossed, $\leq 40$ km/h	B
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	One lane crossed, $\leq 40$ km/h	B
<b>Merivale Road/Loblaws Plaza</b>				
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	Two lanes crossed, $\geq 50$ km/h	F
South Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	Two lanes crossed, $\geq 50$ km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	One lane crossed, $\leq 40$ km/h	B
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	One lane crossed, $\leq 40$ km/h	B

Table 11: TLOS Intersection Analysis

Approach	Delay <sup>(1)</sup>		TLOS
	AM Peak	PM Peak	
<b>Baseline Road/Merivale Road</b>			
North Approach	53 sec	68 sec	F
South Approach	38 sec	46 sec	F
East Approach	52 sec	71 sec	F
West Approach	64 sec	70 sec	F
<b>Baseline Road/Clyde Avenue</b>			
North Approach	47 sec	72 sec	F
South Approach	63 sec	77 sec	F
East Approach	32 sec	72 sec	F
West Approach	79 sec	54 sec	F
<b>Clyde Avenue/Merivale Road/Lotta Avenue</b>			
North Approach	16 sec	56 sec	F
South Approach	12 sec	30 sec	D
East Approach	53 sec	50 sec	F
<b>Merivale Road/Burris Lane</b>			
North Approach	3 sec	10 sec	B
South Approach	3 sec	7 sec	B
<b>Merivale Road/Loblaws Plaza</b>			
North Approach	11 sec	7 sec	C
South Approach	8 sec	12 sec	C

1. Delay based on outputs from Synchro analysis of existing conditions

Table 12: TkLOS Intersection Analysis

Approach	Effective Corner Radius	Number of Receiving Lanes Departing Intersection	TkLOS
<b>Baseline Road/Merivale Road</b>			
North Approach	10m to 15m	3	B
South Approach	10m to 15m	3	B
East Approach	10m to 15m	2	B
West Approach	10m to 15m	2	B
<b>Baseline Road/Clyde Avenue</b>			
North Approach	10m to 15m	2	B
South Approach	10m to 15m	2	B
East Approach	10m to 15m	2	B
West Approach	10m to 15m	2	B
<b>Clyde Avenue/Merivale Road/Lotta Avenue</b>			
North Approach	10m to 15m	1	E
South Approach	> 15m	2	A
East Approach	> 15m	2	A
West Approach	10m to 15m	3	B
<b>Merivale Road/Burris Lane</b>			
North Approach	< 10m	1	F
South Approach	< 10m	1	F
East Approach	< 10m	2	D
West Approach	< 10m	2	D
<b>Merivale Road/Loblaws Plaza</b>			
North Approach	< 10m	1	F
South Approach	10m to 15m	1	E
East Approach	< 10m	2	D
West Approach	< 10m	2	D























## **APPENDIX O**

---

Total Synchro Analysis

1: Merivale & Baseline  
AM Peak Hour

1500 Merivale Road  
2031 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	1037	8	132	911	420	0	671	232	361	430	332
Future Volume (vph)	267	1037	8	132	911	420	0	671	232	361	430	332
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		35.0	115.0		0.0	0.0		70.0	125.0		0.0
Storage Lanes	1		1	1		0	0		1	2		0
Taper Length (m)	45.0			60.0			10.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor	0.99		0.90	0.98	0.98				0.90	0.94	0.96	
Fr			0.850		0.953				0.850		0.935	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1734	3502	1390	1685	3227	0	0	3435	1551	3364	3051	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1717	3502	1252	1650	3227	0	0	3435	1391	3165	3051	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		61				83			152
Link Speed (k/h)		60			60			60				60
Link Distance (m)		174.4			682.4			320.1				406.0
Travel Time (s)		10.5			40.9			19.2				24.4
Confl. Peds. (#/hr)	50		70	70		50	60		60	60		60
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	15%	6%	3%	3%	0%	4%	3%	3%	5%	4%
Adj. Flow (vph)	267	1037	8	132	911	420	0	671	232	361	430	332
Shared Lane Traffic (%)												
Lane Group Flow (vph)	267	1037	8	132	1331	0	0	671	232	361	762	0
Enter Blocked Intersection	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			5.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2			2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru			Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5			30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8			1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA			NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases			2						8			
Detector Phase	5	2	2	1	6			8	1	7	4	



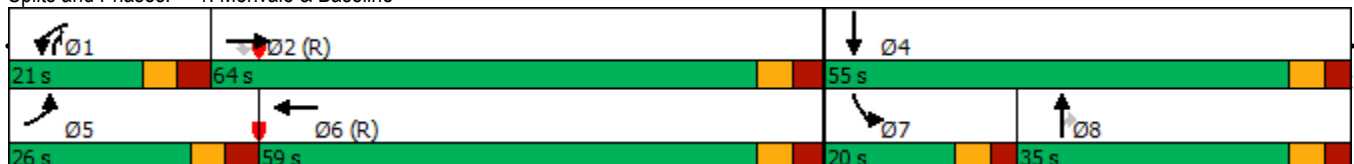


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0			10.0	5.0	5.0	10.0	
Minimum Split (s)	12.1	41.1	41.1	12.1	41.1			34.6	12.1	11.5	34.6	
Total Split (s)	26.0	64.0	64.0	21.0	59.0			35.0	21.0	20.0	55.0	
Total Split (%)	18.6%	45.7%	45.7%	15.0%	42.1%			25.0%	15.0%	14.3%	39.3%	
Maximum Green (s)	18.9	56.9	56.9	13.9	51.9			28.4	13.9	13.5	48.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7			3.7	3.7	3.7	3.7	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4			2.9	3.4	2.8	2.9	
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)	7.1	7.1	7.1	7.1	7.1			6.6	7.1	6.5	6.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag	Lead	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max			Max	None	None	Min	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		27.0	27.0		27.0			21.0			21.0	
Pedestrian Calls (#/hr)		40	40		40			40			40	
Act Effct Green (s)	18.9	57.5	57.5	13.3	51.9			28.4	41.2	13.5	48.4	
Actuated g/C Ratio	0.14	0.41	0.41	0.10	0.37			0.20	0.29	0.10	0.35	
v/c Ratio	1.14	0.72	0.01	0.82	1.08			0.96	0.48	1.11	0.66	
Control Delay	143.3	14.6	0.0	98.1	89.6			81.4	25.7	140.4	33.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	143.3	14.6	0.0	98.1	89.6			81.4	25.7	140.4	33.8	
LOS	F	B	A	F	F			F	C	F	C	
Approach Delay		40.7			90.3			67.1			68.0	
Approach LOS		D			F			E			E	
Queue Length 50th (m)	~77.7	96.9	0.0	33.5	~193.6			90.1	27.9	~54.2	70.0	
Queue Length 95th (m)	m#91.9	m101.0	m0.0	#64.2	#233.4			#125.2	49.0	#83.1	90.4	
Internal Link Dist (m)		150.4			658.4			296.1			382.0	
Turn Bay Length (m)	50.0		35.0	115.0					70.0	125.0		
Base Capacity (vph)	234	1437	592	167	1234			696	489	324	1154	
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	1.14	0.72	0.01	0.79	1.08			0.96	0.47	1.11	0.66	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 66 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.14  
 Intersection Signal Delay: 67.2  
 Intersection LOS: E  
 Intersection Capacity Utilization 114.6%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Merivale & Baseline



2: Clyde & Baseline  
AM Peak Hour

1500 Merivale Road  
2031 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	1115	135	65	524	384	98	759	104	324	475	49
Future Volume (vph)	173	1115	135	65	524	384	98	759	104	324	475	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	85.0		30.0	165.0		0.0	75.0		0.0	100.0		0.0
Storage Lanes	1		0	1		0	2		0	2		0
Taper Length (m)	55.0			40.0			50.0			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	0.95	0.97	0.95	0.95
Ped Bike Factor	0.97	0.99		0.99	0.94		0.94	0.98		0.94	0.99	
Fr t		0.984			0.937			0.982			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3405	0	1751	3042	0	3300	3373	0	3397	3398	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1708	3405	0	1728	3042	0	3097	3373	0	3201	3398	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			142			10			8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		458.5			301.4			153.1			307.3	
Travel Time (s)		27.5			18.1			9.2			18.4	
Confl. Peds. (#/hr)	80		50	50		80	60		90	90		60
Confl. Bikes (#/hr)			8			10			8			10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	4%	2%	5%	2%	5%	2%	5%	2%	2%	10%
Adj. Flow (vph)	173	1115	135	65	524	384	98	759	104	324	475	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	1250	0	65	908	0	98	863	0	324	524	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			11.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	

2: Clyde & Baseline  
AM Peak Hour

1500 Merivale Road  
2031 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.5	34.4		11.5	34.4		11.6	39.9		11.6	39.9	
Total Split (s)	22.0	62.0		13.0	53.0		14.0	43.0		22.0	51.0	
Total Split (%)	15.7%	44.3%		9.3%	37.9%		10.0%	30.7%		15.7%	36.4%	
Maximum Green (s)	15.5	55.6		6.5	46.6		7.4	36.1		15.4	44.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.7		2.8	2.7		3.3	3.6		3.3	3.6	
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	6.4		6.5	6.4		6.6	6.9		6.6	6.9	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		21.0			21.0			26.0			26.0	
Pedestrian Calls (#/hr)		40			40			40			40	
Act Effct Green (s)	15.3	55.6		6.5	46.8		7.3	36.2		15.3	44.2	
Actuated g/C Ratio	0.11	0.40		0.05	0.33		0.05	0.26		0.11	0.32	
v/c Ratio	0.90	0.92		0.80	0.82		0.57	0.98		0.88	0.49	
Control Delay	104.3	51.6		105.7	22.9		78.2	76.6		85.4	40.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	104.3	51.6		105.7	22.9		78.2	76.6		85.4	40.0	
LOS	F	D		F	C		E	E		F	D	
Approach Delay		58.0			28.5			76.8			57.3	
Approach LOS		E			C			E			E	
Queue Length 50th (m)	44.2	157.0		15.6	102.3		12.8	114.8		42.5	56.1	
Queue Length 95th (m)	#83.1	#197.3		m17.2	m104.4		21.7	#154.9		#65.5	72.1	
Internal Link Dist (m)		434.5			277.4			129.1			283.3	
Turn Bay Length (m)	85.0			165.0			75.0			100.0		
Base Capacity (vph)	195	1358		81	1112		174	880		373	1077	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.89	0.92		0.80	0.82		0.56	0.98		0.87	0.49	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 55.3

Intersection LOS: E

Intersection Capacity Utilization 100.9%

ICU Level of Service G

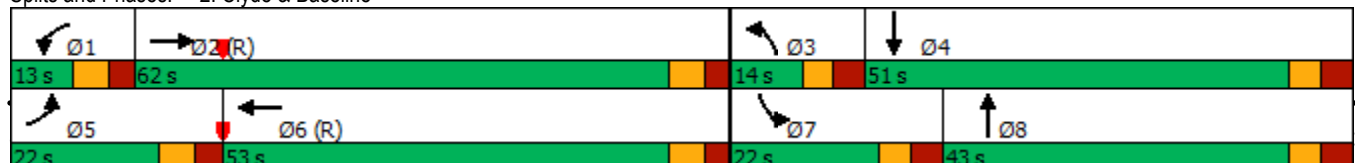
Analysis Period (min) 15

# 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: 2: Clyde & Baseline



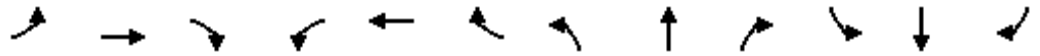
3: Merivale & Lotta & Clyde  
AM Peak Hour

1500 Merivale Road  
2031 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	74	21	462	39	94	34	757	906	37	592	14
Future Volume (vph)	25	74	21	462	39	94	34	757	906	37	592	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	95.0		40.0	80.0		0.0	95.0		0.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	25.0			10.0			30.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.97	0.99		0.98		0.95	0.99		0.94	0.99	1.00	
Frt		0.967				0.850			0.850		0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1717	1760	0	3332	1790	1537	1768	3502	1567	1768	3482	0
Flt Permitted	0.950			0.950			0.383			0.309		
Satd. Flow (perm)	1670	1760	0	3261	1790	1467	703	3502	1469	568	3482	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				94			848			2
Link Speed (k/h)		40			60			60				60
Link Distance (m)		226.4			200.1			492.8				259.9
Travel Time (s)		20.4			12.0			29.6				15.6
Confl. Peds. (#/hr)	20		10	10		20	15		30	30		15
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	1%	4%	5%	4%	1%	2%	2%	1%	2%	8%
Adj. Flow (vph)	25	74	21	462	39	94	34	757	906	37	592	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	95	0	462	39	94	34	757	906	37	606	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	Right
Median Width(m)		5.0			9.0			5.0				4.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			5.0				5.0
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	6	6	

3: Merivale & Lotta & Clyde  
AM Peak Hour

1500 Merivale Road  
2031 Total Traffic

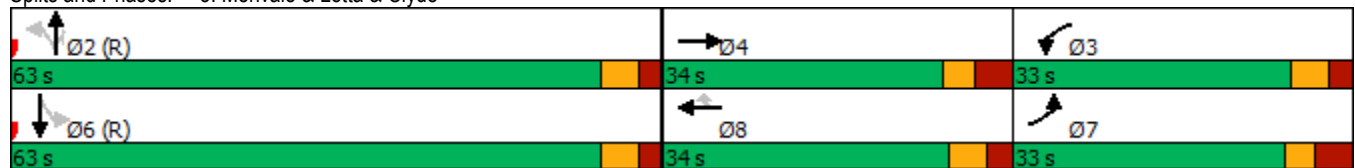


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.8	33.8		11.2	33.2	33.2	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	33.0	34.0		33.0	34.0	34.0	63.0	63.0	63.0	63.0	63.0	63.0
Total Split (%)	25.4%	26.2%		25.4%	26.2%	26.2%	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%
Maximum Green (s)	26.2	27.2		26.8	27.8	27.8	57.0	57.0	57.0	57.0	57.0	57.0
Yellow Time (s)	3.0	3.0		3.7	3.7	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	2.5	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
Total Lost Time (s)	6.8	6.8		6.2	6.2	6.2	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0	20.0	17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)		10			10	10	10	10	10	10	10	10
Act Effct Green (s)	15.1	14.5		22.8	27.2	27.2	73.7	73.7	73.7	73.7	73.7	73.7
Actuated g/C Ratio	0.12	0.11		0.18	0.21	0.21	0.57	0.57	0.57	0.57	0.57	0.57
v/c Ratio	0.13	0.47		0.79	0.10	0.25	0.09	0.38	0.76	0.11	0.31	0.31
Control Delay	48.7	54.1		61.4	44.8	9.9	17.2	17.8	7.2	18.0	16.7	16.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.7	54.1		61.4	44.8	9.9	17.2	17.8	7.2	18.0	16.7	16.7
LOS	D	D		E	D	A	B	B	A	B	B	B
Approach Delay		53.0			52.2			12.1			16.8	
Approach LOS		D			D			B			B	
Queue Length 50th (m)	4.9	19.5		54.1	8.8	0.0	3.3	47.3	5.6	3.7	35.8	
Queue Length 95th (m)	11.9	31.2		68.7	16.6	13.0	11.1	82.5	58.0	12.3	63.9	
Internal Link Dist (m)		202.4			176.1			468.8			235.9	
Turn Bay Length (m)	35.0			95.0		40.0	80.0			95.0		
Base Capacity (vph)	348	376		687	428	422	398	1985	1200	322	1975	
Starvation Cap Reductn	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
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.25		0.67	0.09	0.22	0.09	0.38	0.76	0.11	0.31	

Intersection Summary

Area Type: Other  
 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: 0.79  
 Intersection Signal Delay: 22.5  
 Intersection Capacity Utilization 98.3%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service F

Splits and Phases: 3: Merivale & Lotta & Clyde



4: Merivale & Burris  
AM Peak Hour

1500 Merivale Road  
2031 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	12	7	40	33	55	6	1019	21	35	546	24
Future Volume (vph)	9	12	7	40	33	55	6	1019	21	35	546	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	20.0		0.0	30.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			15.0			25.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.96	0.99		0.98	0.96		0.99	1.00		0.99	1.00	
Fr t		0.945			0.906			0.997			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1739	0	1768	1620	0	1768	3455	0	1624	3397	0
Flt Permitted	0.700			0.745			0.438			0.247		
Satd. Flow (perm)	1246	1739	0	1365	1620	0	805	3455	0	420	3397	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			36			4			9	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		63.4			84.6			135.9			320.1	
Travel Time (s)		4.6			6.1			8.2			19.2	
Confl. Peds. (#/hr)	60		20	20		60	20		20	20		20
Confl. Bikes (#/hr)			5			5			5			10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	3%	1%	10%	4%	10%
Adj. Flow (vph)	9	12	7	40	33	55	6	1019	21	35	546	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	19	0	40	88	0	6	1040	0	35	570	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

4: Merivale & Burris  
AM Peak Hour

1500 Merivale Road  
2031 Total Traffic

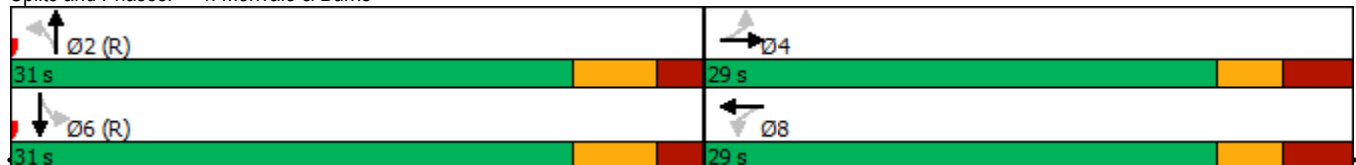


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		25.9	25.9		25.9	25.9	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	22.8	22.8		22.8	22.8		25.1	25.1		25.1	25.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		5.9	5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	20	20		20	20		20	20		20	20	
Act Effct Green (s)	12.4	12.4		12.4	12.4		39.9	39.9		39.9	39.9	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.66	0.66		0.66	0.66	
v/c Ratio	0.04	0.05		0.14	0.24		0.01	0.45		0.13	0.25	
Control Delay	16.4	13.5		18.7	13.5		2.5	3.2		9.2	6.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.4	13.5		18.7	13.5		2.5	3.2		9.2	6.7	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		14.4			15.2			3.2			6.9	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	0.8	1.0		3.5	4.6		0.1	5.8		1.2	11.0	
Queue Length 95th (m)	2.7	3.9		7.4	10.4		m0.3	10.9		7.1	29.0	
Internal Link Dist (m)		39.4			60.6			111.9			296.1	
Turn Bay Length (m)				20.0			30.0			60.0		
Base Capacity (vph)	473	665		518	637		535	2299		279	2263	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.03		0.08	0.14		0.01	0.45		0.13	0.25	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 35 (58%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.45  
 Intersection Signal Delay: 5.4  
 Intersection LOS: A  
 Intersection Capacity Utilization 57.9%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Burris



5: Merivale & Loblaws  
AM Peak Hour

1500 Merivale Road  
2031 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	8	40	8	2	24	85	846	6	32	578	17
Future Volume (vph)	14	8	40	8	2	24	85	846	6	32	578	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	75.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			10.0			0.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.95	0.98		0.99	0.94		0.99	1.00		0.99	1.00	
Fr <sub>t</sub>		0.875			0.862			0.999			0.996	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1591	0	1624	1513	0	1768	3424	0	1734	3388	0
Fl <sub>t</sub> Permitted	0.740			0.726			0.427			0.324		
Satd. Flow (perm)	1313	1591	0	1225	1513	0	790	3424	0	587	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			24			1			5	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		83.9			84.5			175.3			135.9	
Travel Time (s)		6.0			6.1			10.5			8.2	
Confl. Peds. (#/hr)	70		20	20		70	10		20	20		10
Confl. Bikes (#/hr)			5			5			5			10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	10%	1%	1%	1%	4%	30%	3%	5%	1%
Adj. Flow (vph)	14	8	40	8	2	24	85	846	6	32	578	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	48	0	8	26	0	85	852	0	32	595	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane								Yes				
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	



5: Merivale & Loblaws  
AM Peak Hour

1500 Merivale Road  
2031 Total Traffic

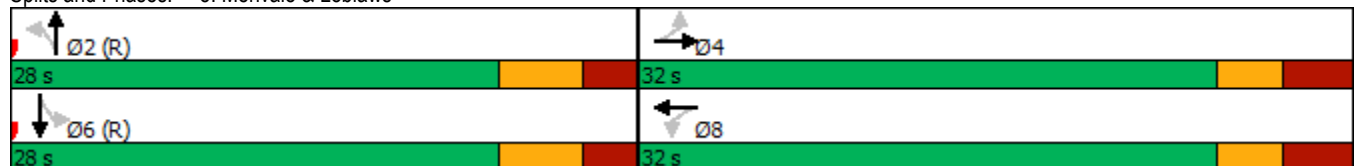


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		27.2	27.2		27.2	27.2	
Total Split (s)	32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		46.7%	46.7%		46.7%	46.7%	
Maximum Green (s)	25.8	25.8		25.8	25.8		21.8	21.8		21.8	21.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	20	20		20	20		20	20		20	20	
Act Effct Green (s)	13.2	13.2		13.2	13.2		43.4	43.4		43.4	43.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.72	0.72		0.72	0.72	
v/c Ratio	0.05	0.13		0.03	0.07		0.15	0.34		0.08	0.24	
Control Delay	15.5	7.3		15.1	7.3		9.3	7.7		6.3	4.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.5	7.3		15.1	7.3		9.3	7.7		6.3	4.5	
LOS	B	A		B	A		A	A		A	A	
Approach Delay		9.1			9.1			7.8			4.6	
Approach LOS		A			A			A			A	
Queue Length 50th (m)	1.2	0.7		0.7	0.2		3.1	19.0		0.9	8.3	
Queue Length 95th (m)	3.2	4.8		2.3	3.3		14.8	53.5		3.4	15.6	
Internal Link Dist (m)		59.9			60.5			151.3			111.9	
Turn Bay Length (m)							75.0			50.0		
Base Capacity (vph)	564	706		526	664		571	2477		424	2452	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.07		0.02	0.04		0.15	0.34		0.08	0.24	

Intersection Summary



















Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 32 (53%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.34  
 Intersection Signal Delay: 6.7  
 Intersection LOS: A  
 Intersection Capacity Utilization 69.1%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 5: Merivale & Loblaws



6: Merivale & E Access  
AM Peak Hour

1500 Merivale Road  
2031 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	0	33	10	0	10	16	900	15	15	598	13
Future Volume (vph)	27	0	33	10	0	10	16	900	15	15	598	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	40.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	10.0			10.0			0.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.926			0.932			0.998			0.997	
Flt Protected		0.978			0.976		0.950			0.950		
Satd. Flow (prot)	0	1686	0	0	1693	0	1768	3496	0	1768	3492	0
Flt Permitted		0.978			0.976		0.950			0.950		
Satd. Flow (perm)	0	1686	0	0	1693	0	1768	3496	0	1768	3492	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		102.0			97.1			156.3			175.3	
Travel Time (s)		7.3			7.0			9.4			10.5	
Confl. Peds. (#/hr)							40		10	10		40
Confl. Bikes (#/hr)			15						5			10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	2%	1%	1%	2%	1%
Adj. Flow (vph)	27	0	33	10	0	10	16	900	15	15	598	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	20	0	16	915	0	15	611	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	37.9%						ICU Level of Service A					
Analysis Period (min)	15											



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	11	5	922	637	4
Future Volume (vph)	9	11	5	922	637	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	40.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	10.0		10.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Fr <sub>t</sub>	0.926				0.999	
Fl <sub>t</sub> Protected	0.978		0.950			
Satd. Flow (prot)	1686	0	1768	3502	3499	0
Fl <sub>t</sub> Permitted	0.978		0.950			
Satd. Flow (perm)	1686	0	1768	3502	3499	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	102.5			200.1	156.3	
Travel Time (s)	7.4			12.0	9.4	
Confl. Peds. (#/hr)			40			40
Confl. Bikes (#/hr)		15				10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	2%	2%	1%
Adj. Flow (vph)	9	11	5	922	637	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	5	922	641	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	4.0			4.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane					Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.9%
	ICU Level of Service A
Analysis Period (min)	15

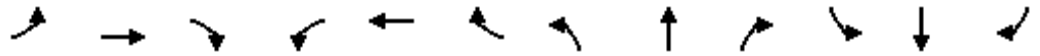
1: Merivale & Baseline  
PM Peak Hour

1500 Merivale Road  
2031 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	994	19	288	1154	256	0	540	225	412	746	434
Future Volume (vph)	295	994	19	288	1154	256	0	540	225	412	746	434
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		35.0	115.0		0.0	0.0		70.0	125.0		0.0
Storage Lanes	1		1	1		0	0		1	2		0
Taper Length (m)	45.0			60.0			10.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor	0.99		0.89	0.98	0.98				0.88	0.92	0.96	
Frt			0.850		0.973				0.850		0.945	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1751	3502	1582	1768	3387	0	0	3502	1567	3397	3158	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1733	3502	1406	1724	3387	0	0	3502	1383	3116	3158	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		22				83			91
Link Speed (k/h)		60			60			60				60
Link Distance (m)		174.4			682.4			320.1				406.0
Travel Time (s)		10.5			40.9			19.2				24.4
Confl. Peds. (#/hr)	60		80	80		60	70		70	70		70
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%	0%	2%	2%	2%	3%	1%
Adj. Flow (vph)	295	994	19	288	1154	256	0	540	225	412	746	434
Shared Lane Traffic (%)												
Lane Group Flow (vph)	295	994	19	288	1410	0	0	540	225	412	1180	0
Enter Blocked Intersection	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			5.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2			2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru			Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5			30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8			1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA			NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases			2						8			
Detector Phase	5	2	2	1	6			8	1	7	4	

1: Merivale & Baseline  
PM Peak Hour

1500 Merivale Road  
2031 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0			10.0	5.0	5.0	10.0	
Minimum Split (s)	12.1	41.1	41.1	12.1	41.1			34.6	12.1	11.5	34.6	
Total Split (s)	26.0	56.0	56.0	29.0	59.0			35.0	29.0	20.0	55.0	
Total Split (%)	18.6%	40.0%	40.0%	20.7%	42.1%			25.0%	20.7%	14.3%	39.3%	
Maximum Green (s)	18.9	48.9	48.9	21.9	51.9			28.4	21.9	13.5	48.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7			3.7	3.7	3.7	3.7	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4			2.9	3.4	2.8	2.9	
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)	7.1	7.1	7.1	7.1	7.1			6.6	7.1	6.5	6.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag	Lead	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max			Ped	None	None	Ped	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		27.0	27.0		27.0			21.0			21.0	
Pedestrian Calls (#/hr)		40	40		40			40			40	
Act Effct Green (s)	18.9	48.9	48.9	21.9	51.9			28.4	49.8	13.5	48.4	
Actuated g/C Ratio	0.14	0.35	0.35	0.16	0.37			0.20	0.36	0.10	0.35	
v/c Ratio	1.25	0.81	0.03	1.04	1.11			0.76	0.39	1.26	1.03	
Control Delay	178.7	18.4	0.1	122.0	101.9			60.5	20.1	188.8	74.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	178.7	18.4	0.1	122.0	101.9			60.5	20.1	188.8	74.5	
LOS	F	B	A	F	F			E	C	F	E	
Approach Delay		54.3			105.3			48.6			104.1	
Approach LOS		D			F			D			F	
Queue Length 50th (m)	~91.9	99.5	0.0	~79.2	~214.4			69.0	23.7	~67.6	~159.8	
Queue Length 95th (m)	m#99.9	m91.9	m0.0	#131.6	#254.3			88.0	42.3	#97.9	#199.4	
Internal Link Dist (m)		150.4			658.4			296.1			382.0	
Turn Bay Length (m)	50.0		35.0	115.0					70.0	125.0		
Base Capacity (vph)	236	1223	578	276	1269			710	574	327	1151	
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	1.25	0.81	0.03	1.04	1.11			0.76	0.39	1.26	1.03	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 77 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.26

Intersection Signal Delay: 84.4

Intersection LOS: F

Intersection Capacity Utilization 118.8%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

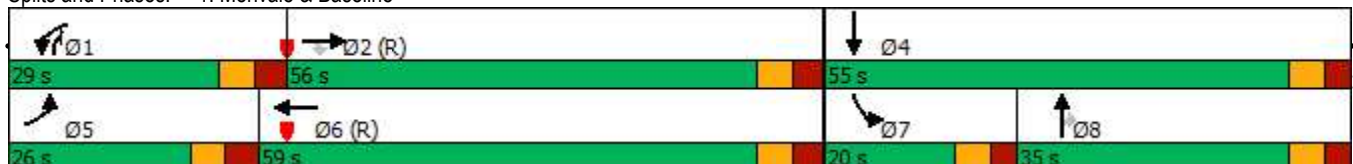
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Merivale & Baseline



2: Clyde & Baseline  
PM Peak Hour

1500 Merivale Road  
2031 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	922	231	127	1199	531	316	802	91	362	629	79
Future Volume (vph)	156	922	231	127	1199	531	316	802	91	362	629	79
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	85.0		30.0	165.0		0.0	75.0		0.0	100.0		0.0
Storage Lanes	1		0	1		0	2		0	2		0
Taper Length (m)	55.0			40.0			50.0			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	0.95	0.97	0.95	0.95
Ped Bike Factor	0.99	0.98		0.98	0.96		0.95	0.99		0.94	0.99	
Frt		0.970			0.954			0.985			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1751	3300	0	1768	3182	0	3431	3426	0	3431	3440	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1732	3300	0	1736	3182	0	3267	3426	0	3241	3440	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			61			8			9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		458.5			301.4			153.1			307.3	
Travel Time (s)		27.5			18.1			9.2			18.4	
Confl. Peds. (#/hr)	80		60	60		80	60		90	90		60
Confl. Bikes (#/hr)			10			10			10			10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	2%	1%	3%	2%	1%	1%	4%	1%	1%	1%
Adj. Flow (vph)	156	922	231	127	1199	531	316	802	91	362	629	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	1153	0	127	1730	0	316	893	0	362	708	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			11.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	

2: Clyde & Baseline  
PM Peak Hour

1500 Merivale Road  
2031 Total Traffic

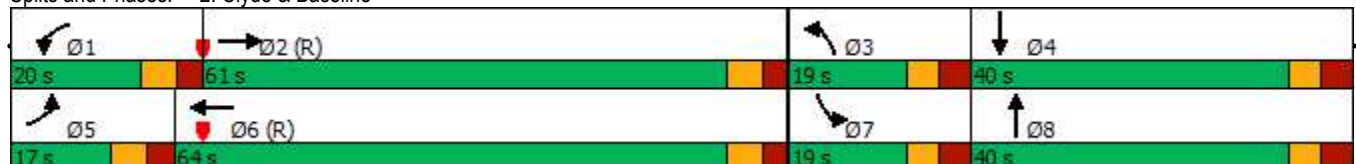


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.5	34.4		11.5	34.4		11.6	39.9		11.6	39.9	
Total Split (s)	17.0	61.0		20.0	64.0		19.0	40.0		19.0	40.0	
Total Split (%)	12.1%	43.6%		14.3%	45.7%		13.6%	28.6%		13.6%	28.6%	
Maximum Green (s)	10.5	54.6		13.5	57.6		12.4	33.1		12.4	33.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.7		2.8	2.7		3.3	3.6		3.3	3.6	
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	6.4		6.5	6.4		6.6	6.9		6.6	6.9	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		21.0			21.0			26.0			26.0	
Pedestrian Calls (#/hr)		40			40			40			40	
Act Effct Green (s)	10.5	55.3		12.8	57.6		12.4	33.1		12.4	33.1	
Actuated g/C Ratio	0.08	0.40		0.09	0.41		0.09	0.24		0.09	0.24	
v/c Ratio	1.19	0.87		0.78	1.29		1.04	1.09		1.19	0.86	
Control Delay	192.1	47.1		89.5	159.1		123.6	109.2		167.9	62.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	192.1	47.1		89.5	159.1		123.6	109.2		167.9	62.5	
LOS	F	D		F	F		F	F		F	E	
Approach Delay		64.4			154.4			112.9			98.2	
Approach LOS		E			F			F			F	
Queue Length 50th (m)	~47.8	140.5		29.5	~292.7		~44.7	~134.4		~57.3	90.8	
Queue Length 95th (m)	#89.1	168.8		m30.2	m#265.2		#72.5	#172.6		#86.4	#117.9	
Internal Link Dist (m)		434.5			277.4			129.1			283.3	
Turn Bay Length (m)	85.0			165.0			75.0			100.0		
Base Capacity (vph)	131	1318		170	1345		303	816		303	820	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.19	0.87		0.75	1.29		1.04	1.09		1.19	0.86	

Intersection Summary
























Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 2 (1%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.29  
 Intersection Signal Delay: 112.5 Intersection LOS: F  
 Intersection Capacity Utilization 124.1% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clyde & Baseline



3: Merivale & Lotta & Clyde  
PM Peak Hour

1500 Merivale Road  
2031 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	44	35	936	120	185	71	837	713	93	719	27
Future Volume (vph)	32	44	35	936	120	185	71	837	713	93	719	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	95.0		40.0	80.0		0.0	95.0		0.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	25.0			10.0			30.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.98	0.98		0.96		0.95	0.98		0.94		1.00	
Fr t		0.934				0.850			0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1685	0	3431	1861	1551	1751	3502	1567	1768	3505	0
Flt Permitted	0.950			0.950			0.232			0.156		
Satd. Flow (perm)	1725	1685	0	3283	1861	1481	421	3502	1467	290	3505	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				185			667			3
Link Speed (k/h)		40			60			60				60
Link Distance (m)		226.4			200.1			492.8				259.9
Travel Time (s)		20.4			12.0			29.6				15.6
Confl. Peds. (#/hr)	20		20	20		20	30		30	30		30
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	1%	1%	1%	3%	2%	2%	2%	1%	1%	1%
Adj. Flow (vph)	32	44	35	936	120	185	71	837	713	93	719	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	79	0	936	120	185	71	837	713	93	746	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	Right
Median Width(m)		5.0			9.0			5.0				4.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			5.0				5.0
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	7	4		3	8	8	5	2	2	1	6	



3: Merivale & Lotta & Clyde  
PM Peak Hour

1500 Merivale Road  
2031 Total Traffic

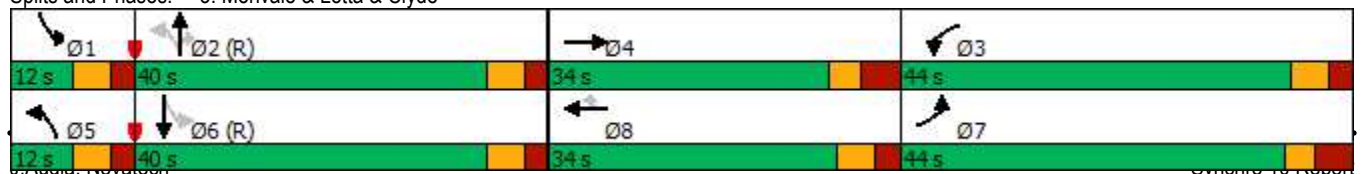


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2	33.2	11.0	30.0	30.0	11.0	30.0	
Total Split (s)	44.0	34.0		44.0	34.0	34.0	12.0	40.0	40.0	12.0	40.0	
Total Split (%)	33.8%	26.2%		33.8%	26.2%	26.2%	9.2%	30.8%	30.8%	9.2%	30.8%	
Maximum Green (s)	37.2	27.2		37.8	27.8	27.8	6.0	34.0	34.0	6.0	34.0	
Yellow Time (s)	3.0	3.0		3.7	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	2.5	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	0.0	
Total Lost Time (s)	6.8	6.8		6.2	6.2	6.2	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0	20.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)		10			10	10		20	20		10	
Act Effct Green (s)	27.6	16.8		38.5	29.5	29.5	52.4	45.7	45.7	54.7	48.7	
Actuated g/C Ratio	0.21	0.13		0.30	0.23	0.23	0.40	0.35	0.35	0.42	0.37	
v/c Ratio	0.09	0.33		0.92	0.28	0.39	0.30	0.68	0.75	0.45	0.57	
Control Delay	34.2	35.2		59.9	39.9	11.3	28.7	42.1	10.4	33.7	38.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.2	35.2		59.9	39.9	11.3	28.7	42.1	10.4	33.7	38.3	
LOS	C	D		E	D	B	C	D	B	C	D	
Approach Delay		34.9			50.7			27.6			37.8	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	5.4	11.7		119.4	23.5	7.9	9.4	91.1	7.5	12.5	76.9	
Queue Length 95th (m)	12.7	22.7		#142.4	37.4	18.0	21.3	#134.1	57.7	#26.5	108.5	
Internal Link Dist (m)		202.4			176.1			468.8			235.9	
Turn Bay Length (m)	35.0			95.0		40.0	80.0			95.0		
Base Capacity (vph)	544	374		1032	499	533	238	1229	948	206	1313	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.21		0.91	0.24	0.35	0.30	0.68	0.75	0.45	0.57	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 98 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 37.6 Intersection LOS: D  
 Intersection Capacity Utilization 85.6% 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.

Splits and Phases: 3: Merivale & Lotta & Clyde



4: Merivale & Burris  
PM Peak Hour

1500 Merivale Road  
2031 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	50	18	63	36	33	15	774	56	73	1123	46
Future Volume (vph)	26	50	18	63	36	33	15	774	56	73	1123	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	20.0		0.0	30.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			15.0			25.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.95	0.99		0.98	0.97		0.99	1.00		0.99	1.00	
Frt		0.960			0.928			0.990			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1755	0	1768	1672	0	1768	3456	0	1768	3503	0
Flt Permitted	0.712			0.713			0.200			0.322		
Satd. Flow (perm)	1261	1755	0	1295	1672	0	369	3456	0	594	3503	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			33			15			8	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		63.4			84.6			135.9			320.1	
Travel Time (s)		4.6			6.1			8.2			19.2	
Confl. Peds. (#/hr)	60		30	30		60	40		20	20		40
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%	2%	1%	1%	1%	1%
Adj. Flow (vph)	26	50	18	63	36	33	15	774	56	73	1123	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	68	0	63	69	0	15	830	0	73	1169	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

4: Merivale & Burris  
PM Peak Hour

1500 Merivale Road  
2031 Total Traffic

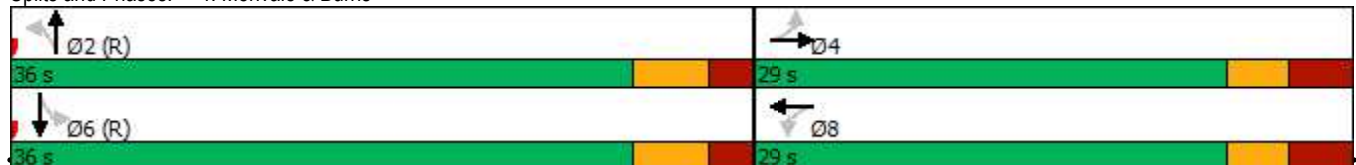


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		25.9	25.9		25.9	25.9	
Total Split (s)	29.0	29.0		29.0	29.0		36.0	36.0		36.0	36.0	
Total Split (%)	44.6%	44.6%		44.6%	44.6%		55.4%	55.4%		55.4%	55.4%	
Maximum Green (s)	22.8	22.8		22.8	22.8		30.1	30.1		30.1	30.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		5.9	5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	20	20		30	30		20	20		20	20	
Act Effct Green (s)	14.8	14.8		14.8	14.8		42.5	42.5		42.5	42.5	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.65	0.65		0.65	0.65	
v/c Ratio	0.09	0.16		0.21	0.17		0.06	0.37		0.19	0.51	
Control Delay	17.4	14.6		19.8	11.4		9.0	6.6		10.4	10.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.4	14.6		19.8	11.4		9.0	6.6		10.4	10.0	
LOS	B	B		B	B		A	A		B	A	
Approach Delay		15.4			15.4			6.6			10.0	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	2.5	4.9		6.3	3.5		0.4	15.9		2.6	28.5	
Queue Length 95th (m)	6.1	10.4		11.7	9.4		m2.7	33.7		12.0	68.9	
Internal Link Dist (m)		39.4			60.6			111.9			296.1	
Turn Bay Length (m)				20.0			30.0			60.0		
Base Capacity (vph)	442	627		454	607		241	2266		388	2294	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.11		0.14	0.11		0.06	0.37		0.19	0.51	

Intersection Summary

Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 27 (42%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.51  
 Intersection Signal Delay: 9.3  
 Intersection LOS: A  
 Intersection Capacity Utilization 75.0%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Burris



5: Merivale & Loblaws  
PM Peak Hour

1500 Merivale Road  
2031 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	33	119	78	24	110	61	716	25	92	1001	48
Future Volume (vph)	43	33	119	78	24	110	61	716	25	92	1001	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	75.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			10.0			0.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.96	0.93		0.94	0.95		0.99	1.00		0.99	1.00	
Fr <sub>t</sub>		0.883			0.877			0.995			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1530	0	1768	1546	0	1768	3477	0	1768	3438	0
Flt Permitted	0.671			0.660			0.218			0.348		
Satd. Flow (perm)	1202	1530	0	1154	1546	0	404	3477	0	638	3438	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			89			6			9	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		83.9			84.5			175.3			135.9	
Travel Time (s)		6.0			6.1			10.5			8.2	
Confl. Peds. (#/hr)	60		100	100		60	20		30	30		20
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	4%	1%	1%	2%	1%	1%	3%	1%
Adj. Flow (vph)	43	33	119	78	24	110	61	716	25	92	1001	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	152	0	78	134	0	61	741	0	92	1049	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane								Yes				
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

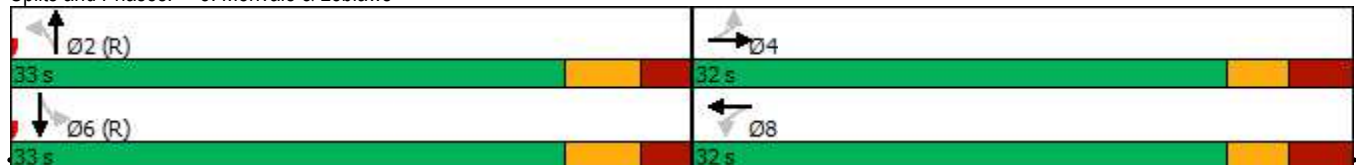


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		27.2	27.2		27.2	27.2	
Total Split (s)	32.0	32.0		32.0	32.0		33.0	33.0		33.0	33.0	
Total Split (%)	49.2%	49.2%		49.2%	49.2%		50.8%	50.8%		50.8%	50.8%	
Maximum Green (s)	25.8	25.8		25.8	25.8		26.8	26.8		26.8	26.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	60	60		20	20		20	20		20	20	
Act Effct Green (s)	19.5	19.5		19.5	19.5		37.6	37.6		37.6	37.6	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.58	0.58		0.58	0.58	
v/c Ratio	0.12	0.31		0.23	0.26		0.26	0.37		0.25	0.53	
Control Delay	14.1	13.0		16.0	6.7		15.6	11.3		6.1	6.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.1	13.0		16.0	6.7		15.6	11.3		6.1	6.1	
LOS	B	B		B	A		B	B		A	A	
Approach Delay		13.3			10.1			11.6			6.1	
Approach LOS		B			B			B			A	
Queue Length 50th (m)	2.9	8.1		5.4	3.0		4.3	29.1		7.1	51.1	
Queue Length 95th (m)	7.9	18.1		12.6	11.5		m11.0	60.2		m2.7	10.0	
Internal Link Dist (m)		59.9			60.5			151.3			111.9	
Turn Bay Length (m)							75.0			50.0		
Base Capacity (vph)	477	629		458	667		233	2014		369	1992	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.24		0.17	0.20		0.26	0.37		0.25	0.53	

Intersection Summary



















Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 35 (54%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.53  
 Intersection Signal Delay: 8.9  
 Intersection LOS: A  
 Intersection Capacity Utilization 89.6%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Merivale & Loblaws



6: Merivale & E Access  
PM Peak Hour

1500 Merivale Road  
2031 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	0	24	32	0	33	31	751	30	30	1143	25
Future Volume (vph)	19	0	24	32	0	33	31	751	30	30	1143	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	40.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	10.0			10.0			0.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.925			0.931			0.994			0.997	
Flt Protected		0.978			0.976		0.950			0.950		
Satd. Flow (prot)	0	1684	0	0	1691	0	1768	3482	0	1768	3492	0
Flt Permitted		0.978			0.976		0.950			0.950		
Satd. Flow (perm)	0	1684	0	0	1691	0	1768	3482	0	1768	3492	0
Link Speed (k/h)		50			50			60		60		
Link Distance (m)		102.0			97.1			156.3		175.3		
Travel Time (s)		7.3			7.0			9.4		10.5		
Confl. Peds. (#/hr)							40		10	10		40
Confl. Bikes (#/hr)			10						10			15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	2%	1%	1%	2%	1%
Adj. Flow (vph)	19	0	24	32	0	33	31	751	30	30	1143	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	43	0	0	65	0	31	781	0	30	1168	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			4.0		4.0		
Link Offset(m)		0.0			0.0			0.0		0.0		
Crosswalk Width(m)		5.0			5.0			5.0		5.0		
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	46.3%						ICU Level of Service A					
Analysis Period (min)	15											



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	6	10	805	1190	9
Future Volume (vph)	7	6	10	805	1190	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	40.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	10.0		10.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Fr <sub>t</sub>	0.938				0.999	
Fl <sub>t</sub> Protected	0.974		0.950			
Satd. Flow (prot)	1701	0	1768	3502	3499	0
Fl <sub>t</sub> Permitted	0.974		0.950			
Satd. Flow (perm)	1701	0	1768	3502	3499	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	102.5			200.1	156.3	
Travel Time (s)	7.4			12.0	9.4	
Confl. Peds. (#/hr)			40			40
Confl. Bikes (#/hr)		10				10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	2%	2%	1%
Adj. Flow (vph)	7	6	10	805	1190	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	10	805	1199	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	4.0			4.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane					Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.0%
ICU Level of Service	A
Analysis Period (min)	15

1: Merivale & Baseline  
AM Peak Hour

1500 Merivale Road  
2038 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	267	1037	8	137	911	420	0	681	245	361	434	332
Future Volume (vph)	267	1037	8	137	911	420	0	681	245	361	434	332
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		35.0	115.0		0.0	0.0		70.0	125.0		0.0
Storage Lanes	1		1	1		0	0		1	2		0
Taper Length (m)	45.0			60.0			10.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor	0.99		0.90	0.98	0.98				0.90	0.94	0.96	
Fr			0.850		0.953				0.850		0.935	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1734	3502	1390	1685	3227	0	0	3435	1551	3364	3051	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1717	3502	1252	1650	3227	0	0	3435	1391	3168	3051	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		61				83		152	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		174.4			682.4			320.1			406.0	
Travel Time (s)		10.5			40.9			19.2			24.4	
Confl. Peds. (#/hr)	50		70	70		50	60		60	60		60
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	15%	6%	3%	3%	0%	4%	3%	3%	5%	4%
Adj. Flow (vph)	267	1037	8	137	911	420	0	681	245	361	434	332
Shared Lane Traffic (%)												
Lane Group Flow (vph)	267	1037	8	137	1331	0	0	681	245	361	766	0
Enter Blocked Intersection	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			5.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2			2	1	1	1	2
Detector Template	Left	Thru	Right	Left	Thru			Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5			30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8			1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA			NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases			2						8			
Detector Phase	5	2	2	1	6			8	1	7	4	



1: Merivale & Baseline  
AM Peak Hour

1500 Merivale Road  
2038 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0			10.0	5.0	5.0	10.0	
Minimum Split (s)	12.1	41.1	41.1	12.1	41.1			34.6	12.1	11.5	34.6	
Total Split (s)	26.0	64.0	64.0	21.0	59.0			35.0	21.0	20.0	55.0	
Total Split (%)	18.6%	45.7%	45.7%	15.0%	42.1%			25.0%	15.0%	14.3%	39.3%	
Maximum Green (s)	18.9	56.9	56.9	13.9	51.9			28.4	13.9	13.5	48.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7			3.7	3.7	3.7	3.7	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4			2.9	3.4	2.8	2.9	
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)	7.1	7.1	7.1	7.1	7.1			6.6	7.1	6.5	6.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag	Lead	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max			Max	None	None	Min	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		27.0	27.0		27.0			21.0			21.0	
Pedestrian Calls (#/hr)		40	40		40			40			40	
Act Effct Green (s)	18.9	57.3	57.3	13.5	51.9			28.4	41.4	13.5	48.4	
Actuated g/C Ratio	0.14	0.41	0.41	0.10	0.37			0.20	0.30	0.10	0.35	
v/c Ratio	1.14	0.72	0.01	0.85	1.08			0.98	0.51	1.11	0.66	
Control Delay	143.2	14.6	0.0	101.4	89.6			84.4	27.0	140.4	33.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	143.2	14.6	0.0	101.4	89.6			84.4	27.0	140.4	33.9	
LOS	F	B	A	F	F			F	C	F	C	
Approach Delay		40.7			90.7			69.2			68.0	
Approach LOS		D			F			E			E	
Queue Length 50th (m)	~77.8	96.2	0.0	34.8	~193.6			91.7	30.7	~54.2	70.6	
Queue Length 95th (m)	m#91.4	m100.3	m0.0	#67.9	#233.4			#128.2	52.8	#83.1	91.1	
Internal Link Dist (m)		150.4			658.4			296.1			382.0	
Turn Bay Length (m)	50.0		35.0	115.0					70.0	125.0		
Base Capacity (vph)	234	1434	591	167	1234			696	489	324	1154	
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	1.14	0.72	0.01	0.82	1.08			0.98	0.50	1.11	0.66	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 66 (47%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.14

Intersection Signal Delay: 67.7

Intersection LOS: E

Intersection Capacity Utilization 114.6%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

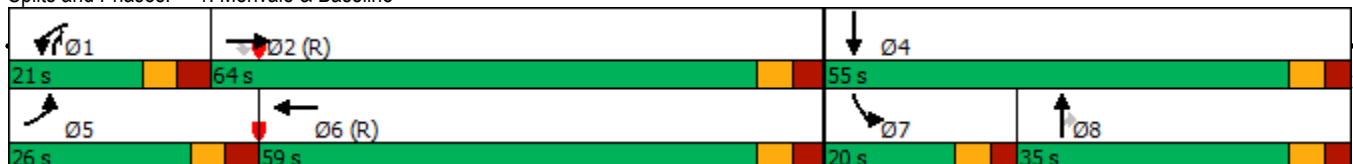
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



























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

Splits and Phases: 1: Merivale & Baseline



2: Clyde & Baseline  
AM Peak Hour
























1500 Merivale Road  
2038 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 		 	 		 	 	
Traffic Volume (vph)	173	1115	138	65	524	384	106	768	104	324	479	49
Future Volume (vph)	173	1115	138	65	524	384	106	768	104	324	479	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	85.0		30.0	165.0		0.0	75.0		0.0	100.0		0.0
Storage Lanes	1		0	1		0	2		0	2		0
Taper Length (m)	55.0			40.0			50.0			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	0.95	0.97	0.95	0.95
Ped Bike Factor	0.97	0.99		0.99	0.94		0.94	0.98		0.94	0.99	
Fr t		0.983			0.937			0.982			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	3401	0	1751	3042	0	3300	3374	0	3397	3398	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1708	3401	0	1728	3042	0	3098	3374	0	3204	3398	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			142			10			8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		458.5			301.4			153.1			307.3	
Travel Time (s)		27.5			18.1			9.2			18.4	
Confl. Peds. (#/hr)	80		50	50		80	60		90	90		60
Confl. Bikes (#/hr)			8			10			8			10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	4%	2%	5%	2%	5%	2%	5%	2%	2%	10%
Adj. Flow (vph)	173	1115	138	65	524	384	106	768	104	324	479	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	1253	0	65	908	0	106	872	0	324	528	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			11.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	



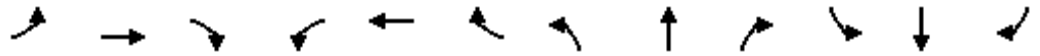
3: Merivale & Lotta & Clyde  
AM Peak Hour

1500 Merivale Road  
2038 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	74	21	473	39	110	34	757	912	44	592	14
Future Volume (vph)	25	74	21	473	39	110	34	757	912	44	592	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	95.0		40.0	80.0		0.0	95.0		0.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	25.0			10.0			30.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.97	0.99		0.98		0.95	0.99		0.94	0.99	1.00	
Fr t		0.967				0.850			0.850		0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1717	1760	0	3332	1790	1537	1768	3502	1567	1768	3482	0
Flt Permitted	0.950			0.950			0.382			0.309		
Satd. Flow (perm)	1670	1760	0	3261	1790	1467	701	3502	1469	568	3482	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				110			848			2
Link Speed (k/h)		40			60			60				60
Link Distance (m)		226.4			200.1			492.8				259.9
Travel Time (s)		20.4			12.0			29.6				15.6
Confl. Peds. (#/hr)	20		10	10		20	15		30	30		15
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	4%	3%	1%	4%	5%	4%	1%	2%	2%	1%	2%	8%
Adj. Flow (vph)	25	74	21	473	39	110	34	757	912	44	592	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	95	0	473	39	110	34	757	912	44	606	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	Right
Median Width(m)		5.0			9.0			5.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			5.0			5.0	
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		
Detector Phase	7	4		3	8	8	2	2	2	6	6	

3: Merivale & Lotta & Clyde  
AM Peak Hour

1500 Merivale Road  
2038 Total Traffic

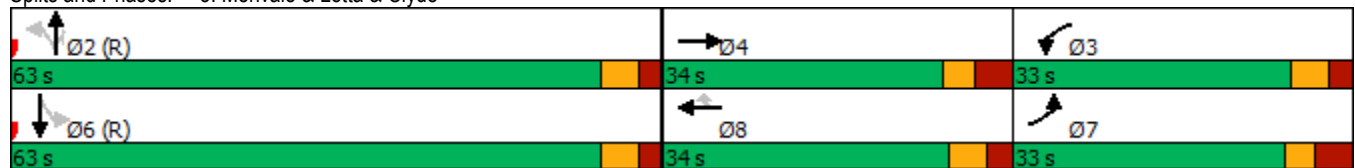


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	11.8	33.8		11.2	33.2	33.2	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	33.0	34.0		33.0	34.0	34.0	63.0	63.0	63.0	63.0	63.0	63.0
Total Split (%)	25.4%	26.2%		25.4%	26.2%	26.2%	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%
Maximum Green (s)	26.2	27.2		26.8	27.8	27.8	57.0	57.0	57.0	57.0	57.0	57.0
Yellow Time (s)	3.0	3.0		3.7	3.7	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	2.5	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
Total Lost Time (s)	6.8	6.8		6.2	6.2	6.2	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead		Lag	Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0			7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		20.0			20.0	20.0	17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)		10			10	10	10	10	10	10	10	10
Act Effct Green (s)	15.3	14.5		23.1	27.4	27.4	73.4	73.4	73.4	73.4	73.4	73.4
Actuated g/C Ratio	0.12	0.11		0.18	0.21	0.21	0.56	0.56	0.56	0.56	0.56	0.56
v/c Ratio	0.12	0.47		0.80	0.10	0.28	0.09	0.38	0.76	0.14	0.31	0.31
Control Delay	48.5	54.1		61.7	44.7	9.5	17.3	17.9	7.4	18.5	16.9	16.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	54.1		61.7	44.7	9.5	17.3	17.9	7.4	18.5	16.9	16.9
LOS	D	D		E	D	A	B	B	A	B	B	B
Approach Delay		52.9			51.4			12.3				17.0
Approach LOS		D			D			B				B
Queue Length 50th (m)	4.9	19.5		55.5	8.8	0.0	3.4	47.7	6.3	4.5	36.2	36.2
Queue Length 95th (m)	11.9	31.2		70.4	16.6	14.1	11.1	82.5	61.7	14.1	63.9	63.9
Internal Link Dist (m)		202.4			176.1			468.8				235.9
Turn Bay Length (m)	35.0			95.0		40.0	80.0			95.0		
Base Capacity (vph)	348	376		687	430	436	395	1977	1198	320	1966	1966
Starvation Cap Reductn	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
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.25		0.69	0.09	0.25	0.09	0.38	0.76	0.14	0.31	0.31

Intersection Summary























Area Type:	Other
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:	0.80
Intersection Signal Delay:	22.7
Intersection LOS:	C
Intersection Capacity Utilization:	98.7%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 3: Merivale & Lotta & Clyde



4: Merivale & Burris  
AM Peak Hour

1500 Merivale Road  
2038 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	12	7	40	33	55	6	1041	21	35	555	24
Future Volume (vph)	9	12	7	40	33	55	6	1041	21	35	555	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	20.0		0.0	30.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			15.0			25.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.96	0.99		0.98	0.96		0.99	1.00		0.99	1.00	
Frt		0.945			0.906			0.997			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1739	0	1768	1620	0	1768	3455	0	1624	3398	0
Flt Permitted	0.700			0.745			0.434			0.239		
Satd. Flow (perm)	1246	1739	0	1365	1620	0	797	3455	0	406	3398	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			33			4			9	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		63.4			84.6			135.9			320.1	
Travel Time (s)		4.6			6.1			8.2			19.2	
Confl. Peds. (#/hr)	60		20	20		60	20		20	20		20
Confl. Bikes (#/hr)			5			5			5			10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	3%	1%	10%	4%	10%
Adj. Flow (vph)	9	12	7	40	33	55	6	1041	21	35	555	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	19	0	40	88	0	6	1062	0	35	579	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

4: Merivale & Burris  
AM Peak Hour

1500 Merivale Road  
2038 Total Traffic

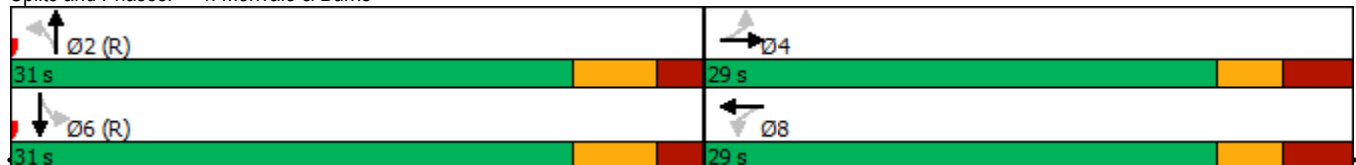


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		25.9	25.9		25.9	25.9	
Total Split (s)	29.0	29.0		29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Maximum Green (s)	22.8	22.8		22.8	22.8		25.1	25.1		25.1	25.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		5.9	5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	20	20		20	20		20	20		20	20	
Act Effct Green (s)	12.4	12.4		12.4	12.4		39.9	39.9		39.9	39.9	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.66	0.66		0.66	0.66	
v/c Ratio	0.04	0.05		0.14	0.24		0.01	0.46		0.13	0.26	
Control Delay	16.4	13.5		18.7	14.1		2.5	3.3		9.3	6.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.4	13.5		18.7	14.1		2.5	3.3		9.3	6.7	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		14.4			15.6			3.3			6.9	
Approach LOS		B			B			A			A	
Queue Length 50th (m)	0.8	1.0		3.5	4.9		0.1	5.8		1.2	11.3	
Queue Length 95th (m)	2.7	3.9		7.4	10.6		m0.3	11.0		7.2	29.5	
Internal Link Dist (m)		39.4			60.6			111.9			296.1	
Turn Bay Length (m)				20.0			30.0			60.0		
Base Capacity (vph)	473	665		518	636		530	2299		270	2263	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.03		0.08	0.14		0.01	0.46		0.13	0.26	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 35 (58%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.46  
 Intersection Signal Delay: 5.5  
 Intersection LOS: A  
 Intersection Capacity Utilization 58.3%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Merivale & Burris



5: Merivale & Loblaws  
AM Peak Hour

1500 Merivale Road  
2038 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	8	40	8	2	24	85	868	6	32	587	17
Future Volume (vph)	14	8	40	8	2	24	85	868	6	32	587	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	75.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			10.0			0.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.95	0.98		0.99	0.94		0.99	1.00		0.99	1.00	
Fr <sub>t</sub>		0.875			0.862			0.999			0.996	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1591	0	1624	1513	0	1768	3424	0	1734	3388	0
Fl <sub>t</sub> Permitted	0.740			0.726			0.423			0.314		
Satd. Flow (perm)	1313	1591	0	1225	1513	0	783	3424	0	569	3388	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			24			1			5	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		83.9			84.5			175.3			135.9	
Travel Time (s)		6.0			6.1			10.5			8.2	
Confl. Peds. (#/hr)	70		20	20		70	10		20	20		10
Confl. Bikes (#/hr)			5			5			5			10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	10%	1%	1%	1%	4%	30%	3%	5%	1%
Adj. Flow (vph)	14	8	40	8	2	24	85	868	6	32	587	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	48	0	8	26	0	85	874	0	32	604	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane								Yes				
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	



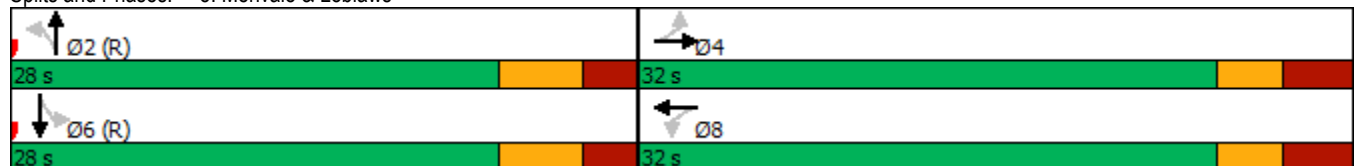




















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		27.2	27.2		27.2	27.2	
Total Split (s)	32.0	32.0		32.0	32.0		28.0	28.0		28.0	28.0	
Total Split (%)	53.3%	53.3%		53.3%	53.3%		46.7%	46.7%		46.7%	46.7%	
Maximum Green (s)	25.8	25.8		25.8	25.8		21.8	21.8		21.8	21.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	20	20		20	20		20	20		20	20	
Act Effct Green (s)	13.2	13.2		13.2	13.2		43.4	43.4		43.4	43.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.72	0.72		0.72	0.72	
v/c Ratio	0.05	0.13		0.03	0.07		0.15	0.35		0.08	0.25	
Control Delay	15.5	7.3		15.1	7.3		9.3	7.8		6.4	4.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.5	7.3		15.1	7.3		9.3	7.8		6.4	4.5	
LOS	B	A		B	A		A	A		A	A	
Approach Delay		9.1			9.1			7.9			4.6	
Approach LOS		A			A			A			A	
Queue Length 50th (m)	1.2	0.7		0.7	0.2		3.1	19.6		0.9	8.4	
Queue Length 95th (m)	3.2	4.8		2.3	3.3		14.8	55.3		3.4	15.7	
Internal Link Dist (m)		59.9			60.5			151.3			111.9	
Turn Bay Length (m)							75.0			50.0		
Base Capacity (vph)	564	706		526	664		566	2477		411	2452	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.07		0.02	0.04		0.15	0.35		0.08	0.25	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 32 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.35  
 Intersection Signal Delay: 6.7  
 Intersection Capacity Utilization 69.7%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service C

Splits and Phases: 5: Merivale & Loblaws



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	0	53	10	0	10	25	905	15	15	600	20
Future Volume (vph)	44	0	53	10	0	10	25	905	15	15	600	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	40.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	10.0			10.0			0.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.926			0.932			0.998			0.995	
Flt Protected		0.978			0.976		0.950			0.950		
Satd. Flow (prot)	0	1686	0	0	1693	0	1768	3496	0	1768	3486	0
Flt Permitted		0.978			0.976		0.950			0.950		
Satd. Flow (perm)	0	1686	0	0	1693	0	1768	3496	0	1768	3486	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		102.0			97.1			156.3			175.3	
Travel Time (s)		7.3			7.0			9.4			10.5	
Confl. Peds. (#/hr)							40		10	10		40
Confl. Bikes (#/hr)			15						5			10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	2%	1%	1%	2%	1%
Adj. Flow (vph)	44	0	53	10	0	10	25	905	15	15	600	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	97	0	0	20	0	25	920	0	15	620	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	40.9%						ICU Level of Service A					
Analysis Period (min)	15											



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	19	9	931	657	6
Future Volume (vph)	14	19	9	931	657	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	40.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	10.0		10.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.922				0.999	
Flt Protected	0.979		0.950			
Satd. Flow (prot)	1680	0	1768	3502	3499	0
Flt Permitted	0.979		0.950			
Satd. Flow (perm)	1680	0	1768	3502	3499	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	102.5			200.1	156.3	
Travel Time (s)	7.4			12.0	9.4	
Confl. Peds. (#/hr)			40			40
Confl. Bikes (#/hr)		15				10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	2%	2%	1%
Adj. Flow (vph)	14	19	9	931	657	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	0	9	931	663	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	4.0			4.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane					Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.2%
	ICU Level of Service A
Analysis Period (min)	15

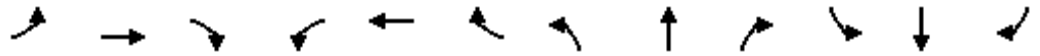
1: Merivale & Baseline  
PM Peak Hour

1500 Merivale Road  
2038 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	994	19	300	1154	256	0	549	233	412	757	434
Future Volume (vph)	295	994	19	300	1154	256	0	549	233	412	757	434
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	50.0		35.0	115.0		0.0	0.0		70.0	125.0		0.0
Storage Lanes	1		1	1		0	0		1	2		0
Taper Length (m)	45.0			60.0			10.0			45.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	0.95
Ped Bike Factor	0.99		0.89	0.98	0.98				0.88	0.92	0.96	
Frt			0.850		0.973				0.850		0.945	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1751	3502	1582	1768	3387	0	0	3502	1567	3397	3159	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1733	3502	1406	1724	3387	0	0	3502	1383	3120	3159	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134		22				83			88
Link Speed (k/h)		60			60			60				60
Link Distance (m)		174.4			682.4			320.1				406.0
Travel Time (s)		10.5			40.9			19.2				24.4
Confl. Peds. (#/hr)	60		80	80		60	70		70	70		70
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%	0%	2%	2%	2%	3%	1%
Adj. Flow (vph)	295	994	19	300	1154	256	0	549	233	412	757	434
Shared Lane Traffic (%)												
Lane Group Flow (vph)	295	994	19	300	1410	0	0	549	233	412	1191	0
Enter Blocked Intersection	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			5.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2			2	1	1	1	2
Detector Template	Left	Thru	Right	Left	Thru			Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5			30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8			1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA			NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6			8	1	7	4	
Permitted Phases			2						8			
Detector Phase	5	2	2	1	6			8	1	7	4	

1: Merivale & Baseline  
PM Peak Hour

1500 Merivale Road  
2038 Total Traffic

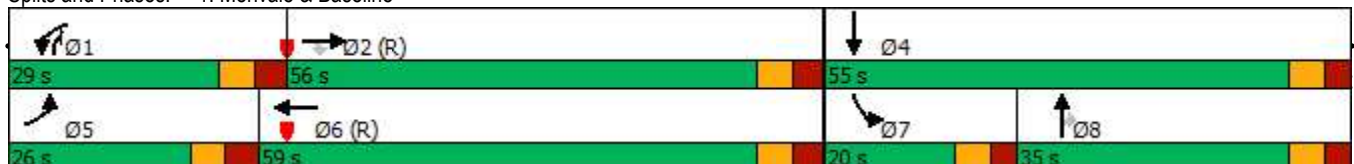


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0			10.0	5.0	5.0	10.0	
Minimum Split (s)	12.1	41.1	41.1	12.1	41.1			34.6	12.1	11.5	34.6	
Total Split (s)	26.0	56.0	56.0	29.0	59.0			35.0	29.0	20.0	55.0	
Total Split (%)	18.6%	40.0%	40.0%	20.7%	42.1%			25.0%	20.7%	14.3%	39.3%	
Maximum Green (s)	18.9	48.9	48.9	21.9	51.9			28.4	21.9	13.5	48.4	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7			3.7	3.7	3.7	3.7	
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4			2.9	3.4	2.8	2.9	
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)	7.1	7.1	7.1	7.1	7.1			6.6	7.1	6.5	6.6	
Lead/Lag	Lead	Lag	Lag	Lead	Lag			Lag	Lead	Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max			Ped	None	None	Ped	
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		27.0	27.0		27.0			21.0			21.0	
Pedestrian Calls (#/hr)		40	40		40			40			40	
Act Effct Green (s)	18.9	48.9	48.9	21.9	51.9			28.4	49.8	13.5	48.4	
Actuated g/C Ratio	0.14	0.35	0.35	0.16	0.37			0.20	0.36	0.10	0.35	
v/c Ratio	1.25	0.81	0.03	1.09	1.11			0.77	0.41	1.26	1.04	
Control Delay	178.5	18.3	0.1	133.3	101.9			61.2	20.7	188.8	77.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	178.5	18.3	0.1	133.3	101.9			61.2	20.7	188.8	77.7	
LOS	F	B	A	F	F			E	C	F	E	
Approach Delay		54.2			107.4			49.1			106.2	
Approach LOS		D			F			D			F	
Queue Length 50th (m)	~92.1	99.4	0.0	~85.6	~214.4			70.3	25.3	~67.6	~163.4	
Queue Length 95th (m)	m#98.8	m91.5	m0.0	#138.5	#254.3			89.5	44.4	#97.9	#203.0	
Internal Link Dist (m)		150.4			658.4			296.1			382.0	
Turn Bay Length (m)	50.0		35.0	115.0					70.0	125.0		
Base Capacity (vph)	236	1223	578	276	1269			710	574	327	1149	
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	1.25	0.81	0.03	1.09	1.11			0.77	0.41	1.26	1.04	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 77 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.26  
 Intersection Signal Delay: 85.7  
 Intersection LOS: F  
 Intersection Capacity Utilization 118.8%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Merivale & Baseline



2: Clyde & Baseline  
PM Peak Hour

1500 Merivale Road  
2038 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	922	240	127	1199	531	323	811	91	362	639	79
Future Volume (vph)	156	922	240	127	1199	531	323	811	91	362	639	79
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	85.0		30.0	165.0		0.0	75.0		0.0	100.0		0.0
Storage Lanes	1		0	1		0	2		0	2		0
Taper Length (m)	55.0			40.0			50.0			55.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.97	0.95	0.95	0.97	0.95	0.95
Ped Bike Factor	0.99	0.98		0.98	0.96		0.95	0.99		0.95	0.99	
Frt		0.969			0.954			0.985			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1751	3294	0	1768	3182	0	3431	3427	0	3431	3440	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1732	3294	0	1737	3182	0	3269	3427	0	3243	3440	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			61			8			9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		458.5			301.4			153.1			307.3	
Travel Time (s)		27.5			18.1			9.2			18.4	
Confl. Peds. (#/hr)	80		60	60		80	60		90	90		60
Confl. Bikes (#/hr)			10			10			10			10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	3%	2%	1%	3%	2%	1%	1%	4%	1%	1%	1%
Adj. Flow (vph)	156	922	240	127	1199	531	323	811	91	362	639	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	1162	0	127	1730	0	323	902	0	362	718	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	Left	Left	R NA
Median Width(m)		5.0			5.0			11.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	

2: Clyde & Baseline  
PM Peak Hour

1500 Merivale Road  
2038 Total Traffic

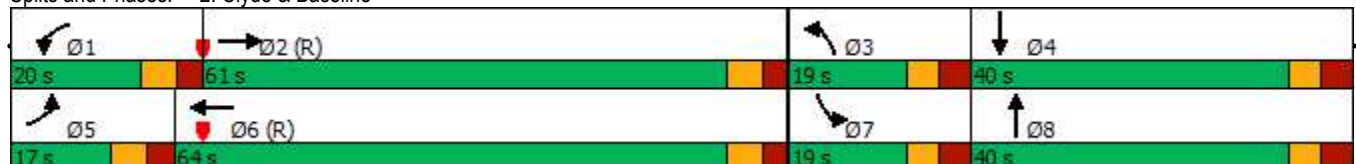


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	
Minimum Split (s)	11.5	34.4		11.5	34.4		11.6	39.9		11.6	39.9	
Total Split (s)	17.0	61.0		20.0	64.0		19.0	40.0		19.0	40.0	
Total Split (%)	12.1%	43.6%		14.3%	45.7%		13.6%	28.6%		13.6%	28.6%	
Maximum Green (s)	10.5	54.6		13.5	57.6		12.4	33.1		12.4	33.1	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.8	2.7		2.8	2.7		3.3	3.6		3.3	3.6	
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	6.4		6.5	6.4		6.6	6.9		6.6	6.9	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		21.0			21.0			26.0			26.0	
Pedestrian Calls (#/hr)		40			40			40			40	
Act Effct Green (s)	10.5	55.3		12.8	57.6		12.4	33.1		12.4	33.1	
Actuated g/C Ratio	0.08	0.40		0.09	0.41		0.09	0.24		0.09	0.24	
v/c Ratio	1.19	0.88		0.78	1.29		1.07	1.11		1.19	0.88	
Control Delay	192.1	47.7		89.3	159.1		129.3	112.8		167.9	63.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	192.1	47.7		89.3	159.1		129.3	112.8		167.9	63.6	
LOS	F	D		F	F		F	F		F	E	
Approach Delay		64.8			154.4			117.1			98.6	
Approach LOS		E			F			F			F	
Queue Length 50th (m)	~47.8	142.3		29.5	~292.7		~46.6	~137.0		~57.3	92.4	
Queue Length 95th (m)	#89.1	170.7		m30.2	m#264.0		#74.7	#175.4		#86.4	#121.0	
Internal Link Dist (m)		434.5			277.4			129.1			283.3	
Turn Bay Length (m)	85.0			165.0			75.0			100.0		
Base Capacity (vph)	131	1316		170	1345		303	816		303	820	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.19	0.88		0.75	1.29		1.07	1.11		1.19	0.88	

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 2 (1%), Referenced to phase 2:EBT and 6:WBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.29  
 Intersection Signal Delay: 113.5 Intersection LOS: F  
 Intersection Capacity Utilization 124.1% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clyde & Baseline



3: Merivale & Lotta & Clyde  
PM Peak Hour

1500 Merivale Road  
2038 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	44	35	943	120	201	71	837	723	112	719	27
Future Volume (vph)	32	44	35	943	120	201	71	837	723	112	719	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		0.0	95.0		40.0	80.0		0.0	95.0		0.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	25.0			10.0			30.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.98	0.98		0.96		0.95	0.98		0.94		1.00	
Frt		0.934				0.850			0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1685	0	3431	1861	1551	1751	3502	1567	1768	3505	0
Flt Permitted	0.950			0.950			0.234			0.144		
Satd. Flow (perm)	1725	1685	0	3283	1861	1481	424	3502	1467	268	3505	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				201			676			3
Link Speed (k/h)		40			60			60				60
Link Distance (m)		226.4			200.1			492.8				259.9
Travel Time (s)		20.4			12.0			29.6				15.6
Confl. Peds. (#/hr)	20		20	20		20	30		30	30		30
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	1%	1%	1%	3%	2%	2%	2%	1%	1%	1%
Adj. Flow (vph)	32	44	35	943	120	201	71	837	723	112	719	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	79	0	943	120	201	71	837	723	112	746	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	Right	L NA	Left	R NA	L NA	Left	Right
Median Width(m)		5.0			9.0			5.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			5.0			5.0	
Two way Left Turn Lane												Yes
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8	2		2	6		
Detector Phase	7	4		3	8	8	5	2	2	1	6	



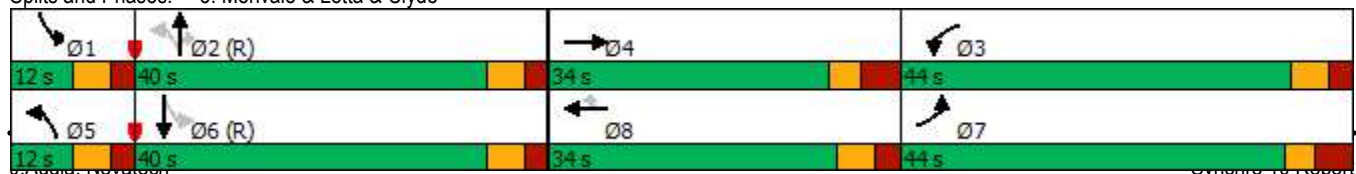


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	11.8	33.8		11.2	33.2	33.2	11.0	30.0	30.0	11.0	30.0	
Total Split (s)	44.0	34.0		44.0	34.0	34.0	12.0	40.0	40.0	12.0	40.0	
Total Split (%)	33.8%	26.2%		33.8%	26.2%	26.2%	9.2%	30.8%	30.8%	9.2%	30.8%	
Maximum Green (s)	37.2	27.2		37.8	27.8	27.8	6.0	34.0	34.0	6.0	34.0	
Yellow Time (s)	3.0	3.0		3.7	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	2.5	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	0.0	
Total Lost Time (s)	6.8	6.8		6.2	6.2	6.2	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		20.0			20.0	20.0		17.0	17.0		17.0	
Pedestrian Calls (#/hr)		10			10	10		20	20		10	
Act Effct Green (s)	27.6	16.8		39.0	29.9	29.9	51.1	44.3	44.3	54.9	48.2	
Actuated g/C Ratio	0.21	0.13		0.30	0.23	0.23	0.39	0.34	0.34	0.42	0.37	
v/c Ratio	0.09	0.33		0.92	0.28	0.41	0.30	0.70	0.77	0.54	0.57	
Control Delay	34.1	35.2		59.2	39.6	11.1	28.9	43.4	10.8	38.1	38.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	34.1	35.2		59.2	39.6	11.1	28.9	43.4	10.8	38.1	38.5	
LOS	C	D		E	D	B	C	D	B	D	D	
Approach Delay		34.9			49.7			28.3			38.5	
Approach LOS		C			D			C			D	
Queue Length 50th (m)	5.4	11.7		119.1	23.5	8.7	9.5	93.4	7.8	15.3	77.3	
Queue Length 95th (m)	12.7	22.7		#144.1	36.9	19.1	21.3	#134.1	58.9	#35.3	108.5	
Internal Link Dist (m)		202.4			176.1			468.8			235.9	
Turn Bay Length (m)	35.0			95.0		40.0	80.0			95.0		
Base Capacity (vph)	545	374		1037	504	548	235	1194	945	208	1301	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.21		0.91	0.24	0.37	0.30	0.70	0.77	0.54	0.57	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 98 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 37.7 Intersection LOS: D  
 Intersection Capacity Utilization 87.4% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Merivale & Lotta & Clyde



4: Merivale & Burris  
PM Peak Hour

1500 Merivale Road  
2038 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	50	18	63	36	33	15	791	56	73	1146	46
Future Volume (vph)	26	50	18	63	36	33	15	791	56	73	1146	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	20.0		0.0	30.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			15.0			25.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.95	0.99		0.98	0.97		0.99	1.00		0.99	1.00	
Frt		0.960			0.928			0.990			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1755	0	1768	1672	0	1768	3456	0	1768	3504	0
Flt Permitted	0.712			0.713			0.193			0.314		
Satd. Flow (perm)	1261	1755	0	1295	1672	0	356	3456	0	579	3504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			33			15			8	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		63.4			84.6			135.9			320.1	
Travel Time (s)		4.6			6.1			8.2			19.2	
Confl. Peds. (#/hr)	60		30	30		60	40		20	20		40
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%	2%	1%	1%	1%	1%
Adj. Flow (vph)	26	50	18	63	36	33	15	791	56	73	1146	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	68	0	63	69	0	15	847	0	73	1192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

4: Merivale & Burris  
PM Peak Hour

1500 Merivale Road  
2038 Total Traffic

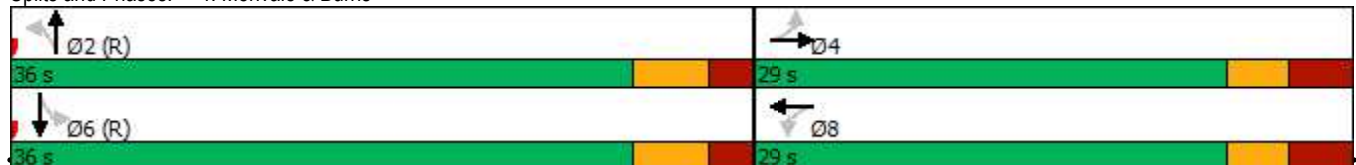


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	28.2	28.2		28.2	28.2		25.9	25.9		25.9	25.9	
Total Split (s)	29.0	29.0		29.0	29.0		36.0	36.0		36.0	36.0	
Total Split (%)	44.6%	44.6%		44.6%	44.6%		55.4%	55.4%		55.4%	55.4%	
Maximum Green (s)	22.8	22.8		22.8	22.8		30.1	30.1		30.1	30.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		5.9	5.9		5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	
Pedestrian Calls (#/hr)	20	20		30	30		20	20		20	20	
Act Effct Green (s)	14.8	14.8		14.8	14.8		42.5	42.5		42.5	42.5	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.65	0.65		0.65	0.65	
v/c Ratio	0.09	0.16		0.21	0.17		0.06	0.37		0.19	0.52	
Control Delay	17.4	14.6		19.8	11.4		9.3	6.7		10.5	10.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.4	14.6		19.8	11.4		9.3	6.7		10.5	10.1	
LOS	B	B		B	B		A	A		B	B	
Approach Delay		15.4			15.4			6.7			10.1	
Approach LOS		B			B			A			B	
Queue Length 50th (m)	2.5	4.9		6.3	3.5		0.4	14.9		2.6	29.5	
Queue Length 95th (m)	6.1	10.4		11.7	9.4		m2.6	34.4		12.1	71.0	
Internal Link Dist (m)		39.4			60.6			111.9			296.1	
Turn Bay Length (m)				20.0			30.0			60.0		
Base Capacity (vph)	442	627		454	607		232	2266		379	2294	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.11		0.14	0.11		0.06	0.37		0.19	0.52	

Intersection Summary

Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 27 (42%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.52  
 Intersection Signal Delay: 9.4  
 Intersection LOS: A  
 Intersection Capacity Utilization 75.7%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

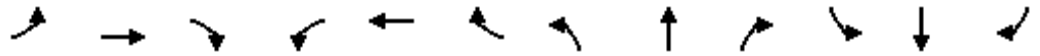
Splits and Phases: 4: Merivale & Burris



5: Merivale & Loblaws  
PM Peak Hour

1500 Merivale Road  
2038 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	33	119	78	24	110	61	733	25	92	1024	48
Future Volume (vph)	43	33	119	78	24	110	61	733	25	92	1024	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	75.0		0.0	50.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	10.0			10.0			0.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.96	0.93		0.94	0.95		0.99	1.00		0.99	1.00	
Fr <sub>t</sub>		0.883			0.877			0.995			0.993	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1768	1530	0	1768	1546	0	1768	3478	0	1768	3438	0
Fl <sub>t</sub> Permitted	0.671			0.660			0.210			0.340		
Satd. Flow (perm)	1202	1530	0	1154	1546	0	389	3478	0	624	3438	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			84			6			9	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		83.9			84.5			175.3			135.9	
Travel Time (s)		6.0			6.1			10.5			8.2	
Confl. Peds. (#/hr)	60		100	100		60	20		30	30		20
Confl. Bikes (#/hr)			5			5			5			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	4%	1%	1%	2%	1%	1%	3%	1%
Adj. Flow (vph)	43	33	119	78	24	110	61	733	25	92	1024	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	152	0	78	134	0	61	758	0	92	1072	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		4.0			4.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane								Yes				
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

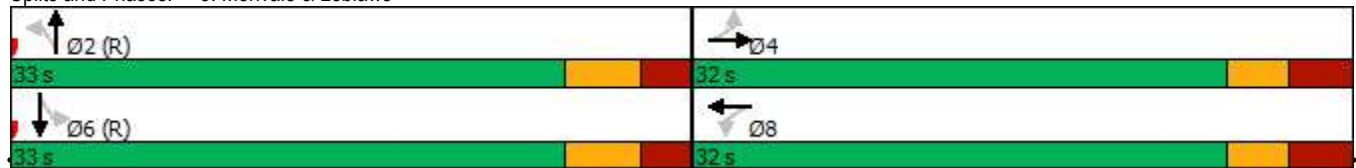


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	32.2	32.2		32.2	32.2		27.2	27.2		27.2	27.2	
Total Split (s)	32.0	32.0		32.0	32.0		33.0	33.0		33.0	33.0	
Total Split (%)	49.2%	49.2%		49.2%	49.2%		50.8%	50.8%		50.8%	50.8%	
Maximum Green (s)	25.8	25.8		25.8	25.8		26.8	26.8		26.8	26.8	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	19.0	19.0		19.0	19.0		14.0	14.0		14.0	14.0	
Pedestrian Calls (#/hr)	60	60		20	20		20	20		20	20	
Act Effct Green (s)	19.5	19.5		19.5	19.5		37.6	37.6		37.6	37.6	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.58	0.58		0.58	0.58	
v/c Ratio	0.12	0.32		0.23	0.26		0.27	0.38		0.25	0.54	
Control Delay	14.1	13.3		16.0	7.2		16.0	11.4		6.2	6.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.1	13.3		16.0	7.2		16.0	11.4		6.2	6.1	
LOS	B	B		B	A		B	B		A	A	
Approach Delay		13.5			10.5			11.7			6.1	
Approach LOS		B			B			B			A	
Queue Length 50th (m)	2.9	8.3		5.4	3.3		4.6	31.3		7.1	52.7	
Queue Length 95th (m)	7.9	18.4		12.6	11.8		m10.8	60.5		m2.7	10.1	
Internal Link Dist (m)		59.9			60.5			151.3			111.9	
Turn Bay Length (m)							75.0			50.0		
Base Capacity (vph)	477	627		458	664		225	2014		361	1992	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.09	0.24		0.17	0.20		0.27	0.38		0.25	0.54	

Intersection Summary



















Area Type: Other  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 35 (54%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.54  
 Intersection Signal Delay: 9.0  
 Intersection LOS: A  
 Intersection Capacity Utilization 90.3%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Merivale & Loblaws



6: Merivale & E Access  
PM Peak Hour

1500 Merivale Road  
2038 Total Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	0	39	32	0	33	52	754	30	30	1148	43
Future Volume (vph)	32	0	39	32	0	33	52	754	30	30	1148	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	40.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	10.0			10.0			0.0			0.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor												
Frt		0.926			0.931			0.994			0.995	
Flt Protected		0.978			0.976		0.950			0.950		
Satd. Flow (prot)	0	1686	0	0	1691	0	1768	3482	0	1768	3486	0
Flt Permitted		0.978			0.976		0.950			0.950		
Satd. Flow (perm)	0	1686	0	0	1691	0	1768	3482	0	1768	3486	0
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		102.0			97.1			156.3			175.3	
Travel Time (s)		7.3			7.0			9.4			10.5	
Confl. Peds. (#/hr)							40		10	10		40
Confl. Bikes (#/hr)			10						10			15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	2%	1%	1%	2%	1%
Adj. Flow (vph)	32	0	39	32	0	33	52	754	30	30	1148	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	65	0	52	784	0	30	1191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			4.0			4.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	53.7%						ICU Level of Service A					
Analysis Period (min)	15											



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	14	18	826	1205	14
Future Volume (vph)	10	14	18	826	1205	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	40.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	10.0		10.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.921				0.998	
Flt Protected	0.980		0.950			
Satd. Flow (prot)	1680	0	1768	3502	3495	0
Flt Permitted	0.980		0.950			
Satd. Flow (perm)	1680	0	1768	3502	3495	0
Link Speed (k/h)	50			60	60	
Link Distance (m)	102.5			200.1	156.3	
Travel Time (s)	7.4			12.0	9.4	
Confl. Peds. (#/hr)			40			40
Confl. Bikes (#/hr)		10				10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	2%	2%	1%
Adj. Flow (vph)	10	14	18	826	1205	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	18	826	1219	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	4.0			4.0	4.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane					Yes	
Headway Factor	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.7%
ICU Level of Service	A
Analysis Period (min)	15