

NewCold Toronto Ontario (TO-01) Traffic Impact Study

NewCOLD Cooperative U.A

60682143

April 2023

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Revision History

Rev #	Revision Date	Revised By:	Revision Description
1	Nov. 4, 2022	Atm Abir	Incorporates City of Guelph comments from review of first draft
2	Dec. 19, 2022	Atm Abir	Incorporated the MTO data for the New Mid-Block Interchange on Highway 6.
3	Feb. 15, 2023	Atm Abir	Incorporated updated Site Plan and Parking information
4	Apr. 24, 2023	S. Harmsworth	Revise Appendix D – Parking Study Memo; include all development phases

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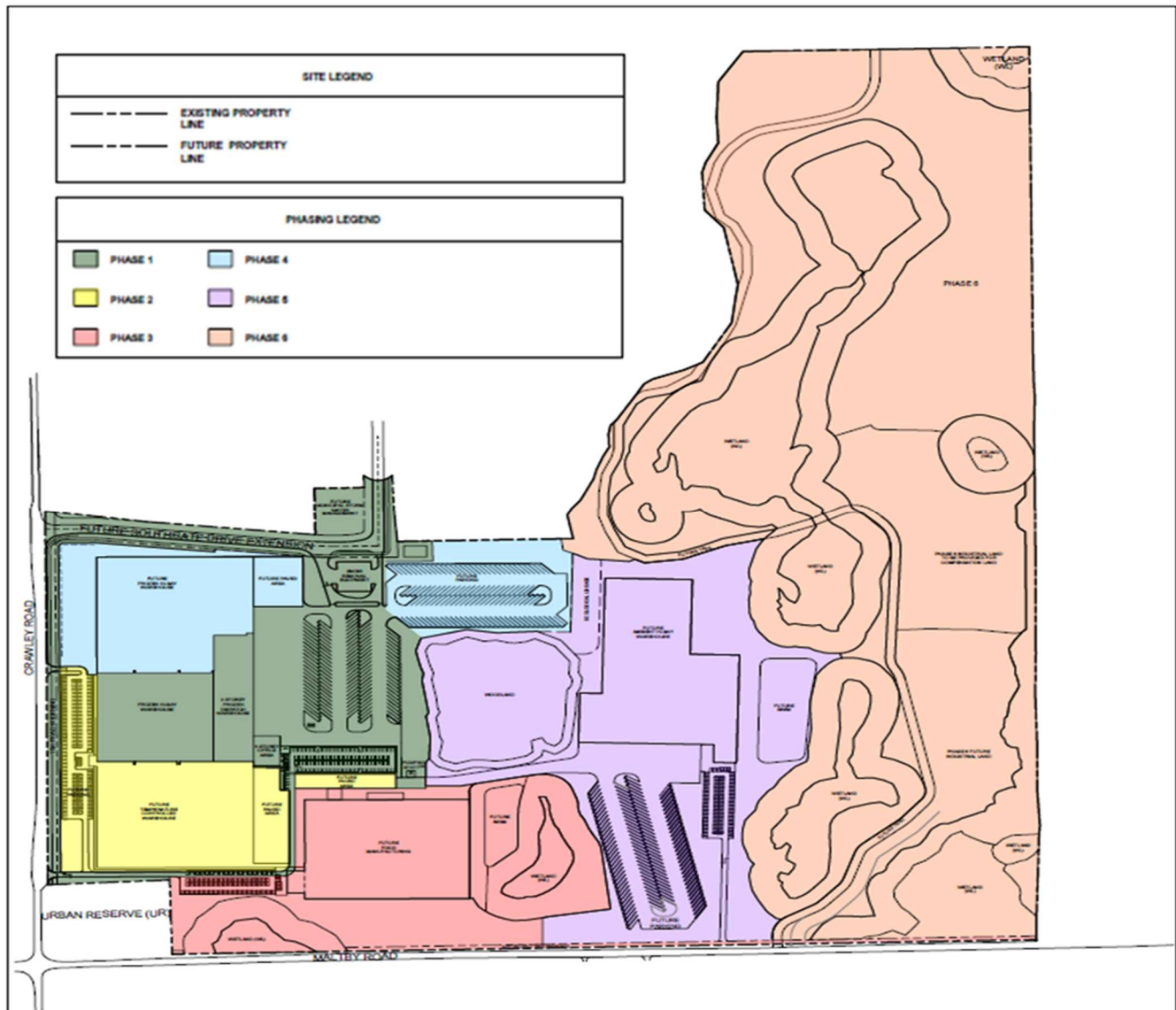
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AECOM Canada Ltd was retained by NewCOLD Cooperative U.A. to undertake a Traffic Impact Study (TIS) in support of a site plan and building permit approval to construct a cold storage facility, on a parcel of land located on the Southgate Business Park in Guelph.

The proposed cold storage facility is located within the Southgate Business Park. The development concept for Phase 1 and Full buildout are shown in **Figure ES-1** and **Figure ES-2**.

[illegible]

Figure ES-2: Development Concept (Full Buildout)



This report looks at the following phases of development:

- The first phase of development (Maple Phase 1) is approximately 32,222 m² and has a target completion in 2024.
- The full buildout of the proposed development is approximately 150,060 m² and has a target completion in 2029.

Other interim development phases are under consideration but are not yet finalized and therefore were not included in this TIS.

The site-generated trips were based on the proposed site accesses, and the number of employees, visitors and trucks which will be coming to the facility daily. Data provided by the client for the traffic impact study is outlined in **Section 4.2**.

Scope of Work

AECOM has followed the City of Guelph TIS Guidelines (April 2016) in the preparation of this report. Based on discussions with the City and MTO the following is the identified scope of work for this TIS:

■ Study Area Intersections:

- Laird Road and Highway 6 Northbound Interchange
- Laird Road and Highway 6 Southbound Interchange
- Laird Road and Southgate Drive
- Admiral Place/Rutherford Crescent and Southgate Drive
- Clair Road and Southgate Drive
- Maltby Road West and Crawley Road
- Maltby Road West and Gordon Street
- Highway 6 and Concession Road 4
- Highway 6 Midblock Interchange Ramp West Ramp Terminal
- Highway 6 Midblock Interchange Ramp East Ramp Terminal

■ Analysis Periods: weekday AM and PM peak hours

– Background Developments and other consideration:

- New Highway 6 Interchange and Closure of Maltby Road West/Concession Road 4 intersection at Highway 6
- Clair-Maltby Secondary Plan Area

■ Horizon Years: Existing (2022), phase 1 buildout (2024), full phase buildout (2029), five years after full buildout (2034) and ten years after full buildout (2039).

■ Parking Study:

- 6 proxy sites will be selected for comparison to the subject site
- Sites to be located within 10km of a 400 series highway

■ Warrants / Sight Distance Analysis:

- The TIS will include relevant signal warrants, sight distance analyses and left-turn lane warrants, if required.

Conclusion

that the following is a summary of the completed TIS investigations:

■ Existing Traffic Conditions (2022):

Most of the study area intersections are currently operating at satisfactory levels of service. Westbound movements of the Concession Road 4 and Highway 6 intersection are currently operating at near capacity with a LOS E during AM peak hour whereas eastbound movements of the Concession Road 4 and Highway 6 intersection are currently operating at capacity with a LOS F during the PM peak hour. The northbound left turn movement at Laird Road and Southgate Drive intersection is identified as a critical movement operating near capacity with a LOS E during the PM peak hour. Eastbound movements at the Maltby Road West and Gordon Street stop-controlled intersection are operating near capacity with LOS F during both AM and PM peak hour. Westbound movements at Maltby Road and Gordon Street intersection are operating with LOS E during AM peak hour and LOS F during PM peak hour.

■ Development Trip Generation:

The development is forecast to generate 87 passenger vehicle trips and 13 truck trips during the AM and PM peak hours (inbound and outbound altogether for phase 1-2024); and 436 passenger vehicle trips and 46 truck trips during the AM and PM peak hours (inbound and outbound altogether for full buildout -2029).

■ Background Traffic Condition:

The study area intersections are forecast to operate at acceptable levels of service for most of the intersections under 2024, 2029, 2034 and 2039 background traffic conditions apart from the movements listed below:

MTO Facilities

Highway 6 and Concession Road 4

- Westbound thru-left-right turn movement with LOS E (AM peak hour) and LOS F (PM peak hour), 2024 -new Highway 6 Midblock interchange not open scenarios
- Eastbound thru-left-right turn movement with LOS E (PM peak hour, 2024 -new Highway 6 Midblock interchange not open scenarios)

Laird Road and Highway 6 Interchange Northbound ramp terminal:

- Northbound right turn movement with v/c ratio more than 0.75 (AM peak hour, 2029 all scenarios, 2034, and 2039).

City of Guelph Facilities

Laird Road and Southgate Drive:

- Northbound left turn movement with LOS F (PM peak hour, 2024/2029 all scenarios, 2034, and 2039).
- Westbound thru-right turn movement with v/c ratio more than 0.85 (PM peak hour, 2029 all scenarios, 2034, and 2039).
- Westbound through movement with LOS F (PM peak hour, 2034 and 2039)
- Eastbound left turn movement with LOS F (AM peak hour, 2034 and 2039).
- Eastbound thru movement with v/c ratio more than 0.85 (PM peak hour, 2039).

- Southbound thru-right movement with v/c ratio more than 0.85 (PM peak hour, 2039).

Maltby Road West and Concession Road 7:

- Northbound left-thru-right turn movement with a v/c ratio more than 0.85 (PM peak hour, 2034 and 2039)

Clair Road and Southgate Drive

- All northbound movements at Clair Road and Southgate Drive with LOS E (PM peak hour, 2034 and 2039)

Admiral Place and Southgate Drive:

- Eastbound thru-left-right turn movement with LOS E (PM peak hour, 2039)

■ **Total Traffic Conditions:**

The future total traffic is forecast to operate at a similar level of operation as the background traffic operations for the majority of the intersections in the study area apart from the Clair Road and Southgate Road intersection during the future total 2029 PM peak hour. All the northbound operations that were operating with a LOS of D during the background 2029 PM peak hour will operate with a LOS F during the total 2029 PM peak hour. Therefore, the proposed site is shown to impact traffic operations at this intersection. A signal warrant was conducted for the Clair Road and Southgate Drive intersection with volumes from 2029, which shows no signal is warranted for the intersection (refer to **Section 7.1**). A sensitivity analysis was conducted to show the intersection operations as a signalized intersection (refer to **Section 5.7**). Note that the Clair Road and Southgate Drive intersection was a signalized intersection until 2017 after which it was converted to a stop-controlled intersection (source: Google Maps historical street view image).

Recommendations

No lane configuration changes are required to the network to accommodate the proposed development. The new Highway 6 midblock interchange will function without any critical movements throughout all horizon years. The proposed development will not affect the interchange operation.

For the Laird Road and Southgate Drive intersection, all projected traffic can be accommodated with the existing layout in horizon year 2039; however, the signal timing plan may need to be modified as development proceeds to better accommodate turning movements.

It is recommended that the Clair Road and Southgate Drive intersection be monitored as development proceeds to confirm an appropriate timing for implementing signals.

Pedestrian and cyclist access the proposed site from the walking trail and proposed cycling trail should be provided along Southgate Drive and accommodations to the site should be provided separate from the truck access.

The parking study conducted recommended no additional parking be required on the site plan. Considering the type of development and the ITE Parking Generation Rates, the proposed site parking facilities are adequate to accommodate both the Phase 1 and the full-build requirements.

To encourage alternative modes of travel, the following on-site Transportation Demand Management (TDM) measures are recommended:

- 10 short term and 23 long term Bicycle Parking spaces required as per City Zoning By-Law, 2022 (note that only 7 bicycle parking spaces are required as per City Parking Standards, 2019);
- As recommended in the City Parking Standards:
 - Bicycle Stall of 1.8 metres x 0.6 metres minimum;
 - Access Aisle to Bicycle Stall of minimum 1.2 metres;
 - Headroom with minimum 1.9 metres vertical clearance;
 - Parallel Racks spacing of 0.6 metres for Bicycle Racks;
 - End to End Racks spacing of 1.8 metres for Bicycle Racks;
 - Aisle width from Rack to Rack of 3.9 metres for Bicycle Racks;
- The provision of Carpool Spaces is not typically mandated through Zoning, but the City may encourage the addition of carpool spaces in a design guideline for future developments. A suggested target of 5% (8 parking spaces) of the total parking spaces should be dedicated to carpool parking. This can be identified through signs, and should a change be required down the road, signs can be added or removed as appropriate to meet demand. The carpool parking spaces should be close to the facility, but not as close as accessible parking.

Sight distance analysis for the proposed site accesses will be completed at a later date based on appropriate standards (TAC Manual).

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1. Introduction

1.1 Study Purpose and Objectives

AECOM Canada Ltd was retained by NewCOLD Cooperative U.A. to undertake a Traffic Impact Study (TIS) in support of a site plan and building permit approval to construct a cold storage facility on a parcel of land located within the Southgate Business Park in the City of Guelph (City).

The TIS was undertaken as per the City of Guelph Traffic Impact Study Guidelines (April 2016). This report presents the data and methodology used to undertake the TIS as well as the TIS findings and recommendations in support of the site plan and building permit approval application. The following general scope of work was reviewed with the City of Guelph and the Ministry of Transportation Ontario (MTO) West Region:

- Assess current traffic operations at nearby intersections on a typical weekday during both the AM and PM peak hours in the Existing (2022) conditions.
- Estimate trips generated by the proposed facility and distribution of the trips on the existing network. Trip generation breakdown by vehicle type and hours of operations was provided by the client.
- Traffic growth rates were provided by City of Guelph and the MTO.
- Summarize the required improvements to facilitate the proposed site traffic for each of the following development phases and corresponding horizon years:
 - Phase 1 completion (2024)
 - with Southgate Drive Extension (to Crawley Road¹); new Highway 6 Mid-block Interchange not open
 - without Southgate Drive Extension; new Highway 6 Mid-block Interchange not open
 - with Southgate Drive Extension; new Highway 6 Mid-block Interchange open
 - Full buildout (2029)
 - with Southgate Drive Extension; new Highway 6 Mid-block Interchange open
 - without Southgate Drive Extension; new Highway 6 Mid-block Interchange open
 - Five years after the anticipated opening year of the proposed facility (2034); it is anticipated that both the Southgate Drive Extension and the new Highway 6 Mid-block Interchange will be operational by this horizon year.
 - Ten years after the anticipated opening year of the proposed facility (2039)

1.2 Site/Development Description

Facility will be constructed in different phases as identified in the **Table 1**. This TIS will focus on the Phase 1 (i.e., the Maple/Hudson Building) and Full build out scenarios only². **Table 1** shows the land use and associated development area within the proposed phases.

1. In all instances the reference to "Southgate Drive Extension" means the extension of the existing Southgate Drive from its current terminus at the north side of the New Cold site westward to a new intersection connection at Crawley Road.

2. As directed by NewCold Cooperative U.A., the interim phases beyond Phase 1 have not yet been fully identified. Further assessment will be completed once those phases have been determined.

Table 1: Description of the Proposed Land Use within the Industrial Development

	Building Type	Building G.F.A m ²
Maple /Hudson Building	Warehouse	85,340
Food Production Building	Manufacturing	24,290
Astro Building	Warehouse	40,430

1.3 Study Area

The project site location and the study area intersections are illustrated in **Figure 1**. The proposed cold storage facility is located within the Southgate Business Park. The main entrance of the facility will be through the Southgate Drive entrance (only trucks will be accessing through this entrance), whereas the other three entrances along Maltby Road West and Crawley Road will be for employees or visitors. It is anticipated that most of the trucks will use the Southgate Drive extension-Crawley Road via Concession Road 7 to enter the site, once this extension and the new Highway 6 Interchange are complete. **Figure 2** shows the new Highway 6 midblock interchange being part of the study area once it is open. Accordingly, the Study Area includes the following eleven intersections.

- Laird Road and Highway 6 Northbound Interchange
- Laird Road and Highway 6 Southbound Interchange
- Laird Road and Southgate Drive
- Admiral Place/Rutherford Crescent and Southgate Drive
- Clair Road and Southgate Drive
- Maltby Road West and Crawley Road
- Maltby Road West and Gordon Street
- Highway 6 and Concession Road 4
- Southgate Drive Extension (construction timing unknown; to be completed before facility build-out)
- Highway 6 Midblock Interchange West Ramp Terminal Intersection (to be completed by 2024 or later)
- Highway 6 Midblock Interchange East Ramp Terminal Intersection (to be completed by 2024 or later)

Figure 1: Study Area

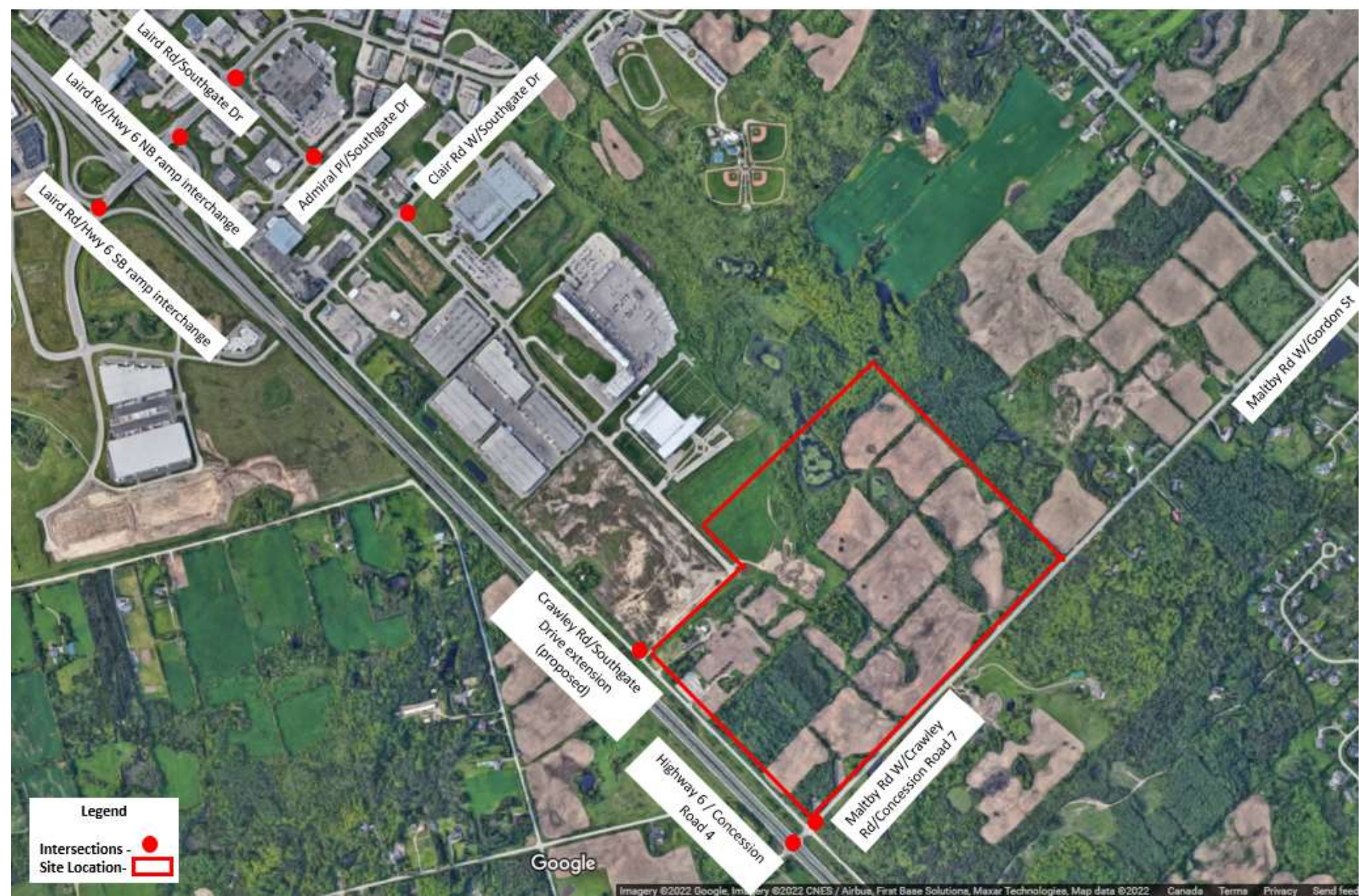
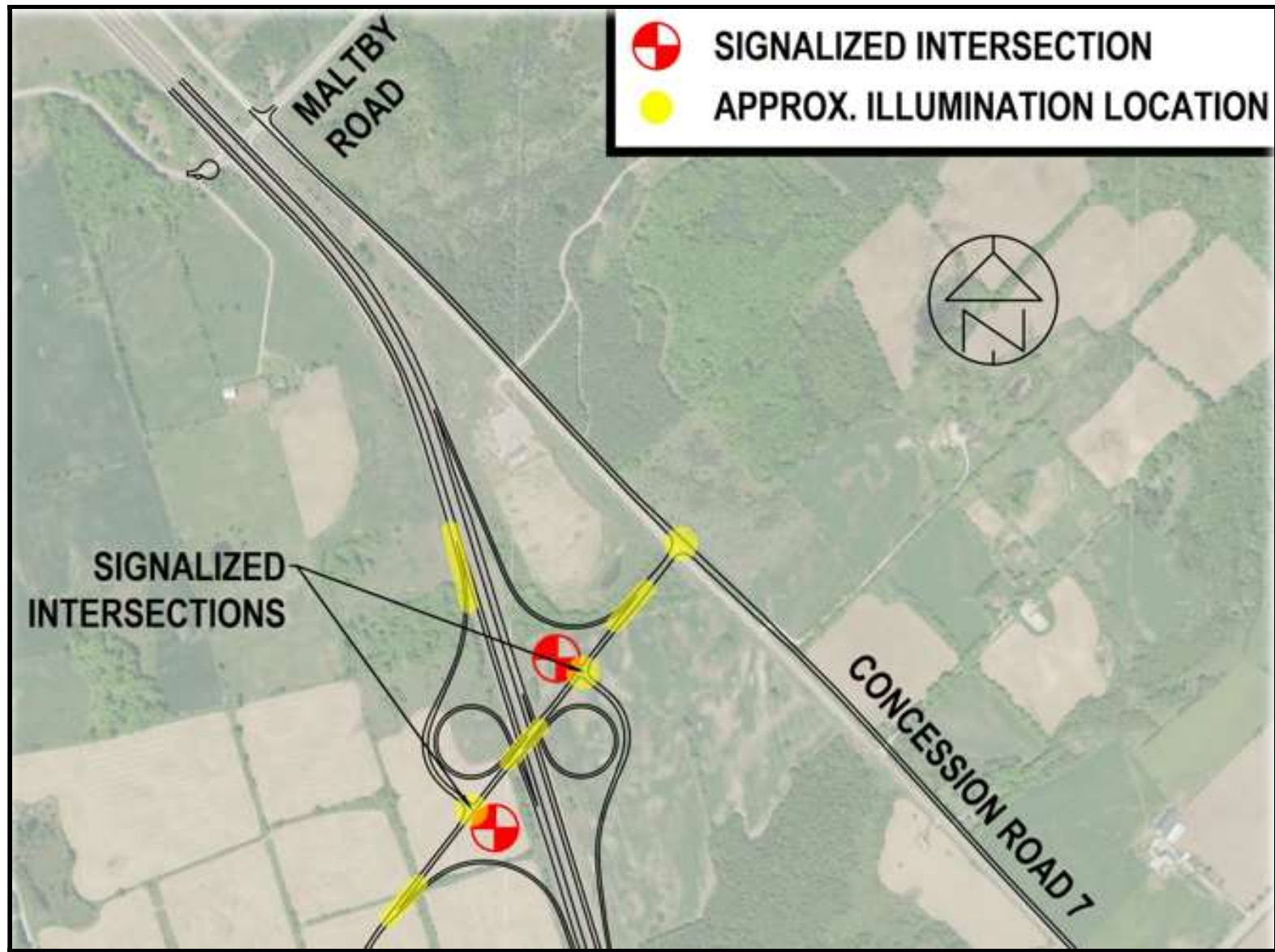


Figure 2: New Highway 6 Midblock Interchange



2. Introduction

2.1 Study Purpose and Objectives

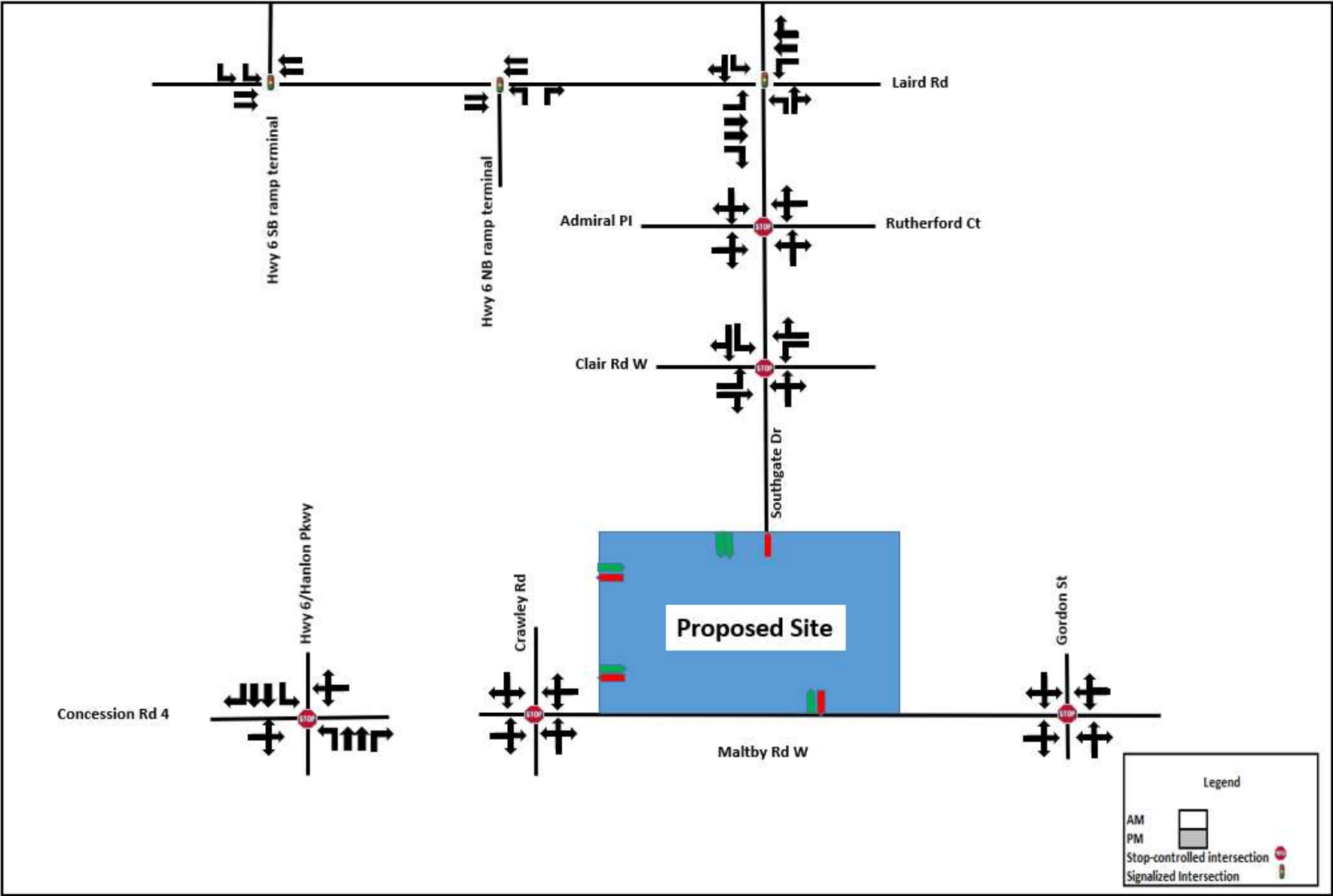
The main roadways in the vicinity of the subject site that have been considered in assessing the traffic impacts of the development include Highway 6, Laird Road, Southgate Drive, Admiral Place/Rutherford Crescent, Clair Road West, Concession Road 7, Concession Road 4, Gordon Street and Maltby Road West. The existing road network as well as lane configurations and traffic control devices at the study area intersections are illustrated in **Figure 3**. Based on the road classification in the *City of Guelph Road Network Map*³, the characteristics of these roadways are as follows:

- **Highway 6** is under the jurisdiction of the MTO. This Highway is also referred to as the Hanlon Expressway; however, within this report the roadway is referred to as Highway 6. Near the subject site, Highway 6 has a four-lane cross section with additional right and left turn storage lanes (northbound and southbound) at its intersection with Concession Road 4 and Maltby Road West. The posted maximum speed limit is 80 kilometers per hour (km/h) for all approaches. The Highway 6 ramp interchanges with Laird Road have a posted maximum speed of 50 km/h.
- **Laird Road** is classified as an east-west arterial road under the City's jurisdiction. Near the subject site, Laird Road has a four-lane cross section with additional right-turn (only eastbound) and left-turn lanes (both eastbound and westbound) at its intersection with Southgate Drive. The posted maximum speed limit is 50 km/h for all approaches.
- **Southgate Drive** is classified as a north-south local road under the City's jurisdiction. Near the subject site, Southgate Drive has a two-lane cross section with additional left-turn storage lanes at its intersections with Laird Road (both northbound and southbound), Clair Road West (southbound). The maximum speed limit is assumed to be 50 km/h as no posted speed limit sign was observed. The City's maximum speed limit is 50 km/h unless otherwise posted. The City of Guelph states that Southgate Drive is a 24-hours permissive truck route in their Permissive Truck Routes Map⁴.
- **Admiral Place / Rutherford Crescent** is classified as an east-west arterial road under the City's jurisdiction. Near the subject site, Admiral Place / Rutherford Crescent has a two-lane cross section at its intersection with Southgate Drive. The maximum speed limit is assumed to be 50 km/h, as per City bylaw, as no posted speed limit sign was observed.
- **Clair Road West** is classified as an east-west collector under the City's jurisdiction. Near the subject site, Clair Road West has a two-lane cross section with additional left turn storage lanes (both eastbound and westbound) at its intersection with Southgate Drive. The posted maximum speed limit is 60 km/h for (both eastbound and westbound).
- **Concession Road 4** is classified as an east-west local road under the jurisdiction of the County of Wellington. Near the subject site, Concession Road 4 has a two-lane cross section at its intersection with Highway 6. The maximum speed limit is assumed to be 50 km/h as no posted limit sign was observed.
- **Concession Road 7** is classified as an east-west local road under the jurisdiction of the County of Wellington. Near the subject site, Concession Road 7 has a two-lane cross section at its intersection with Maltby Road West. The posted maximum speed limit is 60 km/h.

3. https://guelph.ca/wp-content/uploads/map_CityOfGuelph.pdf

4. https://guelph.ca/wp-content/uploads/map_permissiveTruckRoutes.pdf

Figure 3: Existing Lane Configuration and Traffic Control

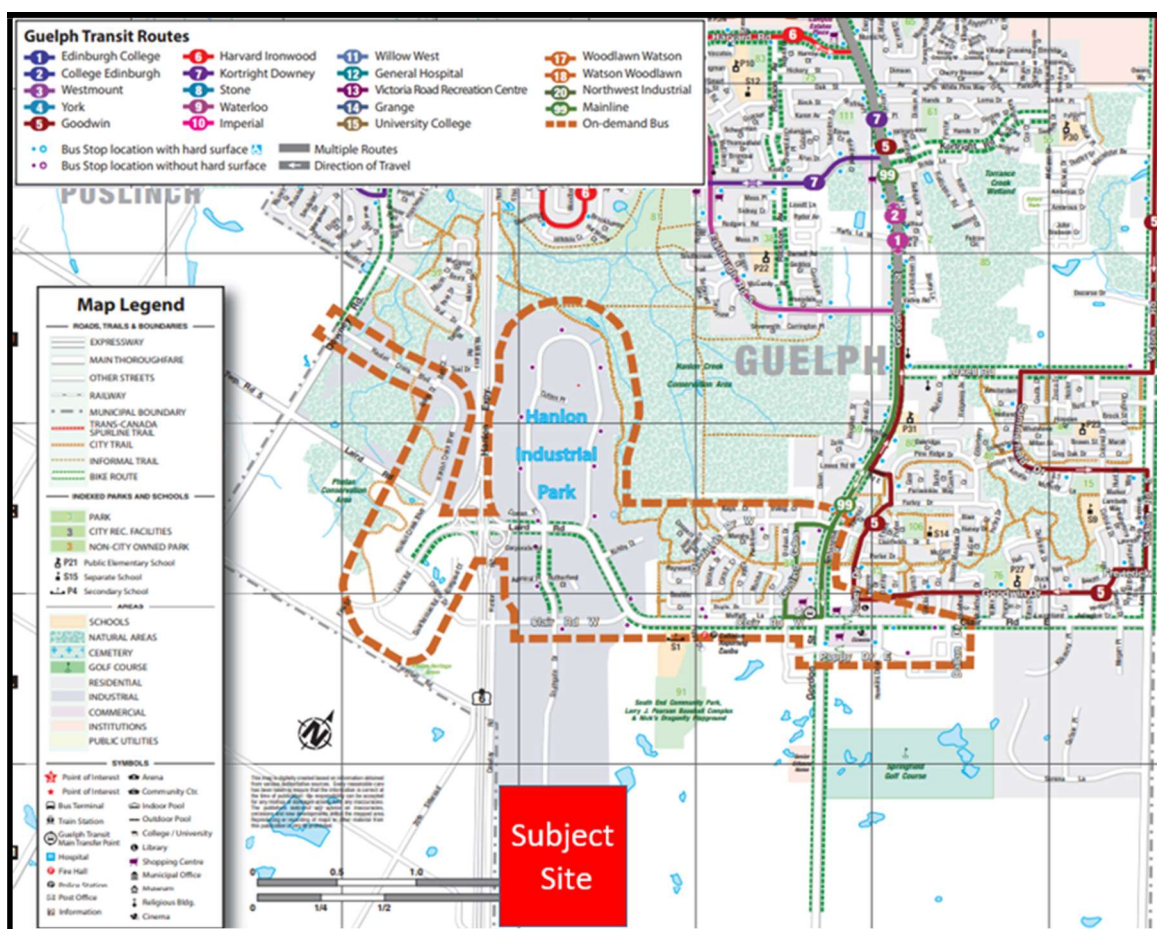


- **Maltby Road West** is classified as an east-west collector road under the City's jurisdiction. Near the subject site, Maltby Road West has a two-lane cross section at its intersections with Crawley Road. The posted maximum speed limit is 60 km/h.
- **Crawley Road** is classified as a north-south local road under the City's jurisdiction. Near the subject site, Crawley Road has a two-lane cross section at its intersection with Maltby Road West. The posted maximum speed limit is 60 km/h.
- **Gordon Street** is classified as a north-south arterial road under the City's jurisdiction. Near the subject site, Gordon Street has a two-lane cross section at its intersection with Maltby Road West. The posted maximum speed limit is 70 km/h.

2.2 Existing Transit Service

The subject site is in the general Hanlon Business Park area for which Guelph Transit provides on-demand bus service as indicated on their Existing Transit Route Map⁵. **Figure 4** illustrates the area in which on-demand service is provided. On-demand service is provided Monday to Saturday from 5:45 AM to 12:15 AM and on Sunday from 9:15 AM to 6:45 PM.

Figure 4: Existing Transit Network



5. https://guelph.ca/wp-content/uploads/GuelphTransit_SystemMap.pdf

2.3 Future Transit Service

On November 15, 2021, Council approved the Guelph Transit Future Ready Action Plan, a blended model of transit hubs, express routes, and routes that follow the city's spine in a grid pattern as well as its outer perimeter. It's designed to get people where they want to go with more route types (e.g., core, base, university express, on-demand, and industrial express), faster travel times, frequent service, and service reliability. As part of the Future Ready Action Plan that came as a result of the route review, there has been an expansion of transit services planned for Southgate Drive south of Clair Road West. The expansion was set for 2023, but developments on Southgate Drive have delayed this transit service expansion plan until the development is complete. Though the change is not intended for next year, it is on the city's radar for future expansion of transit service to this area.

2.4 Active Transportation

Within the study area, sidewalks are provided on both sides of Laird Road west of Southgate Drive and on the north side of Laird Road east of Southgate Drive. Clair Road, Southgate Drive, Maltby Road West, Crawley Road, and Concession Road 4 provide gravel shoulders on both sides of the roadway with no formal sidewalk facilities.

Existing cycling facilities in the study area include on-street bicycle lanes on both sides of Laird Road and on both sides of Southgate Drive between Corporate Court and Clair Road. **Figure 5** illustrates both the existing and future cycling infrastructure in the study area as identified in the City's *2012 Cycling Master Plan*.

The City's *2021 Trail Master Plan* includes existing and planned trail connections in the study area. The Plan indicates a Desired Connection to the north-east of the proposed site. **Figure 6** identifies the Proposed Trail Map.

2.5 Data Collection

Traffic volumes for the following study area intersections identified in **Section 1.3** were obtained from turning movement counts collected by AccuTraffic, on March 10th, 2022:-

- Laird Road and Highway 6 Northbound⁶ Interchange (signalized)
- Laird Road and Highway 6 Southbound⁷ Interchange (signalized)
- Laird Road and Southgate Drive (signalized)
- Admiral Place/Rutherford Crescent and Southgate Drive (stop-control)
- Clair Road and Southgate Drive (stop-control)
- Maltby Road West and Crawley Road (stop-control)
- Maltby Road West and Gordon Street (stop control)
- Highway 6 and Concession Road 4 (stop-control)
- Southgate Drive Extension (construction timing unknown; to be completed before facility build-out)

Appendix A includes the detailed traffic counts for these study area intersections. As noted above, there are only three existing signalized intersections. All other intersections in our study area are unsignalized/stop controlled, or not yet constructed. The signal timing plans of the signalized intersections were provided by the City and the MTO. All Signal Timing Plans are included in **Appendix B**.

⁶ "Laird Road and Highway 6 Northbound Interchange" refers to the east ramp terminal intersection.

⁷ "Laird Road and Highway 6 Southbound Interchange" refers to the west ramp terminal intersection.

The new Highway 6 midblock interchange traffic volume data was provided by MTO from the Midblock Traffic Operations Report from the Highway 401/6 Improvements Project. The specific pages from report provided by MTO are attached to **Appendix A**.

In addition, the MTO provided the following 2019⁸ data for a location on Highway 6 at the Laird Road interchange (specifically: Linear Highway Referencing System (LHRS) location 13599/offset 0.0):

- 2-way AADT: 35400 vehicles
- 2019 yearly growth rate= +2%
- 10-year growth rate = +13 % (2010-2019)

2.6 Existing Traffic Volumes (2022)

To account for potential impacts because of the COVID-19 pandemic, a 2016 TMC count for the Laird Road and Southgate Drive intersection was obtained⁹ and compared to the new count data. To conduct the comparison the 2016 count was grown to the year 2022 using a 2% growth factor and directly compared with the new count data for the same intersection. A calibration factor was determined and applied to all the newly collected count data. The AM and PM peak hour calibration factors were averaged resulting in an increase of 24% for each movement overall, from 2016 to 2022, at all of the study area intersections. The calibration methodology and Synchro input parameters are described in **Section 2.7** and **Section 2.8**.

Figure 7 shows the resulting adjusted existing (2022) AM and PM traffic volumes that were used in this assessment¹⁰.

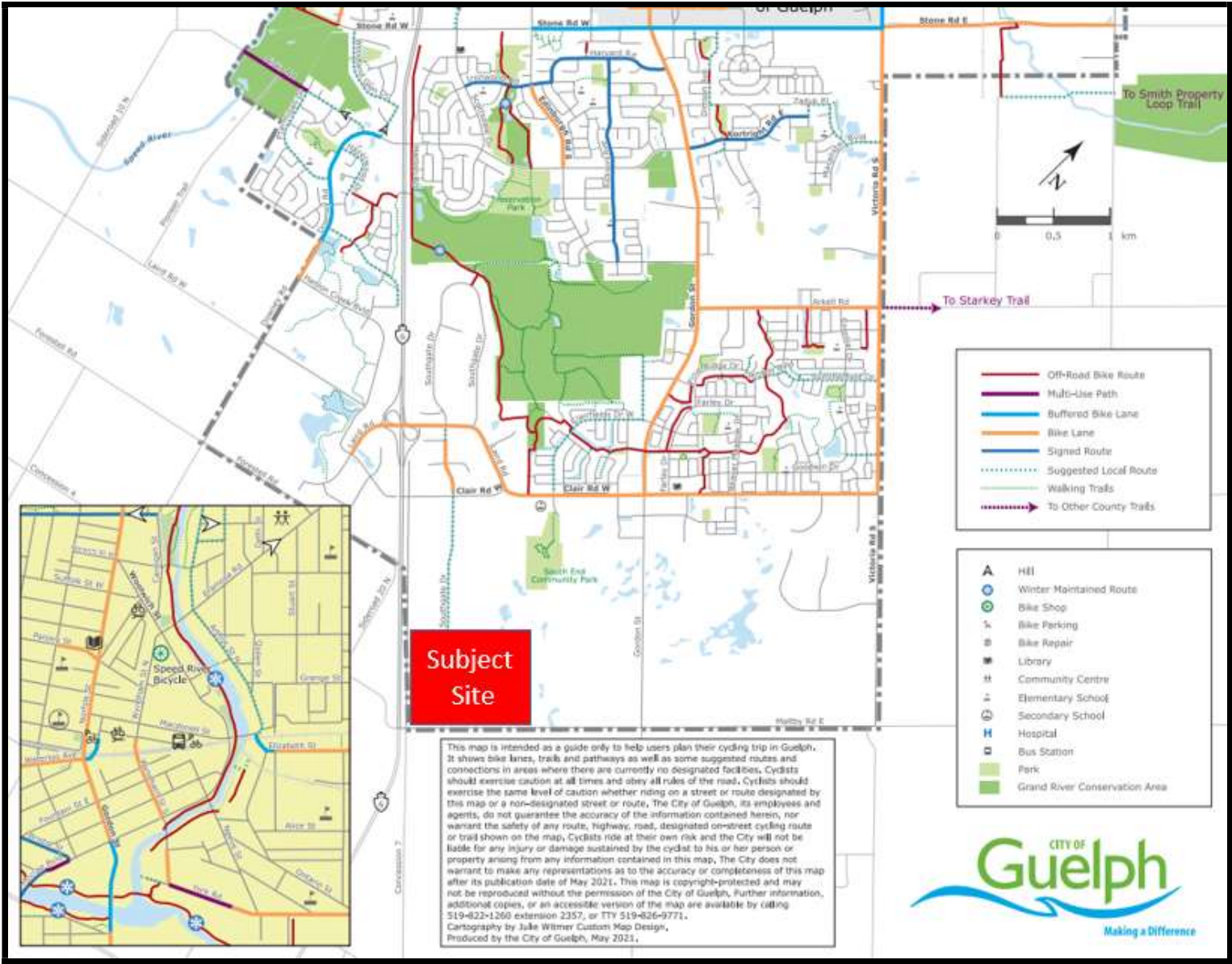
Note that the New Midblock interchange is not present in horizon year 2022 and is not included in the existing conditions traffic volumes.

8. As noted by the MTO (email dated 12-10-2022), 2019 data is the latest available; 2020-2021 data has not yet been produced because of effects of COVID.

9. Data purchased from Spectrum.

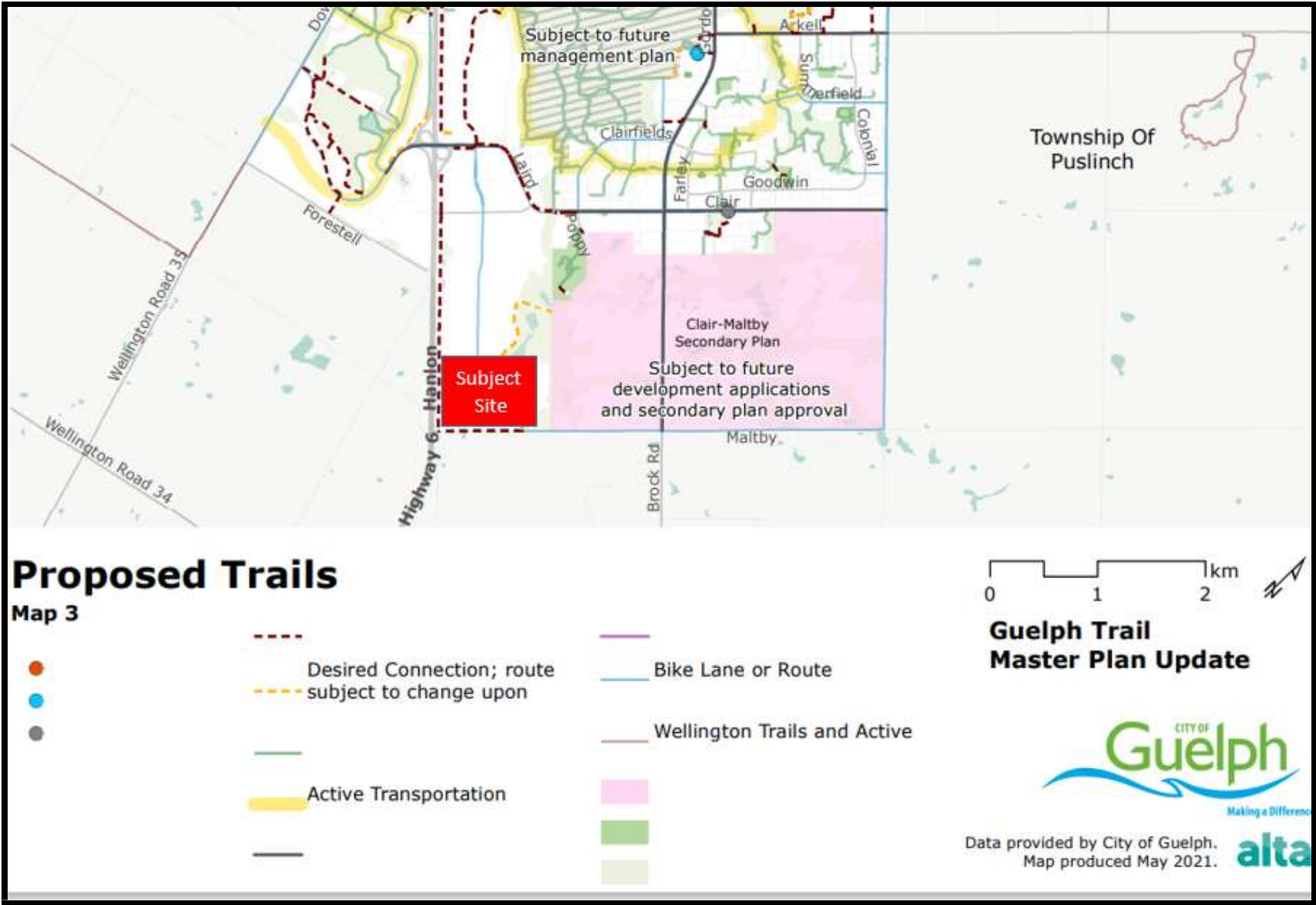
10. Note that the volumes shown in **Figure 6** have undergone some adjustment based on the exercise of calibrating the existing conditions Synchro model, as described in **Section 3.7**.

Figure 5: Existing Cycling Network



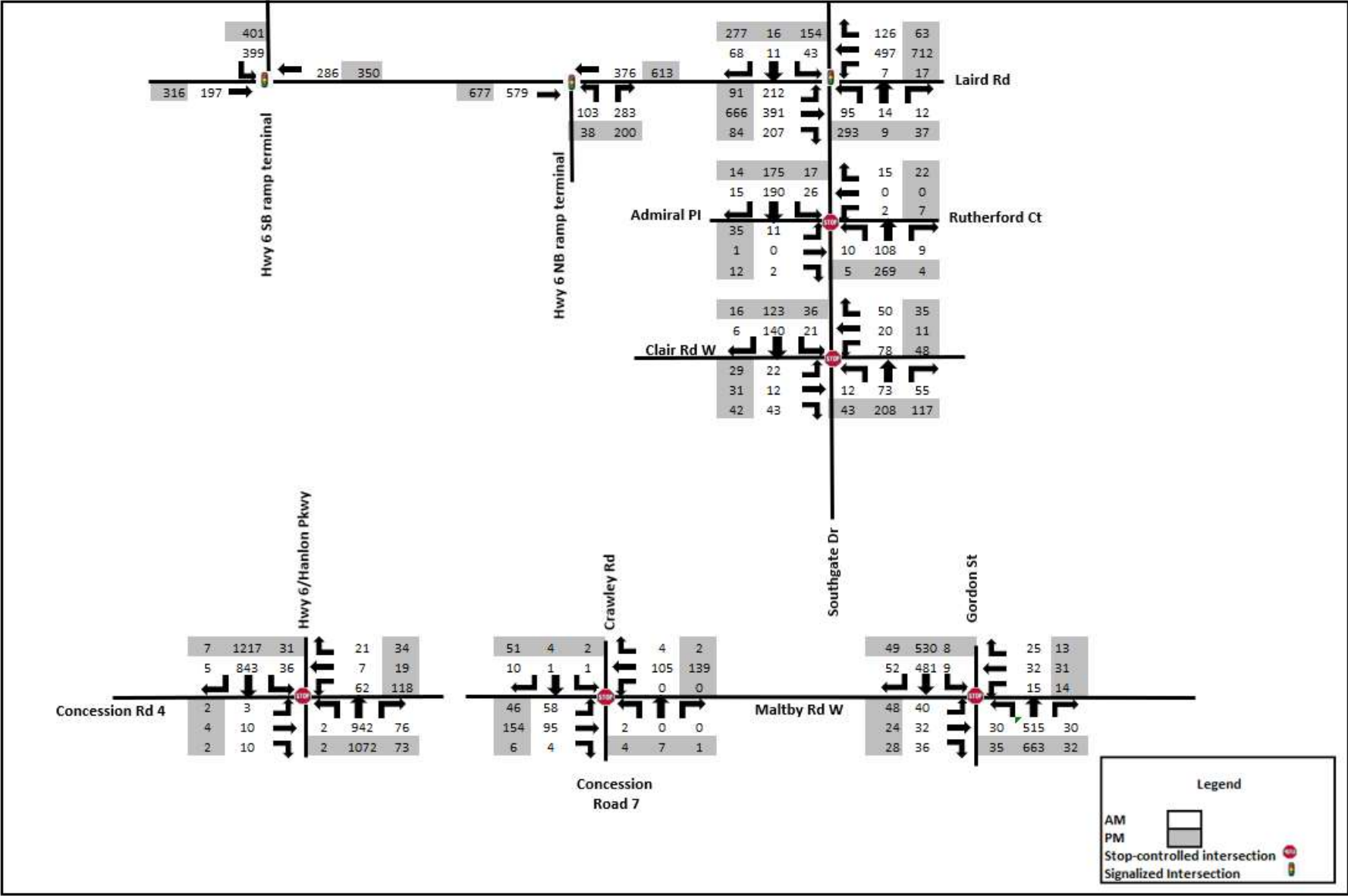
1.1

Figure 6: Proposed Trail Map



1.2

Figure 7: Existing (2022) Adjusted AM and PM Traffic Volumes



2.7 Synchro Model Input Parameters

Traffic operations are analyzed using Synchro / SimTraffic version 11.0 software. The following input parameters were used for this assessment and vary depending on the facility being assessed (i.e., MTO or City of Guelph facilities). All inputs to the Synchro models were assumed to be the default value, aside from the specific inputs noted below.

- **Ideal Saturated Flow Rate:** For the LOS analysis the Ideal Saturated Flow Rate is assumed to be Synchro default 1900 vehicles per hour per lane (vphpl).
- **Signal Cycle Length:** The signal timing plans provided in **Appendix B** were input to the Synchro model. For all the intersections, the cycle length from the signal timing plan was used. For the new Highway 6 midblock interchange, a signal cycle length of 90 seconds per cycle was used for intersection capacity analysis.
- **Peak Hour Factor:** For the City intersections, the Peak Hour Factor for the AM and PM peak hour is calculated from the 15-minute interval traffic counts provided in **Appendix A**. The Peak Hour Factor ranges from 0.78-0.95 (AM and PM) within the study area intersections. For the new Highway 6 midblock interchange, a PHF of 0.92 was used.
- **Intersection Control:** The future intersection of Southgate Drive / Crawley Road is assumed to be an All-Way stop controlled intersection for analysis. Similarly, the future intersection of Southgate Drive / New Cold facility access is assumed to be all way stop for analysis.
- **Storage Length and Queues:** The volume distribution for queue/storage length assessment for multilane approaches is split 60/40 for dual left turn lanes and 50/50 for through volumes distributed in a 2-lane cross section.

2.8 Synchro Model Calibration

The V/C ratio represents how saturated a road or intersection movement is, based on actual volumes versus the maximum number of vehicles that can travel. A v/c between 0.00 and 0.49 means that less than half the capacity is being used by vehicles; this is generally associated with good operating conditions. As the v/c approaches 1.00, traffic conditions worsen and at 1.00 the theoretical maximum number of vehicles is reached, and operations are generally denoted as 'very poor'. A v/c can exceed 1.00, indicating very poor/over saturated conditions and extended traffic delays.

The "critical movements" identified in the capacity analyses summary tables are based on the City's TIS guidelines. According to the guidelines, critical movements are defined as having an LOS of "E" or "F" and/or a V/C ratio for overall intersection operation, through movements or shared/turning movements increased to 0.85 or above; for exclusive movements increased to 0.90 or above for signalized intersections, and for unsignalized intersections an LOS of "E", or "F".

Critical movements in the Existing Condition (2022) AM and PM peak hour scenarios were calibrated in Synchro 11 to reduce the v/c ratio below 1. The following assumptions were made to calibrate the Synchro 11 model:

- **Laird Road and Southgate Drive:** Lost time of – 1 was adjusted for the critical northbound left-turn movement in the PM peak model.
- **Concession Road 4 and Highway 6:** The COVID-19 adjustment factor (24% as discussed in **Section 2.6**) was removed, and critical gap was adjusted for westbound left, through and right turn movements to 7.0 seconds, 6.1 seconds, and 6.5 seconds for the PM peak model.

- **Maltby Road West and Gordon Street:** The COVID-19 adjustment factor (24% as discussed in **Section 2.6**) was removed for the PM peak model. Maltby Road West and Gordon Street is analyzed as an unsignalized intersection for the existing conditions assessment but is converted to a signalized intersection with an optimized cycle length of 100 seconds and speed limit of 60 km/hr as suggested for the future conditions analyses, as requested by City of Guelph.

2.9 Traffic Operations Criteria

The following Level of Service (LOS) criteria are used to assess the Synchro model results. The LOS describes the “driver experience” on a transportation facility; see **Table 2** for further description.

Table 2: Traffic Operations Criteria

LOS	Signalized Intersections		Unsignalized Intersections	
	Description	Ave Delay	Description	Ave Delay
A	Very seldom does a vehicle wait longer than one red light. The approach appears open, turns are easily made, and drivers have freedom of operation.	≤10 sec	Little or no traffic delay occurs. Approaches appear open, turning movements are easily made, and drivers have freedom of operation.	≤10 sec
B	An occasional green light is fully used, and many greens approach full use. Many drivers begin to feel somewhat restricted within groups of vehicles approaching the intersection	≤20 sec	Short traffic delays occur. Many drivers begin to feel somewhat restricted in terms of freedom of operation.	≤15 sec
C	Intersection operation is stable but often has fully used greens. Drivers feel more restricted and occasionally may wait more than one red light. Queues may develop behind turning vehicles	≤35 sec	Average traffic delays occur. Operations are generally stable, but drivers emerging from the minor street may experience difficulty in completing their movement. This may occasionally impact on the stability of flow on the major street.	≤25 sec
D	Drivers experience increasing restriction and instability of traffic flow. There are substantial delays to vehicles during short peaks within the peak hour, but there is enough time with lower demand to permit occasional clearing of queues and prevent excessive backups.	≤55 sec	Long traffic delays occur. Drivers emerging from minor streets experience significant restriction and frustration. Drivers on the major street will experience congestion and delay.	≤35 sec
E	The capacity of the road is reached. There are long queues of vehicles waiting upstream of the intersection and delays to vehicles may extend to several signal cycles.	≤80 sec	Very long traffic delays occur. Operations approach the capacity of the intersection.	≤50 sec
F	Vehicle demand exceeds the available capacity and delays extending through the peak hour are experienced.	>80 sec	Vehicle demand exceeds the available capacity. Very long traffic delays occur frequently.	>50 sec

2.9.1 Storage Length and Queues for the MTO Facilities

Synchro is used for assessing intersection capacity. As per MTO requirements if the $v/c > 0.85$ for intersections, and/ or if $v/c > 0.75$ for ramps, an analysis is completed to determine possible geometric improvements.

The TAC's Geometric Design Guide for Canadian Roads, MTO Design Supplement for TAC's Geometric Design Guide for Canadian Roads¹¹ and the OTM Books¹² were referenced in evaluating impacts at unsignalized intersections

For signalized intersections, the queue and storage lengths for left turn (LT) and through (thru) movements for signalized intersections under the MTO jurisdiction is calculated using the arrival rate method (Greenshields Method) explained in MTO's Signal Timing Policy. For LT and thru storage length calculations, trucks are converted to passenger vehicles using a factor of 1.5. For calculating queues, storage length, and taper length for right turn (RT) movements and RT taper with auxiliary lanes, Chapter 9 of the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads was referenced (90 sec signal cycle length is used). Queue assessment include a review to determine if the through lane queues impede access to the free flow turn lanes, ramps, channeled lanes, or auxiliary lanes.

At signalized intersections, the storage lane length should accommodate about 1.5 times the average number of passenger vehicles to be stored per cycle for a roadway design speed ≤ 60 kph, and about 2 times the number of pass vehicles for a design speed ≥ 60 kph. For Ontario highways, threshold volumes for RT channelization and exclusive LT lane requirements are:

- double LT to be considered when peak LT vol > 300vph
- RT channel when peak RT vol > 500 vph
- separate RT when peak RT vol > 200 vph

2.9.2 Storage Length and Queues for the City of Guelph Facilities

Synchro 11 was used to calculate the storage length and queues for the City of Guelph facilities for existing, background, and future total scenarios for all the horizon years

2.10 Existing (2022) Traffic Operations

Table 3 summarizes the results of the Existing (2022) traffic operations assessment. The results indicate that most of the study area intersections are currently operating under acceptable levels of service during the AM and PM peak hours. The exceptions are that all westbound movements at the Highway 6 / Concession Road 4 intersection are currently operating at near-capacity conditions with a LOS E (AM peak hour) and LOS F (PM peak hour) respectively. Also, the northbound left-turn movement at Laird Road and Southgate Drive intersection is identified as a critical movement operating near capacity with a LOS E. **Appendix C** contains the supporting detailed Synchro 11 reports.

Table 3: Existing (2022) Traffic Operations - MTO and City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange (Signalized)	Eastbound Thru	10.1	B	0.34	43.2	8.9	A	0.39	43
	Westbound Thru	9.5	A	0.24	28.1	8.9	A	0.37	39.2
	Northbound Left	20.7	C	0.29	2.9	19.3	B	0.12	10.7
	Northbound Right	23.7	C	0.73	46.3	23.1	C	0.63	35.3
	Overall	13.6	B	0.73	-	11	B	0.63	-

11. http://www.mto.gov.on.ca/phmpmbp/Reference%20Materials/HwyDes-MTO_DS_TAC_GDG-April2020-Final.pdf

12. <https://www.library.mto.gov.on.ca/SydneyPLUS/Sydney/Portal/default.aspx?lang=en-US>

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LO S	V/C	95th Percentile Queue	Delay(s)	LO S	V/C	95th Percentile Queue
Laird Road and Highway 6 Southbound interchange (Signalized)	Eastbound Thru	8.6	A	0.16	12.1	8.2	A	0.2	17.6
	Westbound Thru	9.1	A	0.24	17	8.3	A	0.23	19.6
	Southbound Left	19.2	B	0.58	28.8	18.7	B	0.52	29.8
	Overall	13.6	B	0.58	-	12.2	B	0.52	-
Highway 6 / Concession Rd 4 (Two-Way Stop Control)	Eastbound Thru-Right-Left	23.6	C	0.11	3.1	34.8	D	0.06	1.6
	Westbound Thru-Right-Left	38.2	E	0.48	18.9	115.2	F	0.99	65
	Northbound Left	12.2	B	0	0.1	11.7	B	0	0.1
	Northbound Thru	0	A	0.3	0	0	A	0.34	0
	Northbound Right	0	A	0.05	0	0	A	0.05	0
	Southbound Left	11.2	B	0.06	1.6	11.8	B	0.06	1.5
	Southbound Thru	0	A	0.27	0	0	A	0.38	0
	Southbound Right	0	A	0	0	0	A	0	0
	Overall	2.2	A	0.48	-	7.9	A	0.99	-
Laird Road and Southgate Drive (Signalized)	Eastbound Left	13	B	0.49	30.1	15	B	0.41	17.5
	Eastbound Thru	12.7	B	0.23	35.7	19.5	B	0.54	74.8
	Eastbound Right	3.5	A	0.29	13.7	4	A	0.19	6.2
	Westbound Left	8.4	A	0.02	2.3	10.8	B	0.08	5.1
	Westbound Thru-Right	23.4	C	0.67	60.9	29	C	0.78	94.2
	Northbound Left	17.6	B	0.31	21.9	71.6	E	0.99	60.2
	Northbound Thru-Right	18.6	B	0.07	9.2	13.5	B	0.21	9.4
	Southbound Left	15.1	B	0.12	11.2	18.2	B	0.34	31
	Southbound Thru-Right	12.8	B	0.29	14.2	15.6	B	0.71	25.7
	Overall	16	B	0.67	-	27.4	C	0.99	-
Admiral PI and Southgate Drive (Two-Way Stop Control)	Eastbound Left/Thru/Right	12.5	B	0.03	0.7	15.4	C	0.15	4.1
	Westbound Left/Thru/Right	10.3	B	0.03	0.6	12.2	B	0.07	1.7
	Northbound Left	0.1	A	0.01	0.2	0	A	0	0.1
	Northbound Thru	0.7	A	0.01	0.2	0.2	A	0	0.1
	Northbound Right	0.7	A	0.01	0.2	0.2	A	0	0.1
	Southbound Left	0.2	A	0.02	0.5	0.2	A	0.02	0.6
	Southbound Thru	1.1	A	0.02	0.5	1	A	0.02	0.6
	Southbound Right	1.1	A	0.02	0.5	1	A	0.02	0.6
	Overall	1.7	A	0.03	-	2.4	A	0.15	-
Clair Road and Southgate Drive (All-Way Stop Control)	Eastbound Left	8.4	A	0.04	-	9.3	A	0.06	-
	Eastbound Thru	7.5	A	0.09	-	8.9	A	0.14	-
	Eastbound Right	7.5	A	0.09	-	8.9	A	0.14	-
	Westbound Left	8.9	A	0.14	-	10	A	0.11	-
	Westbound Thru	7.5	A	0.11	-	8.7	A	0.09	-
	Westbound Right	7.5	A	0.11	-	8.7	A	0.09	-
	Northbound Left	10	A	0.23	-	17.6	C	0.64	-
	Northbound Thru	10	A	0.23	-	17.6	C	0.64	-
	Northbound Right	10	A	0.23	-	17.6	C	0.64	-
	Southbound Left	8.7	A	0.04	-	9.2	A	0.08	-
	Southbound Thru	9.1	A	0.25	-	10.1	B	0.27	-

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Maltby Road West and Crawley Road (All-Way Stop Control)	Southbound Right	9.1	A	0.25	-	10.1	B	0.27	-
	Overall	8.9	A	0.25	-	13.5	B	0.64	-
	Eastbound Left	0.4	A	0.05	1.2	0.3	A	0.03	0.9
	Eastbound Thru	3.1	A	0.05	1.2	1.9	A	0.03	0.9
	Eastbound Right	3.1	A	0.05	1.2	1.9	A	0.03	0.9
	Westbound Left	-	-	-	-	-	-	-	-
	Westbound Thru	0	A	0	0	0	A	0	0
	Westbound Right	0	A	0	0	0	A	0	0
	Northbound Left	11.8	B	0	0.1	12.3	B	0.03	0.6
	Northbound Thru	-	-	-	-	12.3	B	0.03	0.6
	Northbound Right	-	-	-	-	12.3	B	0.03	0.6
	Southbound Left	9.7	A	0.02	0.4	9.6	A	0.07	1.9
	Southbound Thru	9.7	A	0.02	0.4	9.6	A	0.07	1.9
	Southbound Right	9.7	A	0.02	0.4	9.6	A	0.07	1.9
	Overall	2.2	A	0.05	-	2.6	A	0.07	-
Maltby Road West and Gordon Street (Two-Way Stop Control)	Eastbound Left/Thru/Right	57.4	F	0.66	30.7	139	F	0.94	47.6
	Westbound Left/Thru/Right	36.2	E	0.41	14.7	59.5	F	0.5	18.6
	Northbound Left	0.4	A	0.03	0.8	0.6	A	0.04	1
	Northbound Thru	0.9	A	0.03	0.8	1	A	0.04	1
	Northbound Right	0.9	A	0.03	0.8	1	A	0.04	1
	Southbound Left	0.1	A	0.01	0.2	0.2	A	0.01	0.3
	Southbound Thru	0.3	A	0.01	0.2	0.3	A	0.01	0.3
	Southbound Right	0.3	A	0.01	0.2	0.3	A	0.01	0.3
	Overall	7.3	A	0.66	-	12.3	B	0.94	-

3. Background Traffic Operations Assessment

3.1 Planned Developments Review

The following considerations were made in the preparation of the future background traffic volumes.

3.1.1 Hanlon Mid-Block Interchange TIS

The construction of a new Midblock Interchange at Highway 6 connecting Concession Road 7 is planned to start in the winter of 2022/2023 and end in late fall of 2025. According to the current staging plans, there are 4 construction stages: “early works” covers stages 1 and 2, including detailed design and construction on the interchange itself and the new connection roads. Stages 3 and 4 are to be completed 2023-2025 and are called “remaining works”.

Stage 3 (2023-2024) involves:

- Reconstruction of Concession Road 7
- Linking the new Midblock Connection Road to Concession Road 7
- Constructing a traffic circle at Concession Road 7 and Wellington Road 34
- Closing Concession Road 7 from Maltby Rd to Wellington Road 34; traffic detoured onto Highway 6 live lanes.

Stage 4 (2023-2024) involves:

- Closing Wellington Road 34 from Midblock Connection Road to Heritage Lake Drive; traffic detoured to the new Midblock Connection Road.
- Removing/closing the at-grade intersection at Wellington Road 34 and Concession Road 4 / Maltby Road; these closures will re-assign traffic onto the Midblock Connection Road
- Removing the signal at the Highway 6 and Wellington Road 34 intersection

All 4 stages will keep live lanes on Highway 6 open during construction most of the time.

In consideration of the above staging plans, the MTO requested two scenarios be assessed for the 2024 horizon year (Phase 1), one in which the existing Highway 6 access at Maltby Road will remain in place and the new Midblock Interchange will not be operational, and the other where the Highway 6 access at Maltby Road will be closed, and the new Highway 6 Midblock Interchange will be operational. For the 2029, 2034 and 2039 future background scenario it was assumed that the new Midblock Interchange will be in place, and the accesses to Highway 6 from Maltby Road West / Concession Road 4 will be closed. **Figure 8** and **Figure 9** shows the general arrangement of the proposed new Highway 6 Midblock Interchange¹³.

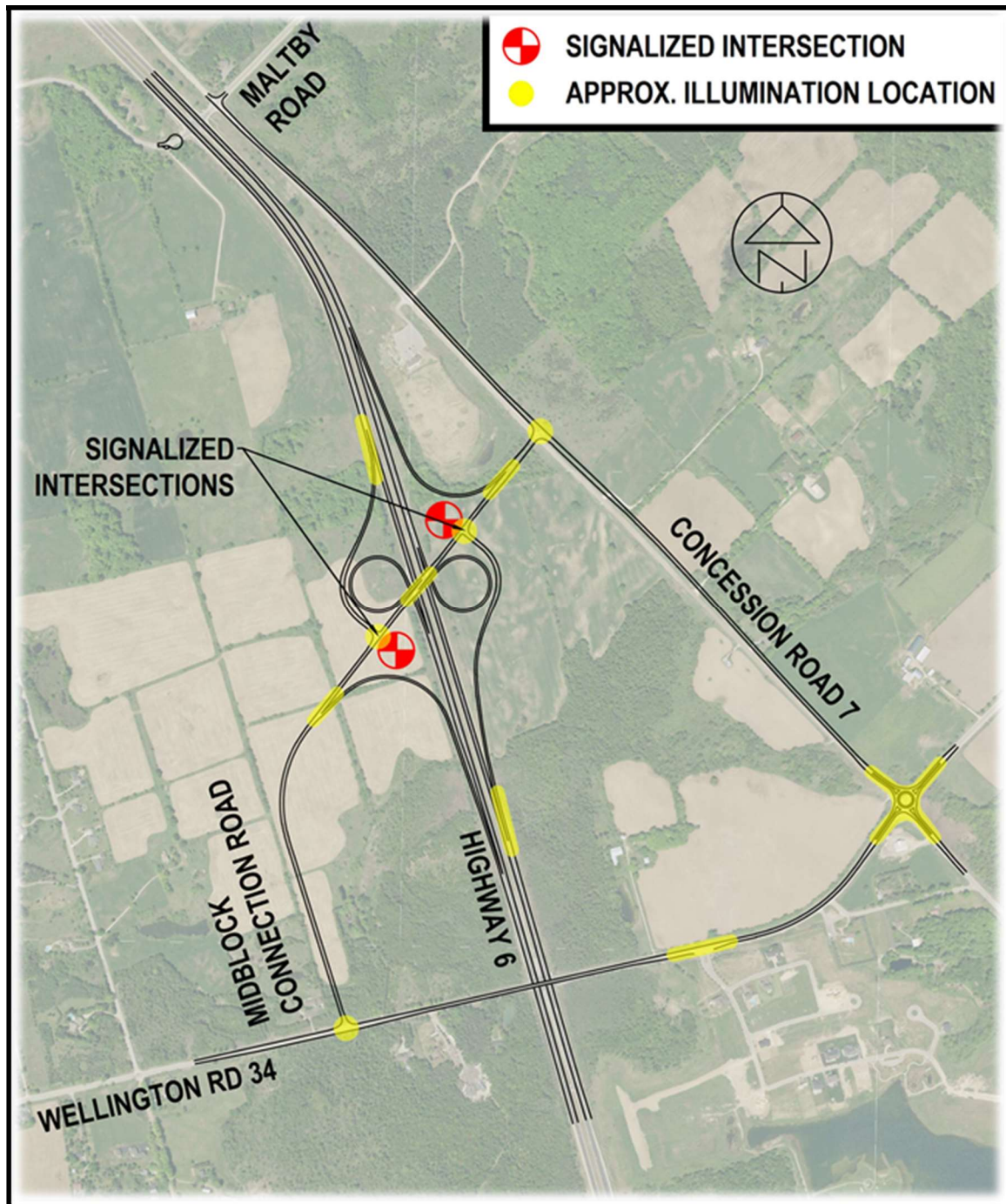
As identified by MTO, the Hanlon Midblock Interchange Project TIS has included future land use developments in their horizon years and included them in their modelling of traffic assignment in their future scenarios. The Cold Storage Facility TIS takes information from this report, and as discussed in later sections we add the New Cold Storage Facility traffic to the MTO project traffic volumes. As identified by MTO, there is another development to be located near Concession Road 7 and Maltby Road in the future. At the time of writing, this development information has not yet been confirmed, but if needed will be incorporated into the final report.

13. <https://highways6and401hamiltontoguelph.ca/2021/02/10/15-design-refinements-north-of-highway-401-new-wellington-road-34-midblock-interchange-and-concession-road-7-improvements/?msclkid=77d6b728ac6d11ecb901537c76f0bc22>

Figure 8: New Wellington Road 34, Midblock Interchange, and Concession Road 7 Improvements



Figure 9: Hanlon Midblock Interchange Project Study Area



3.1.2 City of Guelph – Clair Maltby Secondary Plan

The Clair-Maltby Secondary Plan establishes a detailed planning framework consisting of a Vision, Guiding Principles, Objectives, Policies and Schedules to guide and regulate future development of the Clair-Maltby Secondary Plan area. The City Council approved the Clair-Maltby Secondary Plan in May 2022. This secondary plan area includes the Maltby Road West/Gordon Street intersection.

3.1.3 City of Guelph – Official Plan

The City of Guelph Official Plan identified that Southgate Drive would be extended to Maltby Road West in the future. Due to the this proposed New Cold Facility, the City has agreed to consider an alternate arrangement to extend Southgate Drive west to Crawley Road (refer to **Figure ES-1**)¹⁴. This revised arrangement, if approved, would allow the City to maintain the future capacity and connectivity that would be provided by Southgate Drive extending directly to Maltby Road, while allowing for the development of this site to accommodate the proposed facility.

The City of Guelph requested two analysis scenarios for 2024 and 2029; one without the Southgate Drive Extension to Crawley Road and the other with the Southgate Drive Extension to Crawley Road as timing for the construction is not yet clear.

3.2 Horizon Years Assessed

The following is an assessment of the future background traffic conditions for Phase 1 (2024) and Full buildout scenarios (2029), and the analyses for the traffic conditions five years (2034) and 10 years (2039) after full buildout.

For the new Highway 6 Midblock interchange, traffic data was provided by MTO from the Midblock Traffic Operations Report—Highway 401/6 Improvements with a request that the traffic data for the required horizon year assessment be developed by interpolating the data within the report to the required horizon year. In undertaking this data interpolation, it was determined that a straight-line interpolation (considering a typical 2% growth factor) was difficult to achieve¹⁵. The following approach was instead used to determine the new Highway 6 Midblock interchange future traffic volumes

- 2023 traffic data was directly applied as the horizon year 2024 traffic volumes;
- 2031 traffic data was directly applied as the horizon year 2029 volumes;
- 2041 traffic data was directly applied as the horizon year 2039 volumes;
- The average of 2031 and 2041 traffic data was applied as the horizon year 2034 volume.

3.3 Background Traffic Volumes (Phase-1, 2024)

To derive the background traffic volumes (for the City intersections), a growth rate of 2% per annum was applied to the existing volumes (2022) shown in **Figure 7**; refer to **Section 3.2** for the discussion on developing Highway 6 Midblock interchange traffic volumes. This growth rate¹⁶ is based on the Census population growth of the City of Guelph from 2011 to 2016. Based on the discussions with the City and the MTO, three sets of background traffic volumes were prepared, and are illustrated in the following figures:

- **Figure 10:** 2024 background traffic volumes without the Southgate Drive Extension in place, but the new Highway 6 Interchange not open.
- **Figure 11:** 2024 background traffic volumes with the Southgate Drive Extension and the new Highway 6 Interchange not open.

14. Prior to the completion of this assessment and report, discussions were held with the City of Guelph staff to review the proposed extension of Southgate Drive west to Crawley Road in July 2022. The assumptions made to complete this TIS are based on these discussions with the City Staff and any change would potentially require further updates to this assessment.

15 It is requested that MTO provide further clarification on the growth between the 2024 horizon year and the 2029 horizon year traffic volumes provided in the shred report pages, especially when looking at the new Highway 6 Midblock Interchange east ramp terminal WB approach volumes.

16 The growth rate was provided by the City for use in this assessment, at the meeting on August 15th, 2022.

- **Figure 12:** 2024 background traffic volumes with the Southgate Drive Extension in place and the new Highway 6 Interchange open.

Note that the volumes shown in **Figure 11** and **Figure 12** are primarily included to prepare the total traffic volumes scenario, as the results from the assessment of these two traffic volume scenarios are not entirely relevant on their own as without the site itself the Southgate Drive Extension would not necessarily occur as shown in this study.

Figure 13 depicts the 2024 background volumes for the new Highway 6 midblock interchange

3.4 Background Traffic Volumes (Full Buildout 2029, 2034 and 2039)

Building on the 2024 Future Background Traffic Volumes, a 2% annual growth factor was applied to obtain the 2029 and 2034 Future Background Traffic Volumes for City intersections. A 1% annual growth factor was applied to obtain the 2039 Future Background Traffic volume as per City's direction (refer to the discussion in **Section 3.2** on the development of future traffic volumes at the new Highway 6 Midblock interchange).

The trip assignment for full buildout (2029), and 5- and 10-years after full buildout (2034 and 2039) background scenarios was reviewed to account for revised travel patterns that will occur as the new Highway 6 Interchange will be in place and the access to Highway 6 from Maltby Road West/Concession Road 4 will be closed by 2029. However, as there are anticipated changes to the future network (i.e., new Highway 6 Midblock Interchange), additional steps were completed to obtain the final future background volumes by reassigning trips. Using the same ratio of the existing southbound left turn movement and the northbound right turn movement to and from Highway 6 at the Maltby Road West / Concession Road 4 intersection and considering revised routes based on the travel time to and from origin-destination points, these trips were manually re-assigned to the future network for the background scenarios where this connection is closed. 60% of traffic volume at this intersection are currently travelling from the north whereas 40% are coming from the south along the Highway 6. This ratio was maintained, and trips reallocated accordingly in the existing conditions assessment for 2024 (Southgate Drive Extension; new Highway 6 Midblock interchange open scenario), 2029, 2034 and 2039 future background scenarios. The future background traffic volumes are illustrated in the following figures:

- **Figure 14:** 2029 background traffic volumes without the Southgate Drive Extension.
- **Figure 15:** 2029 background traffic volumes with the Southgate Drive Extension.
- **Figure 17:** 2034 background traffic volumes with the Southgate Drive Extension.
- **Figure 19:** 2039 background traffic volumes with the Southgate Drive Extension.

Note that the volumes shown in **Figure 15**, **Figure 17**, and **Figure 19** are primarily included to prepare the total traffic volumes scenario, as the results from the assessment of these three traffic volume scenarios are not entirely relevant on their own as without the subject site the Southgate Drive Extension would not be constructed as proposed or may not be constructed within the assessed horizon years.

The background volumes of the new Highway 6 Midblock interchange were developed with the approach mentioned in **Section 3.2**. **Figure 16**, **Figure 18** and **Figure 20** depict the 2029, 2034 and 2039 background volumes for the new Highway 6 Midblock interchange. (Note :MTO should provide some additional information on the growth between the 2024 horizon year and the 2029 horizon year as there is a large jump in traffic volumes that must not be attributed to background traffic growth.)

Figure 10: 2024 Background Traffic Volumes (without Southgate Drive Extension; new Highway 6 Midblock Interchange not open)

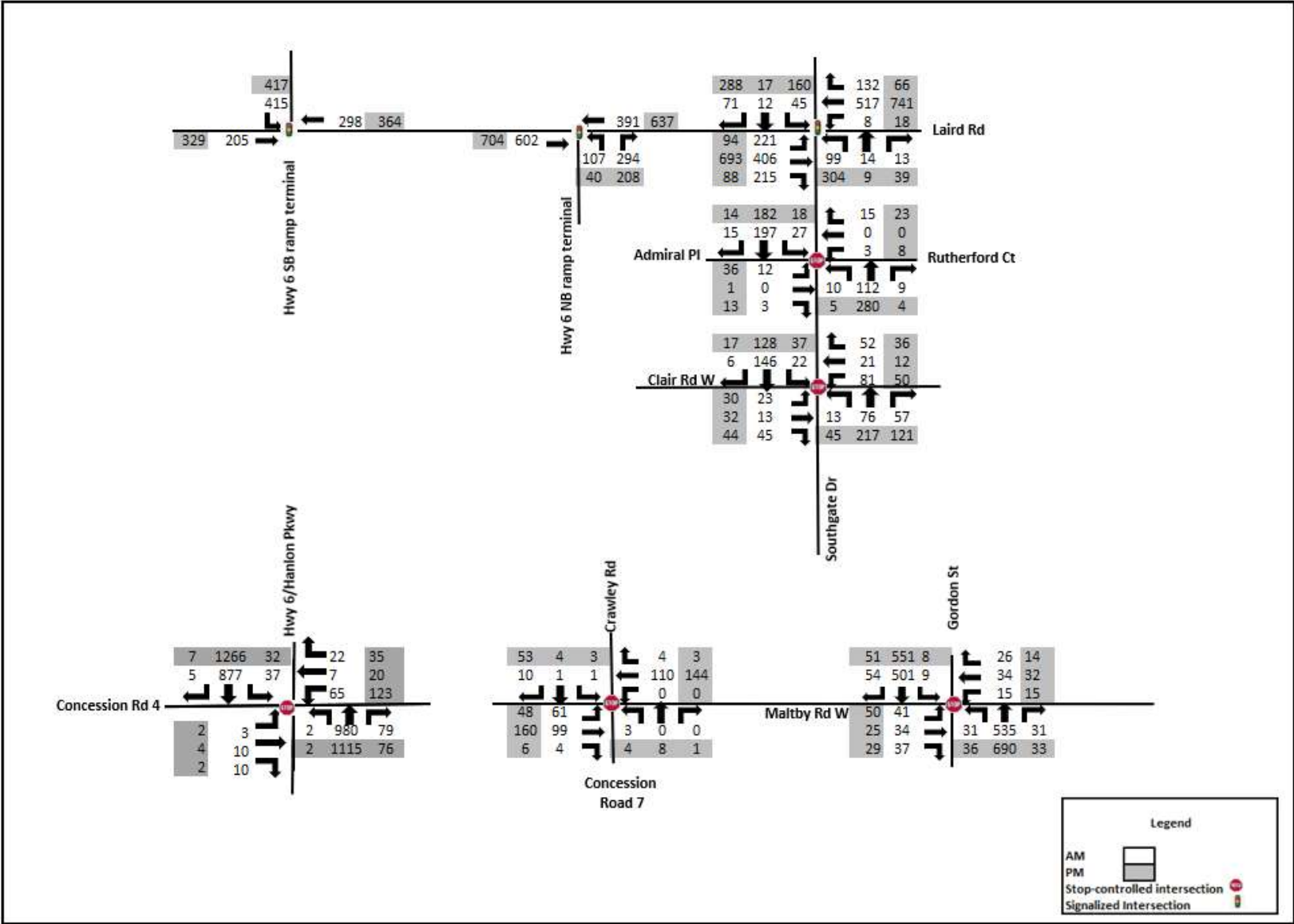


Figure 11: 2024 Background Traffic Volumes (with Southgate Drive Extension; new Highway 6 Midblock Interchange not open)

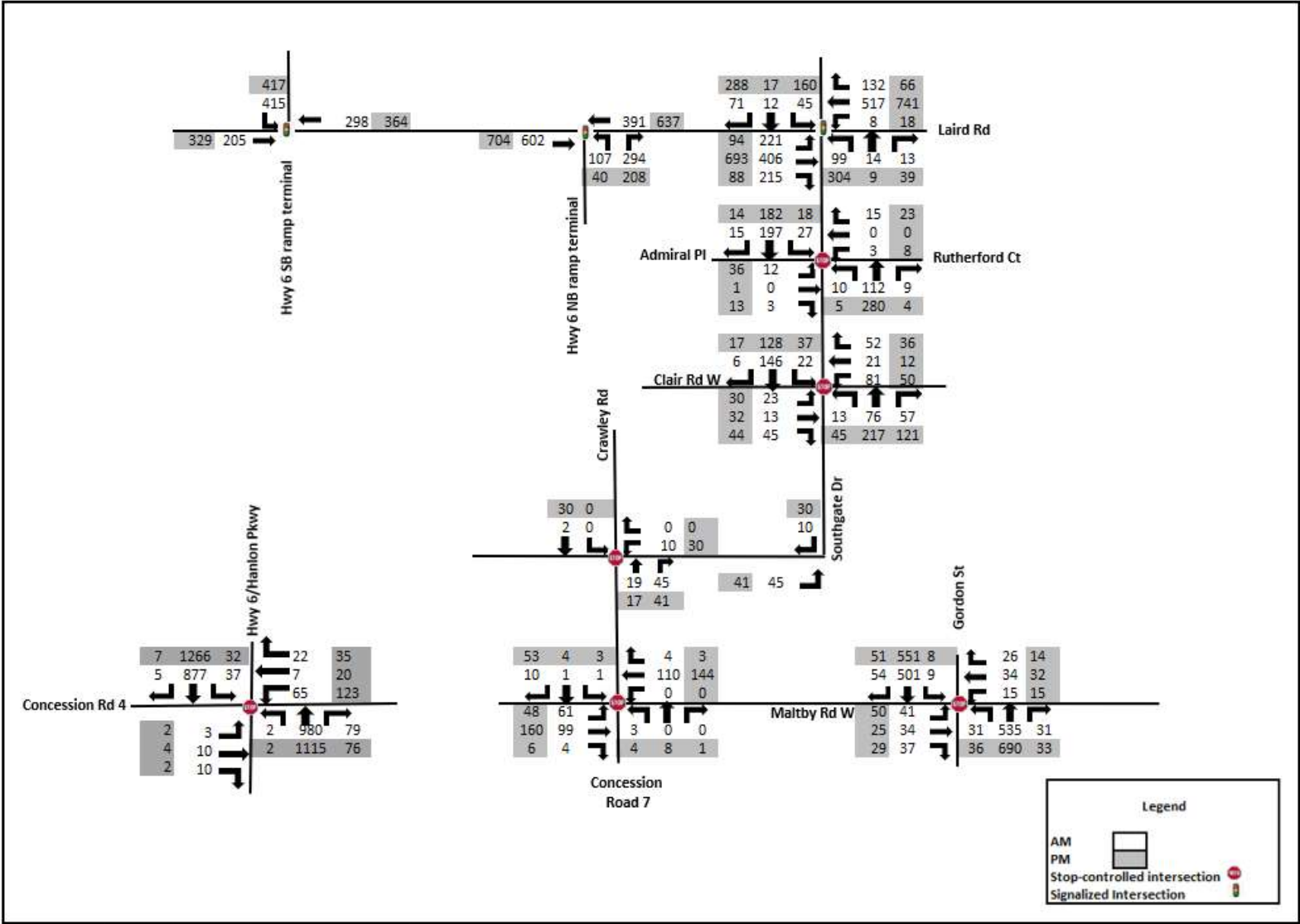


Figure 12: 2024 Background Traffic Volumes (with Southgate Drive Extension; new Highway 6 Midblock Interchange open)

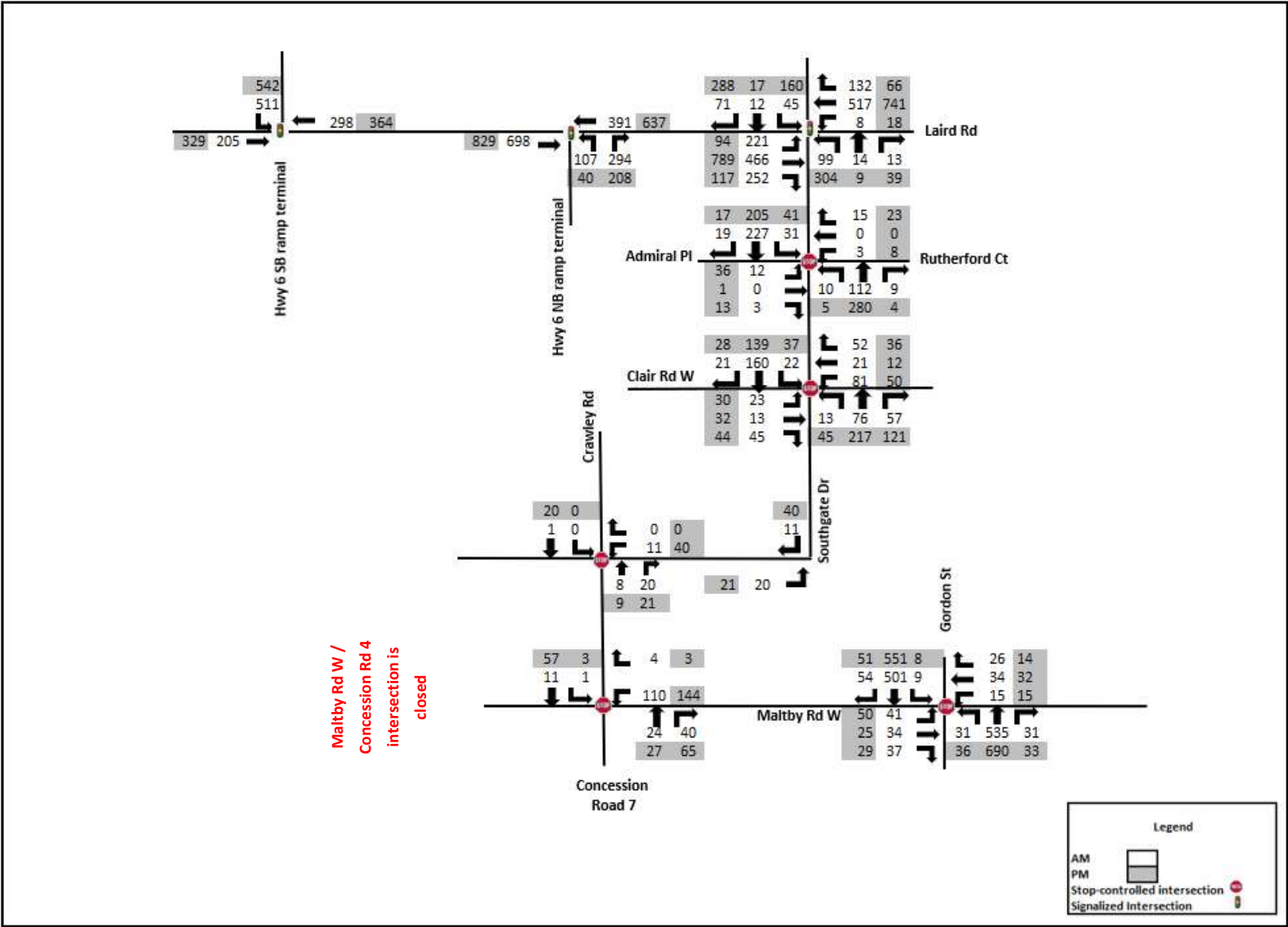


Figure 13: 2024 Background Traffic Volumes (new Highway 6 Midblock Interchange Ramp Terminal Intersections)

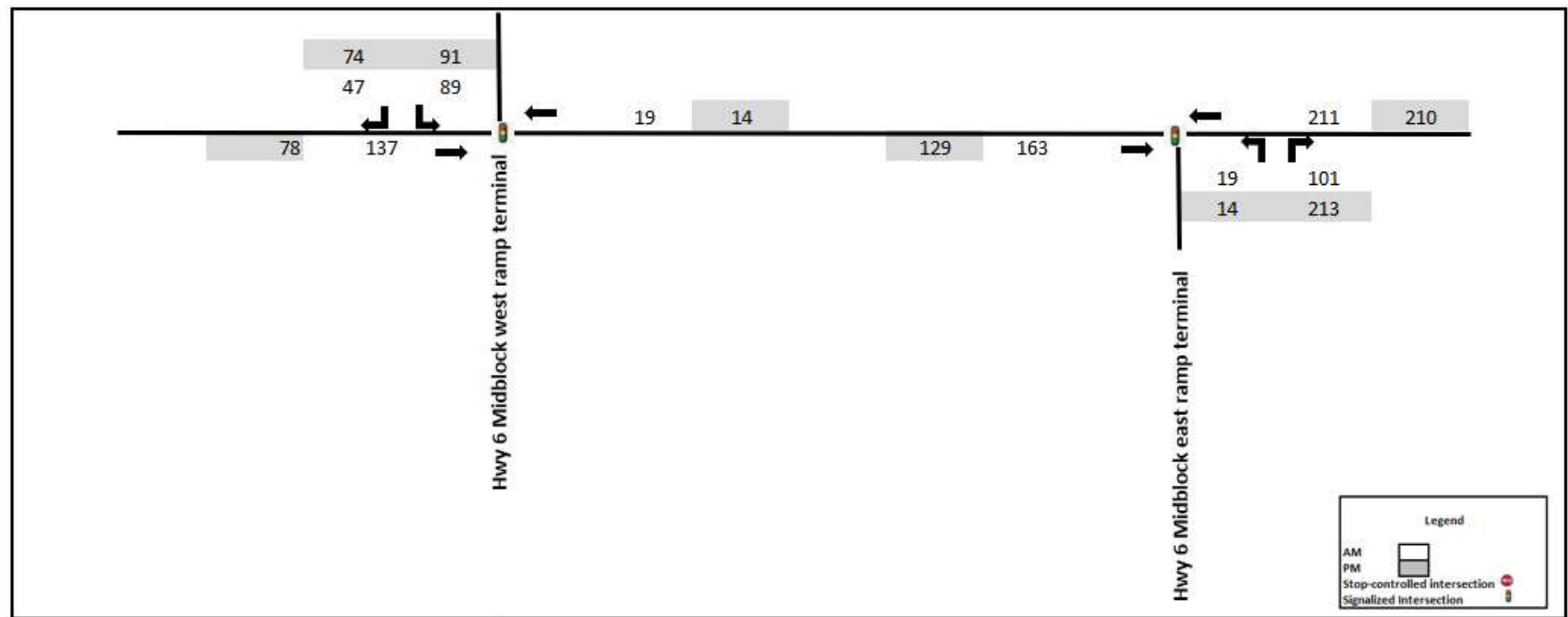


Figure 14: 2029 Background Traffic Volumes (without Southgate Drive Extension)

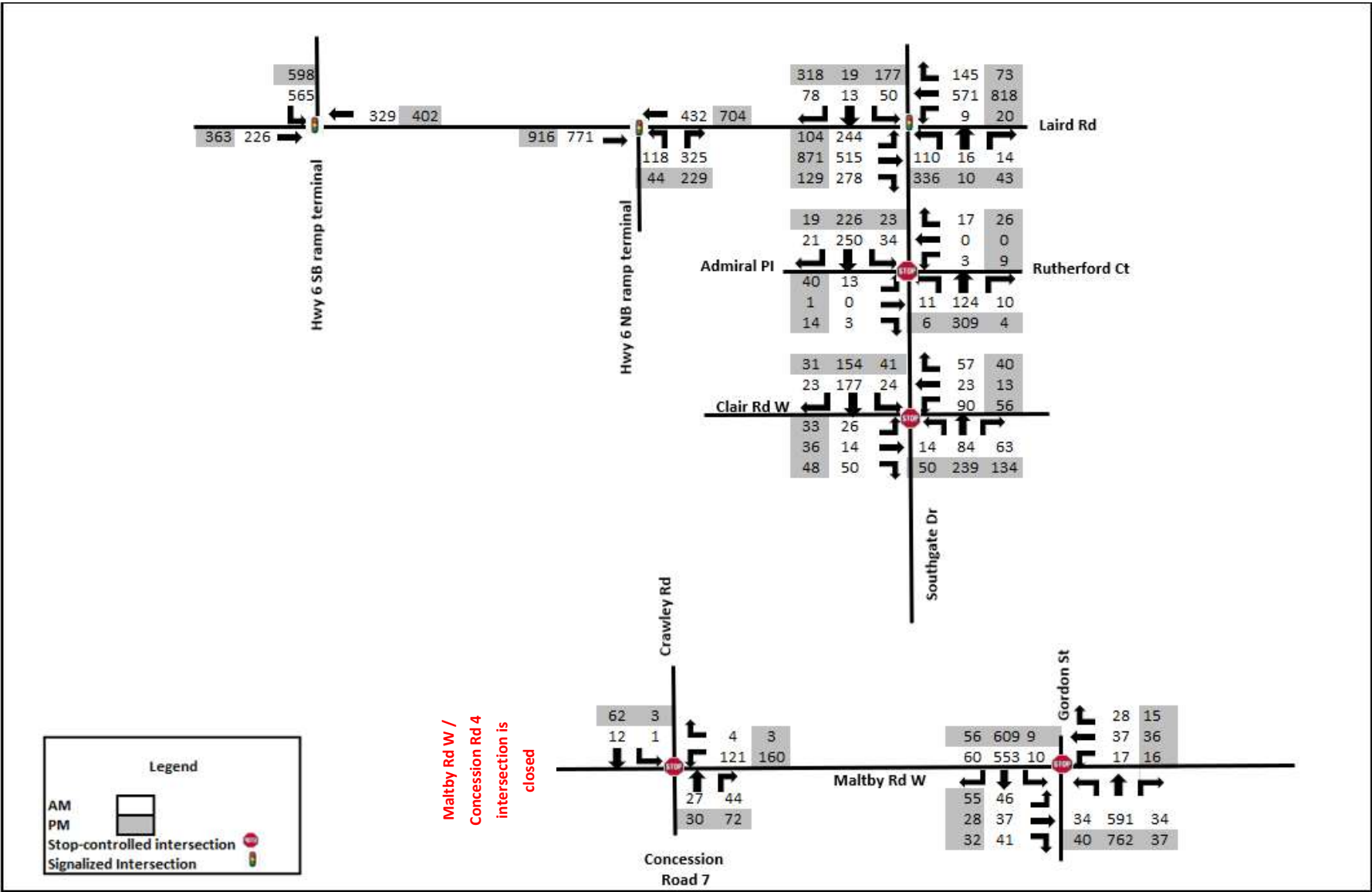


Figure 15: 2029 Background Traffic Volumes (with Southgate Drive Extension)

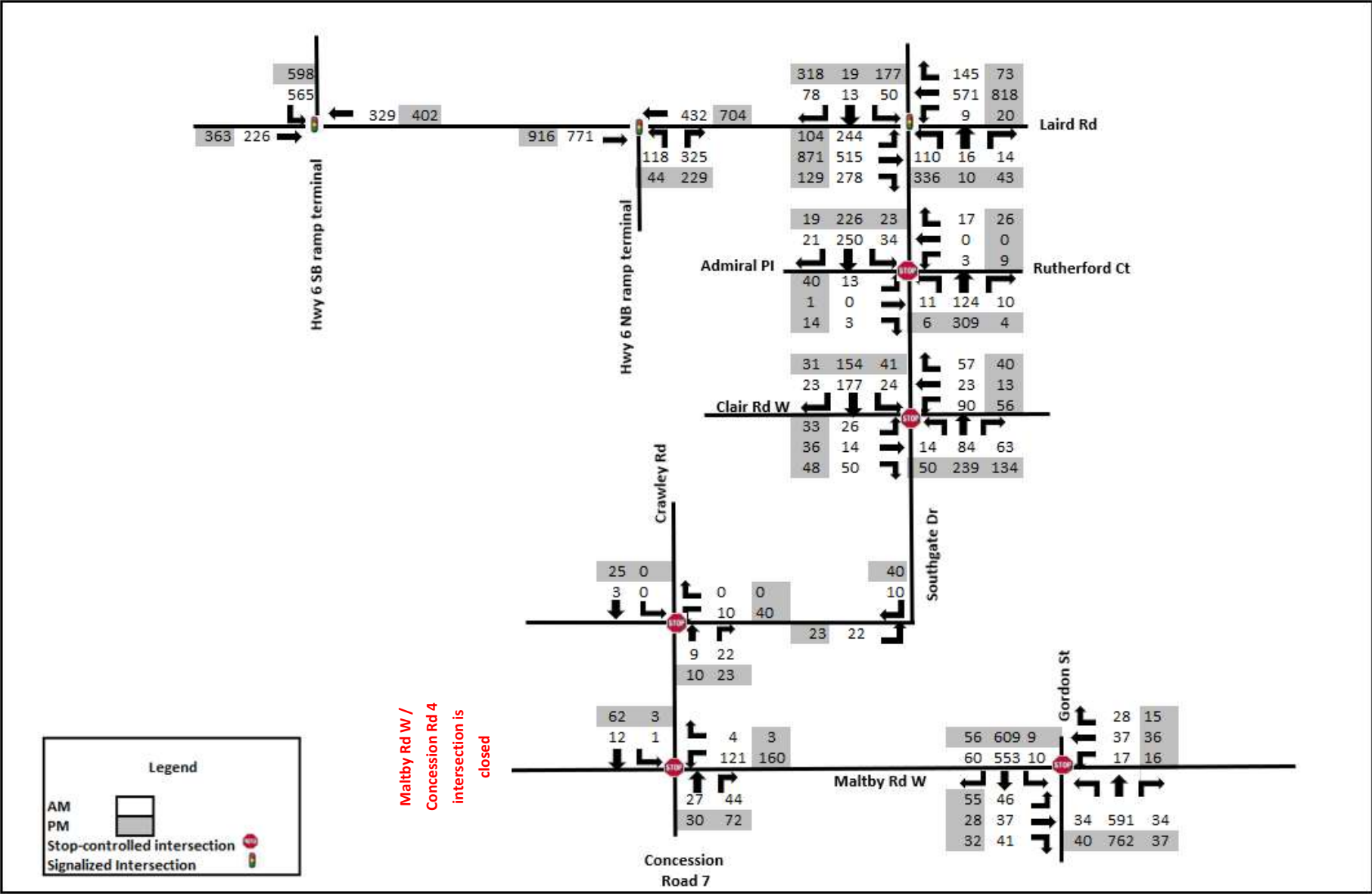


Figure 16: 2029 Background Traffic Volumes (Highway 6 Midblock Interchange Ramp Terminal Intersections)

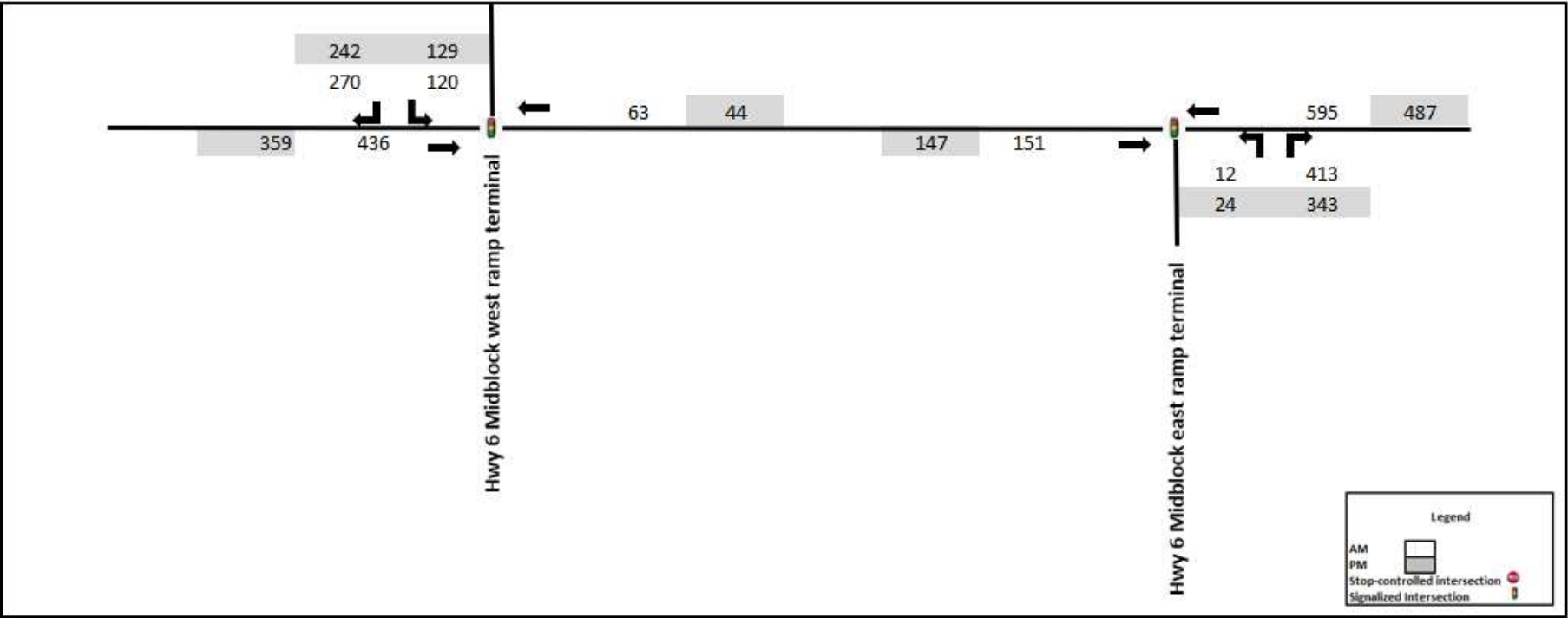


Figure 17: 2034 Background Traffic Volumes

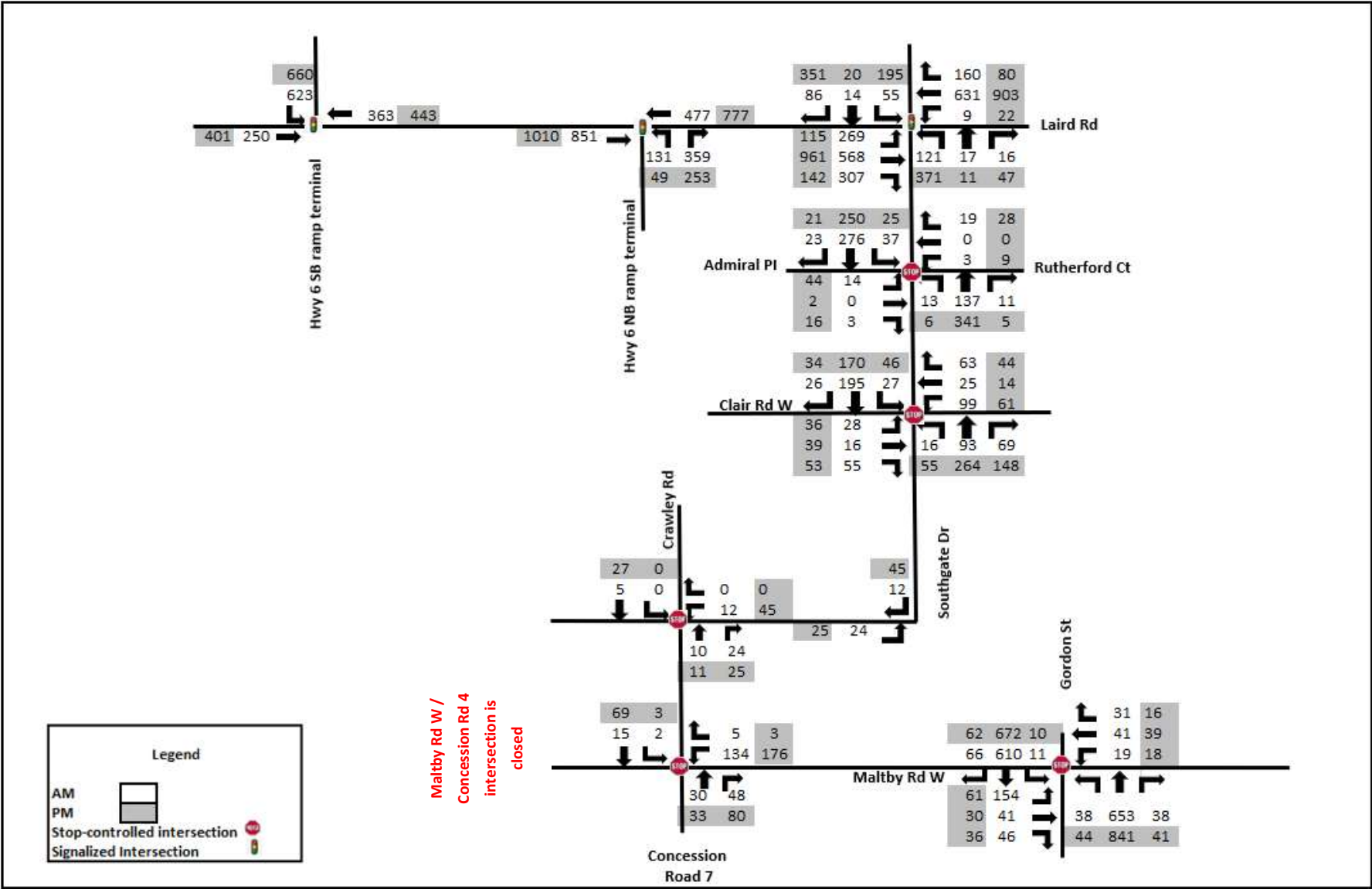


Figure 18: 2034 Background Traffic Volumes (new Highway 6 Midblock Interchange Ramp Terminal Intersections)

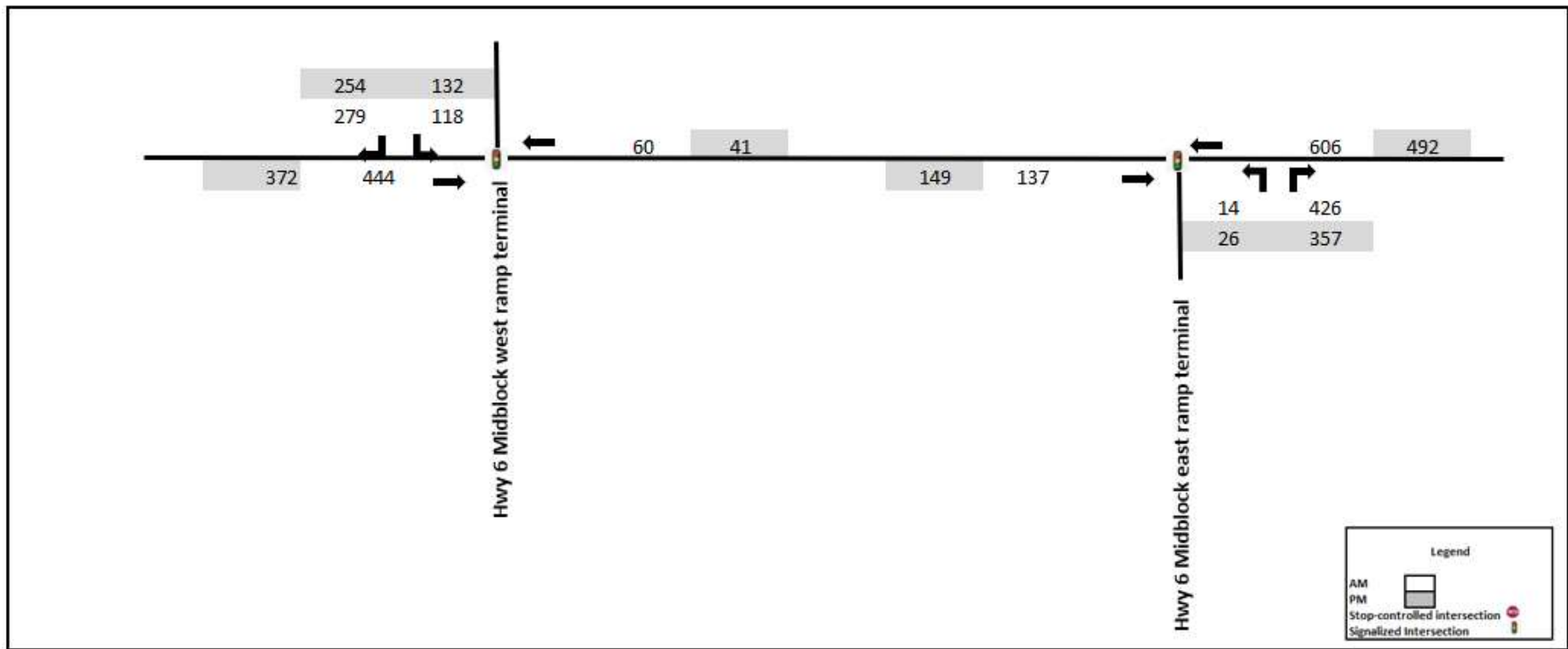


Figure 19: 2039 Background Traffic Volumes

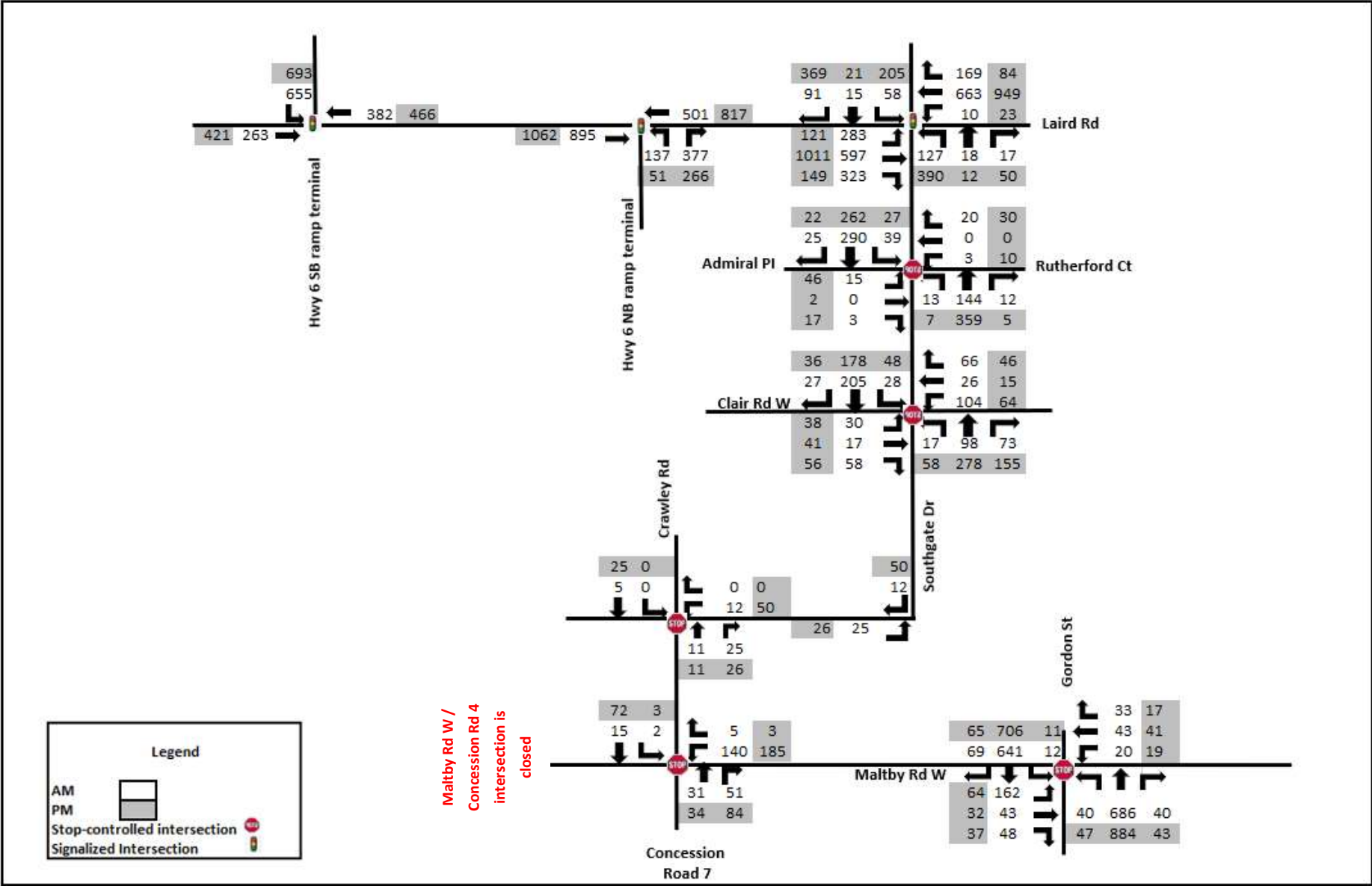
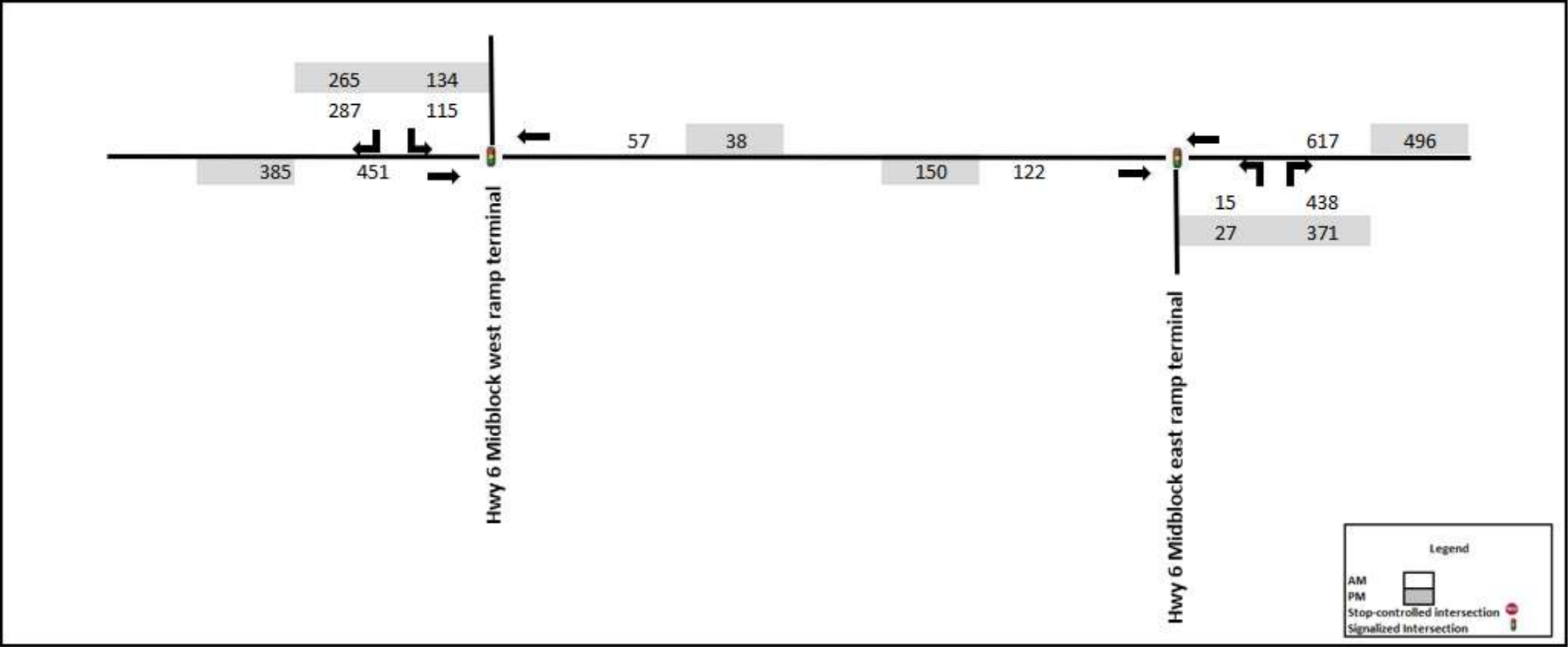


Figure 20: 2039 Background Traffic Volumes (new Highway 6 Midblock Interchange Ramp Terminal Intersections)



3.5 Background Traffic Operations (Phase 1, 2024)

The 2024 background traffic volumes have been analysed using the same methodology as under existing traffic conditions. Signal timings have not been optimized for this assessment. The traffic operations results are presented in summary tables as follows.

For the MTO Facilities:

- **Table 4** : without Southgate Drive Extension; new Highway 6 Interchange not open
- **Table 5** : with Southgate Drive Extension; new Highway 6 Interchange open

For the City Facilities:

- **Table 6**: without Southgate Drive Extension; new Highway 6 Midblock Interchange not open.
- **Table 7**: with the Southgate Drive Extension; Highway 6 Midblock Interchange not open. The results that are different from those in Table 4 are included to identify the changes for this scenario compared to the Table 4 scenario, which includes only the added Crawley Road and Southgate Drive intersection (i.e., there are no other changes to the assessed network).
- **Table 8**: with the Southgate Drive Extension and the new Highway 6 Midblock Interchange open. The results that are difference from those in **Table 6** and **Table 7** are included to identify the changes between scenarios. All intersection results in **Table 8** are different from Tables 4 and 6 with the exception of the Maltby Road / Gordon Street intersection, which was the same in all 2024 background traffic scenarios.

Table 4: 2024 Background Traffic Operations (without Southgate Drive Extension; Highway 6 Midblock Interchange not open) – MTO Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LO S	V/C	95th Percentile Queue	Delay(s)	LO S	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange	Eastbound Thru	10.9	B	0.36	47.3	9.4	A	0.41	46.7
	Westbound Thru	10.2	B	0.26	30.6	9.4	A	0.39	42.5
	Northbound Left	20.3	C	0.28	23.2	19.1	B	0.12	11
	Northbound Right	25.4	C	0.75	50.4	24.5	C	0.65	38.2
	Overall	14.5	B	0.75	-	11.6	B	0.65	-
Laird Road and Highway 6 Southbound interchange	Eastbound Thru	8.9	A	0.16	12.7	8.3	A	0.21	18.6
	Westbound Thru	9.5	A	0.25	17.9	8.5	A	0.24	20.6
	Southbound Left	19.2	B	0.58	29.8	18.8	B	0.53	30.9
	Overall	13.7	B	0.58	-	12.3	B	0.53	-
Highway 6 / Concession Rd 4	Eastbound Thru-Right-Left	24.8	C	0.12	3.2	37	E	0.07	1.7
	Westbound Thru-Right-Left	43.6	E	0.54	22.3	149.2	F	1.09	75.8
	Northbound Left	12.5	B	0	0.1	12.2	B	0	0.1
	Northbound Thru	0	A	0.31	0	0	A	0.35	0
	Northbound Right	0	A	0.05	0	0	A	0.05	0
	Southbound Left	11.5	B	0.07	1.7	12.1	B	0.06	1.6
	Southbound Thru	0	A	0.28	0	0	A	0.4	0
	Southbound Right	0	A	0	0	0	A	0	0
	Overall	2.5	A	0.54	-	10.1	B	1.09	-

Table 5: 2024 Background Traffic Operations (with Southgate Drive Extension; Highway 6 Interchange open) – MTO Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange	Eastbound Thru	12.3	B	0.43	59.3	10.7	B	0.48	59.5
	Westbound Thru	11	B	0.26	32.2	9.9	A	0.4	44.4
	Northbound Left	19.5	B	0.27	23.1	18.7	B	0.12	11
	Northbound Right	28.1	C	0.75	55.9	27.4	C	0.66	41.6
	Overall	15.6	B	0.75	-	12.6	B	0.66	-
Laird Road and Highway 6 Southbound interchange	Eastbound Thru	10.3	B	0.17	14.4	9.6	A	0.22	20.8
	Westbound Thru	10.9	B	0.26	20.4	9.8	A	0.25	23
	Southbound Left	19.4	B	0.64	36.5	19.3	B	0.61	40.2
	Overall	15.1	B	0.64	-	13.9	B	0.61	-
New Highway 6 midblock interchange - West Ramp terminal	Eastbound Thru	3.2	A	0.06	5.3	3.3	A	0.03	3.5
	Westbound Thru	3.3	A	0.01	1.3	3.3	A	0.01	1
	Southbound Left	30.1	C	0.36	24.9	30.2	C	0.37	25.2
	Southbound Right	10	A	0.18	8.6	9.3	A	0.26	10.6
	Overall	12.5	B	0.36	-	14.6	B	0.37	-
New Highway 6 midblock interchange - East Ramp terminal	Eastbound Thru	2.7	A	0.06	5.3	3.1	A	0.05	5
	Westbound Thru	2.7	A	0.08	6.6	3.2	A	0.09	7.5
	Northbound Left	29.2	C	0.09	9	28.3	C	0.06	7
	Northbound Right	10.2	B	0.36	13.4	10	A	0.55	18.6
	Overall	5.3	A	0.36	-	6.3	A	0.55	-

Table 6: 2024 Background Traffic Operations (without Southgate Drive Extension; Highway 6 Midblock Interchange not open) – City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Southgate Drive	Eastbound Left	13.4	B	0.52	31.6	16.1	B	0.44	18.8
	Eastbound Thru	12.5	B	0.24	37.2	20.5	C	0.57	81.0
	Eastbound Right	3.5	A	0.30	13.8	4.5	A	0.20	7.0
	Westbound Left	8.4	A	0.02	2.6	11.4	B	0.08	5.4
	Westbound Thru-Right	23.2	C	0.67	64.0	31.4	C	0.82	#110.0
	Northbound Left	18.5	B	0.33	23.3	89.1	F	1.06	#68.9
	Northbound Thru-Right	18.7	B	0.08	9.5	12.9	B	0.21	9.4
	Southbound Left	15.7	B	0.12	12.0	18.1	B	0.35	32.0
	Southbound Thru-Right	13.3	B	0.31	14.7	17.9	B	0.74	30.8
	Overall	16.0	B	0.67	-	30.9	C	1.06	-
Admiral Pl and Southgate Drive	Eastbound Left/Thru/Right	12.5	B	0.03	0.8	15.9	C	0.16	4.4
	Westbound Left/Thru/Right	10.6	B	0.03	0.7	12.6	B	0.07	1.9
	Northbound Left	0.1	A	0.01	0.2	0.1	A	0.00	0.1
	Northbound Thru	0.7	A	0.01	0.2	0.2	A	0.00	0.1
	Northbound Right	0.7	A	0.01	0.2	0.2	A	0.00	0.1
	Southbound Left	0.2	A	0.02	0.6	0.3	A	0.02	0.6
	Southbound Thru	1.1	A	0.02	0.6	1.0	A	0.02	0.6
	Southbound Right	1.1	A	0.02	0.6	1.0	A	0.02	0.6
	Overall	1.8	A	0.03	-	2.5	A	0.16	-
Clair Road and Southgate Drive	Eastbound Left	8.5	A	0.04	-	9.4	A	0.07	-
	Eastbound Thru	7.6	A	0.09	-	9.1	A	0.15	-
	Eastbound Right	7.6	A	0.09	-	9.1	A	0.15	-
	Westbound Left	9.0	A	0.15	-	10.1	B	0.12	-
	Westbound Thru	7.6	A	0.11	-	8.9	A	0.10	-
	Westbound Right	7.6	A	0.11	-	8.9	A	0.10	-
	Northbound Left	10.2	B	0.24	-	19.0	C	0.67	-

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
	Northbound Thru	10.2	B	0.24	-	19.0	C	0.67	-
	Northbound Right	10.2	B	0.24	-	19.0	C	0.67	-
	Southbound Left	8.8	A	0.04	-	9.3	A	0.08	-
	Southbound Thru	9.2	A	0.26	-	10.4	B	0.28	-
	Southbound Right	9.2	A	0.26	-	10.4	B	0.28	-
	Overall	9.0	A	0.26	-	14.4	B	0.67	-
Maltby Road West and Crawley Road	Eastbound Left	0.4	A	0.05	1.3	0.3	A	0.04	0.9
	Eastbound Thru	3.1	A	0.05	1.3	2.0	A	0.04	0.9
	Eastbound Right	3.1	A	0.05	1.3	2.0	A	0.04	0.9
	Westbound Left	-	-	-	-	-	-	-	-
	Westbound Thru	0.0	A	0.00	0.0	0.0	A	0.00	0.0
	Westbound Right	0.0	A	0.00	0.0	0.0	A	0.00	0.0
	Northbound Left	12.0	B	0.01	0.2	12.5	B	0.03	0.7
	Northbound Thru	-	-	-	-	12.5	B	0.03	0.7
	Northbound Right	-	-	-	-	12.5	B	0.03	0.7
	Southbound Left	9.7	A	0.02	0.4	9.8	A	0.08	2.0
	Southbound Thru	9.7	A	0.02	0.4	9.8	A	0.08	2.0
	Southbound Right	9.7	A	0.02	0.4	9.8	A	0.08	2.0
	Overall	2.2	A	0.05	-	2.7	A	0.08	-
Maltby Road West and Gordon Street	Eastbound Left/Thru/Right	25.6	C	0.29	31.7	26.8	C	0.28	30.6
	Westbound Left/Thru/Right	21.3	C	0.18	20.7	24.4	C	0.15	19.0
	Northbound Left/Thru/Right	14.8	B	0.63	111.2	17.4	B	0.74	154.8
	Southbound Left/Thru/Right	13.0	B	0.57	95.6	12.8	B	0.58	101.9
	Overall	15.3	B	0.63	-	16.5	B	0.74	-

Table 7: 2024 Background Traffic Operations (with Southgate Drive Extension; Highway 6 new Midblock Interchange not open) – City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Crawley Road/Southgate Drive	Westbound Left/Right	7.3	A	0.01	-	7.5	A	0.04	-
	Northbound Thru/Right	6.8	A	0.07	-	6.9	A	0.06	-
	Southbound Thru/Left	7.0	A	0.01	-	7.2	A	0.04	-
	Overall	7.0	A	0.07	-	7.1	A	0.06	-

Table 8: 2024 Background Traffic Operations (with Southgate Drive Extension; new Highway 6 Midblock Interchange open) – City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Southgate Drive	Eastbound Left	13.4	B	0.52	31.6	16.3	B	0.44	18.8
	Eastbound Thru	12.8	B	0.28	43.0	22.3	C	0.65	95.0
	Eastbound Right	3.5	A	0.34	14.7	5.3	A	0.26	9.9
	Westbound Left	8.4	A	0.02	2.6	11.7	B	0.10	5.4
	Westbound Thru-Right	23.2	C	0.67	64.0	31.3	C	0.82	#110.0
	Northbound Left	18.5	B	0.33	23.3	87.6	F	1.05	#68.6
	Northbound Thru-Right	18.7	B	0.08	9.5	12.8	B	0.21	9.4
	Southbound Left	15.7	B	0.12	12.0	18.1	B	0.35	32.0
	Southbound Thru- Right	13.3	B	0.31	14.7	17.7	B	0.74	30.5
	Overall	15.7	B	0.67	-	30.6	C	1.05	-

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Admiral Pl and Southgate Drive	Eastbound Left/Thru/Right	13.0	B	0.03	0.9	18.1	C	0.18	5.2
	Westbound Left/Thru/Right	10.7	B	0.03	0.7	13.1	B	0.08	2.1
	Northbound Left	0.1	A	0.01	0.2	0.1	A	0.01	0.1
	Northbound Thru	0.7	A	0.01	0.2	0.2	A	0.01	0.1
	Northbound Right	0.7	A	0.01	0.2	0.2	A	0.01	0.1
	Southbound Left	0.2	A	0.03	0.6	0.6	A	0.06	1.4
	Southbound Thru	1.1	A	0.03	0.6	2.0	A	0.06	1.4
	Southbound Right	1.1	A	0.03	0.6	2.0	A	0.06	1.4
Clair Road and Southgate Drive	Overall	1.8	A	0.03	-	3.0	A	0.18	-
	Eastbound Left	8.6	A	0.05	-	9.5	A	0.07	-
	Eastbound Thru	7.7	A	0.09	-	9.2	A	0.15	-
	Eastbound Right	7.7	A	0.09	-	9.2	A	0.15	-
	Westbound Left	9.1	A	0.15	-	10.2	B	0.12	-
	Westbound Thru	7.7	A	0.12	-	9.0	A	0.10	-
	Westbound Right	7.7	A	0.12	-	9.0	A	0.10	-
	Northbound Left	10.2	B	0.25	-	19.4	C	0.68	-
	Northbound Thru	10.2	B	0.25	-	19.4	C	0.68	-
	Northbound Right	10.2	B	0.25	-	19.4	C	0.68	-
	Southbound Left	8.8	A	0.04	-	9.4	A	0.08	-
	Southbound Thru	9.7	A	0.30	-	10.9	B	0.32	-
	Southbound Right	9.7	A	0.30	-	10.9	B	0.32	-
	Overall	9.2	A	0.30	-	14.6	B	0.68	-
Maltby Road West and Concession Road 7	Westbound Left	0.6	A	0.08	2.1	0.7	A	0.09	2.5
	Westbound Right	7.2	A	0.08	2.1	7.3	A	0.09	2.5
	Northbound Thru	9.8	A	0.09	2.5	9.8	A	0.12	3.2
	Northbound Right	9.8	A	0.09	2.5	9.8	A	0.12	3.2
	Southbound Left	11.5	A	0.02	0.6	12.5	B	0.12	3.2
	Southbound Thru	11.5	A	0.02	0.6	12.5	B	0.12	3.2
	Overall	8.3	A	0.09	-	9.1	A	0.12	-
Crawley Road/Southgate Drive	Westbound Left/Right	7.4	A	0.04	-	7.4	A	0.03	-
	Northbound Thru/Right	6.7	A	0.03	-	6.7	A	0.03	-
	Southbound Thru/Left	7.1	A	0.02	-	7.1	A	0.03	-
	Overall	7.1	A	0.04	-	7.1	A	0.03	-

Appendix C contains the supporting detailed Synchro 11 reports. The results indicate that the study area intersections are forecast to operate at acceptable levels of service during the AM and PM peak hours for most of the intersections.

The new Highway 6 Midblock interchange will operate without any critical movements for all the horizon year 2024 scenarios. All eastbound movements of Concession Road 4 and Highway 6 intersection will be operating with a LOS E during PM peak hour for the scenarios where new Highway 6 Midblock interchange is not open. All westbound movements of Concession Road 4 and Highway 6 intersection will be operating at overcapacity with a LOS E during AM peak hour and LOS F during PM peak hour for the scenarios where new Highway 6 Midblock interchange is not open.

The northbound left turn movement at Laird Road and Southgate Drive is identified as a critical movement operating over capacity with a LOS F during PM peak hour for all three scenarios.

The 2024 Background operations will trend similarly if compared to the Existing 2022 with increased delay and v/c ratio for each critical movement identified in Existing 2022 operations. There will be no new critical movements other than the ones identified at Existing 2022 condition.

3.6 Background Traffic Operations (Full Buildout, 2029)

The 2029 background traffic volumes have been analysed using the same methodology as under existing traffic conditions. As discussed in **Section 3**, the Highway 6 and Maltby Road West/Concession Road 4 intersection is assumed to be closed by this horizon year. Signal timings have not been optimized.

The traffic operations results are presented in summary tables as follows.

- For the MTO facilities:
- **Table 9** without Southgate Drive Extension
- **Table 10** with Southgate Drive Extension

For the City facilities:

- **Table 11** without Southgate Drive Extension
- **Table 12** with Southgate Drive Extension (only the differences in results from that shown in **Table 11**)

Table 9: 2029 Background Traffic Operations (without Southgate Drive Extension) – MTO Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange	Eastbound Thru	15.2	B	0.5	76.3	12.5	B	0.55	73.6
	Westbound Thru	13.1	B	0.3	40.7	11.4	B	0.45	54.2
	Northbound Left	18.4	B	0.26	24.9	18.1	B	0.12	11.6
	Northbound Right	31	C	0.78	67.7	29.5	C	0.69	48
	Overall	18	B	0.78	-	14.3	B	0.69	-
Laird Road and Highway 6 Southbound interchange	Eastbound Thru	9.7	A	0.15	15.5	10.6	B	0.25	24.6
	Westbound Thru	10.1	B	0.23	22	10.8	B	0.28	27.5
	Southbound Left	19.1	B	0.61	41.9	19.2	B	0.63	44.3
	Overall	14.6	B	0.61	-	14.4	B	0.63	-

Table 10: 2029 Background Traffic Operations (with Southgate Drive Extension) -MTO Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange	Eastbound Thru	15.2	B	0.5	76.3	12.5	B	0.55	73.6
	Westbound Thru	13.1	B	0.3	40.7	11.4	B	0.45	54.2
	Northbound Left	18.4	B	0.26	24.9	18.1	B	0.12	11.6
	Northbound Right	31	C	0.78	67.7	29.5	C	0.69	48
	Overall	18	B	0.78	-	14.3	B	0.69	-
Laird Road and Highway 6 Southbound interchange	Eastbound Thru	9.7	A	0.15	15.5	10.6	B	0.25	24.6
	Westbound Thru	10.1	B	0.23	22	10.8	B	0.28	27.5
	Southbound Left	19.1	B	0.61	41.9	19.2	B	0.63	44.3
	Overall	14.6	B	0.61	-	14.4	B	0.63	-
New Highway 6 midblock interchange - West Ramp terminal	Eastbound Thru	4.1	A	0.19	17	4.1	A	0.16	14.5
	Westbound Thru	3.7	A	0.03	3.2	3.8	A	0.02	2.6
	Northbound Left	31.7	C	0.45	31.6	32.1	C	0.48	33.4
	Northbound Right	8.9	A	0.58	19.2	8.5	A	0.55	18.2
	Overall	9.3	A	0.58	-	10.1	B	0.55	-
New Highway 6 midblock interchange - East Ramp terminal	Eastbound Thru	3.6	A	0.06	7.3	3.4	A	0.06	6.6
	Westbound Thru	4.3	A	0.26	27.2	3.9	A	0.21	20
	Northbound Left	27.2	C	0.05	6.2	28.3	C	0.1	9.9
	Northbound Right	10.7	B	0.72	24.8	10.4	B	0.68	22.6
	Overall	6.7	A	0.72	-	6.6	A	0.68	-

**Table 11: 2029 Background Traffic Operations (without Southgate Drive Extension)-
City of Guelph Facilities**

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Southgate Drive	Eastbound Left	28.0	C	0.76	#55.8	20.1	C	0.50	22.8
	Eastbound Thru	12.5	B	0.31	46.0	25.6	C	0.71	#128.5
	Eastbound Right	4.0	A	0.43	11.1	5.5	A	0.28	10.8
	Westbound Left	8.1	A	0.03	2.6	13.7	B	0.12	6.4
	Westbound Thru-Right	23.2	C	0.69	70.1	48.2	D	0.96	#142.7
	Northbound Left	23.1	C	0.35	23.9	187.3	F	1.32	#102.4
	Northbound Thru-Right	20.7	C	0.13	9.7	11.7	B	0.20	9.5
	Southbound Left	17.0	B	0.14	12.6	18.7	B	0.41	34.6
	Southbound Thru- Right	13.1	B	0.34	13.4	25.7	C	0.82	45.5
	Overall	17.7	B	0.76	-	49.3	D	1.32	-
Admiral Pl and Southgate Drive	Eastbound Left/Thru/Right	13.8	B	0.04	1.0	18.9	C	0.21	6.1
	Westbound Left/Thru/Right	10.8	B	0.03	0.8	13.4	B	0.09	2.4
	Northbound Left	0.1	A	0.01	0.2	0.1	A	0.01	0.1
	Northbound Thru	0.7	A	0.01	0.2	0.2	A	0.01	0.1
	Northbound Right	0.7	A	0.01	0.2	0.2	A	0.01	0.1
	Southbound Left	0.3	A	0.03	0.7	0.4	A	0.03	0.8
	Southbound Thru	1.1	A	0.03	0.7	1.1	A	0.03	0.8
	Southbound Right	1.1	A	0.03	0.7	1.1	A	0.03	0.8
	Overall	1.8	A	0.04	-	2.8	A	0.21	-
Clair Road and Southgate Drive	Eastbound Left	8.8	A	0.05	-	9.9	A	0.08	-
	Eastbound Thru	8.0	A	0.11	-	9.7	A	0.17	-
	Eastbound Right	8.0	A	0.11	-	9.7	A	0.17	-
	Westbound Left	9.5	A	0.18	-	10.7	B	0.14	-
	Westbound Thru	8.0	A	0.13	-	9.4	A	0.11	-
	Westbound Right	8.0	A	0.13	-	9.4	A	0.11	-
	Northbound Left	10.7	B	0.28	-	25.1	D	0.77	-
	Northbound Thru	10.7	B	0.28	-	25.1	D	0.77	-
	Northbound Right	10.7	B	0.28	-	25.1	D	0.77	-
	Southbound Left	9.0	A	0.05	-	9.7	A	0.09	-
	Southbound Thru	10.4	B	0.34	-	11.9	B	0.37	-
	Southbound Right	10.4	B	0.34	-	11.9	B	0.37	-
	Overall	9.7	A	0.34	-	17.7	C	0.77	-
Maltby Road West and Concession Road 7	Westbound Left	0.7	A	0.09	2.4	0.8	A	0.11	2.8
	Westbound Right	7.2	A	0.09	2.4	7.3	A	0.11	2.8
	Northbound Thru	10.0	B	0.11	2.9	10.0	B	0.13	3.6
	Northbound Right	10.0	B	0.11	2.9	10.0	B	0.13	3.6
	Southbound Left	12.0	B	0.03	0.8	13.1	B	0.14	3.7
	Southbound Thru	12.0	B	0.03	0.8	13.1	B	0.14	3.7
	Overall	8.5	A	0.11	-	9.3	A	0.14	-
Maltby Road West and Gordon Street	Eastbound Left/Thru/Right	27.4	C	0.34	35.5	27.9	C	0.31	33.8
	Westbound Left/Thru/Right	22.8	C	0.21	23.0	24.8	C	0.16	20.7
	Northbound Left/Thru/Right	16.2	B	0.69	129.6	21.6	C	0.82	194.6
	Southbound Left/Thru/Right	13.7	B	0.62	109.3	14.3	B	0.64	120.8
	Overall	16.4	B	0.69	-	19.2	B	0.82	-

Table 12: 2029 Background Traffic Operations (with Southgate Drive Extension)-City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Crawley Road/Southgate Drive	Westbound Left/Right	7.3	A	0.01	-	7.5	A	0.05	-
	Northbound Thru/Right	6.7	A	0.03	-	6.8	A	0.04	-
	Southbound Thru/Left	7.0	A	0.00	-	7.2	A	0.03	-
	Overall	7.0	A	0.03	-	7.2	A	0.05	-

Appendix C contains the supporting detailed Synchro 11 reports. The results indicate that most of the study area intersections are forecast to operate at acceptable levels of service during the AM and PM peak hours.

The new Highway 6 Midblock interchange will function without any critical movements for the horizon year 2029. The northbound right turn movement at Laird Road and Highway 6 Northbound Interchange is identified as a critical movement during AM peak hour during both scenarios.

The northbound left turn movement and westbound through-right turn movement at Laird Road and Southgate Drive is identified as a critical movement during PM peak hour for both the scenarios.

The 2029 Background traffic operations trend similar to the 2024 Background traffic operations with increased delay and v/c ratio for each critical movement identified in 2024 Background operations (note: the eastbound approach to the Maltby Road West and Concession Road 7 has been removed from the assessment at the Highway 6 / Maltby Road access will close by 2029 with the opening of the new Highway 6 Midblock Interchange.

3.7 Background Traffic Operations (5 years after full buildout, 2034)

The 2034 background traffic volumes have been analysed using the same methodology as under existing traffic conditions. As discussed in **Section 3**, the Highway 6 and Maltby Road West/Concession Road 4 intersection is assumed to be closed by this horizon year as the new Highway 6 Interchange will be open. Signal timings have not been optimized.

Table 13 summarizes the results of the 2034 background traffic operations – MTO facilities.

Table 14 summarizes the results of the 2034 background traffic operations – City of Guelph facilities.

Table 13: 2034 Background Traffic Operations – MTO Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange	Eastbound Thru	18.5	B	0.59	96.5	14.7	B	0.63	91
	Westbound Thru	15.5	B	0.35	50.3	13.2	B	0.51	66.5
	Northbound Left	17.5	B	0.27	27	17.6	B	0.13	12.5
	Northbound Right	32.7	C	0.81	79.4	31.1	C	0.72	54.9
	Overall	20.5	C	0.81	-	16.2	B	0.72	-
Laird Road and Highway 6 Southbound interchange	Eastbound Thru	10.4	B	0.17	17.8	11.5	B	0.29	28.7
	Westbound Thru	10.9	B	0.26	25.3	11.8	B	0.32	31.8
	Southbound Left	19.4	B	0.64	46.4	19.4	B	0.66	49.5
	Overall	15	B	0.64	-	15	B	0.66	-
New Highway 6 midblock interchange - West Ramp terminal	Eastbound Thru	4.1	A	0.2	17.2	4.2	A	0.17	15.1
	Westbound Thru	3.6	A	0.03	3.1	3.8	A	0.02	2.5
	Northbound Left	31.6	C	0.45	31.2	32.2	C	0.49	34.1
	Northbound Right	9	A	0.6	19.5	8.5	A	0.56	18.5
	Overall	9.2	A	0.6	-	10.2	B	0.56	-

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
New Highway 6 midblock interchange - East Ramp terminal	Eastbound Thru	3.6	A	0.06	6.9	3.4	A	0.06	6.8
	Westbound Thru	4.3	A	0.26	28.1	3.9	A	0.21	20.5
	Northbound Left	27.2	C	0.06	6.8	28.4	C	0.11	10.5
	Northbound Right	10.7	B	0.73	25.1	10.5	B	0.69	23
	Overall	6.8	A	0.73	-	6.7	A	0.69	-

Table 14: 2034 Background Traffic Operations-City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Southgate Drive	Eastbound Left	80.6	F	1.03	#76.5	25.5	C	0.57	29.1
	Eastbound Thru	13.4	B	0.39	51.6	31.4	C	0.81	#166.7
	Eastbound Right	4.5	A	0.50	11.4	6.0	A	0.31	11.7
	Westbound Left	8.2	A	0.03	2.6	16.1	B	0.15	7.6
	Westbound Thru-Right	26.4	C	0.78	80.3	89.3	F	1.10	#180.3
	Northbound Left	20.8	C	0.39	26.2	275.7	F	1.53	#133.5
	Northbound Thru-Right	20.1	C	0.16	10.4	10.6	B	0.19	9.7
	Southbound Left	17.6	B	0.17	13.4	18.4	B	0.43	37.5
	Southbound Thru- Right	13.7	B	0.41	14.1	29.4	C	0.85	57.2
Admiral PI and Southgate Drive	Overall	25.4	C	1.03	-	74.4	E	1.53	-
	Eastbound Left/Thru/Right	14.7	B	0.05	1.2	21.8	C	0.26	8.2
	Westbound Left/Thru/Right	11.0	B	0.04	0.9	14.2	B	0.11	2.8
	Northbound Left	0.1	A	0.01	0.3	0.1	A	0.01	0.2
	Northbound Thru	0.8	A	0.01	0.3	0.2	A	0.01	0.2
	Northbound Right	0.8	A	0.01	0.3	0.2	A	0.01	0.2
	Southbound Left	0.3	A	0.03	0.8	0.4	A	0.04	0.9
	Southbound Thru	1.2	A	0.03	0.8	1.2	A	0.04	0.9
	Southbound Right	1.2	A	0.03	0.8	1.2	A	0.04	0.9
Clair Road and Southgate Drive	Overall	1.9	A	0.05	-	3.1	A	0.26	-
	Eastbound Left	9.1	A	0.06	-	10.3	B	0.09	-
	Eastbound Thru	8.3	A	0.12	-	10.3	B	0.20	-
	Eastbound Right	8.3	A	0.12	-	10.3	B	0.20	-
	Westbound Left	10.0	A	0.20	-	11.3	B	0.15	-
	Westbound Thru	8.3	A	0.15	-	9.9	A	0.13	-
	Westbound Right	8.3	A	0.15	-	9.9	A	0.13	-
	Northbound Left	11.4	B	0.31	-	35.8	E	0.87	-
	Northbound Thru	11.4	B	0.31	-	35.8	E	0.87	-
	Northbound Right	11.4	B	0.31	-	35.8	E	0.87	-
	Southbound Left	9.2	A	0.06	-	10.1	B	0.11	-
	Southbound Thru	11.2	B	0.39	-	13.1	B	0.42	-
	Southbound Right	11.2	B	0.39	-	13.1	B	0.42	-
Maltby Road West and Concession Road 7	Overall	10.3	B	0.39	-	23.3	C	0.87	-
	Westbound Left	0.7	A	0.10	2.7	0.9	A	0.12	3.1
	Westbound Right	7.2	A	0.10	2.7	7.4	A	0.12	3.1
	Northbound Thru	10.3	B	0.12	3.4	10.3	B	0.15	4.2
	Northbound Right	10.3	B	0.12	3.4	10.3	B	0.15	4.2
	Southbound Left	12.6	B	0.04	1.0	13.8	B	0.16	4.5
	Southbound Thru	12.6	B	0.04	1.0	13.8	B	0.16	4.5
Maltby Road West and Gordon Street	Overall	8.6	A	0.12	-	9.5	A	0.16	-
	Eastbound Left/Thru/Right	28.4	C	0.37	39.0	29.0	C	0.35	37.4
	Westbound Left/Thru/Right	23.7	C	0.24	26.0	25.5	C	0.18	22.6
	Northbound Left/Thru/Right	19.4	B	0.77	160.8	30.4	C	0.92	#272.9
	Southbound Left/Thru/Right	15.5	B	0.68	130.4	16.2	B	0.71	145.1
Crawley Road/Southgate Drive	Overall	19.7	B	0.77	-	24.5	C	0.92	-
	Westbound Left/Right	7.5	A	0.04	-	7.4	A	0.04	-
	Northbound Thru/Right	6.8	A	0.04	-	6.8	A	0.04	-
	Southbound Thru/Left	7.2	A	0.02	-	7.2	A	0.04	-
	Overall	7.1	A	0.04	-	7.1	A	0.04	-

Appendix C contains the supporting detailed Synchro 11 reports. The results indicate that most of the study area intersections are forecast to operate at acceptable levels of service during the AM and PM peak hours.

The new Highway 6 Midblock interchange will function without any critical movements during the horizon year 2034. The northbound right turn movement at Laird Road and Highway 6 Northbound Interchange is identified as critical movement during AM peak hour.

The northbound left, westbound thru-right turn movement at Laird Road and Southgate Drive is identified as a critical movement operating over capacity with a LOS F during the PM peak hour whereas the eastbound left turn movement of the same intersection is identified as critical movement during AM peak hour operating overcapacity with LOS F. All northbound movements at Clair Road and Southgate Drive will operate near capacity with a LOS E. The Northbound Left/Thru/Right movement at Maltby Road West and Gordon Street is identified as a critical movement during PM peak hour.

The 2034 Background operations will trend similarly for most of the intersections if compared to both scenarios of 2029 Background operations with increased delay and v/c ratio for each critical movement identified in 2029 Background operations. New critical movements are identified at the Laird Road and Southgate Drive intersection (i.e., eastbound left at AM peak hour, northbound through-right at PM peak hour); and at the Clair Road and Southgate Drive intersection (i.e., all PM peak hour northbound movements); and Maltby Road West and Gordon Street (PM peak hour northbound movement) as highlighted in the **Table 14**.

3.8 Background Traffic Operations (10 years after full buildout, 2039)

The 2039 background traffic volumes have been analysed using the same methodology as under existing traffic conditions. As discussed in **Section 3**, the Highway 6 and Maltby Road West/Concession Road 4 intersection is assumed to be closed by this horizon year as the new Highway 6 Midblock Interchange will be open. Signal timings have not been optimized.

Table 15 summarizes the results of the 2039 background traffic operations – MTO facilities. **Table 16** summarizes the results of the 2039 background traffic operations – City of Guelph facilities.

Table 15: 2039 Background Traffic Operations – MTO Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange	Eastbound Thru	20.4	C	0.63	108.2	16.1	B	0.67	102
	Westbound Thru	16.8	B	0.38	55.5	14.2	B	0.55	73.7
	Northbound Left	17.2	B	0.27	27.9	29.4	B	0.12	12.8
	Northbound Right	33.7	C	0.82	85.4	31.8	C	0.73	58.3
	Overall	21.8	C	0.82	-	17.3	B	0.73	-
Laird Road and Highway 6 Southbound interchange	Eastbound Thru	10.8	B	0.19	19.2	12.1	B	0.3	31
	Westbound Thru	11.4	B	0.28	27.3	12.4	B	0.34	34.5
	Southbound Left	19.4	B	0.65	49.1	19.4	B	0.67	52.3
	Overall	15.3	B	0.65	-	15.4	B	0.67	-
New Highway 6 midblock interchange - West Ramp terminal	Eastbound Thru	4.1	A	0.2	17.4	4.2	A	0.17	15.7
	Westbound Thru	3.6	A	0.03	3	3.9	A	0.02	2.4
	Northbound Left	31.5	C	0.44	30.6	32.4	C	0.49	34.8
	Northbound Right	9.1	A	0.61	19.7	8.5	A	0.57	18.9
	Overall	9.1	A	0.61	-	10.2	B	0.57	-
New Highway 6 midblock interchange - East Ramp terminal	Eastbound Thru	3.7	A	0.05	6.4	3.5	A	0.06	7
	Westbound Thru	4.4	A	0.27	29.2	3.9	A	0.21	21.1
	Northbound Left	27.3	C	0.06	7.2	28.4	C	0.11	10.7
	Northbound Right	10.8	B	0.74	25.7	10.5	B	0.7	23.6
	Overall	6.9	A	0.74	-	6.8	A	0.7	-

Table 16: 2039 Background Traffic Operations-City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Southgate Drive	Eastbound Left	138.4	F	1.19	#89	27.9	C	0.61	#31.5
	Eastbound Thru	14.2	B	0.42	54.8	35.2	D	0.87	#180.4
	Eastbound Right	4.8	A	0.53	11.5	6.1	A	0.33	11.9
	Westbound Left	8.3	A	0.04	2.8	16.7	B	0.16	7.9
	Westbound Thru-Right	30.6	C	0.84	86.0	119.3	F	1.18	#193.2
	Northbound Left	20.6	C	0.39	27.2	327.8	F	1.65	#148.9
	Northbound Thru-Right	19.9	B	0.15	10.6	10.4	B	0.20	10.3
	Southbound Left	17.4	B	0.16	14.0	18.5	B	0.44	39.4
	Southbound Thru- Right	13.9	B	0.43	14.4	32.8	C	0.87	64.6
	Overall	34.0	C	1.19	-	91.2	F	1.65	-
Admiral PI and Southgate Drive	Eastbound Left/Thru/Right	15.3	C	0.05	1.3	24.1	C	0.30	9.7
	Westbound Left/Thru/Right	11.0	B	0.04	1.0	14.9	B	0.12	3.2
	Northbound Left	0.1	A	0.01	0.3	0.1	A	0.01	0.2
	Northbound Thru	0.7	A	0.01	0.3	0.3	A	0.01	0.2
	Northbound Right	0.7	A	0.01	0.3	0.3	A	0.01	0.2
	Southbound Left	0.3	A	0.03	0.8	0.5	A	0.04	1.0
	Southbound Thru	1.2	A	0.03	0.8	1.3	A	0.04	1.0
	Southbound Right	1.2	A	0.03	0.8	1.3	A	0.04	1.0
	Overall	1.9	A	0.05	-	3.4	A	0.26	-
Clair Road and Southgate Drive	Eastbound Left	9.3	A	0.06	-	10.6	B	0.10	-
	Eastbound Thru	8.5	A	0.13	-	10.8	B	0.22	-
	Eastbound Right	8.5	A	0.13	-	10.8	B	0.22	-
	Westbound Left	10.2	B	0.21	-	11.7	B	0.17	-
	Westbound Thru	8.6	A	0.16	-	10.2	B	0.14	-
	Westbound Right	8.6	A	0.16	-	10.2	B	0.14	-
	Northbound Left	11.8	B	0.34	-	46.2	E	0.93	-
	Northbound Thru	11.8	B	0.34	-	46.2	E	0.93	-
	Northbound Right	11.8	B	0.34	-	46.2	E	0.93	-
	Southbound Left	9.3	A	0.06	-	10.3	B	0.12	-
	Southbound Thru	11.8	B	0.42	-	14.0	B	0.45	-
	Southbound Right	11.8	B	0.42	-	14.0	B	0.45	-
	Overall	10.7	B	0.42	-	28.6	D	0.93	-
Maltby Road West and Concession Road 7	Westbound Left	0.8	A	0.10	2.8	0.9	A	0.12	3.1
	Westbound Right	7.2	A	0.10	2.8	7.4	A	0.12	3.1
	Northbound Thru	10.4	B	0.13	3.6	10.3	B	0.15	4.2
	Northbound Right	10.4	B	0.13	3.6	10.3	B	0.15	4.2
	Southbound Left	12.9	B	0.04	1.0	13.8	B	0.16	4.5
	Southbound Thru	12.9	B	0.04	1.0	13.8	B	0.16	4.5
	Overall	8.7	A	0.13	-	9.5	A	0.16	-
Maltby Road West and Gordon Street	Eastbound Left/Thru/Right	29.4	C	0.40	41.6	29.8	C	0.37	39.5
	Westbound Left/Thru/Right	24.1	C	0.25	27.2	25.8	C	0.19	24.0
	Northbound Left/Thru/Right	21.9	C	0.81	181.1	39.6	D	0.97	#298.0
	Southbound Left/Thru/Right	16.7	B	0.72	144.0	17.7	B	0.75	161.0
	Overall	20.4	C	0.81	-	29.6	C	0.97	-
Crawley Road/Southgate Drive	Westbound Left/Right	7.5	A	0.05	-	7.5	A	0.04	-
	Northbound Thru/Right	6.8	A	0.04	-	6.8	A	0.04	-
	Southbound Thru/Left	7.2	A	0.03	-	7.2	A	0.04	-
	Overall	7.1	A	0.05	-	7.1	A	0.04	-

Appendix C contains the supporting detailed Synchro 11 reports. The results indicate that most of the study area intersections are forecast to operate at acceptable levels of service during the AM and PM peak hours.

The new Highway 6 Midblock interchange will function without any critical movement during the horizon year 2039.

The eastbound through, northbound left, westbound thru-right turn movement at Laird Road and Southgate Drive is identified as a critical movement during the PM peak hour whereas the eastbound left turn movement of the same intersection identified as critical movement during the AM peak hour operating overcapacity with LOS F. All northbound movements at Clair Road and Southgate Drive will operate near capacity with a LOS E. The northbound left-thru-right turn movement at Maltby Road West and Gordon Street is identified as critical movement during PM peak hour.

The 2039 Background traffic operations will trend similarly for most of the intersections if compared to the 2034 Background traffic operations with increased delay and v/c ratio for each critical movement identified in the 2034 Background traffic operations.

4. Site Generated Traffic Volumes

4.1 Site Description

The proposed cold storage facility is located within the Southgate Business Park. For the first phase of development (Maple / Hudson Phase) the gross floor area is approximately 22,909 m² and the estimated completion date is in 2024. The full buildout of the proposed development has an approximate gross floor area of 150,060 m² and an estimated completion date in 2029. Other interim phases are still being finalized and are not included in this traffic assessment¹⁷.

546 car parking spaces, and 444 truck parking spaces, are included in the proposed site plan. The main entrance to the facility will be through Southgate Drive at the north side of the site; however, only trucks will be accessing the site through this entrance. All other employee and visitor vehicles will use the other three entrances, one entrance along Maltby Road West and two entrances from Crawley Road. After the new Highway 6 Midblock Interchange is open, it is anticipated that trucks will primarily use the Southgate Drive Extension/Crawley Road via Concession Road 7 route to enter the site.

Figure 22 illustrates the site plan of the proposed development.¹⁸

4.2 Inputs for Site Generated Trips

The site generated trips were based on the proposed site accesses, and the number of employees, visitors and trucks which will be coming to the facility daily. The following data was provided by the client:

1. Site Phases

- The first phase of development (Maple / Hudson Phase) is approximately 22,909 m² and has a target completion in 2024 (refer to **Figure 21**)
- The full buildout of the proposed development is approximately 150,060 m² and has a target completion in 2029 (refer to **Figure 22**).
- Other interim development phases are under consideration but are not yet finalized and therefore were not included in this TIS.

2. Typical 53' box trailer and truck traffic (Design Day = 24 hours)

- a. Phase I (2024): Inbound = 122/day; Outbound = 202/day; Total 324/day¹⁹
- b. Full buildout (2029): Inbound = 410/day; Outbound = 696/day; Total 1,106/day

- All trucks accessing the site will be coming from Mississauga and Brampton along Highway 401 to northbound Highway 6.

17. It is understood that as per the City's TIS Guidelines this traffic impact study will need to be updated/revised once the interim phases and their construction timelines are more fully developed.

18. Site plan provided by Joanna Kowalska and Richard Williams from AECOM

19 Truck trips were assumed to be evenly distributed throughout the day, based on discussions with the client. Note that as per client expectations, the weekday traffic volumes are anticipated to be much higher than weekend traffic to and from the site; for this reason, and in discussion with MTO, only the weekday peak hours are assessed in this report.

Figure 21: Development Concept (Phase 1)

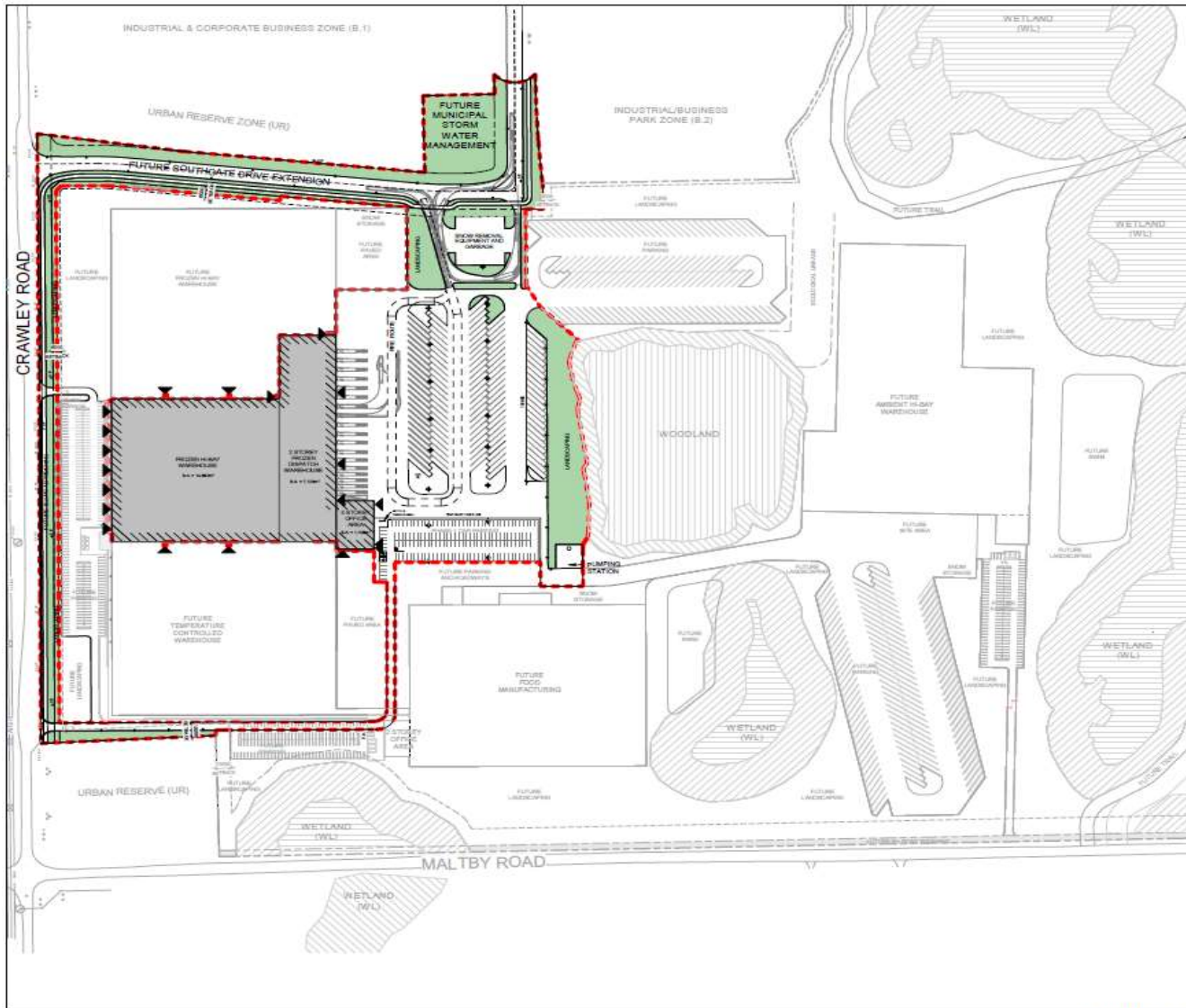
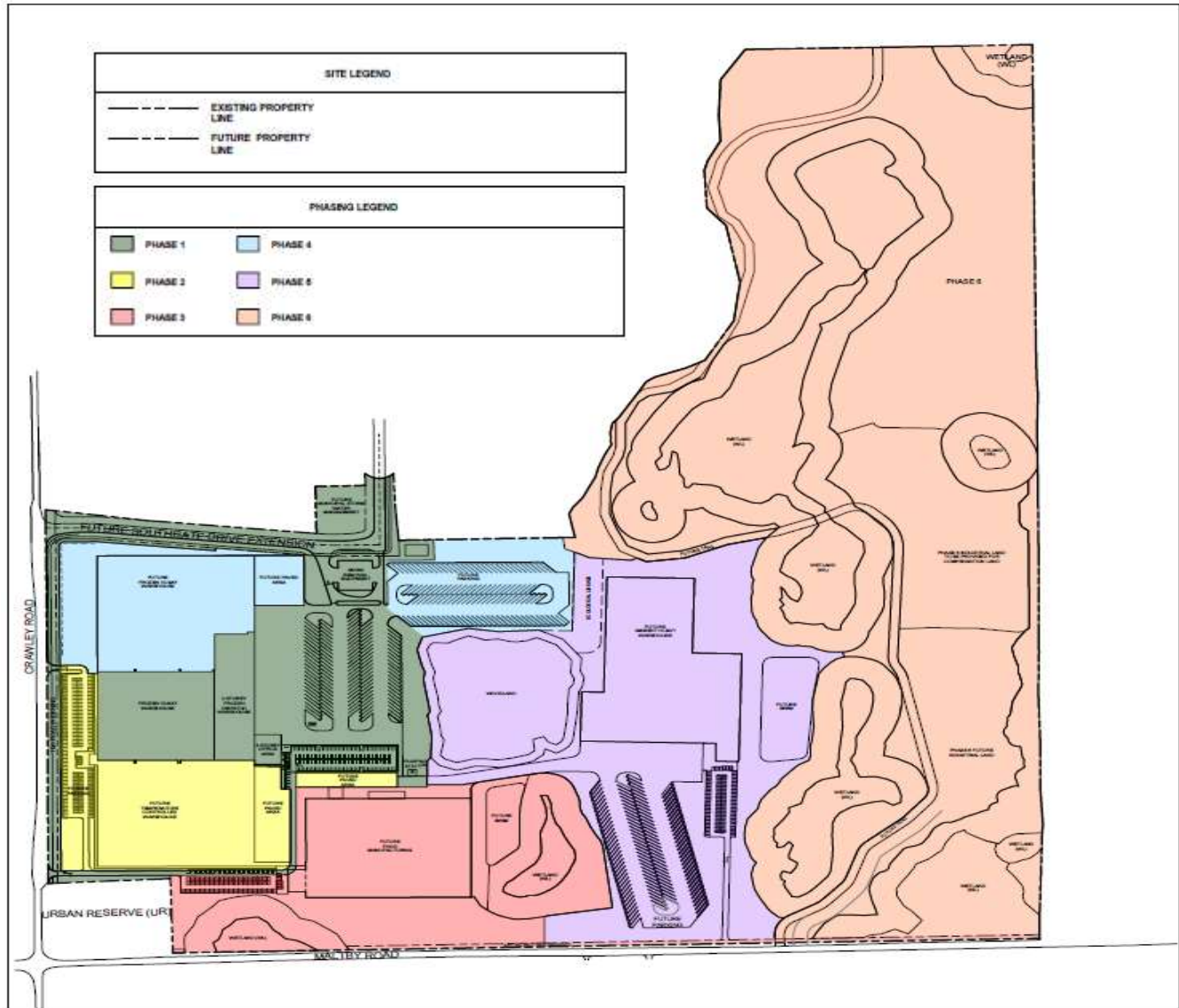


Figure 22: Concept Site Plan



3. Full time employees (FTE) and visitors

- a. Phase I (2024): FTE :106/day; visitors:10/day
- b. Full buildout (2029): FTE :572/day; visitors:10/day

- All the full-time employees will be residing in Guelph.²⁰
- The office staff, in general, work from 8 AM – 5 PM. There are 3 shifts for the warehouse, generally 7 a.m. to 3:30 p.m., 3 p.m. to 11:30 p.m., and 11 p.m. to 7:30 a.m. It is assumed that half of the total full-time employees will be working in the first shift whereas other two shifts will have equal distribution of remaining full-time employees.

20. From the initial review by the City of Guelph, it was decided that the trip distribution should include trips from outside of the city so that most, but not all, trips are from within the city boundary.

4. Site Access and Parking Spaces

- The main access to the facility will be through Southgate Drive; however, only trucks will be accessing through this entrance.
- Four additional access points along Maltby Road West and Crawley Road will be for employees or visitors.
- 546 car parking spaces, 444 truck parking spaces are proposed within the site.
- 162 car parking spaces are provided for Phase 1.

Table 17 and **Table 18** summarize the forecast number of net new trips generated by the proposed development, broken down by vehicle type for phase 1 (2024), full buildout (2029), 5 years after full buildout (2034) and 10 years after full buildout (2039)

Table 17: Trip Generation Phase 1 (2024)

Phase 1 (2024)	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Passenger Vehicle	58	29	29	58
Trucks	5	8	5	8

Table 18: Trip Generation full buildout and 5 years after full buildout (2029, 2034)

Full Build Out (2029)	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Passenger Vehicle	291	145	145	291
Trucks	17	29	17	29

4.3 Trip Distribution

The trip distribution (origin-destination patterns) was determined based on the 2016 Transportation Tomorrow Survey (TTS) data. **Table 19** displays the breakdown for the trip distribution used in this study for passenger vehicles and trucks for all horizon years.

Table 19: Trip Distribution

Peak Hour	Passenger Vehicles						Trucks	
	North City of Guelph		East City of Guelph		Southeast of the City of Guelph		South	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
AM	40%	63%	50%	27%	10%	10%	100%	100%
PM	63%	50%	27%	40%	10%	10%	100%	100%

The data from the TTS survey showed some areas that would not generate trips; however, as the data from the TTS survey is from pre-2016, we have modified the distribution based on discussions with the City and have included trips to and from residential areas southeast of the City.

As identified by the client, all truck trips will be travelling to and from Highway 401, south of the development site.

4.4 Trip Assignment

The assignment of the site generated trips is based on the anticipated travel routes within the study area for the OD patterns identified in **Section 4.3**. This assignment is also based on the anticipated travel time for the various origin/destination areas as identified by comparing various potential routes throughout the day using Google Maps.

When the new Highway 6 Midblock Interchange and Southgate Drive Extension is open, trucks will travel to/from the site and the only site access for trucks from Southgate Drive via the Southgate Drive at Laird Road intersection or Concession Road 7 at Maltby Road West intersection (Passenger vehicles will travel to/from the site via Laird Road at Southgate Drive, Clair Road at Southgate Drive and Gordon Street at Maltby Road West, and Concession Road 7 at Maltby Road West, to three different accesses for passenger vehicles.

Table 20, and **Table 21** display the breakdown for the trip assignment used in this study for passenger vehicles and trucks for the year 2024, 2029, 2034, and 2039 for this scenario.

Table 20: Trip Assignment for Passenger Vehicles (Highway 6 Midblock Interchange Open and Southgate Drive Extension in Place)

Route To/From Site	Site Traffic (Passenger Vehicles)
North of Guelph	
Through Southgate Dr/Laird Rd via Highway 6	80%
Through Southgate Dr/Clair Rd W	10%
Through Gordon St/Maltby Rd W	10%
East City of Guelph	
Through Southgate Dr/Clair Rd W	55%
Through Gordon St/Maltby Rd W	45%
South of the City of Guelph	
Through Maltby Rd W/Gordon St	100%

Table 21: Trip Assignment for Trucks (Southgate Drive Extension in Place)

New Highway 6 Interchange	Trucks	Site Traffic
Not Open	Through Southgate Dr/Laird Rd via Highway 6	100%
	Through Crawled Rd/Concession Rd 7	0%
Open	Through Southgate Dr/Laird Rd via Highway 6	10%
	Through Concession Rd 7 via New Interchange	90%

As discussed with the MTO, the timing for the completed construction of the new Highway 6 Midblock interchange and upgrades along Concession Road 7 is anticipated to be in 2024 but is subject to delays. For this reason, multiple scenarios for the year 2024 were assessed.

As noted above, once the new Highway 6 Midblock interchange is open, it is assumed that all passenger vehicle site trips from the northern part of Guelph will enter and leave the site through Southgate Drive based on the estimated shorter travel time compared to travelling south to the new Highway 6 Midblock interchange and backtracking to the site. This travel pattern will vary from what occurs before the new Highway 6 Midblock interchange is open and the Maltby Road West/Concession Road 4 intersection is still operational. For the purpose of analyzing the future 2024 Highway 6 Midblock *Interchange not open scenarios*, the potential reassignment of traffic from that shown in **Table 20** has been conservatively assumed as follows based on the existing travel pattern and travel time to access the proposed site:

- For inbound and outbound assignment, 85% of the passenger vehicle site traffic that will be coming from the northern part of Guelph and will use the Maltby Road West/Crawley Road/Concession Road

7 intersection via the Highway 6/Concession Road 4 intersection, while the remaining 15% will enter through the Laird Road Interchange and Laird Road/Southgate Drive intersection. (Note : this 85%-15% distribution is applied to the 80% site traffic-through Southgate Drive/Laird Road via Highway 6 assignment identified in **Table 20**)

- At the Clair Road and Southgate Drive intersection, site trips were reallocated from the Clair Road westbound through movement to a westbound left-turn movement and from eastbound through to northbound right with the extended Southgate Drive in place, as per City's request.

For the purpose of analyzing the future 2024 (Highway 6 Midblock Interchange open scenario), 2029 (full buildout), 2034 (5 years after full buildout) , and 2039 (10 years after full buildout) scenarios, the potential reassignment of traffic from that shown in **Table 20** has been conservatively assumed as follows based on the existing travel pattern and expected future travel time to access the proposed site through the new Highway 6 Midblock Interchange:

- Passenger Vehicles will use the Gordon Street at Maltby Road West intersection to travel to the area(s) southeast of Guelph; therefore, vehicle site traffic will not impact the new Highway 6 Midblock Interchange as it will not be used by any passenger vehicles due to the shorter travel time via Gordon Street at Maltby Road West.
- Passenger vehicles which are coming from east Guelph via the east leg of the Clair Road and Southgate Drive intersection will be following the same distribution as in Phase 1 (2024) as their travel route or travel time to and from the site will not have any impact due to the opening of the new Highway 6 Midblock Interchange and the closure of the Maltby Road West/Concession Road 4 accesses to Highway 6.
- There is no anticipated change to the truck traffic patterns due to the closure of the Maltby Road West/Concession Road 4 accesses to Highway 6 until Southgate Drive is extended to Crawley Road. Once open, it is assumed that 90% of the trucks will be taking the Concession 7 road via the new Highway 6 Midblock Interchange to enter the site whereas 10% will continue using the Laird Road to Southgate Drive route to access the site (this is the same as the assignment shown in **Table 21**).

4.5 Modal Split

For this assessment it was conservatively assumed that transit and active transportation trips would not be sufficient to reduce the vehicle trips generated by the site, primarily considering the existing nearest transit stop and the available cycling and pedestrian facilities to the site.²¹

4.6 Pass-by and Diverted-link Trips

For this assessment it was conservatively assumed that pass-by trips and diverted-link trips would be limited and were therefore not incorporated to reduce overall traffic volumes.²²

4.7 Site Generated Traffic Volumes

Figure 23 to **Figure 29** illustrate the site-generated traffic volumes for the AM and PM peak hours for the phase 1 (2024) and full buildout (2029) scenarios. The full-buildout (2029) scenario also represents 5 years after full buildout (2034), and 10 years after full buildout (2039).

21. This modal split assumption particularly for future horizon years may be further revised based on the City's review.

22. This assumption may be revised based on the City's review.

Figure 23: 2024 Site Generated Traffic Volumes (without Southgate Drive Extension; new Highway 6 Midblock Interchange not open)

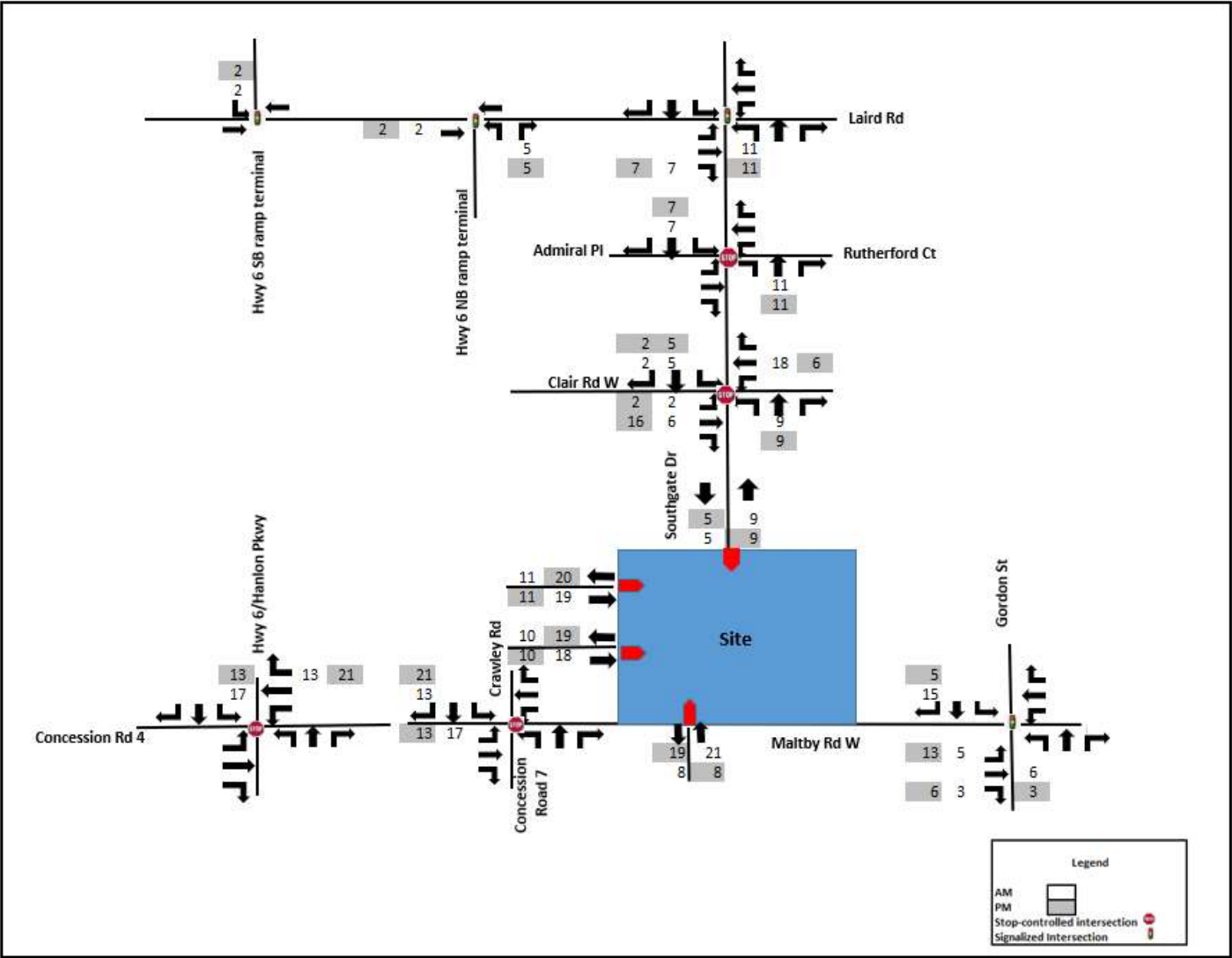


Figure 24: 2024 Site Generated Traffic Volumes (with Southgate Drive Extension; new Highway 6 Midblock Interchange not open)

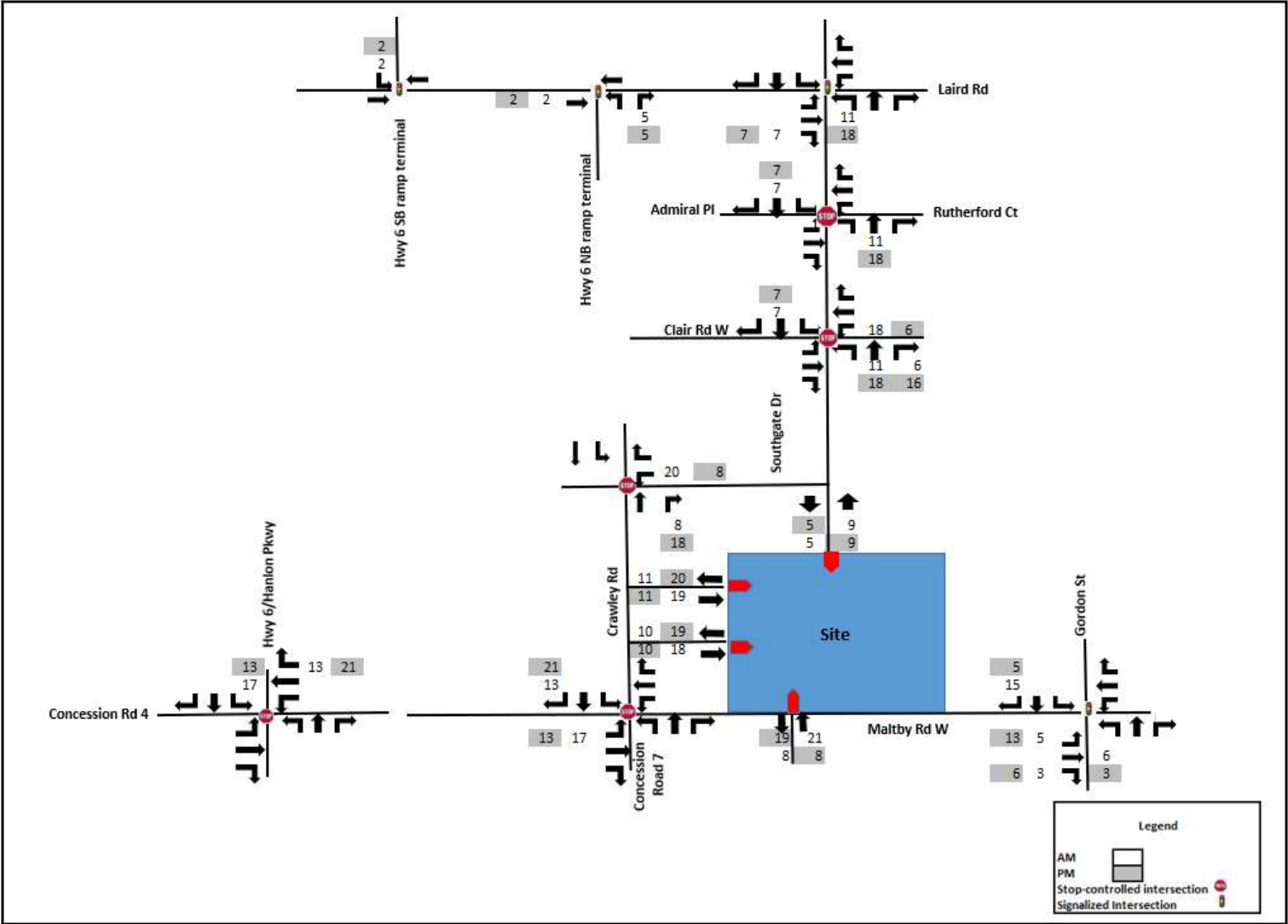


Figure 25: 2024 Site Generated Traffic Volumes (with Southgate Drive Extension; new Highway 6 Midblock Interchange open)

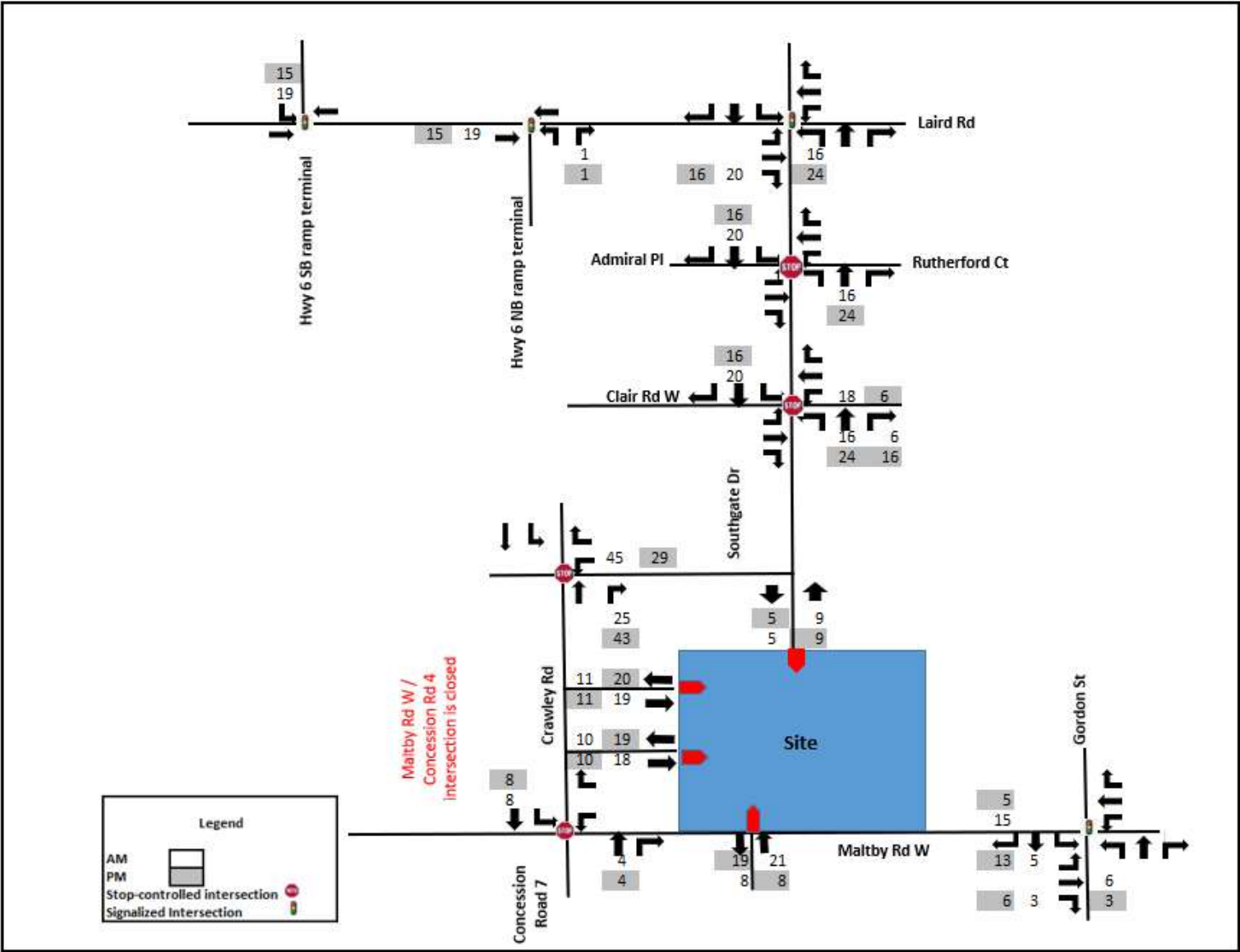


Figure 26: 2024 Site Generated Traffic Volumes (new Highway 6 Midblock Interchange Ramp Terminal Intersections)

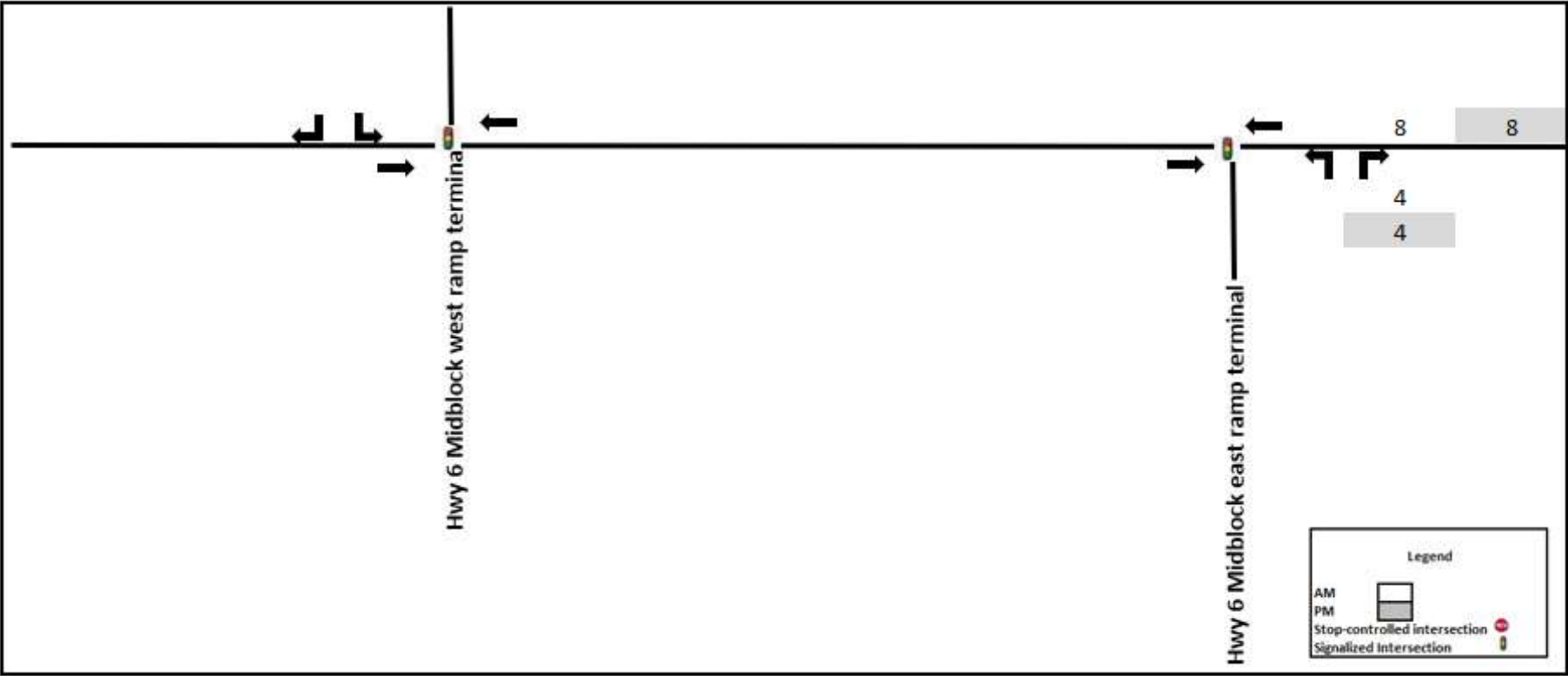


Figure 27: 2029 Site Generated Traffic Volumes (without Southgate Drive Extension)

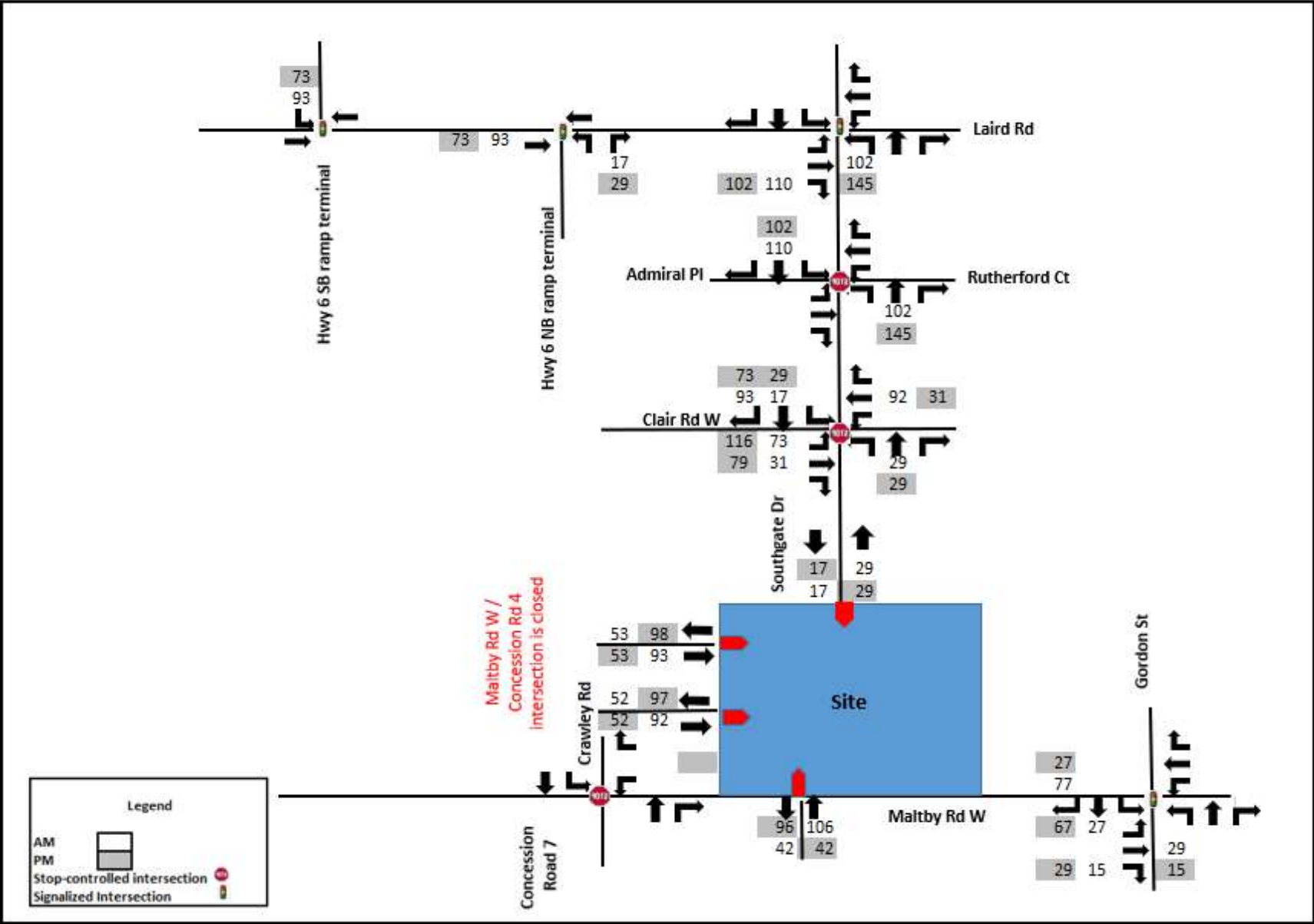


Figure 28: 2029 Site Generated Traffic Volumes (with Southgate Drive Extension)

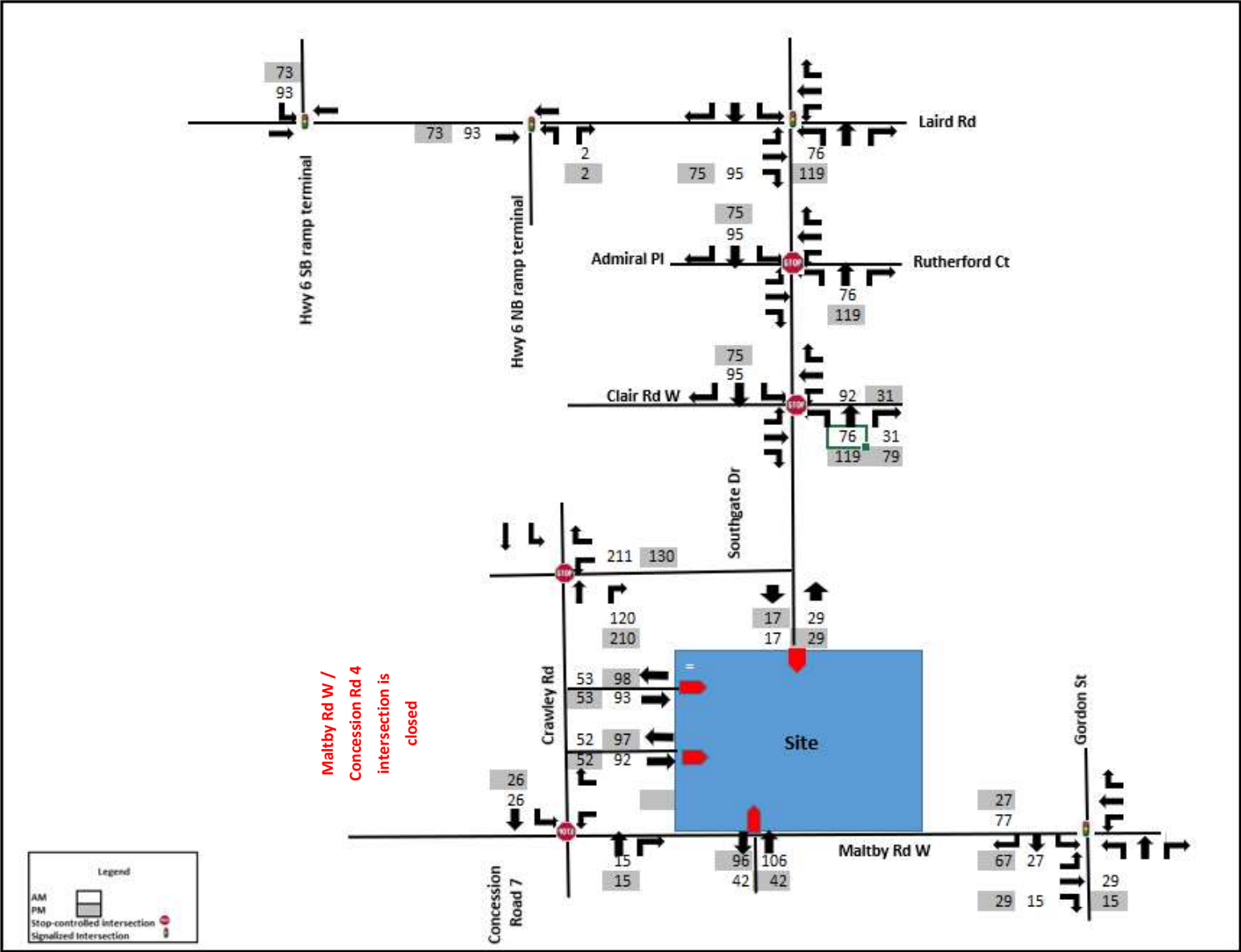
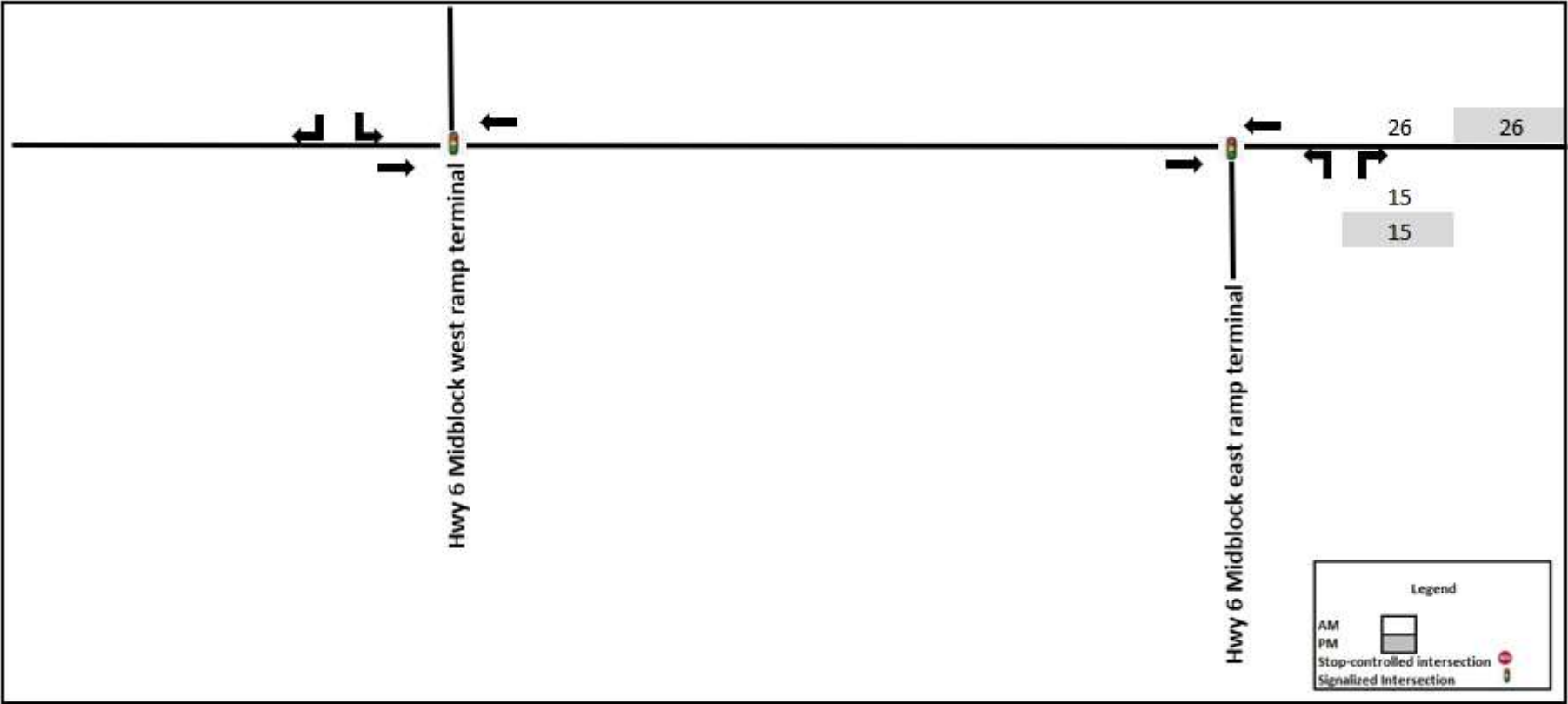


Figure 29: 2029 Site Generated Traffic Volumes (new Highway 6 Midblock Interchange Ramp Terminal Intersections)



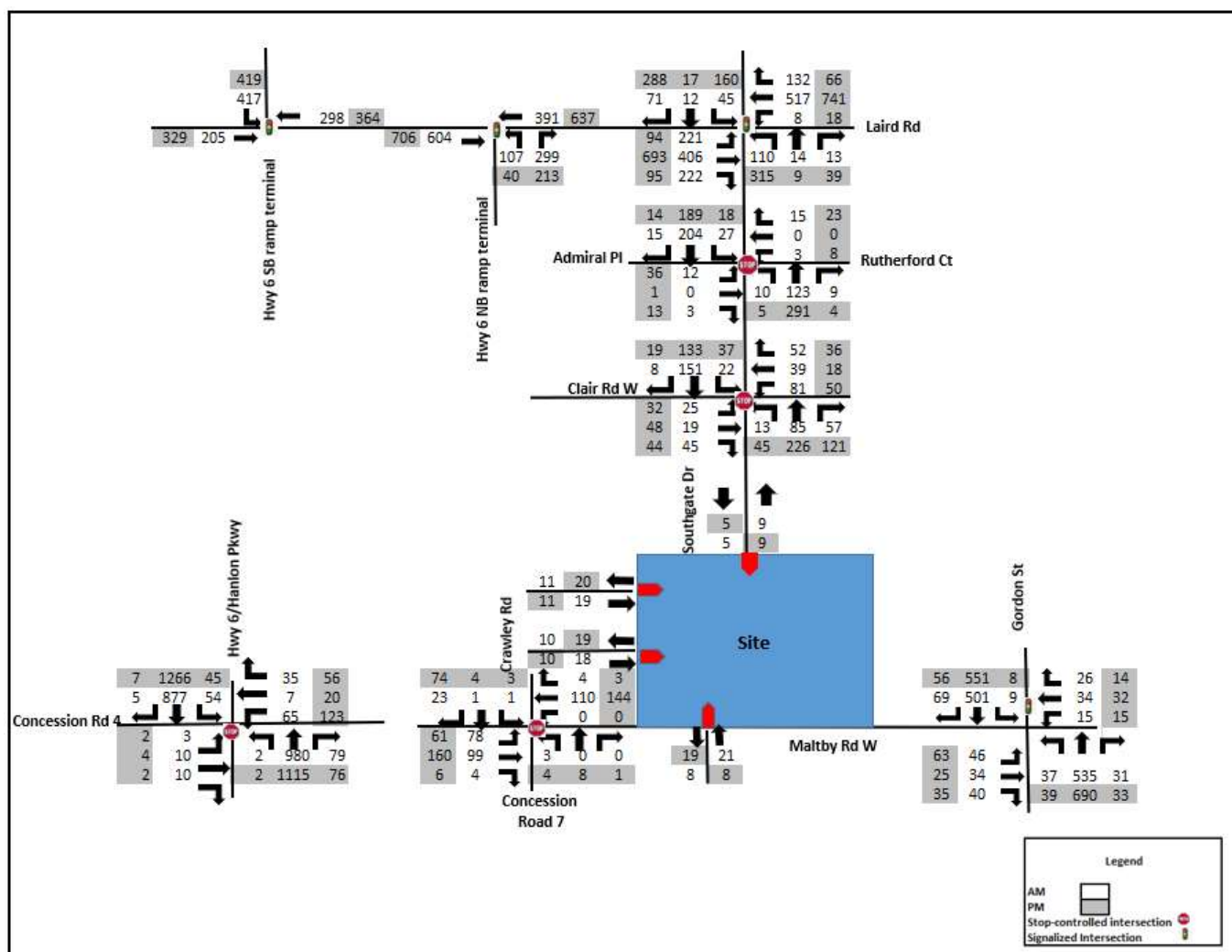
5. Total Traffic Operations Assessment

5.1 Total Traffic Volumes (2024, 2029, 2034 and 2039)

The background traffic volumes forecast the traffic for the horizon years without taking the site trips into consideration whereas the site generated traffic forecast is only considering the traffic trips to and from proposed site. The total traffic volumes are calculated²³ by adding the site traffic volume to the background traffic volume of the same horizon year (i.e., 2024, 2029, 2034 and 2039).

Figure 30 to Figure 40 illustrates the 2024, 2029, 2034, and 2039 total traffic volumes, including trips generated by the proposed development for different scenarios for the City of Guelph and MTO facilities.

Figure 30: 2024 Total Traffic Volumes (without Southgate Drive Extension; new Highway 6 Midblock Interchange not open)



23. Total Traffic Volume = Total Background (same horizon year for all the variables) + Site Traffic Volume

Figure 31: 2024 Total Traffic Volumes (with Southgate Drive Extension; new Highway 6 Midblock Interchange not open)

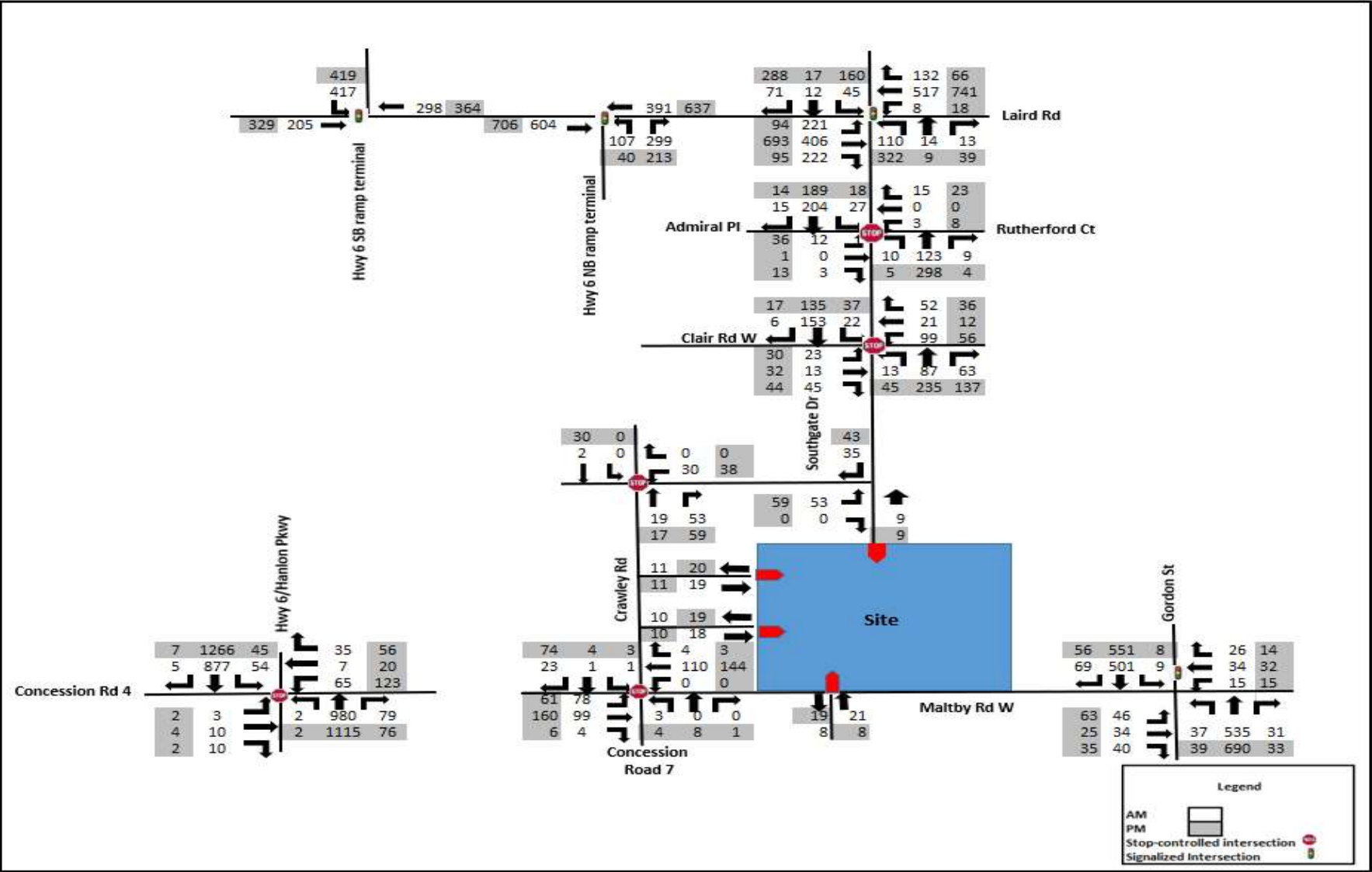


Figure 32: 2024 Total Traffic Volumes (with Southgate Drive Extension; new Highway 6 Midblock Interchange open)

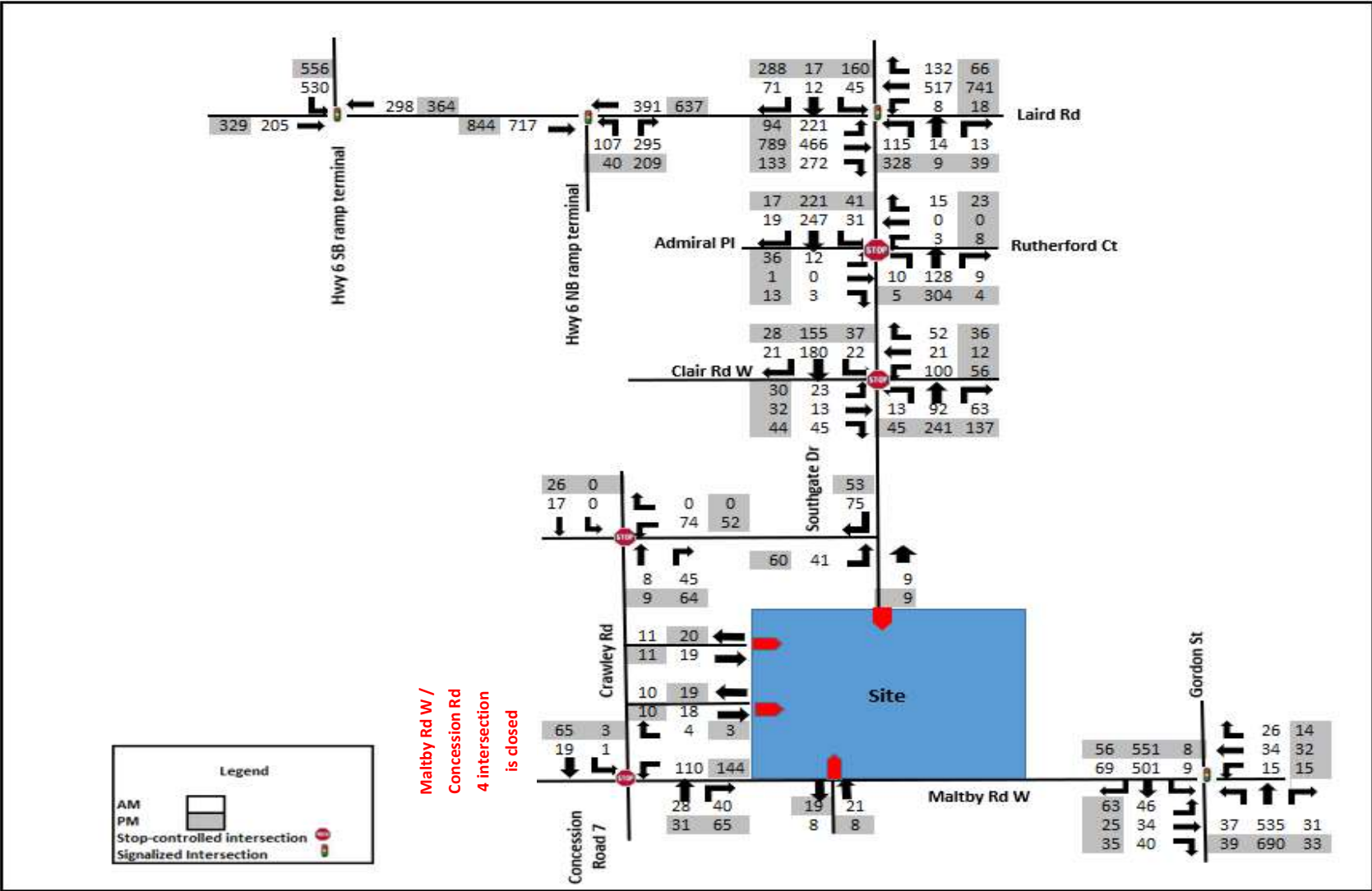


Figure 33: 2024 Total Traffic Volumes (new Highway 6 Midblock Interchange Ramp Terminal Intersections)

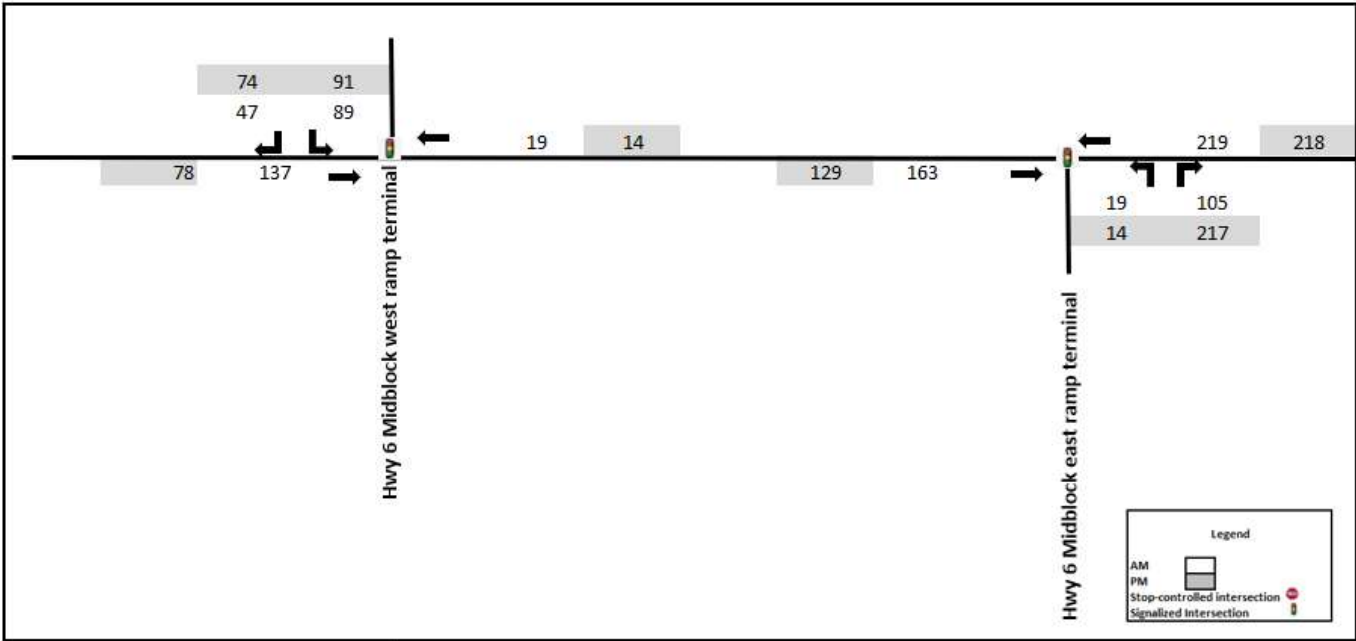


Figure 34: 2029 Total Traffic Volumes (without Southgate Drive Extension)

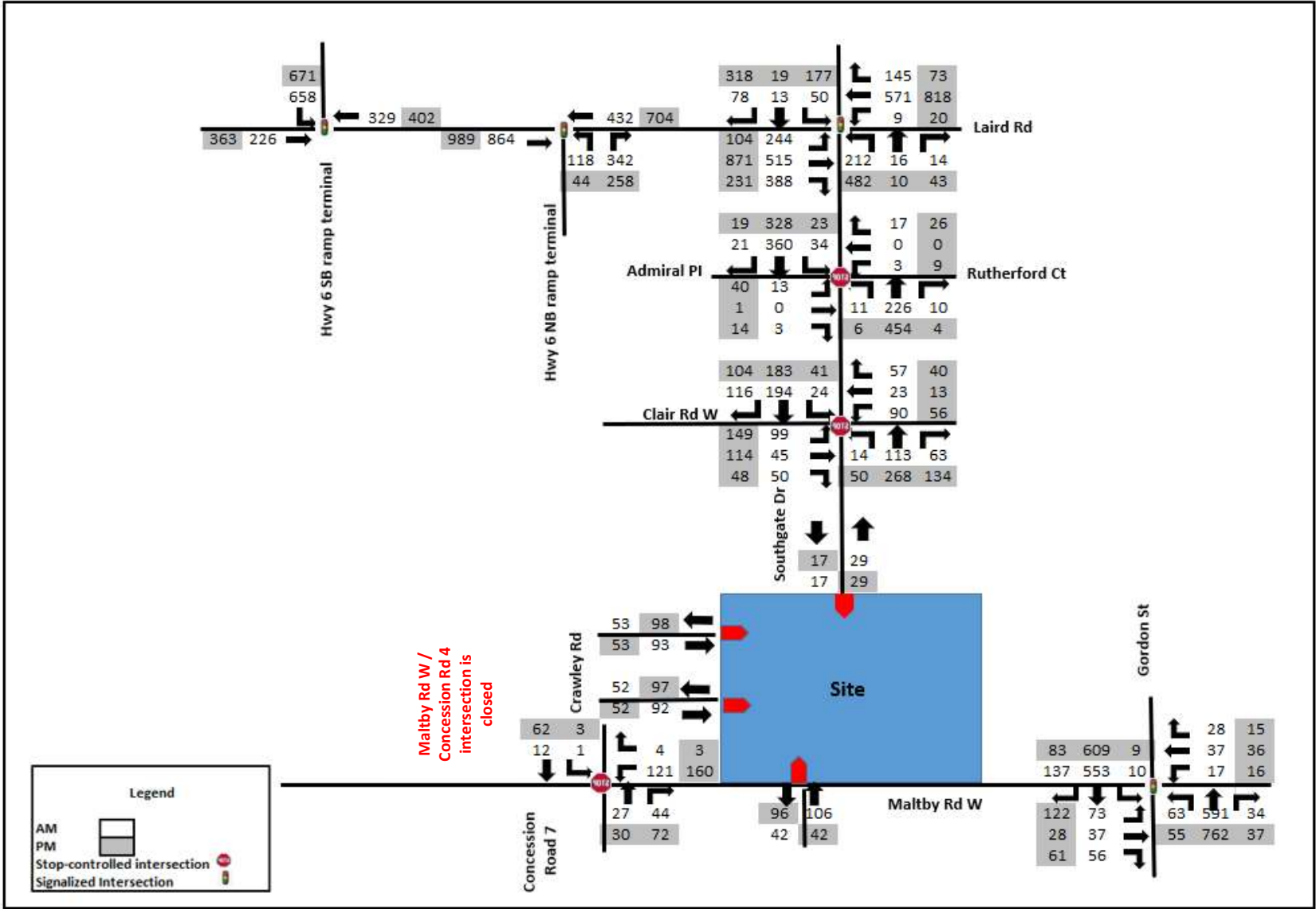


Figure 35: 2029 Total Traffic Volumes (with Southgate Drive Extension)

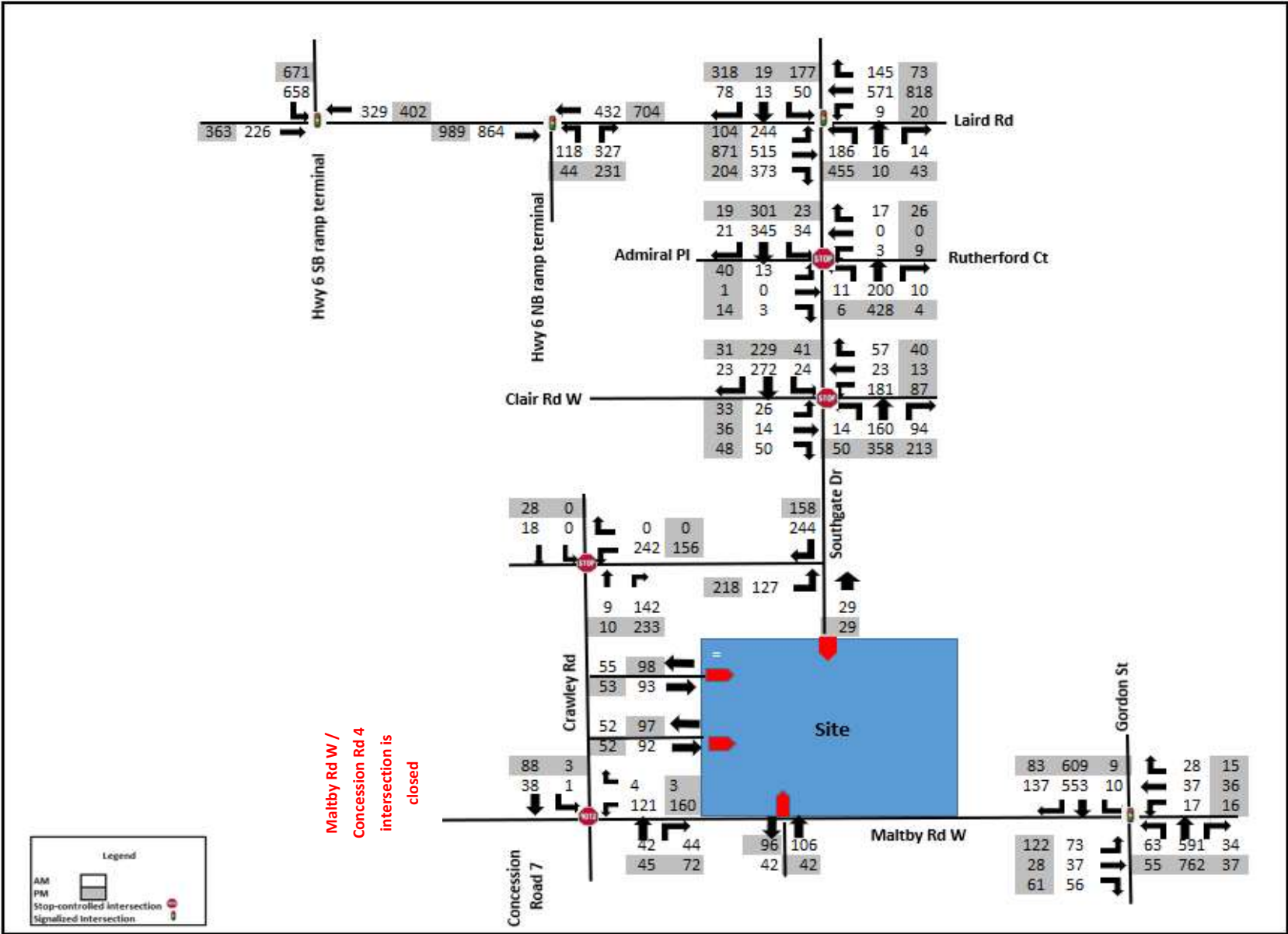


Figure 36: 2029 Total Traffic Volumes (new Highway 6 Midblock Interchange Ramp Terminal Intersection)

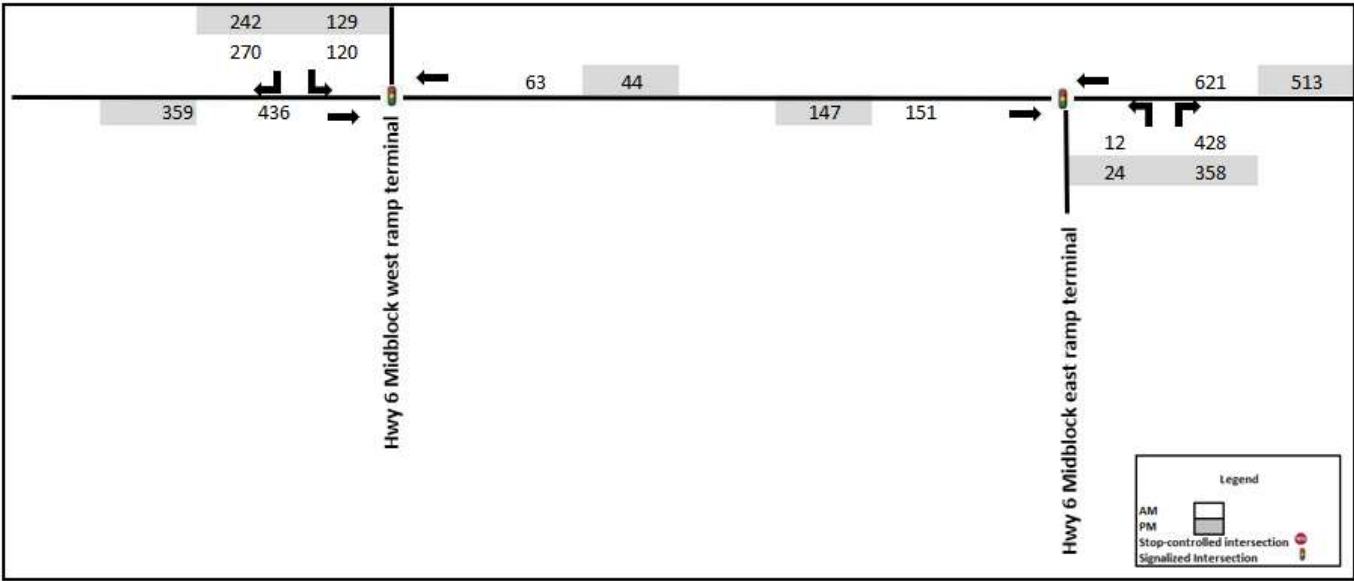


Figure 37: 2034 Total Traffic Volumes

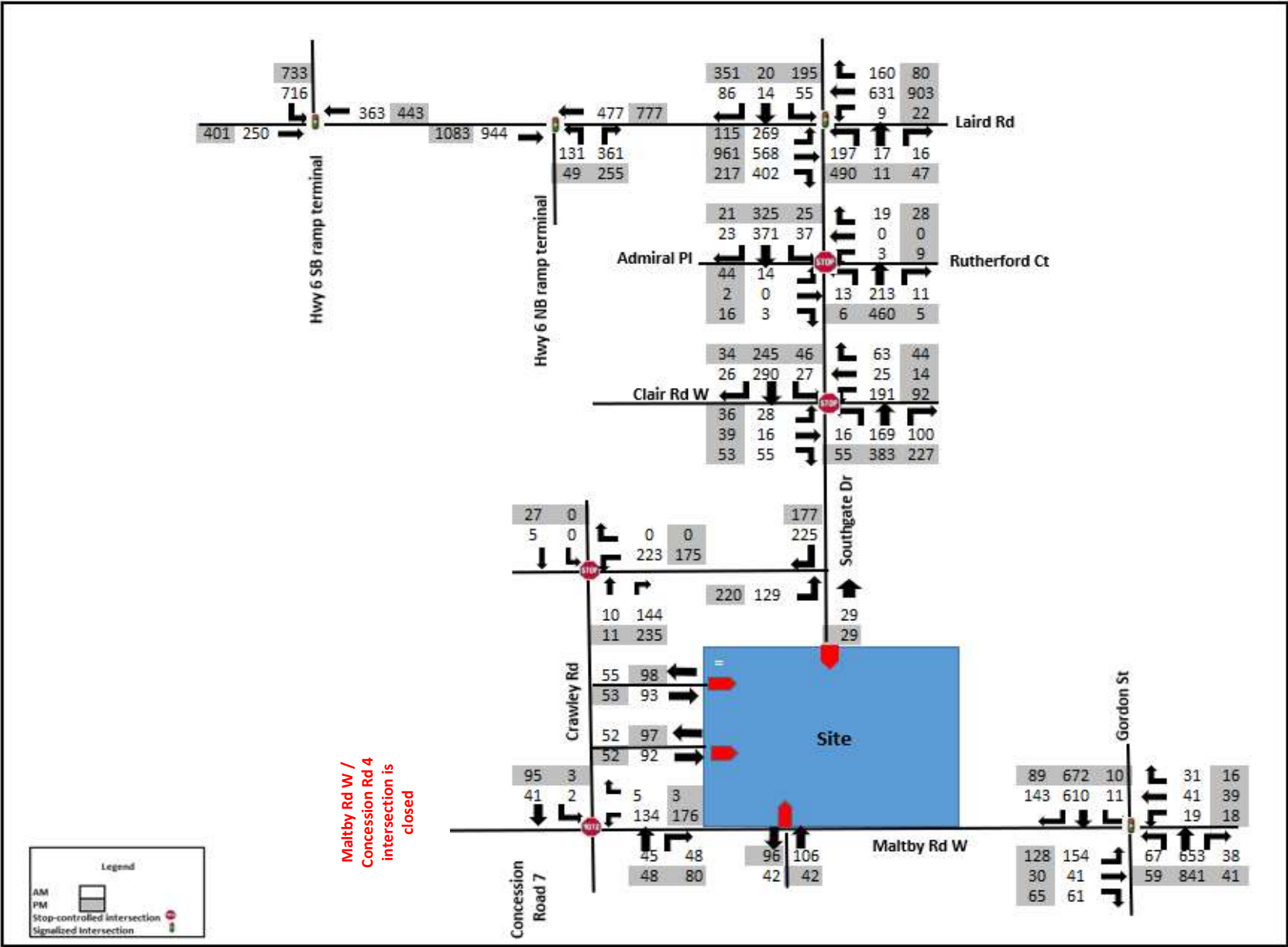


Figure 38: 2034 Total Traffic Volumes (new Highway 6 Midblock Interchange ramp terminals)

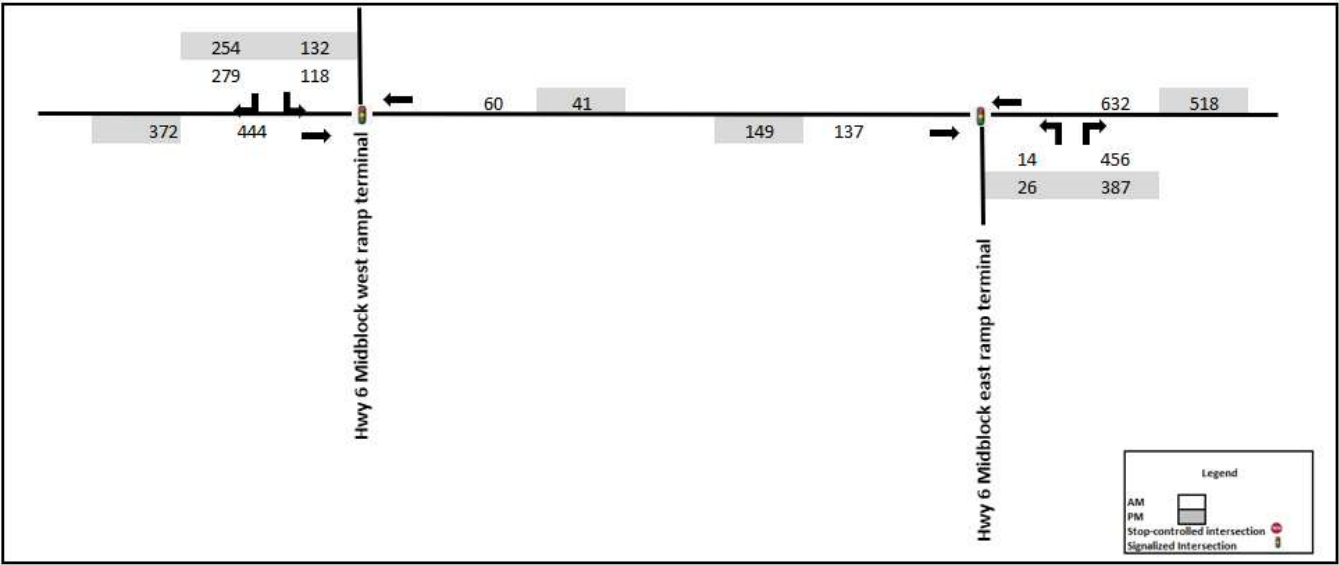


Figure 39: 2039 Total Traffic Volumes

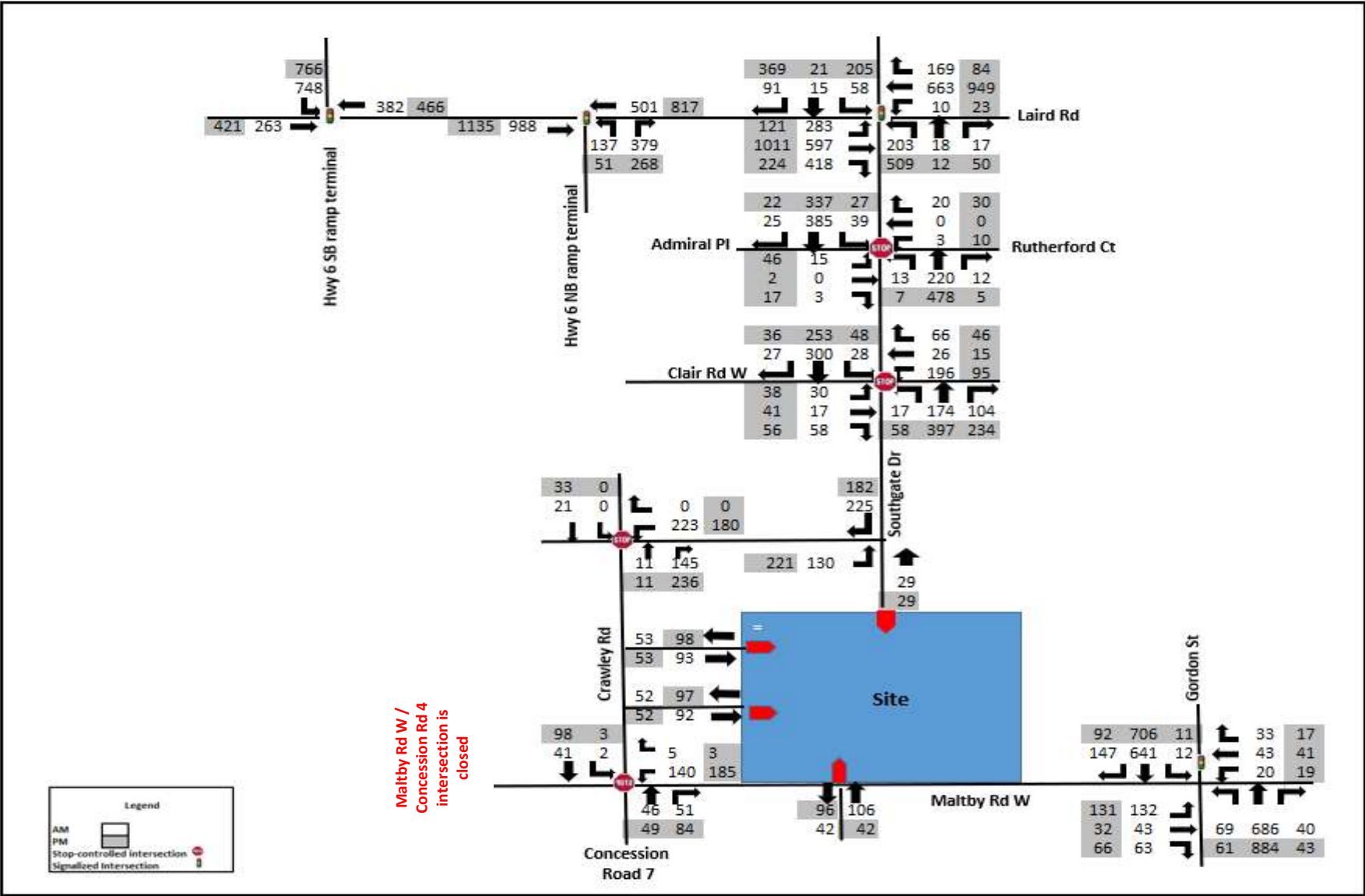
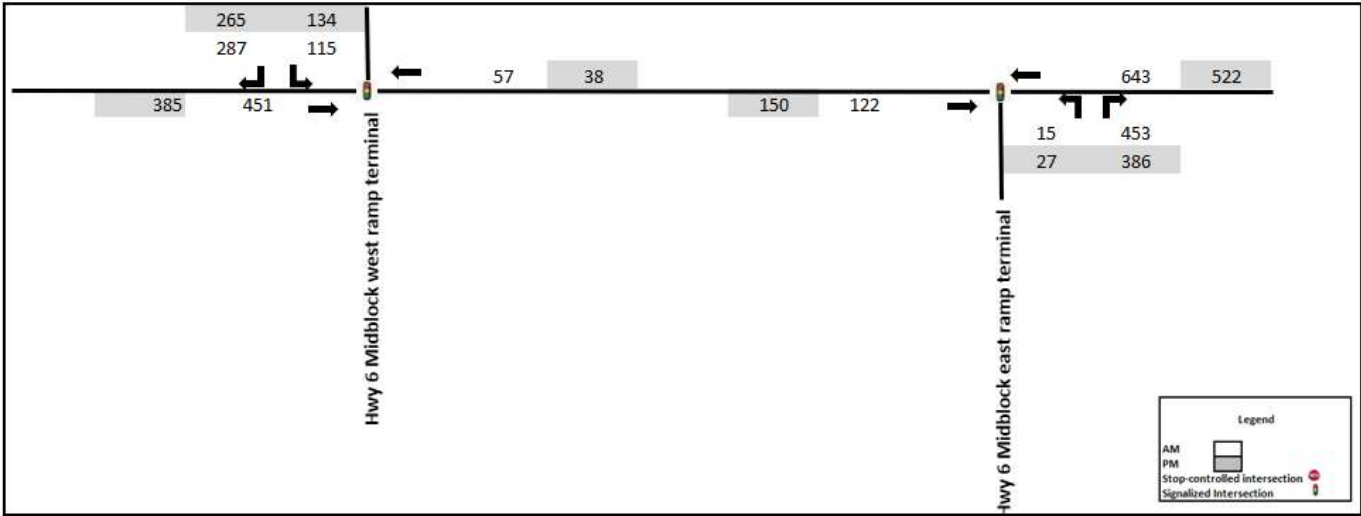


Figure 40: 2039 Total Traffic Volumes (new Highway 6 Midblock Interchange ramp terminals)



5.2 Total Traffic Operations (Phase-1, 2024)

The 2024 total traffic volumes have been analysed using the same methodology as under existing and background traffic conditions. Signal timings have not been optimized. **Table 22** and **Table 23** summarizes the results of the 2024 total traffic operations (without Southgate Drive Extension; new Highway 6 Midblock Interchange not open) for the MTO and City of Guelph facilities respectively.

Table 22: 2024 Total Traffic Operations (without Southgate Drive Extension; Highway 6 Midblock Interchange not open) – MTO Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange	Eastbound Thru	11.1	B	0.36	48.3	9.6	A	0.41	47.6
	Westbound Thru	10.3	B	0.26	31.1	9.6	A	0.39	43.2
	Northbound Left	20.1	C	0.28	23.2	18.9	B	0.12	11
	Northbound Right	25.7	C	0.75	51.6	24.8	C	0.66	39.1
	Overall	14.7	B	0.75	-	11.9	B	0.66	-
Laird Road and Highway 6 Southbound interchange	Eastbound Thru	9	A	0.16	12.7	8.4	A	0.21	18.6
	Westbound Thru	9.5	A	0.25	18	8.5	A	0.24	20.6
	Southbound Left	19.2	B	0.58	30	18.9	B	0.53	31.1
	Overall	13.8	B	0.58	-	12.4	B	0.53	-
Highway 6 / Concession Rd 4	Eastbound Thru-Right-Left	26.5	D	0.13	3.5	39.6	E	0.07	1.8
	Westbound Thru-Right-Left	45.6	E	0.58	25.8	172.7	F	1.17	88.5
	Northbound Left	12.5	B	0	0.1	12	B	0	0.1
	Northbound Thru	0	A	0.31	0	0	A	0.35	0
	Northbound Right	0	A	0.05	0	0	A	0.05	0
	Southbound Left	11.7	B	0.1	2.6	12.3	B	0.09	2.3
	Southbound Thru	0	A	0.28	0	0	A	0.4	0
	Southbound Right	0	A	0	0	0	A	0	0
	Overall	2.9	A	0.58	-	13	B	1.17	-

Table 23: 2024 Total Traffic Operations (without Southgate Drive Extension; new Highway 6 Midblock Interchange not open)-City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Southgate Drive	Eastbound Left	13.5	B	0.52	31.6	16.2	B	0.44	18.9
	Eastbound Thru	12.6	B	0.24	37.2	20.6	C	0.57	81.5
	Eastbound Right	3.5	A	0.31	14.4	5.2	A	0.22	8.6
	Westbound Left	8.4	A	0.02	2.6	11.6	B	0.08	5.4
	Westbound Thru-Right	23.3	C	0.67	64.0	31.6	C	0.82	#110.7
	Northbound Left	19.1	B	0.37	25.4	108.4	F	1.12	#78.4
	Northbound Thru-Right	18.7	B	0.08	9.5	12.8	B	0.20	9.4
	Southbound Left	15.7	B	0.13	12.0	18.1	B	0.35	32.0
	Southbound Thru- Right	13.3	B	0.31	14.7	18.3	B	0.74	31.3
	Overall	16.1	B	0.67	-	33.8	C	1.12	-
Admiral PI and Southgate Drive	Eastbound Left/Thru/Right	12.7	B	0.03	0.8	16.5	C	0.16	4.6
	Westbound Left/Thru/Right	10.7	B	0.03	0.7	12.9	B	0.08	2.0
	Northbound Left	0.1	A	0.01	0.2	0.1	A	0.01	0.1
	Northbound Thru	0.6	A	0.01	0.2	0.2	A	0.01	0.1
	Northbound Right	0.6	A	0.01	0.2	0.2	A	0.01	0.1
	Southbound Left	0.2	A	0.02	0.6	0.3	A	0.02	0.6
	Southbound Thru	1.0	A	0.02	0.6	1.0	A	0.02	0.6
	Southbound Right	1.0	A	0.02	0.6	1.0	A	0.02	0.6
	Overall	1.7	A	0.03	-	2.4	A	0.17	-

Clair Road and Southgate Drive	Eastbound Left	8.6	A	0.05	-	9.6	A	0.07	-
	Eastbound Thru	7.8	A	0.10	-	9.6	A	0.19	-
	Eastbound Right	7.8	A	0.10	-	9.6	A	0.19	-
	Westbound Left	9.1	A	0.15	-	10.3	B	0.12	-
	Westbound Thru	8.0	A	0.15	-	9.2	A	0.11	-
	Westbound Right	8.0	A	0.15	-	9.2	A	0.11	-
	Northbound Left	10.5	B	0.26	-	20.8	C	0.70	-
	Northbound Thru	10.5	B	0.26	-	20.8	C	0.70	-
	Northbound Right	10.5	B	0.26	-	20.8	C	0.70	-
	Southbound Left	8.9	A	0.05	-	9.5	A	0.08	-
	Southbound Thru	9.5	A	0.27	-	10.8	B	0.30	-
	Southbound Right	9.5	A	0.27	-	10.8	B	0.30	-
Overall		9.3	A	0.27	-	15.3	C	0.70	-
Maltby Road West and Crawley Road	Eastbound Left	0.5	A	0.07	1.30	0.3	A	0.04	0.9
	Eastbound Thru	3.6	A	0.07	1.30	2.0	A	0.04	0.9
	Eastbound Right	3.6	A	0.07	1.30	2.0	A	0.04	0.9
	Westbound Left	-	-	-	-	-	-	-	-
	Westbound Thru	0.0	A	0.00	0.00	0.0	A	0.00	0.0
	Westbound Right	0.0	A	0.00	0.00	0.0	A	0.00	0.0
	Northbound Left	12.9	B	0.01	0.20	12.5	B	0.03	0.7
	Northbound Thru	-	-	-	-	12.5	B	0.03	0.7
	Northbound Right	-	-	-	-	12.5	B	0.03	0.7
	Southbound Left	9.5	A	0.04	0.40	9.8	A	0.08	2.0
	Southbound Thru	9.5	A	0.04	0.40	9.8	A	0.08	2.0
	Southbound Right	9.5	A	0.04	0.40	9.8	A	0.08	2.0
Overall		2.9	A	0.07	-	2.7	A	0.08	-
Maltby Road West and Gordon Street	Eastbound Left/Thru/Right	26.3	C	0.32	33.9	28.6	C	0.34	36.0
	Westbound Left/Thru/Right	21.3	C	0.18	20.7	24.4	C	0.15	19.1
	Northbound Left/Thru/Right	15.2	B	0.65	114.2	17.7	B	0.74	157.6
	Southbound Left/Thru/Right	13.3	B	0.58	99.3	12.9	B	0.59	103.4
	Overall	15.7	B	0.65	-	16.9	B	0.74	-

Appendix C contains the supporting detailed Synchro 11 reports. The results indicate that most of the study area intersections are forecast to operate at similar level of service during the AM and PM peak hours as the 2024 background operations (without Southgate Drive Extension; new Highway 6 Midblock Interchange not open). The proposed site will not impact the operations after the first phase (2024).

The 2024 Total traffic operations will trend similarly if compared to the Existing 2022 with increased delay and v/c ratio for each critical movement identified in Existing 2022 operations. There will be no new critical movements other than the ones identified at Existing 2022 condition.

Table 24 summarizes the results of the 2024 total traffic operations (with Southgate Drive Extension; new Highway 6 Midblock Interchange not open) which are different from **Table 27** and **Table 28**.

Table 24: 2024 Total Traffic Operations (with Southgate Drive Extension; new Highway 6 Midblock Interchange not open)

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Clair Road and Southgate Drive	Eastbound Left	8.6	A	0.05	-	9.6	A	0.07	-
	Eastbound Thru	7.7	A	0.09	-	9.3	A	0.15	-
	Eastbound Right	7.7	A	0.09	-	9.3	A	0.15	-
	Westbound Left	9.4	A	0.19	-	10.5	B	0.13	-
	Westbound Thru	7.7	A	0.12	-	9.1	A	0.1	-
	Westbound Right	7.7	A	0.12	-	9.1	A	0.1	-
	Northbound Left	10.6	B	0.27	-	22.5	C	0.74	-
	Northbound Thru	10.6	B	0.27	-	22.5	C	0.74	-
	Northbound Right	10.6	B	0.27	-	22.5	C	0.74	-
	Southbound Left	8.9	A	0.05	-	9.5	A	0.08	-
	Southbound Thru	9.5	A	0.27	-	10.8	B	0.3	-
	Southbound Right	9.5	A	0.27	-	10.8	B	0.3	-
Overall		9.4	A	0.27	-	16.4	C	0.77	-

Crawley Road/Southgate Drive	Westbound Left/Right	7.5	A	0.04	-	7.6	A	0.05	-
	Northbound Thru/Right	6.9	A	0.08	-	6.9	A	0.08	-
	Southbound Thru/Left	7.1	A	0	-	7.3	A	0.04	-
	Overall	7	A	0.08	-	7.2	A	0.08	-
Crawley Road/Southgate Drive connection / Site access	Eastbound Left	7.5	A	0.07	-	7.6	A	0.08	-
	Northbound Thru	7.1	A	0.01	-	7.2	A	0.01	-
	Southbound Right	6.6	A	0.04	-	6.7	A	0.05	-
	Overall	7.2	A	0.07	-	7.2	A	0.08	-

Appendix C contains the supporting detailed Synchro 11 reports. The results indicate that most of the study area intersections are forecast to operate at similar level of service during the AM and PM peak hours as the 2024 background operations (without Southgate Drive Extension; new Highway 6 Midblock Interchange not open). The proposed site will not impact the operations after the first phase (2024).

The 2024 Total traffic operations will trend similarly if compared to the Existing 2022 with increased delay and v/c ratio for each critical movement identified in Existing 2022 operations. There will be no new critical movements other than the ones identified at Existing 2022 condition.

Table 25 summarizes the results of the 2024 total traffic operations (with Southgate Drive extension; Highway 6 Midblock Interchange open) – MTO facilities.

Table 26 summarizes the results of the 2024 total traffic operations (with Southgate Drive extension; new Highway 6 Interchange open) – City of Guelph facilities.

Table 25: 2024 Total Traffic Operations (with Southgate Drive Extension; Highway 6 Midblock Interchange open) – MTO Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange	Eastbound Thru	12.7	B	0.44	62.2	11	B	0.5	62.1
	Westbound Thru	11.2	B	0.26	32.8	10.1	B	0.4	45.3
	Northbound Left	19.3	B	0.26	23.1	18.5	B	0.12	10.9
	Northbound Right	28.7	C	0.76	56.9	27.9	C	0.67	42.5
	Overall	15.9	B	0.76	-	12.9	B	0.67	-
Laird Road and Highway 6 Southbound interchange	Eastbound Thru	10.5	B	0.17	14.7	9.8	A	0.22	21.1
	Westbound Thru	11.1	B	0.27	20.8	10	B	0.25	23.3
	Southbound Left	19.5	B	0.65	38	19.2	B	0.61	41.3
	Overall	15.3	B	0.65	-	14.1	B	0.61	-
New Highway 6 midblock interchange - West Ramp terminal	Eastbound Thru	3.2	A	0.06	5.3	3.3	A	0.03	3.5
	Westbound Thru	3.3	A	0.01	1.3	3.3	A	0.01	1
	Southbound Left	30.1	C	0.36	24.9	30.2	C	0.37	25.2
	Southbound Right	10	A	0.18	8.6	9.3	A	0.26	10.6
	Overall	12.5	B	0.36	-	14.6	B	0.37	-
New Highway 6 midblock interchange - East Ramp terminal	Eastbound Thru	2.7	A	0.06	5.3	3.1	A	0.05	5.1
	Westbound Thru	2.8	A	0.09	6.8	3.2	A	0.09	7.8
	Northbound Left	29.2	C	0.09	9	28.3	C	0.06	7
	Northbound Right	10.2	B	0.37	13.6	9.9	A	0.56	18.7
	Overall	5.3	A	0.37	-	6.3	A	0.56	-

Table 26: 2024 Total Traffic Operations (with Southgate Drive Extension; new Highway 6 Midblock Interchange open) – City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Southgate Drive	Eastbound Left	13.5	B	0.52	31.6	16.4	B	0.44	19
	Eastbound Thru	12.8	B	0.28	43	22.5	C	0.65	95.7
	Eastbound Right	3.5	A	0.36	15.1	5.3	A	0.29	10.4
	Westbound Left	8.4	A	0.02	2.6	11.8	B	0.1	5.4
	Westbound Thru-Right	23.3	C	0.67	64	31.5	C	0.82	#110.8
	Northbound Left	19.4	B	0.38	26.8	113.6	F	1.13	#81.4
	Northbound Thru-Right	18.7	B	0.08	9.5	12.7	B	0.2	9.4
	Southbound Left	15.7	B	0.13	12	18	B	0.35	32
	Southbound Thru- Right	13.3	B	0.31	14.7	18.3	B	0.74	31.6
	Overall	15.7	B	0.67	-	34.3	C	1.13	-
Admiral PI and Southgate Drive	Eastbound Left/Thru/Right	13.5	B	0.04	0.9	19.3	C	0.2	5.7
	Westbound Left/Thru/Right	10.9	B	0.03	0.7	13.7	B	0.08	2.2
	Northbound Left	0.1	A	0.01	0.2	0.1	A	0.01	0.1
	Northbound Thru	0.6	A	0.01	0.2	0.2	A	0.01	0.1
	Northbound Right	0.6	A	0.01	0.2	0.2	A	0.01	0.1
	Southbound Left	0.3	A	0.03	0.6	0.7	A	0.06	1.5
	Southbound Thru	1	A	0.03	0.6	1.9	A	0.06	1.5
	Southbound Right	1	A	0.03	0.6	1.9	A	0.06	1.5
	Overall	1.7	A	0.04	-	2.9	A	0.2	-
Clair Road and Southgate Drive	Eastbound Left	8.8	A	0.05	-	9.8	A	0.07	-
	Eastbound Thru	7.9	A	0.1	-	9.5	A	0.16	-
	Eastbound Right	7.9	A	0.1	-	9.5	A	0.16	-
	Westbound Left	9.7	A	0.2	-	10.7	B	0.14	-
	Westbound Thru	7.9	A	0.12	-	9.2	A	0.1	-
	Westbound Right	7.9	A	0.12	-	9.2	A	0.1	-
	Northbound Left	11	B	0.29	-	24.5	C	0.76	-
	Northbound Thru	11	B	0.29	-	24.5	C	0.76	-
	Northbound Right	11	B	0.29	-	24.5	C	0.76	-
	Southbound Left	8.9	B	0.05	-	9.5	A	0.08	-
	Southbound Thru	10.5	B	0.35	-	11.6	B	0.36	-
	Southbound Right	10.5	B	0.35	-	11.6	B	0.36	-
	Overall	9.9	A	0.35	-	17.5	C	0.76	-
Maltby Road West and Concession Road 7	Westbound Left	0.6	A	0.08	2.1	0.7	A	0.09	2.5
	Westbound Right	7.2	A	0.08	2.1	7.3	A	0.09	2.5
	Northbound Thru	10	A	0.1	2.7	10	A	0.12	3.4
	Northbound Right	10	A	0.1	2.7	10	A	0.12	3.4
	Southbound Left	11.5	B	0.04	1	12.6	B	0.13	3.7
	Southbound Thru	11.5	B	0.04	1	12.6	B	0.13	3.7
	Overall	8.5	A	0.1	-	9.3	A	0.13	-
Maltby Road West and Gordon Street	Eastbound Left/Thru/Right	26.3	C	0.32	33.9	28.6	C	0.34	36
	Westbound Left/Thru/Right	21.3	C	0.18	20.7	24.4	C	0.15	19.1
	Northbound Left/Thru/Right	15.2	B	0.65	114.2	17.7	B	0.74	157.6
	Southbound Left/Thru/Right	13.3	B	0.58	99.3	12.9	B	0.59	103.4
	Overall	15.7	B	0.65	-	16.9	B	0.74	-
Crawley Road/Southgate Drive	Westbound Left/Right	7.6	A	0.07	-	7.8	A	0.09	-
	Northbound Thru/Right	6.8	A	0.06	-	6.9	A	0.08	-
	Southbound Thru/Left	7.1	A	0	-	7.3	A	0.03	-
	Overall	7.2	A	0.07	-	7.3	A	0.09	-
Crawley Road/Southgate Drive connection / Site access	Eastbound Left	7.5	A	0.05	-	7.6	A	0.08	-
	Northbound Thru	7.2	A	0.01	-	7.2	A	0.01	-
	Southbound Right	6.7	A	0.08	-	6.7	A	0.06	-
	Overall	7	A	0.08	-	7.2	A	0.08	-

Appendix C contains the supporting detailed Synchro 11 reports. The results indicate that most of the study area intersections are forecast to operate at similar level of service during the AM and PM peak hours as the 2024 background operations (with Southgate Drive Extension; new Highway 6 Midblock Interchange open). The proposed site will not impact the operations after the first phase (2024).

The new Highway 6 midblock interchange will function without any critical movements during the horizon year 2024.

The northbound right turn movement at Laird Road and Highway 6 Northbound interchange is identified as critical movement during AM peak hour.

The 2024 Total traffic operations will trend similarly if compared to the Existing 2022 with increased delay and v/c ratio for each critical movement identified in Existing 2022 operations. There will be no new critical movements other than the ones identified at Existing 2022 condition.

5.3 Total Traffic Operations (Full Buildout, 2029)

The 2029 total traffic volumes have been analysed using the same methodology as under existing and background traffic conditions. Signal timings have not been optimized.

Table 27 and **Table 27** summarizes the results of the 2029 total traffic operations (without Southgate Drive Extension) – MTO and City of Guelph facilities respectively.

Table 27: 2029 Total Traffic Volumes (without Southgate Drive Extension) – MTO Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange	Eastbound Thru	19.1	B	0.6	101.3	15.6	B	0.63	95
	Westbound Thru	15.6	B	0.32	46.6	13.6	B	0.48	63
	Northbound Left	17	B	0.24	24.4	16.9	B	0.11	11.4
	Northbound Right	33.6	C	0.81	77.2	32.4	C	0.75	57
	Overall	20.9	C	0.81	-	17.1	B	0.75	-
Laird Road and Highway 6 Southbound interchange	Eastbound Thru	10.7	B	0.16	16.7	11.5	B	0.26	26.2
	Westbound Thru	11.2	B	0.24	23.7	11.8	B	0.29	29.2
	Southbound Left	19.4	B	0.66	49.3	19.3	B	0.66	50.4
	Overall	15.5	B	0.66	-	15.2	B	0.66	-

Table 28: 2029 Total Traffic Volumes (without Southgate Drive Extension) – City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Southgate Drive	Eastbound Left	42.7	D	0.88	#59.6	20.8	C	0.51	23.4
	Eastbound Thru	13.2	B	0.36	46.0	26.3	C	0.72	#131.2
	Eastbound Right	4.3	A	0.54	11.7	5.5	A	0.43	13.0
	Westbound Left	8.2	A	0.03	2.6	14.2	B	0.12	6.6
	Westbound Thru-Right	25.5	C	0.75	70.1	50.5	D	0.97	#145.2
	Northbound Left	50.1	D	0.84	#54.8	449.7	F	1.93	#180.4
	Northbound Thru-Right	20.9	C	0.14	9.7	11.5	B	0.20	9.5
	Southbound Left	17.1	B	0.14	12.6	18.4	B	0.41	34.6
	Southbound Thru- Right	13.7	B	0.37	13.4	26.7	C	0.82	48.3
	Overall	22.4	C	0.88	-	95.2	F	1.93	-

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Admiral PI and Southgate Drive	Eastbound Left/Thru/Right	17.7	C	0.06	1.4	31.2	D	0.33	10.9
	Westbound Left/Thru/Right	12.3	C	0.04	1.0	17.6	C	0.13	3.6
	Northbound Left	0.1	B	0.01	0.3	0.1	A	0.01	0.2
	Northbound Thru	0.5	B	0.01	0.3	0.2	A	0.01	0.2
	Northbound Right	0.5	A	0.01	0.3	0.2	A	0.01	0.2
	Southbound Left	0.3	A	0.03	0.8	0.5	A	0.04	0.9
	Southbound Thru	1.0	A	0.03	0.8	1.1	A	0.04	0.9
	Southbound Right	1.0	A	0.03	0.8	1.1	A	0.04	0.9
Clair Road and Southgate Drive	Overall	1.5	A	0.06	-	3.0	A	0.33	-
	Eastbound Left	11.0	B	0.22	-	15.3	C	0.39	-
	Eastbound Thru	9.5	A	0.18	-	14.2	B	0.39	-
	Eastbound Right	9.5	A	0.18	-	14.2	B	0.39	-
	Westbound Left	10.8	B	0.20	-	12.9	B	0.16	-
	Westbound Thru	9.1	A	0.15	-	11.4	B	0.14	-
	Westbound Right	9.1	A	0.15	-	11.4	B	0.14	-
	Northbound Left	13.5	B	0.38	-	63.2	F	0.99	-
	Northbound Thru	13.5	B	0.38	-	63.2	F	0.99	-
	Northbound Right	13.5	B	0.38	-	63.2	F	0.99	-
	Southbound Left	9.6	A	0.05	-	11.3	B	0.11	-
	Southbound Thru	15.6	C	0.57	-	22.2	C	0.66	-
	Southbound Right	15.6	C	0.57	-	22.2	C	0.66	-
Maltby Road West and Concession Road 7	Overall	12.7	B	0.57	-	34.4	D	0.99	-
	Westbound Left	0.7	A	0.09	2.4	0.8	A	0.11	2.8
	Westbound Right	7.2	A	0.09	2.4	7.3	A	0.11	2.8
	Northbound Thru	10.0	B	0.11	2.9	10.0	B	0.13	3.6
	Northbound Right	10.0	B	0.11	2.9	10.0	B	0.13	3.6
	Southbound Left	12.0	B	0.03	0.8	13.1	B	0.14	3.7
Maltby Road West and Gordon Street	Southbound Thru	12.0	B	0.03	0.8	13.1	B	0.14	3.7
	Overall	8.5	A	0.11	-	9.3	A	0.14	-
	Eastbound Left/Thru/Right	30.8	C	0.45	47.4	37.0	D	0.60	63.3
	Westbound Left/Thru/Right	22.6	C	0.20	22.9	24.9	C	0.17	20.7
	Northbound Left/Thru/Right	17.2	B	0.72	140.4	24.9	C	0.86	#242.1
	Southbound Left/Thru/Right	14.5	B	0.66	126.3	14.6	B	0.66	127.1
	Overall	17.6	B	0.72	-	22.3	C	0.86	-

Appendix C contains the supporting detailed Synchro 11 reports. The results indicate that most of the study area intersections are forecast to operate at similar level of service during the AM and PM peak hours as the 2029 background operations (without Southgate Drive Extension).

The new Highway 6 Midblock interchange will function without any critical movements. The northbound right turn movement at Laird Road and Highway 6 Northbound interchange is identified as a critical movement during AM peak hour.

The northbound left turn movement and the westbound thru-right turn movement at Laird Road and Southgate Drive is identified as a critical movement during PM peak hour; and all the northbound movements at Clair Road and Southgate Drive are also identified as operating over capacity with a LOS F during PM Peak hour. The northbound left-thru-right turn movement at Maltby Road West and Gordon Street is identified as a critical movement during PM peak hour.

The 2029 Total traffic operations will trend similarly for most of the intersection if compared to the 2024 Total Traffic operations with increased delay and v/c ratio for each critical movement identified in 2024 Total Traffic operations. There will be new critical movements at Clair Road and Southgate Drive northbound as identified in **Table 28**. (Note: the Maltby Road West and Concession Road 7 approaches to Highway 6 are assumed to be closed in 2029).

The proposed site results in the Clair Road and Southgate Drive northbound movements (during PM peak hour only) exceeding capacity in this horizon year. In 2024, the background traffic volumes for these movements were

already approaching capacity, and again without the site traffic in place the operations for these movements are exceeded considering only background traffic volumes by 2034. The site traffic contributes to this intersection reaching capacity in an earlier horizon year.

Table 29 summarizes the results of the 2029 total traffic operations (with Southgate Drive Extension) – MTO facilities.

Table 30 summarizes the results of the 2029 total traffic operations (with Southgate Drive Extension) – City of Guelph facilities.

Table 29: 2029 Total Traffic Volumes (with Southgate Drive Extension) – MTO Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange	Eastbound Thru	17.7	B	0.58	94.5	13.5	B	0.6	83.3
	Westbound Thru	14.4	B	0.31	43.5	11.7	B	0.46	55.4
	Northbound Left	17.6	B	0.25	24.6	17.9	B	0.12	11.6
	Northbound Right	32.6	C	0.79	72.3	30.3	C	0.7	49.4
	Overall	19.7	B	0.79	-	14.9	B	0.7	-
Laird Road and Highway 6 Southbound interchange	Eastbound Thru	10.7	B	0.16	16.7	11.5	B	0.26	26.2
	Westbound Thru	11.2	B	0.24	23.7	11.8	B	0.29	29.2
	Southbound Left	19.4	B	0.66	49.3	19.3	B	0.66	50.4
	Overall	15.5	B	0.66	-	15.2	B	0.66	-
New Highway 6 midblock interchange - West Ramp terminal	Eastbound Thru	4.1	A	0.19	17	4.1	A	0.16	14.5
	Westbound Thru	3.7	A	0.03	3.2	3.8	A	0.02	2.6
	Northbound Left	31.7	C	0.45	31.6	32.1	C	0.48	33.4
	Northbound Right	8.9	A	0.58	19.2	8.5	A	0.55	18.2
	Overall	9.3	A	0.58	-	10.1	B	0.55	-
New Highway 6 midblock interchange - East Ramp terminal	Eastbound Thru	3.6	A	0.06	7.5	3.4	A	0.06	6.7
	Westbound Thru	4.4	A	0.27	29.1	3.9	A	0.22	21.5
	Northbound Left	27.1	C	0.05	6.2	28.3	C	0.1	9.9
	Northbound Right	10.7	B	0.73	25.1	10.4	B	0.69	23
	Overall	6.7	A	0.73	-	6.7	A	0.69	-

Table 30: 2029 Total Traffic Volumes (with Southgate Drive Extension) – City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Southgate Drive	Eastbound Left	42.7	D	0.88	#59.6	20.7	C	0.51	23.4
	Eastbound Thru	13.2	B	0.36	46	26.2	C	0.72	#130.9
	Eastbound Right	4	A	0.52	11.5	5.5	A	0.4	12.5
	Westbound Left	8.2	A	0.03	2.6	14.1	B	0.12	6.6
	Westbound Thru-Right	25.5	C	0.75	70.1	50.2	D	0.97	#145.0
	Northbound Left	34.9	C	0.68	40.2	374.2	F	1.76	#162.7
	Northbound Thru-Right	20.9	C	0.14	9.7	11.5	B	0.2	9.5
	Southbound Left	17.1	B	0.14	12.6	18.5	B	0.41	34.6
	Southbound Thru- Right	13.7	B	0.37	13.4	26.7	C	0.82	48.1
	Overall	20.9	C	0.88	-	81.7	F	1.76	-
Admiral PI and Southgate Drive	Eastbound Left/Thru/Right	16.8	C	0.05	1.3	27.6	D	0.3	9.6
	Westbound Left/Thru/Right	11.9	B	0.04	1	16.6	C	0.12	3.3
	Northbound Left	0.1	A	0.01	0.3	0.1	A	0.01	0.2
	Northbound Thru	0.5	A	0.01	0.3	0.2	A	0.01	0.2
	Northbound Right	0.5	A	0.01	0.3	0.2	A	0.01	0.2
	Southbound Left	0.3	A	0.03	0.8	0.5	A	0.04	0.9
	Southbound Thru	1	A	0.03	0.8	1.1	A	0.04	0.9
	Southbound Right	1	A	0.03	0.8	1.1	A	0.04	0.9
	Overall	1.5	A	0.05	-	2.9	A	0.3	-

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Clair Road and Southgate Drive	Eastbound Left	10.1	B	0.06	-	10.7	B	0.09	-
	Eastbound Thru	9.4	A	0.13	-	10.7	B	0.19	-
	Eastbound Right	9.4	A	0.13	-	10.7	B	0.19	-
	Westbound Left	13.6	B	0.4	-	12.3	B	0.22	-
	Westbound Thru	9.1	A	0.15	-	10.1	B	0.12	-
	Westbound Right	9.1	A	0.15	-	10.1	B	0.12	-
	Northbound Left	15.5	C	0.51	-	121.9	F	1.19	-
	Northbound Thru	15.5	C	0.51	-	121.9	F	1.19	-
	Northbound Right	15.5	C	0.51	-	121.9	F	1.19	-
	Southbound Left	9.7	A	0.05	-	10.2	B	0.1	-
	Southbound Thru	16	C	0.57	-	16.2	C	0.55	-
	Southbound Right	16	C	0.57	-	16.2	C	0.55	-
Maltby Road West and Concession Road 7	Overall	14	B	0.57	-	70.5	F	1.19	-
	Westbound Left	0.7	A	0.09	2.4	0.3	A	0.11	2.8
	Westbound Right	7.2	A	0.09	2.4	7.3	A	0.11	2.8
	Northbound Thru	10.6	B	0.14	3.9	10.6	B	0.16	4.6
	Northbound Right	10.6	B	0.14	3.9	10.6	B	0.16	4.6
	Southbound Left	12.4	B	0.09	2.3	13.6	B	0.19	5.6
	Southbound Thru	12.4	B	0.09	2.3	13.6	B	0.19	5.6
Maltby Road West and Gordon Street	Overall	9.2	A	0.14	-	9.9	A	0.19	-
	Eastbound Left/Thru/Right	30.8	C	0.45	47.4	37	D	0.6	63.3
	Westbound Left/Thru/Right	22.6	C	0.2	22.9	24.9	C	0.17	20.7
	Northbound Left/Thru/Right	17.2	B	0.72	140.4	24.9	C	0.86	#242.1
	Southbound Left/Thru/Right	14.5	B	0.66	126.3	14.6	B	0.66	127.1
Crawley Road/Southgate Drive	Overall	17.6	B	0.72	-	22.3	C	0.86	-
	Westbound Left/Right	9.4	A	0.3	-	9.3	A	0.24	-
	Northbound Thru/Right	7.8	A	0.18	-	8.4	A	0.28	-
	Southbound Thru/Left	7.7	A	0	-	7.8	A	0.04	-
Crawley Road/Southgate Drive connection / Site access	Overall	8.7	A	0.3	-	8.7	A	0.28	-
	Eastbound Left	8.8	A	0.18	-	9.5	A	0.3	-
	Northbound Thru	7.7	A	0.04	-	7.9	A	0.04	-
	Southbound Right	8.1	A	0.27	-	7.9	A	0.19	-
	Overall	8.3	A	0.27	-	8.8	A	0.3	-

Appendix C contains the supporting detailed Synchro 11 reports. The results indicate that most of the study area intersections are forecast to operate at similar level of service during the AM and PM peak hours as the 2029 background operations (with Southgate Drive Extension).

The new Highway 6 Midblock interchange will function without any critical movements. The Southgate Drive extension results in better traffic operations at the Laird Road interchange compared to the Without Southgate Drive extension scenario. The northbound right turn movement at Laird Road and Highway 6 Northbound Interchange is identified as a critical movement during AM peak hour.

The northbound left turn movement and westbound thru-right turn movement at Laird Road and Southgate Drive is identified as a critical movement during the PM peak hour; and all the northbound movements at Clair Road and Southgate Drive are also identified as operating over capacity with a LOS F during PM Peak hour. The northbound left-thru-right turn movement at Maltby Road West and Gordon Street is identified as critical movement during PM peak hour.

The 2029 Total traffic operations will trend similarly for most of the intersection if compared to the 2024 Total Traffic operations with increased delay and v/c ratio for each critical movement identified in 2024 Total Traffic operations. There are new critical movements at Clair Road and Southgate Drive northbound as identified in

Table 30 (Note: the Maltby Road West and Concession Road 7 approaches to Highway 6 are assumed to be closed in 2029).

The proposed site results in the Clair Road and Southgate Drive northbound movements (during PM peak hour only) exceeding capacity in this horizon year. In 2024, the background traffic volumes for these movements were already approaching capacity, and again without the site traffic in place the operations for these movements are exceeded considering only background traffic volumes by 2034. The site traffic contributes to this intersection reaching capacity in an earlier horizon year.

The Southgate Drive extension does provide for some improvement to critical movements at the Laird Road / Southgate Drive intersection when comparing this scenario to the without Southgate Drive extension 2029 scenario (**Table 28**), but results in worse conditions at the Clair Road / Southgate Drive intersection making the same comparison.

5.4 Total Traffic Operations (5 years after full buildout, 2034)

The 2034 total traffic volumes have been analysed using the same methodology as under existing and background traffic conditions. Signal timings have not been optimized. **Table 31** and **Table 32** summarizes the results of the 2034 total traffic operations for the MTO and City of Guelph facilities respectively.

Table 31: 2034 Total Traffic Volumes – MTO Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange	Eastbound Thru	21.2	C	0.67	116.1	15.9	B	0.68	102.7
	Westbound Thru	16.6	B	0.36	52.7	13.5	B	0.52	67.7
	Northbound Left	17	B	0.26	26.7	17.4	B	0.12	12.5
	Northbound Right	34.5	C	0.82	83.4	31.7	C	0.73	56
	Overall	22.3	C	0.82	-	16.9	B	0.73	-
Laird Road and Highway 6 Southbound interchange	Eastbound Thru	11.7	B	0.18	19.8	12.6	B	0.3	31.3
	Westbound Thru	12.3	B	0.27	28	13	B	0.33	34.6
	Southbound Left	19.3	B	0.67	54.1	19.4	B	0.68	55.4
	Overall	16	B	0.67	-	15.9	B	0.68	-
New Highway 6 midblock interchange - West Ramp terminal	Eastbound Thru	4.1	A	0.2	17.2	4.2	A	0.17	15.1
	Westbound Thru	3.6	A	0.03	3.1	3.8	A	0.02	2.5
	Northbound Left	31.6	C	0.45	31.2	32.2	C	0.49	34.1
	Northbound Right	9	A	0.6	19.5	8.5	A	0.56	18.5
	Overall	9.2	A	0.6	-	10.2	B	0.56	-
New Highway 6 midblock interchange - East Ramp terminal	Eastbound Thru	3.7	A	0.06	7.2	3.5	A	0.06	7.1
	Westbound Thru	4.5	A	0.27	30.9	4	A	0.22	22.5
	Northbound Left	27	C	0.06	6.8	28.2	C	0.11	10.4
	Northbound Right	10.8	B	0.75	25.9	10.6	B	0.71	24
	Overall	7	A	0.75	-	6.9	A	0.71	-

Table 32: 2034 Total Traffic Volumes – City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Southgate Drive	Eastbound Left	10.2	F	1.1	#76.5	25.7	C	0.57	29.1
	Eastbound Thru	14.1	B	0.41	51.6	31.8	C	0.81	#167
	Eastbound Right	4.2	A	0.55	11.7	6	A	0.43	13.2
	Westbound Left	8.2	A	0.03	2.6	16.3	B	0.15	7.6
	Westbound Thru-Right	28.5	C	0.81	80.3	91.6	F	1.1	#180.3
	Northbound Left	29.4	C	0.65	26.6	472.5	F	1.49	#195.4
	Northbound Thru-Right	19.8	B	0.14	10.4	10.5	B	0.19	9.7
	Southbound Left	17.4	B	0.15	13.4	18.3	B	0.43	37.5
	Southbound Thru- Right	13.9	B	0.42	14.1	30.3	C	0.85	59
	Overall	28.3	C	1.1	-	109.1	F	1.98	-

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Admiral PI and Southgate Drive	Eastbound Left/Thru/Right	18.2	C	0.06	1.6	33.8	D	0.38	13.4
	Westbound Left/Thru/Right	12.1	B	0.04	1.1	17.7	C	0.14	3.9
	Northbound Left	0.1	A	0.01	0.3	0.1	A	0.01	0.2
	Northbound Thru	0.6	A	0.01	0.3	0.2	A	0.01	0.2
	Northbound Right	0.6	A	0.01	0.3	0.2	A	0.01	0.2
	Southbound Left	0.4	A	0.03	0.9	0.6	A	0.04	1.1
	Southbound Thru	1.1	A	0.03	0.9	1.2	A	0.04	1.1
	Southbound Right	1.1	A	0.03	0.9	1.2	A	0.04	1.1
	Overall	1.6	A	0.06	-	3.5	A	0.38	-
Clair Road and Southgate Drive	Eastbound Left	10.5	B	0.07	-	10.9	B	0.09	-
	Eastbound Thru	9.9	A	0.15	-	11.1	B	0.21	-
	Eastbound Right	9.9	A	0.15	-	11.1	B	0.21	-
	Westbound Left	14.7	B	0.43	-	12.7	B	0.24	-
	Westbound Thru	9.6	A	0.17	-	10.4	B	0.14	-
	Westbound Right	9.6	A	0.17	-	10.4	B	0.14	-
	Northbound Left	17.4	C	0.56	-	167.5	F	1.3	-
	Northbound Thru	17.4	C	0.56	-	167.5	F	1.3	-
	Northbound Right	17.4	C	0.56	-	167.5	F	0.3	-
	Southbound Left	10.1	B	0.06	-	10.4	B	0.11	-
	Southbound Thru	18.7	C	0.63	-	18.1	C	0.6	-
	Southbound Right	18.7	C	0.63	-	18.1	C	0.6	-
	Overall	15.7	C	0.63	-	94.7	F	1.3	-
Maltby Road West and Concession Road 7	Westbound Left	0.7	A	0.1	2.7	0.9	A	0.12	3.1
	Westbound Right	7.2	A	0.1	2.7	7.4	A	0.12	3.1
	Northbound Thru	10.9	B	0.16	4.5	10.9	B	0.18	5.4
	Northbound Right	10.9	B	0.16	4.5	10.9	B	0.18	5.4
	Southbound Left	13	B	0.1	2.7	14.4	B	0.22	6.5
	Southbound Thru	13	B	0.1	2.7	14.4	B	0.22	6.5
	Overall	9.4	A	0.16	-	10.2	B	0.22	-
Maltby Road West and Gordon Street	Eastbound Left/Thru/Right	46.6	D	0.75	#89.1	38.5	D	0.63	67.6
	Westbound Left/Thru/Right	23.5	C	0.23	25.9	25.6	C	0.18	22.7
	Northbound Left/Thru/Right	20.9	C	0.8	174.4	37.3	D	0.96	#286.9
	Southbound Left/Thru/Right	16.4	B	0.72	149.4	16.7	B	0.73	152.9
	Overall	22.7	C	0.8	-	29.1	C	0.96	-
Crawley Road/Southgate Drive	Westbound Left/Right	9.8	A	0.34	-	9.2	A	0.23	-
	Northbound Thru/Right	8	A	0.19	-	8.4	A	0.29	-
	Southbound Thru/Left	7.9	A	0.03	-	7.9	A	0.04	-
	Overall	9.1	A	0.34	-	8.6	A	0.29	-
Crawley Road/Southgate Drive connection / Site access	Eastbound Left	8.7	A	0.18	-	9.6	A	0.31	-
	Northbound Thru	7.7	A	0.04	-	7.9	A	0.04	-
	Southbound Right	8	A	0.25	-	8	A	0.21	-
	Overall	8.2	A	0.25	-	8.9	A	0.31	-

Appendix C contains the supporting detailed Synchro 11 reports. The results indicate that the study area intersections are forecast to operate at similar level of service during the AM and PM peak hours as the 2034 background operations.

The new Highway 6 Midblock interchange will function without any critical movements. The northbound right turn movement at Laird Road and Highway 6 northbound interchange is identified as critical movement during AM peak hour.

The northbound movements at Clair Road and Southgate Drive were already identified as critical movement with LOS E during PM Peak hour in background 2034 traffic operations. Those movements will operate with LOS F 5 years after full build-out.

The 2034 Total Traffic operations will trend similarly for most of the intersections if compared to the 2029 Total operations with increased delay and v/c ratio for each critical movement identified in 2029 Total traffic operations.

New critical movements are identified in Laird Road and Southgate Drive (eastbound left at AM peak period, westbound through-right at PM peak hour) as highlighted in the **Table 32**.

5.5 Total Traffic Operations (10 years after full buildout, 2039)

The 2039 total traffic volumes have been analysed using the same methodology as under existing and background traffic conditions. Signal timings have not been optimized.

Table 33 and **Table 34** summarizes the results of the 2039 total traffic operations for the MTO and City of Guelph facilities respectively.

Table 33: 2039 Total Traffic Volumes – MTO Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Highway 6 Northbound interchange	Eastbound Thru	23.1	C	0.71	123.7	17.5	B	0.72	113.5
	Westbound Thru	17.5	B	0.39	55.5	14.4	B	0.55	74.4
	Northbound Left	16.8	B	0.26	27.9	17.2	B	0.12	12.8
	Northbound Right	36.3	D	0.84	90.7	32.1	C	0.74	59.4
	Overall	23.8	C	0.84	-	18.1	B	0.74	-
Laird Road and Highway 6 Southbound interchange	Eastbound Thru	12.2	B	0.2	21.1	13.3	B	0.32	33.7
	Westbound Thru	12.9	B	0.29	30.2	13.6	B	0.36	37.7
	Southbound Left	19.4	B	0.68	56.9	19.4	B	0.69	58.5
	Overall	16.2	B	0.68	-	16.2	B	0.69	-
New Highway 6 midblock interchange - West Ramp terminal	Eastbound Thru	4.1	A	0.2	17.4	4.2	A	0.17	15.7
	Westbound Thru	3.6	A	0.03	3	3.9	A	0.02	2.4
	Northbound Left	31.5	C	0.44	30.6	32.4	C	0.49	34.8
	Northbound Right	9.1	A	0.61	19.7	8.5	A	0.57	18.9
	Overall	9.1	A	0.61	-	10.2	B	0.57	-
New Highway 6 midblock interchange - East Ramp terminal	Eastbound Thru	3.7	A	0.05	6.5	3.5	A	0.06	7.1
	Westbound Thru	4.5	A	0.28	31.2	4	A	0.22	22.6
	Northbound Left	27.1	C	0.06	7	28.3	C	0.11	10.7
	Northbound Right	10.8	B	0.75	26	10.6	B	0.71	24
	Overall	7	A	0.75	-	6.9	A	0.71	-

Table 34: 2039 Total Traffic Volumes – City of Guelph Facilities

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Southgate Drive	Eastbound Left	140.7	F	1.2	#89.0	28.2	C	0.61	#31.5
	Eastbound Thru	14.4	B	0.43	54.8	35.6	D	0.87	#180.4
	Eastbound Right	4.4	A	0.56	11.8	6.1	A	0.44	13.4
	Westbound Left	8.3	A	0.04	2.8	16.9	B	0.16	7.9
	Westbound Thru-Right	30.9	C	0.85	86	121.2	F	1.18	#193.2
	Northbound Left	30.8	C	0.68	44	526.5	F	2.11	#209.9
	Northbound Thru-Right	19.9	B	0.14	10.6	10.4	B	0.2	10.3
	Southbound Left	17.4	B	0.16	14	18.4	B	0.44	39.4
	Southbound Thru- Right	13.9	B	0.43	14.4	33.2	C	0.88	65.8
	Overall	33.6	C	1.2	-	126.2	F	2.11	-
Admiral PI and Southgate Drive	Eastbound Left/Thru/Right	19.1	C	0.07	1.8	39.1	E	0.44	16.1
	Westbound Left/Thru/Right	12.2	B	0.05	1.2	18.9	C	0.16	4.5
	Northbound Left	0.1	A	0.01	0.3	0.1	A	0.01	0.2
	Northbound Thru	0.6	A	0.01	0.3	0.2	A	0.01	0.2
	Northbound Right	0.6	A	0.01	0.3	0.2	A	0.01	0.2
	Southbound Left	0.4	A	0.04	0.9	0.6	A	0.05	1.2
	Southbound Thru	1.1	A	0.04	0.9	1.3	A	0.05	1.2
	Southbound Right	1.1	A	0.04	0.9	1.3	A	0.05	1.2
	Overall	1.7	A	0.07	-	4	A	0.44	-

Intersection	Lane Configuration	Weekday AM				Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue	Delay(s)	LOS	V/C	95th Percentile Queue
Clair Road and Southgate Drive	Eastbound Left	10.7	B	0.08	-	11	B	0.1	-
	Eastbound Thru	10.2	B	0.16	-	11.4	B	0.23	-
	Eastbound Right	10.2	B	0.16	-	11.4	B	0.23	-
	Westbound Left	15.4	C	0.45	-	12.9	B	0.25	-
	Westbound Thru	9.9	A	0.19	-	10.5	B	0.14	-
	Westbound Right	9.9	A	0.19	-	10.5	B	0.14	-
	Northbound Left	18.6	C	0.59	-	196.6	F	1.37	-
	Northbound Thru	18.6	C	0.59	-	196.6	F	1.37	-
	Northbound Right	18.6	C	0.59	-	196.6	F	1.37	-
	Southbound Left	10.2	B	0.07	-	10.6	B	0.12	-
	Southbound Thru	20.5	C	0.66	-	19.5	C	0.63	-
	Southbound Right	20.5	C	0.66	-	19.5	C	0.63	-
	Overall	16.7	C	0.66	-	110	F	1.37	-
Maltby Road West and Concession Road 7	Westbound Left	0.8	A	0.1	2.8	0.9	A	0.12	3.3
	Westbound Right	7.2	A	0.1	2.8	7.4	A	0.12	3.3
	Northbound Thru	11	B	0.16	4.7	11.1	B	0.19	5.7
	Northbound Right	11	B	0.16	4.7	11.1	B	0.19	5.7
	Southbound Left	13.2	B	0.11	2.8	14.9	B	0.23	7
	Southbound Thru	13.2	B	0.11	2.8	14.9	B	0.23	7
	Overall	9.4	A	0.16	-	10.3	B	0.23	-
Maltby Road West and Gordon Street	Eastbound Left/Thru/Right	42.3	D	0.69	#74.3	39.4	D	0.65	69.9
	Westbound Left/Thru/Right	23.9	C	0.24	27	25.9	C	0.2	24
	Northbound Left/Thru/Right	23.8	C	0.84	#205.4	49	D	1.01	#310.2
	Southbound Left/Thru/Right	17.8	B	0.76	165.3	18.1	B	0.76	168.8
	Overall	23.6	C	0.84	-	35.2	D	1.01	-
Crawley Road/Southgate Drive	Westbound Left/Right	9.9	A	0.34	-	9.2	A	0.23	-
	Northbound Thru/Right	8	A	0.19	-	8.4	A	0.29	-
	Southbound Thru/Left	7.9	A	0.03	-	7.9	A	0.05	-
	Overall	9.1	A	0.34	-	8.6	A	0.29	-
Crawley Road/Southgate Drive connection / Site access	Eastbound Left	8.7	A	0.18	-	9.7	A	0.31	-
	Northbound Thru	7.7	A	0.04	-	8	A	0.04	-
	Southbound Right	8	A	0.25	-	8.1	A	0.22	-
	Overall	8.2	A	0.25	-	8.9	A	0.31	-

Appendix C contains the supporting detailed Synchro 11 reports. The results indicate that the study area intersections are forecast to operate at similar level of service during the AM and PM peak hours as the 2039 background operations.

The new Highway 6 Midblock interchange will function without any critical movements.

The northbound movements at Clair Road and Southgate Drive were already identified as critical movement with LOS E during PM Peak hour in background 2039 traffic operations. Those movements will operate with LOS F with the site in service. The eastbound thru and southbound thru-right at this intersection are identified as new critical movements. New critical movement is identified at the Admiral Place and Southgate Drive intersection eastbound Left/Thru/Right movement of the PM peak with a LOS E.

The 2039 Total Traffic operations will trend similarly for most of the intersections if compared to the 2034 Total operations with increased delay and v/c ratio for each critical movement identified in 2034 Total traffic operations.

5.6 Total Traffic PM Peak Sensitivity Analysis (10 years after full buildout, 2039)

A separate Synchro model scenario was run to check the operations of Laird Road / Southgate Drive and Clair Road / Southgate Drive with a modified signal timing plan for the 2039 Future Total Traffic PM peak hour operations.

The peak hour factor was adjusted to 1 from 0.82 and the splits were optimized for this intersection changing the existing cycle length of 100 seconds to 110 seconds (note: City of Guelph prefers a cycle length between 90 -110 seconds).

As per the Synchro results shown in **Appendix C**, the Laird Road / Southgate Drive intersection will operate at an overall LOS D in the horizon year 2039. As such, all traffic projected at this intersection can generally be accommodated with the existing layout in horizon year 2039; however, the signal timing plan may need to be modified as development proceeds to better accommodate turning movements, such as the northbound left-turn which is shown operating at a LOS F (refer to **Table 35** Sensitivity Analysis results summary).

The Clair Road / Southgate Drive was converted to a signalized intersection from the existing All-Way stopped control intersection (a cycle length of 100 seconds was used, and signal timing plan was optimized). The Clair Road and Southgate Drive will perform better without any critical movements if converted to a signalized intersection from the existing All-Way stop controlled intersection.

Table 35: 2039 Total Traffic (PM) Sensitivity Analysis

Intersection	Lane Configuration	Weekday PM			
		Delay(s)	LOS	V/C	95th Percentile Queue
Laird Road and Southgate Drive	Eastbound Left	39.3	D	0.68	#45.7
	Eastbound Thru	32.1	C	0.74	#167.2
	Eastbound Right	6.2	A	0.39	19.6
	Westbound Left	19.1	B	0.13	8.4
	Westbound Thru-Right	45.9	D	0.91	#174.6
	Northbound left	170.9	F	1.29	#184.0
	Northbound Thru-Right	9.2	A	0.14	10.3
	Southbound Left	18.7	B	0.37	37.2
	Southbound Thru-Right	40.0	D	0.86	79.9
	Overall	54.0	D	1.29	-
Clair Road and Southgate Drive	Eastbound Left	31.1	C	0.14	15.8
	Eastbound Thru-Right	16.0	B	0.24	20.9
	Westbound Left	36.3	D	0.38	34.3
	Westbound Thru-Right	13.3	B	0.18	13.3
	Northbound Left-Thru-Right	15.8	B	0.74	131.8
	Southbound Left	8.5	A	0.18	9.4
	Southbound Thru-Right	8.1	A	0.32	38.0
	Overall	15.6	B	0.74	-

6. Parking and Transportation Demand Management

The subject development could benefit from the implementation of Transportation Demand Management (TDM) measures. It is noted that transit service located near the business park is currently provided on-demand. As noted in **Section 2.3**, limited active transportation infrastructure is available in the Business Park area; however, employee oriented TDM measures should still be encouraged both under current conditions in the Business Park area and with improved transit service and walking/cycling facilities in the future.

The following TDM measures are identified as appropriate for this development:

- **Parking** – Employee and customer parking reduced from that required by the City of Guelph by-law. A separate parking study was completed and is included in **Appendix D**. The parking study identified that the proposed number of parking spaces for this site plan are sufficient. There are 164 parking spaces proposed for Phase 1, plus 96 for Phase 2, plus 149 for Phase 3, plus 1 for Phase 4, plus 132 for Phase 5, totalling 542 parking spaces proposed for full-build out. The City by-law requires 817 parking spaces for this combination of Warehouse and Manufacturing land uses based on total GFA, a difference of 275 parking spaces from the site plan. Based on employee numbers and trips generated by this site, between 239 and 436 parking spaces would be sufficient; therefore, the site plan proposed 542 parking spaces is more than sufficient to accommodate the on-site parking requirements (see **Appendix D** for assessment and support for variance to the City By-law parking requirements).
- **Carpool** – The provision of Carpool Spaces is not typically mandated through Zoning, but the City may encourage the addition of carpool spaces in a design guideline for future developments. A suggested target of 5% (8 parking spaces) of the total parking spaces should be dedicated to carpool parking. This can be identified through signs, and should a change be required down the road, signs can be added or removed as appropriate to meet demand. The carpool parking spaces should be close to the facility, but not as close as accessible parking.
- **Cycling**:
 - 10 short term and 23 long term Bicycle Parking spaces required as per City Zoning By-Law. Note only 7 bicycle parking spaces are required as per City Parking Standards ;
 - Bicycle Stall of 1.8 metres x 0.6 metres minimum is recommended as per City Parking Standards;
 - Access Aisle to Bicycle Stall of minimum 1.2 metres is recommended as per City Parking Standards;
 - Headroom with minimum 1.9 metres vertical clearance is recommended as per City Parking Standards;
 - Parallel Racks spacing of 0.6 metres for Bicycle Racks is recommended as per City Parking Standards;
 - End to End Racks spacing of 1.8 metres for Bicycle Racks is recommended as per City Parking Standards;
 - Aisle width from Rack to Rack of 3.9 metres for Bicycle Racks is recommended as per City Parking Standards;
- **Walking** –Internal sidewalks connected to future sidewalks and trails.
- **Transit** – Employees could be encouraged to make use of the currently available on-demand bus service until future improvements to transit service to the Business Park areas.

7. Warrants and Site Distance Analysis

7.1 Signal and Stop Control Warrants

A signal warrant was conducted for the Clair Road and Southgate Drive intersection using 2029 traffic volumes , which shows no signal is warranted for the intersection. AECOM recommends that the intersection be monitored and potentially converted to a signalized intersection when needed. Note that the Clair Road and Southgate Drive intersection was a signalized intersection until 2017 (source: Google Maps historical street view image). The Warrant is included in **Appendix E**.

7.2 Site Distance Analysis

AECOM will conduct a site distance analysis of the proposed driveways and include the assessment results in the final TIS report.

8. Turning Lane Requirements- MTO Facilities

The turning lane requirements were calculated based on the MTO requirements discussed in **Section 2.7**. **Table 36** shows turning lane requirements for MTO facilities-2039 Turning Lane requirements

Table 36: 2039 Turning Lane Requirements

Main Arterial	Intersection	Movement	Design Speed	2039 AM Volume	2039 PM Volume	Number of Lanes	Cycle Length	m (arrival rate)	Calculated Left Turn Storage Length (TSOTP) (m)	Calculated Right Turn Storage Length (TAC) (m)	Parallel Lane Length (TAC MTO Sup Exhibits 9-J and 9-R)	Minimum Storage (excludes taper)	Auxiliary Lane Length (excludes taper)	Taper (TAC MTO Sup Exhibits 9-J and 9-R) (m)	Auxiliary Lane + Taper (m)	Larger of Aux + 2/3 Taper and Thru Queue + 1/3 Taper
WR34 Midblock	Highway 6 West Ramp Terminal	SB-L	80	115	134	1	90	3.4	53		50	15	103			
		SB-R		287	265	1				108	60	15	168	70	238	238
		EB-T	80	451	385	1		11.3	128	169		15	169			
		WB-T		57	38	1		1.5	30	21		15	30			
	Highway 6 East Ramp Terminal	NB-L	80	15	27	1	90	0.7	15		50	15	65			
		NB-R		465	396	1				174	60	15	234	70	304	304
		EB-T	80	122	150	1		3.8	53	56		15	56			
		WB-T		643	522	1		16.1	173	241		15	241			
Laird Road	Highway 6 Southbound Interchange	SB-L	80	758	770	2	83.2	10.7	120		50	15	170			
		EB-T	80	267	423	2		4.9	68	73		15	73			
		WB-T		391	468	2		5.5	75	81		15	81			
	Highway 6 Northbound Interchange	NB-L	80	140	53	1	93.1	3.7	53		50	15	103			
		NB-R		426	284	1				165	60	15	225	70	295	295
		EB-T	80	1001	1139	2		14.8	158	221		15	221			
		WB-T		520	838	2		10.9	128	163		15	163			

Note : A factor of 1.5 was used to convert trucks to passenger vehicles for the Laird Road / Highway 6 Northbound and Southbound interchange and new Highway 6 midblock interchange (northbound right turn movement at the East Ramp terminal only); supporting heavy vehicle data was not available for the new midblock interchange.

9. Conclusions and Recommendations

The following is a summary of the completed traffic impact study investigations:

- **Existing Traffic Conditions (2022):** Most of the study area intersections are currently operating at satisfactory levels of service. Westbound movements of the Concession Road 4 and Highway 6 intersection are currently operating at near capacity with a LOS E during AM peak hour whereas eastbound movements of Concession Road 4 and Highway 6 intersection are currently operating at capacity with a LOS F during the PM peak hour. The northbound left turn movement at Laird Road and Southgate Drive is identified as a critical movement operating near capacity with a LOS E during the PM peak hour. Eastbound movements at the Maltby Road West and Gordon Street stop-controlled intersection are operating near capacity with LOS F during both AM and PM peak hour. Westbound movements at Maltby Road and Gordon Street intersection are operating with LOS E during AM peak hour and LOS F during PM peak hour.
- **Development Trip Generation:** The development is forecast to generate 87 passenger vehicle trips and 13 truck trips during the AM and PM peak hours (inbound and outbound altogether for phase 1-2024); and 436 passenger vehicle trips and 46 truck trips during the AM and PM peak hours (inbound and outbound altogether for full buildout -2029).
- **Background Traffic Condition:** The study area intersections are forecast to operate at acceptable levels of service for most of the intersections under 2024, 2029, 2034 and 2039 background traffic conditions apart from the movements listed below:

MTO Facilities

Highway 6 and Concession Road 4

- Westbound thru-left-right turn movement with LOS E (AM peak hour) and LOS F (PM peak hour), 2024 -new Highway 6 Midblock interchange not open scenarios
- Eastbound thru-left-right turn movement with LOS E (PM peak hour, 2024 -new Highway 6 Midblock interchange not open scenarios)

Laird Road and Highway 6 Interchange Northbound ramp terminal:

- Northbound right turn movement with v/c ratio more than 0.75 (AM peak hour, 2029 all scenarios, 2034, and 2039).

City of Guelph Facilities

Laird Road and Southgate Drive:

- Northbound left turn movement with LOS F (PM peak hour, 2024/2029 all scenarios, 2034, and 2039).
- Westbound thru-right turn movement with v/c ratio more than 0.85 (PM peak hour, 2029 all scenarios, 2034, and 2039).
- Westbound through movement with LOS F (PM peak hour, 2034 and 2039)
- Eastbound left turn movement with LOS F (AM peak hour, 2034 and 2039).
- Eastbound thru movement with v/c ratio more than 0.85 (PM peak hour, 2039).
- Southbound thru-right movement with v/c ratio more than 0.85 (PM peak hour, 2039).

Maltby Road West and Concession Road 7:

- Northbound left-thru-right turn movement with a v/c ratio more than 0.85 (PM peak hour, 2034 and 2039)

Clair Road and Southgate Drive

- All northbound movements at Clair Road and Southgate Drive with LOS E (PM peak hour, 2034 and 2039)

Admiral Place and Southgate Drive:

- Eastbound thru-left-right turn movement with LOS E (PM peak hour, 2039)

- **Total Traffic Conditions:** The future total traffic is forecast to operate at a similar level of operation as the background traffic operations for the majority of the intersections in the study area apart from the Clair Road and Southgate Road intersection during the future total 2029 PM peak hour. All the northbound operations that were operating with a LOS of D during the background 2029 PM peak hour will operate with a LOS F during the total 2029 PM peak hour. Therefore, the proposed site is shown to impact traffic operations at this intersection; however, the impact is related to a change in traffic patterns (volumes shifted to a westbound left turn from the westbound through movement) related to the extension of Southgate Drive to Crawley Road in addition to site-generated traffic. A signal warrant was conducted for the Clair Road and Southgate Drive intersection with volumes from 2029, which shows no signal is warranted for the intersection (refer to **Section 7.1**). A sensitivity analysis was conducted to show the intersection operations as a signalized intersection (refer to **Section 5.7**). Note that the Clair Road and Southgate Drive intersection was a signalized intersection until 2017 after which it was converted to a stop-controlled intersection (source: Google Maps historical street view image).

Based on the completed assessment, it is concluded that the development can proceed to full-build out based on the total estimated gross floor area, employee numbers, and truck traffic volumes.

9.1 Recommendations

No lane configuration changes are required to the network to accommodate the proposed development. The new Highway 6 midblock interchange will function without any critical movements throughout all horizon years. The proposed development will not affect the interchange operation.

For the Laird Road and Southgate Drive intersection, all projected traffic can be accommodated with the existing layout in horizon year 2039; however, the signal timing plan may need to be modified as development proceeds to better accommodate turning movements.

It is recommended that the Clair Road and Southgate Drive intersection be monitored as development proceeds to confirm an appropriate timing for implementing signals.

Pedestrian and cyclist access the proposed site from the walking trail and proposed cycling trail should be provided along Southgate Drive and accommodations to the site should be provided separate from the truck access.

The parking study conducted recommended no additional parking be required on the site plan. Considering the type of development and the ITE Parking Generation Rates, the proposed site parking facilities are adequate to accommodate the full-build requirements.

To encourage alternative modes of travel, the following on-site Transportation Demand Management (TDM) measures are recommended:

- 10 short term and 23 long term Bicycle Parking spaces required as per City Zoning By-Law , 2022 (note only 7 bicycle parking spaces required as per City Parking Standards, 2019);
- As recommended in the City Parking Standards:
 - Bicycle Stall of 1.8 metres x 0.6 metres minimum;
 - Access Aisle to Bicycle Stall of minimum 1.2 metres;
 - Headroom with minimum 1.9 metres vertical clearance;
 - Parallel Racks spacing of 0.6 metres for Bicycle Racks;
 - End to End Racks spacing of 1.8 metres for Bicycle Racks;
 - Aisle width from Rack to Rack of 3.9 metres for Bicycle Racks;
- The provision of Carpool Spaces is not typically mandated through Zoning, but the City may encourage the addition of carpool spaces in a design guideline for future developments. A suggested target of 5% (8 parking spaces) of the total parking spaces should be dedicated to carpool parking. This can be identified through signs, and should a change be required down the road, signs can be added or removed as appropriate to meet demand. The carpool parking spaces should be close to the facility, but not as close as accessible parking.

Sight distance analysis for the proposed site accesses will be completed at a later date based on appropriate standards (TAC Manual).

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Appendix **A**

Traffic Data



Morning Peak Diagram	Specified Period From: 6:00:00 To: 10:00:00	One Hour Peak From: 7:30:00 To: 8:30:00																																																					
Municipality: Guelph Site #: 2203500001 Intersection: Laird Rd & Hwy 6 NB Ramp interch TFR File #: 1 Count date: 10-Mar-22	Weather conditions: Person counted: Person prepared: Person checked:																																																						
** Signalized Intersection **	Major Road: Laird Rd runs W/E																																																						
East Leg Total: 998 East Entering: 303 East Peds: 0 Peds Cross: 8																																																							
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Heavys	6	47	53																																																				
Totals	83	228																																																					
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Afternoon Peak Diagram	Specified Period From: 14:30:00 To: 18:30:00	One Hour Peak From: 16:30:00 To: 17:30:00																																																
Municipality: Guelph Site #: 2203500001 Intersection: Laird Rd & Hwy 6 NB Ramp interch TFR File #: 1 Count date: 10-Mar-22	Weather conditions: Person counted: Person prepared: Person checked:																																																	
** Signalized Intersection **	Major Road: Laird Rd runs W/E																																																	
East Leg Total: 1201 East Entering: 494 East Peds: 0 Peds Cross: 8																																																		
<table style="width: 30%;"> <thead> <tr><th>Heavys</th><th>Trucks</th><th>Cars</th><th>Totals</th></tr> </thead> <tbody> <tr><td>42</td><td>9</td><td>474</td><td>525</td></tr> </tbody> </table>  N W E S <table style="width: 30%;"> <thead> <tr><th>Cars</th><th>Trucks</th><th>Heavys</th><th>Totals</th></tr> </thead> <tbody> <tr><td>448</td><td>7</td><td>39</td><td>494</td></tr> <tr><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>448</td><td>7</td><td>39</td><td></td></tr> </tbody> </table> <table style="width: 100%;"> <thead> <tr><th>Heavys</th><th>Trucks</th><th>Cars</th><th>Totals</th></tr> </thead> <tbody> <tr><td>7</td><td>2</td><td>537</td><td>546</td></tr> <tr><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>7</td><td>2</td><td>537</td><td></td></tr> </tbody> </table>  N W E S <table style="width: 100%;"> <thead> <tr><th>Cars</th><th>Trucks</th><th>Heavys</th><th>Totals</th></tr> </thead> <tbody> <tr><td>665</td><td>6</td><td>36</td><td>707</td></tr> </tbody> </table> Laird Rd Hwy 6 NB Ramp interchange			Heavys	Trucks	Cars	Totals	42	9	474	525	Cars	Trucks	Heavys	Totals	448	7	39	494	0	0	0	0	448	7	39		Heavys	Trucks	Cars	Totals	7	2	537	546	0	0	0	0	7	2	537		Cars	Trucks	Heavys	Totals	665	6	36	707
Heavys	Trucks	Cars	Totals																																															
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Heavys	Trucks	Cars	Totals																																															
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7	2	537																																																
Cars	Trucks	Heavys	Totals																																															
665	6	36	707																																															
Peds Cross: 8 West Peds: 0 West Entering: 546 West Leg Total: 1071	<table style="width: 100%;"> <tr><td>Cars</td><td>0</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Heavys</td><td>0</td></tr> <tr><td>Totals</td><td>0</td></tr> </table>	Cars	0	Trucks	0	Heavys	0	Totals	0	<table style="width: 100%;"> <tr><td>Cars</td><td>26</td><td>128</td><td>154</td></tr> <tr><td>Trucks</td><td>2</td><td>4</td><td>6</td></tr> <tr><td>Heavys</td><td>3</td><td>29</td><td>32</td></tr> <tr><td>Totals</td><td>31</td><td>161</td><td></td></tr> </table>	Cars	26	128	154	Trucks	2	4	6	Heavys	3	29	32	Totals	31	161		Peds Cross: 8 South Peds: 0 South Entering: 192 South Leg Total: 192																							
Cars	0																																																	
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Heavys	3	29	32																																															
Totals	31	161																																																
Comments																																																		

Total Count Diagram

Municipality: Guelph
Site #: 2203500001
Intersection: Laird Rd & Hwy 6 NB Ramp interch
TFR File #: 1
Count date: 10-Mar-22

Weather conditions:

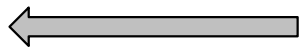
Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Laird Rd runs W/E

East Leg Total: 7268
 East Entering: 2548
 East Peds: 0
 Peds Cross: 8

Heavys	Trucks	Cars	Totals
347	83	2482	2912

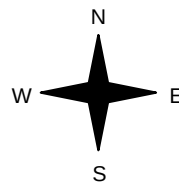


Laird Rd

Heavys	Trucks	Cars	Totals
117	53	3257	3427
0	0	0	0
117	53	3257	



Hwy 6 NB Ramp interchange



Cars	Trucks	Heavys	Totals
2180	60	308	2548
0	0	0	0
2180	60	308	



Laird Rd

Cars	Trucks	Heavys	Totals
4241	81	398	4720



Peds Cross: 8
 West Peds: 0
 West Entering: 3427
 West Leg Total: 6339

Cars	0
Trucks	0
Heavys	0
Totals	0



Cars	302	984	1286
Trucks	23	28	51
Heavys	39	281	320
Totals	364	1293	

Peds Cross: 8
 South Peds: 0
 South Entering: 1657
 South Leg Total: 1657

Comments

Traffic Count Summary

Intersection: Laird Rd & Hwy 6 NB Ramp interc						Count Date: 10-Mar-22		Municipality: Guelph					
North Approach Totals						North/South Total Approaches	South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total		
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0	
7:00:00	0	0	0	0	0	202	7:00:00	51	0	151	202	0	
8:00:00	0	0	0	0	0	288	8:00:00	86	0	202	288	0	
9:00:00	0	0	0	0	0	269	9:00:00	79	0	190	269	0	
10:00:00	0	0	0	0	0	192	10:00:00	40	0	152	192	0	
15:00:00	0	0	0	0	0	87	15:00:00	14	0	73	87	0	
16:00:00	0	0	0	0	0	201	16:00:00	36	0	165	201	0	
17:00:00	0	0	0	0	0	195	17:00:00	27	0	168	195	0	
18:00:00	0	0	0	0	0	169	18:00:00	22	0	147	169	0	
Totals: 0 0 0 0 0						1603	S Totals: 355 0 1248 1603 0						
East Approach Totals						East/West Total Approaches	West Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total		
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0	
7:00:00	0	175	0	175	0	480	7:00:00	0	305	0	305	0	
8:00:00	0	281	0	281	0	706	8:00:00	0	425	0	425	0	
9:00:00	0	263	0	263	0	685	9:00:00	0	422	0	422	0	
10:00:00	0	191	0	191	0	534	10:00:00	0	343	0	343	0	
15:00:00	0	161	0	161	0	409	15:00:00	0	248	0	248	0	
16:00:00	0	442	0	442	0	940	16:00:00	0	498	0	498	0	
17:00:00	0	524	0	524	0	1036	17:00:00	0	512	0	512	0	
18:00:00	0	368	0	368	0	847	18:00:00	0	479	0	479	0	
Totals: 0 2405 0 2405 0						5637	W Totals: 0 3232 0 3232 0						
Calculated Values for Traffic Crossing Major Street													
Hours Ending:		7:00	8:00	9:00	10:00			15:00	16:00	17:00	18:00		
Crossing Values:		51	86	79	40			14	36	27	22		



Count Date: 10-Mar-22 Site #: 2203500001

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	8	8	0	0	21	21	0	0	0	0	0	0	0	0	0	0	4	4	0	0
6:30:00	15	7	0	0	45	24	0	0	0	0	0	0	0	0	0	0	12	8	0	0
6:45:00	28	13	0	0	89	44	0	0	0	0	2	2	1	1	0	0	15	3	0	0
7:00:00	50	22	0	0	131	42	0	0	0	0	2	0	1	0	0	0	18	3	0	0
7:15:00	68	18	0	0	161	30	0	0	0	0	4	2	5	4	0	0	28	10	0	0
7:30:00	87	19	0	0	186	25	1	1	0	0	4	0	5	0	0	0	36	8	0	0
7:45:00	96	9	0	0	226	40	4	3	0	0	5	1	6	1	0	0	47	11	0	0
8:00:00	122	26	0	0	283	57	7	3	0	0	7	2	8	2	0	0	63	16	0	0
8:15:00	138	16	0	0	319	36	9	2	0	0	7	0	9	1	0	0	77	14	0	0
8:30:00	153	15	0	0	360	41	12	3	0	0	11	4	11	2	0	0	83	6	0	0
8:45:00	174	21	0	0	396	36	15	3	0	0	12	1	14	3	0	0	90	7	0	0
9:00:00	186	12	0	0	430	34	15	0	0	0	13	1	15	1	0	0	100	10	0	0
9:15:00	193	7	0	0	467	37	15	0	0	0	13	0	16	1	0	0	111	11	0	0
9:30:00	200	7	0	0	495	28	15	0	0	0	13	0	19	3	0	0	120	9	0	0
9:45:00	207	7	0	0	517	22	15	0	0	0	14	1	23	4	0	0	135	15	0	0
10:00:00	213	6	0	0	536	19	15	0	0	0	15	1	28	5	0	0	144	9	0	0
10:15:00	213	0	0	0	536	0	15	0	0	0	15	0	28	0	0	0	144	0	0	0
14:30:00	213	0	0	0	536	0	15	0	0	0	15	0	28	0	0	0	144	0	0	0
14:45:00	216	3	0	0	563	27	15	0	0	0	16	1	31	3	0	0	149	5	0	0
15:00:00	219	3	0	0	592	29	19	4	0	0	16	0	32	1	0	0	160	11	0	0
15:15:00	222	3	0	0	617	25	20	1	0	0	16	0	32	0	0	0	170	10	0	0
15:30:00	228	6	0	0	642	25	20	0	0	0	16	0	33	1	0	0	187	17	0	0
15:45:00	241	13	0	0	680	38	20	0	0	0	18	2	33	0	0	0	190	3	0	0
16:00:00	251	10	0	0	714	34	20	0	0	0	21	3	35	2	0	0	198	8	0	0
16:15:00	253	2	0	0	739	25	20	0	0	0	22	1	36	1	0	0	214	16	0	0
16:30:00	259	6	0	0	776	37	21	1	0	0	22	0	36	0	0	0	227	13	0	0
16:45:00	267	8	0	0	800	24	22	1	0	0	24	2	36	0	0	0	240	13	0	0
17:00:00	274	7	0	0	831	31	22	0	0	0	25	1	37	1	0	0	245	5	0	0
17:15:00	277	3	0	0	865	34	23	1	0	0	25	0	39	2	0	0	251	6	0	0
17:30:00	285	8	0	0	904	39	23	0	0	0	26	1	39	0	0	0	256	5	0	0
17:45:00	289	4	0	0	927	23	23	0	0	0	26	0	39	0	0	0	261	5	0	0
18:00:00	293	4	0	0	951	24	23	0	0	0	27	1	39	0	0	0	270	9	0	0
18:15:00	296	3	0	0	972	21	23	0	0	0	28	1	39	0	0	0	275	5	0	0
18:30:00	302	6	0	0	984	12	23	0	0	0	28	0	39	0	0	0	281	6	0	0
18:45:00	302	0	0	0	984	0	23	0	0	0	28	0	39	0	0	0	281	0	0	0
18:45:15	302	0	0	0	984	0	23	0	0	0	28	0	39	0	0	0	281	0	0	0



Count Date: 10-Mar-22 Site #: 2203500001																				
Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	0	0	47	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30:00	0	0	96	49	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0
6:45:00	0	0	171	75	0	0	0	0	1	1	0	0	0	0	5	2	0	0	0	0
7:00:00	0	0	294	123	0	0	0	0	2	1	0	0	0	0	9	4	0	0	0	0
7:15:00	0	0	376	82	0	0	0	0	3	1	0	0	0	0	12	3	0	0	0	0
7:30:00	0	0	469	93	0	0	0	0	7	4	0	0	0	0	15	3	0	0	0	0
7:45:00	0	0	563	94	0	0	0	0	7	0	0	0	0	0	20	5	0	0	0	0
8:00:00	0	0	691	128	0	0	0	0	10	3	0	0	0	0	29	9	0	0	0	0
8:15:00	0	0	778	87	0	0	0	0	12	2	0	0	0	0	34	5	0	0	0	0
8:30:00	0	0	907	129	0	0	0	0	13	1	0	0	0	0	38	4	0	0	0	0
8:45:00	0	0	991	84	0	0	0	0	18	5	0	0	0	0	41	3	0	0	0	0
9:00:00	0	0	1085	94	0	0	0	0	20	2	0	0	0	0	47	6	0	0	0	0
9:15:00	0	0	1170	85	0	0	0	0	24	4	0	0	0	0	51	4	0	0	0	0
9:30:00	0	0	1243	73	0	0	0	0	25	1	0	0	0	0	56	5	0	0	0	0
9:45:00	0	0	1317	74	0	0	0	0	30	5	0	0	0	0	62	6	0	0	0	0
10:00:00	0	0	1396	79	0	0	0	0	32	2	0	0	0	0	67	5	0	0	0	0
10:15:00	0	0	1396	0	0	0	0	0	32	0	0	0	0	0	67	0	0	0	0	0
14:30:00	0	0	1396	0	0	0	0	0	32	0	0	0	0	0	67	0	0	0	0	0
14:45:00	0	0	1493	97	0	0	0	0	37	5	0	0	0	0	74	7	0	0	0	0
15:00:00	0	0	1621	128	0	0	0	0	41	4	0	0	0	0	81	7	0	0	0	0
15:15:00	0	0	1742	121	0	0	0	0	41	0	0	0	0	0	89	8	0	0	0	0
15:30:00	0	0	1842	100	0	0	0	0	42	1	0	0	0	0	91	2	0	0	0	0
15:45:00	0	0	1987	145	0	0	0	0	44	2	0	0	0	0	96	5	0	0	0	0
16:00:00	0	0	2092	105	0	0	0	0	48	4	0	0	0	0	101	5	0	0	0	0
16:15:00	0	0	2215	123	0	0	0	0	49	1	0	0	0	0	105	4	0	0	0	0
16:30:00	0	0	2314	99	0	0	0	0	50	1	0	0	0	0	108	3	0	0	0	0
16:45:00	0	0	2455	141	0	0	0	0	51	1	0	0	0	0	110	2	0	0	0	0
17:00:00	0	0	2591	136	0	0	0	0	51	0	0	0	0	0	111	1	0	0	0	0
17:15:00	0	0	2694	103	0	0	0	0	52	1	0	0	0	0	113	2	0	0	0	0
17:30:00	0	0	2851	157	0	0	0	0	52	0	0	0	0	0	115	2	0	0	0	0
17:45:00	0	0	2946	95	0	0	0	0	53	1	0	0	0	0	117	2	0	0	0	0
18:00:00	0	0	3062	116	0	0	0	0	53	0	0	0	0	0	117	0	0	0	0	0
18:15:00	0	0	3172	110	0	0	0	0	53	0	0	0	0	0	117	0	0	0	0	0
18:30:00	0	0	3257	85	0	0	0	0	53	0	0	0	0	0	117	0	0	0	0	0
18:45:00	0	0	3257	0	0	0	0	0	53	0	0	0	0	0	117	0	0	0	0	0
18:45:15	0	0	3257	0	0	0	0	0	53	0	0	0	0	0	117	0	0	0	0	0

Morning Peak Diagram		Specified Period From: 6:00:00 To: 10:00:00	One Hour Peak From: 7:30:00 To: 8:30:00																																									
Municipality: Guelph Site #: 2203500002 Intersection: Laird Rd & Hwy 6 SB Ramp interch TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:																																										
** Signalized Intersection **		Major Road: Laird Rd runs W/E																																										
North Leg Total: 322 North Entering: 322 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">18</td> <td style="border-left: 1px solid black; text-align: right;">18</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">2</td> <td style="border-left: 1px solid black; text-align: right;">2</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">0</td> <td style="text-align: right;">302</td> <td style="border-left: 1px solid black; text-align: right;">302</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">0</td> <td style="text-align: right;">322</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Heavys	0	18	18	Trucks	0	2	2	Cars	0	302	302	Totals	0	322			<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">0</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">0</td> </tr> </table>	Heavys	0	Trucks	0	Cars	0	Totals	0	East Leg Total: 712 East Entering: 231 East Peds: 0 Peds Cross:																
Heavys	0	18	18																																									
Trucks	0	2	2																																									
Cars	0	302	302																																									
Totals	0	322																																										
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<table style="border-collapse: collapse;"> <tr> <th>Heavys</th> <th>Trucks</th> <th>Cars</th> <th>Totals</th> </tr> <tr> <td>12</td> <td>14</td> <td>205</td> <td>231</td> </tr> </table> Hwy 6 SB Ramp interchange <table style="border-collapse: collapse;"> <tr> <th>Cars</th> <th>Trucks</th> <th>Heavys</th> <th>Totals</th> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>205</td> <td>14</td> <td>12</td> <td>231</td> </tr> </table> Laird Rd Laird Rd <table style="border-collapse: collapse;"> <tr> <th>Heavys</th> <th>Trucks</th> <th>Cars</th> <th>Totals</th> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>6</td> <td>3</td> <td>150</td> <td>159</td> </tr> </table> <table style="border-collapse: collapse;"> <tr> <th>Cars</th> <th>Trucks</th> <th>Heavys</th> <th>Totals</th> </tr> <tr> <td>452</td> <td>5</td> <td>24</td> <td>481</td> </tr> </table>					Heavys	Trucks	Cars	Totals	12	14	205	231	Cars	Trucks	Heavys	Totals	0	0	0	0	205	14	12	231	Heavys	Trucks	Cars	Totals	0	0	0	0	6	3	150	159	Cars	Trucks	Heavys	Totals	452	5	24	481
Heavys	Trucks	Cars	Totals																																									
12	14	205	231																																									
Cars	Trucks	Heavys	Totals																																									
0	0	0	0																																									
205	14	12	231																																									
Heavys	Trucks	Cars	Totals																																									
0	0	0	0																																									
6	3	150	159																																									
Cars	Trucks	Heavys	Totals																																									
452	5	24	481																																									
Peds Cross: West Peds: 0 West Entering: 159 West Leg Total: 390																																												
Comments																																												

Afternoon Peak Diagram		Specified Period From: 14:30:00 To: 18:30:00	One Hour Peak From: 16:00:00 To: 17:00:00																																																
Municipality: Guelph Site #: 2203500002 Intersection: Laird Rd & Hwy 6 SB Ramp interch TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:																																																	
** Signalized Intersection **		Major Road: Laird Rd runs W/E																																																	
North Leg Total: 323 North Entering: 323 North Peds: 0 Peds Cross:	<table style="margin: auto;"> <tr> <td>Heavys</td><td>0</td><td>6</td><td>6</td></tr> <tr> <td>Trucks</td><td>0</td><td>2</td><td>2</td></tr> <tr> <td>Cars</td><td>0</td><td>315</td><td>315</td></tr> <tr> <td>Totals</td><td>0</td><td>323</td><td></td></tr> </table>		Heavys	0	6	6	Trucks	0	2	2	Cars	0	315	315	Totals	0	323		East Leg Total: 860 East Entering: 282 East Peds: 0 Peds Cross:																																
Heavys	0	6	6																																																
Trucks	0	2	2																																																
Cars	0	315	315																																																
Totals	0	323																																																	
<table style="margin-bottom: 10px;"> <tr><th>Heavys</th><th>Trucks</th><th>Cars</th><th>Totals</th></tr> <tr><td>6</td><td>6</td><td>270</td><td>282</td></tr> </table> Laird Rd <table style="margin-top: 10px;"> <tr><th>Heavys</th><th>Trucks</th><th>Cars</th><th>Totals</th></tr> <tr><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>6</td><td>0</td><td>249</td><td>255</td></tr> <tr><td>6</td><td>0</td><td>249</td><td></td></tr> </table> Hwy 6 SB Ramp interchange <table style="margin-bottom: 10px;"> <tr><th>Cars</th><th>Trucks</th><th>Heavys</th><th>Totals</th></tr> <tr><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>270</td><td>6</td><td>6</td><td>282</td></tr> <tr><td>270</td><td>6</td><td>6</td><td></td></tr> </table> Laird Rd <table style="margin-top: 10px;"> <tr><th>Cars</th><th>Trucks</th><th>Heavys</th><th>Totals</th></tr> <tr><td>564</td><td>2</td><td>12</td><td>578</td></tr> </table>				Heavys	Trucks	Cars	Totals	6	6	270	282	Heavys	Trucks	Cars	Totals	0	0	0	0	6	0	249	255	6	0	249		Cars	Trucks	Heavys	Totals	0	0	0	0	270	6	6	282	270	6	6		Cars	Trucks	Heavys	Totals	564	2	12	578
Heavys	Trucks	Cars	Totals																																																
6	6	270	282																																																
Heavys	Trucks	Cars	Totals																																																
0	0	0	0																																																
6	0	249	255																																																
6	0	249																																																	
Cars	Trucks	Heavys	Totals																																																
0	0	0	0																																																
270	6	6	282																																																
270	6	6																																																	
Cars	Trucks	Heavys	Totals																																																
564	2	12	578																																																
Peds Cross: West Peds: 0 West Entering: 255 West Leg Total: 537																																																			
Comments																																																			

Total Count Diagram

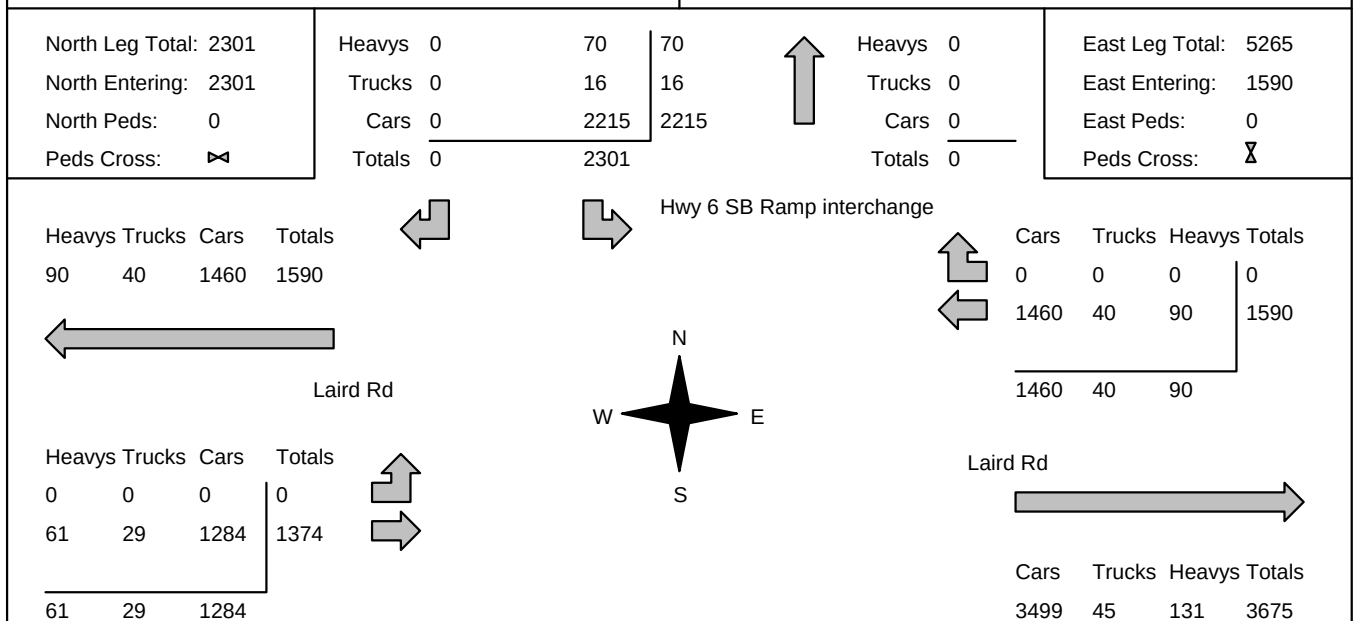
Municipality: Guelph
Site #: 2203500002
Intersection: Laird Rd & Hwy 6 SB Ramp interch
TFR File #: 1
Count date: 10-Mar-22

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Laird Rd runs W/E



Peds Cross: 0
 West Peds: 0
 West Entering: 1374
 West Leg Total: 2964

Comments

Traffic Count Summary

Intersection: Laird Rd & Hwy 6 SB Ramp interc

Count Date: 10-Mar-22

Municipality: Guelph

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	215	0	0	215	0	215	7:00:00	0	0	0	0	0
8:00:00	284	0	0	284	0	284	8:00:00	0	0	0	0	0
9:00:00	285	0	0	285	0	285	9:00:00	0	0	0	0	0
10:00:00	234	0	0	234	0	234	10:00:00	0	0	0	0	0
15:00:00	168	0	0	168	0	168	15:00:00	0	0	0	0	0
16:00:00	351	0	0	351	0	351	16:00:00	0	0	0	0	0
17:00:00	323	0	0	323	0	323	17:00:00	0	0	0	0	0
18:00:00	311	0	0	311	0	311	18:00:00	0	0	0	0	0
Totals:						2171	S Totals:	0	0	0	0	0
East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	0	124	0	124	0	221	7:00:00	0	97	0	97	0
8:00:00	0	231	0	231	0	398	8:00:00	0	167	0	167	0
9:00:00	0	211	0	211	0	369	9:00:00	0	158	0	158	0
10:00:00	0	134	0	134	0	261	10:00:00	0	127	0	127	0
15:00:00	0	88	0	88	0	174	15:00:00	0	86	0	86	0
16:00:00	0	251	0	251	0	443	16:00:00	0	192	0	192	0
17:00:00	0	282	0	282	0	537	17:00:00	0	255	0	255	0
18:00:00	0	199	0	199	0	418	18:00:00	0	219	0	219	0
Totals:						2821	W Totals:	0	1301	0	1301	0
Calculated Values for Traffic Crossing Major Street												
Hours Ending:		7:00	8:00	9:00	10:00		15:00	16:00	17:00	18:00		
Crossing Values:		215	284	285	234		168	351	323	311		



Count Date: 10-Mar-22 Site #: 2203500002

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	36	36	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
6:30:00	62	26	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0
6:45:00	115	53	0	0	0	0	1	1	0	0	0	0	3	0	0	0	0	0	0	0
7:00:00	208	93	0	0	0	0	1	0	0	0	0	0	6	3	0	0	0	0	0	0
7:15:00	253	45	0	0	0	0	1	0	0	0	0	0	7	1	0	0	0	0	0	0
7:30:00	312	59	0	0	0	0	3	2	0	0	0	0	10	3	0	0	0	0	0	0
7:45:00	378	66	0	0	0	0	3	0	0	0	0	0	13	3	0	0	0	0	0	0
8:00:00	473	95	0	0	0	0	4	1	0	0	0	0	22	9	0	0	0	0	0	0
8:15:00	528	55	0	0	0	0	5	1	0	0	0	0	24	2	0	0	0	0	0	0
8:30:00	614	86	0	0	0	0	5	0	0	0	0	0	28	4	0	0	0	0	0	0
8:45:00	679	65	0	0	0	0	6	1	0	0	0	0	29	1	0	0	0	0	0	0
9:00:00	745	66	0	0	0	0	8	2	0	0	0	0	31	2	0	0	0	0	0	0
9:15:00	795	50	0	0	0	0	9	1	0	0	0	0	33	2	0	0	0	0	0	0
9:30:00	853	58	0	0	0	0	10	1	0	0	0	0	36	3	0	0	0	0	0	0
9:45:00	910	57	0	0	0	0	11	1	0	0	0	0	39	3	0	0	0	0	0	0
10:00:00	966	56	0	0	0	0	11	0	0	0	0	0	41	2	0	0	0	0	0	0
10:15:00	966	0	0	0	0	0	11	0	0	0	0	0	41	0	0	0	0	0	0	0
14:30:00	966	0	0	0	0	0	11	0	0	0	0	0	41	0	0	0	0	0	0	0
14:45:00	1034	68	0	0	0	0	12	1	0	0	0	0	44	3	0	0	0	0	0	0
15:00:00	1124	90	0	0	0	0	12	0	0	0	0	0	50	6	0	0	0	0	0	0
15:15:00	1219	95	0	0	0	0	12	0	0	0	0	0	52	2	0	0	0	0	0	0
15:30:00	1287	68	0	0	0	0	12	0	0	0	0	0	52	0	0	0	0	0	0	0
15:45:00	1393	106	0	0	0	0	14	2	0	0	0	0	55	3	0	0	0	0	0	0
16:00:00	1464	71	0	0	0	0	14	0	0	0	0	0	59	4	0	0	0	0	0	0
16:15:00	1540	76	0	0	0	0	15	1	0	0	0	0	62	3	0	0	0	0	0	0
16:30:00	1619	79	0	0	0	0	15	0	0	0	0	0	64	2	0	0	0	0	0	0
16:45:00	1694	75	0	0	0	0	16	1	0	0	0	0	65	1	0	0	0	0	0	0
17:00:00	1779	85	0	0	0	0	16	0	0	0	0	0	65	0	0	0	0	0	0	0
17:15:00	1834	55	0	0	0	0	16	0	0	0	0	0	66	1	0	0	0	0	0	0
17:30:00	1936	102	0	0	0	0	16	0	0	0	0	0	68	2	0	0	0	0	0	0
17:45:00	2003	67	0	0	0	0	16	0	0	0	0	0	70	2	0	0	0	0	0	0
18:00:00	2085	82	0	0	0	0	16	0	0	0	0	0	70	0	0	0	0	0	0	0
18:15:00	2153	68	0	0	0	0	16	0	0	0	0	0	70	0	0	0	0	0	0	0
18:30:00	2215	62	0	0	0	0	16	0	0	0	0	0	70	0	0	0	0	0	0	0
18:45:00	2215	0	0	0	0	0	16	0	0	0	0	0	70	0	0	0	0	0	0	0
18:45:15	2215	0	0	0	0	0	16	0	0	0	0	0	70	0	0	0	0	0	0	0

Morning Peak Diagram		Specified Period From: 6:00:00 To: 10:00:00	One Hour Peak From: 7:30:00 To: 8:30:00
Municipality: Guelph Site #: 2203500003 Intersection: Laird Rd & Southgate Dr TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **		Major Road: Laird Rd runs W/E	

North Leg Total: 383 North Entering: 99 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">5</td> <td style="padding: 2px;">3</td> <td style="padding: 2px;">7</td> <td style="border-left: 1px solid black; padding: 2px;">15</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">5</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">2</td> <td style="border-left: 1px solid black; padding: 2px;">8</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">45</td> <td style="padding: 2px;">5</td> <td style="padding: 2px;">26</td> <td style="border-left: 1px solid black; padding: 2px;">76</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">55</td> <td style="padding: 2px;">9</td> <td style="padding: 2px;">35</td> <td style="border-left: 1px solid black; padding: 2px;"></td> </tr> </table>	Heavys	5	3	7	15	Trucks	5	1	2	8	Cars	45	5	26	76	Totals	55	9	35		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">16</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">4</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">264</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">284</td> </tr> </table>	Heavys	16	Trucks	4	Cars	264	Totals	284	East Leg Total: 869 East Entering: 509 East Peds: 0 Peds Cross:
Heavys	5	3	7	15																											
Trucks	5	1	2	8																											
Cars	45	5	26	76																											
Totals	55	9	35																												
Heavys	16																														
Trucks	4																														
Cars	264																														
Totals	284																														

Heavys	Trucks	Cars	Totals
48	17	468	533

N
 W ——— E
 S

Cars	Trucks	Heavys	Totals
100	1	1	102
378	5	18	401
4	0	2	6
482	6	21	

Heavys	Trucks	Cars	Totals
11	3	157	171
20	6	289	315
43	7	117	167
74	16	563	

Southgate Dr

 S

Cars	Trucks	Heavys	Totals
322	9	29	360

Peds Cross:
 West Peds: 0
 West Entering: 653
 West Leg Total: 1186

Southgate Dr

 S

Cars	126	45	7	7	59
Trucks	8	7	0	1	8
Heavys	48	25	4	2	31
Totals	182	77	11	10	

Peds Cross:
 South Peds: 0
 South Entering: 98
 South Leg Total: 280

Comments

Afternoon Peak Diagram		Specified Period From: 14:30:00 To: 18:30:00	One Hour Peak From: 16:00:00 To: 17:00:00
Municipality: Guelph Site #: 2203500003 Intersection: Laird Rd & Southgate Dr TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **		Major Road: Laird Rd runs W/E	

North Leg Total: 491 North Entering: 360 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">6</td> <td style="text-align: right;">4</td> <td style="text-align: right;">4</td> <td style="border-left: 1px solid black; text-align: right;">14</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">2</td> <td style="text-align: right;">1</td> <td style="text-align: right;">1</td> <td style="border-left: 1px solid black; text-align: right;">4</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">215</td> <td style="text-align: right;">8</td> <td style="text-align: right;">119</td> <td style="border-left: 1px solid black; text-align: right;">342</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">223</td> <td style="text-align: right;">13</td> <td style="text-align: right;">124</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Heavys	6	4	4	14	Trucks	2	1	1	4	Cars	215	8	119	342	Totals	223	13	124		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">13</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">3</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">115</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">131</td> </tr> </table>	Heavys	13	Trucks	3	Cars	115	Totals	131	East Leg Total: 1330 East Entering: 639 East Peds: 0 Peds Cross:
Heavys	6	4	4	14																											
Trucks	2	1	1	4																											
Cars	215	8	119	342																											
Totals	223	13	124																												
Heavys	13																														
Trucks	3																														
Cars	115																														
Totals	131																														

Heavys	Trucks	Cars	Totals
57	13	963	1033

Southgate Dr

Laird Rd

Cars	Trucks	Heavys	Totals
51	0	0	51
547	8	19	574
9	2	3	14
607	10	22	

Heavys	Trucks	Cars	Totals
10	2	61	73
13	7	517	537
32	0	36	68
55	9	614	

Southgate Dr

Laird Rd

Cars	Trucks	Heavys	Totals
664	9	18	691

Peds Cross: West Peds: 0 West Entering: 678 West Leg Total: 1711	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">53</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">3</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">39</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">95</td> </tr> </table>	Cars	53	Trucks	3	Heavys	39	Totals	95	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">201</td> <td style="text-align: right;">3</td> <td style="text-align: right;">28</td> <td style="border-left: 1px solid black; text-align: right;">232</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">3</td> <td style="text-align: right;">1</td> <td style="text-align: right;">1</td> <td style="border-left: 1px solid black; text-align: right;">5</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">32</td> <td style="text-align: right;">3</td> <td style="text-align: right;">1</td> <td style="border-left: 1px solid black; text-align: right;">36</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">236</td> <td style="text-align: right;">7</td> <td style="text-align: right;">30</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Cars	201	3	28	232	Trucks	3	1	1	5	Heavys	32	3	1	36	Totals	236	7	30		Peds Cross: South Peds: 0 South Entering: 273 South Leg Total: 368
Cars	53																														
Trucks	3																														
Heavys	39																														
Totals	95																														
Cars	201	3	28	232																											
Trucks	3	1	1	5																											
Heavys	32	3	1	36																											
Totals	236	7	30																												

Comments

Traffic Count Summary

Intersection: Laird Rd & Southgate Dr

Count Date: 10-Mar-22

Municipality: Guelph

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	12	3	14	29	1	131	7:00:00	91	4	7	102	0
8:00:00	23	5	43	71	0	172	8:00:00	83	12	6	101	0
9:00:00	38	8	56	102	0	182	9:00:00	63	5	12	80	0
10:00:00	19	5	42	66	0	152	10:00:00	70	5	11	86	0
15:00:00	11	5	36	52	0	217	15:00:00	128	5	32	165	1
16:00:00	43	5	147	195	0	526	16:00:00	298	6	27	331	0
17:00:00	124	13	223	360	0	633	17:00:00	236	7	30	273	0
18:00:00	75	11	176	262	0	400	18:00:00	118	5	15	138	0
							</					



Count Date: 10-Mar-22 Site #: 2203500003

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	0	0	38	38	1	1	0	0	0	0	0	0	1	1	1	1	0	0	0	0
6:30:00	2	2	99	61	3	2	0	0	0	0	0	0	4	3	2	1	0	0	0	0
6:45:00	2	0	190	91	13	10	0	0	0	0	0	0	6	2	7	5	0	0	0	0
7:00:00	3	1	250	60	27	14	0	0	0	0	0	0	7	1	8	1	1	1	1	1
7:15:00	5	2	327	77	36	9	0	0	0	0	0	0	8	1	9	1	1	0	1	0
7:30:00	5	0	418	91	49	13	0	0	1	1	0	0	9	1	10	1	1	0	1	0
7:45:00	5	0	538	120	73	24	0	0	2	1	0	0	9	0	14	4	1	0	1	0
8:00:00	6	1	640	102	103	30	0	0	3	1	0	0	9	0	19	5	2	1	1	0
8:15:00	7	1	713	73	131	28	0	0	5	2	0	0	9	0	23	4	2	0	1	0
8:30:00	9	2	796	83	149	18	0	0	6	1	1	1	11	2	28	5	2	0	1	0
8:45:00	10	1	879	83	168	19	0	0	11	5	1	0	12	1	31	3	2	0	1	0
9:00:00	10	0	954	75	184	16	1	1	12	1	1	0	13	1	35	4	2	0	1	0
9:15:00	11	1	1023	69	194	10	1	0	13	1	1	0	14	1	38	3	3	1	1	0
9:30:00	13	2	1073	50	205	11	2	1	14	1	2	1	14	0	44	6	3	0	1	0
9:45:00	17	4	1139	66	210	5	2	0	16	2	2	0	14	0	49	5	4	1	1	0
10:00:00	18	1	1204	65	215	5	2	0	18	2	2	0	14	0	56	7	4	0	1	0
10:15:00	18	0	1204	0	215	0	2	0	18	0	2	0	14	0	56	0	4	0	1	0
14:30:00	18	0	1204	0	215	0	2	0	18	0	2	0	14	0	56	0	4	0	1	0
14:45:00	22	4	1293	89	217	2	2	0	23	5	2	0	16	2	62	6	4	0	1	0
15:00:00	23	1	1390	97	221	4	2	0	23	0	2	0	17	1	68	6	4	0	2	1
15:15:00	28	5	1528	138	228	7	2	0	24	1	3	1	17	0	78	10	4	0	2	0
15:30:00	32	4	1619	91	232	4	2	0	26	2	3	0	18	1	83	5	4	0	2	0
15:45:00	39	7	1724	105	239	7	2	0	27	1	3	0	19	1	87	4	4	0	2	0
16:00:00	43	4	1812	88	245	6	2	0	28	1	3	0	20	1	91	4	4	0	2	0
16:15:00	45	2	1942	130	257	12	3	1	30	2	3	0	21	1	96	5	4	0	2	0
16:30:00	47	2	2051	109	265	8	4	1	31	1	3	0	22	1	101	5	4	0	2	0
16:45:00	49	2	2249	198	284	19	4	0	33	2	3	0	23	1	104	3	4	0	2	0
17:00:00	52	3	2359	110	296	12	4	0	36	3	3	0	23	0	110	6	4	0	2	0
17:15:00	54	2	2487	128	303	7	4	0	36	0	3	0	23	0	116	6	5	1	2	0
17:30:00	57	3	2594	107	316	13	4	0	36	0	3	0	23	0	118	2	5	0	2	0
17:45:00	58	1	2701	107	322	6	4	0	36	0	3	0	23	0	119	1	5	0	2	0
18:00:00	62	4	2795	94	326	4	4	0	37	1	3	0	23	0	121	2	5	0	2	0
18:15:00	64	2	2904	109	331	5	4	0	38	1	3	0	23	0	122	1	6	1	2	0
18:30:00	68	4	2988	84	333	2	4	0	38	0	3	0	23	0	124	2	6	0	2	0
18:45:00	68	0	2988	0	333	0	4	0	38	0	3	0	23	0	124	0	6	0	2	0
18:45:15	68	0	2988	0	333	0	4	0	38	0	3	0	23	0	124	0	6	0	2	0



Count Date: 10-Mar-22 Site #: 2203500003

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	20	20	0	0	0	0	1	1	0	0	0	0	2	2	1	1	0	0	0	0
6:30:00	30	10	1	1	2	2	2	1	0	0	0	0	5	3	2	1	0	0	0	0
6:45:00	55	25	2	1	4	2	3	1	0	0	0	0	11	6	2	0	0	0	0	0
7:00:00	70	15	2	0	7	3	4	1	0	0	0	0	17	6	2	0	0	0	0	0
7:15:00	87	17	3	1	8	1	6	2	0	0	2	2	23	6	5	3	0	0	0	0
7:30:00	95	8	3	0	8	0	7	1	0	0	2	0	29	6	5	0	0	0	0	0
7:45:00	118	23	4	1	9	1	8	1	0	0	2	0	36	7	6	1	0	0	0	0
8:00:00	125	7	9	5	10	1	9	1	0	0	3	1	40	4	7	1	0	0	0	0
8:15:00	132	7	9	0	13	3	11	2	0	0	3	0	44	4	9	2	0	0	0	0
8:30:00	140	8	10	1	15	2	14	3	0	0	3	0	54	10	9	0	2	2	0	0
8:45:00	147	7	11	1	18	3	15	1	0	0	4	1	64	10	9	0	2	0	0	0
9:00:00	152	5	12	1	19	1	16	1	0	0	4	0	69	5	9	0	2	0	0	0
9:15:00	163	11	12	0	21	2	16	0	0	0	6	2	78	9	10	1	2	0	0	0
9:30:00	173	10	14	2	23	2	18	2	0	0	6	0	85	7	10	0	2	0	0	0
9:45:00	178	5	14	0	24	1	18	0	0	0	7	1	88	3	11	1	3	1	0	0
10:00:00	187	9	15	1	25	1	19	1	0	0	7	0	101	13	11	0	4	1	0	0
10:15:00	187	0	15	0	25	0	19	0	0	0	7	0	101	0	11	0	4	0	0	0
14:30:00	187	0	15	0	25	0	19	0	0	0	7	0	101	0	11	0	4	0	0	0
14:45:00	273	86	17	2	51	26	19	0	0	0	7	0	113	12	11	0	4	0	1	1
15:00:00	298	25	18	1	55	4	19	0	1	1	7	0	118	5	12	1	6	2	1	0
15:15:00	363	65	18	0	62	7	20	1	1	0	7	0	126	8	12	0	6	0	1	0
15:30:00	415	52	20	2	64	2	20	0	1	0	7	0	137	11	12	0	7	1	1	0
15:45:00	527	112	21	1	72	8	21	1	1	0	8	1	141	4	13	1	8	1	1	0
16:00:00	562	35	22	1	78	6	23	2	2	1	8	0	148	7	13	0	9	1	1	0
16:15:00	644	82	24	2	83	5	23	0	3	1	8	0	159	11	14	1	9	0	1	0
16:30:00	678	34	24	0	90	7	25	2	3	0	9	1	166	7	14	0	9	0	1	0
16:45:00	731	53	24	0	98	8	25	0	3	0	9	0	176	10	14	0	10	1	1	0
17:00:00	763	32	25	1	106	8	26	1	3	0	9	0	180	4	16	2	10	0	1	0
17:15:00	817	54	27	2	113	7	27	1	3	0	9	0	186	6	17	1	10	0	1	0
17:30:00	840	23	27	0	115	2	27	0	3	0	9	0	189	3	18	1	10	0	1	0
17:45:00	849	9	27	0	118	3	27	0	3	0	9	0	192	3	19	1	10	0	1	0
18:00:00	865	16	27	0	121	3	27	0	3	0	9	0	195	3	19	0	10	0	1	0
18:15:00	881	16	28	1	127	6	27	0	3	0	9	0	208	13	19	0	10	0	1	0
18:30:00	892	11	28	0	133	6	28	1	3	0	9	0	215	7	20	1	10	0	1	0
18:45:00	892	0	28	0	133	0	28	0	3	0	9	0	215	0	20	0	10	0	1	0
18:45:15	892	0	28	0	133	0	28	0	3	0	9	0	215	0	20	0	10	0	1	0



Count Date: 10-Mar-22 Site #: 2203500003

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	9	9	23	23	39	39	0	0	0	0	0	0	1	1	1	1	2	2	0	0
6:30:00	17	8	40	17	84	45	0	0	0	0	0	0	3	2	3	2	9	7	0	0
6:45:00	40	23	86	46	128	44	0	0	2	2	1	1	3	0	3	0	14	5	0	0
7:00:00	73	33	159	73	185	57	0	0	3	1	1	0	4	1	5	2	18	4	0	0
7:15:00	101	28	209	50	226	41	0	0	6	3	1	0	5	1	10	5	24	6	0	0
7:30:00	137	36	268	59	247	21	1	1	7	1	3	2	7	2	13	3	31	7	0	0
7:45:00	178	41	345	77	269	22	1	0	8	1	4	1	10	3	15	2	42	11	0	0
8:00:00	217	39	431	86	301	32	2	1	9	1	7	3	12	2	22	7	59	17	0	0
8:15:00	255	38	485	54	327	26	3	1	11	2	7	0	15	3	26	4	69	10	0	0
8:30:00	294	39	557	72	364	37	4	1	13	2	10	3	18	3	33	7	74	5	0	0
8:45:00	334	40	608	51	389	25	4	0	14	1	14	4	18	0	37	4	78	4	0	0
9:00:00	363	29	682	74	409	20	4	0	18	4	14	0	22	4	43	6	87	9	0	0
9:15:00	398	35	749	67	429	20	6	2	20	2	15	1	23	1	48	5	96	9	0	0
9:30:00	416	18	818	69	439	10	6	0	21	1	15	0	25	2	54	6	102	6	0	0
9:45:00	432	16	887	69	451	12	7	1	26	5	15	0	26	1	63	9	111	9	0	0
10:00:00	449	17	953	66	463	12	7	0	29	3	16	1	28	2	66	3	118	7	0	0
10:15:00	449	0	953	0	463	0	7	0	29	0	16	0	28	0	66	0	118	0	0	0
14:30:00	449	0	953	0	463	0	7	0	29	0	16	0	28	0	66	0	118	0	0	0
14:45:00	455	6	1030	77	507	44	9	2	31	2	18	2	29	1	74	8	121	3	0	0
15:00:00	468	13	1138	108	542	35	11	2	32	1	19	1	31	2	79	5	132	11	0	0
15:15:00	478	10	1233	95	578	36	11	0	32	0	19	0	32	1	83	4	145	13	0	0
15:30:00	483	5	1317	84	618	40	12	1	32	0	19	0	37	5	84	1	158	13	0	0
15:45:00	500	17	1429	112	658	40	14	2	34	2	20	1	37	0	86	2	162	4	0	0
16:00:00	518	18	1547	118	676	18	16	2	37	3	22	2	37	0	91	5	172	10	0	0
16:15:00	535	17	1669	122	682	6	17	1	40	3	22	0	40	3	94	3	185	13	0	0
16:30:00	550	15	1784	115	691	9	17	0	41	1	22	0	44	4	99	5	192	7	0	0
16:45:00	565	15	1925	141	700	9	18	1	43	2	22	0	46	2	101	2	202	10	0	0
17:00:00	579	14	2064	139	712	12	18	0	44	1	22	0	47	1	104	3	204	2	0	0
17:15:00	592	13	2174	110	724	12	18	0	45	1	22	0	48	1	105	1	210	6	0	0
17:30:00	616	24	2345	171	729	5	19	1	45	0	22	0	49	1	109	4	212	2	0	0
17:45:00	624	8	2446	101	737	8	19	0	45	0	23	1	49	0	110	1	218	6	0	0
18:00:00	637	13	2554	108	750	13	19	0	46	1	23	0	51	2	111	1	224	6	0	0
18:15:00	640	3	2676	122	763	13	20	1	46	0	23	0	51	0	111	0	229	5	0	0
18:30:00	650	10	2757	81	769	6	20	0	46	0	23	0	51	0	114	3	232	3	0	0
18:45:00	650	0	2757	0	769	0	20	0	46	0	23	0	51	0	114	0	232	0	0	0
18:45:15	650	0	2757	0	769	0	20	0	46	0	23	0	51	0	114	0	232	0	0	0

Morning Peak Diagram		Specified Period From: 6:00:00 To: 10:00:00	One Hour Peak From: 6:15:00 To: 7:15:00
Municipality: Guelph Site #: 2203500004 Intersection: Southgate Dr & Corporate Ct TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Southgate Dr runs N/S	

North Leg Total: 325 North Entering: 219 North Peds: 1 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">31</td> <td style="border-left: 1px solid black; text-align: right;">31</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">1</td> <td style="border-left: 1px solid black; text-align: right;">1</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">3</td> <td style="text-align: right;">184</td> <td style="border-left: 1px solid black; text-align: right;">187</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">3</td> <td style="text-align: right;">216</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Heavys	0	31	31	Trucks	0	1	1	Cars	3	184	187	Totals	3	216			<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">25</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">6</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">75</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">106</td> </tr> </table>	Heavys	25	Trucks	6	Cars	75	Totals	106
Heavys	0	31	31																								
Trucks	0	1	1																								
Cars	3	184	187																								
Totals	3	216																									
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Cars	75																										
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Southgate Dr

<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">Cars</td> <td style="text-align: right;">6</td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">6</td> </tr> </table>	Heavys	0	Trucks	0	Cars	6	Totals	6	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">1</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">Cars</td> <td style="text-align: right;">6</td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">7</td> </tr> </table>	Heavys	1	Trucks	0	Cars	6	Totals	7		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">Cars</td> <td style="text-align: right;">0</td> <td style="text-align: right;">Totals</td> <td style="text-align: right;">0</td> </tr> </table>	Heavys	0	Trucks	0	Cars	0	Totals	0
Heavys	0	Trucks	0	Cars	6	Totals	6																				
Heavys	1	Trucks	0	Cars	6	Totals	7																				
Heavys	0	Trucks	0	Cars	0	Totals	0																				

Corporate Ct

Southgate Dr

Peds Cross: West Peds: 0 West Entering: 7 West Leg Total: 13	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">184</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">1</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">31</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">216</td> </tr> </table>	Cars	184	Trucks	1	Heavys	31	Totals	216		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">3</td> <td style="text-align: right;">69</td> <td style="border-left: 1px solid black; text-align: right;">72</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">6</td> <td style="border-left: 1px solid black; text-align: right;">6</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">24</td> <td style="border-left: 1px solid black; text-align: right;">24</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">3</td> <td style="text-align: right;">99</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Cars	3	69	72	Trucks	0	6	6	Heavys	0	24	24	Totals	3	99	
Cars	184																										
Trucks	1																										
Heavys	31																										
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Trucks	0	6	6																								
Heavys	0	24	24																								
Totals	3	99																									

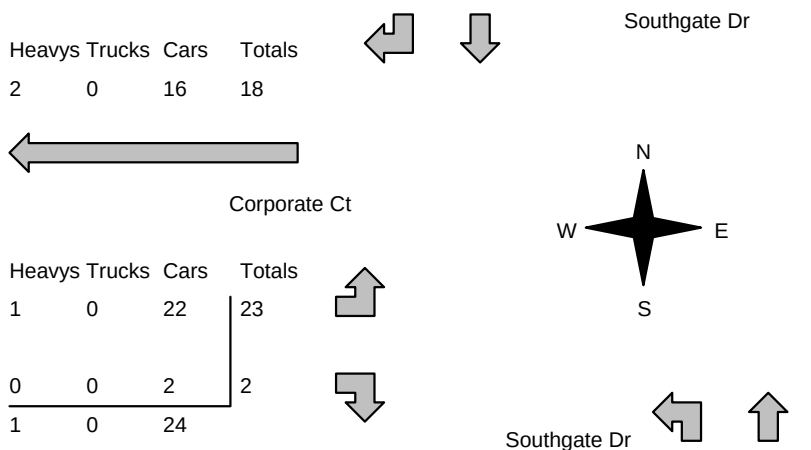
Southgate Dr

Peds Cross: South Peds: 0 South Entering: 102 South Leg Total: 318

Comments

Afternoon Peak Diagram		Specified Period From: 14:30:00 To: 18:30:00	One Hour Peak From: 14:45:00 To: 15:45:00
Municipality: Guelph Site #: 2203500004 Intersection: Southgate Dr & Corporate Ct TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Southgate Dr runs N/S	

North Leg Total: 494 North Entering: 196 North Peds: 4 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">2</td> <td style="text-align: right;">45</td> <td style="border-left: 1px solid black; text-align: right;">47</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">3</td> <td style="border-left: 1px solid black; text-align: right;">3</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">8</td> <td style="text-align: right;">138</td> <td style="border-left: 1px solid black; text-align: right;">146</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">10</td> <td style="text-align: right;">186</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Heavys	2	45	47	Trucks	0	3	3	Cars	8	138	146	Totals	10	186			<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">34</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">4</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">260</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">298</td> </tr> </table>	Heavys	34	Trucks	4	Cars	260	Totals	298
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Trucks	0	3	3																								
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Southgate Dr

Corporate Ct

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Southgate Dr

<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">Cars</td> <td style="text-align: right;">Totals</td> </tr> <tr> <td style="text-align: right;">2</td> <td style="text-align: right;">0</td> <td style="text-align: right;">16</td> <td style="text-align: right;">18</td> </tr> </table>	Heavys	Trucks	Cars	Totals	2	0	16	18	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">Cars</td> <td style="text-align: right;">Totals</td> </tr> <tr> <td style="text-align: right;">1</td> <td style="text-align: right;">0</td> <td style="text-align: right;">22</td> <td style="text-align: right;">23</td> </tr> <tr> <td style="text-align: right;">0</td> <td style="text-align: right;">0</td> <td style="text-align: right;">2</td> <td style="text-align: right;">2</td> </tr> <tr> <td style="text-align: right;">1</td> <td style="text-align: right;">0</td> <td style="text-align: right;">24</td> <td></td> </tr> </table>	Heavys	Trucks	Cars	Totals	1	0	22	23	0	0	2	2	1	0	24		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">140</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">3</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">45</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">188</td> </tr> </table>	Cars	140	Trucks	3	Heavys	45	Totals	188	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">8</td> <td style="text-align: right;">238</td> <td style="border-left: 1px solid black; text-align: right;">246</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">4</td> <td style="border-left: 1px solid black; text-align: right;">4</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">33</td> <td style="border-left: 1px solid black; text-align: right;">33</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">8</td> <td style="text-align: right;">275</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Cars	8	238	246	Trucks	0	4	4	Heavys	0	33	33	Totals	8	275	
Heavys	Trucks	Cars	Totals																																																
2	0	16	18																																																
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Peds Cross:
 West Peds: 0
 West Entering: 25
 West Leg Total: 43

Peds Cross:
 South Peds: 0
 South Entering: 283
 South Leg Total: 471

Comments

Total Count Diagram

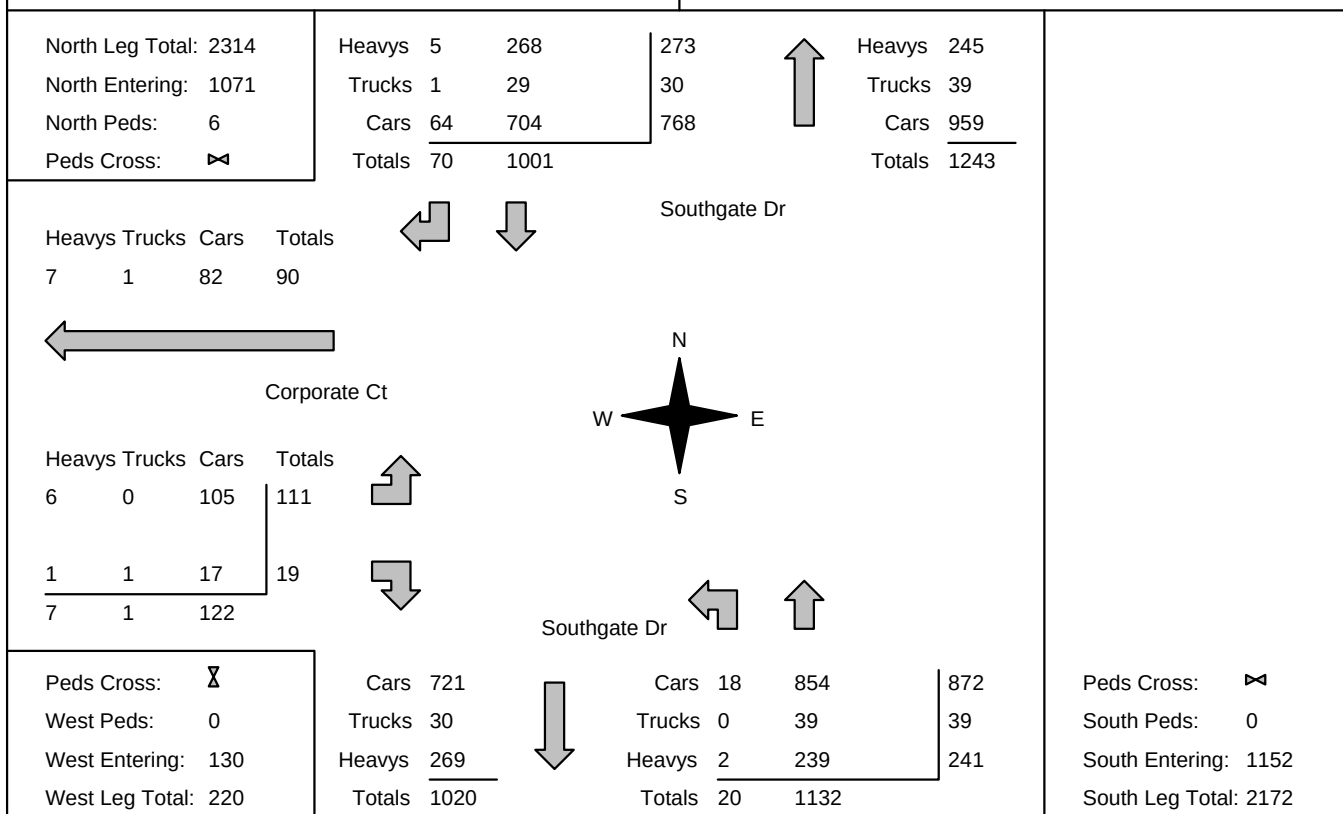
Municipality: Guelph
Site #: 2203500004
Intersection: Southgate Dr & Corporate Ct
TFR File #: 1
Count date: 10-Mar-22

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Southgate Dr runs N/S



Comments

Traffic Count Summary

Intersection: Southgate Dr & Corporate Ct					Count Date: 10-Mar-22		Municipality: Guelph					
North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	0	208	3	211	1	306	7:00:00	3	92	0	95	0
8:00:00	0	162	4	166	0	266	8:00:00	3	97	0	100	0
9:00:00	0	136	14	150	0	218	9:00:00	1	67	0	68	0
10:00:00	0	87	8	95	0	175	10:00:00	3	77	0	80	0
15:00:00	0	85	4	89	5	222	15:00:00	2	131	0	133	0
16:00:00	0	176	10	186	0	475	16:00:00	6	283	0	289	0
17:00:00	0	68	10	78	0	308	17:00:00	1	229	0	230	0
18:00:00	0	54	13	67	0	179	18:00:00	0	112	0	112	0



Count Date: 10-Mar-22 Site #: 2203500004

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	0	0	37	37	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0
6:30:00	0	0	83	46	0	0	0	0	0	0	0	0	0	0	14	11	0	0	0	0
6:45:00	0	0	126	43	1	1	0	0	1	1	0	0	0	0	20	6	0	0	0	0
7:00:00	0	0	181	55	3	2	0	0	1	0	0	0	0	0	26	6	0	0	1	1
7:15:00	0	0	221	40	3	0	0	0	1	0	0	0	0	0	34	8	0	0	1	0
7:30:00	0	0	239	18	3	0	0	0	2	1	0	0	0	0	42	8	0	0	1	0
7:45:00	0	0	261	22	5	2	0	0	3	1	0	0	0	0	53	11	0	0	1	0
8:00:00	0	0	292	31	6	1	0	0	7	4	1	1	0	0	71	18	0	0	1	0
8:15:00	0	0	314	22	8	2	0	0	7	0	1	0	0	0	82	11	0	0	1	0
8:30:00	0	0	349	35	12	4	0	0	10	3	1	0	0	0	88	6	0	0	1	0
8:45:00	0	0	373	24	15	3	0	0	14	4	1	0	0	0	92	4	0	0	1	0
9:00:00	0	0	388	15	20	5	0	0	15	1	1	0	0	0	103	11	0	0	1	0
9:15:00	0	0	401	13	23	3	0	0	16	1	1	0	0	0	112	9	1	1	1	0
9:30:00	0	0	411	10	25	2	0	0	17	1	1	0	0	0	118	6	1	0	1	0
9:45:00	0	0	426	15	26	1	0	0	17	0	1	0	0	0	128	10	1	0	1	0
10:00:00	0	0	439	13	27	1	0	0	18	1	1	0	0	0	136	8	1	0	1	0
10:15:00	0	0	439	0	27	0	0	0	18	0	1	0	0	0	136	0	1	0	1	0
14:30:00	0	0	439	0	27	0	0	0	18	0	1	0	0	0	136	0	1	0	1	0
14:45:00	0	0	473	34	29	2	0	0	20	2	1	0	0	0	141	5	1	0	2	1
15:00:00	0	0	504	31	30	1	0	0	22	2	1	0	0	0	152	11	2	1	6	4
15:15:00	0	0	537	33	33	3	0	0	22	0	1	0	0	0	166	14	2	0	6	0
15:30:00	0	0	575	38	35	2	0	0	23	1	1	0	0	0	180	14	2	0	6	0
15:45:00	0	0	611	36	37	2	0	0	23	0	1	0	0	0	186	6	3	1	6	0
16:00:00	0	0	630	19	39	2	0	0	26	3	1	0	0	0	198	12	3	0	6	0
16:15:00	0	0	637	7	40	1	0	0	27	1	1	0	0	0	213	15	3	0	6	0
16:30:00	0	0	644	7	42	2	0	0	28	1	1	0	0	0	221	8	3	0	6	0
16:45:00	0	0	653	9	45	3	0	0	28	0	1	0	0	0	234	13	3	0	6	0
17:00:00	0	0	658	5	49	4	0	0	28	0	1	0	0	0	236	2	3	0	6	0
17:15:00	0	0	668	10	53	4	0	0	28	0	1	0	0	0	244	8	3	0	6	0
17:30:00	0	0	672	4	58	5	0	0	28	0	1	0	0	0	247	3	3	0	6	0
17:45:00	0	0	678	6	59	1	0	0	29	1	1	0	0	0	253	6	3	0	6	0
18:00:00	0	0	687	9	61	2	0	0	29	0	1	0	0	0	260	7	4	1	6	0
18:15:00	0	0	699	12	63	2	0	0	29	0	1	0	0	0	264	4	5	1	6	0
18:30:00	0	0	704	5	64	1	0	0	29	0	1	0	0	0	268	4	5	0	6	0
18:45:00	0	0	704	0	64	0	0	0	29	0	1	0	0	0	268	0	5	0	6	0
18:45:15	0	0	704	0	64	0	0	0	29	0	1	0	0	0	268	0	5	0	6	0



Count Date: 10-Mar-22 Site #: 2203500004

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30:00	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45:00	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00:00	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	7	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
7:30:00	9	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
7:45:00	12	3	0	0	3	3	0	0	0	0	0	0	2	1	0	0	0	0	0	0
8:00:00	15	3	0	0	3	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0
8:15:00	18	3	0	0	4	1	0	0	0	0	1	0	3	1	0	0	0	0	0	0
8:30:00	21	3	0	0	4	0	0	0	0	0	1	0	4	1	0	0	0	0	0	0
8:45:00	26	5	0	0	4	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0
9:00:00	29	3	0	0	4	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0
9:15:00	29	0	0	0	4	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0
9:30:00	33	4	0	0	4	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0
9:45:00	35	2	0	0	5	1	0	0	0	0	1	0	4	0	0	0	0	0	0	0
10:00:00	36	1	0	0	6	1	0	0	0	0	1	0	4	0	0	0	0	0	0	0
10:15:00	36	0	0	0	6	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0
14:30:00	36	0	0	0	6	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0
14:45:00	41	5	0	0	10	4	0	0	0	0	1	0	4	0	0	0	1	1	0	0
15:00:00	43	2	0	0	10	0	0	0	0	0	1	0	5	1	0	0	1	0	0	0
15:15:00	48	5	0	0	11	1	0	0	0	0	1	0	5	0	0	0	1	0	0	0
15:30:00	54	6	0	0	12	1	0	0	0	0	1	0	5	0	0	0	1	0	0	0
15:45:00	63	9	0	0	12	0	0	0	0	0	1	0	5	0	0	0	1	0	0	0
16:00:00	65	2	0	0	12	0	0	0	0	0	1	0	5	0	0	0	1	0	0	0
16:15:00	72	7	0	0	12	0	0	0	0	0	1	0	5	0	0	0	1	0	0	0
16:30:00	75	3	0	0	13	1	0	0	0	0	1	0	5	0	0	0	1	0	0	0
16:45:00	81	6	0	0	13	0	0	0	0	0	1	0	6	1	0	0	1	0	0	0
17:00:00	84	3	0	0	14	1	0	0	0	0	1	0	6	0	0	0	1	0	0	0
17:15:00	90	6	0	0	14	0	0	0	0	0	1	0	6	0	0	0	1	0	0	0
17:30:00	94	4	0	0	14	0	0	0	0	0	1	0	6	0	0	0	1	0	0	0
17:45:00	95	1	0	0	14	0	0	0	0	0	1	0	6	0	0	0	1	0	0	0
18:00:00	99	4	0	0	16	2	0	0	0	0	1	0	6	0	0	0	1	0	0	0
18:15:00	103	4	0	0	16	0	0	0	0	0	1	0	6	0	0	0	1	0	0	0
18:30:00	105	2	0	0	17	1	0	0	0	0	1	0	6	0	0	0	1	0	0	0
18:45:00	105	0	0	0	17	0	0	0	0	0	1	0	6	0	0	0	1	0	0	0
18:45:15	105	0	0	0	17	0	0	0	0	0	1	0	6	0	0	0	1	0	0	0

Morning Peak Diagram		Specified Period From: 6:00:00 To: 10:00:00	One Hour Peak From: 6:15:00 To: 7:15:00
Municipality: Guelph Site #: 2203500005 Intersection: Southgate Dr & Admiral Pl TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Southgate Dr runs N/S	

North Leg Total: 294 North Entering: 186 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">1</td> <td style="text-align: right;">22</td> <td style="text-align: right;">7</td> <td style="border-left: 1px solid black; text-align: right;">30</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">1</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">1</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">11</td> <td style="text-align: right;">130</td> <td style="text-align: right;">14</td> <td style="border-left: 1px solid black; text-align: right;">155</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">12</td> <td style="text-align: right;">153</td> <td style="text-align: right;">21</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Heavys	1	22	7	30	Trucks	0	1	0	1	Cars	11	130	14	155	Totals	12	153	21		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">24</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">6</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">78</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">108</td> </tr> </table>	Heavys	24	Trucks	6	Cars	78	Totals	108	East Leg Total: 42 East Entering: 14 East Peds: 0 Peds Cross:
Heavys	1	22	7	30																											
Trucks	0	1	0	1																											
Cars	11	130	14	155																											
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Heavys	24																														
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Cars	78																														
Totals	108																														

Heavys	Trucks	Cars	Totals
2	0	18	20

Southgate Dr

Cars	Trucks	Heavys	Totals
4	2	6	12
0	0	0	0
0	0	2	2
4	2	8	

Admiral Pl

N
S
W
E

Rutherford Ct

Heavys	Trucks	Cars	Totals
3	0	6	9
0	0	0	0
0	0	2	2
3	0	8	

Southgate Dr

Cars	Trucks	Heavys	Totals
19	2	7	28

Peds Cross: West Peds: 2 West Entering: 11 West Leg Total: 31	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">132</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">1</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">24</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">157</td> </tr> </table>	Cars	132	Trucks	1	Heavys	24	Totals	157	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">7</td> <td style="text-align: right;">68</td> <td style="text-align: right;">5</td> <td style="border-left: 1px solid black; text-align: right;">80</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">4</td> <td style="text-align: right;">2</td> <td style="border-left: 1px solid black; text-align: right;">6</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">1</td> <td style="text-align: right;">15</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">16</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">8</td> <td style="text-align: right;">87</td> <td style="text-align: right;">7</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Cars	7	68	5	80	Trucks	0	4	2	6	Heavys	1	15	0	16	Totals	8	87	7		Peds Cross: South Peds: 3 South Entering: 102 South Leg Total: 259
Cars	132																														
Trucks	1																														
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Totals	157																														
Cars	7	68	5	80																											
Trucks	0	4	2	6																											
Heavys	1	15	0	16																											
Totals	8	87	7																												

Comments

Afternoon Peak Diagram		Specified Period From: 14:30:00 To: 18:30:00	One Hour Peak From: 15:00:00 To: 16:00:00
Municipality: Guelph Site #: 2203500005 Intersection: Southgate Dr & Admiral Pl TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Southgate Dr runs N/S	

North Leg Total: 429 North Entering: 166 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">5</td> <td style="padding: 2px;">33</td> <td style="padding: 2px;">9</td> <td style="border-right: 1px solid black; padding: 2px;">47</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">1</td> <td style="border-right: 1px solid black; padding: 2px;">4</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">5</td> <td style="padding: 2px;">106</td> <td style="padding: 2px;">4</td> <td style="border-right: 1px solid black; padding: 2px;">115</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">11</td> <td style="padding: 2px;">141</td> <td style="padding: 2px;">14</td> <td style="border-right: 1px solid black; padding: 2px;"></td> </tr> </table>	Heavys	5	33	9	47	Trucks	1	2	1	4	Cars	5	106	4	115	Totals	11	141	14		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">36</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">6</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">221</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">263</td> </tr> </table>	Heavys	36	Trucks	6	Cars	221	Totals	263	East Leg Total: 42 East Entering: 24 East Peds: 0 Peds Cross:
Heavys	5	33	9	47																											
Trucks	1	2	1	4																											
Cars	5	106	4	115																											
Totals	11	141	14																												
Heavys	36																														
Trucks	6																														
Cars	221																														
Totals	263																														

Heavys	Trucks	Cars	Totals
6	1	8	15

Southgate Dr

 Admiral Pl

Cars	Trucks	Heavys	Totals
12	0	6	18
0	0	0	0
5	0	1	6
17	0	7	

W

 E

 S

Heavys	Trucks	Cars	Totals
5	0	23	28
0	0	1	1
0	0	10	10
5	0	34	

Southgate Dr

Cars	Trucks	Heavys	Totals
6	2	10	18

Peds Cross: West Peds: 5 West Entering: 39 West Leg Total: 54	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">121</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">2</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">34</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">157</td> </tr> </table>	Cars	121	Trucks	2	Heavys	34	Totals	157	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">3</td> <td style="padding: 2px;">186</td> <td style="padding: 2px;">1</td> <td style="border-right: 1px solid black; padding: 2px;">190</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">6</td> <td style="padding: 2px;">1</td> <td style="border-right: 1px solid black; padding: 2px;">7</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">25</td> <td style="padding: 2px;">1</td> <td style="border-right: 1px solid black; padding: 2px;">27</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">4</td> <td style="padding: 2px;">217</td> <td style="padding: 2px;">3</td> <td style="border-right: 1px solid black; padding: 2px;"></td> </tr> </table>	Cars	3	186	1	190	Trucks	0	6	1	7	Heavys	1	25	1	27	Totals	4	217	3		Peds Cross: South Peds: 0 South Entering: 224 South Leg Total: 381
Cars	121																														
Trucks	2																														
Heavys	34																														
Totals	157																														
Cars	3	186	1	190																											
Trucks	0	6	1	7																											
Heavys	1	25	1	27																											
Totals	4	217	3																												

Comments

Total Count Diagram

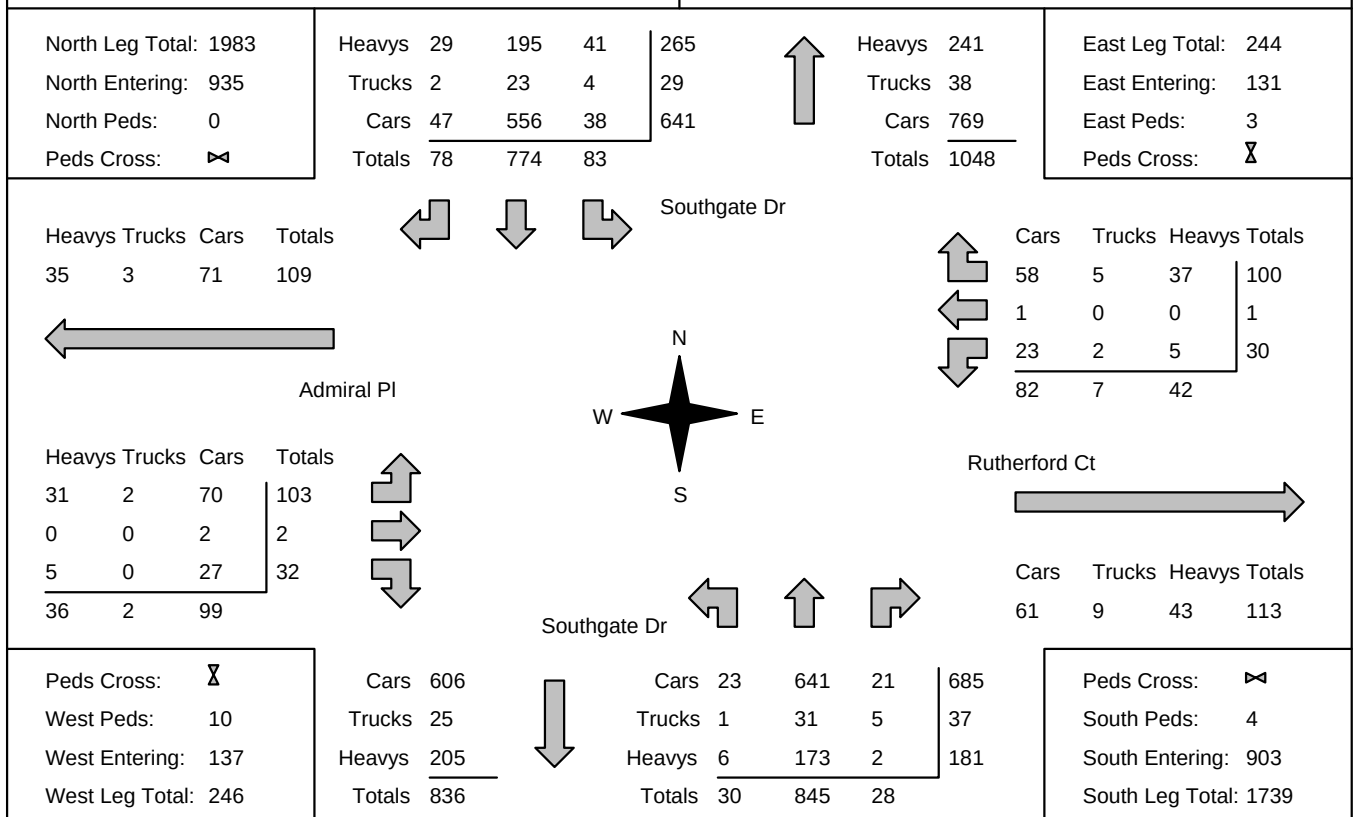
Municipality: Guelph
Site #: 2203500005
Intersection: Southgate Dr & Admiral Pl
TFR File #: 1
Count date: 10-Mar-22

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Southgate Dr runs N/S



Comments

Traffic Count Summary

Intersection: Southgate Dr & Admiral PI					Count Date: 10-Mar-22		Municipality: Guelph					
North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	23	149	13	185	0	289	7:00:00	9	87	8	104	2
8:00:00	8	131	10	149	0	222	8:00:00	2	65	6	73	1
9:00:00	11	101	24	136	0	201	9:00:00	3	60	2	65	0
10:00:00	12	67	4	83	0	151	10:00:00	4	60	4	68	0
15:00:00	3	61	5	69	0	134	15:00:00	2	60	3	65	0
16:00:00	14	141	11	166	0	390	16:00:00	4	217	3	224	0
17:00:00	4	59	5	68	0	254	17:00:00	3	181	2	186	1
18:00:00	7	41	5	53	0	143	18:00:00	3	87	0	90	0
Totals:	82	750	77	909	0	1784	S Totals:	30	817	28	875	4
East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	1	0	12	13	0	19	7:00:00	4	0	2	6	1
8:00:00	2	0	5	7	0	30	8:00:00	17	0	6	23	2
9:00:00	4	0	5	9	0	17	9:00:00	5	1	2	8	0
10:00:00	2	0	14	16	0	24	10:00:00	5	0	3	8	0
15:00:00	5	1	7	13	2	18	15:00:00	5	0	0	5	2
16:00:00	6	0	18	24	0	63	16:00:00	28	1	10	39	5
17:00:00	6	0	23	29	1	47	17:00:00	16	0	2	18	0
18:00:00	4	0	9	13	0	35	18:00:00	17	0	5	22	0
Totals:	30	1	93	124	3	253	W Totals:	97	2	30	129	10
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	7:00	8:00	9:00	10:00			15:00	16:00	17:00	18:00		
Crossing Values:	7	20	10	7			11	35	23	21		



Count Date: 10-Mar-22 Site #: 2203500005

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0
6:30:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0
6:45:00	0	0	0	0	2	1	0	0	0	0	1	1	1	1	0	0	4	2	0	0
7:00:00	0	0	0	0	4	2	0	0	0	0	1	0	1	0	0	0	7	3	0	0
7:15:00	0	0	0	0	5	1	0	0	0	0	2	1	2	1	0	0	7	0	0	0
7:30:00	0	0	0	0	5	0	0	0	0	0	2	0	2	0	0	0	8	1	0	0
7:45:00	0	0	0	0	5	0	0	0	0	0	2	0	2	0	0	0	9	1	0	0
8:00:00	0	0	0	0	5	0	1	1	0	0	2	0	2	0	0	0	10	1	0	0
8:15:00	0	0	0	0	6	1	1	0	0	0	3	1	2	0	0	0	10	0	0	0
8:30:00	1	1	0	0	6	0	1	0	0	0	3	0	2	0	0	0	11	1	0	0
8:45:00	2	1	0	0	6	0	2	1	0	0	3	0	2	0	0	0	13	2	0	0
9:00:00	3	1	0	0	6	0	2	0	0	0	3	0	2	0	0	0	13	0	0	0
9:15:00	4	1	0	0	10	4	2	0	0	0	4	1	3	1	0	0	15	2	0	0
9:30:00	4	0	0	0	10	0	2	0	0	0	4	0	3	0	0	0	15	0	0	0
9:45:00	4	0	0	0	12	2	2	0	0	0	4	0	3	0	0	0	15	0	0	0
10:00:00	4	0	0	0	15	3	2	0	0	0	4	0	3	0	0	0	17	2	0	0
10:15:00	4	0	0	0	15	0	2	0	0	0	4	0	3	0	0	0	17	0	0	0
14:30:00	4	0	0	0	15	0	2	0	0	0	4	0	3	0	0	0	17	0	0	0
14:45:00	9	5	1	1	18	3	2	0	0	0	4	0	3	0	0	0	17	0	2	2
15:00:00	9	0	1	0	22	4	2	0	0	0	4	0	3	0	0	0	17	0	2	0
15:15:00	11	2	1	0	26	4	2	0	0	0	4	0	3	0	0	0	17	0	2	0
15:30:00	13	2	1	0	26	0	2	0	0	0	4	0	3	0	0	0	20	3	2	0
15:45:00	14	1	1	0	33	7	2	0	0	0	4	0	4	1	0	0	21	1	2	0
16:00:00	14	0	1	0	34	1	2	0	0	0	4	0	4	0	0	0	23	2	2	0
16:15:00	16	2	1	0	36	2	2	0	0	0	4	0	5	1	0	0	25	2	3	1
16:30:00	17	1	1	0	37	1	2	0	0	0	5	1	5	0	0	0	26	1	3	0
16:45:00	19	2	1	0	46	9	2	0	0	0	5	0	5	0	0	0	27	1	3	0
17:00:00	19	0	1	0	50	4	2	0	0	0	5	0	5	0	0	0	29	2	3	0
17:15:00	19	0	1	0	52	2	2	0	0	0	5	0	5	0	0	0	29	0	3	0
17:30:00	21	2	1	0	55	3	2	0	0	0	5	0	5	0	0	0	31	2	3	0
17:45:00	23	2	1	0	55	0	2	0	0	0	5	0	5	0	0	0	31	0	3	0
18:00:00	23	0	1	0	56	1	2	0	0	0	5	0	5	0	0	0	32	1	3	0
18:15:00	23	0	1	0	58	2	2	0	0	0	5	0	5	0	0	0	34	2	3	0
18:30:00	23	0	1	0	58	0	2	0	0	0	5	0	5	0	0	0	37	3	3	0
18:45:00	23	0	1	0	58	0	2	0	0	0	5	0	5	0	0	0	37	0	3	0
18:45:15	23	0	1	0	58	0	2	0	0	0	5	0	5	0	0	0	37	0	3	0

Morning Peak Diagram		Specified Period From: 6:00:00 To: 10:00:00	One Hour Peak From: 6:00:00 To: 7:00:00
Municipality: Guelph Site #: 2203500006 Intersection: Southgate Dr & Clair Rd W TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Southgate Dr runs N/S	

North Leg Total: 252 North Entering: 135 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">12</td> <td style="text-align: right;">6</td> <td style="border-left: 1px solid black; text-align: right;">18</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">1</td> <td style="text-align: right;">0</td> <td style="text-align: right;">2</td> <td style="border-left: 1px solid black; text-align: right;">3</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">4</td> <td style="text-align: right;">101</td> <td style="text-align: right;">9</td> <td style="border-left: 1px solid black; text-align: right;">114</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">5</td> <td style="text-align: right;">113</td> <td style="text-align: right;">17</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Heavys	0	12	6	18	Trucks	1	0	2	3	Cars	4	101	9	114	Totals	5	113	17		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">10</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">6</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">101</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">117</td> </tr> </table>	Heavys	10	Trucks	6	Cars	101	Totals	117	East Leg Total: 190 East Entering: 119 East Peds: 0 Peds Cross:
Heavys	0	12	6	18																											
Trucks	1	0	2	3																											
Cars	4	101	9	114																											
Totals	5	113	17																												
Heavys	10																														
Trucks	6																														
Cars	101																														
Totals	117																														

Heavys	Trucks	Cars	Totals
0	2	29	31

Clair Rd W

Southgate Dr

Cars	Trucks	Heavys	Totals
38	0	2	40
16	0	0	16
62	1	0	63
116	1	2	

Clair Rd W

Heavys	Trucks	Cars	Totals
0	2	16	18
0	0	10	10
0	2	33	35
0	4	59	

N
S
E
W

Southgate Dr

Peds Cross: West Peds: 0 West Entering: 63 West Leg Total: 94	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">196</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">3</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">12</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">211</td> </tr> </table>	Cars	196	Trucks	3	Heavys	12	Totals	211	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">9</td> <td style="text-align: right;">47</td> <td style="text-align: right;">43</td> <td style="border-left: 1px solid black; text-align: right;">99</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">1</td> <td style="text-align: right;">4</td> <td style="text-align: right;">1</td> <td style="border-left: 1px solid black; text-align: right;">6</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">8</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">8</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">10</td> <td style="text-align: right;">59</td> <td style="text-align: right;">44</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Cars	9	47	43	99	Trucks	1	4	1	6	Heavys	0	8	0	8	Totals	10	59	44		Peds Cross: South Peds: 0 South Entering: 113 South Leg Total: 324
Cars	196																														
Trucks	3																														
Heavys	12																														
Totals	211																														
Cars	9	47	43	99																											
Trucks	1	4	1	6																											
Heavys	0	8	0	8																											
Totals	10	59	44																												

Comments

Afternoon Peak Diagram		Specified Period From: 14:30:00 To: 18:30:00	One Hour Peak From: 15:15:00 To: 16:15:00
Municipality: Guelph Site #: 2203500006 Intersection: Southgate Dr & Clair Rd W TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Southgate Dr runs N/S	

North Leg Total: 360 North Entering: 141 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">27</td> <td style="padding: 2px;">9</td> <td style="border-right: 1px solid black; padding: 2px;">38</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">3</td> <td style="padding: 2px;">2</td> <td style="border-right: 1px solid black; padding: 2px;">5</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">11</td> <td style="padding: 2px;">69</td> <td style="padding: 2px;">18</td> <td style="border-right: 1px solid black; padding: 2px;">98</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">13</td> <td style="padding: 2px;">99</td> <td style="padding: 2px;">29</td> <td style="border-right: 1px solid black; padding: 2px;"></td> </tr> </table>	Heavys	2	27	9	38	Trucks	0	3	2	5	Cars	11	69	18	98	Totals	13	99	29		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">24</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">6</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">189</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">219</td> </tr> </table>	Heavys	24	Trucks	6	Cars	189	Totals	219	East Leg Total: 224 East Entering: 76 East Peds: 0 Peds Cross:
Heavys	2	27	9	38																											
Trucks	0	3	2	5																											
Cars	11	69	18	98																											
Totals	13	99	29																												
Heavys	24																														
Trucks	6																														
Cars	189																														
Totals	219																														

Heavys	Trucks	Cars	Totals
2	2	53	57

Southgate Dr

Cars	Trucks	Heavys	Totals
20	1	7	28
9	0	0	9
32	3	4	39
61	4	11	

Clair Rd W

Southgate Dr

Clair Rd W

Heavys	Trucks	Cars	Totals
1	0	22	23
1	0	24	25
0	1	33	34
2	1	79	

Southgate Dr

Cars	Trucks	Heavys	Totals
130	5	13	148

Peds Cross: West Peds: 1 West Entering: 82 West Leg Total: 139	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">134</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">7</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">31</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">172</td> </tr> </table>	Cars	134	Trucks	7	Heavys	31	Totals	172	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">33</td> <td style="padding: 2px;">147</td> <td style="padding: 2px;">88</td> <td style="border-right: 1px solid black; padding: 2px;">268</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">5</td> <td style="padding: 2px;">3</td> <td style="border-right: 1px solid black; padding: 2px;">10</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">16</td> <td style="padding: 2px;">3</td> <td style="border-right: 1px solid black; padding: 2px;">19</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">35</td> <td style="padding: 2px;">168</td> <td style="padding: 2px;">94</td> <td style="border-right: 1px solid black; padding: 2px;"></td> </tr> </table>	Cars	33	147	88	268	Trucks	2	5	3	10	Heavys	0	16	3	19	Totals	35	168	94		Peds Cross: South Peds: 0 South Entering: 297 South Leg Total: 469
Cars	134																														
Trucks	7																														
Heavys	31																														
Totals	172																														
Cars	33	147	88	268																											
Trucks	2	5	3	10																											
Heavys	0	16	3	19																											
Totals	35	168	94																												

Comments

Total Count Diagram

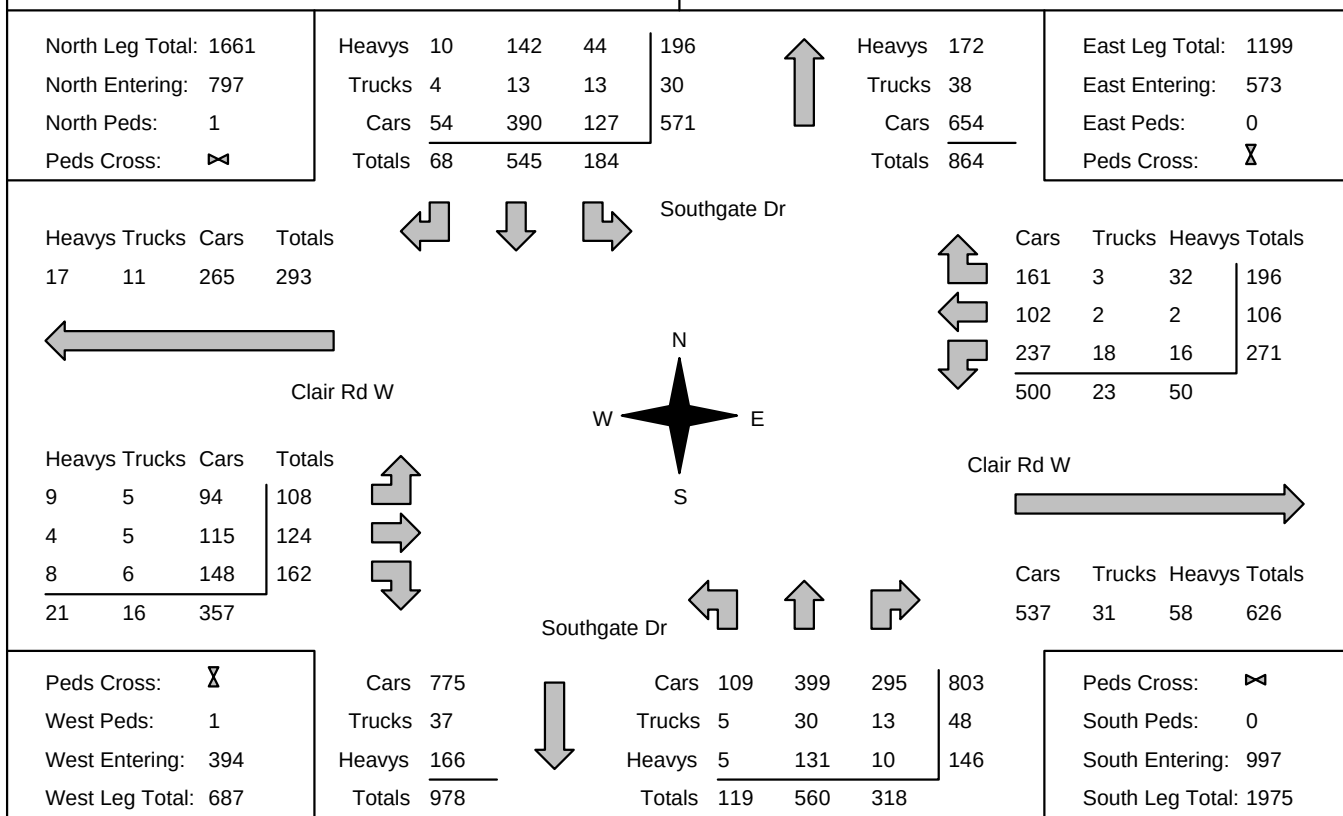
Municipality: Guelph
Site #: 2203500006
Intersection: Southgate Dr & Clair Rd W
TFR File #: 1
Count date: 10-Mar-22

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Southgate Dr runs N/S



Comments

Traffic Count Summary

Intersection: Southgate Dr & Clair Rd W

Count Date: 10-Mar-22

Municipality: Guelph

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	17	113	5	135	0	248	7:00:00	10	59	44	113	0
8:00:00	29	85	7	121	0	185	8:00:00	3	47	14	64	0
9:00:00	21	60	9	90	0	144	9:00:00	7	35	12	54	0
10:00:00	10	52	9	71	0	121	10:00:00	6	36	8	50	0
15:00:00	25	39	2	66	0	123	15:00:00	7	35	15	57	0
16:00:00	37	113	12	162	1	415	16:00:00	27	152	74	253	0
17:00:00	20	40	9	69	0	300	17:00:00	33	116	82	231	0
18:00:00	22	24	10	56	0	182	18:00:00	13	59	54	126	0



Count Date: 10-Mar-22 Site #: 2203500006

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	0	0	29	29	1	1	0	0	0	0	1	1	1	1	2	2	0	0	0	0
6:30:00	0	0	59	30	2	1	1	1	0	0	1	0	3	2	6	4	0	0	0	0
6:45:00	3	3	75	16	3	1	2	1	0	0	1	0	3	0	11	5	0	0	0	0
7:00:00	9	6	101	26	4	1	2	0	0	0	1	0	6	3	12	1	0	0	0	0
7:15:00	14	5	123	22	6	2	3	1	0	0	1	0	7	1	18	6	0	0	0	0
7:30:00	15	1	132	9	8	2	4	1	0	0	1	0	9	2	19	1	0	0	0	0
7:45:00	21	6	147	15	10	2	4	0	1	1	1	0	11	2	24	5	0	0	0	0
8:00:00	25	4	162	15	10	0	6	2	2	1	2	1	15	4	34	10	0	0	0	0
8:15:00	33	8	166	4	12	2	6	0	2	0	2	0	15	0	42	8	0	0	0	0
8:30:00	39	6	179	13	17	5	6	0	3	1	2	0	16	1	43	1	0	0	0	0
8:45:00	40	1	193	14	19	2	7	1	7	4	2	0	16	0	46	3	0	0	0	0
9:00:00	42	2	198	5	19	0	7	0	8	1	2	0	18	2	52	6	0	0	0	0
9:15:00	42	0	207	9	20	1	8	1	8	0	2	0	18	0	57	5	1	1	0	0
9:30:00	43	1	211	4	20	0	8	0	8	0	3	1	21	3	59	2	2	1	0	0
9:45:00	45	2	221	10	21	1	8	0	8	0	3	0	23	2	63	4	4	2	0	0
10:00:00	46	1	232	11	23	2	8	0	8	0	3	0	23	0	70	7	4	0	0	0
10:15:00	46	0	232	0	23	0	8	0	8	0	3	0	23	0	70	0	4	0	0	0
14:30:00	46	0	232	0	23	0	8	0	8	0	3	0	23	0	70	0	4	0	0	0
14:45:00	63	17	245	13	25	2	9	1	9	1	3	0	25	2	75	5	4	0	0	0
15:00:00	66	3	259	14	25	0	10	1	9	0	3	0	26	1	81	6	4	0	0	0
15:15:00	76	10	282	23	28	3	10	0	9	0	3	0	28	2	89	8	4	0	1	1
15:30:00	78	2	302	20	33	5	10	0	10	1	3	0	32	4	96	7	4	0	1	0
15:45:00	88	10	333	31	34	1	11	1	10	0	3	0	33	1	102	6	4	0	1	0
16:00:00	92	4	347	14	35	1	12	1	11	1	3	0	35	2	104	2	6	2	1	0
16:15:00	94	2	351	4	39	4	12	0	12	1	3	0	37	2	116	12	6	0	1	0
16:30:00	98	4	354	3	40	1	12	0	13	1	3	0	37	0	121	5	6	0	1	0
16:45:00	105	7	358	4	41	1	12	0	13	0	3	0	40	3	127	6	7	1	1	0
17:00:00	107	2	361	3	42	1	12	0	13	0	4	1	40	0	128	1	7	0	1	0
17:15:00	110	3	362	1	48	6	13	1	13	0	4	0	40	0	134	6	7	0	1	0
17:30:00	115	5	365	3	49	1	13	0	13	0	4	0	41	1	134	0	8	1	1	0
17:45:00	121	6	367	2	50	1	13	0	13	0	4	0	42	1	135	1	8	0	1	0
18:00:00	125	4	375	8	51	1	13	0	13	0	4	0	43	1	138	3	8	0	1	0
18:15:00	126	1	386	11	53	2	13	0	13	0	4	0	43	0	140	2	9	1	1	0
18:30:00	127	1	390	4	54	1	13	0	13	0	4	0	44	1	142	2	10	1	1	0
18:45:00	127	0	390	0	54	0	13	0	13	0	4	0	44	0	142	0	10	0	1	0
18:45:15	127	0	390	0	54	0	13	0	13	0	4	0	44	0	142	0	10	0	1	0



Count Date: 10-Mar-22 Site #: 2203500006

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	19	19	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30:00	34	15	5	2	14	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45:00	41	7	8	3	25	11	1	1	0	0	0	0	0	0	0	0	1	1	0	0
7:00:00	62	21	16	8	38	13	1	0	0	0	0	0	0	0	0	0	2	1	0	0
7:15:00	69	7	20	4	44	6	1	0	0	0	0	0	0	0	0	0	3	1	0	0
7:30:00	75	6	22	2	48	4	2	1	0	0	0	0	0	0	0	0	3	0	0	0
7:45:00	84	9	25	3	50	2	3	1	0	0	0	0	0	0	0	0	4	1	0	0
8:00:00	95	11	33	8	55	5	4	1	0	0	0	0	0	0	0	0	6	2	0	0
8:15:00	100	5	37	4	60	5	4	0	1	1	2	2	0	0	0	0	8	2	0	0
8:30:00	107	7	40	3	63	3	4	0	1	0	2	0	1	1	0	0	8	0	0	0
8:45:00	113	6	48	8	69	6	4	0	1	0	2	0	1	0	0	0	9	1	0	0
9:00:00	121	8	48	0	75	6	5	1	1	0	2	0	1	0	0	0	9	0	0	0
9:15:00	125	4	52	4	79	4	5	0	2	1	2	0	2	1	0	0	10	1	0	0
9:30:00	131	6	52	0	85	6	6	1	2	0	2	0	2	0	0	0	10	0	0	0
9:45:00	134	3	53	1	87	2	7	1	2	0	2	0	4	2	0	0	12	2	0	0
10:00:00	138	4	56	3	88	1	7	0	2	0	2	0	4	0	0	0	15	3	0	0
10:15:00	138	0	56	0	88	0	7	0	2	0	2	0	4	0	0	0	15	0	0	0
14:30:00	138	0	56	0	88	0	7	0	2	0	2	0	4	0	0	0	15	0	0	0
14:45:00	146	8	59	3	97	9	9	2	2	0	2	0	4	0	0	0	16	1	0	0
15:00:00	154	8	62	3	111	14	9	0	2	0	2	0	7	3	2	2	17	1	0	0
15:15:00	162	8	65	3	120	9	11	2	2	0	2	0	8	1	2	0	18	1	0	0
15:30:00	174	12	66	1	128	8	11	0	2	0	2	0	11	3	2	0	20	2	0	0
15:45:00	180	6	70	4	137	9	13	2	2	0	2	0	11	0	2	0	22	2	0	0
16:00:00	190	10	72	2	138	1	13	0	2	0	3	1	12	1	2	0	24	2	0	0
16:15:00	194	4	74	2	140	2	14	1	2	0	3	0	12	0	2	0	25	1	0	0
16:30:00	199	5	75	1	144	4	14	0	2	0	3	0	13	1	2	0	25	0	0	0
16:45:00	202	3	79	4	146	2	16	2	2	0	3	0	13	0	2	0	28	3	0	0
17:00:00	205	3	83	4	151	5	16	0	2	0	3	0	13	0	2	0	29	1	0	0
17:15:00	208	3	93	10	155	4	16	0	2	0	3	0	14	1	2	0	30	1	0	0
17:30:00	210	2	93	0	157	2	17	1	2	0	3	0	15	1	2	0	30	0	0	0
17:45:00	214	4	95	2	159	2	17	0	2	0	3	0	16	1	2	0	30	0	0	0
18:00:00	222	8	97	2	160	1	17	0	2	0	3	0	16	0	2	0	30	0	0	0
18:15:00	231	9	99	2	161	1	17	0	2	0	3	0	16	0	2	0	32	2	0	0
18:30:00	237	6	102	3	161	0	18	1	2	0	3	0	16	0	2	0	32	0	0	0
18:45:00	237	0	102	0	161	0	18	0	2	0	3	0	16	0	2	0	32	0	0	0
18:45:15	237	0	102	0	161	0	18	0	2	0	3	0	16	0	2	0	32	0	0	0



Count Date: 10-Mar-22 Site #: 2203500006																				
Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	4	4	7	7	15	15	0	0	1	1	0	0	0	0	1	1	0	0	0	0
6:30:00	4	0	14	7	23	8	0	0	3	2	1	1	0	0	4	3	0	0	0	0
6:45:00	8	4	39	25	35	12	0	0	3	0	1	0	0	0	6	2	0	0	0	0
7:00:00	9	1	47	8	43	8	1	1	4	1	1	0	0	0	8	2	0	0	0	0
7:15:00	9	0	53	6	47	4	1	0	6	2	2	1	0	0	13	5	0	0	0	0
7:30:00	9	0	57	4	50	3	1	0	7	1	2	0	0	0	17	4	0	0	0	0
7:45:00	10	1	65	8	53	3	1	0	8	1	2	0	1	1	22	5	0	0	0	0
8:00:00	10	0	71	6	56	3	1	0	10	2	2	0	2	1	25	3	0	0	0	0
8:15:00	14	4	74	3	56	0	1	0	10	0	2	0	2	0	27	2	0	0	0	0
8:30:00	14	0	76	2	57	1	1	0	13	3	4	2	2	0	35	8	0	0	0	0
8:45:00	17	3	80	4	59	2	1	0	14	1	4	0	2	0	41	6	0	0	0	0
9:00:00	17	0	81	1	63	4	1	0	15	1	6	2	2	0	45	4	1	1	0	0
9:15:00	17	0	86	5	65	2	1	0	16	1	6	0	2	0	51	6	1	0	0	0
9:30:00	17	0	89	3	66	1	1	0	18	2	6	0	2	0	57	6	1	0	0	0
9:45:00	18	1	91	2	66	0	1	0	18	0	6	0	2	0	60	3	1	0	0	0
10:00:00	22	4	93	2	70	4	2	1	18	0	7	1	2	0	66	6	1	0	0	0
10:15:00	22	0	93	0	70	0	2	0	18	0	7	0	2	0	66	0	1	0	0	0
14:30:00	22	0	93	0	70	0	2	0	18	0	7	0	2	0	66	0	1	0	0	0
14:45:00	25	3	103	10	81	11	2	0	19	1	7	0	2	0	74	8	1	0	0	0
15:00:00	29	4	113	10	84	3	2	0	20	1	7	0	2	0	79	5	2	1	0	0
15:15:00	37	8	147	34	105	21	2	0	20	0	7	0	3	1	85	6	2	0	0	0
15:30:00	44	7	180	33	122	17	2	0	21	1	9	2	3	0	91	6	2	0	0	0
15:45:00	48	4	225	45	139	17	2	0	24	3	9	0	3	0	93	2	3	1	0	0
16:00:00	53	5	242	17	152	13	4	2	25	1	10	1	3	0	97	4	5	2	0	0
16:15:00	70	17	294	52	193	41	4	0	25	0	10	0	3	0	101	4	5	0	0	0
16:30:00	74	4	308	14	206	13	4	0	27	2	12	2	3	0	105	4	6	1	0	0
16:45:00	81	7	323	15	219	13	4	0	27	0	12	0	3	0	112	7	6	0	0	0
17:00:00	86	5	337	14	229	10	4	0	28	1	13	1	3	0	115	3	7	1	0	0
17:15:00	90	4	364	27	254	25	4	0	29	1	13	0	3	0	118	3	7	0	0	0
17:30:00	92	2	370	6	266	12	5	1	29	0	13	0	3	0	118	0	7	0	0	0
17:45:00	94	2	378	8	275	9	5	0	29	0	13	0	4	1	120	2	7	0	0	0
18:00:00	97	3	387	9	281	6	5	0	29	0	13	0	4	0	123	3	9	2	0	0
18:15:00	100	3	391	4	287	6	5	0	29	0	13	0	4	0	130	7	9	0	0	0
18:30:00	109	9	399	8	295	8	5	0	30	1	13	0	5	1	131	1	10	1	0	0
18:45:00	109	0	399	0	295	0	5	0	30	0	13	0	5	0	131	0	10	0	0	0
18:45:15	109	0	399	0	295	0	5	0	30	0	13	0	5	0	131	0	10	0	0	0



Count Date: 10-Mar-22 Site #: 2203500006

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	10	10	3	3	7	7	1	1	0	0	0	0	0	0	0	0	0	0	0	0
6:30:00	14	4	6	3	19	12	2	1	0	0	0	0	0	0	0	0	0	0	0	0
6:45:00	14	0	6	0	23	4	2	0	0	0	1	1	0	0	0	0	0	0	0	0
7:00:00	16	2	10	4	33	10	2	0	0	0	2	1	0	0	0	0	0	0	0	0
7:15:00	19	3	11	1	40	7	2	0	0	0	2	0	0	0	1	1	0	0	0	0
7:30:00	20	1	11	0	46	6	2	0	0	0	2	0	1	1	1	0	0	0	0	0
7:45:00	23	3	12	1	48	2	2	0	0	0	2	0	1	0	1	0	0	0	0	0
8:00:00	25	2	15	3	59	11	2	0	0	0	2	0	1	0	1	0	0	0	0	0
8:15:00	25	0	18	3	60	1	2	0	1	1	3	1	1	0	1	0	0	0	0	0
8:30:00	27	2	23	5	67	7	2	0	2	1	3	0	2	1	1	0	0	0	0	0
8:45:00	31	4	30	7	67	0	2	0	2	0	3	0	2	0	1	0	0	0	0	0
9:00:00	32	1	35	5	69	2	2	0	2	0	3	0	2	0	1	0	0	0	0	0
9:15:00	37	5	37	2	70	1	2	0	3	1	3	0	2	0	2	1	1	1	0	0
9:30:00	39	2	37	0	70	0	2	0	4	1	3	0	3	1	2	0	1	0	0	0
9:45:00	39	0	38	1	72	2	2	0	4	0	3	0	3	0	2	0	1	0	0	0
10:00:00	42	3	40	2	76	4	3	1	5	1	3	0	5	2	2	0	2	1	0	0
10:15:00	42	0	40	0	76	0	3	0	5	0	3	0	5	0	2	0	2	0	0	0
14:30:00	42	0	40	0	76	0	3	0	5	0	3	0	5	0	2	0	2	0	0	0
14:45:00	45	3	41	1	81	5	3	0	5	0	4	1	6	1	3	1	2	0	0	0
15:00:00	48	3	47	6	85	4	3	0	5	0	4	0	6	0	3	0	2	0	0	0
15:15:00	52	4	50	3	93	8	3	0	5	0	5	1	6	0	3	0	2	0	0	0
15:30:00	56	4	55	5	102	9	3	0	5	0	6	1	7	1	3	0	2	0	1	1
15:45:00	61	5	62	7	114	12	3	0	5	0	6	0	7	0	3	0	2	0	1	0
16:00:00	65	4	69	7	123	9	3	0	5	0	6	0	7	0	4	1	2	0	1	0
16:15:00	74	9	74	5	126	3	3	0	5	0	6	0	7	0	4	0	2	0	1	0
16:30:00	80	6	76	2	126	0	3	0	5	0	6	0	7	0	4	0	3	1	1	0
16:45:00	82	2	84	8	126	0	3	0	5	0	6	0	8	1	4	0	4	1	1	0
17:00:00	84	2	90	6	129	3	5	2	5	0	6	0	8	0	4	0	5	1	1	0
17:15:00	88	4	96	6	131	2	5	0	5	0	6	0	8	0	4	0	5	0	1	0
17:30:00	90	2	101	5	131	0	5	0	5	0	6	0	8	0	4	0	6	1	1	0
17:45:00	90	0	108	7	133	2	5	0	5	0	6	0	9	1	4	0	7	1	1	0
18:00:00	92	2	111	3	136	3	5	0	5	0	6	0	9	0	4	0	8	1	1	0
18:15:00	92	0	115	4	145	9	5	0	5	0	6	0	9	0	4	0	8	0	1	0
18:30:00	94	2	115	0	148	3	5	0	5	0	6	0	9	0	4	0	8	0	1	0
18:45:00	94	0	115	0	148	0	5	0	5	0	6	0	9	0	4	0	8	0	1	0
18:45:15	94	0	115	0	148	0	5	0	5	0	6	0	9	0	4	0	8	0	1	0

Morning Peak Diagram		Specified Period From: 6:00:00 To: 10:00:00	One Hour Peak From: 7:15:00 To: 8:15:00
Municipality: Guelph Site #: 2203500007 Intersection: Hwy 6 & Concession Rd 4 TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Hwy 6 runs N/S	

North Leg Total: 1850 North Entering: 884 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td><td>78</td><td>1</td><td>79</td></tr> <tr><td>Trucks</td><td>0</td><td>17</td><td>0</td><td>17</td></tr> <tr><td>Cars</td><td>5</td><td>748</td><td>35</td><td>788</td></tr> <tr><td>Totals</td><td>5</td><td>843</td><td>36</td><td></td></tr> </table>	Heavys	0	78	1	79	Trucks	0	17	0	17	Cars	5	748	35	788	Totals	5	843	36		<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>140</td></tr> <tr><td>Trucks</td><td>27</td></tr> <tr><td>Cars</td><td>799</td></tr> <tr><td>Totals</td><td>966</td></tr> </table>	Heavys	140	Trucks	27	Cars	799	Totals	966	East Leg Total: 212 East Entering: 90 East Peds: 0 Peds Cross:
Heavys	0	78	1	79																											
Trucks	0	17	0	17																											
Cars	5	748	35	788																											
Totals	5	843	36																												
Heavys	140																														
Trucks	27																														
Cars	799																														
Totals	966																														

Heavys	Trucks	Cars	Totals
1	0	13	14

Hwy 6

Cars	Trucks	Heavys	Totals
21	0	0	21
7	0	0	7
61	0	1	62
89	0	1	

Concession Rd 4

Heavys	Trucks	Cars	Totals
0	0	3	3
0	0	10	10
2	0	8	10
2	0	21	

Hwy 6

Cars	Trucks	Heavys	Totals
118	2	2	122

Maltby Rd W

Peds Cross: West Peds: 0 West Entering: 23 West Leg Total: 37	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>817</td></tr> <tr><td>Trucks</td><td>17</td></tr> <tr><td>Heavys</td><td>81</td></tr> <tr><td>Totals</td><td>915</td></tr> </table>	Cars	817	Trucks	17	Heavys	81	Totals	915	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>1</td><td>775</td><td>73</td><td>849</td></tr> <tr><td>Trucks</td><td>0</td><td>27</td><td>2</td><td>29</td></tr> <tr><td>Heavys</td><td>1</td><td>140</td><td>1</td><td>142</td></tr> <tr><td>Totals</td><td>2</td><td>942</td><td>76</td><td></td></tr> </table>	Cars	1	775	73	849	Trucks	0	27	2	29	Heavys	1	140	1	142	Totals	2	942	76		Peds Cross: South Peds: 0 South Entering: 1020 South Leg Total: 1935
Cars	817																														
Trucks	17																														
Heavys	81																														
Totals	915																														
Cars	1	775	73	849																											
Trucks	0	27	2	29																											
Heavys	1	140	1	142																											
Totals	2	942	76																												

Comments

Afternoon Peak Diagram		Specified Period From: 14:30:00 To: 18:30:00	One Hour Peak From: 16:00:00 To: 17:00:00
Municipality: Guelph Site #: 2203500007 Intersection: Hwy 6 & Concession Rd 4 TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Hwy 6 runs N/S	

North Leg Total: 2363 North Entering: 1255 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td><td>115</td><td>1</td><td>116</td></tr> <tr><td>Trucks</td><td>0</td><td>25</td><td>0</td><td>25</td></tr> <tr><td>Cars</td><td>7</td><td>1077</td><td>30</td><td>1114</td></tr> <tr><td>Totals</td><td>7</td><td>1217</td><td>31</td><td></td></tr> </table>	Heavys	0	115	1	116	Trucks	0	25	0	25	Cars	7	1077	30	1114	Totals	7	1217	31		<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>90</td></tr> <tr><td>Trucks</td><td>9</td></tr> <tr><td>Cars</td><td>1009</td></tr> <tr><td>Totals</td><td>1108</td></tr> </table>	Heavys	90	Trucks	9	Cars	1009	Totals	1108	East Leg Total: 279 East Entering: 171 East Peds: 0 Peds Cross:
Heavys	0	115	1	116																											
Trucks	0	25	0	25																											
Cars	7	1077	30	1114																											
Totals	7	1217	31																												
Heavys	90																														
Trucks	9																														
Cars	1009																														
Totals	1108																														

Heavys	Trucks	Cars	Totals
1	0	27	28

Hwy 6

Cars	Trucks	Heavys	Totals
33	0	1	34
18	0	1	19
116	1	1	118
167	1	3	

Concession Rd 4

N
S
W
E

Maltby Rd W

Heavys	Trucks	Cars	Totals
0	0	2	2
0	0	4	4
0	1	1	2
0	1	7	

Hwy 6

Cars	Trucks	Heavys	Totals
104	1	3	108

Peds Cross: West Peds: 0 West Entering: 8 West Leg Total: 36	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>1194</td></tr> <tr><td>Trucks</td><td>27</td></tr> <tr><td>Heavys</td><td>116</td></tr> <tr><td>Totals</td><td>1337</td></tr> </table>	Cars	1194	Trucks	27	Heavys	116	Totals	1337	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>2</td><td>974</td><td>70</td><td>1046</td></tr> <tr><td>Trucks</td><td>0</td><td>9</td><td>1</td><td>10</td></tr> <tr><td>Heavys</td><td>0</td><td>89</td><td>2</td><td>91</td></tr> <tr><td>Totals</td><td>2</td><td>1072</td><td>73</td><td></td></tr> </table>	Cars	2	974	70	1046	Trucks	0	9	1	10	Heavys	0	89	2	91	Totals	2	1072	73		Peds Cross: South Peds: 0 South Entering: 1147 South Leg Total: 2484
Cars	1194																														
Trucks	27																														
Heavys	116																														
Totals	1337																														
Cars	2	974	70	1046																											
Trucks	0	9	1	10																											
Heavys	0	89	2	91																											
Totals	2	1072	73																												

Comments

Total Count Diagram

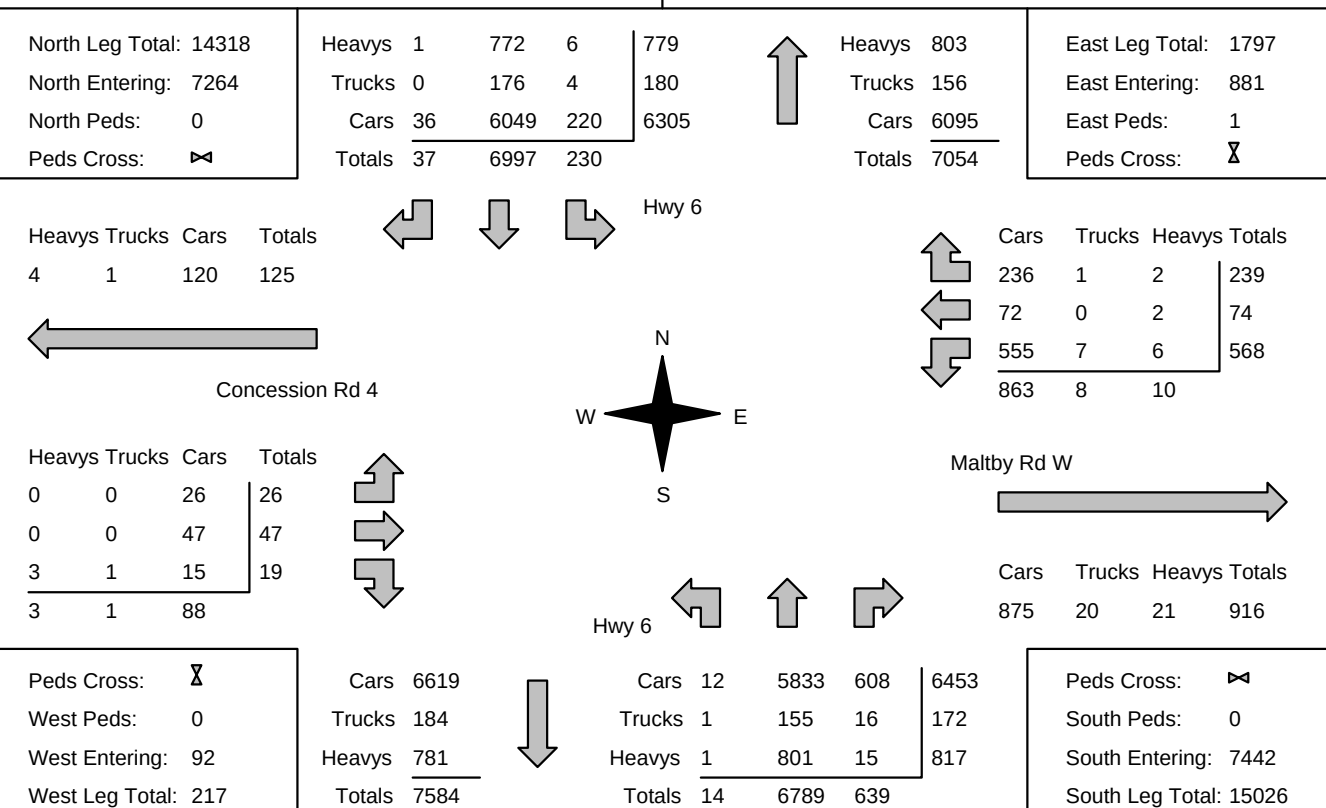
Municipality: Guelph
Site #: 2203500007
Intersection: Hwy 6 & Concession Rd 4
TFR File #: 1
Count date: 10-Mar-22

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Hwy 6 runs N/S



Comments

Traffic Count Summary

Intersection: Hwy 6 & Concession Rd 4

Count Date: 10-Mar-22

Municipality: Guelph

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	18	641	1	660	0	1296	7:00:00	0	556	80	636	0
8:00:00	31	834	5	870	0	1862	8:00:00	2	906	84	992	0
9:00:00	24	766	4	794	0	1699	9:00:00	0	833	72	905	0
10:00:00	21	636	4	661	0	1431	10:00:00	1	714	55	770	0
15:00:00	15	447	1	463	0	913	15:00:00	1	406	43	450	0
16:00:00	50	1090	6	1146	0	2141	16:00:00	3	884	108	995	0
17:00:00	31	1217	7	1255	0	2402	17:00:00	2	1072	73	1147	0
18:00:00	35	951	6	992	0	2091	18:00:00	3	1011	85	1099	0
Totals:	225	6582	34	6841	0	13835	S Totals:	12	6382	600	6994	0
East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	51	3	9	63	0	72	7:00:00	1	7	1	9	0
8:00:00	63	7	23	93	0	115	8:00:00	2	11	9	22	0
9:00:00	66	2	23	91	0	98	9:00:00	2	3	2	7	0
10:00:00	44	5	25	74	1	80	10:00:00	4	2	0	6	0
15:00:00	30	4	19	53	0	59	15:00:00	3	3	0	6	0
16:00:00	90	19	40	149	0	166	16:00:00	4	10	3	17	0
17:00:00	118	19	34	171	0	179	17:00:00	2	4	2	8	0
18:00:00	73	12	51	136	0	146	18:00:00	4	4	2	10	0
Totals:	535	71	224	830	1	915	W Totals:	22	44	19	85	0
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	7:00	8:00	9:00	10:00			15:00	16:00	17:00	18:00		
Crossing Values:	59	76	71	53			37	113	139	89		



Count Date: 10-Mar-22 Site #: 2203500007																				
Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	0	0	87	87	13	13	0	0	2	2	0	0	0	0	14	14	0	0	0	0
6:30:00	0	0	203	116	33	20	0	0	3	1	0	0	0	0	28	14	0	0	0	0
6:45:00	0	0	357	154	55	22	0	0	9	6	1	1	0	0	40	12	0	0	0	0
7:00:00	0	0	492	135	77	22	0	0	12	3	2	1	0	0	52	12	1	1	0	0
7:15:00	0	0	626	134	97	20	0	0	14	2	2	0	0	0	82	30	2	1	0	0
7:30:00	0	0	805	179	115	18	0	0	18	4	3	1	0	0	110	28	3	1	0	0
7:45:00	1	1	1006	201	134	19	0	0	27	9	3	0	0	0	159	49	3	0	0	0
8:00:00	1	0	1236	230	158	24	0	0	35	8	3	0	1	1	191	32	3	0	0	0
8:15:00	1	0	1401	165	170	12	0	0	41	6	4	1	1	0	222	31	3	0	0	0
8:30:00	1	0	1562	161	189	19	0	0	55	14	4	0	1	0	252	30	3	0	0	0
8:45:00	1	0	1731	169	209	20	0	0	65	10	4	0	1	0	276	24	3	0	0	0
9:00:00	1	0	1914	183	227	18	0	0	75	10	5	1	1	0	306	30	4	1	0	0
9:15:00	1	0	2047	133	240	13	0	0	82	7	6	1	1	0	337	31	5	1	0	0
9:30:00	1	0	2180	133	251	11	0	0	92	10	6	0	1	0	370	33	5	0	0	0
9:45:00	1	0	2304	124	260	9	0	0	102	10	8	2	1	0	405	35	5	0	0	0
10:00:00	2	1	2461	157	275	15	0	0	108	6	9	1	1	0	440	35	7	2	0	0
10:15:00	2	0	2461	0	275	0	0	0	108	0	9	0	1	0	440	0	7	0	0	0
14:30:00	2	0	2461	0	275	0	0	0	108	0	9	0	1	0	440	0	7	0	0	0
14:45:00	3	1	2635	174	291	16	0	0	112	4	11	2	1	0	469	29	8	1	0	0
15:00:00	3	0	2795	160	315	24	0	0	118	6	11	0	1	0	502	33	8	0	0	0
15:15:00	3	0	2965	170	335	20	0	0	123	5	13	2	1	0	528	26	8	0	0	0
15:30:00	4	1	3167	202	365	30	0	0	126	3	14	1	1	0	553	25	8	0	0	0
15:45:00	5	1	3366	199	393	28	0	0	131	5	14	0	1	0	571	18	8	0	0	0
16:00:00	6	1	3566	200	417	24	0	0	135	4	15	1	1	0	598	27	10	2	0	0
16:15:00	6	0	3782	216	437	20	0	0	138	3	15	0	1	0	626	28	10	0	0	0
16:30:00	6	0	4041	259	451	14	0	0	141	3	15	0	1	0	646	20	11	1	0	0
16:45:00	6	0	4273	232	466	15	0	0	143	2	16	1	1	0	671	25	11	0	0	0
17:00:00	8	2	4540	267	487	21	0	0	144	1	16	0	1	0	687	16	12	1	0	0
17:15:00	8	0	4772	232	512	25	0	0	149	5	16	0	1	0	706	19	12	0	0	0
17:30:00	9	1	5007	235	527	15	0	0	150	1	16	0	1	0	719	13	14	2	0	0
17:45:00	9	0	5247	240	551	24	0	0	150	0	16	0	1	0	738	19	15	1	0	0
18:00:00	11	2	5470	223	569	18	0	0	152	2	16	0	1	0	760	22	15	0	0	0
18:15:00	12	1	5649	179	597	28	1	1	153	1	16	0	1	0	782	22	15	0	0	0
18:30:00	12	0	5833	184	608	11	1	0	155	2	16	0	1	0	801	19	15	0	0	0
18:45:00	12	0	5833	0	608	0	1	0	155	0	16	0	1	0	801	0	15	0	0	0
18:45:15	12	0	5833	0	608	0	1	0	155	0	16	0	1	0	801	0	15	0	0	0



Count Date: 10-Mar-22 Site #: 2203500007

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
6:30:00	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
6:45:00	1	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
7:00:00	1	0	7	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
7:15:00	1	0	11	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
7:30:00	1	0	13	2	2	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0
7:45:00	3	2	16	3	4	2	0	0	0	0	0	0	0	0	0	0	2	1	0	0
8:00:00	3	0	18	2	8	4	0	0	0	0	0	0	0	0	0	0	2	0	0	0
8:15:00	4	1	21	3	8	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0
8:30:00	4	0	21	0	8	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
8:45:00	5	1	21	0	9	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0
9:00:00	5	0	21	0	9	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
9:15:00	5	0	21	0	9	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
9:30:00	8	3	22	1	9	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
9:45:00	8	0	22	0	9	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
10:00:00	9	1	23	1	9	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
10:15:00	9	0	23	0	9	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
14:30:00	9	0	23	0	9	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
14:45:00	10	1	25	2	9	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
15:00:00	12	2	26	1	9	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
15:15:00	13	1	28	2	9	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
15:30:00	14	1	30	2	10	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0
15:45:00	15	1	34	4	11	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0
16:00:00	16	1	36	2	12	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0
16:15:00	17	1	37	1	12	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
16:30:00	18	1	37	0	13	1	0	0	0	0	1	1	0	0	0	0	3	0	0	0
16:45:00	18	0	39	2	13	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0
17:00:00	18	0	40	1	13	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0
17:15:00	18	0	42	2	14	1	0	0	0	0	1	0	0	0	0	0	3	0	0	0
17:30:00	20	2	42	0	14	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0
17:45:00	21	1	43	1	15	1	0	0	0	0	1	0	0	0	0	0	3	0	0	0
18:00:00	22	1	44	1	15	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0
18:15:00	25	3	46	2	15	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0
18:30:00	26	1	47	1	15	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0
18:45:00	26	0	47	0	15	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0
18:45:15	26	0	47	0	15	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0

Morning Peak Diagram		Specified Period From: 6:00:00 To: 10:00:00	One Hour Peak From: 7:00:00 To: 8:00:00
Municipality: Guelph Site #: 2203500008 Intersection: Maltby Rd W & Crawley Rd TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Maltby Rd W runs W/E	

North Leg Total: 60 North Entering: 10 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>1</td><td>0</td><td>1</td><td style="border-left: 1px solid black;">2</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td style="border-left: 1px solid black;">0</td></tr> <tr><td>Cars</td><td>7</td><td>1</td><td>0</td><td style="border-left: 1px solid black;">8</td></tr> <tr><td>Totals</td><td>8</td><td>1</td><td>1</td><td style="border-left: 1px solid black;"></td></tr> </table>	Heavys	1	0	1	2	Trucks	0	0	0	0	Cars	7	1	0	8	Totals	8	1	1		<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>1</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Cars</td><td>49</td></tr> <tr><td>Totals</td><td>50</td></tr> </table>	Heavys	1	Trucks	0	Cars	49	Totals	50	East Leg Total: 166 East Entering: 88 East Peds: 0 Peds Cross:
Heavys	1	0	1	2																											
Trucks	0	0	0	0																											
Cars	7	1	0	8																											
Totals	8	1	1																												
Heavys	1																														
Trucks	0																														
Cars	49																														
Totals	50																														

Heavys	Trucks	Cars	Totals
1	0	94	95

Crawley Rd

Cars	Trucks	Heavys	Totals
3	0	0	3
85	0	0	85
0	0	0	0
88	0	0	

Maltby Rd W

Concession Rd 7

Maltby Rd W

Heavys	Trucks	Cars	Totals
1	0	46	47
2	1	74	77
0	0	3	3
3	1	123	

Cars	Trucks	Heavys	Totals
74	1	3	78

Peds Cross: West Peds: 0 West Entering: 127 West Leg Total: 222	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>4</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Heavys</td><td>0</td></tr> <tr><td>Totals</td><td>4</td></tr> </table>	Cars	4	Trucks	0	Heavys	0	Totals	4	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>2</td><td>0</td><td>0</td><td style="border-left: 1px solid black;">2</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td style="border-left: 1px solid black;">0</td></tr> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td style="border-left: 1px solid black;">0</td></tr> <tr><td>Totals</td><td>2</td><td>0</td><td>0</td><td style="border-left: 1px solid black;"></td></tr> </table>	Cars	2	0	0	2	Trucks	0	0	0	0	Heavys	0	0	0	0	Totals	2	0	0		Peds Cross: South Peds: 0 South Entering: 2 South Leg Total: 6
Cars	4																														
Trucks	0																														
Heavys	0																														
Totals	4																														
Cars	2	0	0	2																											
Trucks	0	0	0	0																											
Heavys	0	0	0	0																											
Totals	2	0	0																												

Comments

Afternoon Peak Diagram		Specified Period From: 14:30:00 To: 18:30:00	One Hour Peak From: 15:15:00 To: 16:15:00
Municipality: Guelph Site #: 2203500008 Intersection: Maltby Rd W & Crawley Rd TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Maltby Rd W runs W/E	

North Leg Total: 91 North Entering: 46 North Peds: 1 Peds Cross:	<table style="margin: auto;"> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Trucks</td><td>1</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>Cars</td><td>40</td><td>3</td><td>2</td><td>45</td></tr> <tr><td>Totals</td><td>41</td><td>3</td><td>2</td><td></td></tr> </table>	Heavys	0	0	0	0	Trucks	1	0	0	1	Cars	40	3	2	45	Totals	41	3	2		<table style="margin: auto;"> <tr><td>Heavys</td><td>2</td></tr> <tr><td>Trucks</td><td>1</td></tr> <tr><td>Cars</td><td>42</td></tr> <tr><td>Totals</td><td>45</td></tr> </table>	Heavys	2	Trucks	1	Cars	42	Totals	45	East Leg Total: 241 East Entering: 114 East Peds: 0 Peds Cross:
Heavys	0	0	0	0																											
Trucks	1	0	0	1																											
Cars	40	3	2	45																											
Totals	41	3	2																												
Heavys	2																														
Trucks	1																														
Cars	42																														
Totals	45																														

Heavys	Trucks	Cars	Totals
2	4	150	156

Maltby Rd W

Heavys	Trucks	Cars	Totals
2	1	34	37
1	3	120	124
0	0	5	5
3	4	159	

N
S
W
E

Crawley Rd

Cars	Trucks	Heavys	Totals
2	0	0	2
107	3	2	112
0	0	0	0
109	3	2	

Maltby Rd W

Cars	Trucks	Heavys	Totals
123	3	1	127

Peds Cross: West Peds: 0 West Entering: 166 West Leg Total: 322	<table style="margin: auto;"> <tr><td>Cars</td><td>8</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Heavys</td><td>0</td></tr> <tr><td>Totals</td><td>8</td></tr> </table>	Cars	8	Trucks	0	Heavys	0	Totals	8	<table style="margin: auto;"> <tr><td>Cars</td><td>3</td><td>6</td><td>1</td><td>10</td></tr> <tr><td>Trucks</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Totals</td><td>3</td><td>6</td><td>1</td><td></td></tr> </table>	Cars	3	6	1	10	Trucks	0	0	0	0	Heavys	0	0	0	0	Totals	3	6	1		Peds Cross: South Peds: 0 South Entering: 10 South Leg Total: 18
Cars	8																														
Trucks	0																														
Heavys	0																														
Totals	8																														
Cars	3	6	1	10																											
Trucks	0	0	0	0																											
Heavys	0	0	0	0																											
Totals	3	6	1																												

Comments

Total Count Diagram

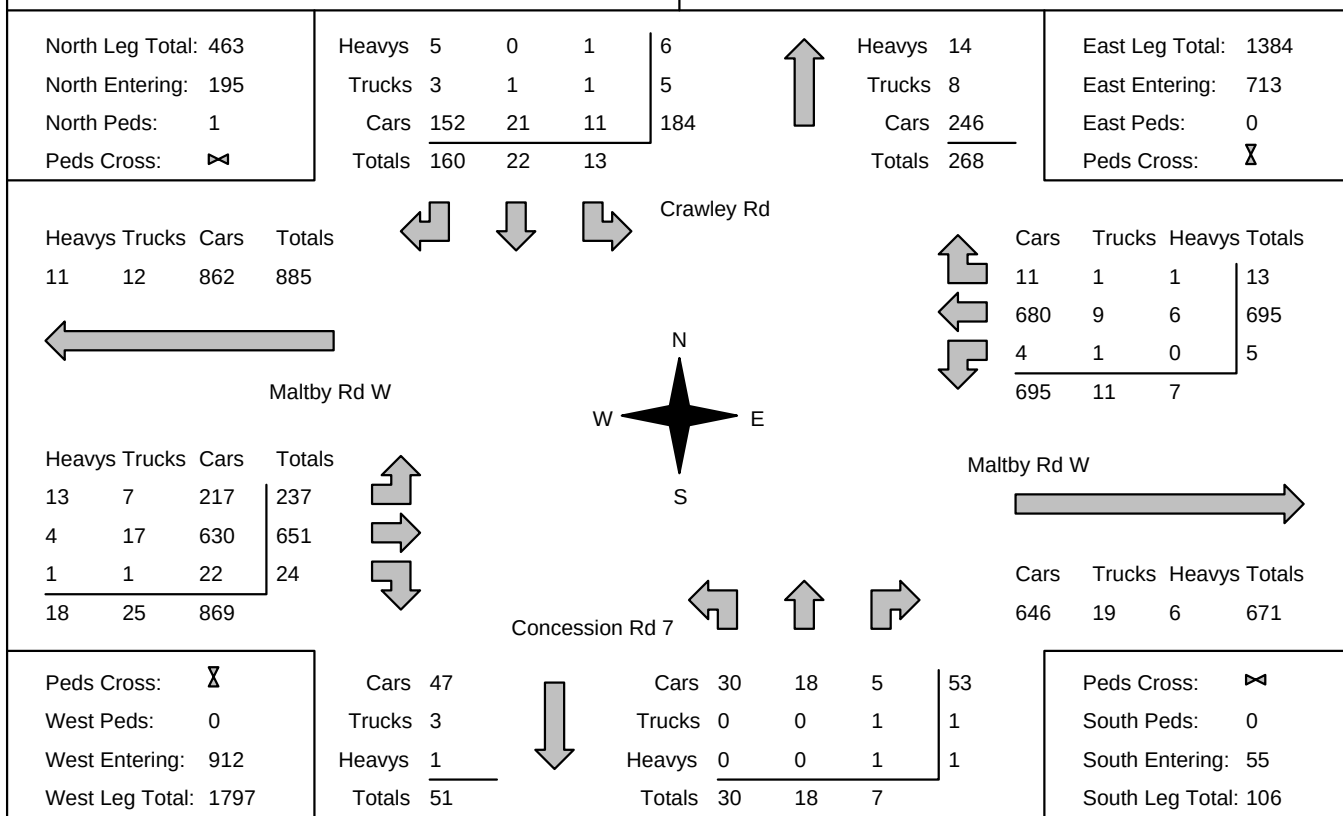
Municipality: Guelph
Site #: 2203500008
Intersection: Maltby Rd W & Crawley Rd
TFR File #: 1
Count date: 10-Mar-22

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Maltby Rd W runs W/E



Comments

Traffic Count Summary

Intersection: Maltby Rd W & Crawley Rd					Count Date: 10-Mar-22		Municipality: Guelph					
North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	1	2	17	20	0	22	7:00:00	1	0	1	2	0
8:00:00	1	1	8	10	0	12	8:00:00	2	0	0	2	0
9:00:00	1	7	9	17	0	20	9:00:00	0	2	1	3	0
10:00:00	0	0	5	5	0	11	10:00:00	2	1	3	6	0
15:00:00	0	1	10	11	0	11	15:00:00	0	0	0	0	0
16:00:00	2	1	31	34	0	44	16:00:00	2	6	2	10	0
17:00:00	3	6	44	53	1	62	17:00:00	6	3	0	9	0
18:00:00	4	3	22	29	0	49	18:00:00	17	3	0	20	0
Totals:	12	21	146	179	1	231	S Totals:	30	15	7	52	0
East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	2	45	0	47	0	152	7:00:00	49	54	2	105	0
8:00:00	0	85	3	88	0	215	8:00:00	47	77	3	127	0
9:00:00	0	82	2	84	0	182	9:00:00	28	70	0	98	0
10:00:00	2	66	1	69	0	146	10:00:00	9	66	2	77	0
15:00:00	0	44	1	45	0	105	15:00:00	16	43	1	60	0
16:00:00	0	117	2	119	0	288	16:00:00	41	120	8	169	0
17:00:00	0	121	2	123	0	229	17:00:00	19	83	4	106	0
18:00:00	0	100	2	102	0	225	18:00:00	17	102	4	123	0
Totals:	4	660	13	677	0	1542	W Totals:	226	615	24	865	0
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	7:00	8:00	9:00	10:00			15:00	16:00	17:00	18:00		
Crossing Values:	4	4	8	3			1	10	15	24		



Count Date: 10-Mar-22 Site #: 2203500008																					
Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians		
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross		
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15:00	0	0	1	1	9	9	0	0	0	0	1	1	0	0	0	0	0	0	0	0	
6:30:00	1	1	1	0	10	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
6:45:00	1	0	1	0	13	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
7:00:00	1	0	2	1	15	2	0	0	0	0	2	1	0	0	0	0	0	0	0	0	
7:15:00	1	0	2	0	17	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	
7:30:00	1	0	2	0	20	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	
7:45:00	1	0	3	1	22	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	
8:00:00	1	0	3	0	22	0	0	0	0	0	2	0	1	1	0	0	1	1	0	0	
8:15:00	1	0	3	0	26	4	0	0	0	0	2	0	1	0	0	0	1	0	0	0	
8:30:00	1	0	6	3	27	1	0	0	0	0	2	0	1	0	0	0	1	0	0	0	
8:45:00	1	0	8	2	30	3	0	0	0	0	2	0	1	0	0	0	1	0	0	0	
9:00:00	1	0	10	2	31	1	1	1	0	0	2	0	1	0	0	0	1	0	0	0	
9:15:00	1	0	10	0	31	0	1	0	0	0	2	0	1	0	0	0	1	0	0	0	
9:30:00	1	0	10	0	31	0	1	0	0	0	2	0	1	0	0	0	1	0	0	0	
9:45:00	1	0	10	0	32	1	1	0	0	0	2	0	1	0	0	0	1	0	0	0	
10:00:00	1	0	10	0	35	3	1	0	0	0	2	0	1	0	0	0	2	1	0	0	
10:15:00	1	0	10	0	35	0	1	0	0	0	2	0	1	0	0	0	2	0	0	0	
14:30:00	1	0	10	0	35	0	1	0	0	0	2	0	1	0	0	0	2	0	0	0	
14:45:00	1	0	11	1	40	5	1	0	0	0	2	0	1	0	0	0	2	0	0	0	
15:00:00	1	0	11	0	45	5	1	0	0	0	2	0	1	0	0	0	2	0	0	0	
15:15:00	2	1	11	0	55	10	1	0	0	0	2	0	1	0	0	0	3	1	0	0	
15:30:00	3	1	12	1	63	8	1	0	0	0	2	0	1	0	0	0	3	0	0	0	
15:45:00	3	0	12	0	70	7	1	0	0	0	2	0	1	0	0	0	3	0	0	0	
16:00:00	3	0	12	0	75	5	1	0	0	0	2	0	1	0	0	0	3	0	0	0	
16:15:00	4	1	14	2	95	20	1	0	0	0	3	1	1	0	0	0	3	0	1	1	
16:30:00	4	0	14	0	98	3	1	0	0	0	3	0	1	0	0	0	3	0	1	0	
16:45:00	4	0	16	2	110	12	1	0	0	0	3	0	1	0	0	0	3	0	1	0	
17:00:00	6	2	18	2	118	8	1	0	0	0	3	0	1	0	0	0	3	0	1	0	
17:15:00	8	2	20	2	131	13	1	0	0	0	3	0	1	0	0	0	3	0	1	0	
17:30:00	9	1	20	0	134	3	1	0	0	0	3	0	1	0	0	0	3	0	1	0	
17:45:00	10	1	20	0	137	3	1	0	1	1	3	0	1	0	0	0	4	1	1	0	
18:00:00	10	0	20	0	139	2	1	0	1	0	3	0	1	0	0	0	4	0	1	0	
18:15:00	11	1	21	1	146	7	1	0	1	0	3	0	1	0	0	0	4	0	1	0	
18:30:00	11	0	21	0	152	6	1	0	1	0	3	0	1	0	0	0	5	1	1	0	
18:45:00	11	0	21	0	152	0	1	0	1	0	3	0	1	0	0	0	5	0	1	0	
18:45:15	11	0	21	0	152	0	1	0	1	0	3	0	1	0	0	0	5	0	1	0	



Count Date: 10-Mar-22 Site #: 2203500008

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15:00	10	10	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30:00	24	14	15	11	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45:00	33	9	36	21	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0
7:00:00	47	14	51	15	2	1	1	0	3	2	0	0	1	1	0	0	0	0	0	0
7:15:00	60	13	63	12	2	0	1	0	3	0	0	0	2	1	1	1	0	0	0	0
7:30:00	68	8	82	19	4	2	1	0	4	1	0	0	2	0	2	1	0	0	0	0
7:45:00	76	8	101	19	4	0	1	0	4	0	0	0	2	0	2	0	0	0	0	0
8:00:00	93	17	125	24	5	1	1	0	4	0	0	0	2	0	2	0	0	0	0	0
8:15:00	98	5	141	16	5	0	2	1	5	1	0	0	2	0	2	0	0	0	0	0
8:30:00	109	11	155	14	5	0	2	0	5	0	0	0	2	0	2	0	0	0	0	0
8:45:00	116	7	173	18	5	0	2	0	5	0	0	0	2	0	2	0	0	0	0	0
9:00:00	119	3	193	20	5	0	3	1	6	1	0	0	2	0	2	0	0	0	0	0
9:15:00	122	3	211	18	5	0	3	0	9	3	0	0	3	1	2	0	0	0	0	0
9:30:00	123	1	223	12	6	1	3	0	9	0	0	0	3	0	2	0	0	0	0	0
9:45:00	123	0	235	12	6	0	3	0	11	2	0	0	3	0	2	0	0	0	0	0
10:00:00	126	3	253	18	6	0	3	0	11	0	1	1	4	1	3	1	0	0	0	0
10:15:00	126	0	253	0	6	0	3	0	11	0	1	0	4	0	3	0	0	0	0	0
14:30:00	126	0	253	0	6	0	3	0	11	0	1	0	4	0	3	0	0	0	0	0
14:45:00	133	7	269	16	7	1	5	2	11	0	1	0	5	1	3	0	0	0	0	0
15:00:00	139	6	296	27	7	0	5	0	11	0	1	0	5	0	3	0	0	0	0	0
15:15:00	147	8	317	21	10	3	6	1	12	1	1	0	5	0	3	0	1	1	0	0
15:30:00	159	12	342	25	13	3	7	1	13	1	1	0	5	0	3	0	1	0	0	0
15:45:00	170	11	373	31	14	1	7	0	13	0	1	0	5	0	3	0	1	0	0	0
16:00:00	176	6	412	39	14	0	7	0	14	1	1	0	7	2	4	1	1	0	0	0
16:15:00	181	5	437	25	15	1	7	0	15	1	1	0	7	0	4	0	1	0	0	0
16:30:00	182	1	454	17	16	1	7	0	15	0	1	0	8	1	4	0	1	0	0	0
16:45:00	185	3	472	18	18	2	7	0	16	1	1	0	9	1	4	0	1	0	0	0
17:00:00	192	7	493	21	18	0	7	0	16	0	1	0	10	1	4	0	1	0	0	0
17:15:00	196	4	520	27	20	2	7	0	16	0	1	0	10	0	4	0	1	0	0	0
17:30:00	198	2	543	23	20	0	7	0	17	1	1	0	12	2	4	0	1	0	0	0
17:45:00	201	3	572	29	21	1	7	0	17	0	1	0	13	1	4	0	1	0	0	0
18:00:00	206	5	594	22	22	1	7	0	17	0	1	0	13	0	4	0	1	0	0	0
18:15:00	216	10	615	21	22	0	7	0	17	0	1	0	13	0	4	0	1	0	0	0
18:30:00	217	1	630	15	22	0	7	0	17	0	1	0	13	0	4	0	1	0	0	0
18:45:00	217	0	630	0	22	0	7	0	17	0	1	0	13	0	4	0	1	0	0	0
18:45:15	217	0	630	0	22	0	7	0	17	0	1	0	13	0	4	0	1	0	0	0

Morning Peak Diagram		Specified Period From: 6:00:00 To: 10:00:00	One Hour Peak From: 8:15:00 To: 9:15:00
Municipality: Guelph Site #: 2203500009 Intersection: Gordon St & Maltby Rd W TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Gordon St runs N/S	

North Leg Total: 904 North Entering: 437 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td><td>19</td><td>0</td><td>19</td></tr> <tr><td>Trucks</td><td>0</td><td>9</td><td>1</td><td>10</td></tr> <tr><td>Cars</td><td>42</td><td>360</td><td>6</td><td>408</td></tr> <tr><td>Totals</td><td>42</td><td>388</td><td>7</td><td></td></tr> </table>	Heavys	0	19	0	19	Trucks	0	9	1	10	Cars	42	360	6	408	Totals	42	388	7		<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>35</td></tr> <tr><td>Trucks</td><td>8</td></tr> <tr><td>Cars</td><td>424</td></tr> <tr><td>Totals</td><td>467</td></tr> </table>	Heavys	35	Trucks	8	Cars	424	Totals	467	East Leg Total: 115 East Entering: 58 East Peds: 0 Peds Cross:
Heavys	0	19	0	19																											
Trucks	0	9	1	10																											
Cars	42	360	6	408																											
Totals	42	388	7																												
Heavys	35																														
Trucks	8																														
Cars	424																														
Totals	467																														

Heavys	Trucks	Cars	Totals
0	2	90	92

N
 W ——— E
 S

Cars	Trucks	Heavys	Totals
19	0	1	20
25	1	0	26
10	2	0	12
54	3	1	

Maltby Rd W

Heavys	Trucks	Cars	Totals
0	1	31	32
0	2	24	26
0	2	27	29
0	5	82	

N
 W ——— E
 S

Cars	Trucks	Heavys	Totals
50	4	3	57

Brock Rd N

Peds Cross: West Peds: 0 West Entering: 87 West Leg Total: 179	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>397</td></tr> <tr><td>Trucks</td><td>13</td></tr> <tr><td>Heavys</td><td>19</td></tr> <tr><td>Totals</td><td>429</td></tr> </table>	Cars	397	Trucks	13	Heavys	19	Totals	429	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>23</td><td>374</td><td>20</td><td>417</td></tr> <tr><td>Trucks</td><td>1</td><td>7</td><td>1</td><td>9</td></tr> <tr><td>Heavys</td><td>0</td><td>34</td><td>3</td><td>37</td></tr> <tr><td>Totals</td><td>24</td><td>415</td><td>24</td><td></td></tr> </table>	Cars	23	374	20	417	Trucks	1	7	1	9	Heavys	0	34	3	37	Totals	24	415	24		Peds Cross: South Peds: 0 South Entering: 463 South Leg Total: 892
Cars	397																														
Trucks	13																														
Heavys	19																														
Totals	429																														
Cars	23	374	20	417																											
Trucks	1	7	1	9																											
Heavys	0	34	3	37																											
Totals	24	415	24																												

Comments

Afternoon Peak Diagram		Specified Period From: 14:30:00 To: 18:30:00	One Hour Peak From: 16:30:00 To: 17:30:00
Municipality: Guelph Site #: 2203500009 Intersection: Gordon St & Maltby Rd W TFR File #: 1 Count date: 10-Mar-22		Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Gordon St runs N/S	

North Leg Total: 1311 North Entering: 587 North Peds: 1 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>1</td><td>12</td><td>0</td><td style="border-left: 1px solid black;">13</td></tr> <tr><td>Trucks</td><td>0</td><td>10</td><td>0</td><td style="border-left: 1px solid black;">10</td></tr> <tr><td>Cars</td><td>48</td><td>508</td><td>8</td><td style="border-left: 1px solid black; border-bottom: 1px solid black;">564</td></tr> <tr><td>Totals</td><td>49</td><td>530</td><td>8</td><td style="border-left: 1px solid black;"></td></tr> </table>	Heavys	1	12	0	13	Trucks	0	10	0	10	Cars	48	508	8	564	Totals	49	530	8		<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>8</td></tr> <tr><td>Trucks</td><td>5</td></tr> <tr><td>Cars</td><td style="border-bottom: 1px solid black;">711</td></tr> <tr><td>Totals</td><td>724</td></tr> </table>	Heavys	8	Trucks	5	Cars	711	Totals	724	East Leg Total: 122 East Entering: 58 East Peds: 0 Peds Cross:
Heavys	1	12	0	13																											
Trucks	0	10	0	10																											
Cars	48	508	8	564																											
Totals	49	530	8																												
Heavys	8																														
Trucks	5																														
Cars	711																														
Totals	724																														

Heavys	Trucks	Cars	Totals
3	1	111	115

N
W — S — E

Cars	Trucks	Heavys	Totals
13	0	0	13
30	0	1	31
14	0	0	14
57	0	1	

Gordon St

Heavys	Trucks	Cars	Totals
0	0	48	48
0	0	24	24
0	2	26	28
0	2	98	

N
W — S — E

Cars	Trucks	Heavys	Totals
62	2	0	64

Maltby Rd W

Peds Cross:	
West Peds:	0
West Entering:	100
West Leg Total:	215

Cars	548
Trucks	12
Heavys	12
Totals	572

Cars	33	650	30	713
Trucks	1	5	2	8
Heavys	1	8	0	9
Totals	35	663	32	

Peds Cross:	
South Peds:	0
South Entering:	730
South Leg Total:	1302

Brock Rd N

Maltby Rd E

Comments

Total Count Diagram

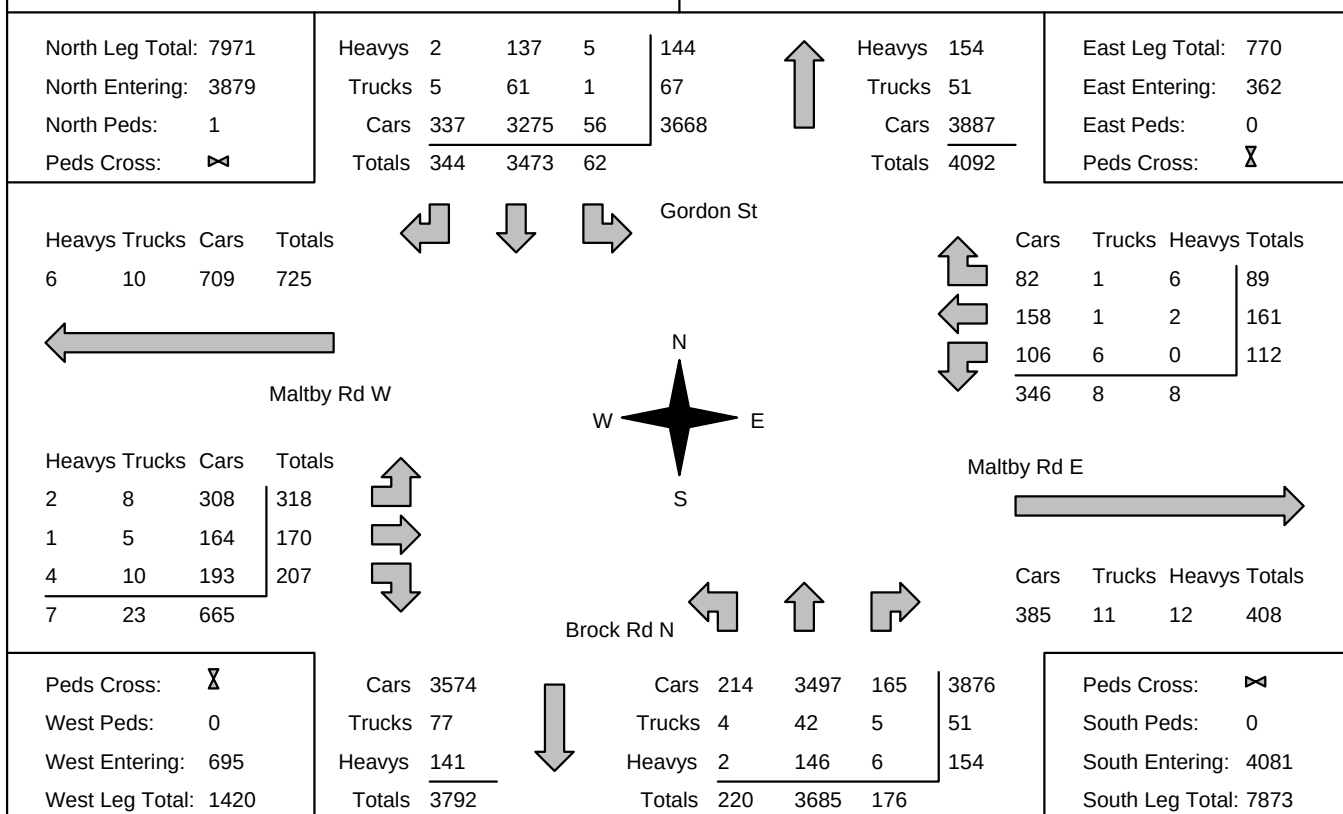
Municipality: Guelph
Site #: 2203500009
Intersection: Gordon St & Maltby Rd W
TFR File #: 1
Count date: 10-Mar-22

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Gordon St runs N/S



Comments

Traffic Count Summary

Intersection: Gordon St & Maltby Rd W

Count Date: 10-Mar-22

Municipality: Guelph

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
6:00:00	0	0	0	0	0	0	6:00:00	0	0	0	0	0
7:00:00	5	296	20	321	0	553	7:00:00	14	208	10	232	0
8:00:00	8	467	50	525	0	860	8:00:00	23	286	26	335	0
9:00:00	9	389	44	442	0	906	9:00:00	27	414	23	464	0
10:00:00	5	430	36	471	0	898	10:00:00	20	391	16	427	0
15:00:00	2	206	16	224	0	492	15:00:00	17	240	11	268	0
16:00:00	8	451	54	513	0	1174	16:00:00	37	598	26	661	0
17:00:00	8	529	61	598	0	1268	17:00:00	31	614	25	670	0
18:00:00	9	497	41	547	1	1282	18:00:00	42	665	28	735	0



Count Date: 10-Mar-22 Site #: 2203500009																					
Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians		
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross		
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	
6:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15:00	3	3	41	41	2	2	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0
6:30:00	7	4	91	50	4	2	0	0	0	0	0	0	0	0	5	3	0	0	0	0	
6:45:00	11	4	135	44	7	3	0	0	1	1	0	0	0	0	8	3	0	0	0	0	
7:00:00	14	3	193	58	10	3	0	0	3	2	0	0	0	0	12	4	0	0	0	0	
7:15:00	22	8	249	56	14	4	0	0	3	0	0	0	0	0	15	3	0	0	0	0	
7:30:00	26	4	307	58	18	4	0	0	5	2	1	1	0	0	19	4	1	1	0	0	
7:45:00	34	8	384	77	23	5	0	0	6	1	1	0	0	0	24	5	2	1	0	0	
8:00:00	37	3	459	75	31	8	0	0	6	0	2	1	0	0	29	5	3	1	0	0	
8:15:00	44	7	544	85	36	5	0	0	7	1	2	0	0	0	39	10	3	0	0	0	
8:30:00	49	5	634	90	41	5	0	0	10	3	3	1	0	0	48	9	3	0	0	0	
8:45:00	55	6	734	100	49	8	1	1	12	2	3	0	0	0	60	12	4	1	0	0	
9:00:00	63	8	829	95	51	2	1	0	13	1	3	0	0	0	66	6	5	1	0	0	
9:15:00	67	4	918	89	56	5	1	0	14	1	3	0	0	0	73	7	6	1	0	0	
9:30:00	73	6	1004	86	61	5	1	0	16	2	3	0	0	0	78	5	6	0	0	0	
9:45:00	78	5	1098	94	63	2	1	0	19	3	3	0	0	0	83	5	6	0	0	0	
10:00:00	82	4	1193	95	66	3	2	1	19	0	3	0	0	0	87	4	6	0	0	0	
10:15:00	82	0	1193	0	66	0	2	0	19	0	3	0	0	0	87	0	6	0	0	0	
14:30:00	82	0	1193	0	66	0	2	0	19	0	3	0	0	0	87	0	6	0	0	0	
14:45:00	92	10	1307	114	73	7	2	0	19	0	3	0	0	0	91	4	6	0	0	0	
15:00:00	99	7	1421	114	77	4	2	0	24	5	3	0	0	0	94	3	6	0	0	0	
15:15:00	117	18	1563	142	81	4	2	0	30	6	3	0	0	0	98	4	6	0	0	0	
15:30:00	121	4	1704	141	86	5	2	0	30	0	3	0	0	0	111	13	6	0	0	0	
15:45:00	129	8	1853	149	94	8	2	0	32	2	3	0	0	0	113	2	6	0	0	0	
16:00:00	136	7	1986	133	103	9	2	0	33	1	3	0	0	0	118	5	6	0	0	0	
16:15:00	144	8	2125	139	105	2	2	0	34	1	3	0	0	0	121	3	6	0	0	0	
16:30:00	153	9	2266	141	112	7	2	0	35	1	3	0	0	0	125	4	6	0	0	0	
16:45:00	158	5	2436	170	118	6	2	0	39	4	4	1	1	1	128	3	6	0	0	0	
17:00:00	165	7	2582	146	126	8	3	1	40	1	5	1	1	0	129	1	6	0	0	0	
17:15:00	179	14	2744	162	135	9	3	0	40	0	5	0	1	0	130	1	6	0	0	0	
17:30:00	186	7	2916	172	142	7	3	0	40	0	5	0	1	0	133	3	6	0	0	0	
17:45:00	196	10	3089	173	149	7	3	0	41	1	5	0	1	0	136	3	6	0	0	0	
18:00:00	206	10	3234	145	154	5	4	1	42	1	5	0	1	0	140	4	6	0	0	0	
18:15:00	209	3	3384	150	158	4	4	0	42	0	5	0	1	0	143	3	6	0	0	0	
18:30:00	214	5	3497	113	165	7	4	0	42	0	5	0	2	1	146	3	6	0	0	0	
18:45:00	214	0	3497	0	165	0	4	0	42	0	5	0	2	0	146	0	6	0	0	0	
18:45:15	214	0	3497	0	165	0	4	0	42	0	5	0	2	0	146	0	6	0	0	0	



Turning Movement Count
Location Name: LAIRD RD & SOUTHGATE DR
Date: Thu, Apr 21, 2016 Deployment Lead: Peter Ilias

Turning Movement Count (317 . LAIRD RD & SOUTHGATE DR)

Start Time	N Approach Southgate Drive						E Approach Laird Road						S Approach Southgate Drive						W Approach Laird Road						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total			
07:00:00	12	1	2	0	2	15	17	92	2	0	0	111	2	2	19	0	0	23	46	82	34	0	0	162	311		
07:15:00	7	2	8	0	0	17	22	91	3	0	0	116	1	1	31	0	0	33	39	90	47	0	0	176	342		
07:30:00	5	2	1	0	0	8	31	151	3	0	0	185	3	1	44	0	0	48	61	102	67	0	0	230	471		
07:45:00	9	5	7	0	0	21	14	121	3	0	1	138	5	1	21	0	0	27	78	118	68	0	0	264	450	1574	
08:00:00	9	2	5	0	1	16	12	128	3	0	0	143	2	1	25	0	0	28	52	122	55	0	1	229	416	1679	
08:15:00	12	2	5	0	0	19	17	161	10	0	0	188	3	3	15	0	0	21	67	111	56	0	0	234	462	1799	
08:30:00	17	4	5	0	0	26	22	128	1	0	0	151	3	2	18	0	0	23	54	124	41	0	0	219	419	1747	
08:45:00	8	3	1	0	0	12	8	130	2	0	0	140	5	3	10	0	0	18	67	117	44	0	0	228	398	1695	
09:00:00	10	2	2	0	0	14	7	77	1	0	0	85	4	2	19	0	0	25	43	80	17	0	0	140	264	1543	
09:15:00	15	2	3	0	0	20	2	69	3	0	0	74	0	3	15	0	0	18	34	45	22	0	0	101	213	1294	
09:30:00	10	4	8	0	0	22	8	76	3	0	0	87	0	3	12	0	0	15	26	67	24	0	0	117	241	1116	
09:45:00	9	6	3	0	0	18	9	70	2	0	0	81	3	1	23	0	0	27	16	58	13	0	0	87	213	931	
BREAK																											
11:00:00	14	4	4	0	0	22	2	101	2	0	0	105	7	5	17	0	0	29	22	80	8	0	0	110	266		
11:15:00	12	2	1	0	0	15	3	88	5	0	0	96	8	4	15	0	0	27	18	72	7	0	0	97	235		
11:30:00	18	4	6	0	0	28	5	85	2	0	0	92	3	13	18	0	0	34	18	83	8	0	0	109	263		
11:45:00	20	1	6	0	2	27	4	89	12	0	0	105	4	4	20	0	0	28	9	92	10	0	0	111	271	1035	
12:00:00	15	5	5	0	0	25	2	112	2	0	2	116	6	5	26	0	0	37	18	96	8	0	0	122	300	1069	
12:15:00	18	5	4	0	0	27	2	120	2	0	0	124	3	9	17	0	0	29	9	104	10	0	0	123	303	1137	
12:30:00	16	4	7	0	2	27	2	94	7	0	0	103	6	6	9	0	2	21	21	115	16	0	0	152	303	1177	
12:45:00	16	5	7	0	0	28	3	106	2	0	0	111	6	9	12	0	0	27	18	75	5	0	0	98	264	1170	
13:00:00	14	2	4	0	0	20	1	101	5	0	0	107	1	7	21	0	0	29	13	65	8	0	1	86	242	1112	
13:15:00	10	3	5	0	0	18	4	84	3	0	0	91	3	2	21	0	0	26	18	96	7	0	0	121	256	1065	
13:30:00	19	5	1	0	0	25	2	83	6	0	0	91	3	6	12	0	0	21	13	75	10	0	0	98	235	997	
13:45:00	8	3	5	0	0	16	0	77	1	0	0	78	5	6	13	0	0	24	23	89	7	0	0	119	237	970	
BREAK																											
15:00:00	18	5	8	0	0	31	3	127	4	0	0	134	7	5	63	0	0	75	37	92	12	0	0	141	381		
15:15:00	52	3	13	0	0	68	9	96	1	0	0	106	6	3	56	0	0	65	31	89	14	0	0	134	373		
15:30:00	52	2	13	0	0	67	5	109	1	0	0	115	9	5	106	0	0	120	56	121	12	0	0	189	491		
15:45:00	47	6	16	0	0	69	3	107	2	0	0	112	5	1	67	0	1	73	35	114	20	0	0	169	423	1668	
16:00:00	52	2	14	0	0	68	7	119	5	0	0	131	6	0	108	0	0	114	16	99	22	0	0	137	450	1737	
16:15:00	89	5	25	0	0	119	7	111	2	0	0	120	8	2	72	0	0	82	10	124	14	0	1	148	469	1833	
16:30:00	113	2	34	0	0	149	5	172	1	0	0	178	14	1	114	0	0	129	18	131	14	0	0	163	619	1961	
16:45:00	68	3	12	0	0	83	2	151	5	0	0	158	8	2	59	0	0	69	22	138	7	0	0	167	477	2015	
17:00:00	58	4	19	0	0	81	3	177	1	0	0	181	4	4	85	0	0	93	13	132	13	0	0	158	513	2078	
17:15:00	39	5	13	0	0	57	3	117	4	0	0	124	7	2	46	0	0	55	16	199	12	0	0	227	463	2072	
17:30:00	25	2	9	0	0	36	2	128	2	0	0	132	7	1	39	0	0	47	17	162	8	0	0	187	402	1855	
17:45:00	15	2	5	0	0	22	5	75	0	0	0	80	2	1	27	0	0	30	32	132	8	0	0	172	304	1682	
Grand Total	931	119	286	0	7	1336	253	3923	113	0	3	4289	169	126	1296	0	3	1591	1087	3691	748	0	3	5526	12742	-	
Approach%	69.7%	8.9%	21.4%	0%		-	5.9%	91.5%	2.6%	0%		-	10.6%	7.9%	81.5%	0%		-	19.7%	66.8%	13.5%	0%		-	-	-	
Totals %	7.3%	0.9%	2.2%	0%		10.5%	2%	30.8%	0.9%	0%		33.7%	1.3%	1%	10.2%	0%		12.5%	8.5%	29%	5.9%	0%		43.4%	-	-	
Heavy	20	8	6	0		-	3	44	2	0		-	4	7	124	0		-	125	52	28	0		-	-	-	
Heavy %	2.1%	6.7%	2.1%	0%		-	1.2%	1.1%	1.8%	0%		-	2.4%	5.6%	9.6%	0%		-	11.5%	1.4%	3.7%	0%		-	-	-	
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	



Peak Hour: 07:30 AM - 08:30 AM Weather:

Start Time	N Approach Southgate Drive						E Approach Laird Road						S Approach Southgate Drive						W Approach Laird Road						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
07:30:00	5	2	1	0	0	8	31	151	3	0	0	185	3	1	44	0	0	48	61	102	67	0	0	230	471
07:45:00	9	5	7	0	0	21	14	121	3	0	1	138	5	1	21	0	0	27	78	118	68	0	0	264	450
08:00:00	9	2	5	0	1	16	12	128	3	0	0	143	2	1	25	0	0	28	52	122	55	0	1	229	416
08:15:00	12	2	5	0	0	19	17	161	10	0	0	188	3	3	15	0	0	21	67	111	56	0	0	234	462
Grand Total	35	11	18	0	1	64	74	561	19	0	1	654	13	6	105	0	0	124	258	453	246	0	1	957	1799
Approach%	54.7%	17.2%	28.1%	0%		-	11.3%	85.8%	2.9%	0%		-	10.5%	4.8%	84.7%	0%		-	27%	47.3%	25.7%	0%		-	-
Totals %	1.9%	0.6%	1%	0%		3.6%	4.1%	31.2%	1.1%	0%		36.4%	0.7%	0.3%	5.8%	0%		6.9%	14.3%	25.2%	13.7%	0%		53.2%	-
PHF	0.73	0.55	0.64	0		0.76	0.6	0.87	0.48	0		0.87	0.65	0.5	0.6	0		0.65	0.83	0.93	0.9	0		0.91	-
Heavy	2	1	2	0		5	1	8	1	0		10	0	1	19	0		20	14	6	3	0		23	-
Heavy %	5.7%	9.1%	11.1%	0%		7.8%	1.4%	1.4%	5.3%	0%		1.5%	0%	16.7%	18.1%	0%		16.1%	5.4%	1.3%	1.2%	0%		2.4%	-
Lights	26	7	10	0		43	73	526	16	0		615	11	4	84	0		99	235	422	241	0		898	-
Lights %	74.3%	63.6%	55.6%	0%		67.2%	98.6%	93.8%	84.2%	0%		94%	84.6%	66.7%	80%	0%		79.8%	91.1%	93.2%	98%	0%		93.8%	-
Mediums	7	3	6	0		16	0	27	2	0		29	2	1	2	0		5	9	25	2	0		36	-
Mediums %	20%	27.3%	33.3%	0%		25%	0%	4.8%	10.5%	0%		4.4%	15.4%	16.7%	1.9%	0%		4%	3.5%	5.5%	0.8%	0%		3.8%	-
Articulated Trucks	2	1	2	0		5	1	8	1	0		10	0	1	19	0		20	14	6	3	0		23	-
Articulated Trucks %	5.7%	9.1%	11.1%	0%		7.8%	1.4%	1.4%	5.3%	0%		1.5%	0%	16.7%	18.1%	0%		16.1%	5.4%	1.3%	1.2%	0%		2.4%	-
Pedestrians	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-
Pedestrians%	-	-	-	-	33.3%	-	-	-	-	33.3%	-	-	-	-	-	0%	-	-	-	-	-	33.3%	-	-	-



Peak Hour: 11:45 AM - 12:45 PM Weather:

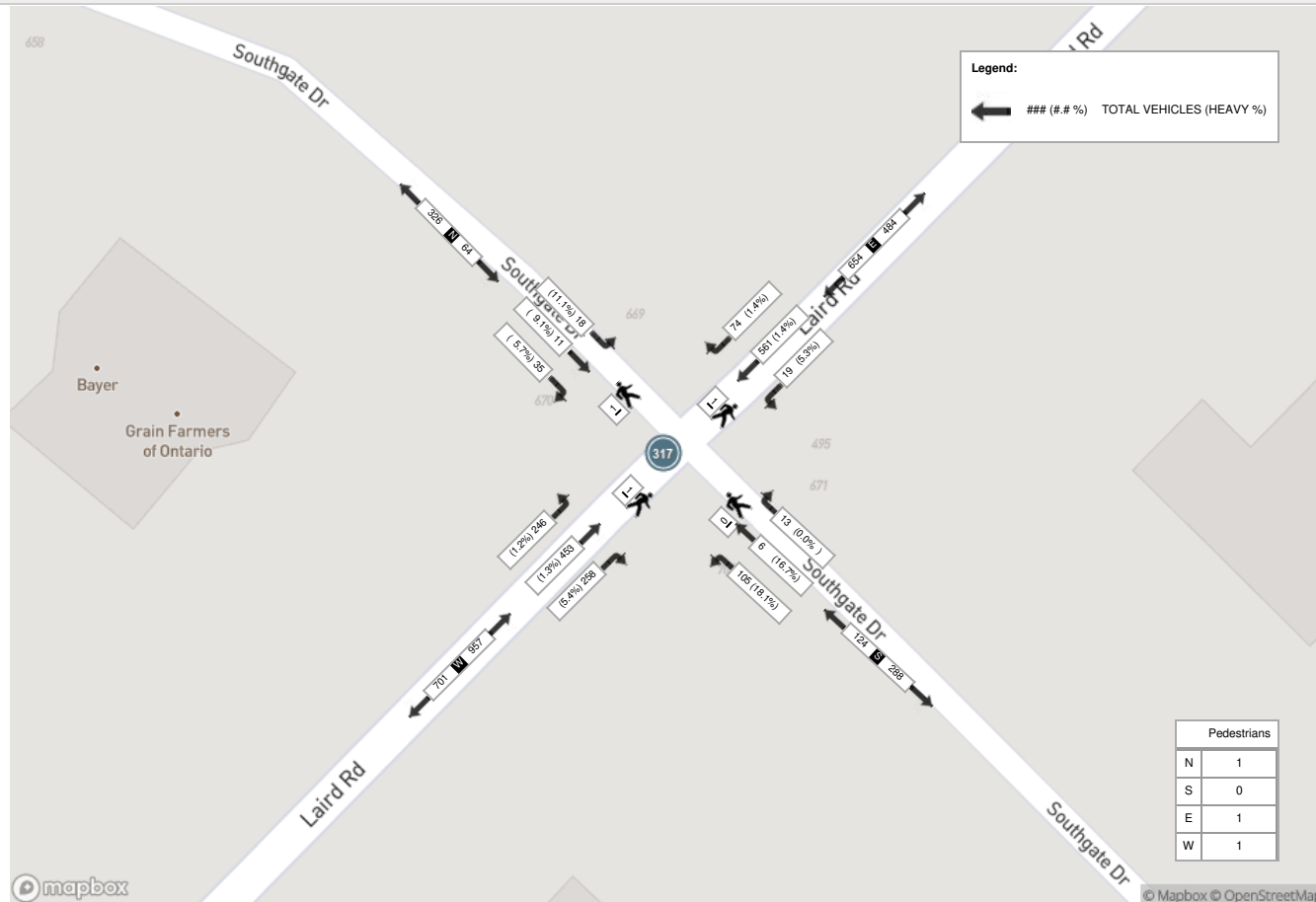
Start Time	N Approach Southgate Drive						E Approach Laird Road						S Approach Southgate Drive						W Approach Laird Road						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
11:45:00	20	1	6	0	2	27	4	89	12	0	0	105	4	4	20	0	0	28	9	92	10	0	0	111	271
12:00:00	15	5	5	0	0	25	2	112	2	0	2	116	6	5	26	0	0	37	18	96	8	0	0	122	300
12:15:00	18	5	4	0	0	27	2	120	2	0	0	124	3	9	17	0	0	29	9	104	10	0	0	123	303
12:30:00	16	4	7	0	2	27	2	94	7	0	0	103	6	6	9	0	2	21	21	115	16	0	0	152	303
Grand Total	69	15	22	0	4	106	10	415	23	0	2	448	19	24	72	0	2	115	57	407	44	0	0	508	1177
Approach%	65.1%	14.2%	20.8%	0%		-	2.2%	92.6%	5.1%	0%		-	16.5%	20.9%	62.6%	0%		-	11.2%	80.1%	8.7%	0%		-	-
Totals %	5.9%	1.3%	1.9%	0%		9%	0.8%	35.3%	2%	0%		38.1%	1.6%	2%	6.1%	0%		9.8%	4.8%	34.6%	3.7%	0%		43.2%	-
PHF	0.86	0.75	0.79	0		0.98	0.63	0.86	0.48	0		0.9	0.79	0.67	0.69	0		0.78	0.68	0.88	0.69	0		0.84	-
Heavy	0	0	0	0		0	0	1	0	0		1	0	0	4	0		4	6	0	0	0		6	-
Heavy %	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	5.6%	0%		3.5%	10.5%	0%	0%	0%		1.2%	-
Lights	69	13	22	0		104	10	411	23	0		444	19	24	68	0		111	51	404	42	0		497	-
Lights %	100%	86.7%	100%	0%		98.1%	100%	99%	100%	0%		99.1%	100%	100%	94.4%	0%		96.5%	89.5%	99.3%	95.5%	0%		97.8%	-
Mediums	0	2	0	0		2	0	3	0	0		3	0	0	0	0		0	0	3	2	0		5	-
Mediums %	0%	13.3%	0%	0%		1.9%	0%	0.7%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	0.7%	4.5%	0%		1%	-
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	4	0		4	6	0	0	0		6	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	5.6%	0%		3.5%	10.5%	0%	0%	0%		1.2%	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	50%	-	-	-	-	-	25%	-	-	-	-	-	25%	-	-	-	-	-	0%	-	-



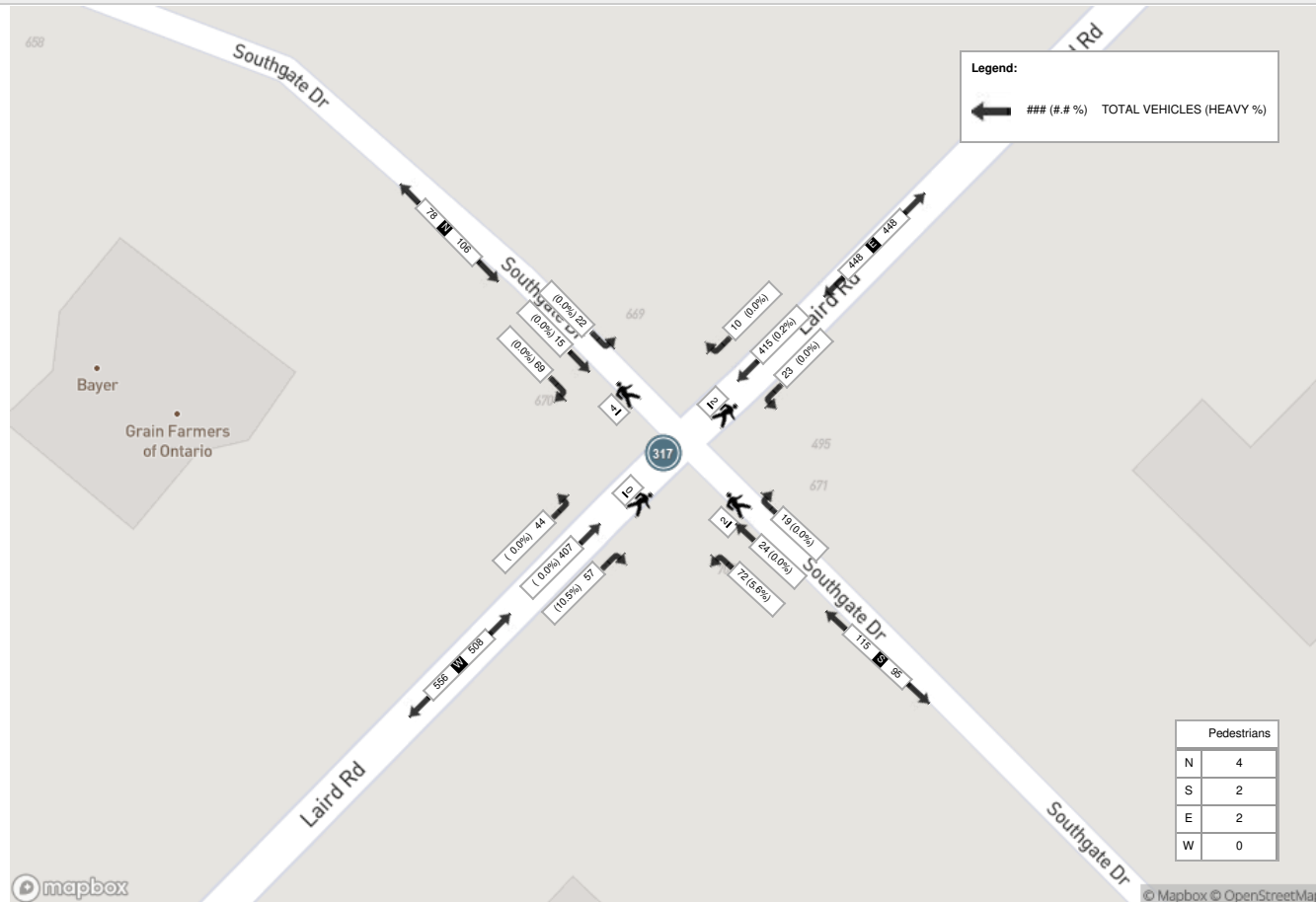
Peak Hour: 04:15 PM - 05:15 PM Weather:

Start Time	N Approach Southgate Drive						E Approach Laird Road						S Approach Southgate Drive						W Approach Laird Road						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:15:00	89	5	25	0	0	119	7	111	2	0	0	120	8	2	72	0	0	82	10	124	14	0	1	148	469
16:30:00	113	2	34	0	0	149	5	172	1	0	0	178	14	1	114	0	0	129	18	131	14	0	0	163	619
16:45:00	68	3	12	0	0	83	2	151	5	0	0	158	8	2	59	0	0	69	22	138	7	0	0	167	477
17:00:00	58	4	19	0	0	81	3	177	1	0	0	181	4	4	85	0	0	93	13	132	13	0	0	158	513
Grand Total	328	14	90	0	0	432	17	611	9	0	0	637	34	9	330	0	0	373	63	525	48	0	1	636	2078
Approach%	75.9%	3.2%	20.8%	0%		-	2.7%	95.9%	1.4%	0%		-	9.1%	2.4%	88.5%	0%		-	9.9%	82.5%	7.5%	0%		-	-
Totals %	15.8%	0.7%	4.3%	0%		20.8%	0.8%	29.4%	0.4%	0%		30.7%	1.6%	0.4%	15.9%	0%		17.9%	3%	25.3%	2.3%	0%		30.6%	-
PHF	0.73	0.7	0.66	0		0.72	0.61	0.86	0.45	0		0.88	0.61	0.56	0.72	0		0.72	0.72	0.95	0.86	0		0.95	-
Heavy	5	2	0	0		7	0	4	1	0		5	2	1	20	0		23	9	9	1	0		19	-
Heavy %	1.5%	14.3%	0%	0%		1.6%	0%	0.7%	11.1%	0%		0.8%	5.9%	11.1%	6.1%	0%		6.2%	14.3%	1.7%	2.1%	0%		3%	-
Lights	316	7	88	0		411	16	599	6	0		621	30	6	307	0		343	52	500	42	0		594	-
Lights %	96.3%	50%	97.8%	0%		95.1%	94.1%	98%	66.7%	0%		97.5%	88.2%	66.7%	93%	0%		92%	82.5%	95.2%	87.5%	0%		93.4%	-
Mediums	7	5	2	0		14	1	8	2	0		11	2	2	3	0		7	2	16	5	0		23	-
Mediums %	2.1%	35.7%	2.2%	0%		3.2%	5.9%	1.3%	22.2%	0%		1.7%	5.9%	22.2%	0.9%	0%		1.9%	3.2%	3%	10.4%	0%		3.6%	-
Articulated Trucks	5	2	0	0		7	0	4	1	0		5	2	1	20	0		23	9	9	1	0		19	-
Articulated Trucks %	1.5%	14.3%	0%	0%		1.6%	0%	0.7%	11.1%	0%		0.8%	5.9%	11.1%	6.1%	0%		6.2%	14.3%	1.7%	2.1%	0%		3%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	100%	-	-

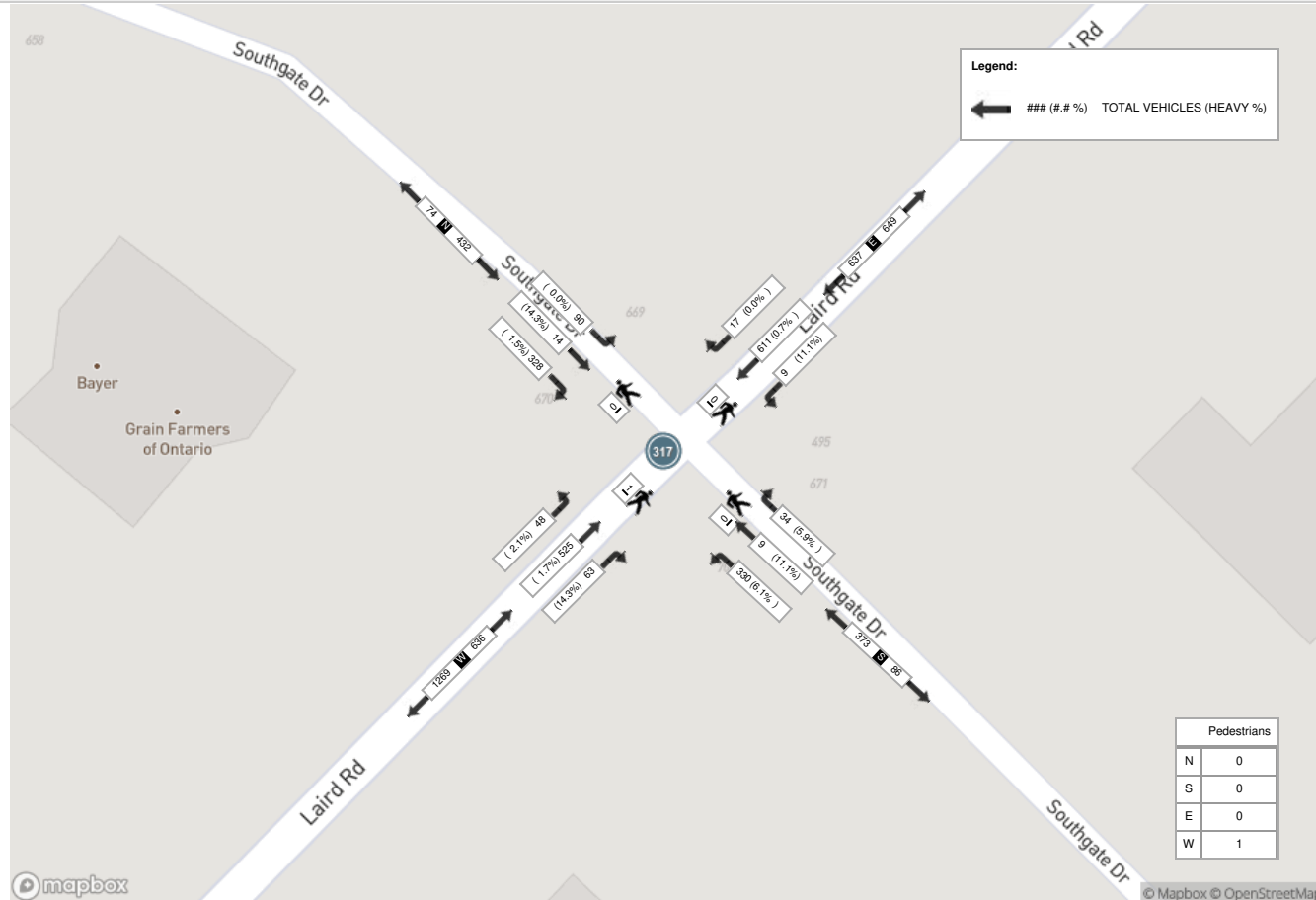
Peak Hour: 07:30 AM - 08:30 AM Weather:



Peak Hour: 11:45 AM - 12:45 PM Weather:



Peak Hour: 04:15 PM - 05:15 PM Weather:



Appendix **B**

Signal Timing Plans



CITY OF GUELPH

Traffic Signal Timing Parameters

Database Date		From Field				Prepared Date:		August. 29, 2017			
						Completed By:		Sh.H			
						Checked By:					
Location:		Laird at southgate						GREEN TIME PERIOD (sec.)			
Phase #	Direction	Vehicle Minimum (sec.)	Pedestrian Minimum (sec.)		Amber (sec.)	All Red (sec.)	Plan 1				
			WALK	FDWALK							
1	WBLT	7.0			3.0		10.0	omit			
2	EB Through	10.0	20.0	7.0	4.0	2.0	27.0	27.0			
3	SBLT	7.0			3.0		10.0	omit			
4	NB Through	10.0	8.0	17.0	4.0	4.0	33.0	33.0			
5	EBLT	7.0			3.0		10.0	omit			
6	WB Through	10.0	20.0	7.0	4.0	2.0	27.0	27.0			
7	NBLT	7.0			3.0		10.0	omit			
8	SBThrough	10.0	11.0	22.0	4.0	4.0	33.0	33.0			
System Control		No									
Local Control		Yes									
Fully-Actuated Mode		Yes									
Note: P+P = Protected Permissive Phase Prot. = Fully Protected Phase		TIME (M-F)		PEAK	CYCLE LENGTH (sec.)		OFFSET (sec.)				
		7:00 - 21:00		1	100						
		21:00- 7:00		2	74						

Cover Sheet

Location: Hwy 6 (Hanlon) ERT @ Laird

Area/District: _____

Timing Based On T.M. Dated: _____

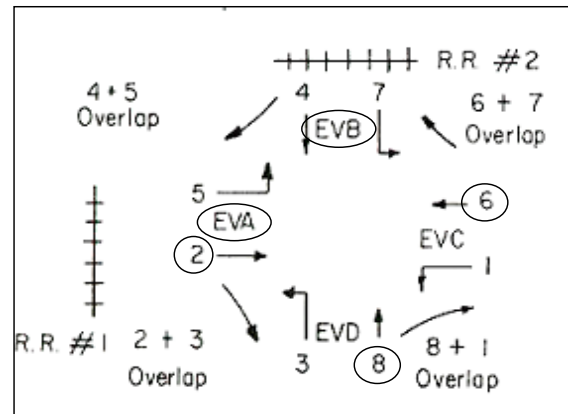
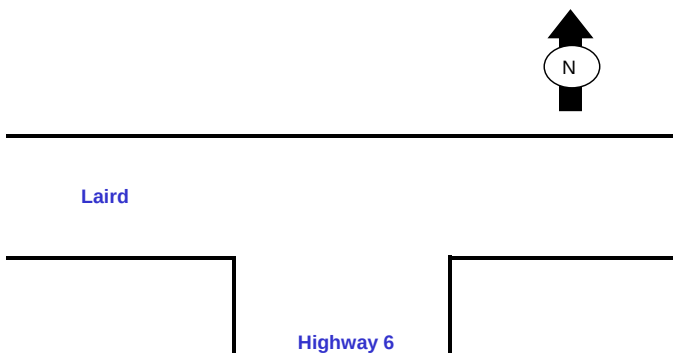
Traffic Signal : 105

Timing Developed By: H Nichols

Approved By: K Plut

Installed By: _____

Installation Date: 18-Jun-18



Circle Movements and Operations

COMMUNICATIONS ADDRESSING

COMM ADDRESS
(C/0 + 0 + 0) = 1

CELL # : _____

ZONE ADDRESS
(C/0 + 0 + 1) = 1

UDP PORT: _____

AREA NUMBER
(C/0 + 0 + 2) = 1

IP ADDRESS: _____

AREA ADDRESS 105
(C/0 + 0 + 3) =

AMPLIFIER: ☐

PROGRAM: 233ON1.C

DISABLE ALARM REPORTING

		Column F							
		1	2	3	4	5	6	7	8
0	OMIT ALARMS					X			

< C + 0 + C = 5 >

- 1 = STOP TIME
- 2 = FLASH SENSE
- 3 = KEYBOARD ENTRY
- 4 = MANUAL PLAN SELECT
- 5 = ENABLE POLICE CNTRL (Not Used)
- 6 = EXTERNAL ALARM (Door Alarm)
- 7 = DETECTOR FAILURE

ACTUATED INTERVAL TIMING AND FAZE FUNCTIONS

		PHASE							
		1	2	3	4	5	6	7	8
0	WALK	-	7	-	-	-	-	-	-
1	DON'T WALK	-	27	-	-	-	-	-	-
2	MIN INITIAL	-	20	-	-	-	20	-	10
3	TYPE 3 LIMIT	-	-	-	-	-	-	-	-
4	ADD PER VEH	-	-	-	-	-	-	-	-
5	VEH EXT	-	3.0	-	-	-	3.0	-	4.0
6	MAX GAP	-	3.0	-	-	-	3.0	-	4.0
7	MIN GAP	-	3.0	-	-	-	3.0	-	4.0
8	MAX LIMIT	-	35	-	-	-	35	-	45
9	MAXIMUM 2	-	-	-	-	-	-	-	-
A	ADV /DLY WALK	-	-	-	-	-	-	-	-
B	SEQUENCE TO	-	-	-	-	-	-	-	-
C	COND SRV MIN	-	-	-	-	-	-	-	-
D	REDUCE EVERY	-	-	-	-	-	-	-	-
E	YELLOW	-	4.5	-	-	-	4.5	-	4.5
F	RED CLEAR	-	2.2	-	-	-	2.2	-	1.9

PHASE BANK #1 < C + O + F = 1 >

		9	A	B	C	D	E
0							RR1 DLY
1	PHASE 1	-	-	-	-	-	RR1 CLR
2	PHASE 2	-	-	-	-	-	EVA DLY
3	PHASE 3	-	-	-	-	-	EVA CLR
4	PHASE 4	-	-	-	-	-	EV B DLY
5	PHASE 5	-	-	-	-	-	EV B CLR
6	PHASE 6	-	-	-	-	-	EVC DLY
7	PHASE 7	-	-	-	-	-	EVC CLR
8	PHASE 8	-	-	-	-	-	EVD DLY
							EVD CLR
							RR2 DLY
							RR2 CLR
							EV CLR
							EV DLY
							RR CLR
							RR DLY

ALL RED START
(F/1 + C + O) =
RED REVERT
(F/1 + O + F) =

5.0

5.0

COLUMN F PHASES

		1	2	3	4	5	6	7	8
0	PERMIT	-	X	-	-	-	X	-	X
1	RED LOCK	-	-	-	-	-	-	-	-
2	YELLOW LOCK	-	-	-	-	-	-	-	-
3	VEH MIN CALL	-	-	-	-	-	-	-	-
4	PED RECALL	-	X	-	-	-	-	-	-
5	PEDESTRIANS	-	-	-	-	-	-	-	-
6	YIELD AT FL SH D/W	-	X	-	-	-	-	-	-
7	RED REST	-	-	-	-	-	-	-	-
8	DOUBLE ENTRY	-	X	-	-	-	X	-	-
9	VEH MAX CALL	-	X	-	-	-	X	-	-
A	SOFT RECALL	-	-	-	-	-	-	-	-
B	MAXIMUM 2	-	-	-	-	-	-	-	-
C	COND SERVICE	-	-	-	-	-	-	-	-
D	MAN CONT CALL	-	-	-	-	-	-	-	-
E	YELLOW START	-	X	-	-	-	X	-	-
F	FIRST PHASES	-	-	-	-	-	-	-	X

< C + O + F = 1 >

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233 Ontario
Timing Sheet #2

Date: 18-Jun-18

LOCATION

Hwy: Hwy 6 ERT

At: Laird

		A	B	C
PREEMPT	RR1-2	SP	EMER	
MINIMUMS	SPEV1	EV2	VEH	
A	WLK (DFLT)	4	4	4
B	FD WALK			14
C	INITAL			5

< C + O + F = 1 >

Column E Phases / Bits

		1	2	3	4	5	6	7	8
0	EXCLUSIVE	-	-	-	-	-	-	-	-
1	RR1 CLEAR	-	-	-	-	-	-	-	-
2	RR2 CLEAR	-	-	-	-	-	-	-	-
3	RR2 LTD SRV	-	-	-	-	-	-	-	-
4	PROT/PERM	-	-	-	-	-	-	-	-
5	FLH TO PREMT	-	-	-	-	-	-	-	-
6	FLASH ENTRY	-	-	-	-	-	-	-	-
7	DISABL MIN YEL	-	-	-	-	-	-	-	-
8	DISABL OVP YEL	-	-	-	-	-	-	-	-
9	OVP FLH YEL	-	-	-	-	-	-	-	-
A	EM VEH A	-	X	-	-	-	X	-	-
B	EM VEH B	-	-	-	-	-	-	-	X
C	EM VEH C	-	-	-	-	-	-	-	-
D	EM VEH D	-	-	-	-	-	-	-	-
E	EXTRA 1	X	X	-	X	-	-	-	-
F	IC SELECT	-	X	-	-	-	-	-	-

< C + O + E = 125 >

Column F Phases / Bits

		1	2	3	4	5	6	7	8
0		-	-	-	-	-	-	-	-
1	EXT PERMIT 1	-	-	-	-	-	-	-	-
2	EXT PERMIT 2	-	-	-	-	-	-	-	-
3	EXCLU PED	-	-	-	-	-	-	-	-
4		-	-	-	-	-	-	-	-
5	PED 2P OUT	-	X	-	-	-	-	-	-
6	PED 6P OUT	-	-	-	-	-	-	-	-
7	PED 4P OUT	-	-	-	-	-	-	-	-
8	PED 8P OUT	-	-	-	-	-	-	-	-
9	FLH YELLOW	-	-	-	-	-	-	-	-
A		-	-	-	-	-	-	-	-
B		-	-	-	-	-	-	-	-
C		-	-	-	-	-	-	-	-
D		-	-	-	-	-	-	-	-
E	RESTRICTED	-	-	-	-	-	-	-	-
F	EXTRA 2	-	-	-	-	-	-	-	-

Column F Phases / Bits

		1	2	3	4	5	6	7	8
0	ADV GRN FLH	-	-	-	-	-	-	-	-
1	PHASE FLASH	-	-	-	-	-	-	-	-
2	FLASH WALK	-	-	-	-	-	-	-	-
3	GUAR PASS	-	-	-	-	-	-	-	-
4	SIMUL GAP	-	X	-	-	-	X	-	-
5	SEQ TIMING	-	-	-	-	-	-	-	-
6	ADV WALK	-	-	-	-	-	-	-	-
7	DELAY WALK	-	-	-	-	-	-	-	-
8	EXT RECALL	-	-	-	-	-	-	-	-
9		-	-	-	-	-	-	-	-
A	MAX EXTEN	-	-	-	-	-	-	-	-
B	INH PED RSRV	-	-	-	-	-	-	-	-
C	SEMI ACTUATED	-	X	-	-	-	X	-	-
D		-	-	-	-	-	-	-	-
E	STRT VEH CALL	-	-	-	-	-	X	-	X
F	STRT PED CALL	-	X	-	-	-	-	-	-

SPECIALS < C + O + F = 2 >

MANUAL PLAN	0
< C/O + A + 1 >	
MANUAL OFFSET	0
< C/O + B + 1 >	

MANUAL SELECTION

MANUAL PLAN

0 = Automatic (Master)
9 = Control Plan 1 - 9
14 (E) = Free (Isolated)
15 (F) = Software Flash

MANUAL OFFSET

0 = Automatic (Master)
1 = Offset A
2 = Offset B
3 = Offset C

FLASH TO PREEMPT

1 = EVA
2 = EVB
3 = EVC
4 = EVD
5 = RR1
6 = RR2
7 = SE1
8 = SE2
1 = TBC TYPE 1
2 = NEMA EXT. COORD.
3 = DAYLIGHT SAVINGS
4 =

EXTRA 1

5 = EXPANDED STATUS REPORTING
6 = INTERNATIONAL PED
7 = CLEAR OUTPUTS DURING FLASH
8 = SPLIT RING

EXTRA 2

1 = AWR ON DURING PHASE INITIAL
2 = LMU INSTALLED

IC SELECT

2 = 2 WAY MODEM
3 = 7 WIRE SLAVE
4 = FLASH / FREE
5 = SIMPLEX MASTER
7 = 7 WIRE MASTER
8 = OFFSET INTURP

Pretimed

	PHASE							
	1	2	3	4	5	6	7	8
WALK	-	7	-		-		-	
DON'T WALK	-	27	-		-		-	
MIN INTIAL		20			-	20		10
TYPE 3 LIMIT	-	-	-	-	-	-	-	-
ADD PER VEH	-	-	-	-	-	-	-	-
VEH EXT		3.0				3.0		4.0
MAX GAP		3.0				3.0		4.0
MIN GAP		3.0				3.0		4.0
MAX LIMIT		35				35		45
MAXIMUM 2	-	-	-				-	
ADV / DLY WALK	-	-	-	-	-	-	-	-
SEQUENCE TO	-	-	-	-	-	-	-	-
COND SRV MIN	-	-	-	-	-	-	-	-
REDUCE EVERY	-	-	-	-	-	-	-	-
YELLOW		4.5				4.5		4.5
RED CLEAR		2.2				2.2		1.9

PHASE BANK # < C + O + F = 1 >

		Column F PHASES							
		1	2	3	4	5	6	7	8
0	PERMIT		X				X		X
1	RED LOCK								
2	YELLOW LOCK								
3	VEH MIN CALL								
4	PED RECALL		X						
5	PEDESTRIANS								
6	REST IN WALK		X						
7	RED REST								
8	DOUBLE ENTRY		X				X		
9	VEH MAX CALL		X				X		X
A	SOFT RECALL								
B	MAXIMUM 2								
C	CORD SERVICE								
D	MAN CONT CALL								
E	YELLOW START		X				X		
F	FIRST PHASES								X

< C + O + F = 1 >

LOCATION: Hwy 6 (Hanlon) ERT @ Laird

Issued Date: 18-Jun-18

Installed Date: 18-Jun-18

BI Tran Systems, Inc.

510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260

Traffic Signal Program 233 Ontario
Timing Sheet #2
Revised (02/95)

9 = VEH MAX RECALL

DETECTOR ASSIGNMENTS

STANDARD 332 CABINET LOCATION	column	1	3	Column 0 C1 Pin #	Column 1 ATTRIBUTES								Column 2 PHASE(S)								Column 3 ASSIGNMENTS								DETECTOR ASSIGNMENT SHEET ONTARIO 233 PROGRAM	
			carry																											
		delay	over																											
I-2 U	0			0	39																		LOCATION: Hwy 6 ERT at Laird Issued Date: 18-Jun-18 Installed Date: 18-Jun-18 DETECTOR ATTRIBUTES 1 = FULL TIME DELAY 2 = PEDESTRIAN CALL 3 = 4 = COUNT 5 = EXTENSION 6 = TYPE 3 7 = CALLING 8 = ALTERNATE DETECTOR ASSIGNMENTS 1 = DET. SET # 1 2 = DET. SET # 2 3 = DET. SET # 3 4 = 5 = 6 = MIN RECALL ON FAILURE 7 = MAX RECALL ON FAILURE 8 - REPORT ON FAILURE DETECTOR MONITOR MAX OFF: D/0+0+1=120 MAX ON: D/0+0+2=60 ADVANCE WARNING BEACONS SIGN #1 SIGN #2 PHASE NUMBER (F/1+C+F)= (F/1+D+F)= TIME BEFORE YELLOW (F/1+C+E)= (F/1+D+E)= OUTPUT PIN NUMBER (E/127+E+8)= (E/127+E+9)=							
J-2 U	1			1	40																									
I-6 U	2			2	41																									
J-6 U	3	5		3	42			X	X		X					X	X	X	X			X								
1-2 L	4			4	43																									
J-2 L	5			5	44																									
1-6 L	6			6	45																									
J-6 L	7	10		7	46			X	X		X					X	X	X	X			X								
I-4	8			8	47																									
J-4	9			9	48																									
I-8	A			A	49																									
J-8	B			B	50																									
J-1	C			C	55																									
I-1	D			D	56																									
J-5	E			E	57																									
I-5	F			F	58																									
< C + O + D = 0 >				DETECTOR ASSIGNMENTS < C + O + E = 126 >																										
STANDARD 332 CABINET LOCATION	column	2	4	Column 4 C1 Pin #	Column 5 ATTRIBUTES								Column 6 PHASE(S)								Column 7 ASSIGNMENTS									
		delay	carry																											
			over																											
J-9 U	0			0	59																									
I-9 U	1			1	60																									
I-9 L	2			2	61																									
J-9 L	3			3	62																									
I-3 U	4			4	63																									
J-3 U	5			5	64																									
I-7 U	6			6	65																									
J-7 U	7			7	66																									
I-12 U	8			8	67																									
I-13 U	9			9	68																									
I-12 L	A			A	69																									
I-13 L	B			B	70																									
I-3 L	C			C	76																									
J-3 L	D			D	77																									
I-7 L	E			E	78																									
J-7 L	F			F	79																									
< C + O + D = 0 >				DETECTOR ASSIGNMENTS < C + O + E = 126 >																										

Input File Layout

Input File Slot No. →

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" FILE	1 Ext, Cnt, Call <C1-56>	2 Ext, Cnt, Call <C1-39>	2 Ext, Cnt, Call <C1-63>	2 Type 3, Call <C1-47>	3 Ext, Cnt, Call <C1-58>	4 Ext, Cnt, Call <C1-41>	4 Ext, Cnt, Call <C1-65>	4 Type 3, Call <C1-49>	1 Ext, Cnt, Call <C1-60>	NOT WIRED	Not Assigned <C1-80>	2 Ped Call <C1-67>	6 Ped Call <C1-68>	Flash Sense <C1-81>
		2 Ext, Cnt, Call <C1-43>	2 Ext, Cnt, Call <C1-76>			4 Ext, Cnt, Call <C1-45>	4 Ext, Cnt, Call <C1-78>		3 Ext, Cnt, Call <C1-62>		Not Assigned <C1-53>	4 Ped Call <C1-69>	8 Ped Call <C1-70>	Stop Time <C1-82>

"J" FILE	5 Ext, Cnt, Call <C1-55>	6 Ext, Cnt, Call <C1-40> 6 Ext, Cnt, Call <C1-44>	6 Ext, Cnt, Call <C1-64> 6 Ext, Cnt, Call <C1-77>	6 Type 3, Call <C1-48>	7 Ext, Cnt, Call <C1-57>	8 Ext, Cnt, Call <C1-42> 8 Ext, Cnt, Call <C1-46>	8 Ext, Cnt, Call <C1-66> 8 Ext, Cnt, Call <C1-79>	8 Type 3, Call <C1-50>	5 Ext, Cnt, Call <C1-59> 7 Ext, Cnt, Call <C1-61>	NOT WIRED	Not Assigned <C1-54> Not Assigned <C1-75>	EV A Preempt <C1-71> EV C Preempt <C1-73>	EV B Preempt <C1-72> EV D Preempt <C1-74>	Railroad 1 <C1-51> Railroad

DETECTOR TYPES

Ext = Extension Detector
Detector is only active during the Phase's GREEN Intervals (ie, will NOT Call the Phase)

Cnt = Count Detector
Used in computing "Added Initial"

Call = Calling Detector
Detector is only active during the Phase's NON-GREEN Intervals (ie, will NOT Extend the Phase)

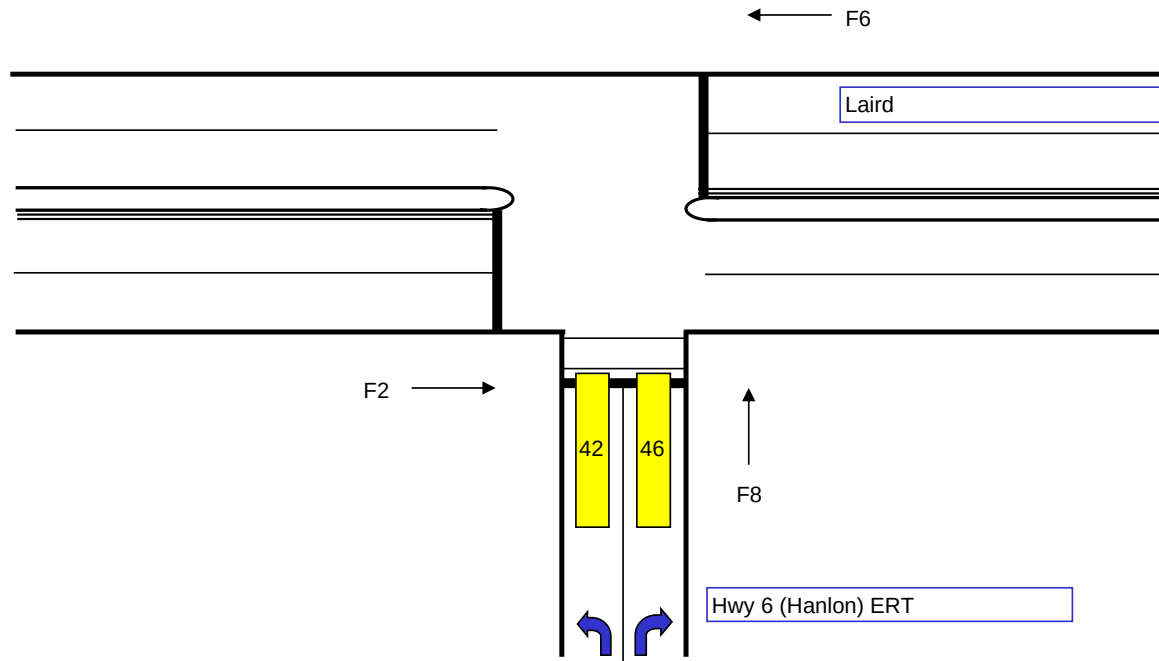
Type 3 = Type 3 Disconnect
Will allow a Calling Detector to Extend its Phase until the Call first drops or the "Type 3 Limit" is reached

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233
Initialized Detector Assignments
(Revised 8/92) 332 Cabinet



Intersection Of: **Hwy 6 (Hanlon) ERT**

At: **Laird**



DEFAULT DETECTOR ASSIGNMENTS

Standard 332 Cabinet Location	Column 0 C1 PIN NUMBER	Column 1 ATTRIBUTES								Column 2 PHASE(S)								Column 3 ASSIGNMENTS							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
I-2 U -->	0	39			X	X	X		X									X	X	X					X
J-2 U -->	1	40			X	X	X								X			X	X	X					X
I-6 U -->	2	41			X	X	X							X				X	X	X					X
J-6 U -->	3	42			X	X	X										X	X	X	X					X
I-2 L -->	4	43			X	X	X		X									X	X	X					X
J-2 L -->	5	44			X	X	X							X				X	X	X					X
I-6 L -->	6	45			X	X	X							X				X	X	X					X
J-6 L -->	7	46			X	X	X										X	X	X	X					X
I-4 -->	8	47					X	X		X								X	X	X					X
J-4 -->	9	48					X	X						X				X	X	X					X
I-8 -->	A	49					X	X						X				X	X	X					X
J-8 -->	B	50					X	X									X	X	X	X					X
J-1 -->	C	55			X	X	X							X				X	X	X					X
I-1 -->	D	56			X	X	X	X										X	X	X					X
J-5 -->	E	57			X	X	X										X	X	X	X					X
I-5 -->	F	58			X	X	X			X								X	X	X					X

"INITIALIZED" DETECTOR ASSIGNMENTS
< C + 0 + E = 126 >

Standard 332 Cabinet Location	Column 4 C1 PIN NUMBER	Column 5 ATTRIBUTES								Column 6 PHASE(S)								Column 7 ASSIGNMENTS							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
J-9 U -->	0	59			X	X	X								X			X	X	X					X
I-9 U -->	1	60			X	X	X		X									X	X	X					X
J-9 L -->	2	61			X	X	X								X			X	X	X					X
I-9 L -->	3	62			X	X	X			X								X	X	X					X
I-3 U -->	4	63			X	X	X		X									X	X	X					X
J-3 U -->	5	64			X	X	X								X			X	X	X					X
I-7 U -->	6	65			X	X	X							X				X	X	X					X
J-7 U -->	7	66			X	X	X										X	X	X	X					X
I-12 U -->	8	67	X							X								X	X	X					X
I-13 U -->	9	68	X											X				X	X	X					X
I-12 L -->	A	69	X											X				X	X	X					X
I-13 L -->	B	70	X														X	X	X	X					X
I-3 L -->	C	76			X	X	X		X									X	X	X					X
J-3 L -->	D	77			X	X	X								X			X	X	X					X
I-7 L -->	E	78			X	X	X			X								X	X	X					X
J-7 L -->	F	79			X	X	X										X	X	X						X

"INITIALIZED" DETECTOR ASSIGNMENTS
< C + 0 + E = 126 >

DETECTOR ATTRIBUTES

- 1= Full time Delay
- 2 = Pedestrian call
- 3 =
- 4 = Count
- 5 = Extension
- 6 = Type 3
- 7 = Calling
- 8 = Alternate

DETECTOR ASSIGNMENTS

- 1 = Det. Set #1
- 2 = Det. Set #2
- 3 = Det. Set #3
- 4 =
- 5 =
- 6 = MIN Recall On Failure
- 7 = MAX Recall On Failure
- 8 = Report On Failure

DETECTOR TYPES

- Ext = Extension Detector
Detector is only active during the Phase's GREEN Intervals (ie, will NOT Call the Phase)
- Cnt = Count Detector
Used in computing "Added Initial"
- Call = Calling Detector
Detector is only active during the Phase's NON-GREEN Intervals (ie, will NOT Extend the Phase)
- Type 3 = Type 3 Disconnect
Will allow a Calling Detector to Extend its Phase until the Call first drops or the "Type 3 Limit" is reached

Input File --> 1 2 3 4 5 6 7 8 9 10 11 12 13 14

"I" FILE

1 Ext, Cnt, Call <C1-56>	2 Ext, Cnt, Call <C1-39> 2 Ext, Cnt, Call <C1-43>	2 Ext, Cnt, Call <C1-63> 2 Ext, Cnt, Call <C1-76>	2 Type 3, Call <C1-47>	3 Ext, Cnt, Call <C1-58>	4 Ext, Cnt, Call <C1-41> 4 Ext, Cnt, Call <C1-45>	4 Ext, Cnt, Call <C1-65> 4 Ext, Cnt, Call <C1-78>	4 Type 3, Call <C1-49>	1 Ext, Cnt, Call <C1-60> 3 Ext, Cnt, <C1-61>	NOT WIRED	Not Assigned <C1-80> Not Assigned <C1-53>	2 Ped Call <C1-67> 4 Ped Call <C1-69>	6 Ped Call <C1-68> 8 Ped Call <C1-82>	Flash Sense <C1-81> Stop Time

"J" FILE

5 Ext, Cnt, Call <C1-55>	6 Ext, Cnt, Call <C1-40> 6 Ext, Cnt, Call <C1-44>	6 Ext, Cnt, Call <C1-64> 6 Ext, Cnt, Call <C1-77>	6 Type 3, Call <C1-48>	7 Ext, Cnt, Call <C1-57>	8 Ext, Cnt, Call <C1-42> 8 Ext, Cnt, Call <C1-46>	8 Ext, Cnt, Call <C1-66> 8 Ext, Cnt, Call <C1-79>	8 Type 3, Call <C1-50>	5 Ext, Cnt, Call <C1-59> 7 Ext, Cnt, Call <C1-61>	NOT WIRED	Not Assigned <C1-54> Not Assigned <C1-75>	EV A Preempt <C1-71> EV C Ped Call <C1-73>	EV B Preempt <C1-72> EV D Preempt <C1-74>	Railroad 1 <C1-51> Railroad 2 <C1-52>

BI Tran Systems, Inc.

510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260

Traffic Signal Program 233
Initialized Detector Assignments
(Revised 8/92) 332 Cabinet

REFERENCE SHEET

Controller Intervals

0 = Walk	8 = Red Rest
1 = FDW	9 = Preemption
2 = Min. Green	A = Stop Time
3 =	B = Red Revert
4 = Var. Initial	C = Yellow-Gap Termination
5 = Extension	D = Yellow-Max. Termination
6 =	E = Yellow-Forceoff Termination
7 = Reduce Gap	F = Red Clearance

Continuous Memory Error Monitoring

The controller's RAM and EPROM memories are continuously checked for errors. If an error is found, the intersection will go into FLASH (via Watch Dog Timer), and one of the following will be shown on the controller's display:

- bAd A = An error was detected in the CPU's RAM, or a new program has been installed on the memory module.
Often caused by a bad controller "gel-cell" battery.
- bAd b = An error was detected in the memory module's RAM.
Often caused by a bad "lithium" battery on the memory module.
- bAd E = An error was detected in the 233 Program EPROM.
- bAd F = An error was detected in the Z-RAM (Dallas chip) on the memory module.

412/C Memory Module

Lithium Battery Condition

To check the condition of the 3.6 volt Lithium Battery on the 412/C Memory Module:

- If $E/112 + 0 + A = 84$ - the battery is BAD
- If $E/112 + 0 + A = 85$ - the battery is O.K.

Monitor "Activate" Flags

(Also Requires T.O.D. Function "E" Flag)
Detector Count Recording:

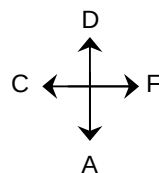
$$E/2 + 0 + 9 = \text{Not Zero}$$

Real Time Split Monitor:

$$E/2 + 0 + E = \text{Not Zero}$$

E Page Enable: $F/1 + 9 + E = \text{Not Zero}$

Display Movement Codes



A = Advance ROW
D = Decrement ROW
C = COLUMN Back
F = Forward COLUMN

Special Event Schedules

Special Event #1: $C + 0 + E = 27$

Special Event #2: $C + 0 + E = 28$

Current Interval = $E + 5 + 0$
Current Interval Timer = $E + 5 + B$
Current Interval
Clearance Phases = $E + 5 + C$

Time of Day Function (7 Key)

Current T.O.D. "E Function"
Control Bits = $C/0 + E + E$
Current T.O.D. "F Function"
Output Bits = $C/0 + E + F$

Logic DELAY Gate

Delay Timer Display

DELAY A Timer = $C/0 + 9 + A$
DELAY B Timer = $C/0 + 9 + B$
thru thru
DELAY F Timer = $C/0 + 9 + F$

Interval Timer Display

Ring A = $F/0 + A + \text{Interval Row}$
Ring B = $F/0 + B + (\text{Interval Row From PHASE BANK data})$

Display Locations

Plan Select Offset Select

Manual = $C/0 + A + 1$ $C/0 + B + 1$
Master = $C/0 + A + 2$ $C/0 + B + 2$
Current = $C/0 + A + 3$ $C/0 + B + 3$
Next = $C/0 + A + 4$ $C/0 + B + 4$
TOD = $C/0 + A + 5$ $C/0 + B + 5$
Master Cycle = $C/0 + A + 0$
Ring A Cycle = $C/0 + B + 0$
Ring B Cycle = $C/0 + D + 0$

MIN Cycle = $C/0 + A + E$
MAX Cycle = $C/0 + B + E$

Phase Hold = $C/0 + F + D$
Phase Next = $C/0 + F + E$
Force Off = $C/0 + F + F$
(with Ring A Cycle Timer)

Current Calculated Cycle
Length = $C/0 + B + F$
Current Permitted
Phases = $E/0 + 7 + 8$
Current Phase
Bank = $F/0 + C + E$

Last Power Failure:
(HR-MIN-DOW) = $8 + 4$
(DOW-YR-MONTH) = $8 + 5$

Last Cabinet Flash
(HR-MIN-DOW) = $8 + 6$
(DOW-YR-MONTH) = $8 + 7$

Power Fail Counts:
(Long Failures) = $F/1 + 0 + C$
(Short Failures) = $F/1 + 0 + D$

Current Time:
(HR-MIN-DOW) = $8 + 0$
(DOW-YR-MONTH) = $8 + 1$
(MIN-SEC-1/10SEC) = $8 + F$

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233
"View" Locations
(Revised 03/94)

Cover Sheet

Location: Hwy 6 (Hanlon) WRT @ Laird

Area/District: _____

Timing Based On T.M. Dated: _____

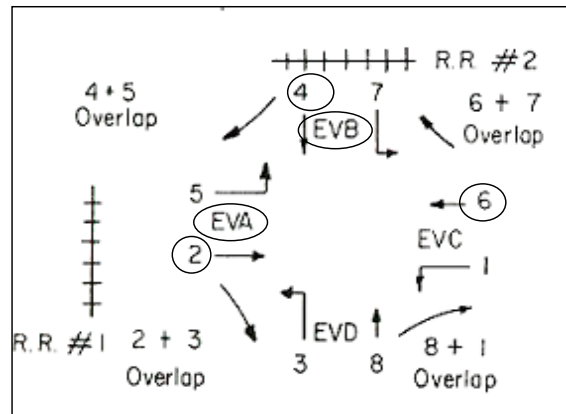
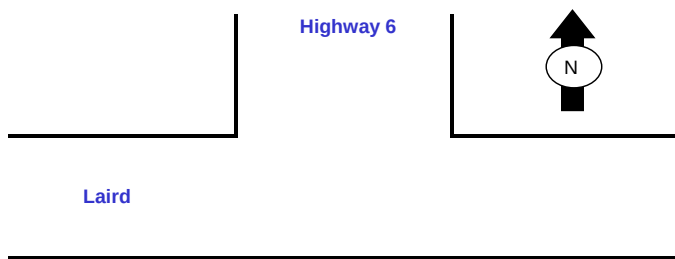
Traffic Signal : 110

Timing Developed By: H Nichols

Approved By: K Plut

Installed By: _____

Installation Date: 18-Jun-18



Circle Movements and Operations

COMMUNICATIONS ADDRESSING

COMM ADDRESS
(C/0 + 0 + 0) = 1

CELL # : _____

ZONE ADDRESS
(C/0 + 0 + 1) = 1

UDP PORT: _____

AREA NUMBER
(C/0 + 0 + 2) = 1

IP ADDRESS: _____

AREA ADDRESS 110
(C/0 + 0 + 3) =

AMPLIFIER: ☐

PROGRAM: 233ON1.C

DISABLE ALARM REPORTING

		Column F							
		1	2	3	4	5	6	7	8
0	OMIT ALARMS					X			

< C + 0 + C = 5 >

- 1 = STOP TIME
- 2 = FLASH SENSE
- 3 = KEYBOARD ENTRY
- 4 = MANUAL PLAN SELECT
- 5 = ENABLE POLICE CNTRL (Not Used)
- 6 = EXTERNAL ALARM (Door Alarm)
- 7 = DETECTOR FAILURE

ACTUATED INTERVAL TIMING AND FAZE FUNCTIONS

		PHASE							
		1	2	3	4	5	6	7	8
0	WALK	-					7		
1	DON'T WALK	-					10		
2	MIN INITIAL		20		10		20		
3	TYPE 3 LIMIT	-							
4	ADD PER VEH	-							
5	VEH EXT		3.0		4.0		3.0		
6	MAX GAP		3.0		4.0		3.0		
7	MIN GAP		3.0		4.0		3.0		
8	MAX LIMIT		25		45		25		
9	MAXIMUM 2	-		-		-		-	
A	ADV/DLY WALK	-		-		-		-	
B	SEQUENCE TO	-		-		-		-	
C	COND SRV MIN	-		-		-		-	
D	REDUCE EVERY	-		-		-		-	
E	YELLOW		4.5		4.5		4.5		
F	RED CLEAR		2.3		1.9		2.3		

PHASE BANK #1 < C + O + F = 1 >

		9	A	B	C	D	E
0							RR1 DLY
1	PHASE 1	-					RR1 CLR
2	PHASE 2	-					EVA DLY
3	PHASE 3	-					EVA CLR
4	PHASE 4	-					EV B DLY
5	PHASE 5	-					EV B CLR
6	PHASE 6	-					EVC DLY
7	PHASE 7	-					EVC CLR
8	PHASE 8	-					EVD DLY
							EVD CLR
							RR2 DLY
							RR2 CLR
							EV CLR
							EV DLY
							RR CLR
							RR DLY

ALL RED START
(F/1 + C + O) =
RED REVERT
(F/1 + O + F) =

5.0

5.0

COLUMN F PHASES

		1	2	3	4	5	6	7	8
0	PERMIT		X		X		X		
1	RED LOCK								
2	YELLOW LOCK								
3	VEH MIN CALL								
4	PED RECALL						X		
5	PEDESTRIANS								
6	YIELD AT FL SH D/W						X		
7	RED REST								
8	DOUBLE ENTRY		X				X		
9	VEH MAX CALL		X				X		
A	SOFT RECALL								
B	MAXIMUM 2								
C	COND SERVICE								
D	MAN CONT CALL								
E	YELLOW START		X				X		
F	FIRST PHASES				X				

< C + O + F = 1 >

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233 Ontario
Timing Sheet #2

Date: 18-Jun-18

LOCATION

Hwy: Hwy 6 WRT

At:

Laird

		A	B	C
PREEMPT	RR1-2	SP	EMER	
MINIMUMS	SPEV1	EV2	VEH	
A	WLK (DFLT)	4	4	4
B	FD WALK			10
C	INITAL			5

< C + O + F = 1 >

Column E Phases / Bits

		1	2	3	4	5	6	7	8
0	EXCLUSIVE								
1	RR1 CLEAR								
2	RR2 CLEAR								
3	RR2 LTD SRV								
4	PROT/PERM								
5	FLH TO PREMT								
6	FLASH ENTRY								
7	DISABL MIN YEL								
8	DISABL OVP YEL								
9	OVP FLH YEL								
A	EM VEH A		X				X		
B	EM VEH B				X				
C	EM VEH C								
D	EM VEH D								
E	EXTRA 1	X		X		X			
F	IC SELECT		X						

< C + O + E = 125 >

Column F Phases / Bits

		1	2	3	4	5	6	7	8
0									
1	EXT PERMIT 1								
2	EXT PERMIT 2								
3	EXCLU PED								
4									
5	PED 2P OUT								
6	PED 6P OUT						X		
7	PED 4P OUT								
8	PED 8P OUT								
9	FLH YELLOW								
A									
B									
C									
D									
E	RESTRICTED								
F	EXTRA 2								

Column F Phases / Bits

		1	2	3	4	5	6	7	8
0	ADV GRN FLH								
1	PHASE FLASH								
2	FLASH WALK								
3	GUAR PASS								
4	SIMUL GAP		X				X		
5	SEQ TIMING								
6	ADV WALK								
7	DELAY WALK								
8	EXT RECALL								
9									
A	MAX EXTEN								
B	INH PED RSRV								
C	SEMI ACTUATED		X				X		
D									
E	STRT VEH CALL		X		X				
F	STRT PED CALL						X		

SPECIALS < C + O + F = 2 >

MANUAL PLAN	0
< C/O + A + 1 >	
MANUAL OFFSET	0
< C/O + B + 1 >	

MANUAL SELECTION

MANUAL PLAN

0 = Automatic (Master)

9 = Control Plan 1 - 9

14 (E) = Free (Isolated)

15 (F) = Software Flash

MANUAL OFFSET

0 = Automatic (Master)

1 = Offset A

2 = Offset B

3 = Offset C

FLASH TO PREEMPT

1 = EVA
2 = EVB
3 = EVC
4 = EVD
5 = RR1
6 = RR2
7 = SE1
8 = SE2
1 = TBC TYPE 1
2 = NEMA EXT. COORD.
3 = DAYLIGHT SAVINGS
4 =

EXTRA 1

5 = EXPANDED STATUS REPORTING
6 = INTERNATIONAL PED
7 = CLEAR OUTPUTS DURING FLASH
8 = SPLIT RING

EXTRA 2

1 = AWR ON DURING PHASE INITIAL
2 = LMU INSTALLED

IC SELECT

2 = 2 WAY MODEM
3 = 7 WIRE SLAVE
4 = FLASH / FREE
5 = SIMPLEX MASTER
7 = 7 WIRE MASTER
8 = OFFSET INTURP

Pretimed

	PHASE							
	1	2	3	4	5	6	7	8
WALK	-	-	-		-	7	-	
DON'T WALK	-	-	-		-	10	-	
MIN INITIAL		20		10	-	20		
TYPE 3 LIMIT	-	-	-	-	-	-	-	-
ADD PER VEH	-	-	-	-	-	-	-	-
VEH EXT		3.0		4.0		3.0		
MAX GAP		3.0		4.0		3.0		
MIN GAP		3.0		4.0		3.0		
MAX LIMIT		25		45		25		
MAXIMUM 2	-	-	-				-	
ADV / DLY WALK	-	-	-	-	-	-	-	-
SEQUENCE TO	-	-	-	-	-	-	-	-
COND SRV MIN	-	-	-	-	-	-	-	-
REDUCE EVERY	-	-	-	-	-	-	-	-
YELLOW		4.5		4.5		4.5		
RED CLEAR		2.3		1.9		2.3		

PHASE BANK # < C + O + F = 1 >

		Column F PHASES							
		1	2	3	4	5	6	7	8
0	PERMIT		X		X		X		
1	RED LOCK								
2	YELLOW LOCK								
3	VEH MIN CALL								
4	PED RECALL						X		
5	PEDESTRIANS								
6	REST IN WALK						X		
7	RED REST								
8	DOUBLE ENTRY		X				X		
9	VEH MAX CALL		X		X		X		
A	SOFT RECALL								
B	MAXIMUM 2								
C	CORD SERVICE								
D	MAN CONT CALL								
E	YELLOW START		X				X		
F	FIRST PHASES				X				

< C + O + F = 1 >

LOCATION: Hwy 6 (Hanlon) WRT @ Laird

Issued Date: 18-Jun-18

Installed Date: 18-Jun-18

BI Tran Systems, Inc.

510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260

Traffic Signal Program 233 Ontario
Timing Sheet #2
Revised (02/95)

DETECTOR ASSIGNMENTS

STANDARD 332 CABINET LOCATION	column	1	3	Column 0 C1 Pin #	Column 1 ATTRIBUTES								Column 2 PHASE(S)								Column 3 ASSIGNMENTS								DETECTOR ASSIGNMENT SHEET ONTARIO 233 PROGRAM	
			carry																											
		delay	over																											
I-2 U	0			0	39																		LOCATION: Hwy 6 WRT at Laird Issued Date: 18-Jun-18 Installed Date: 18-Jun-18 DETECTOR ATTRIBUTES 1 = FULL TIME DELAY 2 = PEDESTRIAN CALL 3 = 4 = COUNT 5 = EXTENSION 6 = TYPE 3 7 = CALLING 8 = ALTERNATE DETECTOR ASSIGNMENTS 1 = DET. SET # 1 2 = DET. SET # 2 3 = DET. SET # 3 4 = 5 = 6 = MIN RECALL ON FAILURE 7 = MAX RECALL ON FAILURE 8 - REPORT ON FAILURE DETECTOR MONITOR MAX OFF: D/0+0+1=120 MAX ON: D/0+0+2=60 ADVANCE WARNING BEACONS SIGN #1 SIGN #2 PHASE NUMBER (F/1+C+F)= (F/1+D+F)= TIME BEFORE YELLOW (F/1+C+E)= (F/1+D+E)= OUTPUT PIN NUMBER (E/127+E+8)= (E/127+E+9)=							
J-2 U	1			1	40																									
I-6 U	2	5		2	41			X	X		X							X	X	X				X						
J-6 U	3			3	42																									
1-2 L	4			4	43																									
J-2 L	5			5	44																									
1-6 L	6	5		6	45			X	X		X							X	X	X				X						
J-6 L	7			7	46																									
I-4	8			8	47																									
J-4	9			9	48																									
I-8	A			A	49																									
J-8	B			B	50																									
J-1	C			C	55																									
I-1	D			D	56																									
J-5	E			E	57																									
I-5	F			F	58																									
< C + O + D = 0 >				DETECTOR ASSIGNMENTS < C + O + E = 126 >																										
STANDARD 332 CABINET LOCATION	column	2	4	Column 4 C1 Pin #	Column 5 ATTRIBUTES								Column 6 PHASE(S)								Column 7 ASSIGNMENTS									
		delay	carry																											
			over																											
J-9 U	0			0	59																									
I-9 U	1			1	60																									
I-9 L	2			2	61																									
J-9 L	3			3	62																									
I-3 U	4			4	63																									
J-3 U	5			5	64																									
I-7 U	6			6	65																									
J-7 U	7			7	66																									
I-12 U	8			8	67																									
I-13 U	9			9	68																									
I-12 L	A			A	69																									
I-13 L	B			B	70																									
I-3 L	C			C	76																									
J-3 L	D			D	77																									
I-7 L	E			E	78																									
J-7 L	F			F	79																									
< C + O + D = 0 >				DETECTOR ASSIGNMENTS < C + O + E = 126 >																										

Input File Layout

Input File Slot No. →

1	2	2	4	5	6	7	8	9	10	11	12	13	14
"I" FILE 1 Ext, Cnt, Call <C1-56>	2 Ext, Cnt, Call <C1-39>	2 Ext, Cnt, Call <C1-63>	2 Type 3, Call <C1-47>	3 Ext, Cnt, Call <C1-58>	4 Ext, Cnt, Call <C1-41>	4 Ext, Cnt, Call <C1-65>	4 Type 3, Call <C1-49>	1 Ext, Cnt, Call <C1-60>	NOT WIRED	Not Assigned <C1-80>	2 Ped Call <C1-67>	6 Ped Call <C1-68>	Flash Sense <C1-81>
	2 Ext, Cnt, Call <C1-43>	2 Ext, Cnt, Call <C1-76>			4 Ext, Cnt, Call <C1-45>	4 Ext, Cnt, Call <C1-78>		3 Ext, Cnt, Call <C1-62>		Not Assigned <C1-53>	4 Ped Call <C1-69>	8 Ped Call <C1-70>	Stop Time <C1-82>

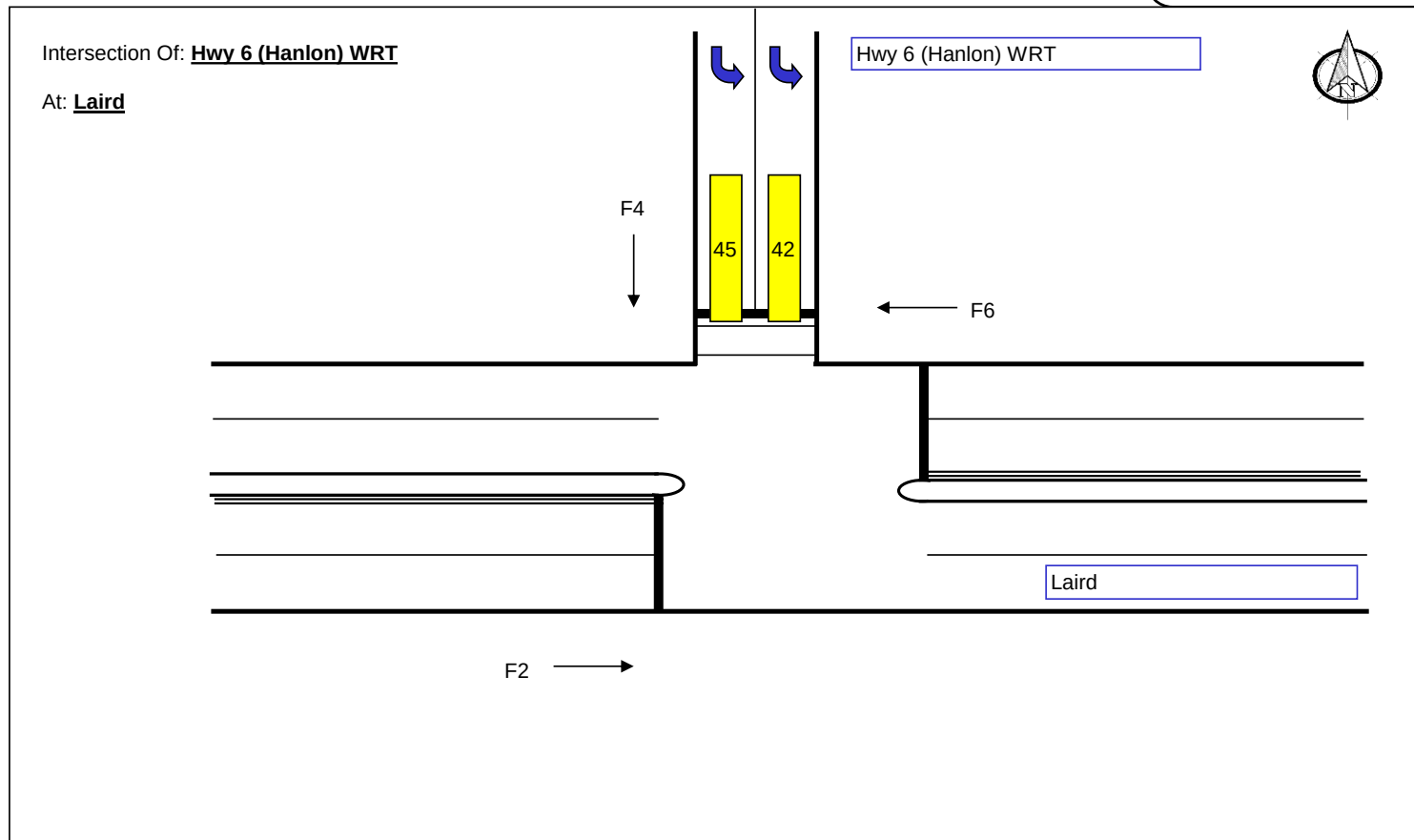
"J" FILE 5 Ext, Cnt, Call <C1-55>	6 Ext, Cnt, Call <C1-40>	6 Ext, Cnt, Call <C1-64>	6 Type 3, Call <C1-48>	7 Ext, Cnt, Call <C1-57>	8 Ext, Cnt, Call <C1-42>	8 Ext, Cnt, Call <C1-66>	8 Type 3, Call <C1-50>	5 Ext, Cnt, Call <C1-59>	NOT WIRED	Not Assigned <C1-54>	EV A Preempt <C1-71>	EV B Preempt <C1-72>	Railroad 1 <C1-51>
	6 Ext, Cnt, Call <C1-44>	6 Ext, Cnt, Call <C1-77>			8 Ext, Cnt, Call <C1-46>	8 Ext, Cnt, Call <C1-79>		7 Ext, Cnt, Call <C1-61>		Not Assigned <C1-75>	EV C Preempt <C1-73>	EV D Preempt <C1-74>	Railroad 2 <C1-52>

DETECTOR TYPES

Ext = Extension Detector
Detector is only active during the Phase's GREEN Intervals (ie, will NOT Call the Phase)
Cnt = Count Detector
Used in computing "Added Initial"
Call = Calling Detector
Detector is only active during the Phase's NON-GREEN Intervals (ie, will NOT Extend the Phase)
Type 3 = Type 3 Disconnect
Will allow a Calling Detector to Extend its Phase until the Call first drops or the "Type 3 Limit" is reached

BI Tran Systems, Inc.

510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233
Initialized Detector Assignments
(Revised 8/92) 332 Cabinet



DEFAULT DETECTOR ASSIGNMENTS

Standard 332 Cabinet Location	Column 0 C1 PIN NUMBER	Column 1 ATTRIBUTES								Column 2 PHASE(S)								Column 3 ASSIGNMENTS							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
I-2 U --->	0	39			X	X	X		X									X	X	X					X
J-2 U --->	1	40			X	X	X								X			X	X	X					X
I-6 U --->	2	41			X	X	X							X				X	X	X					X
J-6 U --->	3	42			X	X	X										X	X	X	X					X
I-2 L --->	4	43			X	X	X		X									X	X	X					X
J-2 L --->	5	44			X	X	X							X				X	X	X					X
I-6 L --->	6	45			X	X	X							X				X	X	X					X
J-6 L --->	7	46			X	X	X										X	X	X	X					X
I-4 --->	8	47					X	X		X								X	X	X					X
J-4 --->	9	48					X	X						X				X	X	X					X
I-8 --->	A	49					X	X						X				X	X	X					X
J-8 --->	B	50					X	X									X	X	X	X					X
J-1 --->	C	55			X	X	X							X				X	X	X					X
I-1 --->	D	56			X	X	X	X										X	X	X					X
J-5 --->	E	57			X	X	X									X		X	X	X					X
I-5 --->	F	58			X	X	X			X								X	X	X					X

"INITIALIZED" DETECTOR ASSIGNMENTS
< C + 0 + E = 126 >

Standard 332 Cabinet Location	Column 4 C1 PIN NUMBER	Column 5 ATTRIBUTES								Column 6 PHASE(S)								Column 7 ASSIGNMENTS							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
J-9 U --->	0	59			X	X	X								X			X	X	X					X
I-9 U --->	1	60			X	X	X		X									X	X	X					X
J-9 L --->	2	61			X	X	X								X			X	X	X					X
I-9 L --->	3	62			X	X	X			X								X	X	X					X
I-3 U --->	4	63			X	X	X		X									X	X	X					X
J-3 U --->	5	64			X	X	X								X			X	X	X					X
I-7 U --->	6	65			X	X	X			X								X	X	X					X
J-7 U --->	7	66			X	X	X										X	X	X	X					X
I-12 U --->	8	67	X							X								X	X	X					X
I-13 U --->	9	68	X											X				X	X	X					X
I-12 L --->	A	69	X										X					X	X	X					X
I-13 L --->	B	70	X														X	X	X	X					X
I-3 L --->	C	76			X	X	X		X									X	X	X					X
J-3 L --->	D	77			X	X	X								X			X	X	X					X
I-7 L --->	E	78			X	X	X			X								X	X	X					X
J-7 L --->	F	79			X	X	X										X	X	X						X

"INITIALIZED" DETECTOR ASSIGNMENTS
< C + 0 + E = 126 >

DETECTOR ATTRIBUTES

- 1= Full time Delay
- 2 = Pedestrian call
- 3 =
- 4 = Count
- 5 = Extension
- 6 = Type 3
- 7 = Calling
- 8 = Alternate

DETECTOR ASSIGNMENTS

- 1 = Det. Set #1
- 2 = Det. Set #2
- 3 = Det. Set #3
- 4 =
- 5 =
- 6 = MIN Recall On Failure
- 7 = MAX Recall On Failure
- 8 = Report On Failure

DETECTOR TYPES

- Ext = Extension Detector
Detector is only active during the Phase's GREEN Intervals (ie, will NOT Call the Phase)
- Cnt = Count Detector
Used in computing "Added Initial"
- Call = Calling Detector
Detector is only active during the Phase's NON-GREEN Intervals (ie, will NOT Extend the Phase)
- Type 3 = Type 3 Disconnect
Will allow a Calling Detector to Extend its Phase until the Call first drops or the "Type 3 Limit" is reached

Input File --> 1 2 3 4 5 6 7 8 9 10 11 12 13 14

"I" FILE

1 Ext, Cnt, Call <C1-56>	2 Ext, Cnt, Call <C1-39> 2 Ext, Cnt, Call <C1-43>	2 Ext, Cnt, Call <C1-63> 2 Ext, Cnt, Call <C1-76>	2 Type 3, Call <C1-47>	3 Ext, Cnt, Call <C1-58>	4 Ext, Cnt, Call <C1-41> 4 Ext, Cnt, Call <C1-45>	4 Ext, Cnt, Call <C1-65> 4 Ext, Cnt, Call <C1-78>	4 Type 3, Call <C1-49>	1 Ext, Cnt, Call <C1-60> 3 Ext, Cnt, <C1-61>	NOT WIRED	Not Assigned <C1-80> Not Assigned <C1-53>	2 Ped Call <C1-67> 4 Ped Call <C1-69>	6 Ped Call <C1-68> 8 Ped Call <C1-82>	Flash Sense <C1-81> Stop Time

"J" FILE

5 Ext, Cnt, Call <C1-55>	6 Ext, Cnt, Call <C1-40> 6 Ext, Cnt, Call <C1-44>	6 Ext, Cnt, Call <C1-64> 6 Ext, Cnt, Call <C1-77>	6 Type 3, Call <C1-48>	7 Ext, Cnt, Call <C1-57>	8 Ext, Cnt, Call <C1-42> 8 Ext, Cnt, Call <C1-46>	8 Ext, Cnt, Call <C1-66> 8 Ext, Cnt, Call <C1-79>	8 Type 3, Call <C1-50>	5 Ext, Cnt, Call <C1-59> 7 Ext, Cnt, Call <C1-61>	NOT WIRED	Not Assigned <C1-54> Not Assigned <C1-75>	EV A Preempt <C1-71> EV C Ped Call <C1-73>	EV B Preempt <C1-72> EV D Preempt <C1-74>	Railroad 1 <C1-51> Railroad 2 <C1-52>

BI Tran Systems, Inc.

510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233
Initialized Detector Assignments
(Revised 8/92) 332 Cabinet

REFERENCE SHEET

Controller Intervals

0 = Walk	8 = Red Rest
1 = FDW	9 = Preemption
2 = Min. Green	A = Stop Time
3 =	B = Red Revert
4 = Var. Initial	C = Yellow-Gap Termination
5 = Extension	D = Yellow-Max. Termination
6 =	E = Yellow-Forceoff Termination
7 = Reduce Gap	F = Red Clearance

Continuous Memory Error Monitoring

The controller's RAM and EPROM memories are continuously checked for errors. If an error is found, the intersection will go into FLASH (via Watch Dog Timer), and one of the following will be shown on the controller's display:

- bAd A = An error was detected in the CPU's RAM, or a new program has been installed on the memory module.
Often caused by a bad controller "gel-cell" battery.
- bAd b = An error was detected in the memory module's RAM.
Often caused by a bad "lithium" battery on the memory module.
- bAd E = An error was detected in the 233 Program EPROM.
- bAd F = An error was detected in the Z-RAM (Dallas chip) on the memory module.

412/C Memory Module

Lithium Battery Condition

To check the condition of the 3.6 volt Lithium Battery on the 412/C Memory Module:

- If $E/112 + 0 + A = 84$ - the battery is BAD
- If $E/112 + 0 + A = 85$ - the battery is O.K.

Monitor "Activate" Flags

(Also Requires T.O.D. Function "E" Flag)
Detector Count Recording:

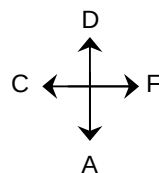
$$E/2 + 0 + 9 = \text{Not Zero}$$

Real Time Split Monitor:

$$E/2 + 0 + E = \text{Not Zero}$$

E Page Enable: $F/1 + 9 + E = \text{Not Zero}$

Display Movement Codes



A = Advance ROW
D = Decrement ROW
C = COLUMN Back
F = Forward COLUMN

Special Event Schedules

Special Event #1: $C + 0 + E = 27$
Special Event #2: $C + 0 + E = 28$

Current Interval = $E + 5 + 0$
Current Interval Timer = $E + 5 + B$
Current Interval
Clearance Phases = $E + 5 + C$

Time of Day Function (7 Key)

Current T.O.D. "E Function"
Control Bits = $C/0 + E + E$
Current T.O.D. "F Function"
Output Bits = $C/0 + E + F$

Logic DELAY Gate

Delay Timer Display

DELAY A Timer = $C/0 + 9 + A$
DELAY B Timer = $C/0 + 9 + B$
thru thru
DELAY F Timer = $C/0 + 9 + F$

Interval Timer Display

Ring A = $F/0 + A + \text{Interval Row}$
Ring B = $F/0 + B + (\text{Interval Row From PHASE BANK data})$

Display Locations

Plan Select Offset Select

Manual = $C/0 + A + 1$ $C/0 + B + 1$
Master = $C/0 + A + 2$ $C/0 + B + 2$
Current = $C/0 + A + 3$ $C/0 + B + 3$
Next = $C/0 + A + 4$ $C/0 + B + 4$
TOD = $C/0 + A + 5$ $C/0 + B + 5$
Master Cycle = $C/0 + A + 0$
Ring A Cycle = $C/0 + B + 0$
Ring B Cycle = $C/0 + D + 0$

MIN Cycle = $C/0 + A + E$
MAX Cycle = $C/0 + B + E$

Phase Hold = $C/0 + F + D$
Phase Next = $C/0 + F + E$
Force Off = $C/0 + F + F$
(with Ring A Cycle Timer)

Current Calculated Cycle
Length = $C/0 + B + F$
Current Permitted
Phases = $E/0 + 7 + 8$
Current Phase
Bank = $F/0 + C + E$

Last Power Failure:
(HR-MIN-DOW) = $8 + 4$
(DOW-YR-MONTH) = $8 + 5$

Last Cabinet Flash
(HR-MIN-DOW) = $8 + 6$
(DOW-YR-MONTH) = $8 + 7$

Power Fail Counts:
(Long Failures) = $F/1 + 0 + C$
(Short Failures) = $F/1 + 0 + D$

Current Time:
(HR-MIN-DOW) = $8 + 0$
(DOW-YR-MONTH) = $8 + 1$
(MIN-SEC-1/10SEC) = $8 + F$

BI Tran Systems, Inc.
510 Bercut Dr., Sacramento, Calif. 95814
916/441-0260
Traffic Signal Program 233
"View" Locations
(Revised 03/94)

Appendix **C**

Synchro Results



NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	212	391	207	7	497	126	95	14	12	43	11	68
Future Volume (vph)	212	391	207	7	497	126	95	14	12	43	11	68
Satd. Flow (prot)	1671	3343	1242	1357	3329	0	1271	1405	0	1530	1287	0
Flt Permitted	0.252			0.500			0.514			0.738		
Satd. Flow (perm)	443	3343	1242	714	3329	0	688	1405	0	1188	1287	0
Satd. Flow (RTOR)			230		31			13			76	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	30%	33%	6%	2%	42%	36%	14%	18%	44%	26%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	236	434	230	8	552	140	106	16	13	48	12	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	236	434	230	8	692	0	106	29	0	48	88	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	36.9	34.5	34.5	30.4	18.9		22.5	16.9		19.1	11.6	
Actuated g/C Ratio	0.59	0.55	0.55	0.49	0.30		0.36	0.27		0.31	0.19	
v/c Ratio	0.49	0.23	0.29	0.02	0.67		0.31	0.07		0.12	0.29	
Control Delay	13.0	12.7	3.5	8.4	23.4		17.6	18.6		15.1	12.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.0	12.7	3.5	8.4	23.4		17.6	18.6		15.1	12.8	
LOS	B	B	A	A	C		B	B		B	B	
Approach Delay		10.4			23.3			17.8			13.6	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	17.1	18.1	0.0	0.5	42.6		9.2	1.5		3.9	1.4	
Queue Length 95th (m)	30.1	35.7	13.7	2.3	60.9		21.9	9.2		11.2	14.2	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	489	1826	782	507	1675		370	812		486	771	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Existing 2022 AM

Synchro 11 Report
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.48	0.24	0.29	0.02	0.41		0.29	0.04		0.10	0.11	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 62.2

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 16.0

Intersection LOS: B

Intersection Capacity Utilization 56.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	32	36	15	32	25	30	515	30	9	481	52
Future Volume (vph)	40	32	36	15	32	25	30	515	30	9	481	52
Satd. Flow (prot)	0	1684	0	0	1675	0	0	1709	0	0	1738	0
Flt Permitted		0.982			0.990			0.997			0.999	
Satd. Flow (perm)	0	1684	0	0	1675	0	0	1709	0	0	1738	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	8%	7%	17%	4%	5%	4%	10%	17%	14%	7%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	43	35	39	16	35	27	33	560	33	10	523	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	78	0	0	626	0	0	590	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 62.9%												
ICU Level of Service B												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

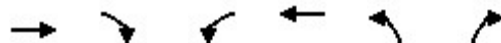
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	579	0	0	376	103	283
Future Volume (vph)	579	0	0	376	103	283
Satd. Flow (prot)	3406	0	0	3112	1504	1302
Flt Permitted					0.950	
Satd. Flow (perm)	3406	0	0	3112	1504	1302
Satd. Flow (RTOR)						119
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	0%	0%	16%	20%	24%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	629	0	0	409	112	308
Shared Lane Traffic (%)						
Lane Group Flow (vph)	629	0	0	409	112	308
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.3			35.3	16.7	16.7
Actuated g/C Ratio	0.54			0.54	0.26	0.26
v/c Ratio	0.34			0.24	0.29	0.73
Control Delay	10.1			9.5	20.7	23.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	10.1			9.5	20.7	23.7
LOS	B			A	C	C
Approach Delay	10.1			9.5	22.9	
Approach LOS	B			A	C	
Queue Length 50th (m)	21.0			12.7	11.3	21.1
Queue Length 95th (m)	43.2			28.1	22.9	46.3
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1842			1683	1046	942
Starvation Cap Reductn	0			0	0	0

Existing 2022 AM

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.34			0.24	0.11	0.33

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 65.2

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 13.6

Intersection LOS: B

Intersection Capacity Utilization 45.1%

ICU Level of Service A

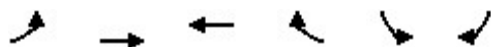
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

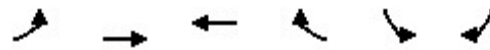
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	197	286	0	399	0
Future Volume (vph)	0	197	286	0	399	0
Satd. Flow (prot)	0	3406	3223	0	3303	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3406	3223	0	3303	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	12%	0%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	253	367	0	512	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	253	367	0	512	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		14.1	
Actuated g/C Ratio		0.48	0.48		0.27	
v/c Ratio		0.16	0.24		0.58	
Control Delay		8.6	9.1		19.2	
Queue Delay		0.0	0.0		0.0	
Total Delay		8.6	9.1		19.2	
LOS		A	A		B	
Approach Delay		8.6	9.1		19.2	
Approach LOS		A	A		B	
Queue Length 50th (m)		6.7	10.2		22.3	
Queue Length 95th (m)		12.1	17.0		28.8	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1628	1541		2842	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.16	0.24		0.18	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 52.4

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 13.6

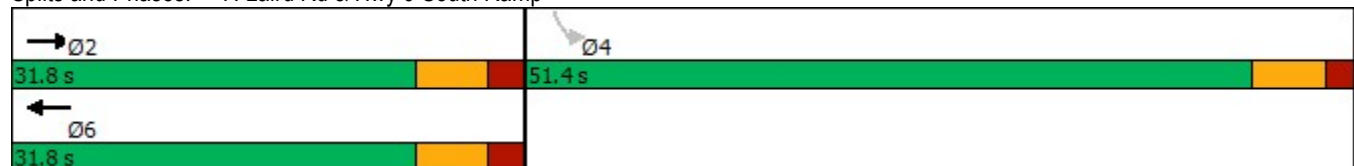
Intersection LOS: B

Intersection Capacity Utilization 45.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	0	2	2	0	15	10	108	9	26	190	15
Future Volume (vph)	11	0	2	2	0	15	10	108	9	26	190	15
Satd. Flow (prot)	0	1393	0	0	974	0	0	1538	0	0	1605	0
Flt Permitted		0.959			0.994			0.996			0.994	
Satd. Flow (perm)	0	1393	0	0	974	0	0	1538	0	0	1605	0
Confl. Peds. (#/hr)			2	2					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	22%	29%	33%	15%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	12	0	2	2	0	16	11	116	10	28	204	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	18	0	0	137	0	0	248	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 28.8%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	12	43	78	20	50	12	73	55	21	140	6
Future Volume (vph)	22	12	43	78	20	50	12	73	55	21	140	6
Satd. Flow (prot)	1626	1601	0	1770	1638	0	0	1599	0	1228	1694	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1626	1601	0	1770	1638	0	0	1599	0	1228	1694	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	2%	0%	5%	10%	20%	2%	47%	11%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	24	13	47	86	22	55	13	80	60	23	154	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	60	0	86	77	0	0	153	0	23	161	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 35.4%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
22: Hwy 6 & Concession Rd 4

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	10	10	62	7	21	2	942	76	36	843	5
Future Volume (vph)	3	10	10	62	7	21	2	942	76	36	843	5
Satd. Flow (prot)	0	1633	0	0	1755	0	1203	3059	1553	1752	3252	1615
Flt Permitted		0.994			0.967		0.950			0.950		
Satd. Flow (perm)	0	1633	0	0	1755	0	1203	3059	1553	1752	3252	1615
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	20%	2%	0%	0%	50%	18%	4%	3%	11%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	11	11	67	8	23	2	1024	83	39	916	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	98	0	2	1024	83	39	916	5
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 48.3% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	95	4	0	105	4	2	0	0	1	1	10
Future Volume (vph)	58	95	4	0	105	4	2	0	0	1	1	10
Satd. Flow (prot)	0	1801	0	0	1890	0	0	1805	0	0	1414	0
Flt Permitted		0.982						0.950			0.996	
Satd. Flow (perm)	0	1801	0	0	1890	0	0	1805	0	0	1414	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	0%	0%	0%	0%	0%	0%	0%	100%	0%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	71	116	5	0	128	5	2	0	0	1	1	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	133	0	0	2	0	0	14	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 25.1%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	666	84	17	712	63	293	9	37	154	16	277
Future Volume (vph)	91	666	84	17	712	63	293	9	37	154	16	277
Satd. Flow (prot)	1556	3471	1099	1327	3410	0	1570	1430	0	1736	1539	0
Flt Permitted	0.135			0.289			0.527			0.527		
Satd. Flow (perm)	221	3471	1099	404	3410	0	871	1430	0	963	1539	0
Satd. Flow (RTOR)			120		9			45			296	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	111	812	102	21	868	77	357	11	45	188	20	338
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	812	102	21	945	0	357	56	0	188	358	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		13.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	39.7	33.1	33.1	35.8	27.3		22.7	12.6		29.1	12.6	
Actuated g/C Ratio	0.52	0.43	0.43	0.47	0.36		0.30	0.16		0.38	0.16	
v/c Ratio	0.41	0.54	0.19	0.08	0.78		0.99	0.21		0.34	0.71	
Control Delay	15.0	19.5	4.0	10.8	29.0		71.6	13.5		18.2	15.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.0	19.5	4.0	10.8	29.0		71.6	13.5		18.2	15.6	
LOS	B	B	A	B	C		E	B		B	B	
Approach Delay		17.5			28.6			63.7			16.5	
Approach LOS		B			C			E			B	
Queue Length 50th (m)	7.4	38.4	0.0	1.3	65.9		42.8	1.5		20.0	8.7	
Queue Length 95th (m)	17.5	74.8	6.2	5.1	94.2		60.2	9.4		31.0	25.7	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	290	1495	541	321	1218		359	646		547	836	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.38	0.54	0.19	0.07	0.78		0.99	0.09		0.34	0.43	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 76.7

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 27.4

Intersection LOS: C

Intersection Capacity Utilization 80.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	24	28	14	31	13	35	663	32	8	530	49
Future Volume (vph)	48	24	28	14	31	13	35	663	32	8	530	49
Satd. Flow (prot)	0	1750	0	0	1792	0	0	1841	0	0	1809	0
Flt Permitted		0.976			0.988			0.998			0.999	
Satd. Flow (perm)	0	1750	0	0	1792	0	0	1841	0	0	1809	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	7%	0%	3%	0%	6%	2%	6%	0%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	52	26	30	15	34	14	38	721	35	9	576	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	0	0	63	0	0	794	0	0	638	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 74.7%												
ICU Level of Service D												
Analysis Period (min) 15												

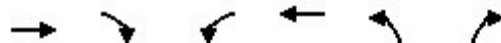
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	677	0	0	613	38	200
Future Volume (vph)	677	0	0	613	38	200
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						71
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	769	0	0	697	43	227
Shared Lane Traffic (%)						
Lane Group Flow (vph)	769	0	0	697	43	227
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.1			35.1	14.0	14.0
Actuated g/C Ratio	0.56			0.56	0.22	0.22
v/c Ratio	0.39			0.37	0.12	0.63
Control Delay	8.9			8.9	19.3	23.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	8.9			8.9	19.3	23.1
LOS	A			A	B	C
Approach Delay	8.9			8.9	22.5	
Approach LOS	A			A	C	
Queue Length 50th (m)	23.6			21.2	4.1	16.5
Queue Length 95th (m)	43.0			39.2	10.7	35.3
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1994			1866	1127	994
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.39			0.37	0.04	0.23

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 62.3

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 11.0

Intersection LOS: B

Intersection Capacity Utilization 42.0%

ICU Level of Service A

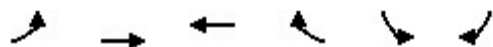
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

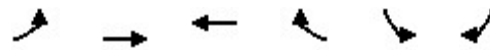
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	316	350	0	401	0
Future Volume (vph)	0	316	350	0	401	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	351	389	0	446	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	351	389	0	446	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.0	25.0		12.7	
Actuated g/C Ratio		0.49	0.49		0.25	
v/c Ratio		0.20	0.23		0.52	
Control Delay		8.2	8.3		18.7	
Queue Delay		0.0	0.0		0.0	
Total Delay		8.2	8.3		18.7	
LOS		A	A		B	
Approach Delay		8.2	8.3		18.7	
Approach LOS		A	A		B	
Queue Length 50th (m)		9.0	10.1		18.9	
Queue Length 95th (m)		17.6	19.6		29.8	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1737	1703		3033	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.20	0.23		0.15	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 51

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 12.2

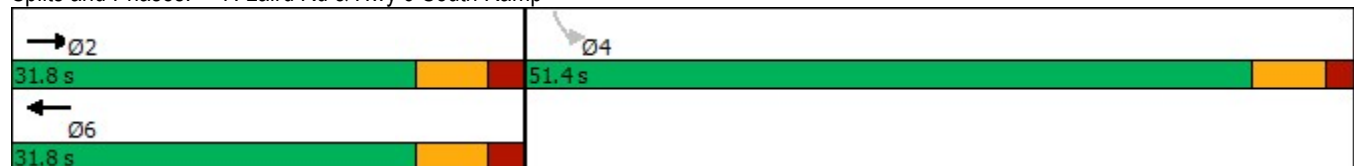
Intersection LOS: B

Intersection Capacity Utilization 42.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1	12	7	0	22	5	269	4	17	175	14
Future Volume (vph)	35	1	12	7	0	22	5	269	4	17	175	14
Satd. Flow (prot)	0	1566	0	0	1308	0	0	1648	0	0	1434	0
Flt Permitted		0.965			0.988			0.999			0.996	
Satd. Flow (perm)	0	1566	0	0	1308	0	0	1648	0	0	1434	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	14%	66%	71%	25%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	43	1	15	9	0	27	6	332	5	21	216	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	0	0	36	0	0	343	0	0	254	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 34.2% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	31	42	48	11	35	43	208	117	36	123	16
Future Volume (vph)	29	31	42	48	11	35	43	208	117	36	123	16
Satd. Flow (prot)	1736	1677	0	1530	1383	0	0	1652	0	1308	1456	0
Flt Permitted	0.950			0.950				0.994		0.950		
Satd. Flow (perm)	1736	1677	0	1530	1383	0	0	1652	0	1308	1456	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	18%	0%	29%	6%	12%	6%	38%	30%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	33	35	48	55	13	40	49	236	133	41	140	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	83	0	55	53	0	0	418	0	41	158	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 47.2%												
ICU Level of Service A												
Analysis Period (min) 15												

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	4	2	118	19	34	2	1072	73	31	1217	7
Future Volume (vph)	2	4	2	118	19	34	2	1072	73	31	1217	7
Satd. Flow (prot)	0	1612	0	0	1744	0	1805	3282	1568	1752	3252	1615
Flt Permitted		0.988			0.967		0.950			0.950		
Satd. Flow (perm)	0	1612	0	0	1744	0	1805	3282	1568	1752	3252	1615
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	50%	2%	5%	3%	0%	10%	3%	3%	11%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	4	2	126	20	36	2	1140	78	33	1295	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	182	0	2	1140	78	33	1295	7
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 56.6%						ICU Level of Service B						
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	154	6	0	139	2	4	7	1	2	4	51
Future Volume (vph)	46	154	6	0	139	2	4	7	1	2	4	51
Satd. Flow (prot)	0	1833	0	0	1824	0	0	1853	0	0	1635	0
Flt Permitted		0.989						0.985			0.998	
Satd. Flow (perm)	0	1833	0	0	1824	0	0	1853	0	0	1635	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	1%	0%	0%	4%	0%	0%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	49	166	6	0	149	2	4	8	1	2	4	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	221	0	0	151	0	0	13	0	0	61	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 32.0% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	666	84	17	712	63	293	9	37	154	16	277
Future Volume (vph)	91	666	84	17	712	63	293	9	37	154	16	277
Satd. Flow (prot)	1556	3471	1099	1327	3410	0	1570	1430	0	1736	1539	0
Flt Permitted	0.135			0.289			0.527			0.527		
Satd. Flow (perm)	221	3471	1099	404	3410	0	871	1430	0	963	1539	0
Satd. Flow (RTOR)			120		9			45			296	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	111	812	102	21	868	77	357	11	45	188	20	338
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	812	102	21	945	0	357	56	0	188	358	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		13.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	39.7	33.1	33.1	35.8	27.3		22.7	12.6		29.1	12.6	
Actuated g/C Ratio	0.52	0.43	0.43	0.47	0.36		0.30	0.16		0.38	0.16	
v/c Ratio	0.41	0.54	0.19	0.08	0.78		0.99	0.21		0.34	0.71	
Control Delay	15.0	19.5	4.0	10.8	29.0		71.6	13.5		18.2	15.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.0	19.5	4.0	10.8	29.0		71.6	13.5		18.2	15.6	
LOS	B	B	A	B	C		E	B		B	B	
Approach Delay		17.5			28.6			63.7			16.5	
Approach LOS		B			C			E			B	
Queue Length 50th (m)	7.4	38.4	0.0	1.3	65.9		42.8	1.5		20.0	8.7	
Queue Length 95th (m)	17.5	74.8	6.2	5.1	94.2		60.2	9.4		31.0	25.7	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	290	1495	541	321	1218		359	646		547	836	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.38	0.54	0.19	0.07	0.78		0.99	0.09		0.34	0.43	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 76.7

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 27.4

Intersection LOS: C

Intersection Capacity Utilization 80.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	24	28	14	31	13	35	663	32	8	530	49
Future Volume (vph)	48	24	28	14	31	13	35	663	32	8	530	49
Satd. Flow (prot)	0	1750	0	0	1792	0	0	1841	0	0	1809	0
Flt Permitted		0.976			0.988			0.998			0.999	
Satd. Flow (perm)	0	1750	0	0	1792	0	0	1841	0	0	1809	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	7%	0%	3%	0%	6%	2%	6%	0%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	52	26	30	15	34	14	38	721	35	9	576	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	108	0	0	63	0	0	794	0	0	638	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 74.7%												
ICU Level of Service D												
Analysis Period (min) 15												

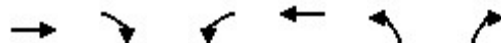
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	677	0	0	613	38	200
Future Volume (vph)	677	0	0	613	38	200
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						71
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	769	0	0	697	43	227
Shared Lane Traffic (%)						
Lane Group Flow (vph)	769	0	0	697	43	227
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.1			35.1	14.0	14.0
Actuated g/C Ratio	0.56			0.56	0.22	0.22
v/c Ratio	0.39			0.37	0.12	0.63
Control Delay	8.9			8.9	19.3	23.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	8.9			8.9	19.3	23.1
LOS	A			A	B	C
Approach Delay	8.9			8.9	22.5	
Approach LOS	A			A	C	
Queue Length 50th (m)	23.6			21.2	4.1	16.5
Queue Length 95th (m)	43.0			39.2	10.7	35.3
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1994			1866	1127	994
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.39			0.37	0.04	0.23

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 62.3

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 11.0

Intersection LOS: B

Intersection Capacity Utilization 42.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

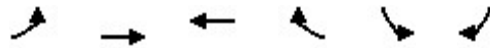
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	316	350	0	401	0
Future Volume (vph)	0	316	350	0	401	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	351	389	0	446	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	351	389	0	446	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.0	25.0		12.7	
Actuated g/C Ratio		0.49	0.49		0.25	
v/c Ratio		0.20	0.23		0.52	
Control Delay		8.2	8.3		18.7	
Queue Delay		0.0	0.0		0.0	
Total Delay		8.2	8.3		18.7	
LOS		A	A		B	
Approach Delay		8.2	8.3		18.7	
Approach LOS		A	A		B	
Queue Length 50th (m)		9.0	10.1		18.9	
Queue Length 95th (m)		17.6	19.6		29.8	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1737	1703		3033	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.20	0.23		0.15	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 51

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 12.2

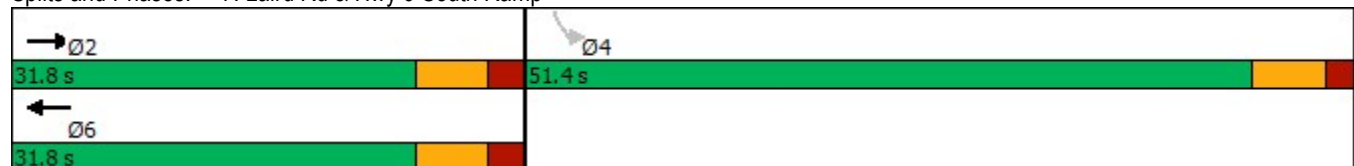
Intersection LOS: B

Intersection Capacity Utilization 42.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1	12	7	0	22	5	269	4	17	175	14
Future Volume (vph)	35	1	12	7	0	22	5	269	4	17	175	14
Satd. Flow (prot)	0	1566	0	0	1308	0	0	1648	0	0	1434	0
Flt Permitted		0.965			0.988			0.999			0.996	
Satd. Flow (perm)	0	1566	0	0	1308	0	0	1648	0	0	1434	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	14%	66%	71%	25%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	43	1	15	9	0	27	6	332	5	21	216	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	0	0	36	0	0	343	0	0	254	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 34.2% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	31	42	48	11	35	43	208	117	36	123	16
Future Volume (vph)	29	31	42	48	11	35	43	208	117	36	123	16
Satd. Flow (prot)	1736	1677	0	1530	1383	0	0	1652	0	1308	1456	0
Flt Permitted	0.950			0.950				0.994		0.950		
Satd. Flow (perm)	1736	1677	0	1530	1383	0	0	1652	0	1308	1456	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	18%	0%	29%	6%	12%	6%	38%	30%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	33	35	48	55	13	40	49	236	133	41	140	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	83	0	55	53	0	0	418	0	41	158	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 47.2%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

22: Concession Rd 4/Hwy 6

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	4	2	118	19	34	2	1072	73	31	1217	7
Future Volume (vph)	2	4	2	118	19	34	2	1072	73	31	1217	7
Satd. Flow (prot)	0	1612	0	0	1744	0	1805	3282	1568	1752	3252	1615
Flt Permitted		0.988			0.967		0.950			0.950		
Satd. Flow (perm)	0	1612	0	0	1744	0	1805	3282	1568	1752	3252	1615
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	50%	2%	5%	3%	0%	10%	3%	3%	11%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	4	2	126	20	36	2	1140	78	33	1295	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	182	0	2	1140	78	33	1295	7
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 56.6%						ICU Level of Service B						
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	154	6	0	139	2	4	7	1	2	4	51
Future Volume (vph)	46	154	6	0	139	2	4	7	1	2	4	51
Satd. Flow (prot)	0	1833	0	0	1824	0	0	1853	0	0	1635	0
Flt Permitted		0.989						0.985			0.998	
Satd. Flow (perm)	0	1833	0	0	1824	0	0	1853	0	0	1635	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	1%	0%	0%	4%	0%	0%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	49	166	6	0	149	2	4	8	1	2	4	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	221	0	0	151	0	0	13	0	0	61	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 32.0% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	693	88	18	741	66	304	9	39	160	17	288
Future Volume (vph)	94	693	88	18	741	66	304	9	39	160	17	288
Satd. Flow (prot)	1556	3471	1099	1327	3410	0	1570	1434	0	1736	1539	0
Flt Permitted	0.127			0.268			0.482			0.537		
Satd. Flow (perm)	208	3471	1099	374	3410	0	796	1434	0	981	1539	0
Satd. Flow (RTOR)			120		9			48			286	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	115	845	107	22	904	80	371	11	48	195	21	351
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	845	107	22	984	0	371	59	0	195	372	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		13.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	39.8	33.2	33.2	35.9	27.3		23.5	13.4		30.0	13.4	
Actuated g/C Ratio	0.51	0.43	0.43	0.46	0.35		0.30	0.17		0.39	0.17	
v/c Ratio	0.44	0.57	0.20	0.08	0.82		1.06	0.21		0.35	0.74	
Control Delay	16.1	20.5	4.5	11.4	31.4		89.1	12.9		18.1	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.1	20.5	4.5	11.4	31.4		89.1	12.9		18.1	17.9	
LOS	B	C	A	B	C		F	B		B	B	
Approach Delay		18.5			31.0			78.7			18.0	
Approach LOS		B			C			E			B	
Queue Length 50th (m)	8.0	41.9	0.0	1.5	71.7		45.1	1.5		20.9	12.3	
Queue Length 95th (m)	18.8	81.0	7.0	5.4	#110.0		#68.9	9.4		32.0	30.8	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	282	1482	538	307	1205		351	643		555	824	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.41	0.57	0.20	0.07	0.82		1.06	0.09		0.35	0.45	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 77.7

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 30.9

Intersection LOS: C

Intersection Capacity Utilization 82.3%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Southgate Dr & Laird Rd

			
Ø1	Ø2	Ø3	Ø4
13 s	33 s	13 s	41 s
			
Ø5	Ø6	Ø7	Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	25	29	15	32	14	36	690	33	8	551	51
Future Volume (vph)	50	25	29	15	32	14	36	690	33	8	551	51
Satd. Flow (prot)	0	1751	0	0	1791	0	0	1841	0	0	1809	0
Flt Permitted		0.837			0.928			0.950			0.989	
Satd. Flow (perm)	0	1500	0	0	1682	0	0	1753	0	0	1791	0
Satd. Flow (RTOR)		19			14			5			9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	7%	0%	3%	0%	6%	2%	6%	0%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	54	27	32	16	35	15	39	750	36	9	599	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	113	0	0	66	0	0	825	0	0	663	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.28			0.15			0.74			0.58	
Control Delay		26.8			24.4			17.4			12.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		26.8			24.4			17.4			12.8	
LOS		C			C			B			B	
Approach Delay		26.8			24.4			17.4			12.8	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		15.2			8.1			104.4			69.8	
Queue Length 95th (m)		30.6			19.0			154.8			101.9	
Internal Link Dist (m)		2054.3			137.7			107.7			138.0	
Turn Bay Length (m)												
Base Capacity (vph)		401			444			1118			1144	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.28			0.15			0.74			0.58	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 16.5

Intersection LOS: B

Intersection Capacity Utilization 79.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W

 Ø2 (R)		 Ø4
68.8 s		31.2 s
 Ø6 (R)		 Ø8
68.8 s		31.2 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	704	0	0	637	40	208
Future Volume (vph)	704	0	0	637	40	208
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						63
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	800	0	0	724	45	236
Shared Lane Traffic (%)						
Lane Group Flow (vph)	800	0	0	724	45	236
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.2			35.2	14.8	14.8
Actuated g/C Ratio	0.56			0.56	0.23	0.23
v/c Ratio	0.41			0.39	0.12	0.65
Control Delay	9.4			9.4	19.1	24.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	9.4			9.4	19.1	24.5
LOS	A			A	B	C
Approach Delay	9.4			9.4	23.6	
Approach LOS	A			A	C	
Queue Length 50th (m)	25.8			23.2	4.3	18.6
Queue Length 95th (m)	46.7			42.5	11.0	38.2
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1972			1845	1114	982
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.41			0.39	0.04	0.24

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 63.1

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 11.6

Intersection LOS: B

Intersection Capacity Utilization 43.3%

ICU Level of Service A

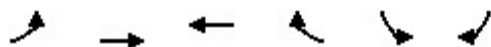
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2		← Ø8	
41.7 s		51.4 s	
← Ø6			
41.7 s			

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

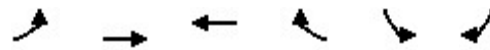
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	329	364	0	417	0
Future Volume (vph)	0	329	364	0	417	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	366	404	0	463	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	366	404	0	463	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		13.0	
Actuated g/C Ratio		0.49	0.49		0.25	
v/c Ratio		0.21	0.24		0.53	
Control Delay		8.3	8.5		18.8	
Queue Delay		0.0	0.0		0.0	
Total Delay		8.3	8.5		18.8	
LOS		A	A		B	
Approach Delay		8.3	8.5		18.8	
Approach LOS		A	A		B	
Queue Length 50th (m)		9.5	10.6		19.7	
Queue Length 95th (m)		18.6	20.6		30.9	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1728	1695		3018	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.21	0.24		0.15	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 51.3

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 12.3

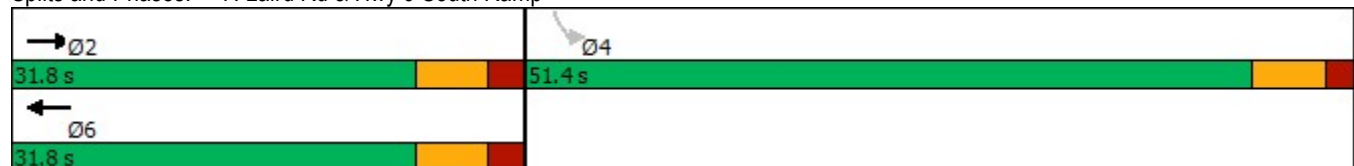
Intersection LOS: B

Intersection Capacity Utilization 43.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	13	8	0	23	5	280	4	18	182	14
Future Volume (vph)	36	1	13	8	0	23	5	280	4	18	182	14
Satd. Flow (prot)	0	1566	0	0	1312	0	0	1648	0	0	1434	0
Flt Permitted		0.965			0.987			0.999			0.996	
Satd. Flow (perm)	0	1566	0	0	1312	0	0	1648	0	0	1434	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	14%	66%	71%	25%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	44	1	16	10	0	28	6	346	5	22	225	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	38	0	0	357	0	0	264	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 35.2% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	32	44	50	12	36	45	217	121	37	128	17
Future Volume (vph)	30	32	44	50	12	36	45	217	121	37	128	17
Satd. Flow (prot)	1736	1677	0	1530	1387	0	0	1652	0	1308	1456	0
Flt Permitted	0.950			0.950				0.994		0.950		
Satd. Flow (perm)	1736	1677	0	1530	1387	0	0	1652	0	1308	1456	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	18%	0%	29%	6%	12%	6%	38%	30%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	34	36	50	57	14	41	51	247	138	42	145	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	86	0	57	55	0	0	436	0	42	164	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 48.5%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
18: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	0	17	41	0	30
Future Volume (vph)	30	0	17	41	0	30
Satd. Flow (prot)	1770	0	1684	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1684	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	33	0	18	45	0	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	0	63	0	0	33
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 13.4%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

25: Maltby Rd W & Crawley Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	160	6	0	144	3	4	8	1	3	4	53
Future Volume (vph)	48	160	6	0	144	3	4	8	1	3	4	53
Satd. Flow (prot)	0	1825	0	0	1823	0	0	1855	0	0	1639	0
Flt Permitted		0.989						0.986			0.998	
Satd. Flow (perm)	0	1825	0	0	1823	0	0	1855	0	0	1639	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	1%	0%	0%	4%	0%	0%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	52	172	6	0	155	3	4	9	1	3	4	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	230	0	0	158	0	0	14	0	0	64	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 33.0%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

27: Hwy 6 & Concession Rd 4

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	4	2	123	20	35	2	1115	76	32	1266	7
Future Volume (vph)	2	4	2	123	20	35	2	1115	76	32	1266	7
Satd. Flow (prot)	0	1612	0	0	1745	0	1805	3282	1568	1752	3252	1615
Flt Permitted		0.988			0.967		0.950			0.950		
Satd. Flow (perm)	0	1612	0	0	1745	0	1805	3282	1568	1752	3252	1615
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	50%	2%	5%	3%	0%	10%	3%	3%	11%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	4	2	131	21	37	2	1186	81	34	1347	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	189	0	2	1186	81	34	1347	7
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 58.3%												
ICU Level of Service B												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	406	215	8	517	132	99	14	13	45	12	71
Future Volume (vph)	221	406	215	8	517	132	99	14	13	45	12	71
Satd. Flow (prot)	1671	3343	1242	1357	3326	0	1271	1405	0	1530	1287	0
Flt Permitted	0.241			0.491			0.514			0.738		
Satd. Flow (perm)	424	3343	1242	701	3326	0	688	1405	0	1188	1287	0
Satd. Flow (RTOR)			239		31			14			79	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	30%	33%	6%	2%	42%	36%	14%	18%	44%	26%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	246	451	239	9	574	147	110	16	14	50	13	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	451	239	9	721	0	110	30	0	50	92	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	38.2	35.7	35.7	31.5	20.3		22.4	16.6		19.1	11.3	
Actuated g/C Ratio	0.60	0.56	0.56	0.49	0.32		0.35	0.26		0.30	0.18	
v/c Ratio	0.52	0.24	0.30	0.02	0.67		0.33	0.08		0.12	0.31	
Control Delay	13.4	12.5	3.5	8.4	23.2		18.5	18.7		15.7	13.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.4	12.5	3.5	8.4	23.2		18.5	18.7		15.7	13.3	
LOS	B	B	A	A	C		B	B		B	B	
Approach Delay		10.5			23.1			18.6			14.1	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	18.0	18.8	0.0	0.6	45.1		9.7	1.5		4.2	1.6	
Queue Length 95th (m)	31.6	37.2	13.8	2.6	64.0		23.3	9.5		12.0	14.7	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	473	1780	773	498	1593		357	805		470	766	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.52	0.25	0.31	0.02	0.45		0.31	0.04		0.11	0.12	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 63.7

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 16.0

Intersection LOS: B

Intersection Capacity Utilization 57.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study
5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	34	37	15	34	26	31	535	31	9	501	54
Future Volume (vph)	41	34	37	15	34	26	31	535	31	9	501	54
Satd. Flow (prot)	0	1685	0	0	1677	0	0	1709	0	0	1738	0
Flt Permitted		0.871			0.939			0.951			0.989	
Satd. Flow (perm)	0	1495	0	0	1590	0	0	1630	0	0	1721	0
Satd. Flow (RTOR)		24			26			5			10	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	8%	7%	17%	4%	5%	4%	10%	17%	14%	7%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	45	37	40	16	37	28	34	582	34	10	545	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	122	0	0	81	0	0	650	0	0	614	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	32.0	32.0		32.0	32.0		68.0	68.0		68.0	68.0	
Total Split (%)	32.0%	32.0%		32.0%	32.0%		68.0%	68.0%		68.0%	68.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		26.6			26.6			62.9			62.9	
Actuated g/C Ratio		0.27			0.27			0.63			0.63	
v/c Ratio		0.29			0.18			0.63			0.57	
Control Delay		25.6			21.3			14.8			13.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		25.6			21.3			14.8			13.0	
LOS		C			C			B			B	
Approach Delay		25.6			21.3			14.8			13.0	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		15.7			8.5			74.1			64.8	
Queue Length 95th (m)		31.7			20.7			111.2			95.6	
Internal Link Dist (m)		2054.8			191.1			101.2			202.1	
Turn Bay Length (m)												
Base Capacity (vph)		415			442			1027			1086	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.29			0.18			0.63			0.57	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Pretimed

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 15.3

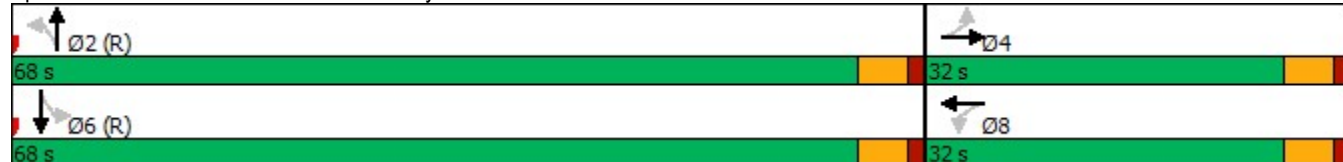
Intersection LOS: B

Intersection Capacity Utilization 67.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W



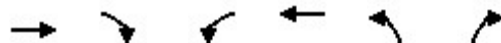
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	602	0	0	391	107	294
Future Volume (vph)	602	0	0	391	107	294
Satd. Flow (prot)	3406	0	0	3112	1504	1302
Flt Permitted					0.950	
Satd. Flow (perm)	3406	0	0	3112	1504	1302
Satd. Flow (RTOR)						109
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	0%	0%	16%	20%	24%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	654	0	0	425	116	320
Shared Lane Traffic (%)						
Lane Group Flow (vph)	654	0	0	425	116	320
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.3			35.3	17.8	17.8
Actuated g/C Ratio	0.53			0.53	0.27	0.27
v/c Ratio	0.36			0.26	0.29	0.75
Control Delay	10.9			10.2	20.3	25.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	10.9			10.2	20.3	25.4
LOS	B			B	C	C
Approach Delay	10.9			10.2	24.0	
Approach LOS	B			B	C	
Queue Length 50th (m)	23.1			14.1	11.8	24.3
Queue Length 95th (m)	47.3			30.6	23.2	50.4
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1813			1656	1029	925
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.36			0.26	0.11	0.35

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 66.3

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 14.5

Intersection LOS: B

Intersection Capacity Utilization 45.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

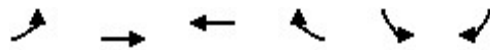
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	205	298	0	415	0
Future Volume (vph)	0	205	298	0	415	0
Satd. Flow (prot)	0	3406	3223	0	3303	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3406	3223	0	3303	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	12%	0%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	263	382	0	532	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	263	382	0	532	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		14.7	
Actuated g/C Ratio		0.47	0.47		0.28	
v/c Ratio		0.16	0.25		0.58	
Control Delay		8.9	9.5		19.2	
Queue Delay		0.0	0.0		0.0	
Total Delay		8.9	9.5		19.2	
LOS		A	A		B	
Approach Delay		8.9	9.5		19.2	
Approach LOS		A	A		B	
Queue Length 50th (m)		7.2	10.8		23.4	
Queue Length 95th (m)		12.7	17.9		29.8	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1611	1524		2813	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.16	0.25		0.19	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 53

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 13.7

Intersection LOS: B

Intersection Capacity Utilization 45.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp

→ Ø2		← Ø4
31.8 s		51.4 s
← Ø6		
31.8 s		

NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	0	3	3	0	15	10	112	9	27	197	15
Future Volume (vph)	12	0	3	3	0	15	10	112	9	27	197	15
Satd. Flow (prot)	0	1404	0	0	970	0	0	1538	0	0	1607	0
Flt Permitted		0.961			0.992			0.996			0.994	
Satd. Flow (perm)	0	1404	0	0	970	0	0	1538	0	0	1607	0
Confl. Peds. (#/hr)			2	2					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	22%	29%	33%	15%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	0	3	3	0	16	11	120	10	29	212	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	19	0	0	141	0	0	257	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 29.4%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	13	45	81	21	52	13	76	57	22	146	6
Future Volume (vph)	23	13	45	81	21	52	13	76	57	22	146	6
Satd. Flow (prot)	1626	1603	0	1770	1638	0	0	1599	0	1228	1696	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1626	1603	0	1770	1638	0	0	1599	0	1228	1696	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	2%	0%	5%	10%	20%	2%	47%	11%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	25	14	49	89	23	57	14	84	63	24	160	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	63	0	89	80	0	0	161	0	24	167	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 36.7%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	99	4	0	110	4	3	0	0	1	1	10
Future Volume (vph)	61	99	4	0	110	4	3	0	0	1	1	10
Satd. Flow (prot)	0	1803	0	0	1890	0	0	1805	0	0	1414	0
Flt Permitted		0.982						0.950			0.996	
Satd. Flow (perm)	0	1803	0	0	1890	0	0	1805	0	0	1414	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	0%	0%	0%	0%	0%	0%	0%	100%	0%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	74	121	5	0	134	5	4	0	0	1	1	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	200	0	0	139	0	0	4	0	0	14	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 25.5% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
27: Hwy 6 & Concession Rd 4

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	10	10	65	7	22	2	980	79	37	877	5
Future Volume (vph)	3	10	10	65	7	22	2	980	79	37	877	5
Satd. Flow (prot)	0	1633	0	0	1756	0	1203	3059	1553	1752	3252	1615
Flt Permitted		0.994			0.967		0.950			0.950		
Satd. Flow (perm)	0	1633	0	0	1756	0	1203	3059	1553	1752	3252	1615
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	20%	2%	0%	0%	50%	18%	4%	3%	11%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	11	11	71	8	24	2	1065	86	40	953	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	103	0	2	1065	86	40	953	5
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 49.4%						ICU Level of Service A						
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	693	88	18	741	66	304	9	39	160	17	288
Future Volume (vph)	94	693	88	18	741	66	304	9	39	160	17	288
Satd. Flow (prot)	1556	3471	1099	1327	3410	0	1570	1434	0	1736	1539	0
Flt Permitted	0.127			0.268			0.482			0.537		
Satd. Flow (perm)	208	3471	1099	374	3410	0	796	1434	0	981	1539	0
Satd. Flow (RTOR)			120		9			48			286	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	115	845	107	22	904	80	371	11	48	195	21	351
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	845	107	22	984	0	371	59	0	195	372	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		13.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	39.8	33.2	33.2	35.9	27.3		23.5	13.4		30.0	13.4	
Actuated g/C Ratio	0.51	0.43	0.43	0.46	0.35		0.30	0.17		0.39	0.17	
v/c Ratio	0.44	0.57	0.20	0.08	0.82		1.06	0.21		0.35	0.74	
Control Delay	16.1	20.5	4.5	11.4	31.4		89.1	12.9		18.1	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.1	20.5	4.5	11.4	31.4		89.1	12.9		18.1	17.9	
LOS	B	C	A	B	C		F	B		B	B	
Approach Delay		18.5			31.0			78.7			18.0	
Approach LOS		B			C			E			B	
Queue Length 50th (m)	8.0	41.9	0.0	1.5	71.7		45.1	1.5		20.9	12.3	
Queue Length 95th (m)	18.8	81.0	7.0	5.4	#110.0		#68.9	9.4		32.0	30.8	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	282	1482	538	307	1205		351	643		555	824	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.41	0.57	0.20	0.07	0.82		1.06	0.09		0.35	0.45	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 77.7

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 30.9

Intersection LOS: C

Intersection Capacity Utilization 82.3%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	25	29	15	32	14	36	690	33	8	551	51
Future Volume (vph)	50	25	29	15	32	14	36	690	33	8	551	51
Satd. Flow (prot)	0	1751	0	0	1791	0	0	1841	0	0	1809	0
Flt Permitted		0.837			0.928			0.950			0.989	
Satd. Flow (perm)	0	1500	0	0	1682	0	0	1753	0	0	1791	0
Satd. Flow (RTOR)		19			14			5			9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	7%	0%	3%	0%	6%	2%	6%	0%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	54	27	32	16	35	15	39	750	36	9	599	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	113	0	0	66	0	0	825	0	0	663	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.28			0.15			0.74			0.58	
Control Delay		26.8			24.4			17.4			12.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		26.8			24.4			17.4			12.8	
LOS		C			C			B			B	
Approach Delay		26.8			24.4			17.4			12.8	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		15.2			8.1			104.4			69.8	
Queue Length 95th (m)		30.6			19.0			154.8			101.9	
Internal Link Dist (m)		2054.3			137.7			107.7			138.0	
Turn Bay Length (m)												
Base Capacity (vph)		401			444			1118			1144	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.28			0.15			0.74			0.58	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 16.5

Intersection LOS: B

Intersection Capacity Utilization 79.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W

 Ø2 (R)		 Ø4
68.8 s		31.2 s
 Ø6 (R)		 Ø8
68.8 s		31.2 s

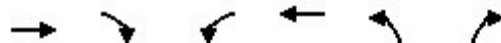
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-08-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	704	0	0	637	40	208
Future Volume (vph)	704	0	0	637	40	208
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						63
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	800	0	0	724	45	236
Shared Lane Traffic (%)						
Lane Group Flow (vph)	800	0	0	724	45	236
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.2			35.2	14.8	14.8
Actuated g/C Ratio	0.56			0.56	0.23	0.23
v/c Ratio	0.41			0.39	0.12	0.65
Control Delay	9.4			9.4	19.1	24.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	9.4			9.4	19.1	24.5
LOS	A			A	B	C
Approach Delay	9.4			9.4	23.6	
Approach LOS	A			A	C	
Queue Length 50th (m)	25.8			23.2	4.3	18.6
Queue Length 95th (m)	46.7			42.5	11.0	38.2
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1972			1845	1114	982
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-08-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.41			0.39	0.04	0.24

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 63.1

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 11.6

Intersection LOS: B

Intersection Capacity Utilization 43.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

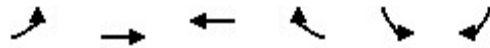
11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	329	364	0	417	0
Future Volume (vph)	0	329	364	0	417	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	366	404	0	463	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	366	404	0	463	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		13.0	
Actuated g/C Ratio		0.49	0.49		0.25	
v/c Ratio		0.21	0.24		0.53	
Control Delay		8.3	8.5		18.8	
Queue Delay		0.0	0.0		0.0	
Total Delay		8.3	8.5		18.8	
LOS		A	A		B	
Approach Delay		8.3	8.5		18.8	
Approach LOS		A	A		B	
Queue Length 50th (m)		9.5	10.6		19.7	
Queue Length 95th (m)		18.6	20.6		30.9	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1728	1695		3018	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.21	0.24		0.15	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 51.3

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 12.3

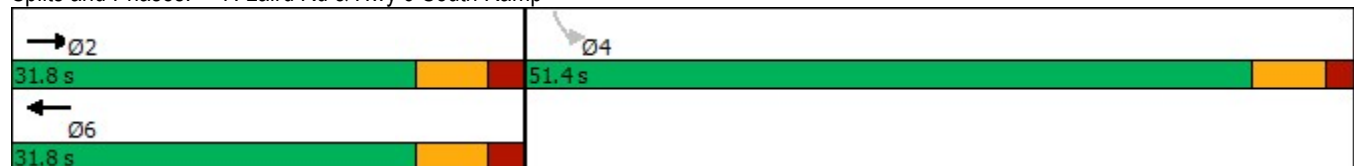
Intersection LOS: B

Intersection Capacity Utilization 43.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	13	8	0	23	5	280	4	18	182	14
Future Volume (vph)	36	1	13	8	0	23	5	280	4	18	182	14
Satd. Flow (prot)	0	1566	0	0	1312	0	0	1648	0	0	1434	0
Flt Permitted		0.965			0.987			0.999			0.996	
Satd. Flow (perm)	0	1566	0	0	1312	0	0	1648	0	0	1434	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	14%	66%	71%	25%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	44	1	16	10	0	28	6	346	5	22	225	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	38	0	0	357	0	0	264	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 35.2% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	32	44	50	12	36	45	217	121	37	128	17
Future Volume (vph)	30	32	44	50	12	36	45	217	121	37	128	17
Satd. Flow (prot)	1736	1677	0	1530	1387	0	0	1652	0	1308	1456	0
Flt Permitted	0.950			0.950				0.994		0.950		
Satd. Flow (perm)	1736	1677	0	1530	1387	0	0	1652	0	1308	1456	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	18%	0%	29%	6%	12%	6%	38%	30%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	34	36	50	57	14	41	51	247	138	42	145	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	86	0	57	55	0	0	436	0	42	164	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 48.5%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	160	6	0	144	3	4	8	1	3	4	53
Future Volume (vph)	48	160	6	0	144	3	4	8	1	3	4	53
Satd. Flow (prot)	0	1825	0	0	1823	0	0	1855	0	0	1639	0
Flt Permitted		0.989						0.986			0.998	
Satd. Flow (perm)	0	1825	0	0	1823	0	0	1855	0	0	1639	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	1%	0%	0%	4%	0%	0%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	52	172	6	0	155	3	4	9	1	3	4	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	230	0	0	158	0	0	14	0	0	64	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 33.0% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

27: Hwy 6 & Concession Rd 4

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	4	2	123	20	35	2	1115	76	32	1266	7
Future Volume (vph)	2	4	2	123	20	35	2	1115	76	32	1266	7
Satd. Flow (prot)	0	1778	0	0	1754	0	1770	3539	1583	1770	3539	1583
Flt Permitted		0.988			0.967		0.950			0.950		
Satd. Flow (perm)	0	1778	0	0	1754	0	1770	3539	1583	1770	3539	1583
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	4	2	131	21	37	2	1186	81	34	1347	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	189	0	2	1186	81	34	1347	7
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 58.3%												
ICU Level of Service B												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	466	252	8	517	132	99	14	13	45	12	71
Future Volume (vph)	221	466	252	8	517	132	99	14	13	45	12	71
Satd. Flow (prot)	1671	3343	1242	1357	3326	0	1271	1405	0	1530	1287	0
Flt Permitted	0.241			0.461			0.514			0.738		
Satd. Flow (perm)	424	3343	1242	659	3326	0	688	1405	0	1188	1287	0
Satd. Flow (RTOR)			280		31			14			79	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	30%	33%	6%	2%	42%	36%	14%	18%	44%	26%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	246	518	280	9	574	147	110	16	14	50	13	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	518	280	9	721	0	110	30	0	50	92	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	38.2	35.7	35.7	31.5	20.3		22.4	16.6		19.1	11.3	
Actuated g/C Ratio	0.60	0.56	0.56	0.49	0.32		0.35	0.26		0.30	0.18	
v/c Ratio	0.52	0.28	0.34	0.02	0.67		0.33	0.08		0.12	0.31	
Control Delay	13.4	12.8	3.5	8.4	23.2		18.5	18.7		15.7	13.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.4	12.8	3.5	8.4	23.2		18.5	18.7		15.7	13.3	
LOS	B	B	A	A	C		B	B		B	B	
Approach Delay		10.5			23.1			18.6			14.1	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	18.0	22.2	0.0	0.6	45.1		9.7	1.5		4.2	1.6	
Queue Length 95th (m)	31.6	43.0	14.7	2.6	64.0		23.3	9.5		12.0	14.7	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	473	1780	792	483	1593		357	805		470	766	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.52	0.29	0.35	0.02	0.45		0.31	0.04		0.11	0.12	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 63.7

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 15.7

Intersection LOS: B

Intersection Capacity Utilization 57.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	34	37	15	34	26	31	535	31	9	501	54
Future Volume (vph)	41	34	37	15	34	26	31	535	31	9	501	54
Satd. Flow (prot)	0	1685	0	0	1677	0	0	1709	0	0	1738	0
Flt Permitted		0.871			0.939			0.951			0.989	
Satd. Flow (perm)	0	1495	0	0	1590	0	0	1630	0	0	1721	0
Satd. Flow (RTOR)		24			26			5			10	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	8%	7%	17%	4%	5%	4%	10%	17%	14%	7%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	45	37	40	16	37	28	34	582	34	10	545	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	122	0	0	81	0	0	650	0	0	614	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	32.0	32.0		32.0	32.0		68.0	68.0		68.0	68.0	
Total Split (%)	32.0%	32.0%		32.0%	32.0%		68.0%	68.0%		68.0%	68.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		26.6			26.6			62.9			62.9	
Actuated g/C Ratio		0.27			0.27			0.63			0.63	
v/c Ratio		0.29			0.18			0.63			0.57	
Control Delay		25.6			21.3			14.8			13.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		25.6			21.3			14.8			13.0	
LOS		C			C			B			B	
Approach Delay		25.6			21.3			14.8			13.0	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		15.7			8.5			74.1			64.8	
Queue Length 95th (m)		31.7			20.7			111.2			95.6	
Internal Link Dist (m)		2054.8			191.1			101.2			202.1	
Turn Bay Length (m)												
Base Capacity (vph)		415			442			1027			1086	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.29			0.18			0.63			0.57	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Pretimed

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 15.3

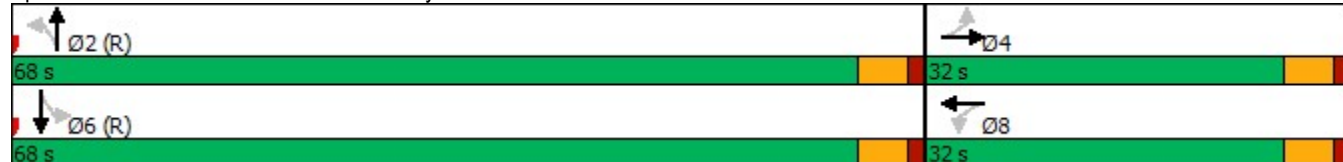
Intersection LOS: B

Intersection Capacity Utilization 67.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W



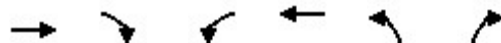
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	698	0	0	391	107	294
Future Volume (vph)	698	0	0	391	107	294
Satd. Flow (prot)	3406	0	0	3112	1504	1302
Flt Permitted					0.950	
Satd. Flow (perm)	3406	0	0	3112	1504	1302
Satd. Flow (RTOR)						74
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	0%	0%	16%	20%	24%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	759	0	0	425	116	320
Shared Lane Traffic (%)						
Lane Group Flow (vph)	759	0	0	425	116	320
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.4			35.4	19.5	19.5
Actuated g/C Ratio	0.52			0.52	0.29	0.29
v/c Ratio	0.43			0.26	0.27	0.75
Control Delay	12.3			11.0	19.5	28.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	12.3			11.0	19.5	28.1
LOS	B			B	B	C
Approach Delay	12.3			11.0	25.8	
Approach LOS	B			B	C	
Queue Length 50th (m)	29.9			15.1	11.8	29.2
Queue Length 95th (m)	59.3			32.2	23.1	55.9
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1768			1615	1004	893
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.43			0.26	0.12	0.36

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 68.1

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 15.6

Intersection LOS: B

Intersection Capacity Utilization 48.4%

ICU Level of Service A

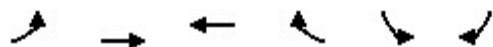
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

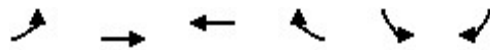
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	205	298	0	511	0
Future Volume (vph)	0	205	298	0	511	0
Satd. Flow (prot)	0	3406	3223	0	3303	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3406	3223	0	3303	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	12%	0%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	263	382	0	655	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	263	382	0	655	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		17.3	
Actuated g/C Ratio		0.45	0.45		0.31	
v/c Ratio		0.17	0.26		0.64	
Control Delay		10.3	10.9		19.4	
Queue Delay		0.0	0.0		0.0	
Total Delay		10.3	10.9		19.4	
LOS		B	B		B	
Approach Delay		10.3	10.9		19.4	
Approach LOS		B	B		B	
Queue Length 50th (m)		8.2	12.5		30.1	
Queue Length 95th (m)		14.4	20.4		36.5	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1535	1453		2680	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.17	0.26		0.24	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 55.7

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 15.1

Intersection LOS: B

Intersection Capacity Utilization 48.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp

→ Ø2		↖ Ø4
31.8 s		51.4 s
← Ø6		
31.8 s		

NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	0	3	3	0	15	10	112	9	31	227	19
Future Volume (vph)	12	0	3	3	0	15	10	112	9	31	227	19
Satd. Flow (prot)	0	1404	0	0	970	0	0	1538	0	0	1606	0
Flt Permitted		0.961			0.992			0.996			0.994	
Satd. Flow (perm)	0	1404	0	0	970	0	0	1538	0	0	1606	0
Confl. Peds. (#/hr)			2	2					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	22%	29%	33%	15%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	0	3	3	0	16	11	120	10	33	244	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	19	0	0	141	0	0	297	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 32.4%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	13	45	81	21	52	13	76	57	22	160	21
Future Volume (vph)	23	13	45	81	21	52	13	76	57	22	160	21
Satd. Flow (prot)	1626	1603	0	1770	1638	0	0	1599	0	1228	1667	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1626	1603	0	1770	1638	0	0	1599	0	1228	1667	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	2%	0%	5%	10%	20%	2%	47%	11%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	25	14	49	89	23	57	14	84	63	24	176	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	63	0	89	80	0	0	161	0	24	199	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 36.7% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
18: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	29	0	8	20	0	17
Future Volume (vph)	29	0	8	20	0	17
Satd. Flow (prot)	1770	0	1684	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1684	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	32	0	9	22	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	31	0	0	18
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	110	4	24	40	1	11
Future Volume (vph)	110	4	24	40	1	11
Satd. Flow (prot)	1804	0	1738	0	0	1766
Flt Permitted	0.954					0.996
Satd. Flow (perm)	1804	0	1738	0	0	1766
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	134	5	29	49	1	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	139	0	78	0	0	14
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 16.7%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	789	117	18	741	66	304	9	39	160	17	288
Future Volume (vph)	94	789	117	18	741	66	304	9	39	160	17	288
Satd. Flow (prot)	1556	3471	1099	1327	3410	0	1570	1434	0	1736	1539	0
Flt Permitted	0.127			0.204			0.485			0.537		
Satd. Flow (perm)	208	3471	1099	285	3410	0	801	1434	0	981	1539	0
Satd. Flow (RTOR)			143		9			48			287	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	115	962	143	22	904	80	371	11	48	195	21	351
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	962	143	22	984	0	371	59	0	195	372	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		13.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	39.7	33.0	33.0	35.8	27.3		23.4	13.4		30.0	13.4	
Actuated g/C Ratio	0.51	0.43	0.43	0.46	0.35		0.30	0.17		0.39	0.17	
v/c Ratio	0.44	0.65	0.26	0.10	0.82		1.05	0.21		0.35	0.74	
Control Delay	16.3	22.3	5.3	11.7	31.3		87.6	12.8		18.1	17.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.3	22.3	5.3	11.7	31.3		87.6	12.8		18.1	17.7	
LOS	B	C	A	B	C		F	B		B	B	
Approach Delay		19.7			30.8			77.3			17.8	
Approach LOS		B			C			E			B	
Queue Length 50th (m)	8.0	50.0	0.0	1.5	71.1		44.7	1.5		20.7	12.1	
Queue Length 95th (m)	18.8	95.0	9.9	5.4	#110.0		#68.6	9.4		32.0	30.5	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	282	1478	550	275	1207		352	644		556	826	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.41	0.65	0.26	0.08	0.82		1.05	0.09		0.35	0.45	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 77.5

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 30.6

Intersection LOS: C

Intersection Capacity Utilization 82.3%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	25	29	15	32	14	36	690	33	8	551	51
Future Volume (vph)	50	25	29	15	32	14	36	690	33	8	551	51
Satd. Flow (prot)	0	1751	0	0	1791	0	0	1841	0	0	1809	0
Flt Permitted		0.837			0.928			0.950			0.989	
Satd. Flow (perm)	0	1500	0	0	1682	0	0	1753	0	0	1791	0
Satd. Flow (RTOR)		19			14			5			9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	7%	0%	3%	0%	6%	2%	6%	0%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	54	27	32	16	35	15	39	750	36	9	599	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	113	0	0	66	0	0	825	0	0	663	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.28			0.15			0.74			0.58	
Control Delay		26.8			24.4			17.4			12.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		26.8			24.4			17.4			12.8	
LOS		C			C			B			B	
Approach Delay		26.8			24.4			17.4			12.8	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		15.2			8.1			104.4			69.8	
Queue Length 95th (m)		30.6			19.0			154.8			101.9	
Internal Link Dist (m)		2054.3			137.7			107.7			138.0	
Turn Bay Length (m)												
Base Capacity (vph)		401			444			1118			1144	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.28			0.15			0.74			0.58	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 16.5

Intersection LOS: B

Intersection Capacity Utilization 79.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W

 Ø2 (R)		 Ø4
68.8 s		31.2 s
 Ø6 (R)		 Ø8
68.8 s		31.2 s

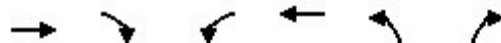
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	829	0	0	637	40	208
Future Volume (vph)	829	0	0	637	40	208
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						37
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	942	0	0	724	45	236
Shared Lane Traffic (%)						
Lane Group Flow (vph)	942	0	0	724	45	236
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.2			35.2	15.7	15.7
Actuated g/C Ratio	0.55			0.55	0.25	0.25
v/c Ratio	0.48			0.40	0.12	0.66
Control Delay	10.7			9.9	18.7	27.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	10.7			9.9	18.7	27.4
LOS	B			A	B	C
Approach Delay	10.7			9.9	26.0	
Approach LOS	B			A	C	
Queue Length 50th (m)	34.0			24.5	4.3	22.0
Queue Length 95th (m)	59.5			44.4	11.0	41.6
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1943			1819	1098	961
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.48			0.40	0.04	0.25

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 64

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 12.6

Intersection LOS: B

Intersection Capacity Utilization 46.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	329	364	0	542	0
Future Volume (vph)	0	329	364	0	542	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	366	404	0	602	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	366	404	0	602	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effct Green (s)		25.1	25.1		15.5	
Actuated g/C Ratio		0.47	0.47		0.29	
v/c Ratio		0.22	0.25		0.61	
Control Delay		9.6	9.8		19.3	
Queue Delay		0.0	0.0		0.0	
Total Delay		9.6	9.8		19.3	
LOS		A	A		B	
Approach Delay		9.6	9.8		19.3	
Approach LOS		A	A		B	
Queue Length 50th (m)		10.6	11.9		26.9	
Queue Length 95th (m)		20.8	23.0		40.2	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1648	1616		2878	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.22	0.25		0.21	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 53.8

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 13.9

Intersection LOS: B

Intersection Capacity Utilization 46.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp

→ Ø2		↖ Ø4
31.8 s		51.4 s
← Ø6		
31.8 s		

NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	13	8	0	23	5	280	4	41	205	17
Future Volume (vph)	36	1	13	8	0	23	5	280	4	41	205	17
Satd. Flow (prot)	0	1566	0	0	1312	0	0	1648	0	0	1392	0
Flt Permitted		0.965			0.987			0.999			0.992	
Satd. Flow (perm)	0	1566	0	0	1312	0	0	1648	0	0	1392	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	14%	66%	71%	25%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	44	1	16	10	0	28	6	346	5	51	253	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	38	0	0	357	0	0	325	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 47.2% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	32	44	50	12	36	45	217	121	37	139	28
Future Volume (vph)	30	32	44	50	12	36	45	217	121	37	139	28
Satd. Flow (prot)	1736	1677	0	1530	1387	0	0	1652	0	1308	1453	0
Flt Permitted	0.950			0.950				0.994		0.950		
Satd. Flow (perm)	1736	1677	0	1530	1387	0	0	1652	0	1308	1453	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	18%	0%	29%	6%	12%	6%	38%	30%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	34	36	50	57	14	41	51	247	138	42	158	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	86	0	57	55	0	0	436	0	42	190	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 49.7%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
18: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	23	0	9	21	0	26
Future Volume (vph)	23	0	9	21	0	26
Satd. Flow (prot)	1770	0	1688	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1688	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	25	0	10	23	0	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	0	33	0	0	28
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	144	3	27	65	3	57
Future Volume (vph)	144	3	27	65	3	57
Satd. Flow (prot)	1805	0	1720	0	0	1896
Flt Permitted	0.953					0.998
Satd. Flow (perm)	1805	0	1720	0	0	1896
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	155	3	29	70	3	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	158	0	99	0	0	64
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 20.3%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	515	278	9	571	145	110	16	14	50	13	78
Future Volume (vph)	244	515	278	9	571	145	110	16	14	50	13	78
Satd. Flow (prot)	1556	3471	1099	1327	3367	0	1570	1320	0	1736	1521	0
Flt Permitted	0.187			0.414			0.685			0.669		
Satd. Flow (perm)	306	3471	1099	578	3367	0	1132	1320	0	1222	1521	0
Satd. Flow (RTOR)			339		31			17			95	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	298	628	339	11	696	177	134	20	17	61	16	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	628	339	11	873	0	134	37	0	61	111	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	42.7	40.0	40.0	36.2	25.2		19.0	13.9		20.1	11.0	
Actuated g/C Ratio	0.63	0.59	0.59	0.53	0.37		0.28	0.20		0.29	0.16	
v/c Ratio	0.76	0.31	0.43	0.03	0.69		0.35	0.13		0.14	0.34	
Control Delay	28.0	12.5	4.0	8.1	23.2		23.1	20.7		17.0	13.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.0	12.5	4.0	8.1	23.2		23.1	20.7		17.0	13.1	
LOS	C	B	A	A	C		C	C		B	B	
Approach Delay		13.9			23.0			22.5			14.5	
Approach LOS		B			C			C			B	
Queue Length 50th (m)	22.9	27.7	0.0	0.7	58.1		19.8	2.8		6.0	2.2	
Queue Length 95th (m)	#55.8	46.0	11.1	2.6	70.1		23.9	9.7		12.6	13.4	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	391	2031	783	453	1473		404	705		505	848	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.76	0.31	0.43	0.02	0.59		0.33	0.05		0.12	0.13	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 68.3

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 17.7

Intersection LOS: B

Intersection Capacity Utilization 61.7%

ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	37	41	17	37	28	34	591	34	10	553	60
Future Volume (vph)	46	37	41	17	37	28	34	591	34	10	553	60
Satd. Flow (prot)	0	1684	0	0	1677	0	0	1709	0	0	1738	0
Flt Permitted		0.863			0.932			0.945			0.988	
Satd. Flow (perm)	0	1480	0	0	1579	0	0	1620	0	0	1719	0
Satd. Flow (RTOR)		24			25			5			11	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	8%	7%	17%	4%	5%	4%	10%	17%	14%	7%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	50	40	45	18	40	30	37	642	37	11	601	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	135	0	0	88	0	0	716	0	0	677	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.34			0.21			0.69			0.62	
Control Delay		27.4			22.8			16.2			13.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		27.4			22.8			16.2			13.7	
LOS		C			C			B			B	
Approach Delay		27.4			22.8			16.2			13.7	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		18.2			9.9			85.8			73.8	
Queue Length 95th (m)		35.5			23.0			129.6			109.3	
Internal Link Dist (m)		2055.5			174.7			162.0			185.2	
Turn Bay Length (m)												
Base Capacity (vph)		399			425			1033			1098	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.34			0.21			0.69			0.62	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 16.4

Intersection LOS: B

Intersection Capacity Utilization 73.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W

 Ø2 (R)		 Ø4
68.8 s		31.2 s
 Ø6 (R)		 Ø8
68.8 s		31.2 s

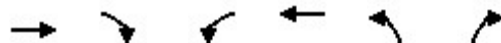
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	771	0	0	432	118	325
Future Volume (vph)	771	0	0	432	118	325
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						48
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	876	0	0	491	134	369
Shared Lane Traffic (%)						
Lane Group Flow (vph)	876	0	0	491	134	369
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.4			35.4	23.5	23.5
Actuated g/C Ratio	0.49			0.49	0.33	0.33
v/c Ratio	0.50			0.30	0.26	0.78
Control Delay	15.2			13.1	18.4	31.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	15.2			13.1	18.4	31.0
LOS	B			B	B	C
Approach Delay	15.2			13.1	27.6	
Approach LOS	B			B	C	
Queue Length 50th (m)	41.2			20.4	13.7	40.6
Queue Length 95th (m)	76.3			40.7	24.9	67.7
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1735			1624	980	866
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.50			0.30	0.14	0.43

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 72.2

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 18.0

Intersection LOS: B

Intersection Capacity Utilization 52.4%

ICU Level of Service A

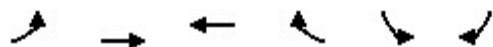
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

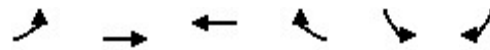
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	226	329	0	565	0
Future Volume (vph)	0	226	329	0	565	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	251	366	0	628	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	251	366	0	628	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		16.4	
Actuated g/C Ratio		0.46	0.46		0.30	
v/c Ratio		0.15	0.23		0.61	
Control Delay		9.7	10.1		19.1	
Queue Delay		0.0	0.0		0.0	
Total Delay		9.7	10.1		19.1	
LOS		A	B		B	
Approach Delay		9.7	10.1		19.1	
Approach LOS		A	B		B	
Queue Length 50th (m)		7.5	11.4		28.4	
Queue Length 95th (m)		15.5	22.0		41.9	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1622	1591		2833	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.15	0.23		0.22	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 54.7

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 14.6

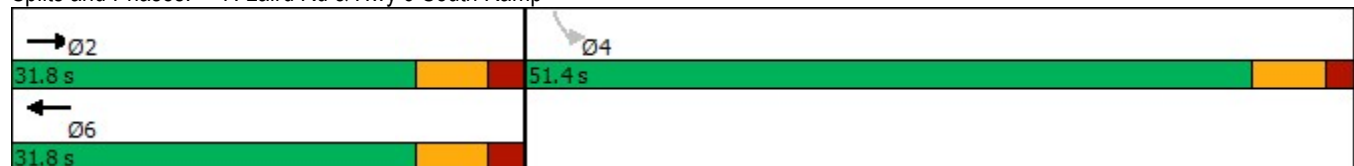
Intersection LOS: B

Intersection Capacity Utilization 52.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	0	3	3	0	17	11	124	10	34	250	21
Future Volume (vph)	13	0	3	3	0	17	11	124	10	34	250	21
Satd. Flow (prot)	0	1400	0	0	971	0	0	1538	0	0	1606	0
Flt Permitted		0.960			0.993			0.996			0.994	
Satd. Flow (perm)	0	1400	0	0	971	0	0	1538	0	0	1606	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	22%	29%	33%	15%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	0	3	3	0	18	12	133	11	37	269	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	0	0	21	0	0	156	0	0	329	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 34.1%						ICU Level of Service A						
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	14	50	90	23	57	14	84	63	24	177	23
Future Volume (vph)	26	14	50	90	23	57	14	84	63	24	177	23
Satd. Flow (prot)	1626	1600	0	1770	1638	0	0	1599	0	1228	1667	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1626	1600	0	1770	1638	0	0	1599	0	1228	1667	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	2%	0%	5%	10%	20%	2%	47%	11%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	29	15	55	99	25	63	15	92	69	26	195	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	70	0	99	88	0	0	176	0	26	220	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 38.9%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
16: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	0	9	22	0	3
Future Volume (vph)	10	0	9	22	0	3
Satd. Flow (prot)	1770	0	1686	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1686	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	11	0	10	24	0	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	34	0	0	3
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	121	4	27	44	1	12
Future Volume (vph)	121	4	27	44	1	12
Satd. Flow (prot)	1805	0	1740	0	0	1599
Flt Permitted	0.954					0.997
Satd. Flow (perm)	1805	0	1740	0	0	1599
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	100%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	148	5	33	54	1	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	153	0	87	0	0	16
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 17.7%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	871	129	20	818	73	336	10	43	177	19	318
Future Volume (vph)	104	871	129	20	818	73	336	10	43	177	19	318
Satd. Flow (prot)	1556	3471	1099	1327	3410	0	1570	1433	0	1736	1539	0
Flt Permitted	0.125			0.174			0.272			0.587		
Satd. Flow (perm)	205	3471	1099	243	3410	0	449	1433	0	1072	1539	0
Satd. Flow (RTOR)			157		9			52			256	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	127	1062	157	24	998	89	410	12	52	216	23	388
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	1062	157	24	1087	0	410	64	0	216	411	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	42.1	35.5	35.5	37.5	27.2		29.5	15.9		31.7	15.9	
Actuated g/C Ratio	0.51	0.43	0.43	0.46	0.33		0.36	0.19		0.38	0.19	
v/c Ratio	0.50	0.71	0.28	0.12	0.96		1.32	0.20		0.41	0.82	
Control Delay	20.1	25.6	5.5	13.7	48.2		187.3	11.7		18.7	25.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.1	25.6	5.5	13.7	48.2		187.3	11.7		18.7	25.7	
LOS	C	C	A	B	D		F	B		B	C	
Approach Delay		22.8			47.5			163.6			23.3	
Approach LOS		C			D			F			C	
Queue Length 50th (m)	10.1	63.7	0.0	1.8	89.8		~64.6	1.7		23.6	24.1	
Queue Length 95th (m)	22.8	#128.5	10.8	6.4	#142.7		#102.4	9.5		34.6	45.5	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	270	1494	562	251	1132		311	609		525	773	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.47	0.71	0.28	0.10	0.96		1.32	0.11		0.41	0.53	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 82.4

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.32

Intersection Signal Delay: 49.3

Intersection LOS: D

Intersection Capacity Utilization 88.4%

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.

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	28	32	16	36	15	40	762	37	9	609	56
Future Volume (vph)	55	28	32	16	36	15	40	762	37	9	609	56
Satd. Flow (prot)	0	1751	0	0	1792	0	0	1841	0	0	1809	0
Flt Permitted		0.829			0.926			0.943			0.987	
Satd. Flow (perm)	0	1486	0	0	1679	0	0	1740	0	0	1787	0
Satd. Flow (RTOR)		19			14			5			9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	7%	0%	3%	0%	6%	2%	6%	0%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	60	30	35	17	39	16	43	828	40	10	662	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	125	0	0	72	0	0	911	0	0	733	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.31			0.16			0.82			0.64	
Control Delay		27.9			24.8			21.6			14.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		27.9			24.8			21.6			14.3	
LOS		C			C			C			B	
Approach Delay		27.9			24.8			21.6			14.3	
Approach LOS		C			C			C			B	
Queue Length 50th (m)		17.3			9.1			128.0			82.6	
Queue Length 95th (m)		33.8			20.7			194.6			120.8	
Internal Link Dist (m)		2054.6			317.2			178.0			128.7	
Turn Bay Length (m)												
Base Capacity (vph)		397			443			1110			1141	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.31			0.16			0.82			0.64	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 19.2

Intersection LOS: B

Intersection Capacity Utilization 87.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W

 Ø2 (R)		 Ø4
68.8 s		31.2 s
 Ø6 (R)		 Ø8
68.8 s		31.2 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	↲
Traffic Volume (vph)	916	0	0	704	44	229
Future Volume (vph)	916	0	0	704	44	229
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						25
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1041	0	0	800	50	260
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1041	0	0	800	50	260
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.2			35.2	17.5	17.5
Actuated g/C Ratio	0.53			0.53	0.27	0.27
v/c Ratio	0.55			0.45	0.12	0.69
Control Delay	12.5			11.4	18.1	29.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	12.5			11.4	18.1	29.5
LOS	B			B	B	C
Approach Delay	12.5			11.4	27.7	
Approach LOS	B			B	C	
Queue Length 50th (m)	42.3			30.2	4.8	26.9
Queue Length 95th (m)	73.6			54.2	11.6	48.0
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1890			1768	1068	932
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.55			0.45	0.05	0.28

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 65.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 14.3

Intersection LOS: B

Intersection Capacity Utilization 50.4%

ICU Level of Service A

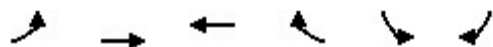
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

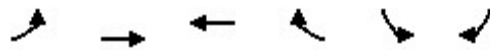
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	363	402	0	598	0
Future Volume (vph)	0	363	402	0	598	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	403	447	0	664	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	403	447	0	664	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		17.0	
Actuated g/C Ratio		0.45	0.45		0.31	
v/c Ratio		0.25	0.28		0.63	
Control Delay		10.6	10.8		19.2	
Queue Delay		0.0	0.0		0.0	
Total Delay		10.6	10.8		19.2	
LOS		B	B		B	
Approach Delay		10.6	10.8		19.2	
Approach LOS		B	B		B	
Queue Length 50th (m)		13.0	14.6		30.3	
Queue Length 95th (m)		24.6	27.5		44.3	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1605	1574		2802	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.25	0.28		0.24	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 55.3

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 14.4

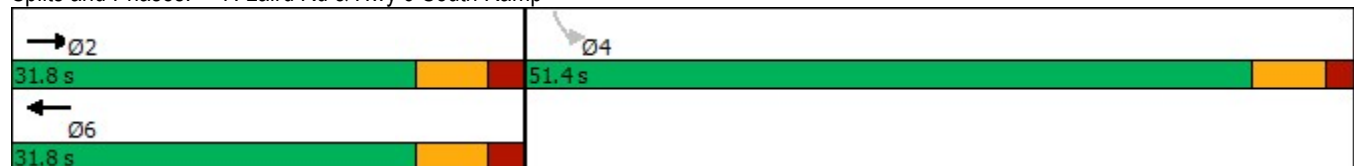
Intersection LOS: B

Intersection Capacity Utilization 50.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1	14	9	0	26	6	309	4	23	226	19
Future Volume (vph)	40	1	14	9	0	26	6	309	4	23	226	19
Satd. Flow (prot)	0	1565	0	0	1309	0	0	1649	0	0	1432	0
Flt Permitted		0.965			0.987			0.999			0.996	
Satd. Flow (perm)	0	1565	0	0	1309	0	0	1649	0	0	1432	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	14%	66%	71%	25%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	49	1	17	11	0	32	7	381	5	28	279	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	0	0	43	0	0	393	0	0	330	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 39.9% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	36	48	56	13	40	50	239	134	41	154	31
Future Volume (vph)	33	36	48	56	13	40	50	239	134	41	154	31
Satd. Flow (prot)	1736	1679	0	1530	1384	0	0	1652	0	1308	1453	0
Flt Permitted	0.950			0.950				0.994		0.950		
Satd. Flow (perm)	1736	1679	0	1530	1384	0	0	1652	0	1308	1453	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	18%	0%	29%	6%	12%	6%	38%	30%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	38	41	55	64	15	45	57	272	152	47	175	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	96	0	64	60	0	0	481	0	47	210	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 53.3% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
18: Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	0	10	23	0	25
Future Volume (vph)	40	0	10	23	0	25
Satd. Flow (prot)	1770	0	1688	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1688	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	43	0	11	25	0	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	36	0	0	27
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	160	3	30	72	3	62
Future Volume (vph)	160	3	30	72	3	62
Satd. Flow (prot)	1806	0	1720	0	0	1896
Flt Permitted	0.953					0.998
Satd. Flow (perm)	1806	0	1720	0	0	1896
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	172	3	32	77	3	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	175	0	109	0	0	70
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 21.7%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
27: Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	25	31	0	119	65
Future Volume (vph)	0	25	31	0	119	65
Satd. Flow (prot)	1611	0	1863	0	0	1805
Flt Permitted						0.969
Satd. Flow (perm)	1611	0	1863	0	0	1805
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	0	27	34	0	129	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	0	34	0	0	200
Sign Control	Free		Free			Free
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 26.7%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	515	278	9	571	145	110	16	14	50	13	78
Future Volume (vph)	244	515	278	9	571	145	110	16	14	50	13	78
Satd. Flow (prot)	1556	3471	1099	1327	3367	0	1570	1320	0	1736	1521	0
Flt Permitted	0.187			0.414			0.685			0.669		
Satd. Flow (perm)	306	3471	1099	578	3367	0	1132	1320	0	1222	1521	0
Satd. Flow (RTOR)			339		31			17			95	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	298	628	339	11	696	177	134	20	17	61	16	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	628	339	11	873	0	134	37	0	61	111	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	42.7	40.0	40.0	36.2	25.2		19.0	13.9		20.1	11.0	
Actuated g/C Ratio	0.63	0.59	0.59	0.53	0.37		0.28	0.20		0.29	0.16	
v/c Ratio	0.76	0.31	0.43	0.03	0.69		0.35	0.13		0.14	0.34	
Control Delay	28.0	12.5	4.0	8.1	23.2		23.1	20.7		17.0	13.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.0	12.5	4.0	8.1	23.2		23.1	20.7		17.0	13.1	
LOS	C	B	A	A	C		C	C		B	B	
Approach Delay		13.9			23.0			22.5			14.5	
Approach LOS		B			C			C			B	
Queue Length 50th (m)	22.9	27.7	0.0	0.7	58.1		19.8	2.8		6.0	2.2	
Queue Length 95th (m)	#55.8	46.0	11.1	2.6	70.1		23.9	9.7		12.6	13.4	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	391	2031	783	453	1473		404	705		505	848	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.76	0.31	0.43	0.02	0.59		0.33	0.05		0.12	0.13	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 68.3

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 17.7

Intersection LOS: B

Intersection Capacity Utilization 61.7%

ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Southgate Dr & Laird Rd

			
Ø1	Ø2	Ø3	Ø4
13 s	33 s	13 s	41 s
			
Ø5	Ø6	Ø7	Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	37	41	17	37	28	34	591	34	10	553	60
Future Volume (vph)	46	37	41	17	37	28	34	591	34	10	553	60
Satd. Flow (prot)	0	1684	0	0	1677	0	0	1709	0	0	1738	0
Flt Permitted		0.863			0.932			0.945			0.988	
Satd. Flow (perm)	0	1480	0	0	1579	0	0	1620	0	0	1719	0
Satd. Flow (RTOR)		24			25			5			11	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	8%	7%	17%	4%	5%	4%	10%	17%	14%	7%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	50	40	45	18	40	30	37	642	37	11	601	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	135	0	0	88	0	0	716	0	0	677	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.34			0.21			0.69			0.62	
Control Delay		27.4			22.8			16.2			13.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		27.4			22.8			16.2			13.7	
LOS		C			C			B			B	
Approach Delay		27.4			22.8			16.2			13.7	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		18.2			9.9			85.8			73.8	
Queue Length 95th (m)		35.5			23.0			129.6			109.3	
Internal Link Dist (m)		2055.5			174.7			162.0			185.2	
Turn Bay Length (m)												
Base Capacity (vph)		399			425			1033			1098	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.34			0.21			0.69			0.62	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 16.4

Intersection LOS: B

Intersection Capacity Utilization 73.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W

 Ø2 (R)		 Ø4
68.8 s		31.2 s
 Ø6 (R)		 Ø8
68.8 s		31.2 s

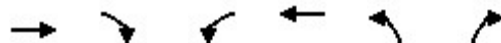
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	771	0	0	432	118	325
Future Volume (vph)	771	0	0	432	118	325
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						48
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	876	0	0	491	134	369
Shared Lane Traffic (%)						
Lane Group Flow (vph)	876	0	0	491	134	369
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.4			35.4	23.5	23.5
Actuated g/C Ratio	0.49			0.49	0.33	0.33
v/c Ratio	0.50			0.30	0.26	0.78
Control Delay	15.2			13.1	18.4	31.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	15.2			13.1	18.4	31.0
LOS	B			B	B	C
Approach Delay	15.2			13.1	27.6	
Approach LOS	B			B	C	
Queue Length 50th (m)	41.2			20.4	13.7	40.6
Queue Length 95th (m)	76.3			40.7	24.9	67.7
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1735			1624	980	866
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.50			0.30	0.14	0.43

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 72.2

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 18.0

Intersection LOS: B

Intersection Capacity Utilization 52.4%

ICU Level of Service A

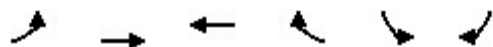
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	226	329	0	565	0
Future Volume (vph)	0	226	329	0	565	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	251	366	0	628	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	251	366	0	628	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		16.4	
Actuated g/C Ratio		0.46	0.46		0.30	
v/c Ratio		0.15	0.23		0.61	
Control Delay		9.7	10.1		19.1	
Queue Delay		0.0	0.0		0.0	
Total Delay		9.7	10.1		19.1	
LOS		A	B		B	
Approach Delay		9.7	10.1		19.1	
Approach LOS		A	B		B	
Queue Length 50th (m)		7.5	11.4		28.4	
Queue Length 95th (m)		15.5	22.0		41.9	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1622	1591		2833	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.15	0.23		0.22	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 54.7

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 14.6

Intersection LOS: B

Intersection Capacity Utilization 52.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp

→ Ø2		← Ø4
31.8 s		51.4 s
← Ø6		
31.8 s		

NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	0	3	3	0	17	11	124	10	34	250	21
Future Volume (vph)	13	0	3	3	0	17	11	124	10	34	250	21
Satd. Flow (prot)	0	1400	0	0	971	0	0	1538	0	0	1606	0
Flt Permitted		0.960			0.993			0.996			0.994	
Satd. Flow (perm)	0	1400	0	0	971	0	0	1538	0	0	1606	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	22%	29%	33%	15%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	0	3	3	0	18	12	133	11	37	269	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	0	0	21	0	0	156	0	0	329	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 34.1% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	14	50	90	23	57	14	84	63	24	177	23
Future Volume (vph)	26	14	50	90	23	57	14	84	63	24	177	23
Satd. Flow (prot)	1626	1600	0	1770	1638	0	0	1599	0	1228	1667	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1626	1600	0	1770	1638	0	0	1599	0	1228	1667	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	2%	0%	5%	10%	20%	2%	47%	11%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	29	15	55	99	25	63	15	92	69	26	195	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	70	0	99	88	0	0	176	0	26	220	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 38.9% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	121	4	27	44	1	12
Future Volume (vph)	121	4	27	44	1	12
Satd. Flow (prot)	1805	0	1740	0	0	1599
Flt Permitted	0.954					0.997
Satd. Flow (perm)	1805	0	1740	0	0	1599
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	100%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	148	5	33	54	1	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	153	0	87	0	0	16
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 17.7%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	871	129	20	818	73	336	10	43	177	19	318
Future Volume (vph)	104	871	129	20	818	73	336	10	43	177	19	318
Satd. Flow (prot)	1556	3471	1099	1327	3410	0	1570	1433	0	1736	1539	0
Flt Permitted	0.125			0.174			0.272			0.587		
Satd. Flow (perm)	205	3471	1099	243	3410	0	449	1433	0	1072	1539	0
Satd. Flow (RTOR)			157		9			52			256	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	127	1062	157	24	998	89	410	12	52	216	23	388
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	1062	157	24	1087	0	410	64	0	216	411	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	42.1	35.5	35.5	37.5	27.2		29.5	15.9		31.7	15.9	
Actuated g/C Ratio	0.51	0.43	0.43	0.46	0.33		0.36	0.19		0.38	0.19	
v/c Ratio	0.50	0.71	0.28	0.12	0.96		1.32	0.20		0.41	0.82	
Control Delay	20.1	25.6	5.5	13.7	48.2		187.3	11.7		18.7	25.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.1	25.6	5.5	13.7	48.2		187.3	11.7		18.7	25.7	
LOS	C	C	A	B	D		F	B		B	C	
Approach Delay		22.8			47.5			163.6			23.3	
Approach LOS		C			D			F			C	
Queue Length 50th (m)	10.1	63.7	0.0	1.8	89.8		~64.6	1.7		23.6	24.1	
Queue Length 95th (m)	22.8	#128.5	10.8	6.4	#142.7		#102.4	9.5		34.6	45.5	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	270	1494	562	251	1132		311	609		525	773	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.47	0.71	0.28	0.10	0.96		1.32	0.11		0.41	0.53	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 82.4

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.32

Intersection Signal Delay: 49.3

Intersection LOS: D

Intersection Capacity Utilization 88.4%

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.

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	28	32	16	36	15	40	762	37	9	609	56
Future Volume (vph)	55	28	32	16	36	15	40	762	37	9	609	56
Satd. Flow (prot)	0	1751	0	0	1792	0	0	1841	0	0	1809	0
Flt Permitted		0.829			0.926			0.943			0.987	
Satd. Flow (perm)	0	1486	0	0	1679	0	0	1740	0	0	1787	0
Satd. Flow (RTOR)		19			14			5			9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	7%	0%	3%	0%	6%	2%	6%	0%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	60	30	35	17	39	16	43	828	40	10	662	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	125	0	0	72	0	0	911	0	0	733	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.31			0.16			0.82			0.64	
Control Delay		27.9			24.8			21.6			14.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		27.9			24.8			21.6			14.3	
LOS		C			C			C			B	
Approach Delay		27.9			24.8			21.6			14.3	
Approach LOS		C			C			C			B	
Queue Length 50th (m)		17.3			9.1			128.0			82.6	
Queue Length 95th (m)		33.8			20.7			194.6			120.8	
Internal Link Dist (m)		2054.6			317.2			178.0			128.7	
Turn Bay Length (m)												
Base Capacity (vph)		397			443			1110			1141	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.31			0.16			0.82			0.64	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 19.2

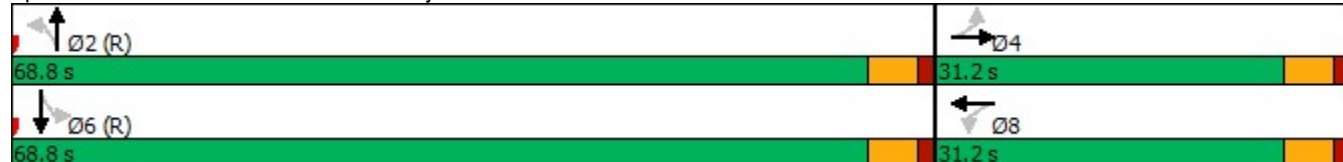
Intersection LOS: B

Intersection Capacity Utilization 87.0%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W



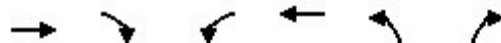
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↖	↗
Traffic Volume (vph)	916	0	0	704	44	229
Future Volume (vph)	916	0	0	704	44	229
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						25
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1041	0	0	800	50	260
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1041	0	0	800	50	260
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.2			35.2	17.5	17.5
Actuated g/C Ratio	0.53			0.53	0.27	0.27
v/c Ratio	0.55			0.45	0.12	0.69
Control Delay	12.5			11.4	18.1	29.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	12.5			11.4	18.1	29.5
LOS	B			B	B	C
Approach Delay	12.5			11.4	27.7	
Approach LOS	B			B	C	
Queue Length 50th (m)	42.3			30.2	4.8	26.9
Queue Length 95th (m)	73.6			54.2	11.6	48.0
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1890			1768	1068	932
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.55			0.45	0.05	0.28

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 65.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 14.3

Intersection LOS: B

Intersection Capacity Utilization 50.4%

ICU Level of Service A

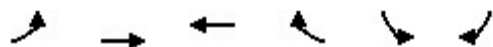
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

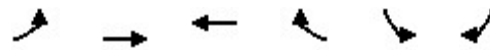
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	363	402	0	598	0
Future Volume (vph)	0	363	402	0	598	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	403	447	0	664	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	403	447	0	664	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		17.0	
Actuated g/C Ratio		0.45	0.45		0.31	
v/c Ratio		0.25	0.28		0.63	
Control Delay		10.6	10.8		19.2	
Queue Delay		0.0	0.0		0.0	
Total Delay		10.6	10.8		19.2	
LOS		B	B		B	
Approach Delay		10.6	10.8		19.2	
Approach LOS		B	B		B	
Queue Length 50th (m)		13.0	14.6		30.3	
Queue Length 95th (m)		24.6	27.5		44.3	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1605	1574		2802	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.25	0.28		0.24	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 55.3

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 14.4

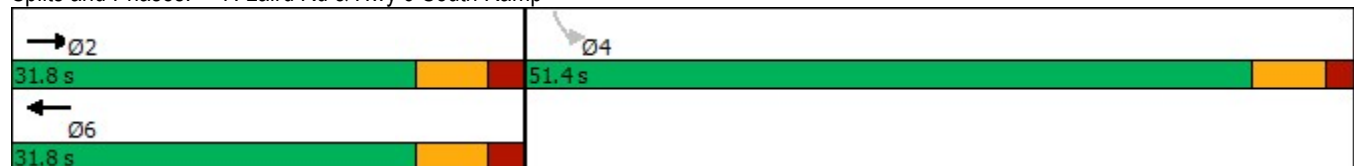
Intersection LOS: B

Intersection Capacity Utilization 50.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1	14	9	0	26	6	309	4	23	226	19
Future Volume (vph)	40	1	14	9	0	26	6	309	4	23	226	19
Satd. Flow (prot)	0	1565	0	0	1309	0	0	1649	0	0	1432	0
Flt Permitted		0.965			0.987			0.999			0.996	
Satd. Flow (perm)	0	1565	0	0	1309	0	0	1649	0	0	1432	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	14%	66%	71%	25%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	49	1	17	11	0	32	7	381	5	28	279	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	0	0	43	0	0	393	0	0	330	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 39.9% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	36	48	56	13	40	50	239	134	41	154	31
Future Volume (vph)	33	36	48	56	13	40	50	239	134	41	154	31
Satd. Flow (prot)	1736	1679	0	1530	1384	0	0	1652	0	1308	1453	0
Flt Permitted	0.950			0.950				0.994		0.950		
Satd. Flow (perm)	1736	1679	0	1530	1384	0	0	1652	0	1308	1453	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	18%	0%	29%	6%	12%	6%	38%	30%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	38	41	55	64	15	45	57	272	152	47	175	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	96	0	64	60	0	0	481	0	47	210	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 53.3% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	160	3	30	72	3	62
Future Volume (vph)	160	3	30	72	3	62
Satd. Flow (prot)	1806	0	1720	0	0	1896
Flt Permitted	0.953					0.998
Satd. Flow (perm)	1806	0	1720	0	0	1896
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	172	3	32	77	3	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	175	0	109	0	0	70
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 21.7%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	269	568	307	9	631	160	121	17	16	55	14	86
Future Volume (vph)	269	568	307	9	631	160	121	17	16	55	14	86
Satd. Flow (prot)	1556	3471	1099	1327	3367	0	1570	1328	0	1736	1522	0
Flt Permitted	0.148			0.388			0.492			0.730		
Satd. Flow (perm)	242	3471	1099	542	3367	0	813	1328	0	1334	1522	0
Satd. Flow (RTOR)			374		31			20			105	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	328	693	374	11	770	195	148	21	20	67	17	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	328	693	374	11	965	0	148	41	0	67	122	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	43.3	38.3	38.3	37.2	27.2		24.5	13.7		19.6	10.2	
Actuated g/C Ratio	0.58	0.51	0.51	0.50	0.36		0.33	0.18		0.26	0.14	
v/c Ratio	1.03	0.39	0.50	0.03	0.78		0.39	0.16		0.17	0.41	
Control Delay	80.6	13.4	4.5	8.2	26.4		20.8	20.1		17.6	13.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	80.6	13.4	4.5	8.2	26.4		20.8	20.1		17.6	13.7	
LOS	F	B	A	A	C		C	C		B	B	
Approach Delay		26.8			26.2			20.6			15.1	
Approach LOS		C			C			C			B	
Queue Length 50th (m)	~39.3	31.4	0.0	0.7	67.1		15.6	2.8		6.7	2.3	
Queue Length 95th (m)	#76.5	51.6	11.4	2.6	80.3		26.2	10.4		13.4	14.1	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	317	1783	746	398	1245		381	602		444	735	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	1.03	0.39	0.50	0.03	0.78		0.39	0.07		0.15	0.17	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 74.6

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 25.4

Intersection LOS: C

Intersection Capacity Utilization 65.8%

ICU Level of Service C

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: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study
5: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	35	0	10	24	0	20
Future Volume (vph)	35	0	10	24	0	20
Satd. Flow (prot)	1770	0	1686	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1686	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	38	0	11	26	0	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	37	0	0	22
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%				ICU Level of Service A		
Analysis Period (min) 15						

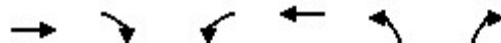
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	851	0	0	477	131	359
Future Volume (vph)	851	0	0	477	131	359
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						34
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	967	0	0	542	149	408
Shared Lane Traffic (%)						
Lane Group Flow (vph)	967	0	0	542	149	408
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.5			35.5	27.4	27.4
Actuated g/C Ratio	0.47			0.47	0.36	0.36
v/c Ratio	0.59			0.35	0.27	0.81
Control Delay	18.5			15.5	17.5	32.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	18.5			15.5	17.5	32.7
LOS	B			B	B	C
Approach Delay	18.5			15.5	28.6	
Approach LOS	B			B	C	
Queue Length 50th (m)	52.5			25.5	15.4	49.6
Queue Length 95th (m)	96.5			50.3	27.0	79.4
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1649			1543	932	820
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.59			0.35	0.16	0.50

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 76.1

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 20.5

Intersection LOS: C

Intersection Capacity Utilization 56.7%

ICU Level of Service B

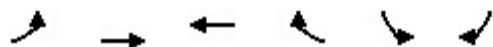
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

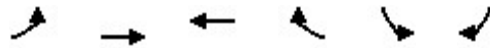
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	250	363	0	623	0
Future Volume (vph)	0	250	363	0	623	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	278	403	0	692	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	278	403	0	692	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		17.5	
Actuated g/C Ratio		0.45	0.45		0.31	
v/c Ratio		0.17	0.26		0.64	
Control Delay		10.4	10.9		19.4	
Queue Delay		0.0	0.0		0.0	
Total Delay		10.4	10.9		19.4	
LOS		B	B		B	
Approach Delay		10.4	10.9		19.4	
Approach LOS		B	B		B	
Queue Length 50th (m)		8.7	13.2		32.0	
Queue Length 95th (m)		17.8	25.3		46.4	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1589	1559		2775	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.17	0.26		0.25	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 55.9

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 15.0

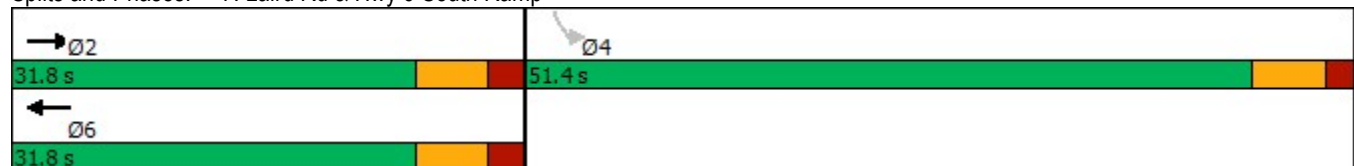
Intersection LOS: B

Intersection Capacity Utilization 56.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	0	3	3	0	19	13	137	11	37	276	23
Future Volume (vph)	14	0	3	3	0	19	13	137	11	37	276	23
Satd. Flow (prot)	0	1398	0	0	973	0	0	1540	0	0	1608	0
Flt Permitted		0.960			0.994			0.996			0.995	
Satd. Flow (perm)	0	1398	0	0	973	0	0	1540	0	0	1608	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	22%	29%	33%	15%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	15	0	3	3	0	20	14	147	12	40	297	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	23	0	0	173	0	0	362	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 36.5%						ICU Level of Service A						
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	16	55	99	25	63	16	93	69	27	195	26
Future Volume (vph)	28	16	55	99	25	63	16	93	69	27	195	26
Satd. Flow (prot)	1626	1607	0	1770	1636	0	0	1599	0	1228	1665	0
Flt Permitted	0.950			0.950				0.995		0.950		
Satd. Flow (perm)	1626	1607	0	1770	1636	0	0	1599	0	1228	1665	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	2%	0%	5%	10%	20%	2%	47%	11%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	31	18	60	109	27	69	18	102	76	30	214	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	78	0	109	96	0	0	196	0	30	243	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 42.0%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
17: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	41	46	19	41	31	38	653	38	11	610	66
Future Volume (vph)	50	41	46	19	41	31	38	653	38	11	610	66
Satd. Flow (prot)	0	1683	0	0	1676	0	0	1709	0	0	1738	0
Flt Permitted		0.858			0.924			0.938			0.986	
Satd. Flow (perm)	0	1471	0	0	1564	0	0	1608	0	0	1715	0
Satd. Flow (RTOR)		25			25			5			11	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	8%	7%	17%	4%	5%	4%	10%	17%	14%	7%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	54	45	50	21	45	34	41	710	41	12	663	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	149	0	0	100	0	0	792	0	0	747	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.37			0.24			0.77			0.68	
Control Delay		28.4			23.7			19.4			15.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		28.4			23.7			19.4			15.5	
LOS		C			C			B			B	
Approach Delay		28.4			23.7			19.4			15.5	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		20.5			11.9			104.4			87.5	
Queue Length 95th (m)		39.0			26.0			160.8			130.4	
Internal Link Dist (m)		2056.4			208.0			145.9			159.6	
Turn Bay Length (m)												
Base Capacity (vph)		398			422			1026			1096	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.37			0.24			0.77			0.68	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 18.7

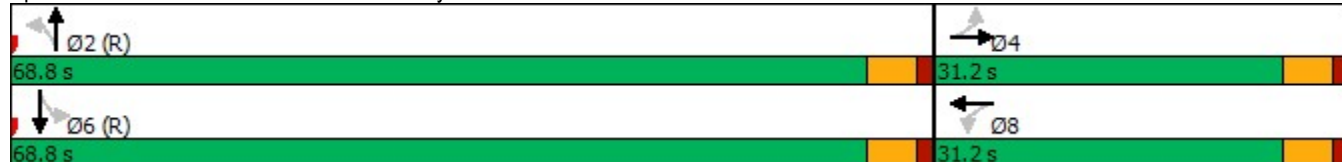
Intersection LOS: B

Intersection Capacity Utilization 80.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 17: Gordon St & Maltby Rd W



NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	134	5	30	48	2	15
Future Volume (vph)	134	5	30	48	2	15
Satd. Flow (prot)	1804	0	1742	0	0	1553
Flt Permitted	0.954					0.995
Satd. Flow (perm)	1804	0	1742	0	0	1553
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	100%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	163	6	37	59	2	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	169	0	96	0	0	20
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 18.9%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	961	142	22	903	80	371	11	47	195	20	351
Future Volume (vph)	115	961	142	22	903	80	371	11	47	195	20	351
Satd. Flow (prot)	1556	3471	1099	1327	3410	0	1570	1435	0	1736	1541	0
Flt Permitted	0.124			0.137			0.226			0.603		
Satd. Flow (perm)	203	3471	1099	191	3410	0	373	1435	0	1102	1541	0
Satd. Flow (RTOR)			173		9			57			246	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	140	1172	173	27	1101	98	452	13	57	238	24	428
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	1172	173	27	1199	0	452	70	0	238	452	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	42.3	35.7	35.7	37.7	27.3		32.5	19.1		34.9	19.1	
Actuated g/C Ratio	0.49	0.42	0.42	0.44	0.32		0.38	0.22		0.41	0.22	
v/c Ratio	0.57	0.81	0.31	0.15	1.10		1.53	0.19		0.43	0.85	
Control Delay	25.5	31.4	6.0	16.1	89.3		275.7	10.6		18.4	29.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	25.5	31.4	6.0	16.1	89.3		275.7	10.6		18.4	29.4	
LOS	C	C	A	B	F		F	B		B	C	
Approach Delay		27.9			87.7			240.1			25.6	
Approach LOS		C			F			F			C	
Queue Length 50th (m)	12.4	81.3	0.0	2.2	~124.7		~88.7	1.8		26.4	34.9	
Queue Length 95th (m)	29.1	#166.7	11.7	7.6	#180.3		#133.5	9.7		37.5	57.2	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	259	1441	557	223	1090		296	592		553	749	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.54	0.81	0.31	0.12	1.10		1.53	0.12		0.43	0.60	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 85.9

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.53

Intersection Signal Delay: 74.4

Intersection LOS: E

Intersection Capacity Utilization 95.5%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	30	36	18	39	16	44	841	41	10	672	62
Future Volume (vph)	61	30	36	18	39	16	44	841	41	10	672	62
Satd. Flow (prot)	0	1751	0	0	1794	0	0	1841	0	0	1809	0
Flt Permitted		0.823			0.914			0.934			0.985	
Satd. Flow (perm)	0	1475	0	0	1660	0	0	1723	0	0	1784	0
Satd. Flow (RTOR)		19			13			5			9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	7%	0%	3%	0%	6%	2%	6%	0%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	66	33	39	20	42	17	48	914	45	11	730	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	138	0	0	79	0	0	1007	0	0	808	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.35			0.18			0.92			0.71	
Control Delay		29.0			25.5			30.4			16.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		29.0			25.5			30.4			16.2	
LOS		C			C			C			B	
Approach Delay		29.0			25.5			30.4			16.2	
Approach LOS		C			C			C			B	
Queue Length 50th (m)		19.6			10.4			162.2			98.3	
Queue Length 95th (m)		37.4			22.6			#272.9			145.1	
Internal Link Dist (m)		2052.7			180.0			146.0			175.4	
Turn Bay Length (m)												
Base Capacity (vph)		394			437			1099			1139	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.35			0.18			0.92			0.71	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 24.5

Intersection LOS: C

Intersection Capacity Utilization 94.7%

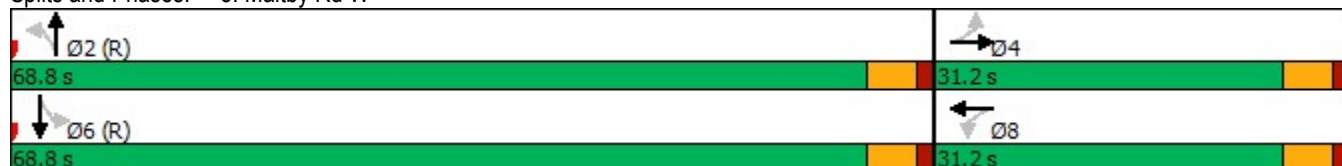
ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Maltby Rd W



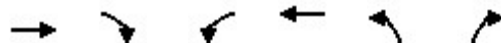
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	1010	0	0	777	49	253
Future Volume (vph)	1010	0	0	777	49	253
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						17
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1148	0	0	883	56	288
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1148	0	0	883	56	288
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.2			35.2	19.6	19.6
Actuated g/C Ratio	0.52			0.52	0.29	0.29
v/c Ratio	0.63			0.51	0.13	0.72
Control Delay	14.7			13.2	17.6	31.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	14.7			13.2	17.6	31.1
LOS	B			B	B	C
Approach Delay	14.7			13.2	28.9	
Approach LOS	B			B	C	
Queue Length 50th (m)	52.8			37.3	5.4	32.0
Queue Length 95th (m)	91.0			66.5	12.5	54.9
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1834			1716	1036	902
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.63			0.51	0.05	0.32

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 68

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 16.2

Intersection LOS: B

Intersection Capacity Utilization 54.5%

ICU Level of Service A

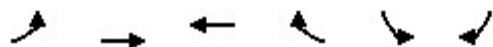
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2		← Ø8	
41.7 s		51.4 s	
← Ø6			
41.7 s			

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

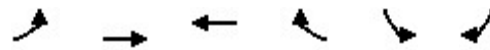
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	401	443	0	660	0
Future Volume (vph)	0	401	443	0	660	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	446	492	0	733	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	446	492	0	733	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		18.5	
Actuated g/C Ratio		0.44	0.44		0.33	
v/c Ratio		0.29	0.32		0.66	
Control Delay		11.5	11.8		19.4	
Queue Delay		0.0	0.0		0.0	
Total Delay		11.5	11.8		19.4	
LOS		B	B		B	
Approach Delay		11.5	11.8		19.4	
Approach LOS		B	B		B	
Queue Length 50th (m)		15.3	17.2		34.3	
Queue Length 95th (m)		28.7	31.8		49.5	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1561	1531		2726	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.29	0.32		0.27	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 56.9

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 15.0

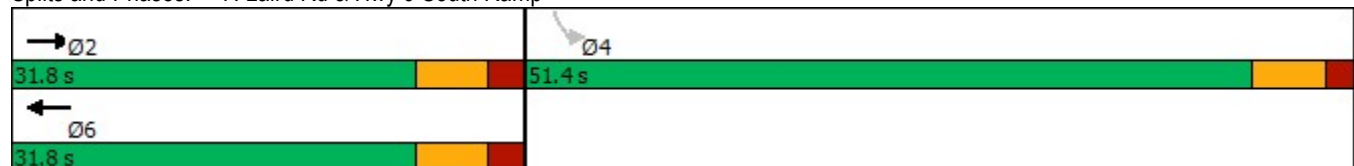
Intersection LOS: B

Intersection Capacity Utilization 54.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	2	16	9	0	28	6	341	5	25	250	21
Future Volume (vph)	44	2	16	9	0	28	6	341	5	25	250	21
Satd. Flow (prot)	0	1569	0	0	1304	0	0	1649	0	0	1430	0
Flt Permitted		0.966			0.988			0.999			0.996	
Satd. Flow (perm)	0	1569	0	0	1304	0	0	1649	0	0	1430	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	14%	66%	71%	25%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	54	2	20	11	0	35	7	421	6	31	309	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	76	0	0	46	0	0	434	0	0	366	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 44.0%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	39	53	61	14	44	55	264	148	46	170	34
Future Volume (vph)	36	39	53	61	14	44	55	264	148	46	170	34
Satd. Flow (prot)	1736	1677	0	1530	1380	0	0	1652	0	1308	1453	0
Flt Permitted	0.950			0.950				0.994		0.950		
Satd. Flow (perm)	1736	1677	0	1530	1380	0	0	1652	0	1308	1453	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	18%	0%	29%	6%	12%	6%	38%	30%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	41	44	60	69	16	50	63	300	168	52	193	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	104	0	69	66	0	0	531	0	52	232	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 57.0% ICU Level of Service B												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
19: Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	28	0	11	25	0	31
Future Volume (vph)	28	0	11	25	0	31
Satd. Flow (prot)	1770	0	1690	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1690	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	30	0	12	27	0	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	0	39	0	0	34
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	176	3	33	80	3	69
Future Volume (vph)	176	3	33	80	3	69
Satd. Flow (prot)	1806	0	1718	0	0	1896
Flt Permitted	0.953					0.998
Satd. Flow (perm)	1806	0	1718	0	0	1896
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	189	3	35	86	3	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	192	0	121	0	0	77
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 23.3%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	283	597	323	10	663	169	127	18	17	58	15	91
Future Volume (vph)	283	597	323	10	663	169	127	18	17	58	15	91
Satd. Flow (prot)	1556	3471	1099	1327	3367	0	1570	1328	0	1736	1522	0
Flt Permitted	0.123			0.375			0.535			0.729		
Satd. Flow (perm)	201	3471	1099	524	3367	0	884	1328	0	1332	1522	0
Satd. Flow (RTOR)			394		31			21			111	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	345	728	394	12	809	206	155	22	21	71	18	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	345	728	394	12	1015	0	155	43	0	71	129	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	43.0	38.0	38.0	37.0	27.0		26.9	16.0		23.1	10.2	
Actuated g/C Ratio	0.56	0.49	0.49	0.48	0.35		0.35	0.21		0.30	0.13	
v/c Ratio	1.19	0.42	0.53	0.04	0.84		0.39	0.15		0.16	0.43	
Control Delay	138.4	14.2	4.8	8.3	30.6		20.6	19.9		17.4	13.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	138.4	14.2	4.8	8.3	30.6		20.6	19.9		17.4	13.9	
LOS	F	B	A	A	C		C	B		B	B	
Approach Delay		40.9			30.3			20.5			15.1	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	~51.0	33.4	0.0	0.8	72.2		16.5	2.9		7.1	2.5	
Queue Length 95th (m)	#89.0	54.8	11.5	2.8	86.0		27.2	10.6		14.0	14.4	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	289	1718	743	377	1203		399	582		489	716	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	1.19	0.42	0.53	0.03	0.84		0.39	0.07		0.15	0.18	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 76.8

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.19

Intersection Signal Delay: 34.0

Intersection LOS: C

Intersection Capacity Utilization 68.1%

ICU Level of Service C

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: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study
5: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	37	0	11	25	0	21
Future Volume (vph)	37	0	11	25	0	21
Satd. Flow (prot)	1770	0	1690	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1690	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	40	0	12	27	0	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	0	39	0	0	23
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%				ICU Level of Service A		
Analysis Period (min) 15						

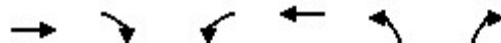
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	895	0	0	501	137	377
Future Volume (vph)	895	0	0	501	137	377
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						28
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1017	0	0	569	156	428
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1017	0	0	569	156	428
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.5			35.5	29.2	29.2
Actuated g/C Ratio	0.46			0.46	0.37	0.37
v/c Ratio	0.63			0.38	0.27	0.82
Control Delay	20.4			16.8	17.2	33.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	20.4			16.8	17.2	33.7
LOS	C			B	B	C
Approach Delay	20.4			16.8	29.3	
Approach LOS	C			B	C	
Queue Length 50th (m)	59.4			28.6	16.2	54.3
Queue Length 95th (m)	108.2			55.5	27.9	85.4
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1610			1507	910	799
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.63			0.38	0.17	0.54

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 78

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 21.8

Intersection LOS: C

Intersection Capacity Utilization 59.0%

ICU Level of Service B

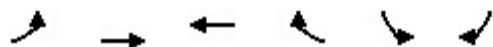
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

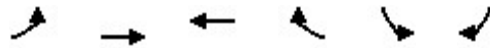
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	263	382	0	655	0
Future Volume (vph)	0	263	382	0	655	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	292	424	0	728	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	292	424	0	728	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		18.4	
Actuated g/C Ratio		0.44	0.44		0.32	
v/c Ratio		0.19	0.28		0.65	
Control Delay		10.8	11.4		19.4	
Queue Delay		0.0	0.0		0.0	
Total Delay		10.8	11.4		19.4	
LOS		B	B		B	
Approach Delay		10.8	11.4		19.4	
Approach LOS		B	B		B	
Queue Length 50th (m)		9.5	14.4		34.0	
Queue Length 95th (m)		19.2	27.3		49.1	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1564	1534		2731	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.19	0.28		0.27	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 56.8

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 15.3

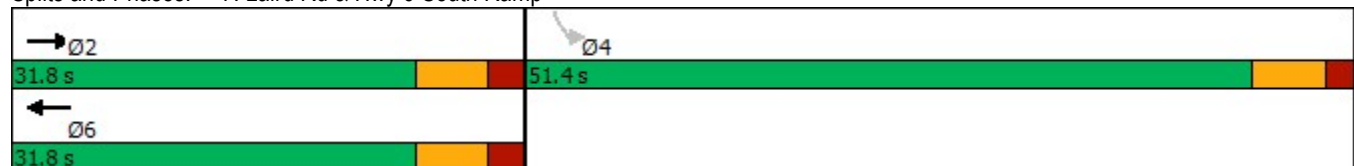
Intersection LOS: B

Intersection Capacity Utilization 59.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	0	3	3	0	20	13	144	12	39	290	25
Future Volume (vph)	15	0	3	3	0	20	13	144	12	39	290	25
Satd. Flow (prot)	0	1397	0	0	973	0	0	1538	0	0	1607	0
Flt Permitted		0.960			0.994			0.996			0.995	
Satd. Flow (perm)	0	1397	0	0	973	0	0	1538	0	0	1607	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	22%	29%	33%	15%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	0	3	3	0	22	14	155	13	42	312	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	25	0	0	182	0	0	381	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 38.6%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	17	58	104	26	66	17	98	73	28	205	27
Future Volume (vph)	30	17	58	104	26	66	17	98	73	28	205	27
Satd. Flow (prot)	1626	1605	0	1770	1638	0	0	1598	0	1228	1665	0
Flt Permitted	0.950			0.950				0.995		0.950		
Satd. Flow (perm)	1626	1605	0	1770	1638	0	0	1598	0	1228	1665	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	2%	0%	5%	10%	20%	2%	47%	11%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	33	19	64	114	29	73	19	108	80	31	225	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	83	0	114	102	0	0	207	0	31	255	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 43.7%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

17: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	43	48	20	43	33	40	686	40	12	641	69
Future Volume (vph)	53	43	48	20	43	33	40	686	40	12	641	69
Satd. Flow (prot)	0	1684	0	0	1676	0	0	1709	0	0	1738	0
Flt Permitted		0.853			0.922			0.934			0.985	
Satd. Flow (perm)	0	1463	0	0	1561	0	0	1601	0	0	1714	0
Satd. Flow (RTOR)		24			25			5			10	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	8%	7%	17%	4%	5%	4%	10%	17%	14%	7%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	58	47	52	22	47	36	43	746	43	13	697	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	157	0	0	105	0	0	832	0	0	785	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.40			0.25			0.81			0.72	
Control Delay		29.4			24.1			21.9			16.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		29.4			24.1			21.9			16.7	
LOS		C			C			C			B	
Approach Delay		29.4			24.1			21.9			16.7	
Approach LOS		C			C			C			B	
Queue Length 50th (m)		22.2			12.8			116.0			96.1	
Queue Length 95th (m)		41.6			27.2			181.1			144.0	
Internal Link Dist (m)		2056.4			208.0			145.9			159.6	
Turn Bay Length (m)												
Base Capacity (vph)		395			421			1021			1095	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.40			0.25			0.81			0.72	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 20.4

Intersection LOS: C

Intersection Capacity Utilization 83.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 17: Gordon St & Maltby Rd W

 Ø2 (R)	 Ø4
68.8 s	31.2 s
 Ø6 (R)	 Ø8
68.8 s	31.2 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	140	5	31	51	2	15
Future Volume (vph)	140	5	31	51	2	15
Satd. Flow (prot)	1804	0	1740	0	0	1553
Flt Permitted	0.954					0.995
Satd. Flow (perm)	1804	0	1740	0	0	1553
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	100%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	171	6	38	62	2	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	0	100	0	0	20
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 19.5%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	1011	149	23	949	84	390	12	50	205	21	369
Future Volume (vph)	121	1011	149	23	949	84	390	12	50	205	21	369
Satd. Flow (prot)	1556	3471	1099	1327	3410	0	1570	1431	0	1736	1540	0
Flt Permitted	0.124			0.137			0.209			0.607		
Satd. Flow (perm)	203	3471	1099	191	3410	0	345	1431	0	1109	1540	0
Satd. Flow (RTOR)			182		9			61			242	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	148	1233	182	28	1157	102	476	15	61	250	26	450
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	1233	182	28	1259	0	476	76	0	250	476	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	42.4	35.8	35.8	37.7	27.3		33.8	20.4		36.3	20.4	
Actuated g/C Ratio	0.49	0.41	0.41	0.43	0.31		0.39	0.23		0.42	0.23	
v/c Ratio	0.61	0.87	0.33	0.16	1.18		1.65	0.20		0.44	0.87	
Control Delay	27.9	35.2	6.1	16.7	119.3		327.8	10.4		18.5	32.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	27.9	35.2	6.1	16.7	119.3		327.8	10.4		18.5	32.8	
LOS	C	D	A	B	F		F	B		B	C	
Approach Delay		31.1			117.1			284.1			27.9	
Approach LOS		C			F			F			C	
Queue Length 50th (m)	14.0	92.7	0.0	2.5	~142.8		~101.9	2.1		27.9	41.3	
Queue Length 95th (m)	#31.5	#180.4	11.9	7.9	#193.2		#148.9	10.3		39.4	64.6	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	255	1420	557	219	1070		289	583		563	737	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.58	0.87	0.33	0.13	1.18		1.65	0.13		0.44	0.65	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 87.4

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.65

Intersection Signal Delay: 91.2

Intersection LOS: F

Intersection Capacity Utilization 99.5%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St/Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	32	37	19	41	17	47	884	43	11	706	65
Future Volume (vph)	64	32	37	19	41	17	47	884	43	11	706	65
Satd. Flow (prot)	0	1752	0	0	1794	0	0	1841	0	0	1809	0
Flt Permitted		0.816			0.912			0.928			0.983	
Satd. Flow (perm)	0	1465	0	0	1656	0	0	1712	0	0	1780	0
Satd. Flow (RTOR)		18			13			5			9	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	7%	0%	3%	0%	6%	2%	6%	0%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	70	35	40	21	45	18	51	961	47	12	767	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	145	0	0	84	0	0	1059	0	0	850	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.37			0.19			0.97			0.75	
Control Delay		29.8			25.8			39.6			17.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		29.8			25.8			39.6			17.7	
LOS		C			C			D			B	
Approach Delay		29.8			25.8			39.6			17.7	
Approach LOS		C			C			D			B	
Queue Length 50th (m)		21.1			11.3			186.1			108.4	
Queue Length 95th (m)		39.5			24.0			#298.0			161.0	
Internal Link Dist (m)		2052.7			180.0			146.0			175.4	
Turn Bay Length (m)												
Base Capacity (vph)		391			436			1092			1137	
Starvation Cap Reductn		0			0			0			0	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.37			0.19			0.97			0.75	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 29.6

Intersection LOS: C

Intersection Capacity Utilization 99.2%

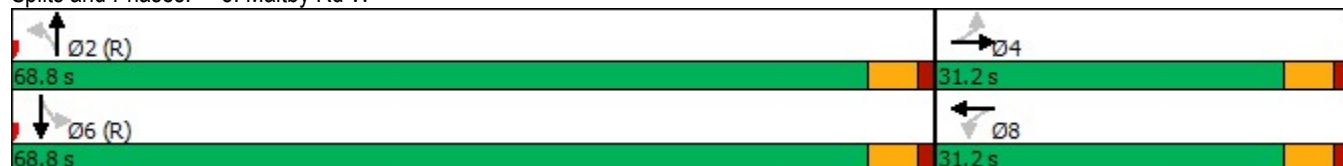
ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Maltby Rd W



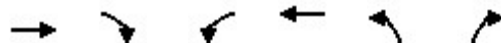
NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	1062	0	0	817	51	266
Future Volume (vph)	1062	0	0	817	51	266
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						13
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1207	0	0	928	58	302
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1207	0	0	928	58	302
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.3			35.3	20.7	20.7
Actuated g/C Ratio	0.51			0.51	0.30	0.30
v/c Ratio	0.67			0.55	0.12	0.73
Control Delay	16.1			14.2	17.3	31.8
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	16.1			14.2	17.3	31.8
LOS	B			B	B	C
Approach Delay	16.1			14.2	29.4	
Approach LOS	B			B	C	
Queue Length 50th (m)	59.1			41.6	5.7	34.7
Queue Length 95th (m)	102.0			73.7	12.8	58.3
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1805			1689	1020	887
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.67			0.55	0.06	0.34

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 69.1

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 17.3

Intersection LOS: B

Intersection Capacity Utilization 56.7%

ICU Level of Service B

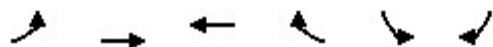
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

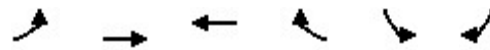
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	421	466	0	693	0
Future Volume (vph)	0	421	466	0	693	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	468	518	0	770	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	468	518	0	770	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		19.4	
Actuated g/C Ratio		0.43	0.43		0.34	
v/c Ratio		0.30	0.34		0.67	
Control Delay		12.1	12.4		19.4	
Queue Delay		0.0	0.0		0.0	
Total Delay		12.1	12.4		19.4	
LOS		B	B		B	
Approach Delay		12.1	12.4		19.4	
Approach LOS		B	B		B	
Queue Length 50th (m)		16.6	18.8		36.6	
Queue Length 95th (m)		31.0	34.5		52.3	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1537	1507		2683	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.30	0.34		0.29	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 57.8

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 15.4

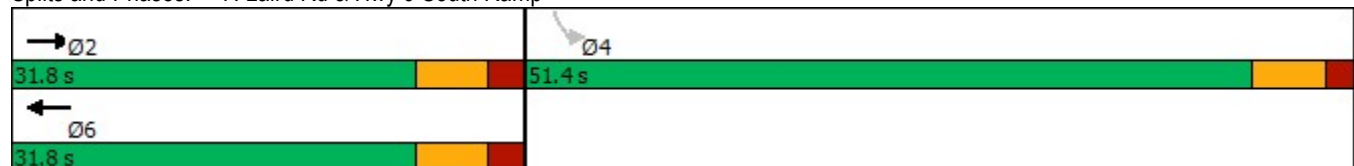
Intersection LOS: B

Intersection Capacity Utilization 56.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	2	17	10	0	30	7	359	5	27	262	22
Future Volume (vph)	46	2	17	10	0	30	7	359	5	27	262	22
Satd. Flow (prot)	0	1570	0	0	1306	0	0	1649	0	0	1429	0
Flt Permitted		0.966			0.988			0.999			0.996	
Satd. Flow (perm)	0	1570	0	0	1306	0	0	1649	0	0	1429	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	14%	66%	71%	25%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	57	2	21	12	0	37	9	443	6	33	323	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	49	0	0	458	0	0	383	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 45.6% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	41	56	64	15	46	58	278	155	48	178	36
Future Volume (vph)	38	41	56	64	15	46	58	278	155	48	178	36
Satd. Flow (prot)	1736	1679	0	1530	1383	0	0	1652	0	1308	1453	0
Flt Permitted	0.950			0.950				0.994		0.950		
Satd. Flow (perm)	1736	1679	0	1530	1383	0	0	1652	0	1308	1453	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	18%	0%	29%	6%	12%	6%	38%	30%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	43	47	64	73	17	52	66	316	176	55	202	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	111	0	73	69	0	0	558	0	55	243	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 59.1%												
ICU Level of Service B												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
19: Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	0	11	26	0	33
Future Volume (vph)	30	0	11	26	0	33
Satd. Flow (prot)	1770	0	1686	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1686	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	33	0	12	28	0	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	0	40	0	0	36
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	185	3	34	84	3	72
Future Volume (vph)	185	3	34	84	3	72
Satd. Flow (prot)	1806	0	1718	0	0	1896
Flt Permitted	0.953					0.998
Satd. Flow (perm)	1806	0	1718	0	0	1896
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	199	3	37	90	3	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	202	0	127	0	0	80
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 24.1%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	406	222	8	517	132	110	14	13	45	12	71
Future Volume (vph)	221	406	222	8	517	132	110	14	13	45	12	71
Satd. Flow (prot)	1671	3343	1242	1357	3326	0	1271	1405	0	1530	1287	0
Flt Permitted	0.241			0.491			0.514			0.738		
Satd. Flow (perm)	424	3343	1242	701	3326	0	688	1405	0	1188	1287	0
Satd. Flow (RTOR)			247		31			14			79	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	30%	33%	6%	2%	42%	36%	14%	18%	44%	26%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	246	451	247	9	574	147	122	16	14	50	13	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	451	247	9	721	0	122	30	0	50	92	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	38.3	35.7	35.7	31.6	20.4		22.4	16.7		19.1	11.3	
Actuated g/C Ratio	0.60	0.56	0.56	0.50	0.32		0.35	0.26		0.30	0.18	
v/c Ratio	0.52	0.24	0.31	0.02	0.67		0.37	0.08		0.13	0.31	
Control Delay	13.5	12.6	3.5	8.4	23.3		19.1	18.7		15.7	13.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.5	12.6	3.5	8.4	23.3		19.1	18.7		15.7	13.3	
LOS	B	B	A	A	C		B	B		B	B	
Approach Delay		10.4			23.1			19.0			14.1	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	18.0	18.8	0.0	0.6	45.1		11.0	1.5		4.2	1.6	
Queue Length 95th (m)	31.6	37.2	14.0	2.6	64.0		25.6	9.5		12.0	14.7	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	472	1779	776	498	1591		357	804		469	765	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2024 AM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.52	0.25	0.32	0.02	0.45		0.34	0.04		0.11	0.12	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 63.8

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 16.1

Intersection LOS: B

Intersection Capacity Utilization 58.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	34	40	15	34	26	37	535	31	9	501	69
Future Volume (vph)	46	34	40	15	34	26	37	535	31	9	501	69
Satd. Flow (prot)	0	1683	0	0	1677	0	0	1710	0	0	1730	0
Flt Permitted		0.862			0.938			0.939			0.990	
Satd. Flow (perm)	0	1479	0	0	1589	0	0	1611	0	0	1715	0
Satd. Flow (RTOR)		24			26			5			13	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	8%	7%	17%	4%	5%	4%	10%	17%	14%	7%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	50	37	43	16	37	28	40	582	34	10	545	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	81	0	0	656	0	0	630	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	32.0	32.0		32.0	32.0		68.0	68.0		68.0	68.0	
Total Split (%)	32.0%	32.0%		32.0%	32.0%		68.0%	68.0%		68.0%	68.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		26.6			26.6			62.9			62.9	
Actuated g/C Ratio		0.27			0.27			0.63			0.63	
v/c Ratio		0.32			0.18			0.65			0.58	
Control Delay		26.3			21.3			15.2			13.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		26.3			21.3			15.2			13.3	
LOS		C			C			B			B	
Approach Delay		26.3			21.3			15.2			13.3	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		17.1			8.5			75.8			67.2	
Queue Length 95th (m)		33.9			20.7			114.2			99.3	
Internal Link Dist (m)		2054.8			191.1			101.2			202.1	
Turn Bay Length (m)												
Base Capacity (vph)		411			441			1015			1083	
Starvation Cap Reductn		0			0			0			0	

Total 2024 AM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.32			0.18			0.65			0.58	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Pretimed

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 15.7

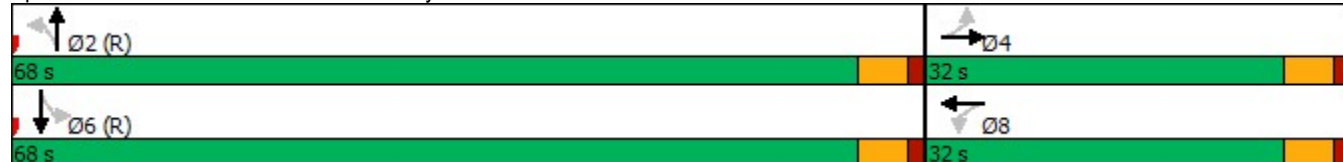
Intersection LOS: B

Intersection Capacity Utilization 72.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W



NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

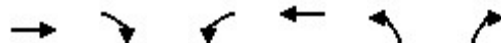
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	604	0	0	391	107	299
Future Volume (vph)	604	0	0	391	107	299
Satd. Flow (prot)	3406	0	0	3112	1504	1302
Flt Permitted					0.950	
Satd. Flow (perm)	3406	0	0	3112	1504	1302
Satd. Flow (RTOR)						108
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	0%	0%	16%	20%	24%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	657	0	0	425	116	325
Shared Lane Traffic (%)						
Lane Group Flow (vph)	657	0	0	425	116	325
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.3			35.3	18.1	18.1
Actuated g/C Ratio	0.53			0.53	0.27	0.27
v/c Ratio	0.36			0.26	0.28	0.75
Control Delay	11.1			10.3	20.1	25.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	11.1			10.3	20.1	25.7
LOS	B			B	C	C
Approach Delay	11.1			10.3	24.2	
Approach LOS	B			B	C	
Queue Length 50th (m)	23.6			14.3	11.8	25.1
Queue Length 95th (m)	48.3			31.1	23.2	51.6
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1804			1648	1024	921
Starvation Cap Reductn	0			0	0	0

Total 2024 AM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.36			0.26	0.11	0.35

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 66.7

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 14.7

Intersection LOS: B

Intersection Capacity Utilization 46.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



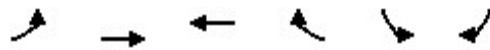
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	205	298	0	417	0
Future Volume (vph)	0	205	298	0	417	0
Satd. Flow (prot)	0	3406	3223	0	3303	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3406	3223	0	3303	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	12%	0%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	263	382	0	535	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	263	382	0	535	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.0	25.0		14.7	
Actuated g/C Ratio		0.47	0.47		0.28	
v/c Ratio		0.16	0.25		0.58	
Control Delay		9.0	9.5		19.2	
Queue Delay		0.0	0.0		0.0	
Total Delay		9.0	9.5		19.2	
LOS		A	A		B	
Approach Delay		9.0	9.5		19.2	
Approach LOS		A	A		B	
Queue Length 50th (m)		7.2	10.8		23.5	
Queue Length 95th (m)		12.7	18.0		30.0	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1609	1523		2810	
Starvation Cap Reductn		0	0		0	

Total 2024 AM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.16	0.25		0.19	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 53

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 13.8

Intersection LOS: B

Intersection Capacity Utilization 46.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp

→ Ø2		↖ Ø4
31.8 s		51.4 s
← Ø6		
31.8 s		

NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	0	3	3	0	15	10	123	9	27	204	15
Future Volume (vph)	12	0	3	3	0	15	10	123	9	27	204	15
Satd. Flow (prot)	0	1404	0	0	970	0	0	1540	0	0	1609	0
Flt Permitted		0.961			0.992			0.996			0.995	
Satd. Flow (perm)	0	1404	0	0	970	0	0	1540	0	0	1609	0
Confl. Peds. (#/hr)			2	2					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	22%	29%	33%	15%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	0	3	3	0	16	11	132	10	29	219	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	19	0	0	153	0	0	264	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 30.2% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	13	45	99	21	52	13	87	63	22	153	6
Future Volume (vph)	23	13	45	99	21	52	13	87	63	22	153	6
Satd. Flow (prot)	1626	1603	0	1770	1638	0	0	1598	0	1228	1696	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1626	1603	0	1770	1638	0	0	1598	0	1228	1696	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	2%	0%	5%	10%	20%	2%	47%	11%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	25	14	49	109	23	57	14	96	69	24	168	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	63	0	109	80	0	0	179	0	24	175	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 38.6%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
18: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	0	19	53	0	2
Future Volume (vph)	30	0	19	53	0	2
Satd. Flow (prot)	1770	0	1678	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1678	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	33	0	21	58	0	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	0	79	0	0	2
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 14.3%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	99	4	0	110	4	3	0	0	1	1	23
Future Volume (vph)	78	99	4	0	110	4	3	0	0	1	1	23
Satd. Flow (prot)	0	1800	0	0	1890	0	0	1805	0	0	1435	0
Flt Permitted		0.979						0.950			0.998	
Satd. Flow (perm)	0	1800	0	0	1890	0	0	1805	0	0	1435	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	0%	0%	0%	0%	0%	0%	0%	100%	0%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	95	121	5	0	134	5	4	0	0	1	1	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	221	0	0	139	0	0	4	0	0	30	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 26.4% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

27: Hwy 6 & Concession Rd 4

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	10	10	65	7	35	2	980	79	54	877	5
Future Volume (vph)	3	10	10	65	7	35	2	980	79	54	877	5
Satd. Flow (prot)	0	1633	0	0	1743	0	1203	3059	1553	1752	3252	1615
Flt Permitted		0.994			0.971		0.950			0.950		
Satd. Flow (perm)	0	1633	0	0	1743	0	1203	3059	1553	1752	3252	1615
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	20%	2%	0%	0%	50%	18%	4%	3%	11%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	11	11	71	8	38	2	1065	86	59	953	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	117	0	2	1065	86	59	953	5
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 53.2%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	693	95	18	741	66	322	9	39	160	17	288
Future Volume (vph)	94	693	95	18	741	66	322	9	39	160	17	288
Satd. Flow (prot)	1556	3471	1099	1327	3410	0	1570	1434	0	1736	1539	0
Flt Permitted	0.127			0.268			0.483			0.540		
Satd. Flow (perm)	208	3471	1099	374	3410	0	798	1434	0	987	1539	0
Satd. Flow (RTOR)			120		9			48			282	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	115	845	116	22	904	80	393	11	48	195	21	351
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	845	116	22	984	0	393	59	0	195	372	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		13.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	39.9	33.2	33.2	35.8	27.3		23.6	13.6		30.1	13.6	
Actuated g/C Ratio	0.51	0.43	0.43	0.46	0.35		0.30	0.17		0.39	0.17	
v/c Ratio	0.44	0.57	0.22	0.08	0.82		1.12	0.20		0.35	0.74	
Control Delay	16.2	20.6	5.2	11.6	31.6		108.4	12.8		18.1	18.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.2	20.6	5.2	11.6	31.6		108.4	12.8		18.1	18.3	
LOS	B	C	A	B	C		F	B		B	B	
Approach Delay		18.5			31.2			95.9			18.2	
Approach LOS		B			C			F			B	
Queue Length 50th (m)	8.1	42.2	0.0	1.5	72.0		48.6	1.5		20.9	12.9	
Queue Length 95th (m)	18.9	81.5	8.6	5.4	#110.7		#78.4	9.4		32.0	31.3	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	281	1480	537	306	1203		352	642		556	821	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2024 PM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.41	0.57	0.22	0.07	0.82		1.12	0.09		0.35	0.45	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 77.8

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.12

Intersection Signal Delay: 33.8

Intersection LOS: C

Intersection Capacity Utilization 83.3%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	25	35	15	32	14	39	690	33	8	551	56
Future Volume (vph)	63	25	35	15	32	14	39	690	33	8	551	56
Satd. Flow (prot)	0	1745	0	0	1791	0	0	1839	0	0	1807	0
Flt Permitted		0.818			0.924			0.945			0.989	
Satd. Flow (perm)	0	1464	0	0	1675	0	0	1743	0	0	1789	0
Satd. Flow (RTOR)		19			14			5			10	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	7%	0%	3%	0%	6%	2%	6%	0%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	68	27	38	16	35	15	42	750	36	9	599	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	66	0	0	828	0	0	669	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.34			0.15			0.74			0.59	
Control Delay		28.6			24.4			17.7			12.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		28.6			24.4			17.7			12.9	
LOS		C			C			B			B	
Approach Delay		28.6			24.4			17.7			12.9	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		18.7			8.1			105.5			70.8	
Queue Length 95th (m)		36.0			19.1			157.6			103.4	
Internal Link Dist (m)		2054.3			137.7			107.7			138.0	
Turn Bay Length (m)												
Base Capacity (vph)		391			442			1112			1143	
Starvation Cap Reductn		0			0			0			0	

Total 2024 PM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.34			0.15			0.74			0.59	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 16.9

Intersection LOS: B

Intersection Capacity Utilization 83.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W

											
Ø2 (R)									Ø4		
68.8 s									31.2 s		
											
Ø6 (R)									Ø8		
68.8 s									31.2 s		

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

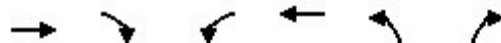
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	↲
Traffic Volume (vph)	706	0	0	637	40	213
Future Volume (vph)	706	0	0	637	40	213
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						63
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	802	0	0	724	45	242
Shared Lane Traffic (%)						
Lane Group Flow (vph)	802	0	0	724	45	242
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.2			35.2	15.1	15.1
Actuated g/C Ratio	0.56			0.56	0.24	0.24
v/c Ratio	0.41			0.39	0.12	0.66
Control Delay	9.6			9.6	18.9	24.8
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	9.6			9.6	18.9	24.8
LOS	A			A	B	C
Approach Delay	9.6			9.6	23.9	
Approach LOS	A			A	C	
Queue Length 50th (m)	26.5			23.6	4.3	19.4
Queue Length 95th (m)	47.6			43.2	11.0	39.1
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1962			1837	1109	978
Starvation Cap Reductn	0			0	0	0

Total 2024 PM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.41			0.39	0.04	0.25

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 63.4

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 11.9

Intersection LOS: B

Intersection Capacity Utilization 43.6%

ICU Level of Service A

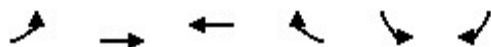
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



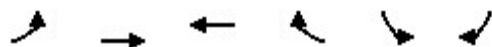
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	329	364	0	419	0
Future Volume (vph)	0	329	364	0	419	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	366	404	0	466	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	366	404	0	466	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.0	25.0		13.0	
Actuated g/C Ratio		0.49	0.49		0.25	
v/c Ratio		0.21	0.24		0.53	
Control Delay		8.4	8.5		18.9	
Queue Delay		0.0	0.0		0.0	
Total Delay		8.4	8.5		18.9	
LOS		A	A		B	
Approach Delay		8.4	8.5		18.9	
Approach LOS		A	A		B	
Queue Length 50th (m)		9.5	10.6		19.8	
Queue Length 95th (m)		18.6	20.6		31.1	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1727	1694		3016	
Starvation Cap Reductn		0	0		0	

Total 2024 PM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
Page 7

NewCold Toronto Ontario (TO-01) Traffic Impact Study 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.21	0.24		0.15	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 51.3

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 12.4

Intersection LOS: B

Intersection Capacity Utilization 43.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp

→ Ø2		← Ø4
31.8 s		51.4 s
← Ø6		
31.8 s		

NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	13	8	0	23	5	298	4	18	189	14
Future Volume (vph)	36	1	13	8	0	23	5	298	4	18	189	14
Satd. Flow (prot)	0	1566	0	0	1312	0	0	1649	0	0	1437	0
Flt Permitted		0.965			0.987			0.999			0.996	
Satd. Flow (perm)	0	1566	0	0	1312	0	0	1649	0	0	1437	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	14%	66%	71%	25%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	44	1	16	10	0	28	6	368	5	22	233	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	38	0	0	379	0	0	272	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 35.7% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	32	44	56	12	36	45	235	137	37	135	17
Future Volume (vph)	30	32	44	56	12	36	45	235	137	37	135	17
Satd. Flow (prot)	1736	1677	0	1530	1387	0	0	1652	0	1308	1455	0
Flt Permitted	0.950			0.950				0.995		0.950		
Satd. Flow (perm)	1736	1677	0	1530	1387	0	0	1652	0	1308	1455	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	18%	0%	29%	6%	12%	6%	38%	30%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	34	36	50	64	14	41	51	267	156	42	153	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	86	0	64	55	0	0	474	0	42	172	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 51.1% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
18: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	38	0	17	59	0	30
Future Volume (vph)	38	0	17	59	0	30
Satd. Flow (prot)	1770	0	1667	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1667	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	41	0	18	64	0	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	0	82	0	0	33
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 14.5%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	160	6	0	144	3	4	8	1	3	4	74
Future Volume (vph)	61	160	6	0	144	3	4	8	1	3	4	74
Satd. Flow (prot)	0	1818	0	0	1823	0	0	1855	0	0	1631	0
Flt Permitted		0.987						0.986			0.998	
Satd. Flow (perm)	0	1818	0	0	1823	0	0	1855	0	0	1631	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	1%	0%	0%	4%	0%	0%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	66	172	6	0	155	3	4	9	1	3	4	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	244	0	0	158	0	0	14	0	0	87	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 35.0% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

27: Concession Rd 4/Hwy 6

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	4	2	123	20	56	2	1115	76	45	1266	7
Future Volume (vph)	2	4	2	123	20	56	2	1115	76	45	1266	7
Satd. Flow (prot)	0	1612	0	0	1728	0	1805	3282	1568	1752	3252	1615
Flt Permitted		0.988			0.970		0.950			0.950		
Satd. Flow (perm)	0	1612	0	0	1728	0	1805	3282	1568	1752	3252	1615
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	50%	2%	5%	3%	0%	10%	3%	3%	11%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	4	2	131	21	60	2	1186	81	48	1347	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	212	0	2	1186	81	48	1347	7
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 62.0%												
ICU Level of Service B												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	406	222	8	517	132	110	14	13	45	12	71
Future Volume (vph)	221	406	222	8	517	132	110	14	13	45	12	71
Satd. Flow (prot)	1671	3343	1242	1357	3326	0	1271	1405	0	1530	1287	0
Flt Permitted	0.241			0.491			0.514			0.738		
Satd. Flow (perm)	424	3343	1242	701	3326	0	688	1405	0	1188	1287	0
Satd. Flow (RTOR)			247		31			14			79	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	30%	33%	6%	2%	42%	36%	14%	18%	44%	26%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	246	451	247	9	574	147	122	16	14	50	13	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	451	247	9	721	0	122	30	0	50	92	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	38.3	35.7	35.7	31.6	20.4		22.4	16.7		19.1	11.3	
Actuated g/C Ratio	0.60	0.56	0.56	0.50	0.32		0.35	0.26		0.30	0.18	
v/c Ratio	0.52	0.24	0.31	0.02	0.67		0.37	0.08		0.13	0.31	
Control Delay	13.5	12.6	3.5	8.4	23.3		19.1	18.7		15.7	13.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.5	12.6	3.5	8.4	23.3		19.1	18.7		15.7	13.3	
LOS	B	B	A	A	C		B	B		B	B	
Approach Delay		10.4			23.1			19.0			14.1	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	18.0	18.8	0.0	0.6	45.1		11.0	1.5		4.2	1.6	
Queue Length 95th (m)	31.6	37.2	14.0	2.6	64.0		25.6	9.5		12.0	14.7	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	472	1779	776	498	1591		357	804		469	765	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2024 AM (without Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.52	0.25	0.32	0.02	0.45		0.34	0.04		0.11	0.12	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 63.8

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 16.1

Intersection LOS: B

Intersection Capacity Utilization 58.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	34	40	15	34	26	37	535	31	9	501	69
Future Volume (vph)	46	34	40	15	34	26	37	535	31	9	501	69
Satd. Flow (prot)	0	1683	0	0	1677	0	0	1710	0	0	1730	0
Flt Permitted		0.862			0.938			0.939			0.990	
Satd. Flow (perm)	0	1479	0	0	1589	0	0	1611	0	0	1715	0
Satd. Flow (RTOR)		24			26			5			13	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	8%	7%	17%	4%	5%	4%	10%	17%	14%	7%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	50	37	43	16	37	28	40	582	34	10	545	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	81	0	0	656	0	0	630	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	32.0	32.0		32.0	32.0		68.0	68.0		68.0	68.0	
Total Split (%)	32.0%	32.0%		32.0%	32.0%		68.0%	68.0%		68.0%	68.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		26.6			26.6			62.9			62.9	
Actuated g/C Ratio		0.27			0.27			0.63			0.63	
v/c Ratio		0.32			0.18			0.65			0.58	
Control Delay		26.3			21.3			15.2			13.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		26.3			21.3			15.2			13.3	
LOS		C			C			B			B	
Approach Delay		26.3			21.3			15.2			13.3	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		17.1			8.5			75.8			67.2	
Queue Length 95th (m)		33.9			20.7			114.2			99.3	
Internal Link Dist (m)		2054.8			191.1			101.2			202.1	
Turn Bay Length (m)												
Base Capacity (vph)		411			441			1015			1083	
Starvation Cap Reductn		0			0			0			0	

Total 2024 AM (without Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.32			0.18			0.65			0.58	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Pretimed

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 15.7

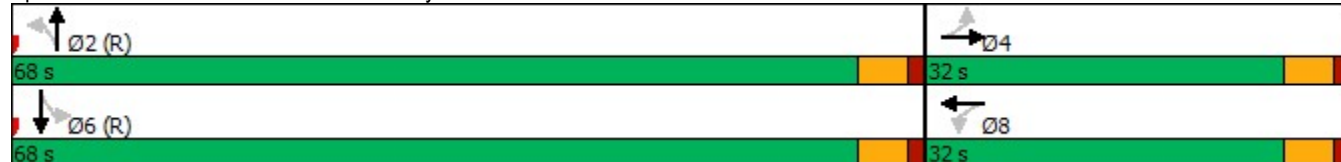
Intersection LOS: B

Intersection Capacity Utilization 72.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W



NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

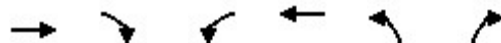
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	604	0	0	391	107	299
Future Volume (vph)	604	0	0	391	107	299
Satd. Flow (prot)	3406	0	0	3112	1504	1302
Flt Permitted					0.950	
Satd. Flow (perm)	3406	0	0	3112	1504	1302
Satd. Flow (RTOR)						108
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	0%	0%	16%	20%	24%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	657	0	0	425	116	325
Shared Lane Traffic (%)						
Lane Group Flow (vph)	657	0	0	425	116	325
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.3			35.3	18.1	18.1
Actuated g/C Ratio	0.53			0.53	0.27	0.27
v/c Ratio	0.36			0.26	0.28	0.75
Control Delay	11.1			10.3	20.1	25.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	11.1			10.3	20.1	25.7
LOS	B			B	C	C
Approach Delay	11.1			10.3	24.2	
Approach LOS	B			B	C	
Queue Length 50th (m)	23.6			14.3	11.8	25.1
Queue Length 95th (m)	48.3			31.1	23.2	51.6
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1804			1648	1024	921
Starvation Cap Reductn	0			0	0	0

Total 2024 AM (without Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.36			0.26	0.11	0.35

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 66.7

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 14.7

Intersection LOS: B

Intersection Capacity Utilization 46.1%

ICU Level of Service A

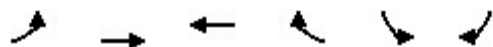
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



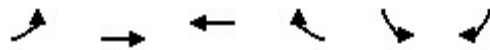
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	205	298	0	417	0
Future Volume (vph)	0	205	298	0	417	0
Satd. Flow (prot)	0	3406	3223	0	3303	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3406	3223	0	3303	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	12%	0%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	263	382	0	535	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	263	382	0	535	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.0	25.0		14.7	
Actuated g/C Ratio		0.47	0.47		0.28	
v/c Ratio		0.16	0.25		0.58	
Control Delay		9.0	9.5		19.2	
Queue Delay		0.0	0.0		0.0	
Total Delay		9.0	9.5		19.2	
LOS		A	A		B	
Approach Delay		9.0	9.5		19.2	
Approach LOS		A	A		B	
Queue Length 50th (m)		7.2	10.8		23.5	
Queue Length 95th (m)		12.7	18.0		30.0	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1609	1523		2810	
Starvation Cap Reductn		0	0		0	

Total 2024 AM (without Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
Page 7

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.16	0.25		0.19	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 53

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 13.8

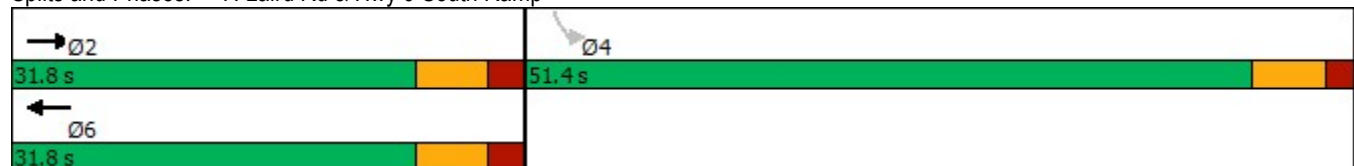
Intersection LOS: B

Intersection Capacity Utilization 46.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	0	3	3	0	15	10	123	9	27	204	15
Future Volume (vph)	12	0	3	3	0	15	10	123	9	27	204	15
Satd. Flow (prot)	0	1404	0	0	970	0	0	1540	0	0	1609	0
Flt Permitted		0.961			0.992			0.996			0.995	
Satd. Flow (perm)	0	1404	0	0	970	0	0	1540	0	0	1609	0
Confl. Peds. (#/hr)			2	2					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	22%	29%	33%	15%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	0	3	3	0	16	11	132	10	29	219	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	19	0	0	153	0	0	264	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 30.2%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	19	45	81	39	52	13	85	57	22	151	8
Future Volume (vph)	25	19	45	81	39	52	13	85	57	22	151	8
Satd. Flow (prot)	1626	1632	0	1770	1688	0	0	1598	0	1228	1691	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1626	1632	0	1770	1688	0	0	1598	0	1228	1691	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	2%	0%	5%	10%	20%	2%	47%	11%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	27	21	49	89	43	57	14	93	63	24	166	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	70	0	89	100	0	0	170	0	24	175	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 37.1% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	99	4	0	110	4	3	0	0	1	1	23
Future Volume (vph)	78	99	4	0	110	4	3	0	0	1	1	23
Satd. Flow (prot)	0	1800	0	0	1890	0	0	1805	0	0	1435	0
Flt Permitted		0.979						0.950			0.998	
Satd. Flow (perm)	0	1800	0	0	1890	0	0	1805	0	0	1435	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	0%	0%	0%	0%	0%	0%	0%	100%	0%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	95	121	5	0	134	5	4	0	0	1	1	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	221	0	0	139	0	0	4	0	0	30	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 26.4% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

27: Hwy 6 & Concession Rd 4

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	10	10	65	7	35	2	980	79	54	877	5
Future Volume (vph)	3	10	10	65	7	35	2	980	79	54	877	5
Satd. Flow (prot)	0	1633	0	0	1743	0	1203	3059	1553	1752	3252	1615
Flt Permitted		0.994			0.971		0.950			0.950		
Satd. Flow (perm)	0	1633	0	0	1743	0	1203	3059	1553	1752	3252	1615
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	20%	2%	0%	0%	50%	18%	4%	3%	11%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	11	11	71	8	38	2	1065	86	59	953	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	117	0	2	1065	86	59	953	5
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 53.2%						ICU Level of Service A						
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	693	95	18	741	66	315	9	39	160	17	288
Future Volume (vph)	94	693	95	18	741	66	315	9	39	160	17	288
Satd. Flow (prot)	1556	3471	1099	1327	3410	0	1570	1434	0	1736	1539	0
Flt Permitted	0.127			0.268			0.483			0.539		
Satd. Flow (perm)	208	3471	1099	374	3410	0	798	1434	0	985	1539	0
Satd. Flow (RTOR)			120		9			48			284	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	115	845	116	22	904	80	384	11	48	195	21	351
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	845	116	22	984	0	384	59	0	195	372	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		13.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	39.8	33.2	33.2	35.9	27.3		23.6	13.5		30.1	13.5	
Actuated g/C Ratio	0.51	0.43	0.43	0.46	0.35		0.30	0.17		0.39	0.17	
v/c Ratio	0.44	0.57	0.22	0.08	0.82		1.09	0.20		0.35	0.74	
Control Delay	16.2	20.6	5.2	11.5	31.5		100.0	12.8		18.1	18.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.2	20.6	5.2	11.5	31.5		100.0	12.8		18.1	18.1	
LOS	B	C	A	B	C		F	B		B	B	
Approach Delay		18.5			31.1			88.4			18.1	
Approach LOS		B			C			F			B	
Queue Length 50th (m)	8.1	42.2	0.0	1.5	72.0		47.2	1.5		20.9	12.6	
Queue Length 95th (m)	18.9	81.3	8.7	5.4	#110.5		#74.4	9.4		32.0	31.2	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	281	1480	537	306	1203		352	643		556	823	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2024 PM (without Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.41	0.57	0.22	0.07	0.82		1.09	0.09		0.35	0.45	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 77.8

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 32.5

Intersection LOS: C

Intersection Capacity Utilization 82.9%

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: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	25	35	15	32	14	39	690	33	8	551	56
Future Volume (vph)	63	25	35	15	32	14	39	690	33	8	551	56
Satd. Flow (prot)	0	1745	0	0	1791	0	0	1839	0	0	1807	0
Flt Permitted		0.818			0.924			0.945			0.989	
Satd. Flow (perm)	0	1464	0	0	1675	0	0	1743	0	0	1789	0
Satd. Flow (RTOR)		19			14			5			10	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	7%	0%	3%	0%	6%	2%	6%	0%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	68	27	38	16	35	15	42	750	36	9	599	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	66	0	0	828	0	0	669	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.34			0.15			0.74			0.59	
Control Delay		28.6			24.4			17.7			12.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		28.6			24.4			17.7			12.9	
LOS		C			C			B			B	
Approach Delay		28.6			24.4			17.7			12.9	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		18.7			8.1			105.5			70.8	
Queue Length 95th (m)		36.0			19.1			157.6			103.4	
Internal Link Dist (m)		2054.3			137.7			107.7			138.0	
Turn Bay Length (m)												
Base Capacity (vph)		391			442			1112			1143	
Starvation Cap Reductn		0			0			0			0	

Total 2024 PM (without Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.34			0.15			0.74			0.59	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 16.9

Intersection LOS: B

Intersection Capacity Utilization 83.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W

 Ø2 (R)		 Ø4
68.8 s		31.2 s
 Ø6 (R)		 Ø8
68.8 s		31.2 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

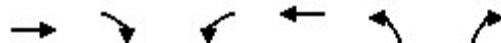
	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	706	0	0	637	40	213
Future Volume (vph)	706	0	0	637	40	213
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						63
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	802	0	0	724	45	242
Shared Lane Traffic (%)						
Lane Group Flow (vph)	802	0	0	724	45	242
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.2			35.2	15.1	15.1
Actuated g/C Ratio	0.56			0.56	0.24	0.24
v/c Ratio	0.41			0.39	0.12	0.66
Control Delay	9.6			9.6	18.9	24.8
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	9.6			9.6	18.9	24.8
LOS	A			A	B	C
Approach Delay	9.6			9.6	23.9	
Approach LOS	A			A	C	
Queue Length 50th (m)	26.5			23.6	4.3	19.4
Queue Length 95th (m)	47.6			43.2	11.0	39.1
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1962			1837	1109	978
Starvation Cap Reductn	0			0	0	0

Total 2024 PM (without Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.41			0.39	0.04	0.25

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 63.4

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 11.9

Intersection LOS: B

Intersection Capacity Utilization 43.6%

ICU Level of Service A

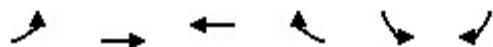
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	329	364	0	419	0
Future Volume (vph)	0	329	364	0	419	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	366	404	0	466	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	366	404	0	466	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.0	25.0		13.0	
Actuated g/C Ratio		0.49	0.49		0.25	
v/c Ratio		0.21	0.24		0.53	
Control Delay		8.4	8.5		18.9	
Queue Delay		0.0	0.0		0.0	
Total Delay		8.4	8.5		18.9	
LOS		A	A		B	
Approach Delay		8.4	8.5		18.9	
Approach LOS		A	A		B	
Queue Length 50th (m)		9.5	10.6		19.8	
Queue Length 95th (m)		18.6	20.6		31.1	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1727	1694		3016	
Starvation Cap Reductn		0	0		0	

Total 2024 PM (without Southgate Dr/Crawley Rd ; New Hwy 6 interchange not open)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study

7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.21	0.24		0.15	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 51.3

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 12.4

Intersection LOS: B

Intersection Capacity Utilization 43.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp

→ Ø2	31.8 s	→ Ø4	51.4 s
← Ø6	31.8 s		

NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	13	8	0	23	5	291	4	18	189	14
Future Volume (vph)	36	1	13	8	0	23	5	291	4	18	189	14
Satd. Flow (prot)	0	1566	0	0	1312	0	0	1649	0	0	1437	0
Flt Permitted		0.965			0.987			0.999			0.996	
Satd. Flow (perm)	0	1566	0	0	1312	0	0	1649	0	0	1437	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	14%	66%	71%	25%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	44	1	16	10	0	28	6	359	5	22	233	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	38	0	0	370	0	0	272	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 35.6% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	48	44	50	18	36	45	226	121	37	133	19
Future Volume (vph)	32	48	44	50	18	36	45	226	121	37	133	19
Satd. Flow (prot)	1736	1705	0	1530	1429	0	0	1653	0	1308	1455	0
Flt Permitted	0.950			0.950				0.994		0.950		
Satd. Flow (perm)	1736	1705	0	1530	1429	0	0	1653	0	1308	1455	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	18%	0%	29%	6%	12%	6%	38%	30%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	36	55	50	57	20	41	51	257	138	42	151	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	105	0	57	61	0	0	446	0	42	173	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 49.3%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	160	6	0	144	3	4	8	1	3	4	74
Future Volume (vph)	61	160	6	0	144	3	4	8	1	3	4	74
Satd. Flow (prot)	0	1818	0	0	1823	0	0	1855	0	0	1631	0
Flt Permitted		0.987						0.986			0.998	
Satd. Flow (perm)	0	1818	0	0	1823	0	0	1855	0	0	1631	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	1%	0%	0%	4%	0%	0%	0%	0%	0%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	66	172	6	0	155	3	4	9	1	3	4	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	244	0	0	158	0	0	14	0	0	87	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 35.0% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

27: Hwy 6 & Concession Rd 4

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	4	2	123	20	56	2	1115	76	45	1266	7
Future Volume (vph)	2	4	2	123	20	56	2	1115	76	45	1266	7
Satd. Flow (prot)	0	1778	0	0	1738	0	1770	3539	1583	1770	3539	1583
Flt Permitted		0.988			0.970		0.950			0.950		
Satd. Flow (perm)	0	1778	0	0	1738	0	1770	3539	1583	1770	3539	1583
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	4	2	131	21	60	2	1186	81	48	1347	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	212	0	2	1186	81	48	1347	7
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 62.0%												
ICU Level of Service B												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	466	272	8	517	132	115	14	13	45	12	71
Future Volume (vph)	221	466	272	8	517	132	115	14	13	45	12	71
Satd. Flow (prot)	1671	3343	1252	1357	3326	0	1280	1405	0	1530	1287	0
Flt Permitted	0.241			0.461			0.512			0.738		
Satd. Flow (perm)	424	3343	1252	659	3326	0	690	1405	0	1188	1287	0
Satd. Flow (RTOR)			302		31			14			79	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	29%	33%	6%	2%	41%	36%	14%	18%	44%	26%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	246	518	302	9	574	147	128	16	14	50	13	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	518	302	9	721	0	128	30	0	50	92	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	38.3	35.8	35.8	31.6	20.4		22.5	16.7		19.1	11.3	
Actuated g/C Ratio	0.60	0.56	0.56	0.49	0.32		0.35	0.26		0.30	0.18	
v/c Ratio	0.52	0.28	0.36	0.02	0.67		0.38	0.08		0.13	0.31	
Control Delay	13.5	12.8	3.5	8.4	23.3		19.4	18.7		15.7	13.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.5	12.8	3.5	8.4	23.3		19.4	18.7		15.7	13.3	
LOS	B	B	A	A	C		B	B		B	B	
Approach Delay		10.3			23.1			19.3			14.1	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	18.0	22.2	0.0	0.6	45.1		11.5	1.5		4.2	1.6	
Queue Length 95th (m)	31.6	43.0	15.1	2.6	64.0		26.8	9.5		12.0	14.7	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	472	1780	807	482	1590		359	804		469	765	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2024 AM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange open)

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.52	0.29	0.37	0.02	0.45		0.36	0.04		0.11	0.12	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 63.9

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 15.7

Intersection LOS: B

Intersection Capacity Utilization 58.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	34	40	15	34	26	37	535	31	9	501	69
Future Volume (vph)	46	34	40	15	34	26	37	535	31	9	501	69
Satd. Flow (prot)	0	1683	0	0	1677	0	0	1710	0	0	1730	0
Flt Permitted		0.862			0.938			0.939			0.990	
Satd. Flow (perm)	0	1479	0	0	1589	0	0	1611	0	0	1715	0
Satd. Flow (RTOR)		24			26			5			13	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	8%	7%	17%	4%	5%	4%	10%	17%	14%	7%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	50	37	43	16	37	28	40	582	34	10	545	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	81	0	0	656	0	0	630	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	32.0	32.0		32.0	32.0		68.0	68.0		68.0	68.0	
Total Split (%)	32.0%	32.0%		32.0%	32.0%		68.0%	68.0%		68.0%	68.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		26.6			26.6			62.9			62.9	
Actuated g/C Ratio		0.27			0.27			0.63			0.63	
v/c Ratio		0.32			0.18			0.65			0.58	
Control Delay		26.3			21.3			15.2			13.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		26.3			21.3			15.2			13.3	
LOS		C			C			B			B	
Approach Delay		26.3			21.3			15.2			13.3	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		17.1			8.5			75.8			67.2	
Queue Length 95th (m)		33.9			20.7			114.2			99.3	
Internal Link Dist (m)		2054.8			191.1			101.2			127.7	
Turn Bay Length (m)												
Base Capacity (vph)		411			441			1015			1083	
Starvation Cap Reductn		0			0			0			0	

Total 2024 AM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange open)

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.32			0.18			0.65			0.58	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Pretimed

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 15.7

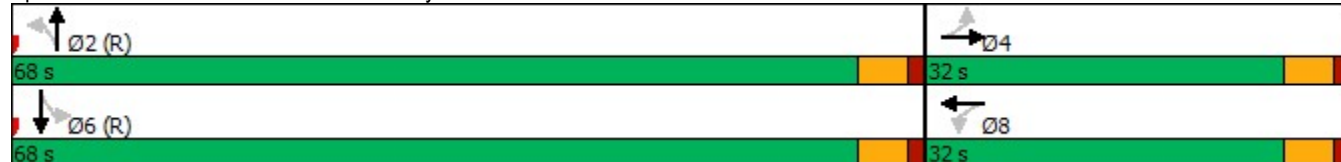
Intersection LOS: B

Intersection Capacity Utilization 72.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W



NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

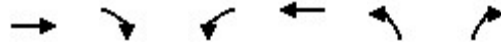
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	↲
Traffic Volume (vph)	717	0	0	391	107	295
Future Volume (vph)	717	0	0	391	107	295
Satd. Flow (prot)	3406	0	0	3112	1504	1292
Flt Permitted					0.950	
Satd. Flow (perm)	3406	0	0	3112	1504	1292
Satd. Flow (RTOR)						69
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	0%	0%	16%	20%	25%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	779	0	0	425	116	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	779	0	0	425	116	321
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.3			35.3	20.0	20.0
Actuated g/C Ratio	0.52			0.52	0.29	0.29
v/c Ratio	0.44			0.26	0.26	0.76
Control Delay	12.7			11.2	19.3	28.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	12.7			11.2	19.3	28.7
LOS	B			B	B	C
Approach Delay	12.7			11.2	26.2	
Approach LOS	B			B	C	
Queue Length 50th (m)	31.5			15.3	11.8	30.1
Queue Length 95th (m)	62.2			32.8	23.1	56.9
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1756			1604	997	879
Starvation Cap Reductn	0			0	0	0

Total 2024 AM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange open)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.44			0.26	0.12	0.37

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 68.5

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 15.9

Intersection LOS: B

Intersection Capacity Utilization 49.0%

ICU Level of Service A

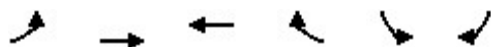
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

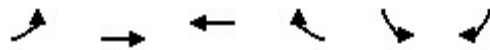
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	205	298	0	530	0
Future Volume (vph)	0	205	298	0	530	0
Satd. Flow (prot)	0	3406	3223	0	3303	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3406	3223	0	3303	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	12%	0%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	263	382	0	679	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	263	382	0	679	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		17.8	
Actuated g/C Ratio		0.45	0.45		0.32	
v/c Ratio		0.17	0.27		0.65	
Control Delay		10.5	11.1		19.5	
Queue Delay		0.0	0.0		0.0	
Total Delay		10.5	11.1		19.5	
LOS		B	B		B	
Approach Delay		10.5	11.1		19.5	
Approach LOS		B	B		B	
Queue Length 50th (m)		8.4	12.7		31.5	
Queue Length 95th (m)		14.7	20.8		38.0	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1522	1440		2658	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.17	0.27		0.26	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 56.2

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 15.3

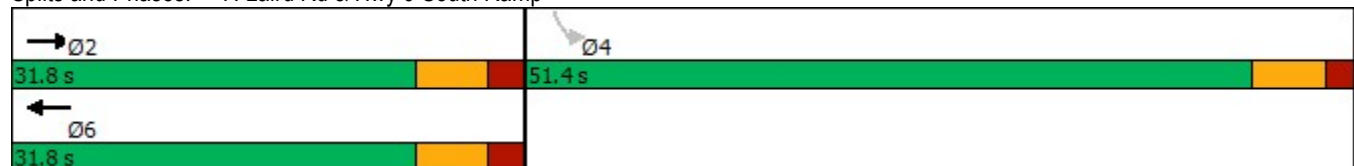
Intersection LOS: B

Intersection Capacity Utilization 49.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	0	3	3	0	15	10	128	9	31	247	19
Future Volume (vph)	12	0	3	3	0	15	10	128	9	31	247	19
Satd. Flow (prot)	0	1404	0	0	970	0	0	1510	0	0	1599	0
Flt Permitted		0.961			0.992			0.997			0.995	
Satd. Flow (perm)	0	1404	0	0	970	0	0	1510	0	0	1599	0
Confl. Peds. (#/hr)			2	2					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	25%	29%	33%	16%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	0	3	3	0	16	11	138	10	33	266	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	19	0	0	159	0	0	319	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 34.0% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	13	45	100	21	52	13	92	63	22	180	21
Future Volume (vph)	23	13	45	100	21	52	13	92	63	22	180	21
Satd. Flow (prot)	1626	1603	0	1770	1638	0	0	1537	0	1228	1657	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1626	1603	0	1770	1638	0	0	1537	0	1228	1657	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	2%	0%	5%	10%	28%	2%	47%	12%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	25	14	49	110	23	57	14	101	69	24	198	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	63	0	110	80	0	0	184	0	24	221	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 38.9%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
18: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	56	0	8	45	0	1
Future Volume (vph)	56	0	8	45	0	1
Satd. Flow (prot)	1770	0	1650	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1650	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	61	0	9	49	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	58	0	0	1
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	110	4	28	40	1	19
Future Volume (vph)	110	4	28	40	1	19
Satd. Flow (prot)	1804	0	1748	0	0	1820
Flt Permitted	0.954					0.998
Satd. Flow (perm)	1804	0	1748	0	0	1820
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	134	5	34	49	1	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	139	0	83	0	0	24
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 16.9%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	789	133	18	741	66	328	9	39	160	17	288
Future Volume (vph)	94	789	133	18	741	66	328	9	39	160	17	288
Satd. Flow (prot)	1556	3471	1099	1327	3410	0	1570	1434	0	1736	1539	0
Flt Permitted	0.127			0.204			0.485			0.540		
Satd. Flow (perm)	208	3471	1099	285	3410	0	801	1434	0	987	1539	0
Satd. Flow (RTOR)			162		9			48			281	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	47%	36%	5%	0%	15%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	115	962	162	22	904	80	400	11	48	195	21	351
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	962	162	22	984	0	400	59	0	195	372	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		13.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	39.7	33.1	33.1	35.9	27.4		23.7	13.6		30.2	13.6	
Actuated g/C Ratio	0.51	0.43	0.43	0.46	0.35		0.30	0.17		0.39	0.17	
v/c Ratio	0.44	0.65	0.29	0.10	0.82		1.13	0.20		0.35	0.74	
Control Delay	16.4	22.5	5.3	11.8	31.5		113.6	12.7		18.0	18.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.4	22.5	5.3	11.8	31.5		113.6	12.7		18.0	18.3	
LOS	B	C	A	B	C		F	B		B	B	
Approach Delay		19.6			31.1			100.7			18.2	
Approach LOS		B			C			F			B	
Queue Length 50th (m)	8.1	50.5	0.0	1.5	71.7		49.3	1.5		20.7	13.0	
Queue Length 95th (m)	19.0	95.7	10.4	5.4	#110.8		#81.4	9.4		32.0	31.6	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	281	1475	560	275	1204		353	643		558	821	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2024 PM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange open)

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.41	0.65	0.29	0.08	0.82		1.13	0.09		0.35	0.45	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 77.8

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 34.3

Intersection LOS: C

Intersection Capacity Utilization 83.6%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	25	35	15	32	14	39	690	33	8	551	56
Future Volume (vph)	63	25	35	15	32	14	39	690	33	8	551	56
Satd. Flow (prot)	0	1745	0	0	1791	0	0	1839	0	0	1807	0
Flt Permitted		0.818			0.924			0.945			0.989	
Satd. Flow (perm)	0	1464	0	0	1675	0	0	1743	0	0	1789	0
Satd. Flow (RTOR)		19			14			5			10	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	7%	0%	3%	0%	6%	2%	6%	0%	4%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	68	27	38	16	35	15	42	750	36	9	599	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	66	0	0	828	0	0	669	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.34			0.15			0.74			0.59	
Control Delay		28.6			24.4			17.7			12.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		28.6			24.4			17.7			12.9	
LOS		C			C			B			B	
Approach Delay		28.6			24.4			17.7			12.9	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		18.7			8.1			105.5			70.8	
Queue Length 95th (m)		36.0			19.1			157.6			103.4	
Internal Link Dist (m)		2054.3			137.7			107.7			138.0	
Turn Bay Length (m)												
Base Capacity (vph)		391			442			1112			1143	
Starvation Cap Reductn		0			0			0			0	

Total 2024 PM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange open)

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.34			0.15			0.74			0.59	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 16.9

Intersection LOS: B

Intersection Capacity Utilization 83.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W

 Ø2 (R)		 Ø4
68.8 s		31.2 s
 Ø6 (R)		 Ø8
68.8 s		31.2 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

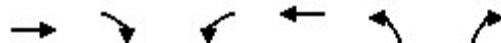
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	844	0	0	637	40	209
Future Volume (vph)	844	0	0	637	40	209
Satd. Flow (prot)	3539	0	0	3312	1556	1324
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1324
Satd. Flow (RTOR)						35
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	22%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	959	0	0	724	45	238
Shared Lane Traffic (%)						
Lane Group Flow (vph)	959	0	0	724	45	238
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.2			35.2	16.1	16.1
Actuated g/C Ratio	0.55			0.55	0.25	0.25
v/c Ratio	0.50			0.40	0.12	0.67
Control Delay	11.0			10.1	18.5	27.9
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	11.0			10.1	18.5	27.9
LOS	B			B	B	C
Approach Delay	11.0			10.1	26.4	
Approach LOS	B			B	C	
Queue Length 50th (m)	35.3			24.9	4.3	22.6
Queue Length 95th (m)	62.1			45.3	10.9	42.5
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1932			1808	1092	940
Starvation Cap Reductn	0			0	0	0

Total 2024 PM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange open)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.50			0.40	0.04	0.25

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 64.4

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 12.9

Intersection LOS: B

Intersection Capacity Utilization 47.2%

ICU Level of Service A

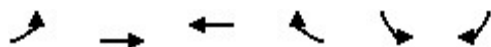
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	329	364	0	556	0
Future Volume (vph)	0	329	364	0	556	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	366	404	0	618	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	366	404	0	618	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		16.0	
Actuated g/C Ratio		0.46	0.46		0.29	
v/c Ratio		0.22	0.25		0.61	
Control Delay		9.8	10.0		19.2	
Queue Delay		0.0	0.0		0.0	
Total Delay		9.8	10.0		19.2	
LOS		A	B		B	
Approach Delay		9.8	10.0		19.2	
Approach LOS		A	B		B	
Queue Length 50th (m)		11.2	12.5		27.7	
Queue Length 95th (m)		21.1	23.3		41.3	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1634	1602		2853	
Starvation Cap Reductn		0	0		0	

Total 2024 PM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange open)

Synchro 11 Report
Page 7

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.22	0.25		0.22	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 54.3

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 14.1

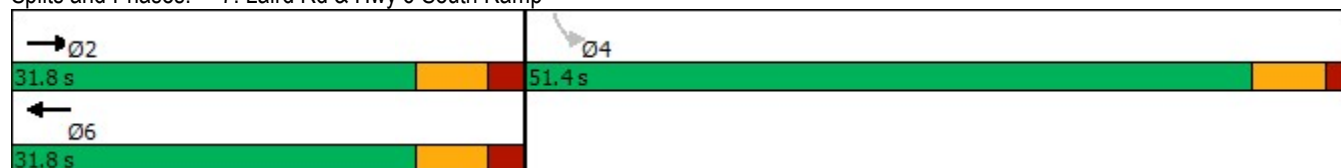
Intersection LOS: B

Intersection Capacity Utilization 47.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1	13	8	0	23	5	304	4	41	221	17
Future Volume (vph)	36	1	13	8	0	23	5	304	4	41	221	17
Satd. Flow (prot)	0	1566	0	0	1312	0	0	1636	0	0	1401	0
Flt Permitted		0.965			0.987			0.999			0.993	
Satd. Flow (perm)	0	1566	0	0	1312	0	0	1636	0	0	1401	0
Confl. Peds. (#/hr)			5	5								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	15%	66%	71%	25%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	44	1	16	10	0	28	6	375	5	51	273	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	38	0	0	386	0	0	345	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 49.3% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	32	44	56	12	36	45	241	137	37	155	28
Future Volume (vph)	30	32	44	56	12	36	45	241	137	37	155	28
Satd. Flow (prot)	1736	1677	0	1530	1387	0	0	1618	0	1308	1454	0
Flt Permitted	0.950			0.950				0.995		0.950		
Satd. Flow (perm)	1736	1677	0	1530	1387	0	0	1618	0	1308	1454	0
Confl. Peds. (#/hr)			1	1								
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	18%	0%	29%	6%	16%	6%	38%	30%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	34	36	50	64	14	41	51	274	156	42	176	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	86	0	64	55	0	0	481	0	42	208	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 53.2% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
18: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	69	0	9	64	0	20
Future Volume (vph)	69	0	9	64	0	20
Satd. Flow (prot)	1770	0	1643	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1643	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	75	0	10	70	0	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	0	80	0	0	22
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 14.9%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	144	3	31	65	3	65
Future Volume (vph)	144	3	31	65	3	65
Satd. Flow (prot)	1805	0	1725	0	0	1896
Flt Permitted	0.953					0.998
Satd. Flow (perm)	1805	0	1725	0	0	1896
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	155	3	33	70	3	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	158	0	103	0	0	73
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 20.7%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	515	373	9	571	145	186	16	14	50	13	78
Future Volume (vph)	244	515	373	9	571	145	186	16	14	50	13	78
Satd. Flow (prot)	1556	3471	1313	1327	3367	0	1433	1320	0	1736	1521	0
Flt Permitted	0.171			0.414			0.505			0.733		
Satd. Flow (perm)	280	3471	1313	578	3367	0	762	1320	0	1339	1521	0
Satd. Flow (RTOR)			455		31			17			95	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	23%	36%	5%	0%	26%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	298	628	455	11	696	177	227	20	17	61	16	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	628	455	11	873	0	227	37	0	61	111	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	40.7	35.8	35.8	34.6	24.4		21.2	13.3		20.2	10.3	
Actuated g/C Ratio	0.57	0.50	0.50	0.48	0.34		0.29	0.18		0.28	0.14	
v/c Ratio	0.88	0.36	0.52	0.03	0.75		0.68	0.14		0.14	0.37	
Control Delay	42.7	13.2	4.0	8.2	25.5		34.9	20.9		17.1	13.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.7	13.2	4.0	8.2	25.5		34.9	20.9		17.1	13.7	
LOS	D	B	A	A	C		C	C		B	B	
Approach Delay		16.6			25.3			32.9			14.9	
Approach LOS		B			C			C			B	
Queue Length 50th (m)	24.6	27.7	0.0	0.7	58.1		~43.4	2.8		6.0	2.2	
Queue Length 95th (m)	#59.6	46.0	11.5	2.6	70.1		40.2	9.7		12.6	13.4	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	339	1725	881	408	1306		332	625		486	761	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2029 AM (with Crawley Rd / Southgate Dr)

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.88	0.36	0.52	0.03	0.67		0.68	0.06		0.13	0.15	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 72

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 20.9

Intersection LOS: C

Intersection Capacity Utilization 65.9%

ICU Level of Service C

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: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	37	56	17	37	28	63	591	34	10	553	137
Future Volume (vph)	73	37	56	17	37	28	63	591	34	10	553	137
Satd. Flow (prot)	0	1740	0	0	1759	0	0	1840	0	0	1812	0
Flt Permitted		0.840			0.924			0.878			0.989	
Satd. Flow (perm)	0	1493	0	0	1642	0	0	1624	0	0	1794	0
Satd. Flow (RTOR)		25			25			5			24	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	79	40	61	18	40	30	68	642	37	11	601	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	88	0	0	747	0	0	761	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.9	24.9	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.45			0.20			0.72			0.66	
Control Delay		30.8			22.6			17.2			14.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		30.8			22.6			17.2			14.5	
LOS		C			C			B			B	
Approach Delay		30.8			22.6			17.2			14.5	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		26.3			10.0			92.7			85.8	
Queue Length 95th (m)		47.4			22.9			140.4			126.3	
Internal Link Dist (m)		2055.5			174.7			162.0			185.2	
Turn Bay Length (m)												
Base Capacity (vph)		403			442			1036			1151	
Starvation Cap Reductn		0			0			0			0	

Total 2029 AM (with Crawley Rd / Southgate Dr)

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.45			0.20			0.72			0.66	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 17.6

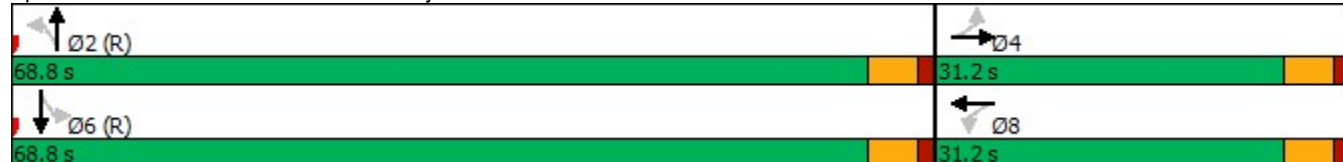
Intersection LOS: B

Intersection Capacity Utilization 95.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W



NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

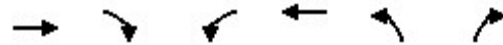
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	864	0	0	432	118	327
Future Volume (vph)	864	0	0	432	118	327
Satd. Flow (prot)	3539	0	0	3312	1556	1292
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1292
Satd. Flow (RTOR)						32
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	25%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	982	0	0	491	134	372
Shared Lane Traffic (%)						
Lane Group Flow (vph)	982	0	0	491	134	372
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.5			35.5	25.9	25.9
Actuated g/C Ratio	0.48			0.48	0.35	0.35
v/c Ratio	0.58			0.31	0.25	0.79
Control Delay	17.7			14.4	17.6	32.6
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	17.7			14.4	17.6	32.6
LOS	B			B	B	C
Approach Delay	17.7			14.4	28.7	
Approach LOS	B			B	C	
Queue Length 50th (m)	51.4			21.7	13.7	44.1
Queue Length 95th (m)	94.5			43.5	24.6	72.3
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1682			1574	951	802
Starvation Cap Reductn	0			0	0	0

Total 2029 AM (with Crawley Rd / Southgate Dr)

Synchro 11 Report
Page 5

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.58			0.31	0.14	0.46

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 74.6

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 19.7

Intersection LOS: B

Intersection Capacity Utilization 55.0%

ICU Level of Service B

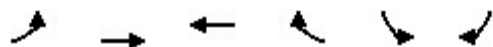
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



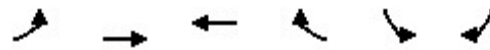
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	226	329	0	658	0
Future Volume (vph)	0	226	329	0	658	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	251	366	0	731	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	251	366	0	731	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		18.5	
Actuated g/C Ratio		0.44	0.44		0.33	
v/c Ratio		0.16	0.24		0.66	
Control Delay		10.7	11.2		19.4	
Queue Delay		0.0	0.0		0.0	
Total Delay		10.7	11.2		19.4	
LOS		B	B		B	
Approach Delay		10.7	11.2		19.4	
Approach LOS		B	B		B	
Queue Length 50th (m)		8.1	12.3		34.2	
Queue Length 95th (m)		16.7	23.7		49.3	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1563	1533		2729	
Starvation Cap Reductn		0	0		0	

Total 2029 AM (with Crawley Rd / Southgate Dr)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.16	0.24		0.27	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 56.8

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 15.5

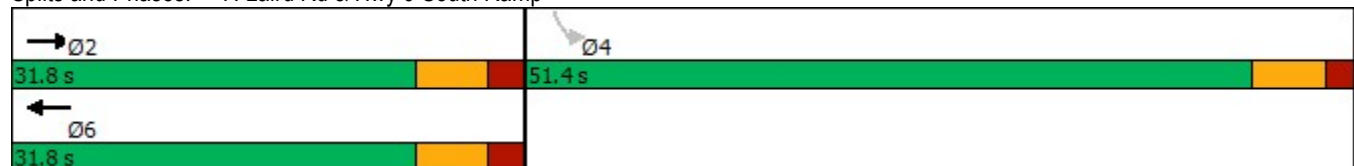
Intersection LOS: B

Intersection Capacity Utilization 55.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	0	3	3	0	17	11	200	10	34	345	21
Future Volume (vph)	13	0	3	3	0	17	11	200	10	34	345	21
Satd. Flow (prot)	0	1400	0	0	971	0	0	1630	0	0	1654	0
Flt Permitted		0.960			0.993			0.997			0.996	
Satd. Flow (perm)	0	1400	0	0	971	0	0	1630	0	0	1654	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	15%	29%	33%	12%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	0	3	3	0	18	12	215	11	37	371	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	0	0	21	0	0	238	0	0	431	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 41.6% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	14	50	181	23	57	14	160	94	24	272	23
Future Volume (vph)	26	14	50	181	23	57	14	160	94	24	272	23
Satd. Flow (prot)	1626	1600	0	1787	1638	0	0	1662	0	1228	1723	0
Flt Permitted	0.950			0.950				0.997		0.950		
Satd. Flow (perm)	1626	1600	0	1787	1638	0	0	1662	0	1228	1723	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	1%	0%	5%	10%	13%	1%	47%	8%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	29	15	55	199	25	63	15	176	103	26	299	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	70	0	199	88	0	0	294	0	26	324	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 49.5%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
16: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	221	0	9	142	0	3
Future Volume (vph)	221	0	9	142	0	3
Satd. Flow (prot)	1770	0	1626	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1626	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	240	0	10	154	0	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	240	0	164	0	0	3
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 28.2%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	121	4	42	44	1	38
Future Volume (vph)	121	4	42	44	1	38
Satd. Flow (prot)	1805	0	1769	0	0	1653
Flt Permitted	0.954					0.999
Satd. Flow (perm)	1805	0	1769	0	0	1653
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	100%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	148	5	51	54	1	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	153	0	105	0	0	47
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 18.5%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	871	204	20	818	73	455	10	43	177	19	318
Future Volume (vph)	104	871	204	20	818	73	455	10	43	177	19	318
Satd. Flow (prot)	1556	3471	1114	1327	3410	0	1612	1433	0	1736	1539	0
Flt Permitted	0.125			0.171			0.261			0.591		
Satd. Flow (perm)	205	3471	1114	239	3410	0	443	1433	0	1080	1539	0
Satd. Flow (RTOR)			249		9			52			243	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	45%	36%	5%	0%	12%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	127	1062	249	24	998	89	555	12	52	216	23	388
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	1062	249	24	1087	0	555	64	0	216	411	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	42.2	35.5	35.5	37.5	27.2		30.1	16.6		32.4	16.6	
Actuated g/C Ratio	0.51	0.43	0.43	0.45	0.33		0.36	0.20		0.39	0.20	
v/c Ratio	0.51	0.72	0.40	0.12	0.97		1.76	0.20		0.41	0.82	
Control Delay	20.7	26.2	5.5	14.1	50.2		374.2	11.5		18.5	26.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.7	26.2	5.5	14.1	50.2		374.2	11.5		18.5	26.7	
LOS	C	C	A	B	D		F	B		B	C	
Approach Delay		22.1			49.4			336.7			23.9	
Approach LOS		C			D			F			C	
Queue Length 50th (m)	10.3	65.4	0.0	1.8	91.5		~116.9	1.7		23.6	26.7	
Queue Length 95th (m)	23.4	#130.9	12.5	6.6	#145.0		#162.7	9.5		34.6	48.1	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	267	1481	618	248	1122		316	604		532	761	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2029 PM (with Crawley Rd / Southgate Dr)

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.48	0.72	0.40	0.10	0.97		1.76	0.11		0.41	0.54	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 83.1

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.76

Intersection Signal Delay: 81.7

Intersection LOS: F

Intersection Capacity Utilization 95.0%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	28	61	16	36	15	55	762	37	9	609	83
Future Volume (vph)	122	28	61	16	36	15	55	762	37	9	609	83
Satd. Flow (prot)	0	1740	0	0	1785	0	0	1846	0	0	1831	0
Flt Permitted		0.801			0.906			0.912			0.987	
Satd. Flow (perm)	0	1434	0	0	1637	0	0	1689	0	0	1809	0
Satd. Flow (RTOR)		20			14			4			13	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	133	30	66	17	39	16	60	828	40	10	662	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	229	0	0	72	0	0	928	0	0	762	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.60			0.17			0.86			0.66	
Control Delay		37.0			24.9			24.9			14.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		37.0			24.9			24.9			14.6	
LOS		D			C			C			B	
Approach Delay		37.0			24.9			24.9			14.6	
Approach LOS		D			C			C			B	
Queue Length 50th (m)		37.4			9.1			138.2			86.9	
Queue Length 95th (m)		63.3			20.7			#242.1			127.1	
Internal Link Dist (m)		2054.6			317.2			178.0			128.7	
Turn Bay Length (m)												
Base Capacity (vph)		384			432			1077			1157	
Starvation Cap Reductn		0			0			0			0	

Total 2029 PM (with Crawley Rd / Southgate Dr)

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.60			0.17			0.86			0.66	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 22.3

Intersection LOS: C

Intersection Capacity Utilization 103.1%

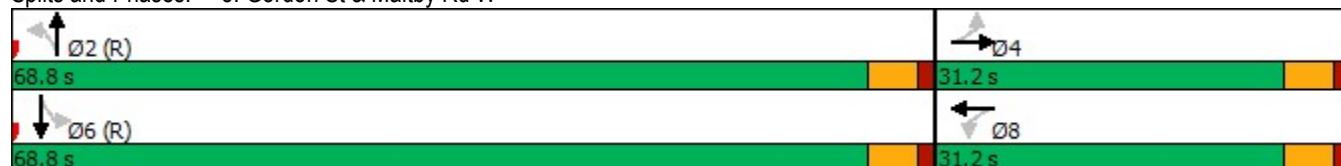
ICU Level of Service G

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Gordon St & Maltby Rd W



NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-08-2022

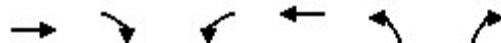
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	989	0	0	704	44	231
Future Volume (vph)	989	0	0	704	44	231
Satd. Flow (prot)	3539	0	0	3312	1556	1335
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1335
Satd. Flow (RTOR)						19
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	21%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1124	0	0	800	50	263
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1124	0	0	800	50	263
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.2			35.2	18.1	18.1
Actuated g/C Ratio	0.53			0.53	0.27	0.27
v/c Ratio	0.60			0.46	0.12	0.70
Control Delay	13.5			11.7	17.9	30.3
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	13.5			11.7	17.9	30.3
LOS	B			B	B	C
Approach Delay	13.5			11.7	28.3	
Approach LOS	B			B	C	
Queue Length 50th (m)	48.3			31.0	4.8	28.1
Queue Length 95th (m)	83.3			55.4	11.6	49.4
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1873			1753	1059	914
Starvation Cap Reductn	0			0	0	0

Total 2029 PM (with Crawley Rd / Southgate Dr)

Synchro 11 Report
Page 5

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-08-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.60			0.46	0.05	0.29

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 66.5

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 14.9

Intersection LOS: B

Intersection Capacity Utilization 52.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	363	402	0	671	0
Future Volume (vph)	0	363	402	0	671	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	403	447	0	746	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	403	447	0	746	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		18.9	
Actuated g/C Ratio		0.44	0.44		0.33	
v/c Ratio		0.26	0.29		0.66	
Control Delay		11.5	11.8		19.3	
Queue Delay		0.0	0.0		0.0	
Total Delay		11.5	11.8		19.3	
LOS		B	B		B	
Approach Delay		11.5	11.8		19.3	
Approach LOS		B	B		B	
Queue Length 50th (m)		13.7	15.5		35.2	
Queue Length 95th (m)		26.2	29.2		50.4	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1550	1521		2707	
Starvation Cap Reductn		0	0		0	

Total 2029 PM (with Crawley Rd / Southgate Dr)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.26	0.29		0.28	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 57.3

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 15.2

Intersection LOS: B

Intersection Capacity Utilization 52.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp

→ Ø2		← Ø4
31.8 s		51.4 s
← Ø6		
31.8 s		

NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1	14	9	0	26	6	428	4	23	301	19
Future Volume (vph)	40	1	14	9	0	26	6	428	4	23	301	19
Satd. Flow (prot)	0	1565	0	0	1309	0	0	1698	0	0	1501	0
Flt Permitted		0.965			0.987			0.999			0.997	
Satd. Flow (perm)	0	1565	0	0	1309	0	0	1698	0	0	1501	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	11%	66%	71%	20%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	49	1	17	11	0	32	7	528	5	28	372	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	0	0	43	0	0	540	0	0	423	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 45.0%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	36	48	87	13	40	50	358	213	41	229	31
Future Volume (vph)	33	36	48	87	13	40	50	358	213	41	229	31
Satd. Flow (prot)	1736	1679	0	1612	1384	0	0	1687	0	1308	1551	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1736	1679	0	1612	1384	0	0	1687	0	1308	1551	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	12%	0%	29%	6%	9%	4%	38%	21%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	38	41	55	99	15	45	57	407	242	47	260	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	96	0	99	60	0	0	706	0	47	295	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 70.0% ICU Level of Service C												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
18: Crawley Rd

11-08-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	170	0	10	233	0	25
Future Volume (vph)	170	0	10	233	0	25
Satd. Flow (prot)	1770	0	1622	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1622	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	185	0	11	253	0	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	185	0	264	0	0	27
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 31.0%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-08-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	160	3	45	72	3	88
Future Volume (vph)	160	3	45	72	3	88
Satd. Flow (prot)	1806	0	1742	0	0	1896
Flt Permitted	0.953					0.998
Satd. Flow (perm)	1806	0	1742	0	0	1896
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	172	3	48	77	3	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	175	0	125	0	0	98
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 22.8%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	515	388	9	571	145	212	16	14	50	13	78
Future Volume (vph)	244	515	388	9	571	145	212	16	14	50	13	78
Satd. Flow (prot)	1556	3471	1282	1327	3367	0	1337	1320	0	1736	1521	0
Flt Permitted	0.171			0.414			0.505			0.733		
Satd. Flow (perm)	280	3471	1282	578	3367	0	711	1320	0	1339	1521	0
Satd. Flow (RTOR)			473		31			17			95	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	26%	36%	5%	0%	35%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	298	628	473	11	696	177	259	20	17	61	16	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	628	473	11	873	0	259	37	0	61	111	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	40.7	35.8	35.8	34.6	24.4		21.2	13.3		20.2	10.3	
Actuated g/C Ratio	0.57	0.50	0.50	0.48	0.34		0.29	0.18		0.28	0.14	
v/c Ratio	0.88	0.36	0.54	0.03	0.75		0.84	0.14		0.14	0.37	
Control Delay	42.7	13.2	4.3	8.2	25.5		50.1	20.9		17.1	13.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.7	13.2	4.3	8.2	25.5		50.1	20.9		17.1	13.7	
LOS	D	B	A	A	C		D	C		B	B	
Approach Delay		16.5			25.3			46.4			14.9	
Approach LOS		B			C			D			B	
Queue Length 50th (m)	24.6	27.7	0.0	0.7	58.1		~55.8	2.8		6.0	2.2	
Queue Length 95th (m)	#59.6	46.0	11.7	2.6	70.1		#54.8	9.7		12.6	13.4	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	339	1725	875	408	1306		309	625		486	761	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2029 AM (without Crawley Rd/Southgate Dr)

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.88	0.36	0.54	0.03	0.67		0.84	0.06		0.13	0.15	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 72

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 22.4

Intersection LOS: C

Intersection Capacity Utilization 67.3%

ICU Level of Service C

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: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	37	56	17	37	28	63	591	34	10	553	137
Future Volume (vph)	73	37	56	17	37	28	63	591	34	10	553	137
Satd. Flow (prot)	0	1740	0	0	1759	0	0	1840	0	0	1812	0
Flt Permitted		0.840			0.924			0.878			0.989	
Satd. Flow (perm)	0	1493	0	0	1642	0	0	1624	0	0	1794	0
Satd. Flow (RTOR)		25			25			5			24	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	79	40	61	18	40	30	68	642	37	11	601	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	88	0	0	747	0	0	761	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.45			0.20			0.72			0.66	
Control Delay		30.8			22.6			17.2			14.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		30.8			22.6			17.2			14.5	
LOS		C			C			B			B	
Approach Delay		30.8			22.6			17.2			14.5	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		26.3			10.0			92.7			85.8	
Queue Length 95th (m)		47.4			22.9			140.4			126.3	
Internal Link Dist (m)		2055.5			174.7			162.0			185.2	
Turn Bay Length (m)												
Base Capacity (vph)		403			442			1036			1151	
Starvation Cap Reductn		0			0			0			0	

Total 2029 AM (without Crawley Rd/Southgate Dr)

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.45			0.20			0.72			0.66	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 17.6

Intersection LOS: B

Intersection Capacity Utilization 95.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W

 Ø2 (R)	 Ø4
68.8 s	31.2 s
 Ø6 (R)	 Ø8
68.8 s	31.2 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

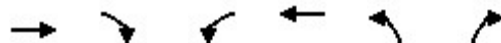
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	864	0	0	432	118	342
Future Volume (vph)	864	0	0	432	118	342
Satd. Flow (prot)	3539	0	0	3312	1556	1262
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1262
Satd. Flow (RTOR)						32
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	28%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	982	0	0	491	134	389
Shared Lane Traffic (%)						
Lane Group Flow (vph)	982	0	0	491	134	389
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.5			35.5	27.9	27.9
Actuated g/C Ratio	0.46			0.46	0.36	0.36
v/c Ratio	0.60			0.32	0.24	0.81
Control Delay	19.1			15.6	17.0	33.6
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	19.1			15.6	17.0	33.6
LOS	B			B	B	C
Approach Delay	19.1			15.6	29.3	
Approach LOS	B			B	C	
Queue Length 50th (m)	54.3			23.0	13.7	47.7
Queue Length 95th (m)	101.3			46.6	24.4	77.2
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1638			1533	925	764
Starvation Cap Reductn	0			0	0	0

Total 2029 AM (without Crawley Rd/Southgate Dr)

Synchro 11 Report
Page 5

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.60			0.32	0.14	0.51

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 76.8

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 20.9

Intersection LOS: C

Intersection Capacity Utilization 56.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



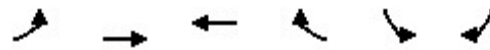
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	226	329	0	658	0
Future Volume (vph)	0	226	329	0	658	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	251	366	0	731	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	251	366	0	731	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		18.5	
Actuated g/C Ratio		0.44	0.44		0.33	
v/c Ratio		0.16	0.24		0.66	
Control Delay		10.7	11.2		19.4	
Queue Delay		0.0	0.0		0.0	
Total Delay		10.7	11.2		19.4	
LOS		B	B		B	
Approach Delay		10.7	11.2		19.4	
Approach LOS		B	B		B	
Queue Length 50th (m)		8.1	12.3		34.2	
Queue Length 95th (m)		16.7	23.7		49.3	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1563	1533		2729	
Starvation Cap Reductn		0	0		0	

Total 2029 AM (without Crawley Rd/Southgate Dr)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.16	0.24		0.27	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 56.8

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 15.5

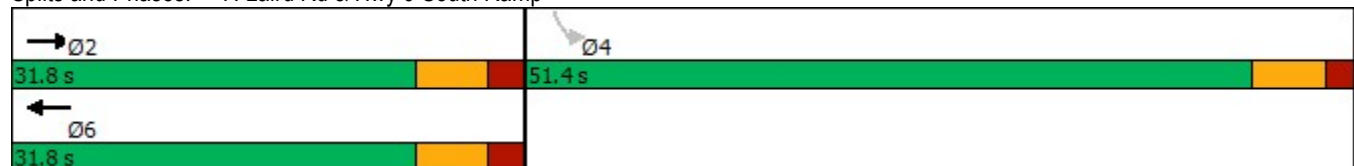
Intersection LOS: B

Intersection Capacity Utilization 56.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	0	3	3	0	17	11	226	10	34	360	21
Future Volume (vph)	13	0	3	3	0	17	11	226	10	34	360	21
Satd. Flow (prot)	0	1400	0	0	971	0	0	1512	0	0	1618	0
Flt Permitted		0.960			0.993			0.998			0.996	
Satd. Flow (perm)	0	1400	0	0	971	0	0	1512	0	0	1618	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	25%	29%	33%	15%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	14	0	3	3	0	18	12	243	11	37	387	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	0	0	21	0	0	266	0	0	447	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 43.1% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	45	50	90	23	57	14	113	63	24	194	116
Future Volume (vph)	99	45	50	90	23	57	14	113	63	24	194	116
Satd. Flow (prot)	1752	1696	0	1770	1638	0	0	1443	0	1228	1582	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1752	1696	0	1770	1638	0	0	1443	0	1228	1582	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	6%	2%	0%	5%	10%	40%	2%	47%	19%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	109	49	55	99	25	63	15	124	69	26	213	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	104	0	99	88	0	0	208	0	26	340	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 40.7%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	121	4	27	44	1	12
Future Volume (vph)	121	4	27	44	1	12
Satd. Flow (prot)	1805	0	1740	0	0	1599
Flt Permitted	0.954					0.997
Satd. Flow (perm)	1805	0	1740	0	0	1599
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	100%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	148	5	33	54	1	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	153	0	87	0	0	16
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 17.7%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	871	231	20	818	73	482	10	43	177	19	318
Future Volume (vph)	104	871	231	20	818	73	482	10	43	177	19	318
Satd. Flow (prot)	1556	3471	1162	1327	3410	0	1556	1433	0	1736	1539	0
Flt Permitted	0.125			0.171			0.260			0.592		
Satd. Flow (perm)	205	3471	1162	239	3410	0	426	1433	0	1082	1539	0
Satd. Flow (RTOR)			282		9			52			242	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	39%	36%	5%	0%	16%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	127	1062	282	24	998	89	588	12	52	216	23	388
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	1062	282	24	1087	0	588	64	0	216	411	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	42.2	35.5	35.5	37.5	27.2		30.2	16.7		32.5	16.7	
Actuated g/C Ratio	0.51	0.43	0.43	0.45	0.33		0.36	0.20		0.39	0.20	
v/c Ratio	0.51	0.72	0.43	0.12	0.97		1.93	0.20		0.41	0.82	
Control Delay	20.8	26.3	5.5	14.2	50.5		449.7	11.5		18.4	26.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.8	26.3	5.5	14.2	50.5		449.7	11.5		18.4	26.7	
LOS	C	C	A	B	D		F	B		B	C	
Approach Delay		21.8			49.7			406.7			23.9	
Approach LOS		C			D			F			C	
Queue Length 50th (m)	10.4	65.5	0.0	1.8	91.7		~131.8	1.7		23.6	27.0	
Queue Length 95th (m)	23.4	#131.2	13.0	6.6	#145.2		#180.4	9.5		34.6	48.3	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	267	1480	657	247	1121		305	604		533	760	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2029 PM (without Crawley Rd/Southgate Dr)

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.48	0.72	0.43	0.10	0.97		1.93	0.11		0.41	0.54	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 83.2

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.93

Intersection Signal Delay: 95.2

Intersection LOS: F

Intersection Capacity Utilization 96.5%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	28	61	16	36	15	55	762	37	9	609	83
Future Volume (vph)	122	28	61	16	36	15	55	762	37	9	609	83
Satd. Flow (prot)	0	1740	0	0	1785	0	0	1846	0	0	1831	0
Flt Permitted		0.801			0.906			0.912			0.987	
Satd. Flow (perm)	0	1434	0	0	1637	0	0	1689	0	0	1809	0
Satd. Flow (RTOR)		20			14			4			13	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	133	30	66	17	39	16	60	828	40	10	662	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	229	0	0	72	0	0	928	0	0	762	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.60			0.17			0.86			0.66	
Control Delay		37.0			24.9			24.9			14.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		37.0			24.9			24.9			14.6	
LOS		D			C			C			B	
Approach Delay		37.0			24.9			24.9			14.6	
Approach LOS		D			C			C			B	
Queue Length 50th (m)		37.4			9.1			138.2			86.9	
Queue Length 95th (m)		63.3			20.7			#242.1			127.1	
Internal Link Dist (m)		2054.6			317.2			178.0			128.7	
Turn Bay Length (m)												
Base Capacity (vph)		384			432			1077			1157	
Starvation Cap Reductn		0			0			0			0	

Total 2029 PM (without Crawley Rd/Southgate Dr)

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.60			0.17			0.86			0.66	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 22.3

Intersection LOS: C

Intersection Capacity Utilization 103.1%

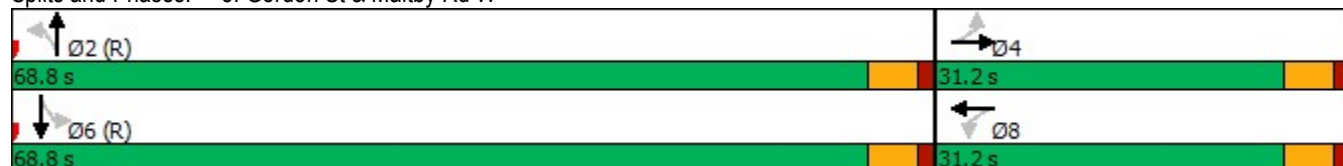
ICU Level of Service G

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Gordon St & Maltby Rd W



NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

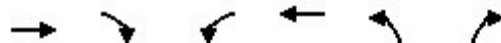
11-08-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	989	0	0	704	44	258
Future Volume (vph)	989	0	0	704	44	258
Satd. Flow (prot)	3539	0	0	3312	1556	1252
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1252
Satd. Flow (RTOR)						19
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	29%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1124	0	0	800	50	293
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1124	0	0	800	50	293
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.3			35.3	21.1	21.1
Actuated g/C Ratio	0.51			0.51	0.30	0.30
v/c Ratio	0.63			0.48	0.11	0.75
Control Delay	15.6			13.6	16.9	32.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	15.6			13.6	16.9	32.4
LOS	B			B	B	C
Approach Delay	15.6			13.6	30.2	
Approach LOS	B			B	C	
Queue Length 50th (m)	53.9			34.5	4.8	33.2
Queue Length 95th (m)	95.0			63.0	11.4	57.0
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1794			1679	1014	823
Starvation Cap Reductn	0			0	0	0

Total 2029 PM (without Crawley Rd/Southgate Dr)

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-08-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.63			0.48	0.05	0.36

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 69.6

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 17.1

Intersection LOS: B

Intersection Capacity Utilization 54.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	363	402	0	671	0
Future Volume (vph)	0	363	402	0	671	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	403	447	0	746	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	403	447	0	746	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		18.9	
Actuated g/C Ratio		0.44	0.44		0.33	
v/c Ratio		0.26	0.29		0.66	
Control Delay		11.5	11.8		19.3	
Queue Delay		0.0	0.0		0.0	
Total Delay		11.5	11.8		19.3	
LOS		B	B		B	
Approach Delay		11.5	11.8		19.3	
Approach LOS		B	B		B	
Queue Length 50th (m)		13.7	15.5		35.2	
Queue Length 95th (m)		26.2	29.2		50.4	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1550	1521		2707	
Starvation Cap Reductn		0	0		0	

Total 2029 PM (without Crawley Rd/Southgate Dr)

Synchro 11 Report
Page 7

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.26	0.29		0.28	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 57.3

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 15.2

Intersection LOS: B

Intersection Capacity Utilization 54.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp

→ Ø2		← Ø4
31.8 s		51.4 s
← Ø6		
31.8 s		

NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	1	14	9	0	26	6	454	4	23	328	19
Future Volume (vph)	40	1	14	9	0	26	6	454	4	23	328	19
Satd. Flow (prot)	0	1565	0	0	1309	0	0	1627	0	0	1475	0
Flt Permitted		0.965			0.987			0.999			0.997	
Satd. Flow (perm)	0	1565	0	0	1309	0	0	1627	0	0	1475	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	16%	66%	71%	23%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	49	1	17	11	0	32	7	560	5	28	405	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	0	0	43	0	0	572	0	0	456	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 46.5% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	114	48	56	13	40	50	268	134	41	183	104
Future Volume (vph)	149	114	48	56	13	40	50	268	134	41	183	104
Satd. Flow (prot)	1787	1774	0	1530	1384	0	0	1620	0	1308	1538	0
Flt Permitted	0.950			0.950				0.994		0.950		
Satd. Flow (perm)	1787	1774	0	1530	1384	0	0	1620	0	1308	1538	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	2%	3%	18%	0%	29%	6%	16%	6%	38%	23%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	169	130	55	64	15	45	57	305	152	47	208	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	169	185	0	64	60	0	0	514	0	47	326	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 66.6% ICU Level of Service C												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-08-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	160	3	30	72	3	62
Future Volume (vph)	160	3	30	72	3	62
Satd. Flow (prot)	1806	0	1720	0	0	1896
Flt Permitted	0.953					0.998
Satd. Flow (perm)	1806	0	1720	0	0	1896
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	172	3	32	77	3	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	175	0	109	0	0	70
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 21.7%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	466	272	8	517	132	115	14	13	45	12	71
Future Volume (vph)	221	466	272	8	517	132	115	14	13	45	12	71
Satd. Flow (prot)	1671	3343	1252	1357	3326	0	1280	1405	0	1530	1287	0
Flt Permitted	0.241			0.461			0.512			0.738		
Satd. Flow (perm)	424	3343	1252	659	3326	0	690	1405	0	1188	1287	0
Satd. Flow (RTOR)			302		31			14			79	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	29%	33%	6%	2%	41%	36%	14%	18%	44%	26%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	246	518	302	9	574	147	128	16	14	50	13	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	518	302	9	721	0	128	30	0	50	92	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	38.3	35.8	35.8	31.6	20.4		22.5	16.7		19.1	11.3	
Actuated g/C Ratio	0.60	0.56	0.56	0.49	0.32		0.35	0.26		0.30	0.18	
v/c Ratio	0.52	0.28	0.36	0.02	0.67		0.38	0.08		0.13	0.31	
Control Delay	13.5	12.8	3.5	8.4	23.3		19.4	18.7		15.7	13.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.5	12.8	3.5	8.4	23.3		19.4	18.7		15.7	13.3	
LOS	B	B	A	A	C		B	B		B	B	
Approach Delay		10.3			23.1			19.3			14.1	
Approach LOS		B			C			B			B	
Queue Length 50th (m)	18.0	22.2	0.0	0.6	45.1		11.5	1.5		4.2	1.6	
Queue Length 95th (m)	31.6	43.0	15.1	2.6	64.0		26.8	9.5		12.0	14.7	
Internal Link Dist (m)		205.4			207.5			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	472	1780	807	482	1590		359	804		469	765	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2024 AM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange open)

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.52	0.29	0.37	0.02	0.45		0.36	0.04		0.11	0.12	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 63.9

Natural Cycle: 95

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 15.7

Intersection LOS: B

Intersection Capacity Utilization 58.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	34	40	15	34	26	37	535	31	9	501	69
Future Volume (vph)	46	34	40	15	34	26	37	535	31	9	501	69
Satd. Flow (prot)	0	1683	0	0	1677	0	0	1710	0	0	1730	0
Flt Permitted		0.862			0.938			0.939			0.990	
Satd. Flow (perm)	0	1479	0	0	1589	0	0	1611	0	0	1715	0
Satd. Flow (RTOR)		24			26			5			13	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	8%	7%	17%	4%	5%	4%	10%	17%	14%	7%	14%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	50	37	43	16	37	28	40	582	34	10	545	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	130	0	0	81	0	0	656	0	0	630	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	32.0	32.0		32.0	32.0		68.0	68.0		68.0	68.0	
Total Split (%)	32.0%	32.0%		32.0%	32.0%		68.0%	68.0%		68.0%	68.0%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		26.6			26.6			62.9			62.9	
Actuated g/C Ratio		0.27			0.27			0.63			0.63	
v/c Ratio		0.32			0.18			0.65			0.58	
Control Delay		26.3			21.3			15.2			13.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		26.3			21.3			15.2			13.3	
LOS		C			C			B			B	
Approach Delay		26.3			21.3			15.2			13.3	
Approach LOS		C			C			B			B	
Queue Length 50th (m)		17.1			8.5			75.8			67.2	
Queue Length 95th (m)		33.9			20.7			114.2			99.3	
Internal Link Dist (m)		2054.8			191.1			101.2			127.7	
Turn Bay Length (m)												
Base Capacity (vph)		411			441			1015			1083	
Starvation Cap Reductn		0			0			0			0	

Total 2024 AM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange open)

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.32			0.18			0.65			0.58	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Pretimed

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 15.7

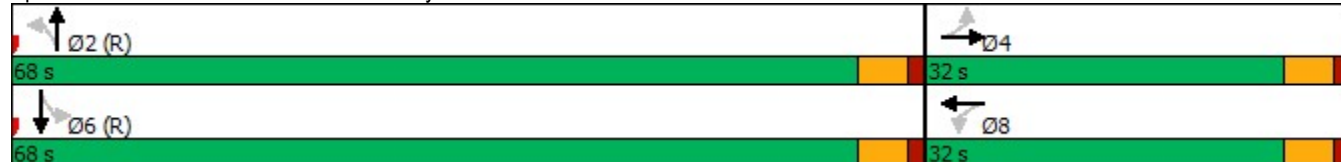
Intersection LOS: B

Intersection Capacity Utilization 72.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Gordon St & Maltby Rd W



NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

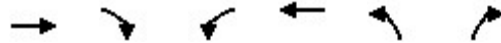
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	↲
Traffic Volume (vph)	717	0	0	391	107	295
Future Volume (vph)	717	0	0	391	107	295
Satd. Flow (prot)	3406	0	0	3112	1504	1292
Flt Permitted					0.950	
Satd. Flow (perm)	3406	0	0	3112	1504	1292
Satd. Flow (RTOR)						69
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	0%	0%	16%	20%	25%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	779	0	0	425	116	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	779	0	0	425	116	321
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.3			35.3	20.0	20.0
Actuated g/C Ratio	0.52			0.52	0.29	0.29
v/c Ratio	0.44			0.26	0.26	0.76
Control Delay	12.7			11.2	19.3	28.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	12.7			11.2	19.3	28.7
LOS	B			B	B	C
Approach Delay	12.7			11.2	26.2	
Approach LOS	B			B	C	
Queue Length 50th (m)	31.5			15.3	11.8	30.1
Queue Length 95th (m)	62.2			32.8	23.1	56.9
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1756			1604	997	879
Starvation Cap Reductn	0			0	0	0

Total 2024 AM (with Southgate Dr/Crawley Rd ; New Hwy 6 interchange open)

Synchro 11 Report
Page 5

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.44			0.26	0.12	0.37

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 68.5

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 15.9

Intersection LOS: B

Intersection Capacity Utilization 49.0%

ICU Level of Service A

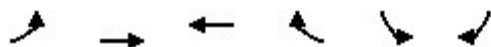
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

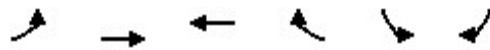
11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	205	298	0	530	0
Future Volume (vph)	0	205	298	0	530	0
Satd. Flow (prot)	0	3406	3223	0	3303	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3406	3223	0	3303	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	6%	12%	0%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	263	382	0	679	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	263	382	0	679	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		17.8	
Actuated g/C Ratio		0.45	0.45		0.32	
v/c Ratio		0.17	0.27		0.65	
Control Delay		10.5	11.1		19.5	
Queue Delay		0.0	0.0		0.0	
Total Delay		10.5	11.1		19.5	
LOS		B	B		B	
Approach Delay		10.5	11.1		19.5	
Approach LOS		B	B		B	
Queue Length 50th (m)		8.4	12.7		31.5	
Queue Length 95th (m)		14.7	20.8		38.0	
Internal Link Dist (m)		249.8	278.5		138.6	
Turn Bay Length (m)						
Base Capacity (vph)		1522	1440		2658	
Starvation Cap Reductn		0	0		0	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.17	0.27		0.26	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 56.2

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 15.3

Intersection LOS: B

Intersection Capacity Utilization 49.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp

→ Ø2		↖ Ø4	
31.8 s		51.4 s	
← Ø6			
31.8 s			

NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	0	3	3	0	15	10	128	9	31	247	19
Future Volume (vph)	12	0	3	3	0	15	10	128	9	31	247	19
Satd. Flow (prot)	0	1404	0	0	970	0	0	1510	0	0	1599	0
Flt Permitted		0.961			0.992			0.997			0.995	
Satd. Flow (perm)	0	1404	0	0	970	0	0	1510	0	0	1599	0
Confl. Peds. (#/hr)			2	2					3	3		
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	25%	29%	33%	16%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	0	3	3	0	16	11	138	10	33	266	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	19	0	0	159	0	0	319	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 34.0% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	13	45	100	21	52	13	92	63	22	180	21
Future Volume (vph)	23	13	45	100	21	52	13	92	63	22	180	21
Satd. Flow (prot)	1626	1603	0	1770	1638	0	0	1537	0	1228	1657	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1626	1603	0	1770	1638	0	0	1537	0	1228	1657	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	2%	0%	5%	10%	28%	2%	47%	12%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	25	14	49	110	23	57	14	101	69	24	198	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	63	0	110	80	0	0	184	0	24	221	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 38.9%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
18: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	56	0	8	45	0	1
Future Volume (vph)	56	0	8	45	0	1
Satd. Flow (prot)	1770	0	1650	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1650	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	61	0	9	49	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	58	0	0	1
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	110	4	28	40	1	19
Future Volume (vph)	110	4	28	40	1	19
Satd. Flow (prot)	1804	0	1748	0	0	1820
Flt Permitted	0.954					0.998
Satd. Flow (perm)	1804	0	1748	0	0	1820
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	100%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	134	5	34	49	1	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	139	0	83	0	0	24
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 16.9%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	961	217	22	903	80	490	11	47	195	20	351
Future Volume (vph)	115	961	217	22	903	80	490	11	47	195	20	351
Satd. Flow (prot)	1556	3471	1114	1327	3410	0	1612	1435	0	1736	1541	0
Flt Permitted	0.124			0.137			0.221			0.605		
Satd. Flow (perm)	203	3471	1114	191	3410	0	375	1435	0	1105	1541	0
Satd. Flow (RTOR)			265		9			57			238	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	45%	36%	5%	0%	12%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	140	1172	265	27	1101	98	598	13	57	238	24	428
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	1172	265	27	1199	0	598	70	0	238	452	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	42.3	35.7	35.7	37.7	27.3		32.9	19.5		35.3	19.5	
Actuated g/C Ratio	0.49	0.41	0.41	0.44	0.32		0.38	0.23		0.41	0.23	
v/c Ratio	0.57	0.82	0.43	0.15	1.11		1.98	0.19		0.43	0.85	
Control Delay	25.7	31.8	6.0	16.3	91.6		472.5	10.5		18.3	30.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	25.7	31.8	6.0	16.3	91.6		472.5	10.5		18.3	30.3	
LOS	C	C	A	B	F		F	B		B	C	
Approach Delay		26.9			89.9			424.1			26.1	
Approach LOS		C			F			F			C	
Queue Length 50th (m)	12.6	82.5	0.0	2.3	~126.4		~142.2	1.8		26.4	36.6	
Queue Length 95th (m)	29.1	#167.0	13.2	7.6	#180.6		#195.4	9.7		37.5	59.0	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	258	1434	615	222	1084		302	589		556	741	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2034 PM

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.54	0.82	0.43	0.12	1.11		1.98	0.12		0.43	0.61	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 86.3

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.98

Intersection Signal Delay: 109.1

Intersection LOS: F

Intersection Capacity Utilization 102.1%

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: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St /Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	30	65	18	39	16	59	841	41	10	672	89
Future Volume (vph)	128	30	65	18	39	16	59	841	41	10	672	89
Satd. Flow (prot)	0	1740	0	0	1787	0	0	1846	0	0	1831	0
Flt Permitted		0.802			0.904			0.905			0.985	
Satd. Flow (perm)	0	1436	0	0	1635	0	0	1676	0	0	1805	0
Satd. Flow (RTOR)		20			13			5			13	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	139	33	71	20	42	17	64	914	45	11	730	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	243	0	0	79	0	0	1023	0	0	838	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.63			0.18			0.96			0.73	
Control Delay		38.5			25.6			37.3			16.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		38.5			25.6			37.3			16.7	
LOS		D			C			D			B	
Approach Delay		38.5			25.6			37.3			16.7	
Approach LOS		D			C			D			B	
Queue Length 50th (m)		40.4			10.4			175.9			103.5	
Queue Length 95th (m)		67.6			22.7			#286.9			152.9	
Internal Link Dist (m)		2052.7			180.0			146.0			175.4	
Turn Bay Length (m)												
Base Capacity (vph)		385			431			1069			1154	
Starvation Cap Reductn		0			0			0			0	

Total 2034 PM

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.63			0.18			0.96			0.73	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 29.1

Intersection LOS: C

Intersection Capacity Utilization 110.5%

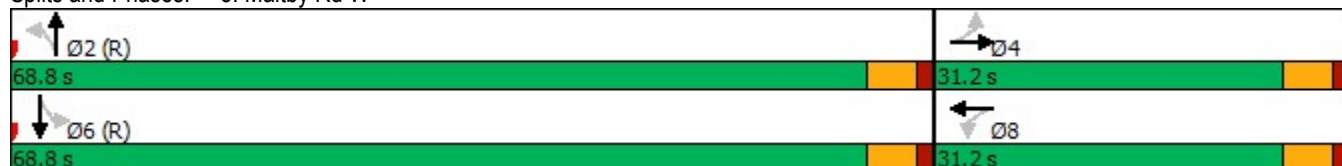
ICU Level of Service H

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Maltby Rd W



NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

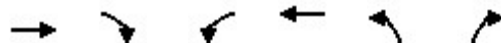
11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	1083	0	0	777	49	255
Future Volume (vph)	1083	0	0	777	49	255
Satd. Flow (prot)	3539	0	0	3312	1556	1335
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1335
Satd. Flow (RTOR)						12
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	21%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1231	0	0	883	56	290
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1231	0	0	883	56	290
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.2			35.2	20.1	20.1
Actuated g/C Ratio	0.51			0.51	0.29	0.29
v/c Ratio	0.68			0.52	0.12	0.73
Control Delay	15.9			13.5	17.4	31.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	15.9			13.5	17.4	31.7
LOS	B			B	B	C
Approach Delay	15.9			13.5	29.4	
Approach LOS	B			B	C	
Queue Length 50th (m)	59.6			38.0	5.4	33.1
Queue Length 95th (m)	102.7			67.7	12.5	56.0
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1820			1703	1029	887
Starvation Cap Reductn	0			0	0	0

Total 2034 PM

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.68			0.52	0.05	0.33

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 68.5

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 16.9

Intersection LOS: B

Intersection Capacity Utilization 56.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	401	443	0	733	0
Future Volume (vph)	0	401	443	0	733	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	446	492	0	814	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	446	492	0	814	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		20.5	
Actuated g/C Ratio		0.43	0.43		0.35	
v/c Ratio		0.30	0.33		0.68	
Control Delay		12.6	13.0		19.4	
Queue Delay		0.0	0.0		0.0	
Total Delay		12.6	13.0		19.4	
LOS		B	B		B	
Approach Delay		12.6	13.0		19.4	
Approach LOS		B	B		B	
Queue Length 50th (m)		16.3	18.2		39.3	
Queue Length 95th (m)		31.3	34.6		55.4	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1509	1480		2636	
Starvation Cap Reductn		0	0		0	

Total 2034 PM

Synchro 11 Report
Page 7

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.30	0.33		0.31	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 58.9

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 15.9

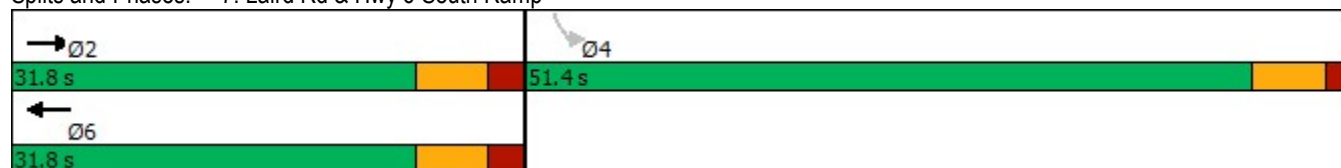
Intersection LOS: B

Intersection Capacity Utilization 56.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp



NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	2	16	9	0	28	6	460	5	25	325	21
Future Volume (vph)	44	2	16	9	0	28	6	460	5	25	325	21
Satd. Flow (prot)	0	1569	0	0	1304	0	0	1697	0	0	1498	0
Flt Permitted		0.966			0.988			0.999			0.997	
Satd. Flow (perm)	0	1569	0	0	1304	0	0	1697	0	0	1498	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	11%	66%	71%	20%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	54	2	20	11	0	35	7	568	6	31	401	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	76	0	0	46	0	0	581	0	0	458	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 49.0%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	39	53	92	14	44	55	383	227	46	245	34
Future Volume (vph)	36	39	53	92	14	44	55	383	227	46	245	34
Satd. Flow (prot)	1736	1677	0	1612	1380	0	0	1687	0	1308	1551	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1736	1677	0	1612	1380	0	0	1687	0	1308	1551	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	12%	0%	29%	6%	9%	4%	38%	21%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	41	44	60	105	16	50	63	435	258	52	278	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	104	0	105	66	0	0	756	0	52	317	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 73.8%												
ICU Level of Service D												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
19: Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	159	0	11	235	0	31
Future Volume (vph)	159	0	11	235	0	31
Satd. Flow (prot)	1770	0	1622	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1622	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	173	0	12	255	0	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	173	0	267	0	0	34
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 30.6%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	176	3	48	80	3	95
Future Volume (vph)	176	3	48	80	3	95
Satd. Flow (prot)	1806	0	1740	0	0	1898
Flt Permitted	0.953					0.999
Satd. Flow (perm)	1806	0	1740	0	0	1898
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	189	3	52	86	3	102
Shared Lane Traffic (%)						
Lane Group Flow (vph)	192	0	138	0	0	105
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 24.0%			ICU Level of Service A			
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	283	597	418	10	663	169	203	18	17	58	15	91
Future Volume (vph)	283	597	418	10	663	169	203	18	17	58	15	91
Satd. Flow (prot)	1556	3471	1313	1327	3367	0	1433	1328	0	1736	1522	0
Flt Permitted	0.123			0.375			0.534			0.729		
Satd. Flow (perm)	201	3471	1313	524	3367	0	805	1328	0	1332	1522	0
Satd. Flow (RTOR)			510		31			21			111	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	23%	36%	5%	0%	26%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	345	728	510	12	809	206	248	22	21	71	18	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	345	728	510	12	1015	0	248	43	0	71	129	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		3.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	43.0	38.0	38.0	37.0	27.0		27.3	16.3		23.1	10.2	
Actuated g/C Ratio	0.56	0.49	0.49	0.48	0.35		0.35	0.21		0.30	0.13	
v/c Ratio	1.20	0.43	0.56	0.04	0.85		0.68	0.14		0.16	0.43	
Control Delay	140.7	14.4	4.4	8.3	30.9		30.8	19.9		17.4	13.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	140.7	14.4	4.4	8.3	30.9		30.8	19.9		17.4	13.9	
LOS	F	B	A	A	C		C	B		B	B	
Approach Delay		38.7			30.7			29.2			15.1	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	~51.0	33.4	0.0	0.8	72.2		28.7	2.9		7.1	2.5	
Queue Length 95th (m)	#89.0	54.8	11.8	2.8	86.0		44.0	10.6		14.0	14.4	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	287	1709	905	375	1197		366	579		486	713	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2039 AM

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	1.20	0.43	0.56	0.03	0.85		0.68	0.07		0.15	0.18	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 77.2

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.20

Intersection Signal Delay: 33.6

Intersection LOS: C

Intersection Capacity Utilization 72.3%

ICU Level of Service C

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: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study
5: Crawley Rd & Southgate Dr

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	248	0	11	145	0	21
Future Volume (vph)	248	0	11	145	0	21
Satd. Flow (prot)	1770	0	1630	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1630	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	270	0	12	158	0	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	270	0	170	0	0	23
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 29.9%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

11-07-2022

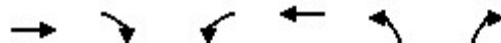
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	↲
Traffic Volume (vph)	988	0	0	501	137	379
Future Volume (vph)	988	0	0	501	137	379
Satd. Flow (prot)	3539	0	0	3312	1556	1292
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1292
Satd. Flow (RTOR)						19
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	25%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1123	0	0	569	156	431
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1123	0	0	569	156	431
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.5			35.5	30.8	30.8
Actuated g/C Ratio	0.45			0.45	0.39	0.39
v/c Ratio	0.71			0.39	0.26	0.84
Control Delay	23.1			17.5	16.8	36.3
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	23.1			17.5	16.8	36.3
LOS	C			B	B	D
Approach Delay	23.1			17.5	31.1	
Approach LOS	C			B	C	
Queue Length 50th (m)	72.6			30.3	16.2	57.5
Queue Length 95th (m)	123.7			55.5	27.9	90.7
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1577			1476	891	748
Starvation Cap Reductn	0			0	0	0

Total 2039 AM

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.71			0.39	0.18	0.58

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 79.6

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 23.8

Intersection LOS: C

Intersection Capacity Utilization 61.7%

ICU Level of Service B

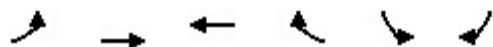
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022

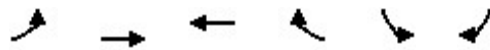


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	263	382	0	748	0
Future Volume (vph)	0	263	382	0	748	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	292	424	0	831	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	292	424	0	831	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		21.1	
Actuated g/C Ratio		0.42	0.42		0.35	
v/c Ratio		0.20	0.29		0.68	
Control Delay		12.2	12.9		19.4	
Queue Delay		0.0	0.0		0.0	
Total Delay		12.2	12.9		19.4	
LOS		B	B		B	
Approach Delay		12.2	12.9		19.4	
Approach LOS		B	B		B	
Queue Length 50th (m)		10.6	16.2		40.4	
Queue Length 95th (m)		21.1	30.2		56.9	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1495	1467		2611	
Starvation Cap Reductn		0	0		0	

Total 2039 AM

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.20	0.29		0.32	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 59.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 16.2

Intersection LOS: B

Intersection Capacity Utilization 61.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp

→ Ø2		↖ Ø4
31.8 s		51.4 s
← Ø6		
31.8 s		

NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	0	3	3	0	20	13	220	12	39	385	25
Future Volume (vph)	15	0	3	3	0	20	13	220	12	39	385	25
Satd. Flow (prot)	0	1397	0	0	973	0	0	1627	0	0	1652	0
Flt Permitted		0.960			0.994			0.997			0.996	
Satd. Flow (perm)	0	1397	0	0	973	0	0	1627	0	0	1652	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	33%	0%	0%	100%	0%	67%	13%	15%	29%	33%	12%	8%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	0	3	3	0	22	14	237	13	42	414	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	25	0	0	264	0	0	483	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 46.1%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	17	58	196	26	66	17	174	104	28	300	27
Future Volume (vph)	30	17	58	196	26	66	17	174	104	28	300	27
Satd. Flow (prot)	1626	1605	0	1787	1638	0	0	1661	0	1228	1720	0
Flt Permitted	0.950			0.950				0.997		0.950		
Satd. Flow (perm)	1626	1605	0	1787	1638	0	0	1661	0	1228	1720	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	11%	0%	6%	1%	0%	5%	10%	13%	1%	47%	8%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	33	19	64	215	29	73	19	191	114	31	330	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	83	0	215	102	0	0	324	0	31	360	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 54.3% ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

17: Gordon St & Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	43	63	20	43	33	69	686	40	12	641	147
Future Volume (vph)	132	43	63	20	43	33	69	686	40	12	641	147
Satd. Flow (prot)	0	1747	0	0	1759	0	0	1842	0	0	1814	0
Flt Permitted		0.779			0.914			0.869			0.985	
Satd. Flow (perm)	0	1399	0	0	1624	0	0	1607	0	0	1789	0
Satd. Flow (RTOR)		17			25			5			22	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	143	47	68	22	47	36	75	746	43	13	697	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	258	0	0	105	0	0	864	0	0	870	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.69			0.24			0.84			0.76	
Control Delay		42.3			23.9			23.8			17.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		42.3			23.9			23.8			17.8	
LOS		D			C			C			B	
Approach Delay		42.3			23.9			23.8			17.8	
Approach LOS		D			C			C			B	
Queue Length 50th (m)		44.5			12.8			125.1			110.7	
Queue Length 95th (m)		#74.3			27.0			#205.4			165.3	
Internal Link Dist (m)		2056.4			208.0			145.9			159.6	
Turn Bay Length (m)												
Base Capacity (vph)		373			437			1025			1147	
Starvation Cap Reductn		0			0			0			0	

Total 2039 AM

Synchro 11 Report
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.69			0.24			0.84			0.76	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 23.6

Intersection LOS: C

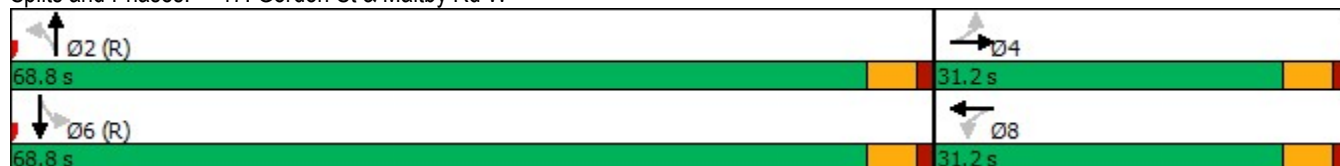
Intersection Capacity Utilization 108.2%

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.

Splits and Phases: 17: Gordon St & Maltby Rd W

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	140	5	46	51	2	41
Future Volume (vph)	140	5	46	51	2	41
Satd. Flow (prot)	1804	0	1765	0	0	1630
Flt Permitted	0.954					0.998
Satd. Flow (perm)	1804	0	1765	0	0	1630
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	0%	0%	100%	13%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	171	6	56	62	2	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	0	118	0	0	52
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 20.3%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
3: Southgate Dr & Laird Rd

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	1011	224	23	949	84	509	12	50	205	21	369
Future Volume (vph)	121	1011	224	23	949	84	509	12	50	205	21	369
Satd. Flow (prot)	1556	3471	1114	1327	3410	0	1612	1431	0	1736	1540	0
Flt Permitted	0.124			0.137			0.206			0.608		
Satd. Flow (perm)	203	3471	1114	191	3410	0	349	1431	0	1111	1540	0
Satd. Flow (RTOR)			273		9			61			237	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	16%	4%	45%	36%	5%	0%	12%	57%	7%	4%	38%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	148	1233	273	28	1157	102	621	15	61	250	26	450
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	1233	273	28	1259	0	621	76	0	250	476	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		
Detector Phase	5	2	2	1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	10.0	10.0	7.0	10.0		7.0	10.0		7.0	10.0	
Minimum Split (s)	10.0	33.0	33.0	10.0	33.0		10.0	33.0		10.0	41.0	
Total Split (s)	13.0	33.0	33.0	13.0	33.0		13.0	41.0		13.0	41.0	
Total Split (%)	13.0%	33.0%	33.0%	13.0%	33.0%		13.0%	41.0%		13.0%	41.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0		0.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		-1.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0	6.0	3.0	6.0		2.0	8.0		3.0	8.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	None		None	None	
Act Effect Green (s)	42.4	35.8	35.8	37.7	27.3		34.1	20.7		36.6	20.7	
Actuated g/C Ratio	0.48	0.41	0.41	0.43	0.31		0.39	0.24		0.42	0.24	
v/c Ratio	0.61	0.87	0.44	0.16	1.18		2.11	0.20		0.44	0.88	
Control Delay	28.2	35.6	6.1	16.9	121.2		526.5	10.4		18.4	33.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.2	35.6	6.1	16.9	121.2		526.5	10.4		18.4	33.2	
LOS	C	D	A	B	F		F	B		B	C	
Approach Delay		30.1			118.9			470.2			28.1	
Approach LOS		C			F			F			C	
Queue Length 50th (m)	14.2	93.9	0.0	2.5	~144.3		~156.2	2.1		27.9	42.3	
Queue Length 95th (m)	#31.5	#180.4	13.4	7.9	#193.2		#209.9	10.3		39.4	65.8	
Internal Link Dist (m)		205.4			206.9			305.7			165.8	
Turn Bay Length (m)	150.0		100.0	100.0			115.0			82.0		
Base Capacity (vph)	254	1415	615	218	1066		295	581		565	732	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	

Total 2039 PM

Synchro 11 Report
Page 1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	0.58	0.87	0.44	0.13	1.18		2.11	0.13		0.44	0.65	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 87.7

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 2.11

Intersection Signal Delay: 126.2

Intersection LOS: F

Intersection Capacity Utilization 106.1%

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: 3: Southgate Dr & Laird Rd

 Ø1	 Ø2	 Ø3	 Ø4
13 s	33 s	13 s	41 s
 Ø5	 Ø6	 Ø7	 Ø8
13 s	33 s	13 s	41 s

NewCold Toronto Ontario (TO-01) Traffic Impact Study

5: Gordon St/Maltby Rd W

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	32	66	19	41	17	61	884	43	11	706	92
Future Volume (vph)	131	32	66	19	41	17	61	884	43	11	706	92
Satd. Flow (prot)	0	1740	0	0	1787	0	0	1846	0	0	1833	0
Flt Permitted		0.798			0.903			0.903			0.983	
Satd. Flow (perm)	0	1428	0	0	1633	0	0	1672	0	0	1804	0
Satd. Flow (RTOR)		20			13			5			13	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	142	35	72	21	45	18	66	961	47	12	767	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	249	0	0	84	0	0	1074	0	0	879	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												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	31.2	31.2		31.2	31.2		24.6	24.6		24.6	24.6	
Total Split (s)	31.2	31.2		31.2	31.2		68.8	68.8		68.8	68.8	
Total Split (%)	31.2%	31.2%		31.2%	31.2%		68.8%	68.8%		68.8%	68.8%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.7	1.7		1.7	1.7		1.4	1.4		1.4	1.4	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.4			5.4			5.1			5.1	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)		25.8			25.8			63.7			63.7	
Actuated g/C Ratio		0.26			0.26			0.64			0.64	
v/c Ratio		0.65			0.20			1.01			0.76	
Control Delay		39.4			25.9			49.0			18.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		39.4			25.9			49.0			18.1	
LOS		D			C			D			B	
Approach Delay		39.4			25.9			49.0			18.1	
Approach LOS		D			C			D			B	
Queue Length 50th (m)		41.7			11.3			~206.1			113.5	
Queue Length 95th (m)		69.9			24.0			#310.2			168.8	
Internal Link Dist (m)		2052.7			180.0			477.3			175.4	
Turn Bay Length (m)												
Base Capacity (vph)		383			430			1066			1153	
Starvation Cap Reductn		0			0			0			0	

Total 2039 PM

Synchro 11 Report
Page 3

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.65			0.20			1.01			0.76	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 100

Control Type: Pretimed

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 35.2

Intersection LOS: D

Intersection Capacity Utilization 113.9%

ICU Level of Service H

Analysis Period (min) 15

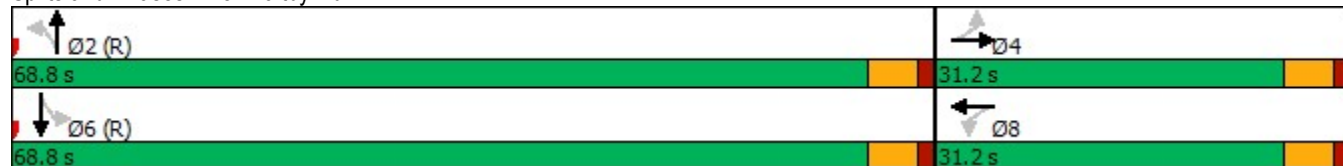
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Maltby Rd W



NewCold Toronto Ontario (TO-01) Traffic Impact Study
6: Hwy 6 North Ramp & Laird Rd

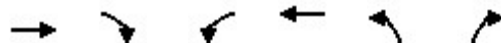
11-07-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	1135	0	0	817	51	268
Future Volume (vph)	1135	0	0	817	51	268
Satd. Flow (prot)	3539	0	0	3312	1556	1346
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3312	1556	1346
Satd. Flow (RTOR)						10
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	9%	16%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	1290	0	0	928	58	305
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1290	0	0	928	58	305
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	40.7			26.7	16.4	16.4
Total Split (s)	41.7			41.7	51.4	51.4
Total Split (%)	44.8%			44.8%	55.2%	55.2%
Yellow Time (s)	4.5			4.5	4.5	4.5
All-Red Time (s)	2.2			2.2	1.9	1.9
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	6.7			6.7	6.4	6.4
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	35.2			35.2	21.0	21.0
Actuated g/C Ratio	0.51			0.51	0.30	0.30
v/c Ratio	0.72			0.55	0.12	0.74
Control Delay	17.5			14.4	17.2	32.1
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	17.5			14.4	17.2	32.1
LOS	B			B	B	C
Approach Delay	17.5			14.4	29.8	
Approach LOS	B			B	C	
Queue Length 50th (m)	66.3			42.0	5.7	35.6
Queue Length 95th (m)	113.5			74.4	12.8	59.4
Internal Link Dist (m)	278.5			205.4	137.5	
Turn Bay Length (m)						
Base Capacity (vph)	1797			1682	1016	882
Starvation Cap Reductn	0			0	0	0

Total 2039 PM

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 6: Hwy 6 North Ramp & Laird Rd

11-07-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.72			0.55	0.06	0.35

Intersection Summary

Cycle Length: 93.1

Actuated Cycle Length: 69.4

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 18.1

Intersection LOS: B

Intersection Capacity Utilization 58.9%

ICU Level of Service B

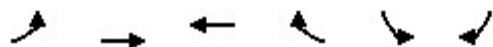
Analysis Period (min) 15

Splits and Phases: 6: Hwy 6 North Ramp & Laird Rd

→ Ø2	← Ø8
41.7 s	51.4 s
← Ø6	
41.7 s	

NewCold Toronto Ontario (TO-01) Traffic Impact Study
7: Laird Rd & Hwy 6 South Ramp

11-07-2022

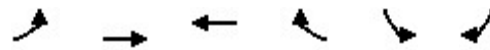


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	0	421	466	0	766	0
Future Volume (vph)	0	421	466	0	766	0
Satd. Flow (prot)	0	3539	3471	0	3433	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3471	0	3433	0
Satd. Flow (RTOR)						
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	468	518	0	851	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	468	518	0	851	0
Turn Type		NA	NA		Perm	
Protected Phases		2	6			
Permitted Phases					4	
Detector Phase		2	6		4	
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	
Minimum Split (s)		26.8	26.8		16.4	
Total Split (s)		31.8	31.8		51.4	
Total Split (%)		38.2%	38.2%		61.8%	
Yellow Time (s)		4.5	4.5		4.5	
All-Red Time (s)		2.3	2.3		1.9	
Lost Time Adjust (s)		0.0	0.0		0.0	
Total Lost Time (s)		6.8	6.8		6.4	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		Max	Max		None	
Act Effect Green (s)		25.1	25.1		21.5	
Actuated g/C Ratio		0.42	0.42		0.36	
v/c Ratio		0.32	0.36		0.69	
Control Delay		13.3	13.6		19.4	
Queue Delay		0.0	0.0		0.0	
Total Delay		13.3	13.6		19.4	
LOS		B	B		B	
Approach Delay		13.3	13.6		19.4	
Approach LOS		B	B		B	
Queue Length 50th (m)		18.3	20.7		41.7	
Queue Length 95th (m)		33.7	37.7		58.5	
Internal Link Dist (m)		239.8	278.5		137.7	
Turn Bay Length (m)						
Base Capacity (vph)		1485	1456		2593	
Starvation Cap Reductn		0	0		0	

Total 2039 PM

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 7: Laird Rd & Hwy 6 South Ramp

11-07-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.32	0.36		0.33	

Intersection Summary

Cycle Length: 83.2

Actuated Cycle Length: 59.9

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 16.2

Intersection LOS: B

Intersection Capacity Utilization 58.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Laird Rd & Hwy 6 South Ramp

→ Ø2		← Ø4
31.8 s		51.4 s
← Ø6		
31.8 s		

NewCold Toronto Ontario (TO-01) Traffic Impact Study
10: Southgate Dr & Admiral PI

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	2	17	10	0	30	7	478	5	27	337	22
Future Volume (vph)	46	2	17	10	0	30	7	478	5	27	337	22
Satd. Flow (prot)	0	1570	0	0	1306	0	0	1697	0	0	1497	0
Flt Permitted		0.966			0.988			0.999			0.997	
Satd. Flow (perm)	0	1570	0	0	1306	0	0	1697	0	0	1497	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	18%	0%	0%	17%	0%	33%	25%	11%	66%	71%	20%	55%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	57	2	21	12	0	37	9	590	6	33	416	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	80	0	0	49	0	0	605	0	0	476	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 50.6%												
ICU Level of Service A												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-07-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	41	56	95	15	46	58	397	234	48	253	36
Future Volume (vph)	38	41	56	95	15	46	58	397	234	48	253	36
Satd. Flow (prot)	1736	1679	0	1612	1383	0	0	1686	0	1308	1550	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1736	1679	0	1612	1383	0	0	1686	0	1308	1550	0
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	12%	0%	29%	6%	9%	4%	38%	21%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	43	47	64	108	17	52	66	451	266	55	288	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	111	0	108	69	0	0	783	0	55	329	0
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Control Type: Unsignalized												
Intersection Capacity Utilization 75.8%												
ICU Level of Service D												
Analysis Period (min) 15												

NewCold Toronto Ontario (TO-01) Traffic Impact Study
19: Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	160	0	11	236	0	33
Future Volume (vph)	160	0	11	236	0	33
Satd. Flow (prot)	1770	0	1622	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1622	0	0	1863
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	174	0	12	257	0	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	174	0	269	0	0	36
Sign Control	Stop		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 30.7%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study
25: Maltby Rd W & Crawley Rd

11-07-2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	185	3	49	84	3	98
Future Volume (vph)	185	3	49	84	3	98
Satd. Flow (prot)	1806	0	1738	0	0	1898
Flt Permitted	0.953					0.999
Satd. Flow (perm)	1806	0	1738	0	0	1898
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	199	3	53	90	3	105
Shared Lane Traffic (%)						
Lane Group Flow (vph)	202	0	143	0	0	108
Sign Control	Free		Stop			Stop
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 24.8%				ICU Level of Service A		
Analysis Period (min) 15						

NewCold Toronto Ontario (TO-01) Traffic Impact Study

13: Clair Rd W & Southgate Dr

11-08-2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	41	56	95	15	46	58	397	234	48	253	36
Future Volume (vph)	38	41	56	95	15	46	58	397	234	48	253	36
Satd. Flow (prot)	1736	1679	0	1612	1383	0	0	1686	0	1308	1550	0
Flt Permitted	0.712			0.685				0.942		0.341		
Satd. Flow (perm)	1301	1679	0	1162	1383	0	0	1595	0	469	1550	0
Satd. Flow (RTOR)		64			52			54			15	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	3%	12%	0%	29%	6%	9%	4%	38%	21%	15%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	43	47	64	108	17	52	66	451	266	55	288	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	111	0	108	69	0	0	783	0	55	329	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	28.7	28.7		28.7	28.7		26.2	26.2		26.2	26.2	
Total Split (s)	29.4	29.4		29.4	29.4		70.6	70.6		70.6	70.6	
Total Split (%)	29.4%	29.4%		29.4%	29.4%		70.6%	70.6%		70.6%	70.6%	
Yellow Time (s)	3.7	3.7		3.7	3.7		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.3	1.3		1.3	1.3		1.3	1.3		1.3	1.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max		Max	Max		Max	Max		Max	Max	
Act Effect Green (s)	24.4	24.4		24.4	24.4			65.6		65.6	65.6	
Actuated g/C Ratio	0.24	0.24		0.24	0.24			0.66		0.66	0.66	
v/c Ratio	0.14	0.24		0.38	0.18			0.74		0.18	0.32	
Control Delay	31.1	16.0		36.3	13.3			15.8		8.5	8.1	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	31.1	16.0		36.3	13.3			15.8		8.5	8.1	
LOS	C	B		D	B			B		A	A	
Approach Delay		20.2			27.3			15.8			8.2	
Approach LOS		C			C			B			A	
Queue Length 50th (m)	6.9	7.5		18.4	2.7			88.9		3.9	24.9	
Queue Length 95th (m)	15.8	20.9		34.3	13.3			131.8		9.4	38.0	
Internal Link Dist (m)		358.8			156.7			1406.1			278.4	
Turn Bay Length (m)	105.0			45.0						35.0		
Base Capacity (vph)	317	458		283	376			1064		307	1021	
Starvation Cap Reductn	0	0		0	0			0		0	0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0			0		0	0	
Storage Cap Reductn	0	0		0	0			0		0	0	
Reduced v/c Ratio	0.14	0.24		0.38	0.18			0.74		0.18	0.32	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 15.6

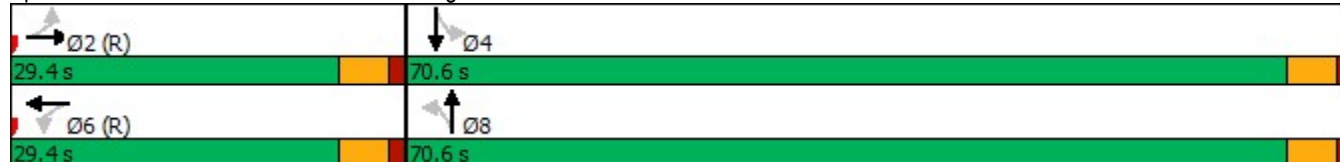
Intersection LOS: B

Intersection Capacity Utilization 78.3%

ICU Level of Service D

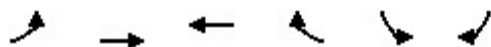
Analysis Period (min) 15

Splits and Phases: 13: Clair Rd W & Southgate Dr



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

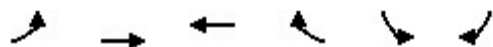
11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	137	19	0	89	47
Future Volume (vph)	0	137	19	0	89	47
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						51
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	149	21	0	97	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	149	21	0	97	51
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		52.1	52.1		10.5	10.5
Actuated g/C Ratio		0.76	0.76		0.15	0.15
v/c Ratio		0.06	0.01		0.36	0.18
Control Delay		3.2	3.3		30.1	10.0
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		3.2	3.3		30.1	10.0
LOS		A	A		C	A
Approach Delay		3.2	3.3		23.2	
Approach LOS		A	A		C	
Queue Length 50th (m)		2.5	0.3		11.9	0.0
Queue Length 95th (m)		5.3	1.3		24.9	8.6
Internal Link Dist (m)		165.1	215.9		105.0	
Turn Bay Length (m)						
Base Capacity (vph)		2689	2689		826	766
Starvation Cap Reductn		0	0		0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.06	0.01		0.12	0.07

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 68.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.36

Intersection Signal Delay: 12.5

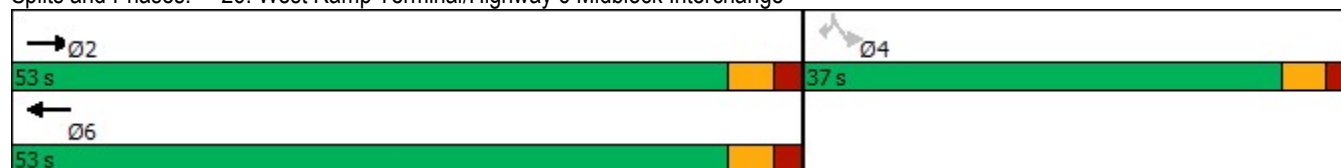
Intersection LOS: B

Intersection Capacity Utilization 33.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



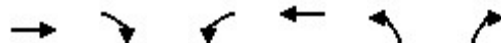
NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	163	0	0	211	19	101
Future Volume (vph)	163	0	0	211	19	101
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						110
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	177	0	0	229	21	110
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	0	0	229	21	110
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	58.0			58.0	10.0	10.0
Actuated g/C Ratio	0.78			0.78	0.14	0.14
v/c Ratio	0.06			0.08	0.09	0.36
Control Delay	2.7			2.7	29.2	10.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	2.7			2.7	29.2	10.2
LOS	A			A	C	B
Approach Delay	2.7			2.7	13.2	
Approach LOS	A			A	B	
Queue Length 50th (m)	3.0			4.0	2.8	0.0
Queue Length 95th (m)	5.3			6.6	9.0	13.4
Internal Link Dist (m)	215.9			173.1	112.4	
Turn Bay Length (m)						
Base Capacity (vph)	2773			2773	621	627
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.06			0.08	0.03	0.18

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 74

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.36

Intersection Signal Delay: 5.3

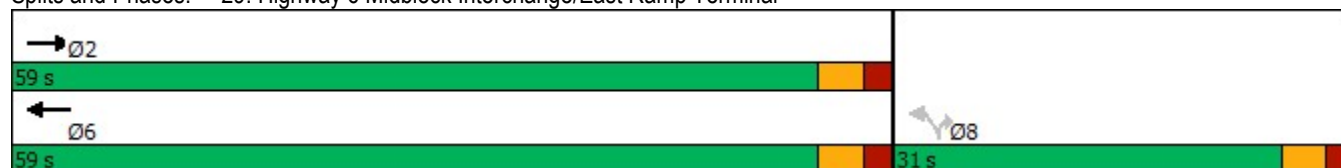
Intersection LOS: A

Intersection Capacity Utilization 33.3%

ICU Level of Service A

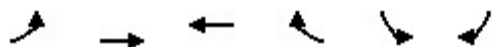
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: Highway 6 Midblock Interchange & West Ramp Terminal

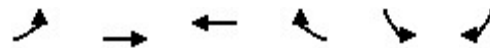
11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	78	14	0	91	74
Future Volume (vph)	0	78	14	0	91	74
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						80
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	85	15	0	99	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	85	15	0	99	80
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		52.0	52.0		10.5	10.5
Actuated g/C Ratio		0.76	0.76		0.15	0.15
v/c Ratio		0.03	0.01		0.37	0.26
Control Delay		3.3	3.3		30.2	9.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		3.3	3.3		30.2	9.3
LOS		A	A		C	A
Approach Delay		3.3	3.3		20.9	
Approach LOS		A	A		C	
Queue Length 50th (m)		1.4	0.3		12.2	0.0
Queue Length 95th (m)		3.5	1.0		25.2	10.6
Internal Link Dist (m)		202.8	182.8		89.4	
Turn Bay Length (m)						
Base Capacity (vph)		2688	2688		826	782
Starvation Cap Reductn		0	0		0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: Highway 6 Midblock Interchange & West Ramp Terminal

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.03	0.01		0.12	0.10

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 68.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 14.6

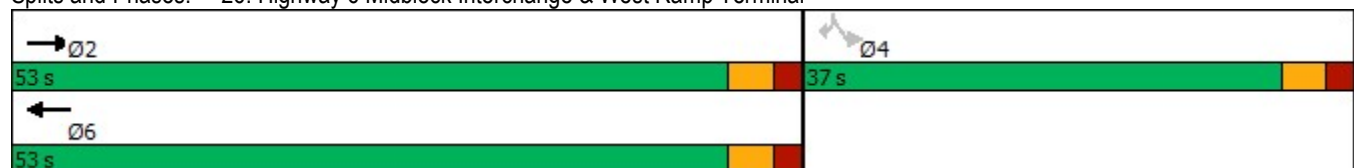
Intersection LOS: B

Intersection Capacity Utilization 38.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: Highway 6 Midblock Interchange & West Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: East Ramp Terminal & Highway 6 Midblock Interchange

11-08-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	129	0	0	210	14	213
Future Volume (vph)	129	0	0	210	14	213
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						232
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	140	0	0	228	15	232
Shared Lane Traffic (%)						
Lane Group Flow (vph)	140	0	0	228	15	232
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.0			54.0	10.4	10.4
Actuated g/C Ratio	0.73			0.73	0.14	0.14
v/c Ratio	0.05			0.09	0.06	0.55
Control Delay	3.1			3.2	28.3	10.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.1			3.2	28.3	10.0
LOS	A			A	C	A
Approach Delay	3.1			3.2	11.1	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.4			4.0	2.0	0.0
Queue Length 95th (m)	5.0			7.5	7.0	18.6
Internal Link Dist (m)	182.8			134.5	129.1	
Turn Bay Length (m)						
Base Capacity (vph)	2568			2568	618	703
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: East Ramp Terminal & Highway 6 Midblock Interchange

11-08-2022

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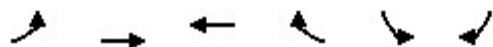
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.05			0.09	0.02	0.33
Intersection Summary						
Cycle Length: 90						
Actuated Cycle Length: 74.4						
Natural Cycle: 50						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.55						
Intersection Signal Delay: 6.3				Intersection LOS: A		
Intersection Capacity Utilization 38.2%				ICU Level of Service A		
Analysis Period (min) 15						

Splits and Phases: 29: East Ramp Terminal & Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

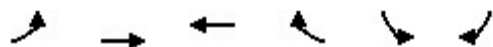
11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	436	63	0	120	270
Future Volume (vph)	0	436	63	0	120	270
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						293
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	474	68	0	130	293
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	474	68	0	130	293
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		48.0	48.0		11.2	11.2
Actuated g/C Ratio		0.69	0.69		0.16	0.16
v/c Ratio		0.19	0.03		0.45	0.58
Control Delay		4.1	3.7		31.7	8.9
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.1	3.7		31.7	8.9
LOS		A	A		C	A
Approach Delay		4.1	3.7		15.9	
Approach LOS		A	A		B	
Queue Length 50th (m)		9.1	1.1		16.2	0.0
Queue Length 95th (m)		17.0	3.2		31.6	19.2
Internal Link Dist (m)		165.1	215.9		105.0	
Turn Bay Length (m)						
Base Capacity (vph)		2455	2455		818	889
Starvation Cap Reductn		0	0		0	0

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 26: West Ramp Terminal/Highway 6 Midblock Interchange

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.19	0.03		0.16	0.33

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.2

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 9.3

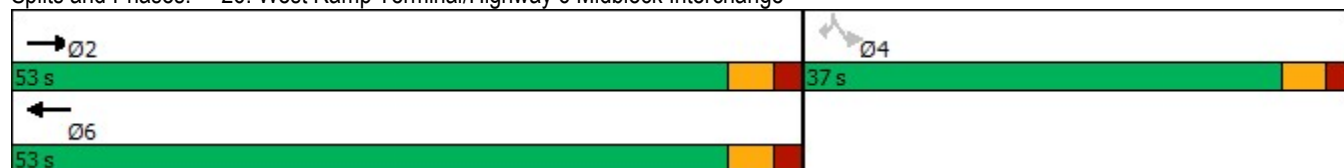
Intersection LOS: A

Intersection Capacity Utilization 50.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



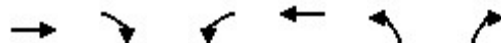
NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	151	0	0	595	12	413
Future Volume (vph)	151	0	0	595	12	413
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						449
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	164	0	0	647	13	449
Shared Lane Traffic (%)						
Lane Group Flow (vph)	164	0	0	647	13	449
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.1			54.1	11.4	11.4
Actuated g/C Ratio	0.72			0.72	0.15	0.15
v/c Ratio	0.06			0.26	0.05	0.72
Control Delay	3.6			4.3	27.2	10.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.6			4.3	27.2	10.7
LOS	A			A	C	B
Approach Delay	3.6			4.3	11.1	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.7			13.0	1.7	0.0
Queue Length 95th (m)	7.3			27.2	6.2	24.8
Internal Link Dist (m)	215.9			173.1	112.4	
Turn Bay Length (m)						
Base Capacity (vph)	2536			2536	610	840
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.06			0.26	0.02	0.53

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 6.7

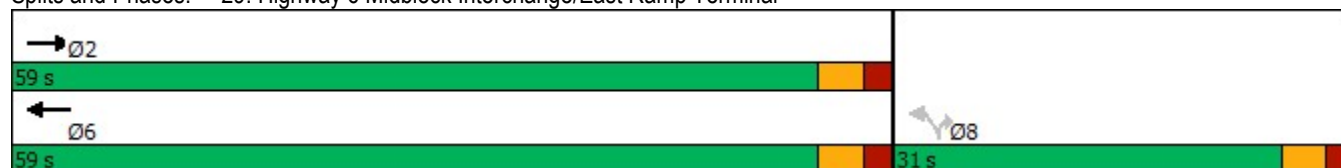
Intersection LOS: A

Intersection Capacity Utilization 50.6%

ICU Level of Service A

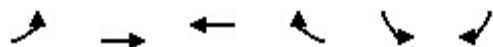
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	359	44	0	129	242
Future Volume (vph)	0	359	44	0	129	242
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						263
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	390	48	0	140	263
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	390	48	0	140	263
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		48.0	48.0		11.5	11.5
Actuated g/C Ratio		0.69	0.69		0.17	0.17
v/c Ratio		0.16	0.02		0.48	0.55
Control Delay		4.1	3.8		32.1	8.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.1	3.8		32.1	8.5
LOS		A	A		C	A
Approach Delay		4.1	3.8		16.7	
Approach LOS		A	A		B	
Queue Length 50th (m)		7.5	0.8		17.6	0.0
Queue Length 95th (m)		14.5	2.6		33.4	18.2
Internal Link Dist (m)		202.8	182.8		89.4	
Turn Bay Length (m)						
Base Capacity (vph)		2444	2444		814	870
Starvation Cap Reductn		0	0		0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.16	0.02		0.17	0.30

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 10.1

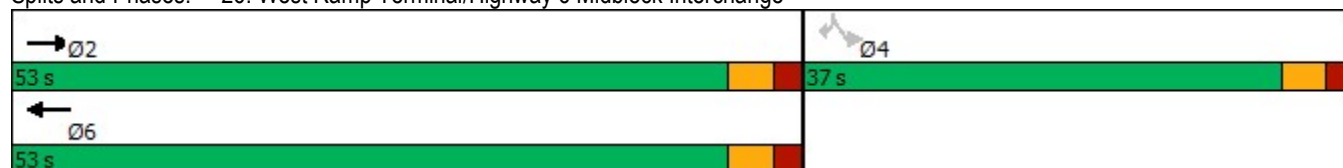
Intersection LOS: B

Intersection Capacity Utilization 46.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	147	0	0	487	24	343
Future Volume (vph)	147	0	0	487	24	343
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						373
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	160	0	0	529	26	373
Shared Lane Traffic (%)						
Lane Group Flow (vph)	160	0	0	529	26	373
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.1			54.1	11.0	11.0
Actuated g/C Ratio	0.72			0.72	0.15	0.15
v/c Ratio	0.06			0.21	0.10	0.68
Control Delay	3.4			3.9	28.3	10.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.4			3.9	28.3	10.4
LOS	A			A	C	B
Approach Delay	3.4			3.9	11.6	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.7			10.2	3.4	0.0
Queue Length 95th (m)	6.6			20.0	9.9	22.6
Internal Link Dist (m)	182.8			134.5	129.1	
Turn Bay Length (m)						
Base Capacity (vph)	2547			2547	613	792
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.06			0.21	0.04	0.47

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.1

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 6.6

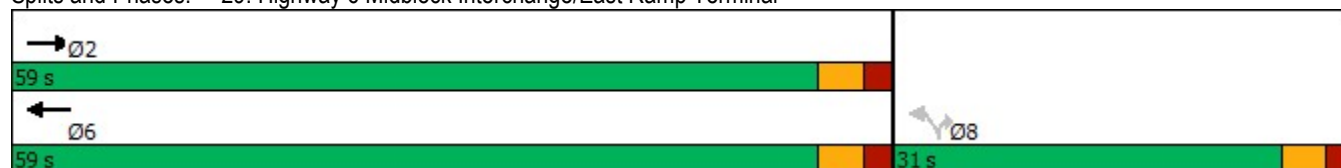
Intersection LOS: A

Intersection Capacity Utilization 46.2%

ICU Level of Service A

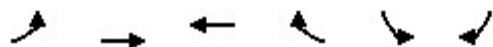
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	444	60	0	118	279
Future Volume (vph)	0	444	60	0	118	279
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						303
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	483	65	0	128	303
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	483	65	0	128	303
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		48.0	48.0		11.2	11.2
Actuated g/C Ratio		0.69	0.69		0.16	0.16
v/c Ratio		0.20	0.03		0.45	0.60
Control Delay		4.1	3.6		31.6	9.0
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.1	3.6		31.6	9.0
LOS		A	A		C	A
Approach Delay		4.1	3.6		15.7	
Approach LOS		A	A		B	
Queue Length 50th (m)		9.3	1.1		16.0	0.0
Queue Length 95th (m)		17.2	3.1		31.2	19.5
Internal Link Dist (m)		165.1	215.9		96.9	
Turn Bay Length (m)						
Base Capacity (vph)		2456	2456		818	895
Starvation Cap Reductn		0	0		0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.20	0.03		0.16	0.34

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.2

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 9.2

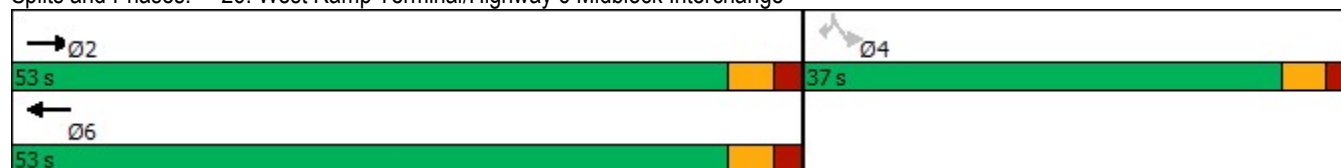
Intersection LOS: A

Intersection Capacity Utilization 51.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	137	0	0	606	14	426
Future Volume (vph)	137	0	0	606	14	426
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						463
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	149	0	0	659	15	463
Shared Lane Traffic (%)						
Lane Group Flow (vph)	149	0	0	659	15	463
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.1			54.1	11.4	11.4
Actuated g/C Ratio	0.72			0.72	0.15	0.15
v/c Ratio	0.06			0.26	0.06	0.73
Control Delay	3.6			4.3	27.2	10.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.6			4.3	27.2	10.7
LOS	A			A	C	B
Approach Delay	3.6			4.3	11.3	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.5			13.3	2.0	0.0
Queue Length 95th (m)	6.9			28.1	6.8	25.1
Internal Link Dist (m)	215.9			173.1	96.4	
Turn Bay Length (m)						
Base Capacity (vph)	2533			2533	609	849
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.06			0.26	0.02	0.55

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 6.8

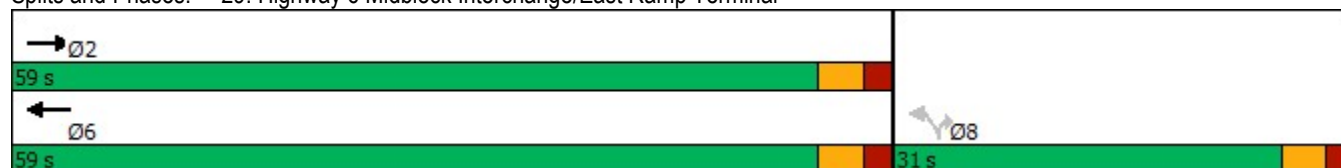
Intersection LOS: A

Intersection Capacity Utilization 51.4%

ICU Level of Service A

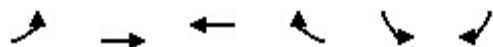
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

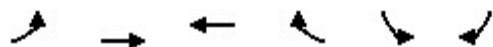
11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	372	41	0	132	254
Future Volume (vph)	0	372	41	0	132	254
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						276
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	404	45	0	143	276
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	404	45	0	143	276
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		48.0	48.0		11.6	11.6
Actuated g/C Ratio		0.69	0.69		0.17	0.17
v/c Ratio		0.17	0.02		0.49	0.56
Control Delay		4.2	3.8		32.2	8.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.2	3.8		32.2	8.5
LOS		A	A		C	A
Approach Delay		4.2	3.8		16.6	
Approach LOS		A	A		B	
Queue Length 50th (m)		7.9	0.7		18.0	0.0
Queue Length 95th (m)		15.1	2.5		34.1	18.5
Internal Link Dist (m)		202.8	182.8		89.4	
Turn Bay Length (m)						
Base Capacity (vph)		2441	2441		813	877
Starvation Cap Reductn		0	0		0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.17	0.02		0.18	0.31

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.6

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 10.2

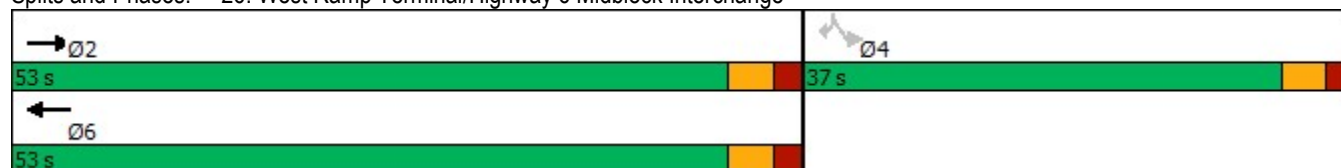
Intersection LOS: B

Intersection Capacity Utilization 47.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	149	0	0	492	26	357
Future Volume (vph)	149	0	0	492	26	357
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						388
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	162	0	0	535	28	388
Shared Lane Traffic (%)						
Lane Group Flow (vph)	162	0	0	535	28	388
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.0			54.0	11.1	11.1
Actuated g/C Ratio	0.72			0.72	0.15	0.15
v/c Ratio	0.06			0.21	0.11	0.69
Control Delay	3.4			3.9	28.4	10.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.4			3.9	28.4	10.5
LOS	A			A	C	B
Approach Delay	3.4			3.9	11.7	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.7			10.3	3.7	0.0
Queue Length 95th (m)	6.8			20.5	10.5	23.0
Internal Link Dist (m)	182.8			134.5	129.1	
Turn Bay Length (m)						
Base Capacity (vph)	2545			2545	612	801
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.06			0.21	0.05	0.48

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.1

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 6.7

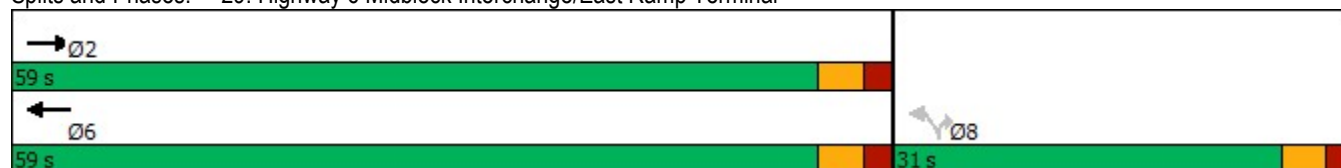
Intersection LOS: A

Intersection Capacity Utilization 47.1%

ICU Level of Service A

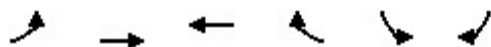
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	451	57	0	115	287
Future Volume (vph)	0	451	57	0	115	287
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						312
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	490	62	0	125	312
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	490	62	0	125	312
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		48.0	48.0		11.1	11.1
Actuated g/C Ratio		0.69	0.69		0.16	0.16
v/c Ratio		0.20	0.03		0.44	0.61
Control Delay		4.1	3.6		31.5	9.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.1	3.6		31.5	9.1
LOS		A	A		C	A
Approach Delay		4.1	3.6		15.5	
Approach LOS		A	A		B	
Queue Length 50th (m)		9.3	1.0		15.6	0.0
Queue Length 95th (m)		17.4	3.0		30.6	19.7
Internal Link Dist (m)		165.1	215.9		96.9	
Turn Bay Length (m)						
Base Capacity (vph)		2460	2460		819	901
Starvation Cap Reductn		0	0		0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.20	0.03		0.15	0.35

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.1

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 9.1

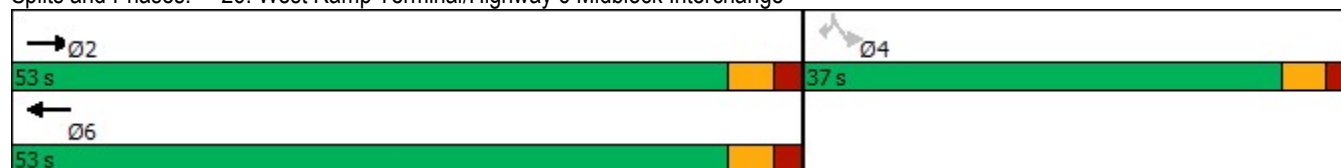
Intersection LOS: A

Intersection Capacity Utilization 52.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	122	0	0	617	15	438
Future Volume (vph)	122	0	0	617	15	438
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						476
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	133	0	0	671	16	476
Shared Lane Traffic (%)						
Lane Group Flow (vph)	133	0	0	671	16	476
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.1			54.1	11.5	11.5
Actuated g/C Ratio	0.72			0.72	0.15	0.15
v/c Ratio	0.05			0.27	0.06	0.74
Control Delay	3.7			4.4	27.3	10.8
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.7			4.4	27.3	10.8
LOS	A			A	C	B
Approach Delay	3.7			4.4	11.3	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.2			13.5	2.1	0.0
Queue Length 95th (m)	6.4			29.2	7.2	25.7
Internal Link Dist (m)	215.9			173.1	96.4	
Turn Bay Length (m)						
Base Capacity (vph)	2530			2530	609	856
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.05			0.27	0.03	0.56

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.6

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 6.9

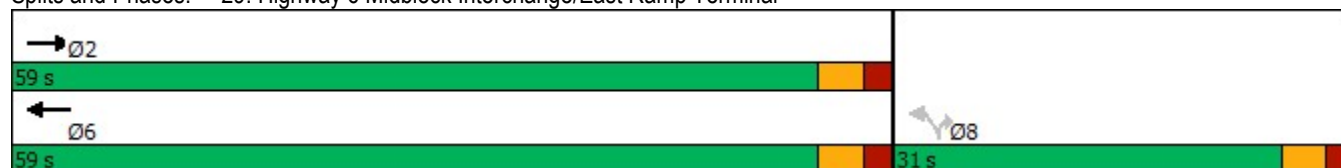
Intersection LOS: A

Intersection Capacity Utilization 52.1%

ICU Level of Service A

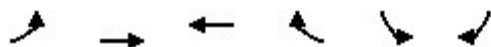
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↘
Traffic Volume (vph)	0	385	38	0	134	265
Future Volume (vph)	0	385	38	0	134	265
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						288
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	418	41	0	146	288
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	418	41	0	146	288
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		48.0	48.0		11.7	11.7
Actuated g/C Ratio		0.69	0.69		0.17	0.17
v/c Ratio		0.17	0.02		0.49	0.57
Control Delay		4.2	3.9		32.4	8.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.2	3.9		32.4	8.5
LOS		A	A		C	A
Approach Delay		4.2	3.9		16.6	
Approach LOS		A	A		B	
Queue Length 50th (m)		8.2	0.7		18.4	0.0
Queue Length 95th (m)		15.7	2.4		34.8	18.9
Internal Link Dist (m)		202.8	182.8		89.4	
Turn Bay Length (m)						
Base Capacity (vph)		2438	2438		812	882
Starvation Cap Reductn		0	0		0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

11-08-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.17	0.02		0.18	0.33

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.7

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 10.2

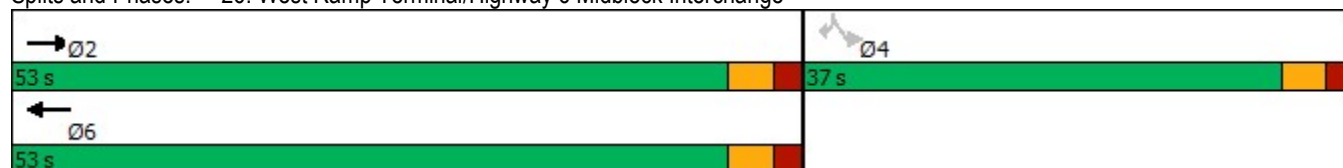
Intersection LOS: B

Intersection Capacity Utilization 48.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



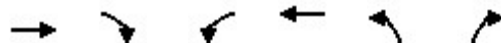
NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	150	0	0	496	27	371
Future Volume (vph)	150	0	0	496	27	371
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						403
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	163	0	0	539	29	403
Shared Lane Traffic (%)						
Lane Group Flow (vph)	163	0	0	539	29	403
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.0			54.0	11.2	11.2
Actuated g/C Ratio	0.72			0.72	0.15	0.15
v/c Ratio	0.06			0.21	0.11	0.70
Control Delay	3.5			3.9	28.4	10.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.5			3.9	28.4	10.5
LOS	A			A	C	B
Approach Delay	3.5			3.9	11.7	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.7			10.4	3.8	0.0
Queue Length 95th (m)	7.0			21.1	10.7	23.6
Internal Link Dist (m)	182.8			134.5	129.1	
Turn Bay Length (m)						
Base Capacity (vph)	2543			2543	612	811
Starvation Cap Reductn	0			0	0	0

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

11-08-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.06			0.21	0.05	0.50

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.2

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 6.8

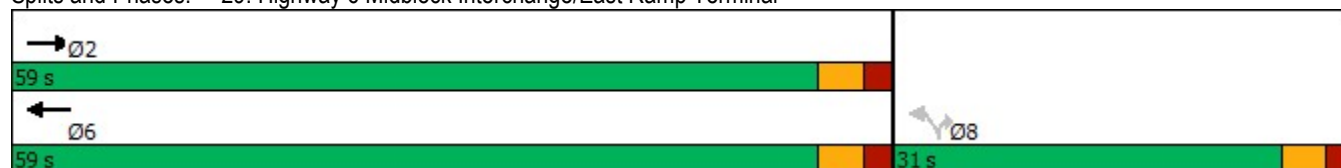
Intersection LOS: A

Intersection Capacity Utilization 48.0%

ICU Level of Service A

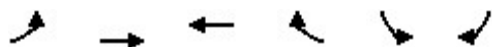
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022



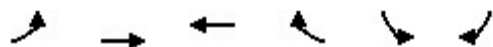
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	137	19	0	89	47
Future Volume (vph)	0	137	19	0	89	47
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						51
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	149	21	0	97	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	149	21	0	97	51
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		52.1	52.1		10.5	10.5
Actuated g/C Ratio		0.76	0.76		0.15	0.15
v/c Ratio		0.06	0.01		0.36	0.18
Control Delay		3.2	3.3		30.1	10.0
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		3.2	3.3		30.1	10.0
LOS		A	A		C	A
Approach Delay		3.2	3.3		23.2	
Approach LOS		A	A		C	
Queue Length 50th (m)		2.5	0.3		11.9	0.0
Queue Length 95th (m)		5.3	1.3		24.9	8.6
Internal Link Dist (m)		165.1	215.9		105.0	
Turn Bay Length (m)						
Base Capacity (vph)		2689	2689		826	766
Starvation Cap Reductn		0	0		0	0

Total 2024 AM (with new Highway 6 Midblock Interchange)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.06	0.01		0.12	0.07

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 68.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.36

Intersection Signal Delay: 12.5

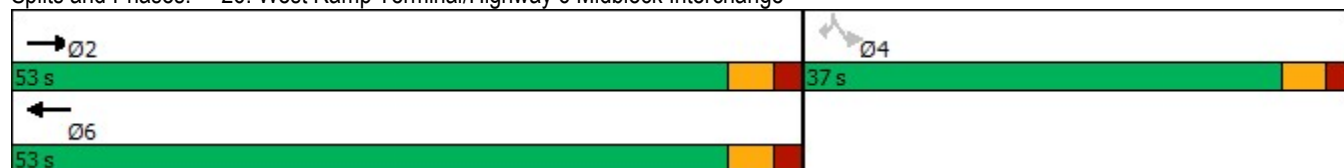
Intersection LOS: B

Intersection Capacity Utilization 33.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022

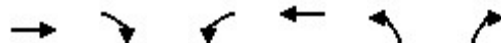
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	163	0	0	219	19	105
Future Volume (vph)	163	0	0	219	19	105
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						114
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	177	0	0	238	21	114
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	0	0	238	21	114
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	58.0			58.0	10.0	10.0
Actuated g/C Ratio	0.78			0.78	0.14	0.14
v/c Ratio	0.06			0.09	0.09	0.37
Control Delay	2.7			2.8	29.2	10.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	2.7			2.8	29.2	10.2
LOS	A			A	C	B
Approach Delay	2.7			2.8	13.1	
Approach LOS	A			A	B	
Queue Length 50th (m)	3.0			4.2	2.8	0.0
Queue Length 95th (m)	5.3			6.8	9.0	13.6
Internal Link Dist (m)	215.9			173.1	112.4	
Turn Bay Length (m)						
Base Capacity (vph)	2773			2773	621	630
Starvation Cap Reductn	0			0	0	0

Total 2024 AM (with new Highway 6 Midblock Interchange)

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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.06			0.09	0.03	0.18

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 74

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 5.3

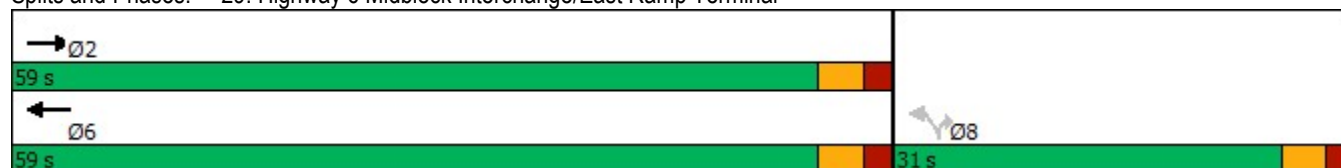
Intersection LOS: A

Intersection Capacity Utilization 33.3%

ICU Level of Service A

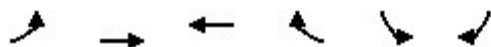
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: Highway 6 Midblock Interchange & West Ramp Terminal

11-09-2022



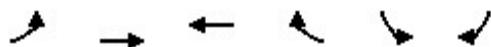
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	78	14	0	91	74
Future Volume (vph)	0	78	14	0	91	74
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						80
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	85	15	0	99	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	85	15	0	99	80
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		52.0	52.0		10.5	10.5
Actuated g/C Ratio		0.76	0.76		0.15	0.15
v/c Ratio		0.03	0.01		0.37	0.26
Control Delay		3.3	3.3		30.2	9.3
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		3.3	3.3		30.2	9.3
LOS		A	A		C	A
Approach Delay		3.3	3.3		20.9	
Approach LOS		A	A		C	
Queue Length 50th (m)		1.4	0.3		12.2	0.0
Queue Length 95th (m)		3.5	1.0		25.2	10.6
Internal Link Dist (m)		202.8	182.8		89.4	
Turn Bay Length (m)						
Base Capacity (vph)		2688	2688		826	782
Starvation Cap Reductn		0	0		0	0

Total 2024 PM (with new Highway 6 Midblock Interchange)

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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: Highway 6 Midblock Interchange & West Ramp Terminal

11-09-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.03	0.01		0.12	0.10

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 68.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 14.6

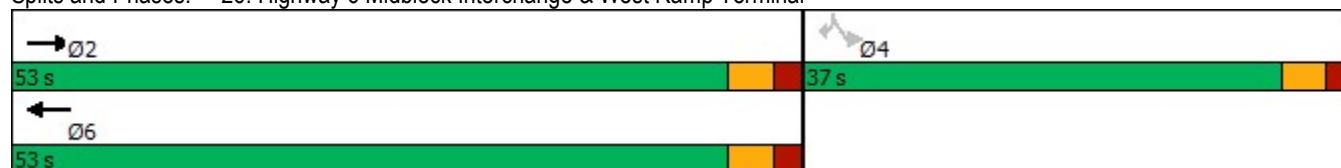
Intersection LOS: B

Intersection Capacity Utilization 38.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: Highway 6 Midblock Interchange & West Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: East Ramp Terminal & Highway 6 Midblock Interchange

11-09-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	↲
Traffic Volume (vph)	129	0	0	218	14	217
Future Volume (vph)	129	0	0	218	14	217
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						236
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	140	0	0	237	15	236
Shared Lane Traffic (%)						
Lane Group Flow (vph)	140	0	0	237	15	236
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.0			54.0	10.5	10.5
Actuated g/C Ratio	0.72			0.72	0.14	0.14
v/c Ratio	0.05			0.09	0.06	0.56
Control Delay	3.1			3.2	28.3	9.9
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.1			3.2	28.3	9.9
LOS	A			A	C	A
Approach Delay	3.1			3.2	11.0	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.4			4.1	2.0	0.0
Queue Length 95th (m)	5.1			7.8	7.0	18.7
Internal Link Dist (m)	182.8			134.5	129.1	
Turn Bay Length (m)						
Base Capacity (vph)	2566			2566	617	706
Starvation Cap Reductn	0			0	0	0

Total 2024 PM (with new Highway 6 Midblock Interchange)

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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: East Ramp Terminal & Highway 6 Midblock Interchange

11-09-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.05			0.09	0.02	0.33

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 74.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 6.3

Intersection LOS: A

Intersection Capacity Utilization 38.4%

ICU Level of Service A

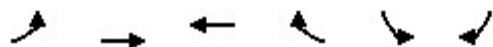
Analysis Period (min) 15

Splits and Phases: 29: East Ramp Terminal & Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	436	63	0	120	270
Future Volume (vph)	0	436	63	0	120	270
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						293
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	474	68	0	130	293
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	474	68	0	130	293
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		48.0	48.0		11.2	11.2
Actuated g/C Ratio		0.69	0.69		0.16	0.16
v/c Ratio		0.19	0.03		0.45	0.58
Control Delay		4.1	3.7		31.7	8.9
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.1	3.7		31.7	8.9
LOS		A	A		C	A
Approach Delay		4.1	3.7		15.9	
Approach LOS		A	A		B	
Queue Length 50th (m)		9.1	1.1		16.2	0.0
Queue Length 95th (m)		17.0	3.2		31.6	19.2
Internal Link Dist (m)		165.1	215.9		105.0	
Turn Bay Length (m)						
Base Capacity (vph)		2455	2455		818	889
Starvation Cap Reductn		0	0		0	0

Total 2029 AM (with new Highway 6 Midblock Interchange)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.19	0.03		0.16	0.33

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.2

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 9.3

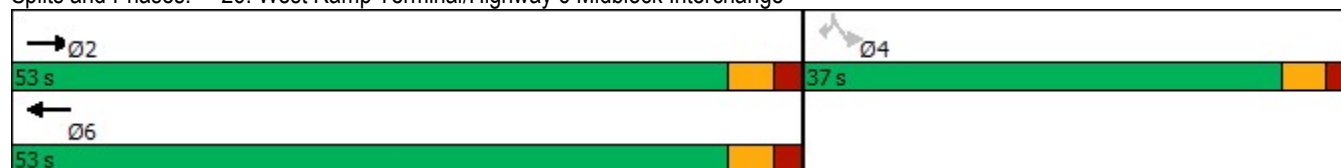
Intersection LOS: A

Intersection Capacity Utilization 51.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	↲
Traffic Volume (vph)	151	0	0	621	12	428
Future Volume (vph)	151	0	0	621	12	428
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						465
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	164	0	0	675	13	465
Shared Lane Traffic (%)						
Lane Group Flow (vph)	164	0	0	675	13	465
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.1			54.1	11.5	11.5
Actuated g/C Ratio	0.72			0.72	0.15	0.15
v/c Ratio	0.06			0.27	0.05	0.73
Control Delay	3.6			4.4	27.1	10.7
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.6			4.4	27.1	10.7
LOS	A			A	C	B
Approach Delay	3.6			4.4	11.2	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.7			13.6	1.7	0.0
Queue Length 95th (m)	7.5			29.1	6.2	25.1
Internal Link Dist (m)	215.9			173.1	112.4	
Turn Bay Length (m)						
Base Capacity (vph)	2533			2533	609	850
Starvation Cap Reductn	0			0	0	0

Total 2029 AM (with new Highway 6 Midblock Interchange)

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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.06			0.27	0.02	0.55

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.6

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 6.7

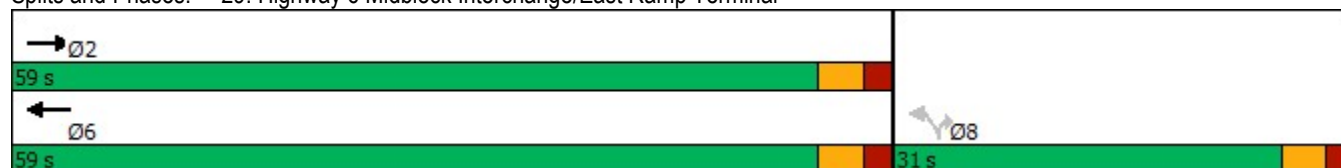
Intersection LOS: A

Intersection Capacity Utilization 51.5%

ICU Level of Service A

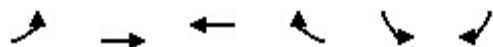
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	359	44	0	129	242
Future Volume (vph)	0	359	44	0	129	242
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						263
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	390	48	0	140	263
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	390	48	0	140	263
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		48.0	48.0		11.5	11.5
Actuated g/C Ratio		0.69	0.69		0.17	0.17
v/c Ratio		0.16	0.02		0.48	0.55
Control Delay		4.1	3.8		32.1	8.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.1	3.8		32.1	8.5
LOS		A	A		C	A
Approach Delay		4.1	3.8		16.7	
Approach LOS		A	A		B	
Queue Length 50th (m)		7.5	0.8		17.6	0.0
Queue Length 95th (m)		14.5	2.6		33.4	18.2
Internal Link Dist (m)		202.8	182.8		89.4	
Turn Bay Length (m)						
Base Capacity (vph)		2444	2444		814	870
Starvation Cap Reductn		0	0		0	0

Total 2029 PM (with new Highway 6 Midblock Interchange)

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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.16	0.02		0.17	0.30

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 10.1

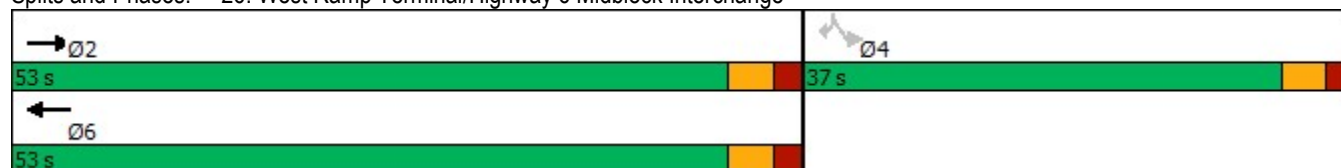
Intersection LOS: B

Intersection Capacity Utilization 47.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022

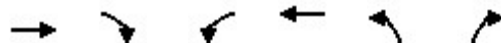
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	147	0	0	513	24	358
Future Volume (vph)	147	0	0	513	24	358
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						389
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	160	0	0	558	26	389
Shared Lane Traffic (%)						
Lane Group Flow (vph)	160	0	0	558	26	389
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.0			54.0	11.1	11.1
Actuated g/C Ratio	0.72			0.72	0.15	0.15
v/c Ratio	0.06			0.22	0.10	0.69
Control Delay	3.4			3.9	28.3	10.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.4			3.9	28.3	10.4
LOS	A			A	C	B
Approach Delay	3.4			3.9	11.6	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.7			10.8	3.4	0.0
Queue Length 95th (m)	6.7			21.5	9.9	23.0
Internal Link Dist (m)	182.8			134.5	129.1	
Turn Bay Length (m)						
Base Capacity (vph)	2545			2545	612	802
Starvation Cap Reductn	0			0	0	0

Total 2029 PM (with new Highway 6 Midblock Interchange)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

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Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.06			0.22	0.04	0.49

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.1

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 6.7

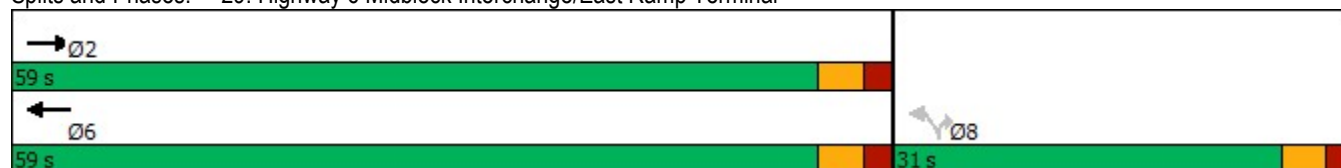
Intersection LOS: A

Intersection Capacity Utilization 47.2%

ICU Level of Service A

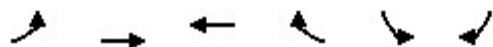
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022



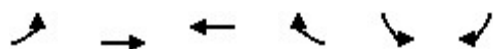
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	444	60	0	118	279
Future Volume (vph)	0	444	60	0	118	279
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						303
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	483	65	0	128	303
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	483	65	0	128	303
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Maximum Green (s)		48.0	48.0		32.0	32.0
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Minimum Gap (s)		3.0	3.0		3.0	3.0
Time Before Reduce (s)		0.0	0.0		0.0	0.0
Time To Reduce (s)		0.0	0.0		0.0	0.0
Recall Mode		None	Max		None	None
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
Act Effct Green (s)		48.0	48.0		11.2	11.2
Actuated g/C Ratio		0.69	0.69		0.16	0.16
v/c Ratio		0.20	0.03		0.45	0.60
Control Delay		4.1	3.6		31.6	9.0
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.1	3.6		31.6	9.0
LOS		A	A		C	A

Total 2034 AM (with new Highway 6 Midblock Interchange)

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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		4.1	3.6		15.7	
Approach LOS		A	A		B	
Queue Length 50th (m)		9.3	1.1		16.0	0.0
Queue Length 95th (m)		17.2	3.1		31.2	19.5
Internal Link Dist (m)		165.1	215.9		96.9	
Turn Bay Length (m)						
Base Capacity (vph)		2456	2456		818	895
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.20	0.03		0.16	0.34

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.2

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 9.2

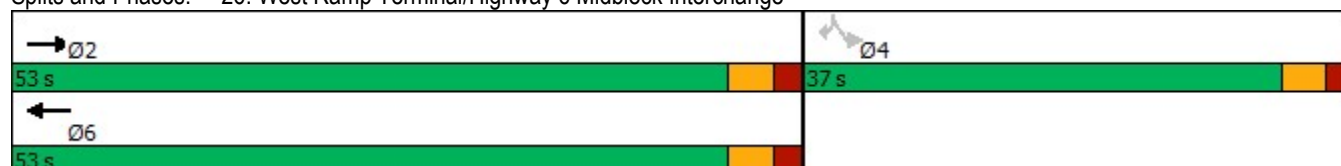
Intersection LOS: A

Intersection Capacity Utilization 53.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↵	↵
Traffic Volume (vph)	137	0	0	632	14	456
Future Volume (vph)	137	0	0	632	14	456
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						496
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	149	0	0	687	15	496
Shared Lane Traffic (%)						
Lane Group Flow (vph)	149	0	0	687	15	496
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Maximum Green (s)	54.0			54.0	26.0	26.0
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Minimum Gap (s)	3.0			3.0	3.0	3.0
Time Before Reduce (s)	0.0			0.0	0.0	0.0
Time To Reduce (s)	0.0			0.0	0.0	0.0
Recall Mode	Max			Max	None	None
Walk Time (s)						
Flash Dont Walk (s)						
Pedestrian Calls (#/hr)						
Act Effct Green (s)	54.1			54.1	11.7	11.7
Actuated g/C Ratio	0.71			0.71	0.15	0.15
v/c Ratio	0.06			0.27	0.06	0.75
Control Delay	3.7			4.5	27.0	10.8
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.7			4.5	27.0	10.8
LOS	A			A	C	B

Total 2034 AM (with new Highway 6 Midblock Interchange)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Approach Delay	3.7			4.5	11.3	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.5			14.0	2.0	0.0
Queue Length 95th (m)	7.2			30.9	6.8	25.9
Internal Link Dist (m)	215.9			173.1	96.4	
Turn Bay Length (m)						
Base Capacity (vph)	2526			2526	608	869
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.06			0.27	0.02	0.57

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.8

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 7.0

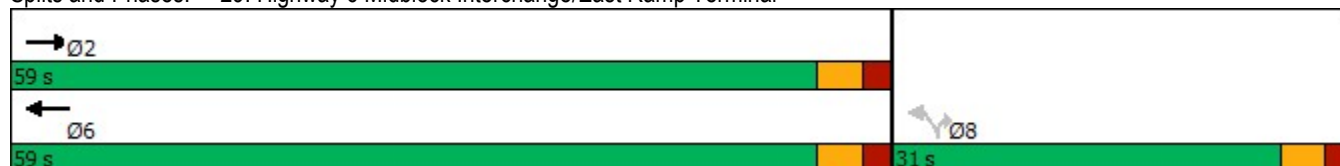
Intersection LOS: A

Intersection Capacity Utilization 53.2%

ICU Level of Service A

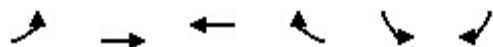
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	372	41	0	132	254
Future Volume (vph)	0	372	41	0	132	254
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						276
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	404	45	0	143	276
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	404	45	0	143	276
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		48.0	48.0		11.6	11.6
Actuated g/C Ratio		0.69	0.69		0.17	0.17
v/c Ratio		0.17	0.02		0.49	0.56
Control Delay		4.2	3.8		32.2	8.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.2	3.8		32.2	8.5
LOS		A	A		C	A
Approach Delay		4.2	3.8		16.6	
Approach LOS		A	A		B	
Queue Length 50th (m)		7.9	0.7		18.0	0.0
Queue Length 95th (m)		15.1	2.5		34.1	18.5
Internal Link Dist (m)		202.8	182.8		89.4	
Turn Bay Length (m)						
Base Capacity (vph)		2441	2441		813	877
Starvation Cap Reductn		0	0		0	0

Total 2034 PM (with new Highway 6 Midblock Interchange)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.17	0.02		0.18	0.31

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.6

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 10.2

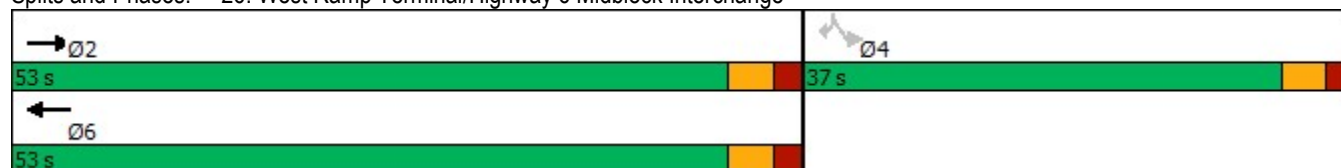
Intersection LOS: B

Intersection Capacity Utilization 49.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↙
Traffic Volume (vph)	149	0	0	518	26	387
Future Volume (vph)	149	0	0	518	26	387
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						421
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	162	0	0	563	28	421
Shared Lane Traffic (%)						
Lane Group Flow (vph)	162	0	0	563	28	421
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.1			54.1	11.2	11.2
Actuated g/C Ratio	0.72			0.72	0.15	0.15
v/c Ratio	0.06			0.22	0.11	0.71
Control Delay	3.5			4.0	28.2	10.6
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.5			4.0	28.2	10.6
LOS	A			A	C	B
Approach Delay	3.5			4.0	11.7	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.7			11.0	3.7	0.0
Queue Length 95th (m)	7.1			22.5	10.4	24.0
Internal Link Dist (m)	182.8			134.5	129.1	
Turn Bay Length (m)						
Base Capacity (vph)	2540			2540	611	822
Starvation Cap Reductn	0			0	0	0

Total 2034 PM (with new Highway 6 Midblock Interchange)

Synchro 11 Report
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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.06			0.22	0.05	0.51

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.3

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 6.9

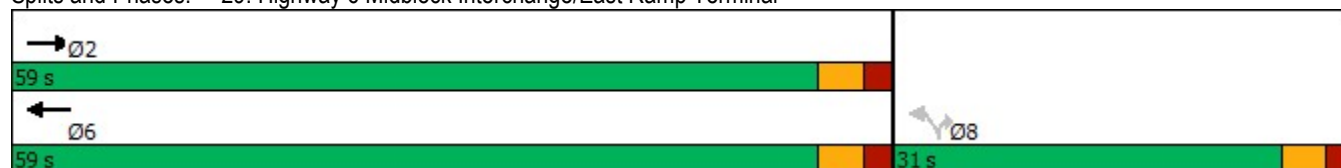
Intersection LOS: A

Intersection Capacity Utilization 49.0%

ICU Level of Service A

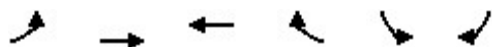
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↘
Traffic Volume (vph)	0	451	57	0	115	287
Future Volume (vph)	0	451	57	0	115	287
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						312
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	490	62	0	125	312
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	490	62	0	125	312
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		48.0	48.0		11.1	11.1
Actuated g/C Ratio		0.69	0.69		0.16	0.16
v/c Ratio		0.20	0.03		0.44	0.61
Control Delay		4.1	3.6		31.5	9.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.1	3.6		31.5	9.1
LOS		A	A		C	A
Approach Delay		4.1	3.6		15.5	
Approach LOS		A	A		B	
Queue Length 50th (m)		9.3	1.0		15.6	0.0
Queue Length 95th (m)		17.4	3.0		30.6	19.7
Internal Link Dist (m)		165.1	215.9		96.9	
Turn Bay Length (m)						
Base Capacity (vph)		2460	2460		819	901
Starvation Cap Reductn		0	0		0	0

Total 2039 AM (with new Highway 6 Midblock Interchange)

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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.20	0.03		0.15	0.35

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.1

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 9.1

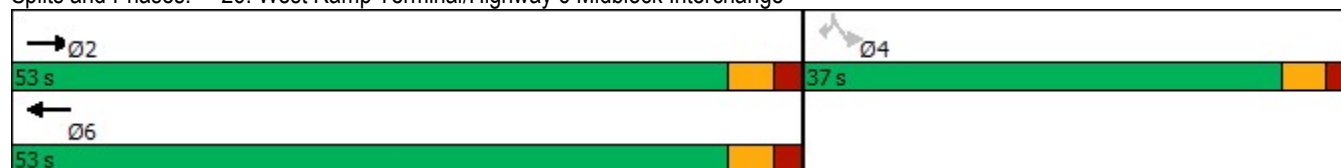
Intersection LOS: A

Intersection Capacity Utilization 53.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↱	↲
Traffic Volume (vph)	122	0	0	643	15	453
Future Volume (vph)	122	0	0	643	15	453
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						492
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	133	0	0	699	16	492
Shared Lane Traffic (%)						
Lane Group Flow (vph)	133	0	0	699	16	492
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.1			54.1	11.7	11.7
Actuated g/C Ratio	0.71			0.71	0.15	0.15
v/c Ratio	0.05			0.28	0.06	0.75
Control Delay	3.7			4.5	27.1	10.8
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.7			4.5	27.1	10.8
LOS	A			A	C	B
Approach Delay	3.7			4.5	11.3	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.2			14.2	2.1	0.0
Queue Length 95th (m)	6.5			31.2	7.0	26.0
Internal Link Dist (m)	215.9			173.1	96.4	
Turn Bay Length (m)						
Base Capacity (vph)	2526			2526	608	867
Starvation Cap Reductn	0			0	0	0

Total 2039 AM (with new Highway 6 Midblock Interchange)

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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.05			0.28	0.03	0.57

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.8

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 7.0

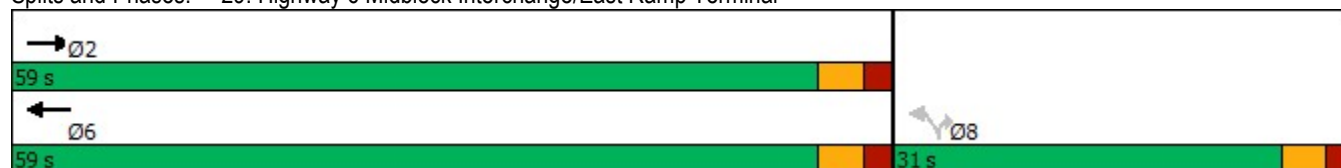
Intersection LOS: A

Intersection Capacity Utilization 53.0%

ICU Level of Service A

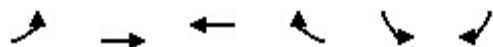
Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



NewCold Toronto Ontario (TO-01) Traffic Impact Study
26: West Ramp Terminal/Highway 6 Midblock Interchange

11-09-2022

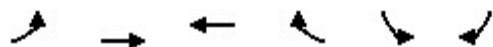


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	385	38	0	134	265
Future Volume (vph)	0	385	38	0	134	265
Satd. Flow (prot)	0	3539	3539	0	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	3539	0	1770	1583
Satd. Flow (RTOR)						288
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	0	418	41	0	146	288
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	418	41	0	146	288
Turn Type		NA	NA		Perm	Perm
Protected Phases		2	6			
Permitted Phases					4	4
Detector Phase		2	6		4	4
Switch Phase						
Minimum Initial (s)		20.0	20.0		10.0	10.0
Minimum Split (s)		25.0	25.0		23.0	23.0
Total Split (s)		53.0	53.0		37.0	37.0
Total Split (%)		58.9%	58.9%		41.1%	41.1%
Yellow Time (s)		3.0	3.0		3.0	3.0
All-Red Time (s)		2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0	5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode		None	Max		None	None
Act Effect Green (s)		48.0	48.0		11.7	11.7
Actuated g/C Ratio		0.69	0.69		0.17	0.17
v/c Ratio		0.17	0.02		0.49	0.57
Control Delay		4.2	3.9		32.4	8.5
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.2	3.9		32.4	8.5
LOS		A	A		C	A
Approach Delay		4.2	3.9		16.6	
Approach LOS		A	A		B	
Queue Length 50th (m)		8.2	0.7		18.4	0.0
Queue Length 95th (m)		15.7	2.4		34.8	18.9
Internal Link Dist (m)		202.8	182.8		89.4	
Turn Bay Length (m)						
Base Capacity (vph)		2438	2438		812	882
Starvation Cap Reductn		0	0		0	0

Total 2039 PM (with new Highway 6 Midblock Interchange)

NewCold Toronto Ontario (TO-01) Traffic Impact Study
 26: West Ramp Terminal/Highway 6 Midblock Interchange

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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.17	0.02		0.18	0.33

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 69.7

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 10.2

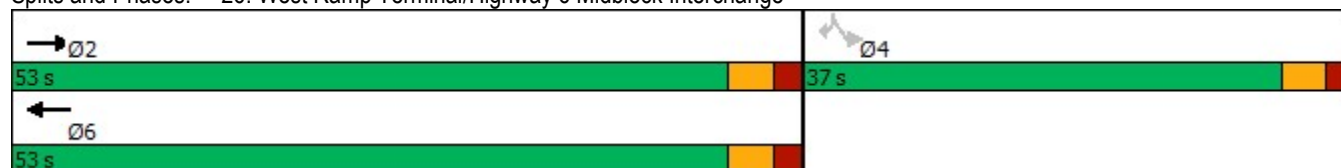
Intersection LOS: B

Intersection Capacity Utilization 48.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 26: West Ramp Terminal/Highway 6 Midblock Interchange



NewCold Toronto Ontario (TO-01) Traffic Impact Study
29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022

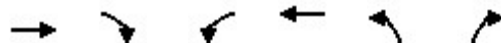
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	↗
Traffic Volume (vph)	150	0	0	522	27	386
Future Volume (vph)	150	0	0	522	27	386
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Satd. Flow (RTOR)						420
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	163	0	0	567	29	420
Shared Lane Traffic (%)						
Lane Group Flow (vph)	163	0	0	567	29	420
Turn Type	NA			NA	Perm	Perm
Protected Phases	2			6		
Permitted Phases					8	8
Detector Phase	2			6	8	8
Switch Phase						
Minimum Initial (s)	20.0			20.0	10.0	10.0
Minimum Split (s)	25.0			25.0	23.0	23.0
Total Split (s)	59.0			59.0	31.0	31.0
Total Split (%)	65.6%			65.6%	34.4%	34.4%
Yellow Time (s)	3.0			3.0	3.0	3.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effect Green (s)	54.1			54.1	11.2	11.2
Actuated g/C Ratio	0.72			0.72	0.15	0.15
v/c Ratio	0.06			0.22	0.11	0.71
Control Delay	3.5			4.0	28.3	10.6
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.5			4.0	28.3	10.6
LOS	A			A	C	B
Approach Delay	3.5			4.0	11.7	
Approach LOS	A			A	B	
Queue Length 50th (m)	2.7			11.1	3.8	0.0
Queue Length 95th (m)	7.1			22.6	10.7	24.0
Internal Link Dist (m)	182.8			134.5	129.1	
Turn Bay Length (m)						
Base Capacity (vph)	2540			2540	611	821
Starvation Cap Reductn	0			0	0	0

Total 2039 PM (with new Highway 6 Midblock Interchange)

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NewCold Toronto Ontario (TO-01) Traffic Impact Study
 29: Highway 6 Midblock Interchange/East Ramp Terminal

11-09-2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.06			0.22	0.05	0.51

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 75.3

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 6.9

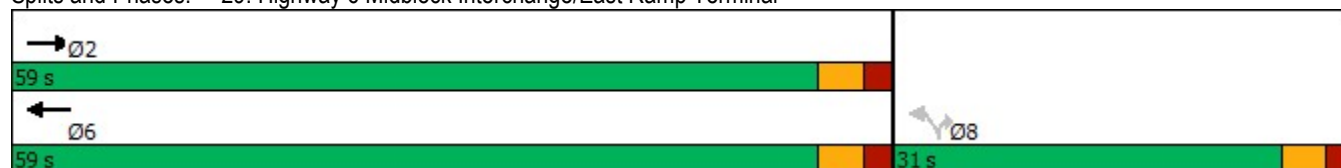
Intersection LOS: A

Intersection Capacity Utilization 48.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 29: Highway 6 Midblock Interchange/East Ramp Terminal



Appendix **D**

Parking Study Memo

To:
Michael Witmer, City of Guelph
**(MEMO NOT SUBMITTED
SEPARATELY FROM TIS REPORT)**

CC:
John Aschenbrenner, NewCold
Richard Williams, AECOM
Gwen Zhang, City of Guelph

Project name:
384 Crawley Road - New Cold
Development Application

Project ref:
60682143

From:
Sheri Harmsworth, P.Eng.

Date:
April 25, 2023

Memo

Subject: New Cold Parking Study

1. Introduction

AECOM Canada Ltd was retained by NewCOLD Cooperative U.A. to undertake a Traffic Impact Study (TIS), including a Parking Study in support of a site plan on a parcel of land located within the Southgate Business Park in Guelph at 384 Crawley Road.

The scope of work for the Parking Study, as identified by the City, is as follows:

- 6 proxy sites will be selected for comparison to the subject site
- Sites to be located within 10km of a 400 series highway

This memo includes the following discussions:

Proposed Parking Facilities: based on the development concept, the proposed parking facilities are outlined by development phase, and

Parking Requirements: a discussion outlining support for the proposed site parking facilities based on an assessment of proxy sites and other relevant materials, such as trips generated by the facility.

2. Proposed Parking Facilities

The proposed cold storage facility has a total 150,060 m² Gross Floor Area (GFA). The development concept Phase 1 and Full build out site plans are shown in **Figure 1** and **Figure 2** respectively. The Site Plan shown in **Figure 1** identifies the proposed parking facilities for Phase 1, while **Figure 2** shows the parking facilities for the full site.

Figure 1 Development Concept (Phase 1)

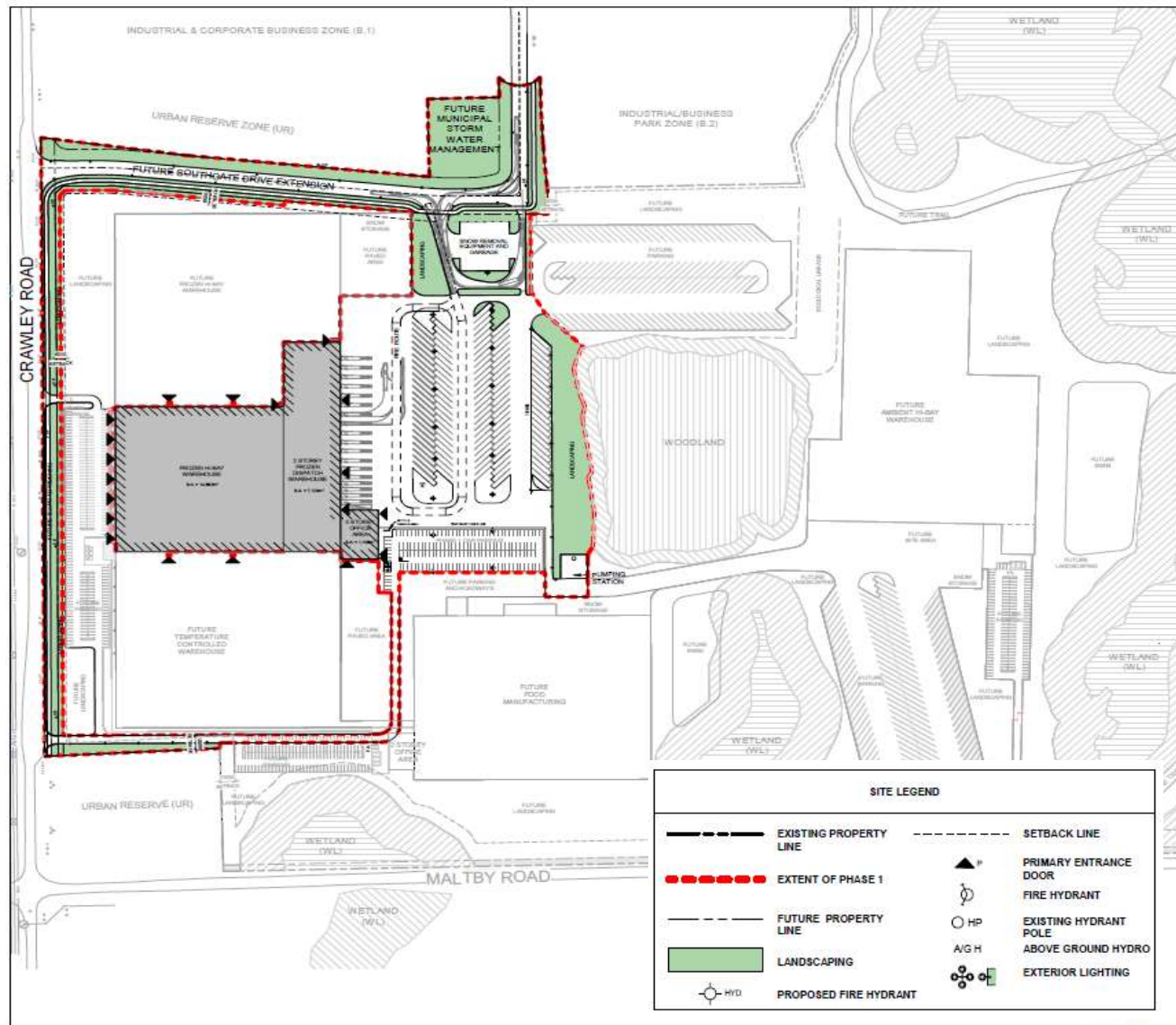


Figure 2 Development Concept (All Phases)

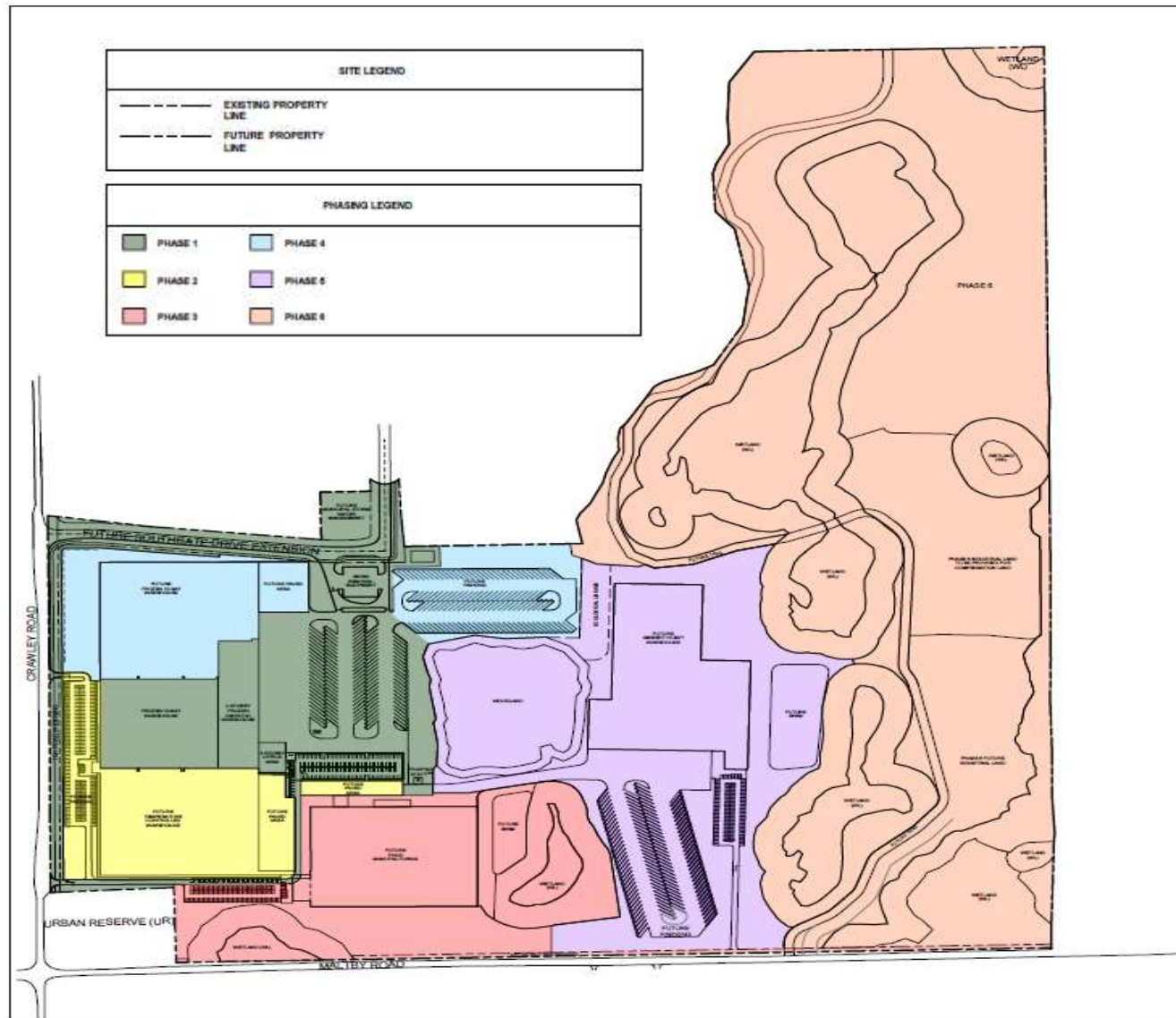


Table 1 shows the breakdown of proposed passenger vehicle parking by phase, including 261 (i.e., 164+96+1) vehicle parking spaces provided for Phases 1 through 3 (Maple/Hudson building), 149 spaces for Phase 4 (Food Production building), and 132 for Phase 5 (Astro building), respectively. This totals 542 vehicle parking spaces. The proposed office area within Phases 1, 4 and 5 is also shown in **Table 1**.

Table 1 Proposed Parking Facilities

Phase	Building Type	Building G.F.A (m ²)*	Office GFA within Building (m ²)	Parking Spaces Provided*
1 – Frozen Storage (Maple / Hudson Building)	Warehouse	32,222	3,300	164
2 – Temp-controlled (Maple / Hudson Building)	Warehouse	25,034	-	96
3 – Food Manufacturing (Food Production Building)	Manufacturing >5000 m ²	24,290	1,094	149
4 – Frozen Storage (Maple / Hudson Building)	Warehouse	28,084	-	1
5 – Ambient Storage (Astro Building)	Warehouse	40,430	1,170	132
Total Passenger Vehicle Parking	-	-		542

***Note:** Building Gross Floor Area (GFA) includes the automated hi-bay storage components. There are an additional 444 truck parking spaces provided for the development site; these parking spaces are not included in this parking study.

3. Parking Requirements

The current City of Guelph's Zoning By-Law minimum requirement for the Warehouse land use is 0.5 parking spaces for every 100 m² of GFA. The Manufacturing land use has a tiered parking requirements with 1 parking space per 50 m² for up to 1000 m² GFA, 1 parking space per 100 m² for GFA between 1000 and 5000m², and 1 parking space per 150 m² for over 5000 m². The Office land use minimum requirement is 3 spaces per 100m² of GFA for lots without parking adjustment (PA) suffix. **Table 2** shows the required parking according to the City Bylaw compared to the parking as shown on the site plan using the Manufacturing and Warehouse land uses.

Based on the by-law requirements, Phase 1 proposed parking meets City by-law requirements; however, there is a deficit in parking area by Phase 2. The total vehicle parking requirement for the development based on the City of Guelph by-law is 817 vehicle parking spaces, resulting in a deficit of 275 vehicle parking spaces (i.e., 817 – 546 = 275 parking spaces).

Table 2 City of Guelph Parking By-Law Requirements

Phase	Building Type	Building G.F.A (m ²)	Required Parking by City By-law	Parking spaces provided	Variance (based on Running Total)
1 – Frozen Storage (Maple / Hudson Building)	Warehouse	32,222	161	164	+3
2 – Temp-controlled (Maple / Hudson Building)	Warehouse	25,034	125	96	-26
3 – Food Manufacturing (Food Production Building)	Manufacturing ≤1000 m ²	1000	20	149	-66
	Manufacturing >1000 ≤5000 m ²	4000	40		
	Manufacturing >5000 m ²	19,290	129		
4 – Frozen Storage (Maple / Hudson Building)	Warehouse	28,084	140	1	-205
5 – Ambient Storage (Astro Building)	Warehouse	40,430	202	132	-275
Totals	-	150,060	817	542	-275

Parking Study – Proxy Sites

The City of Guelph requested that 6 proxy sites be located and reviewed in support of the proposed parking facilities for the New Cold development. In consultation with City staff, potential proxy sites and reference materials were identified. AECOM sought out relevant documentation for each of the identified sites. The following reports and documents were available for review:

- Parking study – Willow West Mall Redevelopment, Guelph, April 2022
- City of Guelph Comprehensive Zoning Bylaw Review, by IBI Group, September 2019
- Metro-Vickers Road Traffic Impact Study, Stantec 2019
- City of Mississauga Committee of Adjustment Files: “A” 311/09, September 10, 2009; “A” 318/15, July 23, 2015, and “A” 438/16, Conestoga Cold Storage, Thursday November 3, 2016
- ITE Trip Generation Manual, 5th Edition

Of the above noted studies, the Comprehensive Zoning Bylaw Review, Metro-Vickers Road Traffic Impact Study, and the Committee of Adjustment files for the Conestoga Cold Storage

facility had relevant parking information and were used for comparison with the proposed New Cold parking facilities. In addition, the ITE Parking Generation Manual, 5th Edition, was reviewed and used for comparison. The following sections provide a summary of relevant materials from each report/document. Following this summary of materials, **Table 3** summarizes the parking data from the completed review.

City of Guelph Comprehensive Zoning Bylaw Review, by IBI Group, September 2019

This review looked at the parking demand of 20 properties in Guelph of various land uses including office, medical office, multiple residential and commercial sites. Parking utilization levels at six commercial properties were surveyed. The maximum parking demand observed at these properties ranged from 0.1 to 2.1 spaces per 100 m².

Metro-Vickers Road Traffic Impact Study, Stantec (2019)

As part of this study, the authors consulted the City of Toronto parking by-laws in order to recommend the number of car parking spaces required for the future site. The by-law (Table 200.5.10.1 Parking Space Rates and Parking Space Occupancy¹) states that for a Warehouse, "Parking spaces must be provided at a minimum rate of 1.0 for each 100 square metres of gross floor area up to 2750 square metres; plus 0.5 for each 100 square metres of gross floor area in excess of 2750 square metres."

As shown in **Table 3**, based on the requirement identified for this proxy site, there would be 440,122 and 202 spaces required for Maple/Hudson building, Food production building² and Astro building respectively (Total 764 vehicle parking spaces). In this case there is a deficit of 219 parking spaces compared to the proposed vehicle parking spaces in the site plan (i.e., 764-542=222).

Phase 1 proposed parking meets City of Guelph by-law requirements, is less than the City of Toronto (Proxy) requirements, and it more than the ITE Parking Generation requirements.

City of Mississauga Committee of Adjustment Files: "A" 311/09, , September 10, 2009; "A" 318/15, July 23, 2015, and "A" 438/16, Conestoga Cold Storage, Thursday November 3, 2016

The City of Mississauga provided three sets of minutes from their Committee of Adjustment meetings, all in reference to applications by Conestoga Cold Storage, The Planning Act R.S.O 1990, cP.13, as amended, and Zoning By-Law 0225-2007, as amended.

In the 2009 minutes, it is described that Conestoga Cold Storage is the owner of Blocks 14 to 19, Registered Plan M-936, located and known as 2660 Meadowpine Boulevard, zoned E2 and E2-19, Employment. The Conestoga Cold Storage application requests a variance to the City of Mississauga parking by-law. The requested variance identifies that By-law 0225-2007, as amended, requires 220 parking spaces, inclusive of 7 wheelchair accessible parking spaces for the construction of a 3,620m² addition to the existing building; however, Conestoga proposed 76 parking spaces including 2 parking spaces for disabled persons.

¹ https://www.toronto.ca/zoning/bylaw_amendments/pdf/parking_rates.pdf

² As the proxy study did not consider "Manufacturing Uses", we have used the City of Toronto parking rate for Manufacturing uses as shown in City of Toronto By-law 569-2013, Table 200.5.10.1 Parking Space Rates and Parking Space Occupancy: minimum rate of 0.5 for each 100 m² of GFA in Policy Area (PA)1, PA2, PA3.

The support for the variance was that “the building is utilized as a storage warehouse for frozen foods....there are 53 employees located in the building at their peak period during the daytime hours...the shifts are staggered.”

The City of Mississauga Planning and Building Department had no objection to the requested variance, but noted that 223 parking spaces, not 220 parking spaces are required as per the By-law; this did not change the decision outcome. The City’s Transportation and Works Department deferred comments to the Site Plan Process. The Committee was satisfied that the “general intent and purpose of the Zoning By-law and the Official Plan will be maintained in this instance.”, and the Committee authorized the variance.

In the 2015 minutes, it is described that Conestoga Cold Storage is the owner of Blocks 10, 11 and 14 to 19, Registered Plan M-936, located and known as 2660 Meadowpine Boulevard, zoned E2, E2-1, and E2-19 – Employment. The Conestoga Cold Storage application requests a variance to the City of Mississauga parking by-law. The requested variance identifies that By-law 0225-2007, as amended, requires 253 parking spaces for the construction of an addition to the rear of the existing industrial building (addition size is not provided); however, Conestoga proposed 134 parking spaces.

The support for the variance was that “the nature of the operation was for the storage of frozen food stored on skids. That the operation was relied heavily on robotics and as such required a minimal work force....the business operated six days a week with three shifts daily...a maximum of 90 parking spaces would be required during the overlap of shift changes.”

The City of Mississauga Planning and Building Department had no objection to the requested overall parking variance but recommended the accessible parking variance be refused (0 requested) and instead that 1 additional accessible parking space be required. Policy Planning Staff support the variance based on the letter justification, although they noted that “generally a parking study would be required based on a reduction in parking of this amount, however in this case staff have accepted the applicant’s letter as sufficient in this specific instance.” The Transportation and Works Department also had no objections. Conestoga amended the application to 132 parking spaces plus 1 parking space for persons with disabilities and the Committee consented to the request. The Committee was satisfied that the “general intent and purpose of the Zoning By-law and the Official Plan will be maintained in this instance.”, and the Committee authorized the variance.

In the 2016 minutes, it is described that Conestoga Cold Storage is the owner of Blocks 10, 11 and 14 to 19, Registered Plan M-936, located and known as 2660 Meadowpine Boulevard, zoned E2, E2-1, and E2-19 – Employment. The Conestoga Cold Storage application requests a variance to the City of Mississauga parking by-law. The requested variance identifies that By-law 0225-2007, as amended, requires 271 parking spaces including 8 parking spaces for persons with disabilities on site for the construction of an addition to the existing industrial building (addition size is not provided); however, Conestoga proposed a total 152 parking spaces including 3 parking spaces for persons with disabilities.

The support for the variance was that “the parking provided on site was sufficient for the number of employees that worked during their busiest shifts, being the day and the afternoon shifts...Due to the automated aspect of the operation only 100 parking stalls were in use on the property and many employees car-pooled or took transit to work...20 new parking stalls would be provided with the construction of the freezer addition bringing the total to 152 parking stalls on site.”

The City of Mississauga Planning and Building Department had no objection to the application. Planning noted that previous minor variance applications 'A' 318/15, 'A' 311/09, and 'A' 145/98 requested parking space reductions and were approved [Edit: File 'A'145/98 was not available for review]. Planning also noted that the parking reduction is greater than 10%, and that a Parking Utilization Study would typically be required for such an application; however, staff accepted the letter as sufficient support. The relative comparison of staff numbers in comparison to building size was identified sufficient support for the reduction in overall parking spaces and therefore Planning had no objection to the application. The Transportation and Works Department deferred comment to the Site Plan Process. The Ministry of Transportation (MTO) commented that they would forward comments to the appropriate City representative [Edit: MTO's comments, if any, were not available for review]. The Committee was satisfied that the "general intent and purpose of the Zoning By-law and the Official Plan will be maintained in this instance.", and the Committee authorized the variance.

In total, the requested variance reduced the overall By-law parking requirement for 271 parking spaces to a total of 152 parking spaces, a difference of 119 parking spaces.

It is the opinion of the authors of this proxy study for the NewCold site that a similar assessment of required parking stalls should be considered for the NewCold facility based on employee numbers rather than on the City of Guelph By-law requirement which is based on GFA.

Institute of Transportation Engineers (ITE) Parking Generation, 5th Edition, January 2019

The ITE Parking Generation manual provides data on surveys across the USA and Canada of peak parking demand for different land uses. The applicable ITE parking rate for the commercial uses corresponds to Land Use Code (LUC) 150 Warehousing ($\ln(P)=0.93 \ln(X)-0.03$; P =parking spaces required, X = employees) for Phases 1 through 3 (Maple /Hudson) and Phase 5 (Astro building).

As discussed in the Traffic Impact Assessment report, the vehicle trips generated by this development are based on the proposed site accesses, and the number of employees, visitors and trucks which will be coming to the facility daily. The following data was provided by the client for the traffic impact study:

1. Site Phases

- The first phase of development has a target completion in 2024.
- The full buildout of the proposed development has a target completion in 2029.

2. Full time employees (FTE) and visitors

a. Phase I (2024):	FTE :106/day;	visitors:10/day
b. Full buildout (2029):	FTE :572/day;	visitors:10/day
- There are 3 shifts for the warehouse, generally 7 AM to 3:30 PM - 3 PM to 11:30 PM – 11 PM to 7:30 AM.
 - It is assumed that half of the total full-time employees will be working in the first shift whereas other two shifts will have equal distribution of remaining full-time employees

For this assessment, using the Phase 1 employee information provided by NewCold, 106 FTE per day, the ITE equation determines the following parking required for Phase 1:

$$\ln(P)=0.93 \ln(X)-0.03;$$

X = 69 employees (50% of employees maximum in 1 shift, plus 30% overlap for shift change)

P = 50 parking spaces required

NewCold identified that a maximum 180 employees would be on-site for one shift in Phases 1, 2, and 3, plus a 30% overlap to allow for shift changes. Based on the ITE equation, the required parking for these 3 phases is as follows:

$$\ln(P)=0.93 \ln(X)-0.03;$$

X = 234 employees (50% of employees maximum in 1 shift, plus 30% overlap for shift change)

P = 155 parking spaces required.

Removing the 50 parking spaces determined for Phase 1 separately, this leaves and additional 105 parking spaces required for Phases 2 and 3.

For Full-build out, NewCold identified a total of 572 employees. Assuming 1 of 3 shifts has a maximum of 50% of the total employees, with an allowance for 30% overlap during shift changes, this would be a maximum of 247 employees on site concurrently. Based on the ITE equation, the required parking for all 5 phases is as follows:

$$\ln(P)=0.93 \ln(X)-0.03;$$

X = 372 employees (maximum in 1 shift, including 30% overlap for shift change)

P = 239 parking spaces required.

Removing the 155 parking spaces determined for Phases 1 through 3, this leaves and additional 84 parking spaces required for Phases 4 and 5. Overall, by this method the proposed site plan includes 303 more parking spaces than are needed for the total number of employees at full build-out.

Table 3 also summarizes the parking requirements based on the ITE Parking Generation guideline.

Table 3 Parking Requirement Summary

Phase	Building Type	Building G.F.A (m²)	Parking spaces provided	Parking By-Law Requirements/Guidelines			Variance (Parking spaces provided - Parking By-Law Requirements/Guidelines)		
				City of Guelph By-law	City of Toronto By-law³	ITE Parking Generation	City of Guelph By-law	City of Toronto By-law	ITE Parking Generation
1 – Frozen Storage (Maple / Hudson Building)	Warehouse	32,222	164	161	175	50⁴	3	-11	114
2 – Temp-controlled (Maple / Hudson Building)	Warehouse	25,034	96	125	125	105⁵	-29	-29	140
3 – Food Manufacturing (Food Production Building)	Manufacturing ≤1000 m2	1000	149	20	122⁶		-40	27	
	Manufacturing >1000 ≤5000 m2	4000		40					
	Manufacturing >5000 m2	19,290		129					
4 – Frozen Storage (Maple / Hudson Building)	Warehouse	28,084	1	140	140	84⁷	-139	-139	49
5 – Ambient Storage (Astro Building)	Warehouse	40,430	132	202	202		-70	-70	
Totals	-	150,060	542	817	764	239	-275	-222	303

³ City of Toronto By-Law referenced in proxy study: Metro Vickers Road Traffic Impact Study, Stantec (2019).

⁴ Based on employee numbers (106 employees Phase 1, maximum 50% in 1 shift) provided for the Traffic Impact Study by NewCold.

⁵ Based on employee numbers (180 employees Phases 1, 2 and 3, maximum 50% in 1 shift) provided for this parking study by NewCold.

⁶ This calculation is based on the Warehouse land use as per City of Toronto By-Law 569-2013, Table 200.5.10.1 Parking Space Rates and Parking Space Occupancy: minimum rate of 0.5 for each 100 m2 of GFA in Policy Area (PA)1, PA2, PA3.

⁷ Based on employee numbers (572 employees for full build-out, less Phases 1, 2 and 3, maximum 50% in 1 shift) provided for the Traffic Impact Study by NewCold.

Trip Generation

The number of trips generated by the site is also useful in comparison to the parking requirements as the proposed facility has a notable GFA for each phase, but a much smaller number of employees that are actually requiring parking than that currently required by the City's parking by-law.

Trip generation breakdown by vehicle type and hours of operations was provided by the client. From the data, the number of trips generated by the facility were determined as follows:

Trip Generation Phase 1 (2024)

Phase 1 (2024)	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Passenger Vehicle	58	29	29	58

Trip Generation Full Buildout

Full Build Out	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Passenger Vehicle	291	145	145	291

The trips generated by the site for full build-out identified 291 vehicles entering/145 exiting in the AM Peak Period and 145 vehicles entering/291 exiting in the PM Peak Period. Assuming a complete overlap that all 145 vehicles + 291 vehicles are within the site concurrently, the total $145+291 = 436$ vehicles would all be accommodated within the available 542 parking spaces at full build-out. (i.e., $542 - 436 = 106$ more parking spaces than required to accommodate all generated trips at full build-out).

Similarly, the trips generated by the site for Phase 1 identified 58 vehicles entering/29 exiting in the AM Peak Period and 29 vehicles entering/58 exiting in the PM Peak Period. Assuming a complete overlap that all 29 vehicles + 58 vehicles are within the site concurrently, the total $29+58 = 87$ vehicles would all be accommodated within the available 164 parking spaces in Phase 1. (i.e., $164 - 87 = 77$ more parking spaces than required to accommodate all generated trips in Phase 1).

Office Land Use

The Office land use minimum requirement is 3 spaces per 100m² of GFA for lots without parking adjustment (PA) suffix. New Cold provided the following office GFA for Phases 1, 3, and 5 (shown in Table 1):

Phase 1 = 3,300 m²

Phase 3 = 1,094 m²

Phase 5 = 1,170 m²

Total Office Area = 5,564 m²

Based on the parking requirement for office GFA, 167 parking spaces would be required at full-build out, compared to the 542 proposed parking spaces within the full build-out site plan.

Phase 1 alone would require 99 parking spaces by this calculation, compared to the 164 parking spaces provided for Phase 1 on the site plan.

Other Travel Modes

There will be on-site bicycle facilities that would contribute to a reduction in required parking spaces. There are opportunities to provide preferential parking to employees that wish to carpool, to encourage fewer single occupant vehicles accessing the site. There are also opportunities to improve transit access to the site in the future, to further reduce the demand for on-site parking facilities. In addition, there is the potential to have staggered shift changes so that not all employees are leaving a shift and starting a shift at the same time. These potential reductions are not included in the preceding calculations.

Accessible Parking

As per the City By-law⁸, for where more than 201 and less than 1000 parking spaces are provided, 2 accessible parking spaces plus an additional 2% of total spaces (round up to the nearest whole number) are to be provided. Based on this calculation, of the 542 proposed parking spaces, 11 parking spaces will be dedicated for accessible parking. Phase 1 will include 2 accessible parking spaces. In all cases, the dedicated accessible parking spaces will be designed as per the City By-law.

4. Recommendation

Considering the type of development and the ITE Parking Generation rates, and the trip generation rates considered in the TIS, the proposed site plan parking facilities are adequate to accommodate the site requirements.

Based on the proposed parking, the following minimum parking ratios would be acceptable:

Warehouse: 1 parking stall for every 320 m² GFA is sufficient, compared to the City by-law 1/200 ratio.

Manufacturing: 1 parking stall for every 163 m² GFA is sufficient considering the total GFA, compared to the City by-law ratios of 1/50, 1/100, and 1/150 for three tiers of manufacturing by <1000 m², between 1000 and 5000 m², and > 5000 m² GFA, respectively.

⁸ The City of Guelph Zoning By-law, Part C: General Provisions and Parking, Table 5.4 – Accessible parking rates,

Appendix **E**

Signal Warrants

Input Data Sheet

[Analysis Sheet](#)
[Results Sheet](#)
[Proposed Collision](#)
[GO TO Justification:](#)

What are the intersecting roadways?

Claire Rd W @ Southgate Drive

What is the direction of the Main Road street?

North-South

When was the data collected?

2039

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road?

1

b.- Number of lanes on the Minor Road?

1

c.- How many approaches?

4

d.- What is the operating environment?

Urban

Population >= 10,000

AND

Speed < 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	24	234	38	90	23	57	14	178	63	117	14	50	
8:00	41	195	41	51	24	30	4	161	20	106	9	37	
9:00	29	160	44	40	23	36	10	144	17	103	31	16	
10:00	14	149	44	31	13	27	9	145	11	112	13	13	
15:00	35	192	82	30	11	36	10	124	21	41	11	14	
16:00	52	174	96	64	14	50	38	288	105	56	33	57	
17:00	28	277	92	27	16	26	47	237	117	62	30	13	
18:00	31	175	93	30	20	14	19	158	77	44	30	14	
Total	253	1,556	528	363	144	275	151	1,435	432	640	171	214	0

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	0
25-36	0

* Include only collisions that are susceptible to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Factored 8 hour pedestrian volume	0		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									0
Net 8 Hour Vehicular Volume on Street Being Crossed									2,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	0	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	0	0	0	0	0	0	0	
Factored volume of total pedestrians	0		0		0		0		
Factored volume of delayed pedestrians	0		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									0
Net 8 Hour Volume of Delayed Pedestrians									0

Results Sheet

[Input Sheet](#)
[Analysis Sheet](#)
[Proposed Collision](#)
[GO TO Justification:](#)

Intersection: Claire Rd W @ Southgate Drive

Count Date: 2039

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	94	%	☐	☒
	B Crossing Volume	97	%	☐	☒
2. Delay to Cross Traffic	A Main Road	74	%	☐	☒
	B Crossing Road	100	%	☐	☒
3. Combination	A Justificaton 1	94	%	☐	☒
	B Justification 2	74	%	☐	☒
4. 4-Hr Volume		67	%	☐	☒

5. Collision Experience	0	%	☐	☒

6. Pedestrians	A Volume	Justification not met	☐	☒
	B Delay	Justification not met	☐	☒