CLAIR - MALTBY SECONDARY PLAN MOBILITY STUDY

Phase 1 - Background Report

City of Guelph

Prepared For: City of Guelph

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1.0 EXECUTIVE SUMMARY

This Mobility Study Phase 1 Background Report reviews the existing transportation conditions and planning context for the Clair-Maltby study area lands to inform a future transportation structure and network for the preparation of the Clair-Maltby Secondary Plan and Master Environmental Servicing Plan (MESP) Study being undertaken by the City of Guelph.

The Mobility Study Phase 1 Background Report specifically includes:

1. An introduction to the study, the objective of the Phase 1 study, and future work to be undertaken as part of Phases 2 and 3;
2. an overview of the existing site context and transportation elements;
3. a review of existing travel patterns, traffic operations, and collision history based on available data within the study area;
4. a review of relevant standards, active development applications, and policies and planning framework based on available planning and transportation studies and reports.
5. a summary of key challenges and opportunities for the site, from a transportation perspective, which highlights key objectives sought through directive policies.

Background and Objectives

The Secondary Planning Area is located in the south end of the City of Guelph. It is bounded generally by Clair Road, Poppy Drive and development lands to the north, Victoria Road (City Boundary) to the east, Maltby Road (City Boundary) to the south and the eastern limits of the Southgate Business Park to the west. It has an area of more than 520 hectares which is currently primarily rural and agricultural in nature.

The study process for these lands in preparation of the Clair-Maltby Secondary Plan and Master Environmental Servicing Plan (MESP) Study, includes:

- Phase 1: includes the preparation of a background report outlining the results of the above-noted review of existing conditions, background documents, and opportunities/challenges for the study area. This background document also includes a technical work plan for the Phase 2 study.
- Phase 2: includes a Community Visioning Exercise, technical analysis work, design matters, and determining an appropriate street network. Findings from Phase 1 and Phase 2 will be documented in a draft Transportation Master Plan Study.
- Phase 3: includes finalizing the Transportation Master Plan Study once a preferred Community Structure alternative is determined through the Design Charrette at the end of Phase 2. Additional refinement in support of Secondary Plan will also be dealt with in Phase 3, as required. The final study will meet the requirements of a Phase 1 and 2 Transportation Master Plan study under the Municipal Engineers Association Class EA process.

Existing Transportation Facilities

The Clair-Maltby Secondary plan area is served by a series of rural and urbanized roads. The area road system, under existing conditions is generally defined by three north-south routes: Gordon Street, Victoria Road, and Southgate Drive; and two east-west routes: Clair Road and Maltby Road. Additionally, Highway 6 (the Hanlon Parkway) operates in a north-south direction west of the secondary plan area.

Gordon Street is a major north-south corridor linking the City of Guelph with Highway 401 in the south, providing an important alternative (Highway 6 being the primary route) link for commuters connecting between Highway 401 and the City of Guelph.

Existing transit routes do not serve the Secondary Plan area except along a section of Clair Road west of Gordon Street. Existing land within the Secondary Plan area is predominantly rural and sections of Clair Road and Gordon Street were recently urbanized. There are currently no transit services along Gordon Street (south of Clair Road), Victoria Road, Maltby Road, or Clair Road (east of Gordon Street).

A number of transit routes located just north Clair Road provide connections to Guelph Central Station, which is located approximately 7.2 kilometres north of the subject lands. Frequency of buses along these routes varies from two to four vehicles per hour during peak morning activity.

The City of Guelph has actively pursued plans detailing future active transportation networks. A city-wide cycling network plan was established as part of the City's Transportation Master Plan.

Pedestrian sidewalks and bicycle lanes are currently provided along Clair Road and Gordon Street within the Secondary Plan area. Sidewalks are also provided along sections of new streets southeast of the Gordon Street / Clair Road intersection.

Existing Travel Patterns

Weekday peak period trips to / from the South Guelph Area are predominately made by automobile (75% driver; 13% passenger), while small proportions are made by school bus, transit, or active means. The most common orientation for all trips to / from the South Guelph area are made within the City of Guelph (75% to 80%). Travel behaviour, by orientation, related to existing trips during the weekday peak hours in the South Guelph area is summarized in the following:

- 50% of trips are made within the local area - generally south of the Eramosa and Speed Rivers.
- Excluding of the aforementioned "local area", another 26% of trips to / from the South Guelph Area are made within the City of Guelph – including 7% to / from the Downtown
- 7% of trips to / from the South Guelph Area are oriented / destined for Waterloo Region.
- 7% of trips to / from the South Guelph Area are oriented / destined for Halton / Peel Regions.
- 5% of trips to / from the South Guelph Area are oriented / destined for Wellington County.
- 3% of trips to / from the South Guelph Area are oriented / destined for the City of Toronto.

Existing trips to / from the South Guelph Area are made using the following modes of transportation during weekday peak travel periods:

- 8% of local trips within the local area are undertaken using transit and active transportation modes, most notably as pedestrians (4%).
- For trips within Guelph, but outside the local area, approximately 95% of trips are made by car (79% driver; 16% vehicle passenger), and only 2% are made by transit.
- Trips made between the South Guelph Area and Halton, Peel and Waterloo Regions, are made by automobile to a greater extent than trips to other areas. Virtually all travel to / from Halton, Peel and Waterloo is undertaken within an automobile.
- The City of Toronto comprises a small proportion of overall travel (3%) to / from the South Guelph Area. These trips are predominately undertaken by car; however, transit mode share is greater for these trips than for trips between the South Guelph Area and other areas analyzed herein.

The signalized intersection traffic analysis indicates that all study area intersections perform acceptably, and without any traffic capacity constraints for any individual traffic movements. During weekday peak hours, overall intersection v/c ratios are shown to be 0.66 or less, while individual traffic movements are shown to all operate with a v/c ratio of 0.71 or less.

Overall signalized intersection traffic operations are good under existing conditions, and are generally reflective of new infrastructure (updated and widened roads) and limited area development.

The existing conditions traffic analysis indicates the that eastbound and westbound STOP-control movements at the Gordon Street and Maltby Road intersection operate with longer delays and fewer gap opportunities. The unsignalized traffic analysis indicates that the eastbound movement operates with LOS D during the weekday morning peak hour and LOS C during the weekday afternoon peak hour, while the westbound movement operates with LOS C during the weekday morning peak hour and LOS E during the weekday afternoon peak hour. Signalization of this intersection may be considered in the longer-term given anticipated traffic growth along both streets.

All other movements at unsignalized intersections analyzed within the study area are shown to operate at LOS B or better during weekday peak hours, which is acceptable.

A total of 134 collisions were reported at study area intersections within a 63 month period from 2012 to 2017. Of the total volume of collisions, 21 (16%) resulted in a non-fatal injury, while 42 collisions (31%) report property damage only (no injury). All other collisions were non-reported or “non-reportable”. No “fatal” collisions were reported. A total of 3 collisions involved vulnerable road users – in all instances, a cyclist.

Policy and Planning Framework and Active Applications

A number of policies and plans were reviewed to inform the existing transportation planning framework for the Clair-Maltby Secondary Plan area. These policies and plans establish direction for planning work to be undertaken in future phases, and provide a foundation for defining a Secondary Plan area transportation structure and multi-modal network. Specifically, the set of polices reviewed include:

- Provincial Policy Statement
- Places to Grow: Growth Plan for the Greater Golden Horseshoe
- City of Guelph Official Plan
- Official Plan Amendment 48
- City of Guelph Official Plan – Section 8: Transportation
- South Guelph Secondary Plan
- South Gordon Secondary Plan
- Guelph – Wellington Transportation Study (Transportation Master Plan)
- Gordon Street (Wellington Road 46) Class EA Environmental Study Report
- Clair Road Class EA Environmental Study Report
- Victoria Road (Clair Road to York Road) Class EA Study
- City of Guelph Transit Growth Strategy
- Moving Guelph Forward: Guelph Transit Growth Opportunities
- Guelph Trails Master Plan
- City of Guelph Cycling Master Plan
- City of Guelph Active Transportation Network Study
- Wellington County Active Transportation Plan

The existing transportation study reviewed current and planned road, transit, cycling and pedestrian environments, which are detailed as part of this review. These plans provide an understanding of future infrastructure provisions for assessing future transportation impacts.

The overview of existing transportation plans, policies, and standards, as detailed in the documents noted above, provide a foundation on which to establish an area transportation plan, and to inform a future transportation structure and network for the study area lands.

Design Guidelines

City of Guelph Engineering and Capital Infrastructure Services prepared their Development Engineering Manual (DEM, Fall 2016) to guide engineering related aspects of development related work, including established Engineering Design Criteria and Standards intended to be used by developers, residents and the City to inform engineering design and related review and discussion. The DEM recognizes that the outlined standards may not be compatible to all scenarios, and engineering judgement should be used in such cases.

The DEM establishes geometric road standards, subdivision road standards, sight triangles, parking standards, and access design standards. It should be noted that road standards do not differentiate the use of pavement for passenger vehicles, transit, cyclists or otherwise and should be updated for the Clair-Maltby Secondary Plan area to include multi-modal uses where appropriate.

Key Challenges and Opportunities

There are a series of challenges and opportunities for the Clair-Maltby Secondary Plan area. Challenges and opportunities are derived from the review of existing conditions, and informed by a review of various policies, standards, and plans.

Roadways

- The City of Guelph has a set of standard road cross-sections that guides design of the right-of-way, boulevard, and pavement width standards for municipal roadways. There is potential to update the road / design standards specifically for the Clair-Maltby Secondary Plan area to permit further programming within the pavement or boulevard spaces to include multi-modal uses where appropriate or to account for variations in natural landscape where a context sensitive standard may be most suitable.

- The Clair Maltby Secondary Plan area is challenged by natural heritage and land use constraints that are barriers to providing a 'grid like' network of local and collector roadways. The Secondary Plan will need to develop a fine grained network within the geographical limits of the study to support suitable access, reasonable traffic capacity, and reasonably developable parcels of property to facilitate future development.

- Existing travel mode splits are heavily auto-oriented. Achieving a balance of successful development and adequate roadway capacity for this study area will require thoughtful integration of non-auto methods of travel – via infrastructure planning as well as programming and maintenance.

- Based on existing travel volumes, existing traffic operations, and the City's Official Plan and Transportation Master Plan, it is anticipated that the existing arterial road network will require improvements to accommodate growth, and the Clair-Maltby Secondary Plan will need to reflect distributed access to the arterial road network and highways, to minimize any undue pressure on local intersections and corridors.

Cycling and Trails

- While, achieving lower auto-mode shares will be a challenge – there is opportunity to provide strong connections with the existing and planned on and off-street bicycle network and trail system within the Secondary Plan area.

- Improving accessibility and connectivity within the study area and to / from major community nodes for non-auto modes of transportation (i.e. walking and cycling) will help to ensure mobility choice.

- Improving first and last mile active transportation connections to public transit will increase the ease of access and encourage multi-modal trips.

Transit

- Transit is limited under existing conditions in this area. Providing frequent and efficient transit routing opportunities through the Secondary Plan area will provide mobility choice and could logically feed into the intensification corridor along Gordon Street and community node planned for the Gordon Street / Clair Road intersection.

- Transit stops can be logically located within a short distance of typical start / end of trip locations and integrated with the trail network and / or sidewalk system to ensure pedestrian connectivity to transit facilities.

- There are opportunities to plan and accommodate "*first / last mile*" connections from future transit services. There is a substantial opportunity create links between multi-modal trip making, including the use of active transportation modes to connect transit service provisions to origins and destinations within the Secondary Plan area.

2.0 INTRODUCTION

2.1 CLAIR-MALTBY SECONDARY PLAN AND MESP STUDY

The City of Guelph is undertaking the Clair-Maltby Secondary Plan and Master Environmental Servicing Plan (MESP) Study to comprehensively plan for the development of the area of Guelph located south of Clair Road and north of Maltby Road - the Clair-Maltby Secondary Planning Area. The lands are being considered for development to accommodate population and employment growth for the City in accordance with the requirements of Provincial policy, in particular Places to Grow: Growth Plan for the Greater Golden Horseshoe.

The MESP and Secondary Plan are being undertaken concurrently as part of the process approved by City Council which is designed to address the complexity of planning for development in the Clair-Maltby Secondary Planning Area. The MESP offers an integrated approach that coordinates the requirements of both the *Environmental Assessment Act* and the *Planning Act*.

2.1.1 Study Process

The Study Process will be undertaken in three phases:

- Phase 1 – Background;
- Phase 2 – Community Structure; and,
- Phase 3 – Secondary Plan and MESP.

2.2 PHASE 1 MOBILITY STUDY: A BACKGROUND REPORT

The purpose of this Mobility Study Background Report is to review available background information, as well as the details and conditions of initial supporting background studies as part of the basis for the Secondary Plan. The Background Report is compiled to provide an overview of existing transportation conditions, plans, policies, and standards on which to establish an area transportation plan, and to inform a future transportation structure and network for the study area lands. Specifically this report considers the following.

Technical Overview of Phase 2 Analysis Work
A discussion of future transportation study to be undertaken within future phases of the Clair-Maltby Secondary Plan and MESP Study. Future elements of the transportation study include community consultation and visioning exercises, detailed technical analysis, and establishing multi-modal transportation networks for the secondary plan area.

Review of Background Studies
A review relevant existing background planning and transportation studies and reports, as well as any other documents determined to be relevant as the study commences. For example, a review of existing City of Guelph road standards will be included, with a view to identifying options for dealing with multi-modal transportation needs.

A review of background studies also provides a basis for documentation of the planned transportation network, and a summary of the transportation planning context and key policy objectives.

Review of Available Data

Available traffic data in the vicinity of the Clair-Maltby Secondary Plan area in the southern part of Guelph has been obtained and reviewed. The data includes road network utilization counts (traffic counts), traffic accident data, and data from the most recent (2011) Transportation Tomorrow Survey (TTS). Existing travel data is summarized herein to document existing travel patterns and traffic operations, and to review collision frequency and trends.

Additional data collection (traffic counts, model calibration studies) will be undertaken as necessary as part of the detailed technical modelling and analysis to be completed as part of Phase 2.

Summary of Challenges and Opportunities

A summary of area challenges and opportunities, from a transportation perspective, will be made available to provide direction on meeting performance measures – such as target travel mode splits, walkability, cycling connectivity and traffic operations. The concept is to mitigate existing area challenges, and utilize existing area opportunities to provide mobility choice.

2.2.1 Report Format

The Mobility Study Background Report introduces the study, the objective of the Phase 1 study, and future work to be undertaken as part of Phases 2 and 3.

The Background report then provides an overview of the existing site context, transportation elements, travel patterns, and collision history. This portion of the report also reviews existing traffic operations in the study area.

The bulk of the report outlines the relevant standards, policies and planning framework which exists at the Provincial and City levels, as well as the County of Wellington, on which to establish an area transportation plan, and to inform a future transportation structure and network for the study area lands.

Finally, the report summarizes key challenges and opportunities for the site, from a transportation perspective, and highlights key objectives sought through directive policies.

2.3 PHASE 2 MOBILITY STUDY OVERVIEW

The work plan has been established for Phase 2 of the Mobility Study, which will include community visioning exercises, technical analysis work, design matters, and determining an appropriate street network. Key components of Phase 2 of the Mobility Study are described briefly in the following.

Community Visioning Exercise

Information from the Phase 1 Background Report will be provided to the Community Visioning exercise so as to assist in informing and directing this process. Key inputs to this exercise will include an overview of the existing and planned transportation network (including roads, transit, and active transportation infrastructure), the identification of existing transportation network constraints (related to natural features and/or capacity), and the existing road standards that are available to address multi-modal mobility objectives. The Conceptual Community Structure that will result from the Community Visioning exercise will provide the basis for the development of up to three (3) alternatives. These alternatives will be the basis for the subsequent transportation planning and analysis work to be undertaken in Phase 2.

Close attention will be paid to any special designations that may come out of the Community Visioning Exercise. These might include such concepts as a Main Street designation, a Transit Spine designation, a Natural Feature Spine, or an overall transit orientation for the community. Special road and intersection treatments (such as pavement markings, modified setbacks and sight triangles, priority trail crossings, or enhanced transit lay-bys) will be identified that will support such features.

Preferred Transportation Network

Using input from the CEIS as well as the parallel MESP studies, the constraints to developing the internal (collector) road network will be identified and documented. As many as three (3) alternative conceptual networks will be developed that will address these constraints, minimizing impacts where natural barriers cannot be avoided, and will provide an appropriate level of service in support of the Conceptual Community Structure alternatives. A key priority will be prioritizing the needs of active transportation and transit users so as to create a transportation network that promotes these alternative modes.

Plans will be developed to illustrate the alternative conceptual internal community road networks, and their connectivity with external transportation elements, adjacent neighborhoods and communities, and existing and proposed community services (such as recreational facilities and schools). All modal elements of the networks will be addressed in these plans, namely roadways, transit routing and nodes, cycling routes and trails, and pedestrian facilities.

Technical Analysis

On the basis of the alternative conceptual community transportation networks, and in consultation with City staff, a multi-modal Transportation Impact Study (TIS) will be undertaken. This work will be undertaken in conformity with the City of Guelph's "Traffic Impact Study Guidelines", and will comprise a standard four-step analysis (trip generation, distribution, mode choice, and assignment). The scope and horizon years for this work will be developed in coordination with City staff.

Once the scope and horizon years for this work are established, analyses will be conducted by City staff so as to provide future background trip information at a regional level (derived from the City's VISUM travel demand model). This data will be used to provide the background travel information for the transportation study. A multi-modal travel demand forecasting exercise and subsequent distribution and assessment of various travel modes will be undertaken by BA Group. Directional distribution information will be extracted from the Transportation Tomorrow Survey (either the 2011 TTS or the 2016 TTS if it becomes available in time for this work), and checked against information in the City's travel demand model.

The results of this work will be used to compile a specific set of recommendations with respect to road widenings, intersection control (signalized or unsignalized), intersection turn lane configurations, and roundabout configurations (if appropriate). It will also provide a technical basis for the comparison of the alternative conceptual road networks under consideration.

A qualitative assessment of the intersections within and around the conceptual community will be undertaken with a view to ensuring that the following are provided for:

- adequate vehicular capacity,
- appropriate and safe active transportation features and facilities; and,
- transit priority where feasible.

This assessment will include a review of the potential for the implementation of roundabouts within the community or on the roads adjacent to the community. This pragmatic review will take into account the needs of all users, particularly transit and emergency vehicles, cyclists, and pedestrians.

School Zones

Special consideration will be given to road elements and features in the vicinity of schools so as to ensure that the needs of pedestrians are prioritized. Traffic calming measures may be considered as deemed necessary. Standards for passenger pick up and drop off amenities will be reviewed, as well junction and mid-block crossing designs.

Vehicle and Bicycle Parking

A review of City of Guelph parking standards will be undertaken, and a parking plan developed for the community. This will detail how on street and off street parking is to be provided, particularly in circumstances where interaction with cycling lanes occurs, or where a denser urban form potentially reduces the opportunity for driveway parking.

Consideration will be given to flexible design of bicycle rooms/garages, bicycle lockers, shelters so that they can be adapted to other uses or combined with other uses if demand isn't initially met at construction.

Recreational Trails

The community transportation network concept will include a concept trail plan. This will be developed in concert with the CEIS work so as to ensure that the trail system does not impinge on Natural Heritage Features. The system will be developed with a view to connecting with, expanding and enhancing the active transportation elements in the road rights-of-way. Off road trail standards will be designated so as to meet appropriate standards (AODA and FADM), and will be developed in conjunction with the parallel MESP studies so as to ensure that environmental and storm water considerations are dealt with.

Transportation Demand Management Framework

A Transportation Demand Management (TDM) framework will be pursued to establish a foundation for managing future travel demands upon development of the secondary plan area, to ensure that measures to promote transit and active transportation are implemented by way of the transportation amenities provided, as well as the built form of the community. Target mode shares and viable options for achieving these targets will be established for future development.

Transit, to discuss Guelph Transit service and routing standards, specific transit related issues and objectives in this area of Guelph, and to ensure that optimal routing is provided through and around this community. If the Community Conceptual Structure includes a Transit Spine corridor, then these discussions will become invaluable in understanding the desired features of the corridor.

Public Consultation and Deliverables

As noted above, the Mobility Study work described herein is intended to meet the requirements of a Transportation Master Plan (Phase 1 and 2) study under the Municipal Engineers Association Class EA process. As such, there must be at least two opportunities (Public Information Centres or PIC's) to present findings and solicit input from the public with respect to this work. These opportunities will be coordinated with the public consultation sessions for the parallel MESP and Secondary Plan studies.

At the end of phase 2, work described above (from both phase 1 and phase 2) a single draft report will address the requirements for a Transportation Master Plan Study. As such it will document the following:

- A problem and opportunity statement.
- The existing transportation network and conditions, and the currently planned improvements.
- The planning context for the Clair-Maltby Secondary Plan area, including the Community Conceptual Plan.
- The alternative Conceptual Transportation Networks (up to three), and the evaluation of these alternatives on the basis of criteria provided in the Terms of Reference document (page 7) plus any additional criteria identified during the course of the study.
- The recommended standards to be used as they relate to meeting community objectives. These will include road and intersection design standards and drawings, pedestrian and cycling facility standards, transit facilities, and traffic calming measures where deemed appropriate.
- The Traffic Impact Study work, including the results and recommendations for improvements and new construction, and the results of the noise assessment.
- The EA studies that will be required to move forward with the Secondary Plan for this area.

3.0 EXISTING TRANSPORTATION CONTEXT

3.1.1 The Site Area

The Secondary Planning Area is located in the south end of the City of Guelph. It is bounded by Clair Road to the north, Victoria Road (City Boundary) to the east, Maltby Road (City Boundary) to the south and the eastern limits of the Southgate Business Park to the west. It has an area of more than 520 hectares which is currently primarily rural and agricultural in nature. The study area is illustrated in Figure 1.

3.1.2 Existing Transportation Elements

3.1.2.1 Existing Road Network

The secondary plan area is served by a series of rural and urbanized roads. Clair Road to the north of the study area, and Gordon Street north of Poppy Drive have been urbanized and widened to accommodate 2 to 4 travel lanes (plus auxiliary turn lanes), curbs and sidewalks. Other major roads in the area, including Gordon Street south of Poppy Drive have typical rural cross-sections and are have 2 travel lanes.

The area road system, under existing conditions is generally defined by three north-south routes: Gordon Street, Victoria Road, and Southgate Drive; and two east-west routes: Clair Road and Maltby Road. Additionally, Highway 6 (the Hanlon Parkway) operates in a north-south direction just west of the secondary plan area.

Gordon Street is a major north-south corridor that becomes Brock Road beyond the City boundary and l the City of Guelph with Highway 401 in the south, providing an important alternative (Highway 6 being the primary route) link for commuters connecting between Highway 401 and the City.

The existing local street network, including intersection lane configuration and traffic controls, is illustrated in Figure 3**.**

An overview of the surrounding municipal street network highways and key roadways is provided below.

Highway 6 (Hanlon Parkway) is a provincially-owned and maintained limited access highway (in the Guelph area) operating in a north-south direction west of the Secondary Plan area. Although the highway has limited access, and operates with a fully grade-separated interchange at Laird Road, it intersects with Maltby Road at an unsignalized intersection (east-west STOP-control). The highway operates with an 80 km/h. posted speed limit and two travel lanes in both the northbound and southbound directions. Northbound and southbound travel lanes are generally separated by a grassed median.

Highway 6 is a major traffic route linking the City of Guelph with the wider region and specifically with Highway 401 in the south. The highway begins at Highway 403 in the City of Hamilton (Dundurn) in the south and extends north through the City of Guelph to Tobermory at the northern end of the Bruce Peninsula.

Highway 6 includes a full interchange at its crossing with Laird Drive, which becomes Clair Road through the study area. The highway also intersects at an unsignalized intersection with Maltby Road, whereby eastbound / westbound traffic movements on Maltby Road operate under STOP-control.

Gordon Street is a two-way arterial road running north-south through the City of Guelph. Gordon Street becomes Brock Road south of the City Boundary at Maltby Road. The street extends south of Highway 401 as Highway 6, and north of Waterloo Avenue in Downtown Guelph as Norfolk Street, Woolwich Street, and then Highway 6 north of Woodlawn Road.

In the site vicinity, it has a 4-lane urban cross-section north of Poppy Drive and a 2-lane rural cross-section south of Poppy Drive. The roadway includes separate left-turn lanes at signalized intersections and bicycle lanes in both directions within the City limits. The street has an existing speed limit of 60 km/h. in its urban section, and a 70 km/h. speed limit in its rural section south of Poppy Drive.

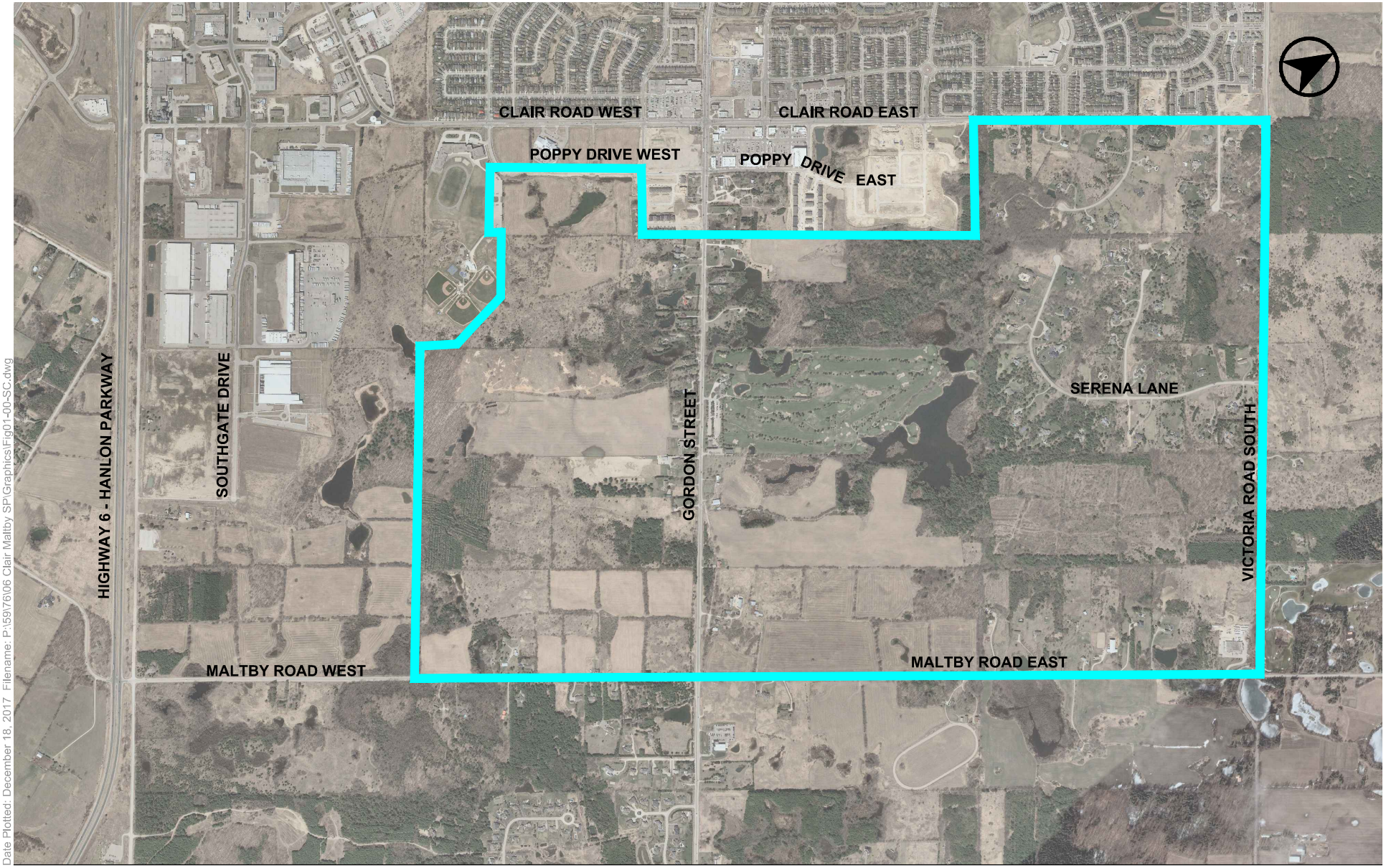
Victoria Road is a north-south direction roadway stretching through the City of Guelph from Wellington County Road 36 in the south (at Highway 401) to Highway 6 in the in the north. In the site vicinity, Victoria Road has a basic 2-lane rural cross section, with a separate north left-turn lane at Clair Road. Victoria Road intersects with Maltby Road in two separate T-intersections, with the section of Victoria Road north of Maltby Road extends from a point approximately 55 metres east of where the section of Victoria Road south of Maltby Road terminates.

Southgate Drive services industrial and employment areas in the southwest area of Guelph east of Highway 6 and north and south of Laird Road. Southgate Drive is a two-way roadway with a 50 km/h. speed limit and a basic 2-lane cross section and auxiliary left-turn lanes at it intersections with Laird Road and Clair Road. The street loops north of Laird Road, intersecting with Laird Road at two points, and extends south of Laird Road (at its western intersection) before terminating in a cul-de-sac approximately 1.4 kilometres south of Clair Road.

Clair Road is a two-way road running east-west between Hanlon Road / Crawley Road in the west (just east of Highway 6) and Victoria Road in the east. It generally operates with a 2-lane cross section except for the "urbanized" portion of the street which extends from 225 metres east of Laird Road to approximately 140 metres east of Beaver Meadow Drive – where the street generally has a 4-lane urban cross section. Within the street's urban portion, auxiliary left-turn lanes are provided at all intersections, as well as bicycle lanes in both directions adjacent to the curb. Clair Road has a speed limit of 60 km/h.

Laird Road is a two-way road oriented generally in an east-west direction between Clair Road in the east and the street's termination approximately 175 metres west of Quaterman Road. It generally operates with a 4-lane cross section west of the street's signalized intersection with Southgate Drive, and a 2-lane cross section between this point and Clair Road in the east. West of the street's signalized intersection with Southgate Drive to Cooper Drive, bicycle lanes are also provided in both directions adjacent to the curb. The street intersects with Highway 6 as a grade-separated interchange, providing a high-capacity traffic connection to Highway 6 in the Secondary Plan area. Laird Road has a speed limit of 50 km/h.

Maltby Road is a two-way rural road oriented generally in an east-west direction between Nassagaweya-Puslinch Townline in the east and Highway 6 in the west. West of Highway 6, Maltby Road continues as Concession Road 4 to Roszell Road near the Town of Hespeler. It operates with a 2-lane cross section and has a speed limit of 50 km/h.



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STUDY SCOPE LOCATION AND CONTEXT

3.1.2.2 Planned Road Network Improvements

A planned future public road network for the south Guelph area is discussed further in Section 4.3.2, while previously conducted environmental assessments for road widenings and improvements is detailed in Section 5.0 of this report.

3.1.3 Existing Transit Services

Guelph Transit is responsible for transit service in the vicinity of the Secondary Plan area, and provides services within the City of Guelph generally. Guelph Transit also connects the City of Guelph with major transit terminals in the Downtown area, including the University of Guelph and Guelph Central Station which provide connections to regional and inter-city transit services – including GO Transit, Greyhound and VIA Rail.

Transit routes do not currently service the Secondary Plan area except for a section of Clair Road west of Gordon Street, as the existing land uses are predominately rural and sections of Clair Road and Gordon Street were recently urbanized. There are currently no Guelph Transit services on Gordon Street, Victoria Road or Maltby Road. With build-out of the Secondary Plan area, it is anticipated that transit services will be introduced southwards with in the City of Guelph.

A number of service transit bus routes currently operate north and west of the Secondary Plan area on Clair Road, Laird Road and Southgate Drive to service existing residential areas north of Clair Road and employment areas along Southgate Drive. These routes operate north of Clair Road serving Hanlon Industrial Park (Route 16), the University of Guelph (Routes 5 and 99), and the Guelph Central Station (Route 99) – which is located approximately 7.2 kilometres north of the subject lands. These routes are identified in Table 1, and may be revised to extend or reroute to the subject site area.

TABLE 1 EXISTING TRANSIT SERVICE FREQUENCY – MONDAY TO FRIDAY

Transit Route	Transit Type	Serviced Road	Morning Peak Hour	Afternoon Peak Hour
Route 5	Bus	Gordon St. / Farley Dr. / Goodwin Dr. / Victoria Rd.	20 min headway	2 to 3 buses in pk. hr. (variable headways)
Route 16	Bus	Gordon St. / Clairfields Dr. / Clair Rd. / Laird Rd. / Southgate Dr.	30 min headway	30 min headway
Route 99 (Mainline)	Bus	Gordon St. / Clair Rd. / Gosling Gdns. / Clairfields Dr.	10 min headway	10 min headway

Notes:
Bus route and schedule information effective January 7th, 2018.

Details related to future plans and transit-related policies, that will impact the future transit network in the Secondary Plan area, are summarized in Sections 4.6 and 7.0 of this report.

3.1.4 Pedestrians and Cyclists

Cycling and pedestrian facilities in the Secondary Plan area are limited under existing conditions, owing to the rural character of existing lands.

However, pedestrian sidewalks and bicycle lanes are currently provided along urbanized sections of Clair Road and Gordon Street within the Secondary Plan area. Bicycle lanes are provided on Gordon Street to the City limit, including within the rural section of the street south of Poppy Drive. Sidewalks are also provided along sections of new streets southeast of the Gordon Street / Clair Road intersection.

The City of Guelph has actively pursued plans detailing future active transportation networks. A city-wide cycling network plan was established as part of the City's Transportation Master Plan – detailed in Section 4.6, while additional trail and active transportation plans are summarized in Section 8 of this report.

3.2 EXISTING AREA TRAVEL CHARACTERISTICS

The site is located in the south portion of the City of Guelph in a largely rural area with few existing transit and cycling / pedestrian facilities. These facilities will be pursued as part of the secondary plan, and would be anticipated to build on the sustainable transportation infrastructure and services made available to more established and recently developed areas in the south portion of the City.

A review of the travel characteristics information provided by the Transportation Tomorrow Survey (TTS) for trips made in the areas immediately north of the Secondary Plan area (herein referred to as the "South Guelph Area") confirms, unsurprisingly given the site location, that a majority of trips are undertaken in a private automobile either as a driver or passenger. However, a proportion of travel is undertaken using non-auto means, specifically for peak direction travel during peak travel periods.

A review of the TTS travel characteristics of trips being made to / from the South Guelph Area during the weekday peak periods is provided in the following sections. The weekday peak travel periods analyzed include trips starting during the weekday morning peak period from 7:00 a.m. to 9:00 a.m. and during the weekday afternoon peak period from 4:00 p.m. to 6:00 p.m. The study area reviewed generally consists of the residential neighbourhoods east and west of Gordon Street between Arkell Road in the north and Clair Road in the south (2006 TTS Zones 8069-8076). The TTS data area (South Guelph Area) is also illustrated in **Appendix A.** TTS data collection efforts have not, to date, surveyed travel patterns for weekend trips, limiting available data for the weekday periods. Additionally, TTS data is reflective of the 2011 (6-year old) survey set as 2016 data is not yet made available. Should 2016 TTS data be made available through the process of the Secondary Plan study, based travel characteristics will be reviewed.

3.2.1 Modal Share

Travel behaviour characteristics for trips to from the South Guelph Area during the weekday morning and afternoon peak periods are summarized in Table 2. Detailed TTS data calculations are included in **Appendix A.**

TABLE 2 MODAL SPLIT (TTS – 2011, SOUTH GUELPH AREA)

Mode	Morning Peak Period Inbound	Morning Peak Period Outbound	Afternoon Peak Period Inbound	Afternoon Peak Period Outbound	Total Peak Period Travel
Auto Driver [4]	73%	69%	81%	79%	**75%**
Auto Passenger [5]	9%	12%	12%	21%	**13%**
Transit	1%	1%	4%	0%	**2%**
Walk	4%	4%	0%	0%	**2%**
Cycle	4%	2%	1%	0%	**2%**
Other [6]	9%	12%	2%	0%	**6%**
Total	100%	100%	100%	100%	**100%**

Notes:
1. Based on 2011 TTS results for morning (7:00 a.m. – 9:00 a.m.) and afternoon (4:00 p.m. – 6:00 p.m.) peak traffic periods.
2. Statistics specific to 2006 GTA Zones 8069-8076
3. Trips represent an expanded value based on a sample of persons surveyed in the study area.
4. Auto driver trips (includes auto drivers and motorcycles).
5. Auto passenger trips (includes auto passenger trips only).
6. Other trips include school bus and taxi trips, consistent with The City's model document.

The proportion of people in the South Guelph Area who chose to drive a car during the morning and afternoon peak weekday periods is in the order of 75%. The balance of travel is undertaken, significantly, as a vehicle passenger (13%), while a small portion of travel is undertaken using transit or by walking / cycling (approximately 2% each).

It should be noted that "other" trips during the weekday peak periods comprise of school bus trips – and that these represent approximately 9% to 12% of trips during the morning peak period. School bus trips comprise a smaller proportion of weekday afternoon peak period trips as they tend to occur before the afternoon peak travel period (before 4:00 p.m.).

The proportion of travel undertaken as a pedestrian, using a bicycle and by transit generally represents 6% of all trips, which is a small proportion of all trips and should be improved as part of new development planned within the Secondary Plan area.

It should be noted that the South Guelph Area (as reviewed in the above) comprises a low-density, suburban residential typology characterized by single detached dwelling units, considerable vehicle parking provisions and amenities, and a fragmented curvilinear street patterns. These features effectively discourage active transportation options, reduce transit efficiency and supportive densities, and prioritize automotive travel.

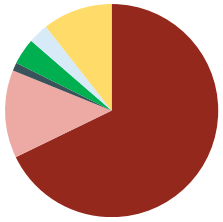
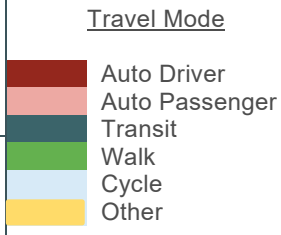
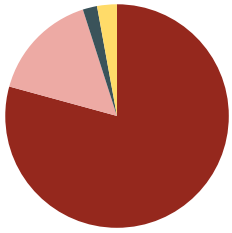
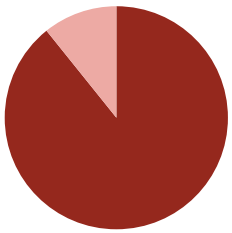
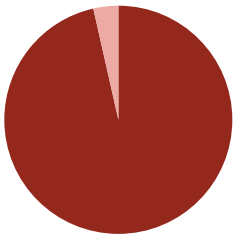
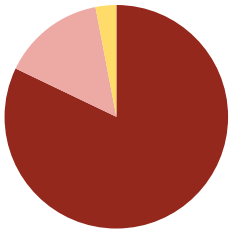
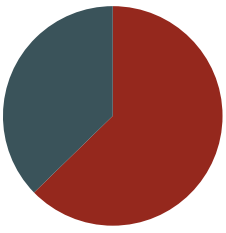
3.2.2 Trip Distribution Patterns

To understand the current travel distribution patterns of persons oriented to / from the South Guelph Area, TTS data was reviewed for weekday morning and afternoon peak period trips for all modes of travel. The study area reviewed consists of the South Guelph Area previously defined and illustrated in **Appendix A.**

The TTS data reveals that trips to / from the South Guelph Area during the weekday peak periods are predominately (76%) undertaken within the City of Guelph boundaries, and that many of these trips (50% of all trips) are "local" – south of the Eramosa and Speed Rivers. It is also important to note that a notable portion of trips are also oriented to / from Halton and Peel Regions (7%), Waterloo Region (7%), Wellington County (5%), and the City of Toronto (3%). Another 2% of trips were dispersed to other areas – notably the City of Hamilton and surround area.

A summary of existing resident travel characteristics including travel mode by certain areas of distribution is provided in Table 3. Detailed TTS data calculations are included in **Appendix A.**

TABLE 3 SOUTH GUELPH AREA: PEAK PERIOD TRIP DISTRIBUTION BY TRAVEL MODE

Destination Area	Proportion of All Trips	Mode Split	Legend
Local Area [1]	50%		
Rest of Guelph	26% (7% Downtown)		
Halton / Peel Regions	7%		
Waterloo Region	7%		
Wellington County	5%		
City of Toronto	3%		

Note:
1. "Local area" consists of areas within the City of Guelph south of the Eramosa and Speed Rivers.
2. Another 2% of trips are oriented to "other" areas in the region.

A summary of weekday peak period (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) travel behaviour and distribution to / from the South Guelph Area is derived from Table 3, and is provided in the following.

- It is notable that approximately 50% of existing peak period trips to / from the South Guelph Area are made "locally". The majority of these trips are undertaken in a private automobile as a driver (68%) or passenger (13%). Many of these trips are also undertaken on a school bus, which one can conclude are "school trips" (11%). Approximately 8% of trips to / from the South Guelph Area are undertaken using transit and active transportation modes, most notably as pedestrians (4%).

- Most commonly, trips to / from the South Guelph Area are made from within the City of Guelph itself. Approximately 76% of trips to / from the South Guelph Area during the weekday peak periods are made within Guelph, including approximately 50% locally (noted above), approximately 7% to the Downtown, and 19% in the rest of Guelph (north of the Eramosa and Speed Rivers). For trips within Guelph, but outside the local area as defined above, approximately 95% of trips are made by car (79% driver; 16% vehicle passenger), and only 2% are made by transit.

- After the City of Guelph itself, Waterloo Region represents the second largest jurisdiction for trips to / from the South Guelph Area. Approximately 7% of trips to / from the South Guelph Area are to / from Waterloo Region. TTS data indicates that trips are made by automobile (96% driver; 4% passenger).

- Approximately 7% of trips to / from the South Guelph Area are to / from Halton / Peel Regions. Trips between the South Guelph Area and Halton and Peel Regions are made by automobile (89% driver; 11% passenger).

- Approximately 5% of trips to / from the South Guelph Area are to / from Wellington County. Trips between the South Guelph Area and Wellington County are made predominately by automobile (82% driver; 15% passenger), while a small proportion of trips (3%) are undertaken by school bus.

- A smaller proportion - approximately 3% of trips to / from the South Guelph Area are made to / from the City of Toronto. Relative to trips to / from other areas, trips to / from Toronto are more likely to be made by transit. A greater proportion of all trips to / from Toronto are taken by transit (37%), but it is still predominantly car-based travel (63%).

- In summary, trips made "local" to the South Guelph Area are more likely to be undertaken by sustainable transportation means (transit, walking, cycling) relative to trips made within the City of Guelph generally, or to trips made between the South Guelph Area and neighbouring Waterloo, Halton, and Peel Regions. During weekday peak travel periods, approximately 7% of "local" trips are made by walking or cycling, while another 1% is made by transit.

  During weekday peak travel periods, trips oriented within the City of Guelph (outside of the "local" area) and to neighbouring regions (Halton, Peel, Waterloo, Wellington County) are predominately and overwhelming undertaken in a private vehicle (see Table 3). During weekday peak travel periods, trips to / from the City of Toronto comprise a small proportion of overall travel (3%). Although trips to / from Toronto are still predominately undertaken by car, the transit mode share is greater than trips between the South Guelph Area and other areas analyzed herein.

3.3 COLLISION HISTORY

Collision data was made available for the 5-year time period from January 1st 2012 to March 31st, 2017, at a number of intersections within the study area, including:

- Clair Road at Gordon Street
- Clair Road West at Laird Road
- Clair Road West at Clairfields Drive West
- Clair Road East at Farley Drive
- Clair Road East at Beaver Meadow Drive
- Clair Road East at Victoria Road South
- Gordon Street at Maltby Road
- Gordon Street at Poppy Drive
- Victoria Road South at Maltby Road

Detailed collision reports are included in **Appendix B**.

A brief summary of collisions for the 2012 to 2017 (end March 2017) period, for each of the above-mentioned intersections, is provided in Table 4.

3.3.1 Collision Data Summary

A total of 134 collisions were report at the above-mentioned intersections within the identified time frame (63 month period from 2012 to 2017). Of the total volume of collisions, 21 (16%) resulted in a non-fatal injury, while 42 collisions (31%) report property damage only (no injury). All other collisions were non-reported or "non-reportable". No "fatal" collisions were reported.

Within the collision data scope, approximately 51% of the collisions recorded have occurred at the Gordon Street and Clair Road intersection. Most (greater than half) of these collisions were either "rear-end" collisions often resulting from following too closely or improper speed for road conditions, or "turning movement" collisions often resulting from left-turn traffic not yielding to on-coming traffic. Measures to reduce rear-end collisions include safety campaigns targeted at poor-weather vehicle operation, greater enforcement, and reduced speed limits. The introduction of protected left-turn phases at this intersection may have an impact on reducing turning movement collisions.

A total of 3 collisions involving vulnerable road users were recorded – in all instances involving cyclists. Two of this collisions occurred at the Gordon Street and Clair Road intersection, and one other at the Clair Road and Farley Drive intersection. Cycling facilities and pavement markings (including pedestrian crossings) should be highly visible and well-marked. Consideration may be made to reducing vehicle speeds given the lack of physical separation (bollards / buffers) between cycling facilities and vehicle travel lanes.

It should be noted that a total of 15 collisions were recorded at the Victoria Road South and Maltby Road intersection. This intersection is currently configured as two separate intersections (back to back T-intersections). This unusual configuration, which requires northbound / southbound traffic to conduct a right-turn then left-turn in short succession to continue in the same direction, may explain the rate of rear-end collisions at this intersection.

TABLE 4 COLLISION DATA SUMMARY

Intersection	Total Collisions (2012 to 2017)[1]	Average Collisions per Month	Impact Type	Classification	Collisions Involving Vulnerable Road Users
Clair Road / Gordon Street	69	1.1	• 31 rear-end • 12 turning movement • 8 angle • 10 single motor vehicle • 6 sideswipe • 1 approaching • 1 other	• 12 non-fatal injury • 22 property damage only • 35 non-reportable	• 2 involving cyclists
Clair Road West / Laird Road	4	0.1	• 2 rear-end • 1 single motor vehicle • 1 sideswipe	• 2 property damage only • 2 non-reportable	• 0 vulnerable road users
Clair Road West / Clairfields Drive West	13	0.2	• 7 rear-end • 1 turning movement • 2 angle • 3 sideswipe	• 13 non-reportable	• 0 vulnerable road users
Clair Road East / Farley Drive	13	0.2	• 1 rear-end • 7 turning movement (primarily east-west left turns) • 3 angle • 2 single motor vehicle	• 3 non-fatal injury • 5 property damage only • 5 non-reportable	• 1 involving cyclists
Clair Road East / Beaver Meadow Dr.	1	-	• 1 single motor vehicle	• 1 non-fatal injury	• 0 vulnerable road users
Clair Road East / Victoria Road South	12	0.2	• 3 rear-end • 5 angle • 3 single motor vehicle • 1 approaching	• 1 non-fatal injury • 6 property damage only • 5 non-reportable	• 0 vulnerable road users
Gordon Street / Maltby Road	5	0.1	• 2 angle • 3 single motor vehicle	• 2 non-fatal injury • 2 property damage only • 1 non-reportable	• 0 vulnerable road users
Gordon St. / Poppy Dr.	2	-	• 2 angle	• 1 non-fatal injury • 1 non-reportable	• 0 vulnerable road users
Victoria Road South / Maltby Road	15	0.2	• 7 rear-end • 2 turning movement • 6 single motor vehicle	• 1 non-fatal injury • 5 property damage only • 9 non-reportable	• 0 vulnerable road users
All Locations	**134**	**2.1**	• **51 rear-end** • **22 turning movement** • **22 angle** • **26 single motor vehicle** • **10 sideswipe** • **2 approaching** • **1 other**	• **21 non-fatal injury** • **42 property damage** • **71 non-reportable**	• **3 involving vulnerable road users**

Notes:
1. Data collection to end of March 2017

3.4 EXISTING TRAFFIC OPERATIONS

3.4.1 Analysis Scope

Existing traffic operations analyses have been undertaken for a number of intersections within the Clair-Maltby Secondary Plan area in order to understand existing traffic conditions and demands. Existing traffic conditions have been reviewed at the following intersections as part of this background study:

Signalized Intersections:

- Gordon Street and Clair Road;
- Gordon Street and Poppy Drive;
- Clair Road and Poppy Drive;
- Clair Road and Farley Drive;
- Clair Road and Beaver Meadow Drive;
- Clair Road and Victoria Road;
- Laird Road and Highway 6 northbound off-ramp; and
- Laird Road and Highway 6 southbound off-ramp.

Unsignalized Intersections:

- Laird Road and Clair Road West;
- Gordon Street and Maltby Road;
- Victoria Road and Maltby Road (east intersection); and
- Victoria Road and Maltby Road (west intersection).

The free traffic movements associated with the existing Highway 6 access ramps to / from Laird Road East will not be analyzed as part of the traffic analysis herein. Given that these movements operate “free”, it is anticipated that they will operate acceptably without constraint.

3.4.2 Analysis Scenarios

Traffic operations analyses have been undertaken during the weekday morning and afternoon street peak hours under the following traffic conditions reflecting existing traffic volumes, lane configurations and traffic controls.

3.4.3 Analysis Assumptions

3.4.3.1 Intersection Capacity Analysis Methodology

Traffic operations analyses have been undertaken at study area intersections using standard capacity analysis procedures as follows.

The traffic operations analysis for signalized and unsignalized intersections was undertaken using *Synchro Version 9* software, adhering to the analysis methodology outlined in the *Highway Capacity Manual 2000*. Key performance indicators utilized for the signalized and unsignalized analyses are volume-to-capacity (v/c) ratios, delay times, and level-of-service (LOS).

Input parameters for the analyses are based on data acquired from traffic surveys. Peak hour factors and heavy traffic percentage parameters were calculated based on the traffic data acquired where appropriate. Bus blockages were estimated based on transit service frequency during prevailing traffic volume peak hours.

3.4.3.2 Traffic Volume Data

Existing traffic volume data were obtained for all study area intersections from the City of Guelph.

Traffic volume data was provided for the period 2012 to 2017 for key intersections in the study area, as well as older traffic volume data for use as reference. Traffic volumes were reviewed against historical data (TMCs and ATRs) to verify general trends and understand potential inconsistencies. Generally, the most recent intersection counts (those from 2015 to 2017) were selected at key study area intersections, and utilized as the basis for analysis. Existing area traffic volumes utilized in assessing current traffic operations are illustrated in Figure 2. Traffic count data utilized in the traffic analysis prepared herein, are included in **Appendix E.**

Traffic signal timing plans were provided by the Ministry of Transportation and the City of Guelph for signalized intersection included as part of the analysis.

3.4.3.3 Road Network Assumptions

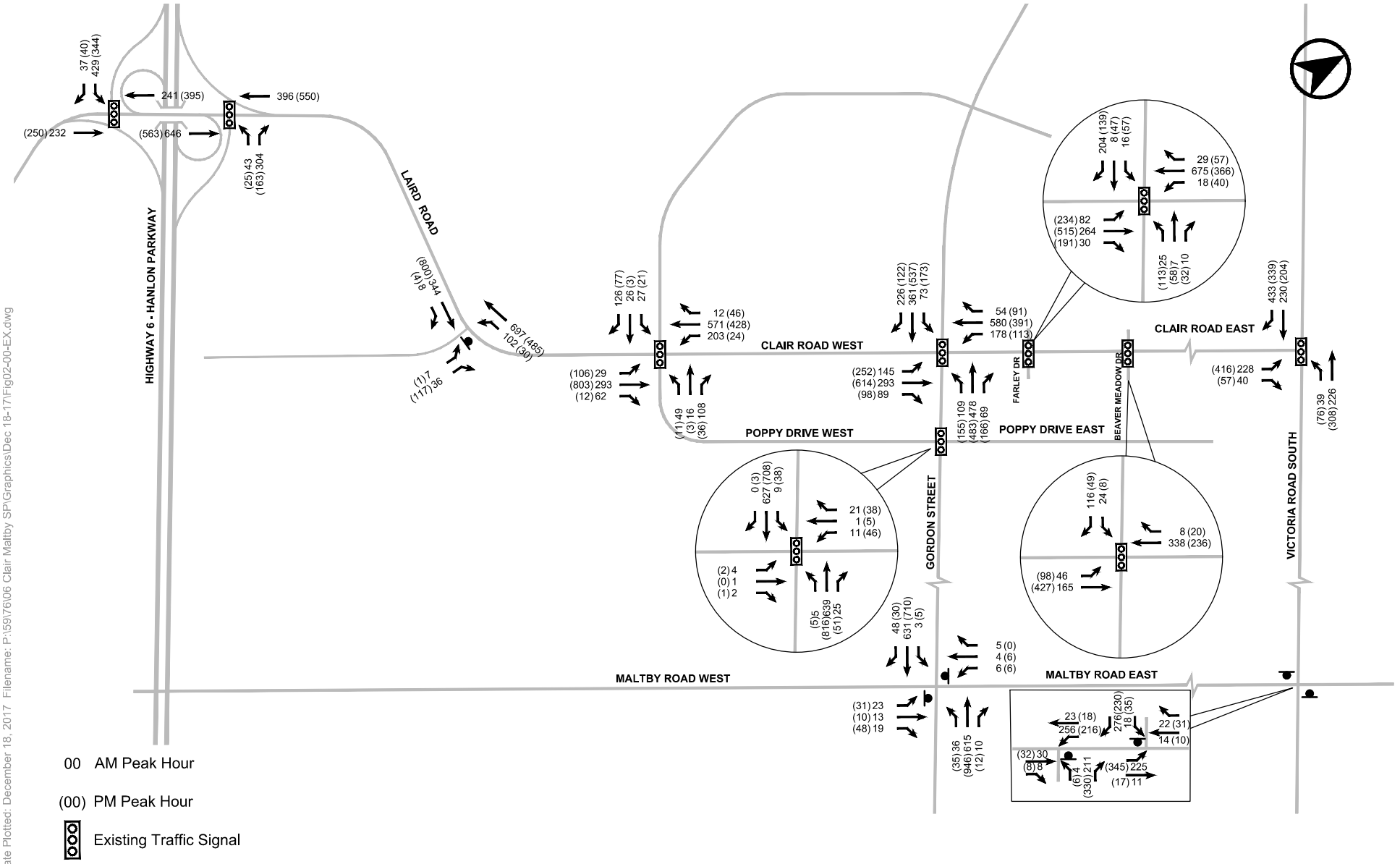
Existing lane configurations on the public area road network reflect existing lane configurations and traffic controls.

The existing area road network configuration and traffic controls are illustrated in Figure 3.

3.4.3.4 Calibration

Vehicle delay surveys were undertaken for the eastbound and westbound traffic movements at the Gordon Street and Maltby Road intersection to appropriately reflected existing traffic delays for the eastbound and westbound movements. The existing traffic analysis herein is calibrated to reflect existing delay results observed during updated data collection and traffic delay surveys.

Vehicle delay surveys are included in **Appendix F.**



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EXISTING TRAFFIC VOLUMES

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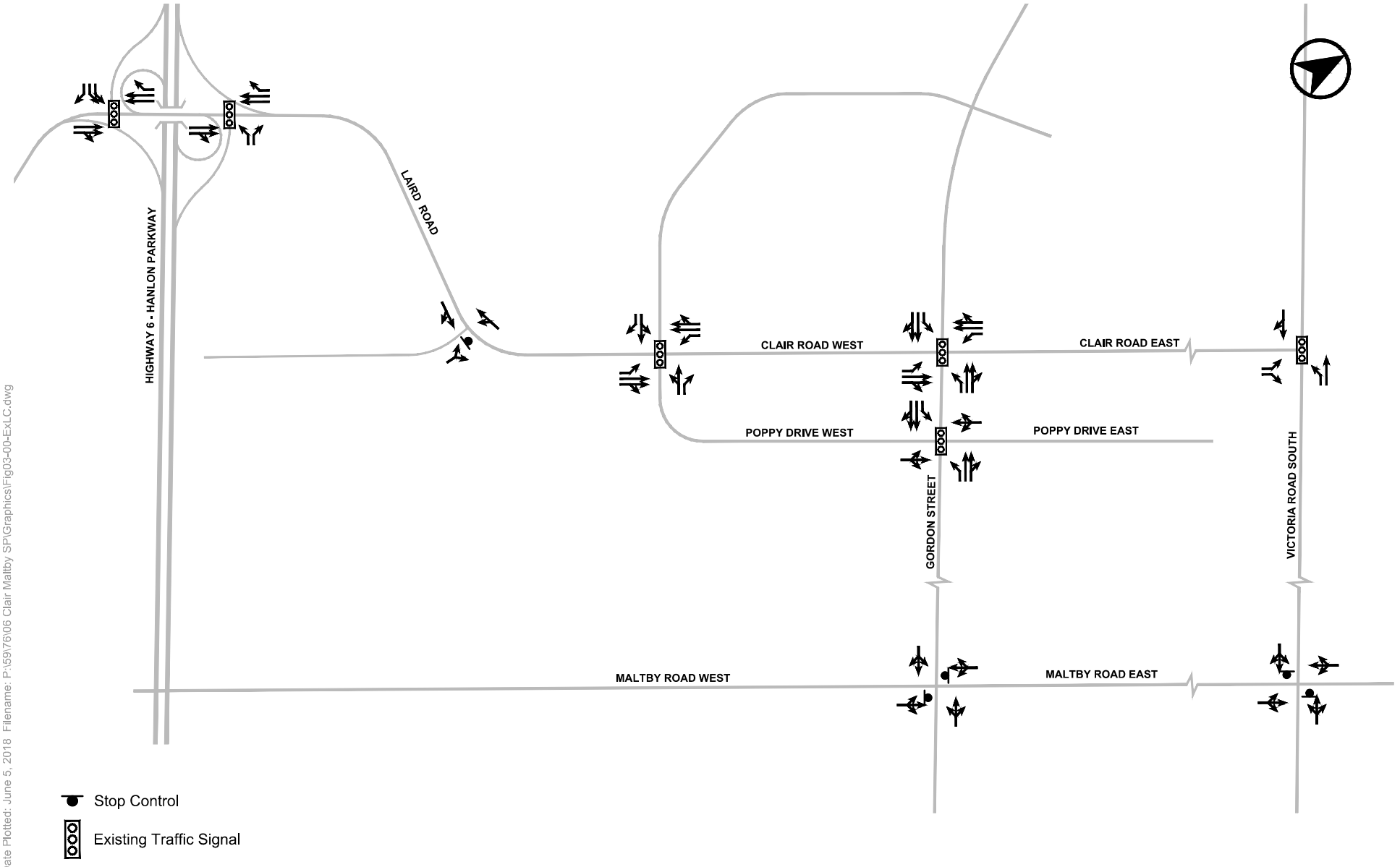
Clair Maltby Secondary Plan
5976-06 December 2017

Figure 2



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EXISTING TRAFFIC LANE CONFIGURATIONS AND CONTROLS

3.4.4 Signalized Intersection Analysis Results

Detailed results of the Synchro analysis of signalized intersections within the study area under existing traffic conditions are included in **Appendix C.** A discussion of the traffic analysis findings follows.

A summary of existing signalized and unsignalized traffic operations at key existing study area intersections is provided in Figure 4.

3.4.4.1 General Findings

The traffic operations analyses outlined herein reflect traffic operations at the key intersections in the site area without explicitly considering the downstream congestion extending beyond study area intersections.

Individual movement and overall volume-to-capacity ratios for each of the signalized intersections within the study area are summarized in Table 5.

The signalized intersection traffic analysis indicates that all study area intersections perform acceptably, and without any traffic capacity constraints for any individual traffic movements. During weekday peak hours, overall intersection v/c ratios are shown to be 0.66 or less, while individual traffic movements are shown to all operate with a v/c ratio of 0.71 or less.

Overall signalized intersection traffic operations are good under existing conditions, and are generally reflective of new infrastructure (updated and widened roads) and limited area development. Existing delay and capacity results are acceptable.

The key Gordon Street and Clair Road intersection operates acceptably under existing traffic conditions, with an overall intersection v/c ratio of 0.58 during the weekday morning peak hour, and 0.66 during the weekday afternoon peak hour. Higher traffic volumes (resulting in a higher v/c ratio) during the weekday afternoon peak hour are reflective of the commercial land uses prevalent in each of the intersection's four quadrants.

The intersection of Clair Road East and Victoria Road was recently signalized. The signalized intersection analysis indicates that this intersection generally operates acceptably. However, the southbound movement is shown to operate acceptably because southbound right-turn traffic utilize the existing southbound curb-adjacent bicycle lane to conduct this movement. Occasionally, southbound through vehicles are positioned to limit southbound right-turn traffic from utilizing the narrow bicycle lane to approach the intersection, resulting in longer traffic queues and delays. The municipality should consider widening the southbound approach to appropriately configure separate southbound through and southbound right-turn lanes, along with a separate and reconfigured southbound bicycle lane.

TABLE 5 STUDY AREA SIGNALIZED INTERSECTIONS OVERALL V/C RATIOS

Intersection	Traffic Movement	Volume to Capacity (v/c) Ratio
Gordon Street and Clair Road	EB L	0.59 (0.71)
	EB TR	0.39 (0.65)
	WB L	0.43 (0.48)
	WB TR	0.63 (0.44)
	NB L	0.43 (0.57)
	NB TR	0.57 (0.60)
	SB L	0.26 (0.60)
	SB TR	0.53 (0.61)
	Overall	**0.58 (0.66)**
Gordon Street and Poppy Drive	EB LTR	0.08 (0.00)
	WB LTR	0.23 (0.43)
	NB L	0.01 (0.01)
	NB TR	0.27 (0.40)
	SB L	0.02 (0.10)
	SB TR	0.26 (0.31)
	Overall	**0.27 (0.39)**
Clair Road West and Poppy Drive West / Clairfields Drive	EB L	0.08 (0.23)
	EB TR	0.23 (0.50)
	WB L	0.38 (0.09)
	WB TR	0.37 (0.31)
	NB LT	0.16 (0.03)
	NB R	0.07 (0.02)
	SB LT	0.12 (0.06)
	SB R	0.09 (0.05)
	Overall	**0.32 (0.34)**
Clair Road East and Farley Drive	EB L	0.22 (0.44)
	EB TR	0.16 (0.41)
	WB L	0.05 (0.18)
	WB TR	0.33 (0.26)
	NB LT	0.42 (0.36)
	NB R	0.10 (0.23)
	SB LT	0.21 (0.15)
	SB R	0.25 (0.29)
	Overall	**0.33 (0.43)**

Clair Road East and Beaver Meadow Drive	EB L	0.25 (0.21)
	EB TR	0.22 (0.34)
	WB L	0.05 (0.04)
	WB TR	0.54 (0.26)
	NB LTR	0.10 (0.07)
	SB LT	0.07 (0.04)
	SB R	0.08 (0.05)
	Overall	**0.32 (0.25)**
Clair Road East and Victoria Road	EB L	0.37 (0.65)
	EB R	0.03 (0.06)
	NB L	0.13 (0.21)
	NB T	0.42 (0.56)
	SB T	0.41 (0.37)
	SB R	0.33 (0.24)
	Overall	**0.39 (0.61)**
Laird Road and Highway 6 Northbound Off-Ramp	EB T	0.59 (0.52)
	WB T	0.38 (0.61)
	NB L	0.07 (0.03)
	NB R	0.43 (0.19)
	Overall	**0.50 (0.37)**
Laird Road and Highway 6 Southbound Off-Ramp	EB T	0.22 (0.22)
	WB T	0.24 (0.34)
	NB L	0.31 (0.23)
	NB R	0.03 (0.03)
	Overall	**0.28 (0.28)**

Notes:
1. 0.00 (0.00) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour)

3.4.5 Unsignalized Intersection Analysis Results

The results of the capacity analysis performed for unsignalized intersections in the study area are summarized in Table 6.

Detailed Synchro analysis output sheets are included in **Appendix C.** A summary of existing signalized and unsignalized traffic operations at key existing study area intersections is provided in Figure 4.

TABLE 6 UNSIGNALIZED INTERSECTION ANALYSIS RESULTS SUMMARY

Intersection	Movement of Interest	Existing Traffic Conditions	
		Delay (s)	LOS
Clair Road West and Laird Road	WB L	2.3 (1.2)	A (A)
	NB (Clair Rd.) LR	14.7 (21.4)	B (C)
Gordon Street and Maltby Road	EB LTR	29.1 (23.9)	D (C)
	WB LTR	20.1 (41.0)	C (E)
	NB LTR	1.2 (1.4)	A (A)
	SB LTR	0.1 (0.2)	A (A)
Victoria Road and Maltby Road (west intersection)	WB LT	7.3 (7.2)	A (A)
	NB LR	9.7 (10.5)	A (B)
Victoria Road and Maltby Road (east intersection)	EB LT	7.5 (7.7)	A (A)
	SB LR	10.6 (12.3)	B (B)

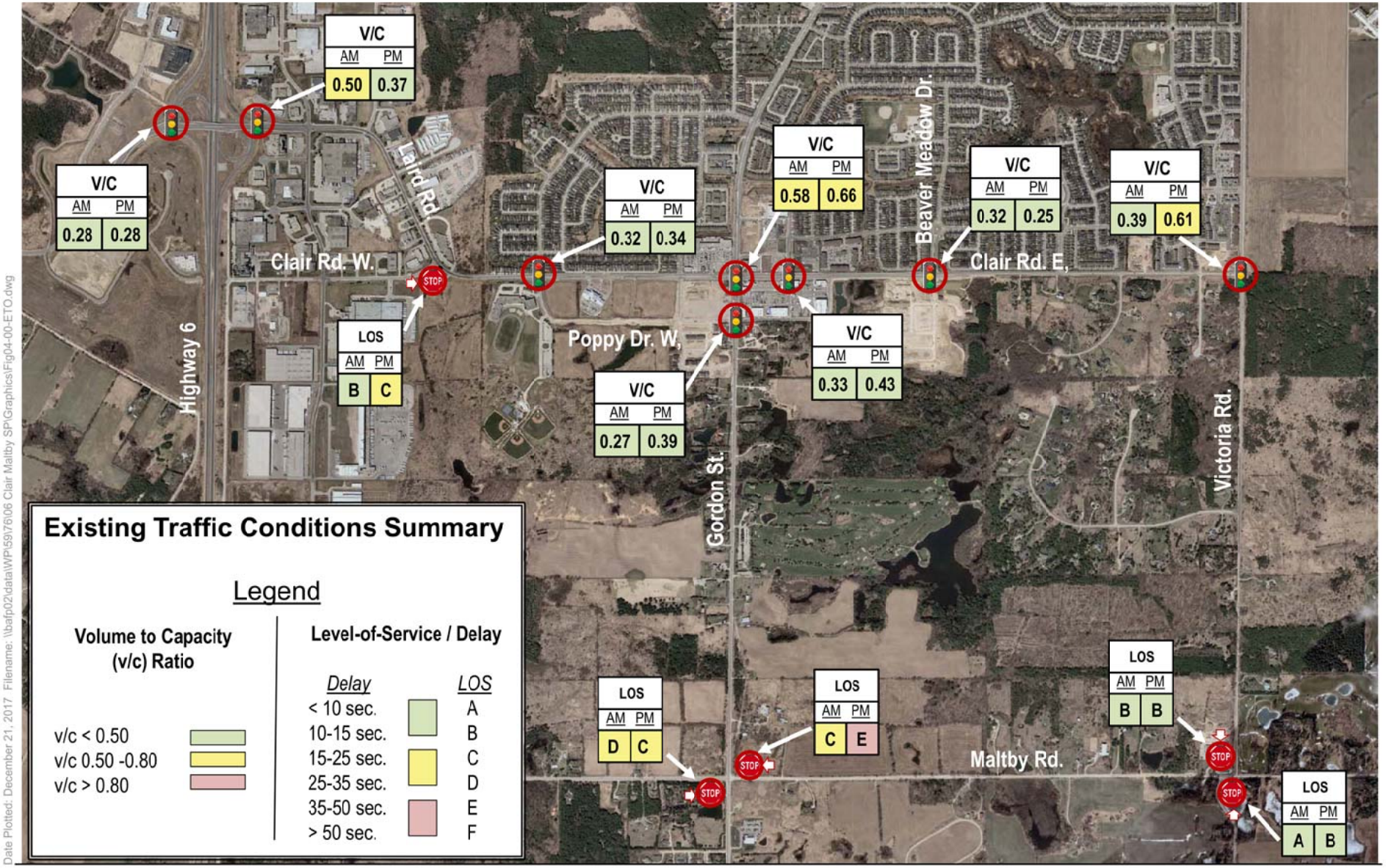
Notes:
1. 0.00 (0.00) – Weekday Morning Peak Hour (Weekday Afternoon Peak Hour)

Existing Unsignalized Intersections

A total of four (4) unsignalized intersections were reviewed within the unsignalized intersection analysis. Traffic operations at unsignalized intersections within the study area operate acceptably, except for the following:

Gordon Street and Maltby Road:
The existing conditions traffic analysis indicates the that eastbound and westbound STOP-control movements at the Gordon Street and Maltby Road intersection operate with longer delays and fewer gap opportunities. The unsignalized traffic analysis indicates that the eastbound movement operates with LOS D during the weekday morning peak hour and LOS C during the weekday afternoon peak hour, while the westbound movement operates with LOS C during the weekday morning peak hour and LOS E during the weekday afternoon peak hour. Signalization of this intersection may be considered in the longer-term given anticipated traffic growth along both streets. This intersection can be monitored, and will be considered more closely in the future traffic analysis to be completed as part of forthcoming reporting.

All other movements at unsignalized intersections within the study area are shown to operate at LOS B or better during weekday peak hours, which is acceptable.



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SUMMARY OF EXISTING TRAFFIC OPERATIONS ANALYSIS

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Clair Maltby Secondary Plan
5976-06 August 2017

Figure 4

3.5 FUTURE TRAFFIC CONSIDERATIONS

3.5.1 General Corridor Growth

BA Group has undertaken a review of traffic patterns in the study area over the past 10 years (2008 to present) to provide an understanding of overall traffic growth trends on key street segments within the Secondary Plan area.

Traffic volumes were reviewed for the following street segments to provide an indication of prevailing trends in vehicle activity along the arterial road corridors of Gordon Street, Clair Road, and Victoria Road within this period.

1. Gordon Street south of Clair Road,
2. Gordon Street north of Maltby Road,
3. Clair Road east of Gordon Street,
4. Clair Road west of Gordon Street, and
5. Victoria Road south of Clair Road.

It should be noted that traffic volumes were also reviewed for segments of Maltby Road east of Gordon Street; however, the infrequency of historical data and generally small traffic volumes could not produce a reflective traffic growth rate. Traffic volumes on Maltby Road were shown to be relatively small, and variable from count to count.

Traffic corridor review observations are outlined in the following and are summarized in **Appendix G**.

- In the **northbound and southbound directions on Gordon Street**. Traffic volumes on the street segment south of Clair Road and on the street segment north of Maltby Road illustrate consistent traffic patterns for the entire Gordon Street segment through the Secondary Plan area. Two-way traffic volumes have decreased by in the order of -0.2% to -0.3% annually during the weekday morning peak hour, and have increased in the order of +0.4% to +0.7% during the weekday afternoon peak hour.

  During the weekday morning peak hour, northbound traffic is shown to remain relatively consistent over the last 10-year period, while southbound traffic is shown to have declined slightly (less than 0.8% annually) over the same period.

  During the weekday afternoon peak hour, northbound traffic is shown to have increased by +0.5% to +0.6% per annum over the last 10-year period, while southbound traffic is shown to have increased between +0.3% to 0.8% per annum over the same period.

- In the **eastbound and westbound directions on Clair Road**. Over the previous 10-year period, two-way traffic volumes on Clair Road are shown to have increased in the order of +3% to +4% annually during both peak hour periods west of Gordon Street, and in the order of +4% to +5% annually during both peak hour periods east of Gordon Street. Generally, traffic volumes have increased at a greater rate during the weekday afternoon peak hour when compared to the weekday morning peak hour.

- In the **northbound and southbound directions on Victoria Road**. It is important to note that the rate of traffic growth on Victoria Road (percentage change) is somewhat misleading for the following reasons:

    - Victoria Road traffic volumes are relatively low, and despite higher rates of vehicle growth, the absolute volume of new traffic is less than those observed on Clair Road.
    - Historical traffic volume data indicates that most of the increase in traffic volumes on Victoria Road occurred between 2013 and 2014, and that traffic volumes after 2014 are shown to be more consistent.

    Understanding this, two-way traffic volumes on Victoria Road south of Clair Road are shown to have increased by +16% to +18% annually during the weekday morning and afternoon peak hours, respectively.

The general corridor growth rates adopted for the purpose of this study are summarized in Table 7.

TABLE 7 CORRIDOR TRAFFIC GROWTH SUMMARY

Street	Direction	Observed Growth Rate [1]
Gordon Street Two-way	Northbound / Southbound	-0.2% to -0.3% (+0.4% to +0.7%)
Clair Road Two-way	Eastbound / Westbound	+3.6% +4.0% (+3.7% to +4.7%)
Victoria Street Two-way	Northbound / Southbound	+16% (+18%)

Notes:
1. 00% (00%) – Morning peak hour (Afternoon peak hour).

3.5.2 Site Specific Background Developments

As part of the Mobility Study Phase 2, future traffic operations will be forecast and assessed, understanding general traffic growth trends, traffic related to Secondary Plan development, and other area background developments – which are summarized in Table 8.

Area background developments also provide an understanding of current changes within the vicinity of the Clair-Maltby Secondary Plan area, and the existing development context that will be considered as part of future planning for the subject lands.

Future traffic modelling exercises were detailed in Section 2.3 of this report, and will be undertaken as part of Phase 2 of the Mobility Study.

TABLE 8 AREA DEVELOPMENT APPLICATIONS

Development	Residential Units	Non-Residential GFA	Two-Way Site Traffic[1] AM (PM) [SAT]	Transportation Study / Analysis
1888 Gordon Street (Tricar Developments Inc.)	460 Apartment Units	6,350 sq. ft. non-residential GFA	297 (329)	*1888 Gordon Street Traffic Impact Study*, September 22, 2017, Stantec.
Neumann Subdivision (Coldwell Banker Neumann REB Ltd.)	Stacked townhouses and apartments (permitted use). Number of units unspecified.	3.22 ha Corporate Business Park 0.98 ha Commercial 4.2 ha	205 (203)	*Neumann Subdivision Guelph, ON Transportation Impact Study*, October 2014, Paradigm Transportation Solutions Ltd.
Bird Subdivision (Thomasfield Homes Ltd.)	21 Single Family Units 36 Townhouse Units 249 Apartment Units 306 Total Units	0.04 ha Future Development	107 (137)	*Bird Residential Subdivision Traffic Impact Study*, October 2010, Paradigm Transportation Solutions Ltd.
Northeast Corner of Gordon Street / Clair Road (Loblaw Properties Ltd.; Choice Properties Real Estate Investment Trust)	-	4,635 sq. m. Additional Retail	(376) [556]	*1750 Gordon Street, Farley Drive and Goodwin Drive / Site Access Review* October 26, 2015, LEA Consulting Ltd.
Southwest Corner of Gordon Street / Clair Road (Fieldgate)	-	7,408 sq. m. Retail	515[2]	*Gordon Street and Clair Road* October 2015, LEA Consulting Ltd.
Southgate Business Park (Industrial Equities)	-	27,870 sq. m. Manufacturing 122,632 sq. m. Warehouse	476 (450)	*Southgate Business Park Transportation Impact Study* June 2012, IBI Group
Hanlon Creek Business Park	--	--	--	--
Dallan Residential Subdivision 161, 205 & 253 Clair Road East	409 residential units (Mix of densities)	--	--	1888 Gordon TIS assumed 105 units. ±400 units were previously proposed. Unclear what's currently being built…
South End Centre	-	13,935 sq.m. (150,000 sq.ft.) Recreation Centre	308 (411)	No TIS. Traffic referenced from 1888 Gordon TIS.
Westminster Woods Victoria Road South & Clair Road East	101 residential apartment units	745 sq. m. Commercial	70 (149)	*Kingsbury C Westminister Woods Traffic Impact Study.* March 2015, Stantec.

Notes:
1. Two-Way Site Traffic based on individual TIS reports.
2. 515 total PM trips, 340 net new PM trips

4.0 POLICY AND REGULATORY PLANNING FRAMEWORK

The Clair-Maltby Secondary Plan transportation elements are guided by the policies and plans set out in the policies outlined below:

4.1 THE PROVINCIAL POLICY STATEMENT (PPS)

The Provincial Policy Statement (PPS) came into effect on March 31, 2005. The PPS provides policy direction on land use planning, development and transportation matters. All planning decisions must be consistent with the PPS. The PPS is based on the principles of "maintaining strong communities, a clean and healthy environment and a strong economy" (Part IV Vision).

The PPS indicates that different modes and transportation systems are to be connected, including across jurisdictional boundaries. It encourages density and mix of uses to support the planning and development of alternative transportation modes and limit the length and need of vehicle trips. It states that public streets should meet the needs of pedestrians and facilitate non-motorized movements.

In addition, the PPS promotes planning decisions including intensification, redevelopment, accounting for existing building stock, promoting various types of housings, making efficient use of existing infrastructure, etc…

4.2 PLACES TO GROW

"Places to Grow" - the Growth Plan for the Greater Golden Horseshoe was initially prepared by the provincial government in 2006 and should be read in conjunction with the PPS. All decisions made by municipalities with respect to planning matters must conform to the Growth Plan.

The Places to Grow Growth Plan has been recently updated following a two-year consultation period. The Government of Ontario has released the Growth Plan for the Greater Golden Horseshoe, 2017. Effective July 1, 2017, this plan will replace the Growth Plan for the Greater Golden Horseshoe, 2006 that initially took effect on June 16, 2006. The plan works to support the achievement of complete communities, curb sprawl, protect the natural environment, support economic development, and ensure that land to accommodate forecasted population and employment growth will be available when needed, now and in the future.

The Growth Plan provides a vision and a framework for managing growth. It requires all municipalities to implement policies to achieve intensification and higher-densities to make efficient use of land and infrastructure and support transit viability, and directs growth to *urban growth centres* and *transit corridors and stations areas*. The plan also calls for the consideration of climate change in planning for future growth that supports moving towards low-carbon communities and approaches to reduce greenhouse gas emissions.

In these areas, the Growth Plan demands increased residential and employment densities to support existing and planned transit services, a mix of land uses, and designed access for various transportation modes to the transit facility including pedestrian and cycling infrastructure.

The Growth Plan requires land use planning to be coordinated with transportation planning and investment. The Plan states that transportation investments and the wider transportation system:

1. provide connectivity among transportation modes for moving people and for moving goods;

2. offer a balance of transportation choices that reduces reliance upon the automobile and promotes transit and *active transportation;*

3. be sustainable and reduce greenhouse gas emissions by encouraging the most financially and environmentally appropriate mode for trip-making and supporting the use of zero- and low-emission vehicles;

4. offer *multimodal* access to jobs, housing, schools, cultural and recreational opportunities, and goods and services;

5. accommodate agricultural vehicles and equipment, as appropriate; and

6. provide for the safety of system users.

The Growth Plan indicates that the design of new facilities and redesign of existing streets will adopt a complete-streets approach that will ensure the needs of all street users are accommodated; however, public transit will be the first priority for transportation infrastructure planning and major transportation investments. Supported by the implementation of complete street policies, municipalities will ensure that active transportation networks are comprehensive and integrated into transportation planning.

The Growth Plan also speaks to accommodating goods movement, through linking international gateways and employment areas by appropriate transportation facilities / infrastructure, and that municipalities establish priority routes for goods movement.

4.3 CITY OF GUELPH OFFICIAL PLAN

The City of Guelph Official Plan is currently undergoing a statutory five year review. The Plan was established in 2001. The current Plan is a consolidation of the Official Plan policies in effect as of December 2014.

4.3.1 Official Plan Amendment 48

The City of Guelph Official Plan Amendment 48 was approved by City Council in June 2012, as the third and final phase in updating the City‘s Official Plan to ensure that its goals, objectives and policies conform and are consistent with provincial plans, polices and legislation.

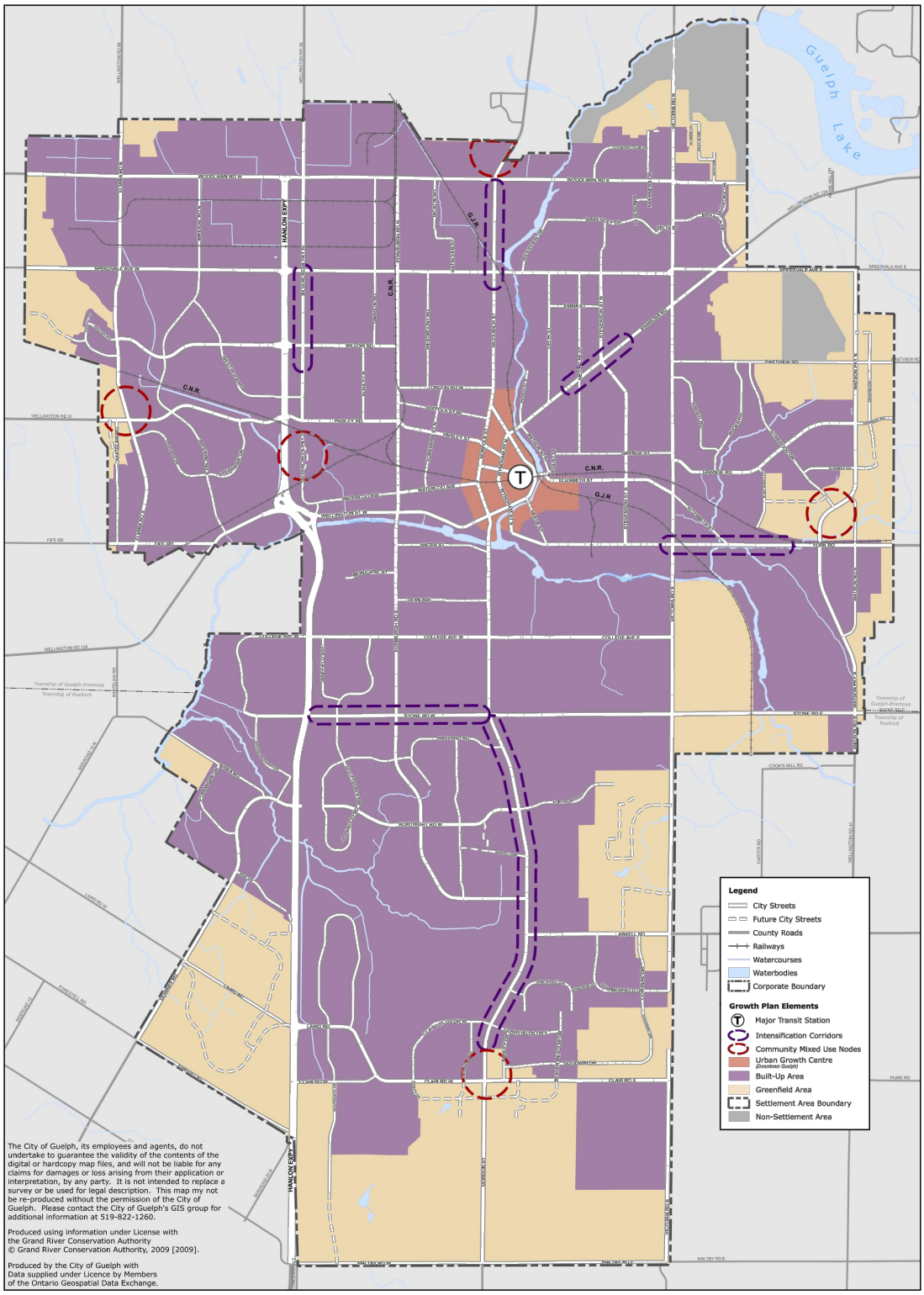
Transportation policies and objectives outlined in Amendment 48 are generally consistent with the initial Official Plan policies, and are described as part of the Current Official Plan in the following.

The City of Guelph Official Plan follows the policies laid out in the PPS and Growth Plan, and establishes a strategic vision, policies, actions and framework to support a healthy natural ecosystem, community services and facilities, education and employment opportunities, infrastructure that is supportive of alternative forms of transportation, community safety, and vibrant neighbourhoods and downtown.

Emphasis in the City of Guelph Official Plan is on maintaining quality of life, safety and stability of the community, and accommodating compact future development that avoids sprawl and is supported by existing infrastructure and services that can be supported by the efficient use of public expenditures. These objectives include developing a ***safe, efficient and convenient transportation system that provides for all modes of travel and supports the land use patterns of the City***.

The Official Plan identifies (in Figure 5) the Clair-Maltby Secondary Plan area as predominately a "greenfield area", while the Clair Road / Gordon Street junction is identified as a "community mixed-use node" (OP Schedule 1B). These areas are further noted as "reserve", "industrial" and "commercial" lands in OP Amendment 48 Schedule 2 (Figure 6).

In regards to development in new "greenfield" areas, the Official Pan directs new development to provide for a diverse mix of land uses at transit supportive densities (50 residents / jobs per hectare) that supports a multi-modal transportation network and efficient public transit that links to the City's Urban Growth Centre and surrounding communities. Transit, along with walking and cycling, are to be supported by new development for everyday travel. The identified community mixed-use node at Clair Road / Gordon Street, is an area identified for higher density and mixed-use development that serve the wider community. The node is intended to be well served by transit and facilitate pedestrian and cycling travel.



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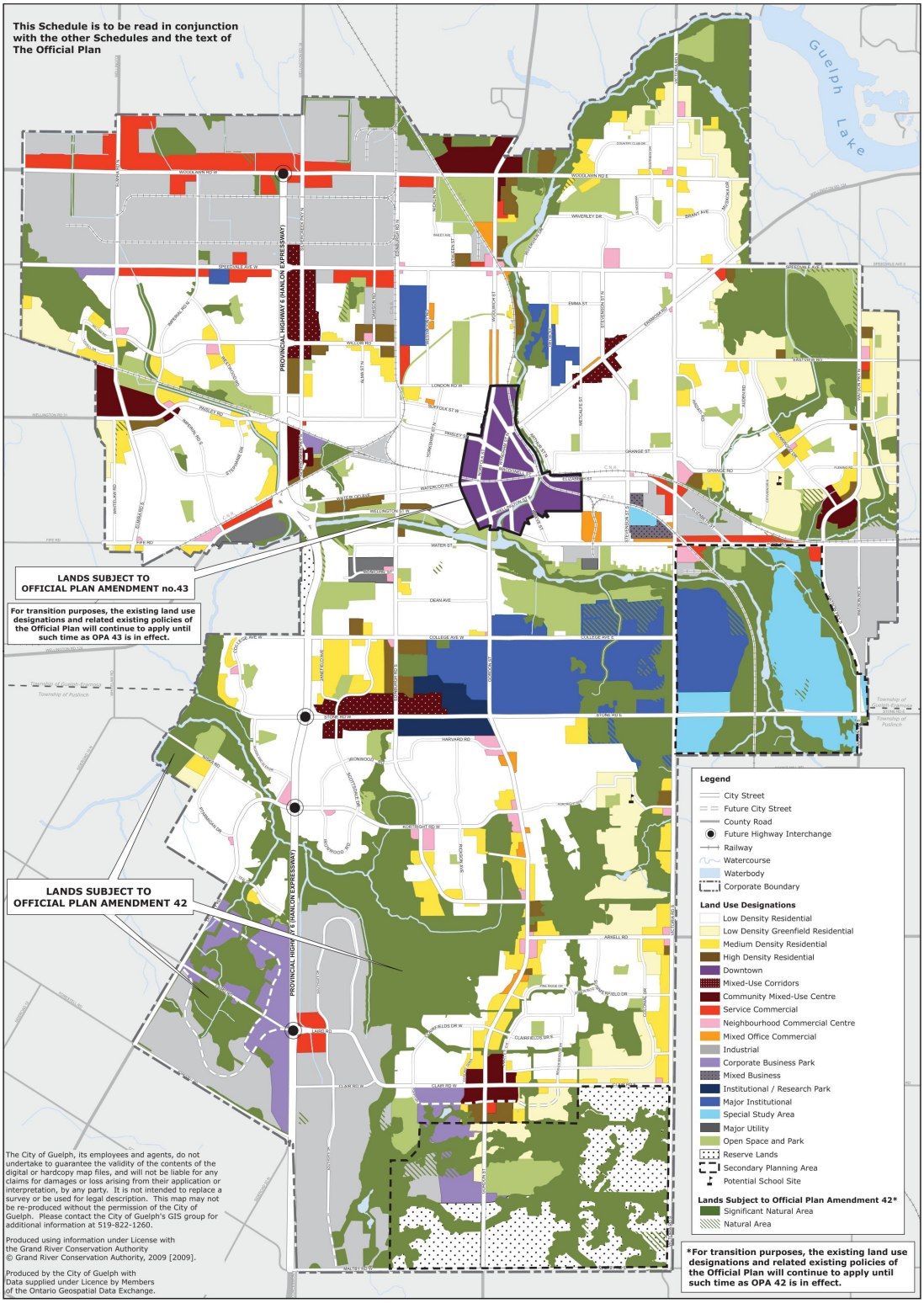
SCHEDULE 1B
CITY OF GUELPH OFFICIAL PLAN
- GROWTH PLAN ELEMENTS

BA Group



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SCHEDULE 2
CITY OF GUELPH OFFICIAL PLAN AMENDMENT 48 - LAND USE PLAN

Transportation policies are established within the Official Plan, which plans and manages the City's transportation system to accommodate the following:

a) provide connectivity among transportation modes for moving people and goods;

b) offer a balance of transportation choices that reduces reliance upon any single mode and promotes transit, cycling and walking;

c) be sustainable, by encouraging the most financially and environmentally appropriate mode for trip-making;

d) offer *multi-modal* access to jobs, housing, schools, cultural and recreational opportunities, and goods and services;

e) provide for the safety of system users; and

f) ensure coordination between transportation system planning, land use planning, and transportation investment.

In planning for new - or reconfiguring existing - transportation infrastructure, the Official Plan dictates that proponents consider separation of travel modes within transportation corridors, use transit infrastructure to shape growth, place priority on increasing the capacity of existing transit systems, expand transit services to areas that are planned to achieved transit supportive densities, facilitate improved linages to / from Downtown Guelph and other intensification areas, and increase mode share of transit. In all cases, and consistent with provincial directives, public transit will be the first priority for transportation infrastructure planning.

In addition to prioritizing transit, the City is directed to develop transportation demand management (TDM) policies, and pedestrian and cycling networks to be utilized by planned new development.

4.3.2 City of Guelph Official Plan – Section 8: Transportation

This section of the Official Plan generally defines the transportation policy for the City. The planning and design of the City Transportation system should meet the following objectives:

a) To derive a transportation system, involving all forms of transport modes, to move people and goods in an environmentally efficient and effective manner.

b) To ensure that the transportation system is financially feasible and has received an acceptable level of public approval.

c) To implement programs to facilitate and encourage greater and safer use of the bicycle as a mode of transport.

d) To support measures to improve the pedestrian environment and system.

e) To encourage the use and expansion of the public transit system to all parts of the City.

f) To work towards achieving a transit "*modal split*" of at least 10 per cent of the average daily City trips which represents more than a doubling of the existing transit ridership in the community.

g) To develop an appropriate hierarchy of roads to ensure the desired movement of residential, commercial, industrial and institutional traffic within and through the City.

h) To outline a proposed road network that will be subject to environmental review processes, either through the City's *development* planning approval process and/or through the Environmental Assessment Act.

i) To work in co-operation with the Provincial Ministry of Transportation and other local governments, to create a road network that can accommodate current and anticipated traffic movement volumes.

j) To work towards minimizing road/rail conflicts by relocating minor or underutilized railway lines and removal of at-grade railroad crossings where feasible.

k) To encourage the maintenance of adequate passenger and freight rail services.

l) To ensure that adequate parking facilities are provided throughout the City.

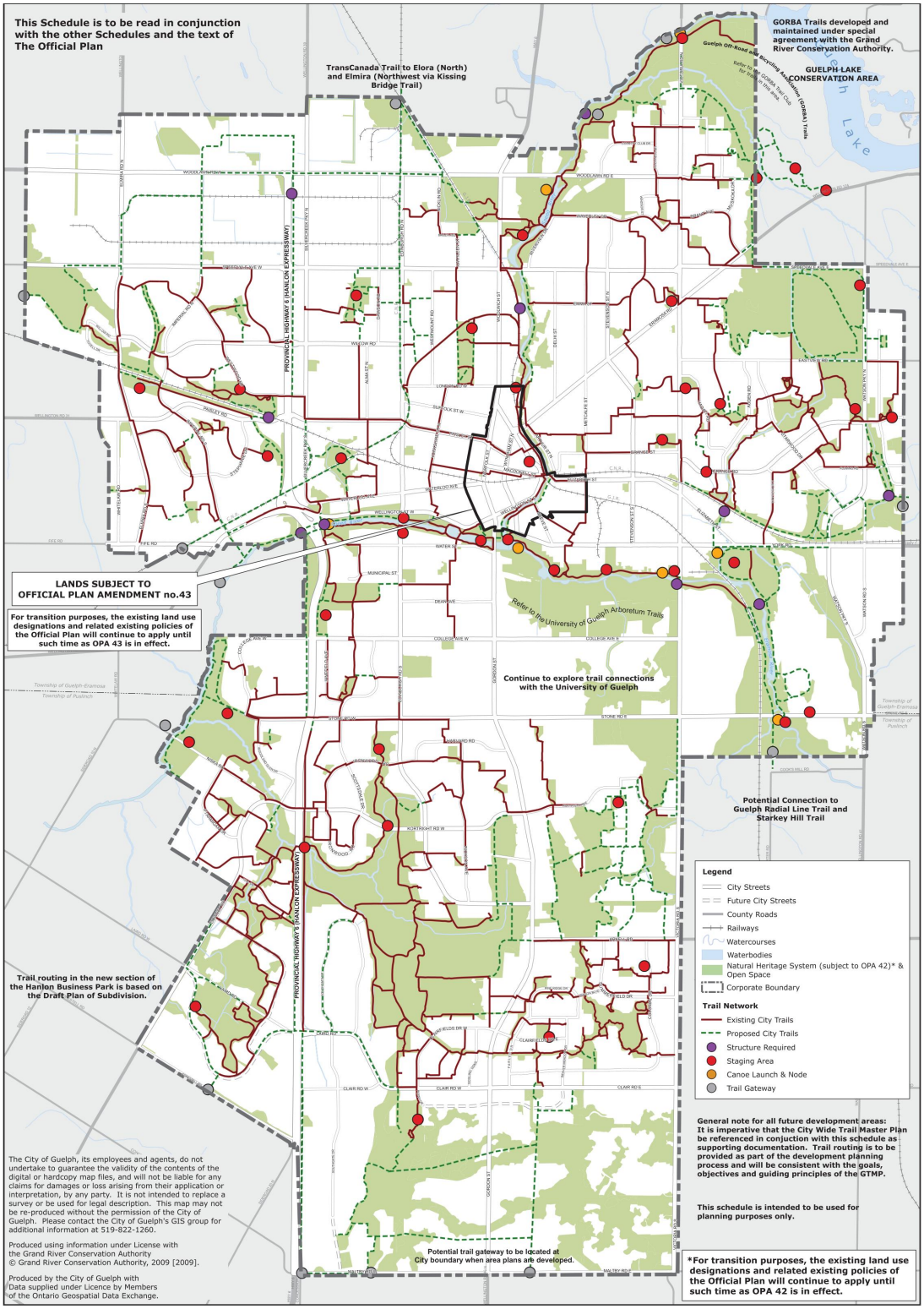
m) To develop a transportation system that minimizes impact on the environment and aesthetic character of the City.

Furthermore, the Official Plan establishes plans and objects related to pedestrian and bicycle movement (bicycle network plan – Schedule 9C), public transport, roads, new / reconfigured road design, transportation and related urban environment, railways, and parking.

Key Pedestrian and Bicycle Policies

The City, through policies and standards, will support the creation of programs and facilities that will encourage walk and greater use of bicycles, through the integration of safe and convenient bike and pedestrian components into the design of new streets including shade trees, street furniture, lighting, street crossing and other traffic control. Additionally, all new development will provide for bicycle / pedestrian linages and street sidewalks, and adequate bicycle parking facilities at major employment / shopping nodes and transportation terminals.

The City, through policies established in the Official Plan, developed a Bicycle Network Plan that directed expansion of bicycle facilities into new development areas including the Clair-Maltby Secondary Plan area. . This network plan was updated as part of OPA 48 – Schedule 7 – comprising the City Trail Network Plan, which is illustrated in Figure 7, and has been subsequently updated as the City of Guelph Active Transportation Network, June 2015 (Figure 8).



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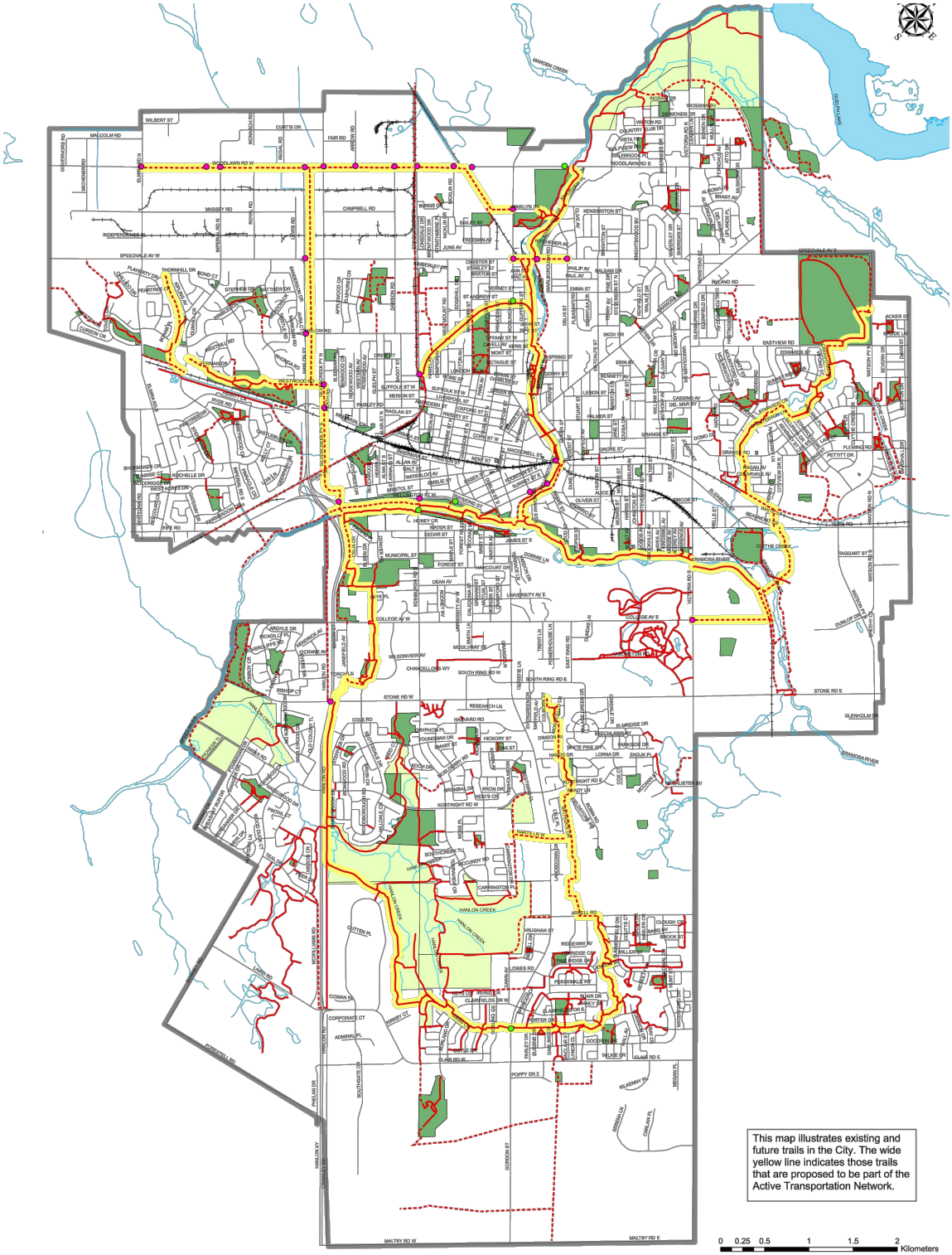
SCHEDULE 7
CITY OF GUELPH OFFICIAL PLAN AMENDMENT 48
- TRAIL NETWORK PLAN



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ACTIVE TRANSPORTATION NETWORK

Key Transit Policies

Important in maintaining and expanding transit services in the City of Guelph, the Official Plan cites developing a compact urban form with a mix of land uses, ensuring the creation of a street network that permits the location of transit stops within a reasonable walking distance of a significant majority of residents, jobs and other activities, and staging urban expansion to include the provision of transit service.

Within new development, transit facilities should be detailed in land use / development plans, and bus stops should be provided at regular intervals.

Roads and Road Design

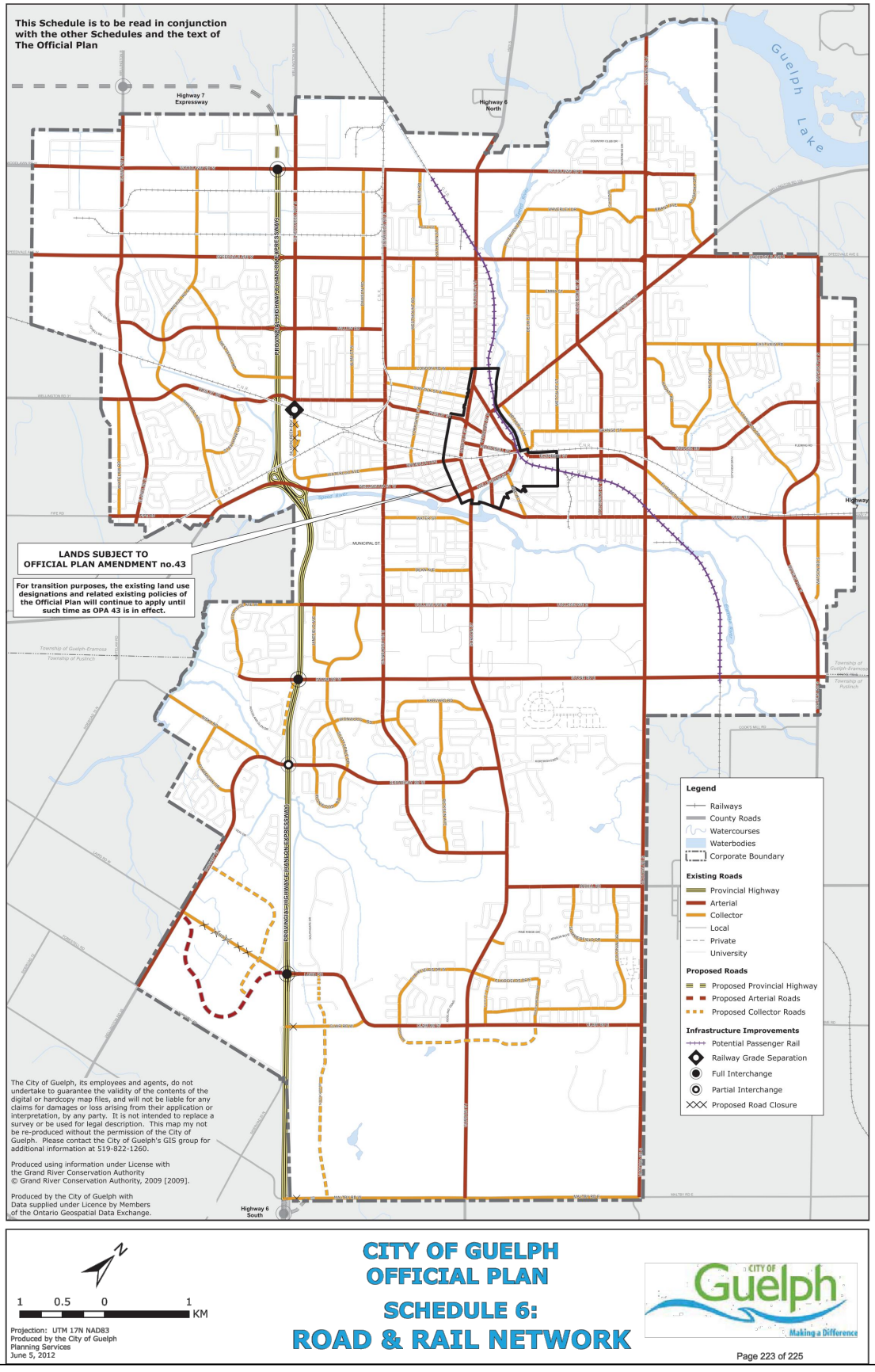
The City of Guelph Official Plan recognizes that private automobiles will continue to represent the primary mode in meeting the travel need of residents and businesses in the City, and lays out a hierarchy of public street facilities and their intended purposes / permissions: expressways, arterials, collects and locals.

The main elements of the road network are identified in Schedule 7 of OP Amendment 48, which is included in Figure 9.

In regards to new public streets and street design, the Official Plan promotes the creation of an arterial – collector grid system in new development areas to assist in the dispersion of traffic and to provide a reasonable walking distance to transit services. A series of public street widenings and "Ultimate Widths" are also identified in the Official Plan (Tables 8.1 and 8.2).

Key street widenings as they related to the Clair-Maltby Secondary Plan area include:

- Clair Road – 30 metre "ultimate width" (5 metre widening on both sides)
- Gordon Street - 30 metre "ultimate width" between Clair Road and Maltby Road (5 metre widening on both sides)
- Maltby Road – 30 metre "ultimate width" (5 metre widening on both sides)
- Victoria Road - 36 metre "ultimate width" between Stone Road and South City Limit (8 metre widening on both sides)
- Clair Road and Laird Road (potential widening to accommodate intersections improvements)
- Clair Road and Crawley Road (potential widening to accommodate intersections improvements)
- Gordon Street and Maltby Road (potential widening to accommodate intersections improvements)
- Maltby Road and Crawley Road (potential widening to accommodate intersections improvements)
- Victoria Road and Clair Road (potential widening to accommodate intersections improvements)
- Victoria Road and Maltby Road (potential widening to accommodate intersections improvements)



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SCHEDULE 6
CITY OF GUELPH OFFICIAL PLAN AMENDMENT 48 - ROAD AND RAIL NETWORK

Urban Environment

The City of Guelph Official Plan establishes policies as they relate to the impact of transportation facilities on urban neighbourhoods and design. These policies include minimizing the impact of trucks upon residential areas, maintain and enhance the streetscape (tree planting), minimize land use conflicts between major transportation routes and residential areas, and noise and vibration mitigation.

Railways

The City recognizes the importance of rail facilities to support freight service and passenger rail service, and to minimize road / rail conflicts through a program of grade-separated under / over passes.

Parking

The City of Guelph, through the application of the City Zoning By-law, establishes parking requirements for all types of land uses to ensure parking demands are met off-street. However, the City may, where the property owner enters into an agreement with the City to ensure continued availability of an off-street parking area, permit the provision of requirement parking spaces on another site that is within convenient and reasonable walking distance.

4.4 SOUTH GUELPH SECONDARY PLAN

The purpose of the South Guelph Secondary Plan is to introduce new planning policies for southern areas that were annexed by the City of Guelph, to establish planning direction for the guidance of City Council and Staff, and to provide information for the public, landowners, development and other stakeholders.

The South Guelph plan was complete in 1998 and comprised a new section to the City of Guelph Official Plan that contains Secondary Plan policies that introduce goals, objectives and policies for lands in the South Guelph area including transportation policies. The South Guelph Secondary Plan comprises the areas generally south of Stone Road, north of Maltby Road, west of Victoria Road, and east of Downey Road / Forestell Road.

The plan identifies the “Gateway” character of the South Guelph area, and identifies Gordon Street and the Hanlon Expressway corridors as key locations to express this character. The plan specifies that development along the Gordon Street corridor should provide detailed planting and landscaping plans, and accommodate setbacks and built form such that new building are located behind the parkway belt of required landscaping and planting. Design controls on entrances off Gordon Street and on parking and loading within the Gordon Street corridor should be developed.

For the Clair-Maltby Secondary Plan area, the South Guelph plan specifies that a system of arterial and collector roads be planned to serve the study area. This road network is enhanced through the road widenings protected for under the City of Guelph OPA 48 document and previously described.

4.5 SOUTH GORDON SECONDARY PLAN

The South Gordon Secondary Plan does not include the lands defined within this study, but rather the lands immediately north of the Clair-Maltby Secondary Plan area (north of Clair Road). However, this 1999 document may provide some policy direction for the development of the subject lands.
Consistent with the South Guelph Secondary Plan, the South Gordon Secondary Plan identifies Gordon Street as a "Gateway" corridor into the City, and describes treating Gordon Street with appropriate landscaping,

From a transportation perspective the South Gordon Secondary Plan specifies that neighbourhoods should be connected to each other and to the rest of the city by roads, pedestrian paths, bicycle linkages, and transit routes to create a more accessible, convenient, safe and energy efficient environment. This objective includes measures to promote pedestrian safety and comfort (providing clearly defined public realm and reducing walking distances between origins and destinations) and the introduction of walking and bicycle paths that are visible, accessible, and aligned along routinely used public spaces. New trails are encouraged to be provided within trail corridors up to 15 metres in width. Bicycle lanes, routes and trails are intended to provide for utilitarian and recreational travel within the community and along the arterial road network.

The South Gordon Secondary Plan specifies that internal road networks should be designed to evenly distribute traffic throughout the neighbourhood along collector roads while discouraging through-traffic on local streets. Collector roads should also be deigned to accommodate public transit bus routing – that would be routed to provide transit stops within 400 metres of 90% of residents. Roadways should also include special control measures to reduce vehicle speeds in appropriate locations, including locations that accommodate wildlife crossings.

Of note, the plan specifies that new development in the area provide for both on-street and off-street parking adjacent to parks with active recreational facilities, and to make use of shared parking arrangements between school sites and neighbouring parks.

4.6 GUELPH – WELLINGTON TRANSPORTATION STUDY (TRANSPORTATION MASTER PLAN)

The Guelph – Wellington Transportation Study was undertaken by a consortium of planning and engineering consultants on behalf of the City of Guelph and finalized in July 2005, in an effort to address long-term transportation needs and improvements in accordance with the Official Plan policies and City's Transportation Strategy and SmartGuelph Principles. The study has 5 main objectives:

1. Identify transportation needs and recommend practical improvements;

2. Recommend Transportation Demand Management (TDM) measures;

3. Identify improvements to City and County roadways;

4. Review Provincial highway initiatives affecting Guelph and Wellington County; and

5. Review inter-regional travel between Guelph, the Region of Waterloo, and the GTA and identify opportunities for transit initiatives to serve this need.

The Master Plan provides direction on the City's existing and planned cycling network, truck route network (Figure 10), and transit node and corridor framework which is intended to support transit routes and the potential removal of reduced / removed parking standards. These planned networks include components related to existing road facilities in the Clair-Maltby Secondary Plan area.

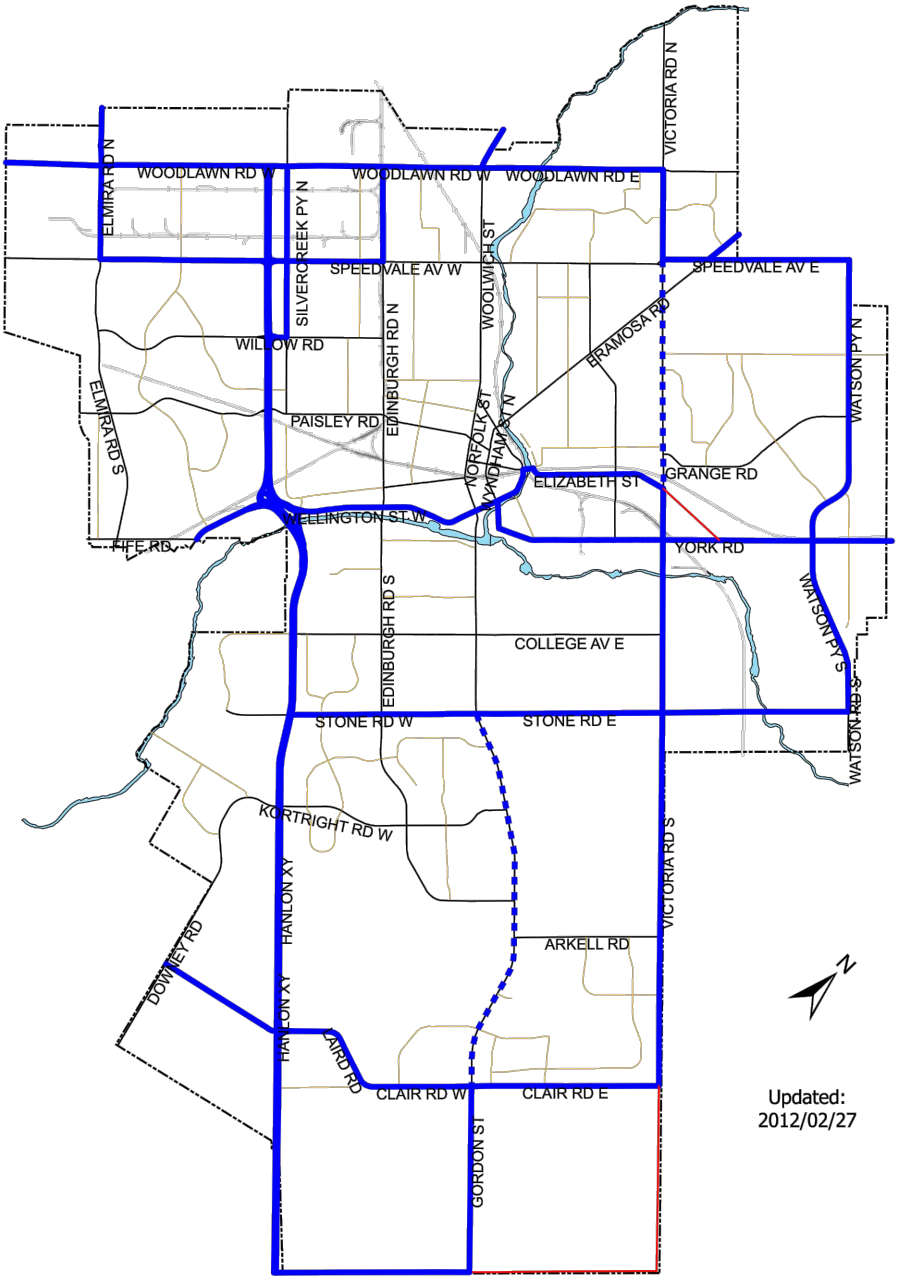
The Guelph – Wellington Transportation Study also reviews existing transportation behavior and forecasts future travel demands based on existing travel and demographic trends. The study concludes that travel demands are 2 to 3 times higher during weekday peak periods than typical weekday midday periods and that 83% of trips within the study area are undertaken in a private automobile, and since the mid-1990s - travel demands have generally increased and average persons per vehicle have reduced. It is also important to note that a significant and increase amount of work travel is occurring between the Waterloo Region and Guelph areas.

Given the aforementioned trends, there is anticipated to be considerable road network deficiencies and traffic congestion in the long term, assuming no new infrastructure improvements, particularly in the South Guelph area. To accommodate increased traffic demand in the South Guelph area, the study identifies a number of improvements, including:

- Widening of Gordon Street from 2 to 4 lanes (approved 2001 EA) from Kortright Road to Wellington Road 34;
- Widening of Clair Road from 2 to 4 lanes (approved 2003 EA) - COMPLETE
- Southerly extension of Southgate Drive to Maltby Road; and
- Development of an internal collector road system within the Clair-Maltby Secondary Plan area connecting to Gordon Street and Maltby Road.

Of note, the forecasting model does not indicate the need to widen Victoria Road south of Clair Road, or widen Maltby Road between Victoria Road and the Hanlon Express to be widened; however, both roads require upgrading.

The study also identifies TDM strategies, w hich partly accommodates forecast future travel demands through reductions in vehicular travel demands ("lowering the tide"). These TDM measures include supportive land use and urban design practices (as outlined in the OP), ridesharing, cycling and walking, alternative measures for reducing auto use (parking prices / supply management, telecommuting, alternative work schedules, congestion pricing), and TDM programs (alternative strategies, education, etc…).



Legend:

- Truck Route (24 hours)
- Truck Route (6am to 8pm only)
- Arterial Roads
- Collector Roads
- Future Truck Routes (after road upgrades completed)
- City Boundary

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GUELPH-WELLINGTON TRANSPORTATION STUDY
TRUCK ROUTE NETWORK

BA Group

Clair Maltby Secondary Plan
5976-06 December 2017

Figure 10

5.0 AREA ROAD ENVIRONMENTAL ASSESSMENTS

5.1 GORDON STREET (WELLINGTON ROAD 46) CLASS EA ENVIRONMENTAL STUDY REPORT

The Gordon Street Class EA was undertaken by the City of Guelph and County of Wellington in December 2000 for the section of Gordon Street between Wellington Road 34 in the south and Lansdown Drive in the north.

The EA study utilizes three other previous transportation reports to judge the transportation impacts of new residential and commercial development along the Gordon Street corridor, and reconfirms the need for traffic capacity within this section of the street. In addition to traffic capacity and operation issues, the EA also identified other public concerns related to truck traffic volumes and roadway deficiencies, including a lack of sidewalks, bicycle lanes, and transit-related infrastructure.

At the time of the study, Gordon Street had a basic two-lane cross-section within the study area. The resulting EA concluded that Alternative 4 (basic improvements plus the widening of Gordon Street) was the preferred solution, and that widening of Gordon Street north of Clair Road would begin by 2002, while widening between Clair Road and Maltby Road would be dependent on the occurrence of development activity.

Upon the adoption of the Gordon Street EA, road widening has been undertaken from just south of Clair Road to Lansdowne Drive. Gordon Street has not been widened from just south of Poppy Drive to Wellington Road 34 under existing conditions. This section is planned to be widened symmetrically from the road centreline except for a 500 metre section in the vicinity of the Mill Creek crossing where widening will occur on the west side only. The EA specified that rural drainage (ditches) be provided on both sides of the road, but did not specify sidewalk / bicycle lane provisions.

5.2 CLAIR ROAD CLASS EA ENVIRONMENTAL STUDY REPORT

The Clair Road Class EA was undertaken on behalf of the City of Guelph in September 2003 for the section of Clair Road and Laird Road between Southgate Drive in the west and Victoria Road in the east.

The EA concluded that Clair Road (at the time of study) will not provide the level of service necessary to avoid traffic congestion, frequent delays, and unsafe driving conditions, given the predicated traffic volumes, and that the road itself is in poor physical condition and lacks sidewalk and bicycle facilities to accommodate these travel modes. Given the prevailing conditions, the EA advanced four alternative planning solutions:

1. Do nothing.
2. Non-structural solutions (increase use of alternative modes; traffic diversion).
3. Construct a new road.
4. Improve the existing road.

In summary, from transportation, natural, social and physical environment perspective, the preferred alternative was the improvement of Clair Road from Victoria Road in the east to the Hanlon Business Park in the west. Improvements include the introduction of an “urban” cross-section with curbs and sidewalks, a

landscaped median in the South Guelph District and adjacent to Bishop Macdonell High School and South End Community Park, provision of sidewalks on both sides of the street, and bicycle lanes within the road surface area.

The EA considered 2 and 4 traffic lane cross-sections, and determined that the western portion of the street (west of Beaver Meadow Drive) would include 4 travel lanes, while the eastern section (east of Beaver Meadow Drive) would include 2 travel lanes – one in either direction. This lane configuration has been implemented from Victoria Road in the east to approximately 200 metres west of Poppy Drive in the west. Bicycle lanes have also been introduced along this section of the street. Sidewalks are provided on both sides of the street west of Hawkins Drive, but are often interrupted (discontinuous) in sections east of this point.

5.3 VICTORIA ROAD (CLAIR ROAD TO YORK ROAD) CLASS EA STUDY

The Victoria Road Class EA was undertaken on behalf of the City of Guelph in December 2005 for the section of Victoria Road between York Road in the north and Clair Road in the south. The extent of the study area is generally north of Clair Road and does not include the section of Victoria Road adjacent to the Clair-Maltby Secondary Plan area (south of Clair Road).

The outcomes of the EA provided cross-section alignments of the street within the study area, including for Victoria Road immediately north of Clair Road. In this location, the EA identified a 3-lane cross-section with one travel lane in either direction and a continuous left-turn / median lane, bicycle lanes, and improvements at the Clair Road / Victoria Road intersection. These intersection improvements include installing traffic signal control and separate eastbound turn lanes and a northbound left-turn lane that have already been implemented.

6.0 ENGINEERING DESIGN CRITERIA AND STANDARDS

6.1 DEVELOPMENT ENGINEERING MANUAL, VERSION 1.0 (2016)

City of Guelph Engineering and Capital Infrastructure Services prepared their Development Engineering Manual (DEM, Fall 2016) to guide engineering related aspects of development related work, including established Engineering Design Criteria and Standards intended to be used by developers, residents and the City to inform engineering design and related review and discussion. The DEM recognizes that the outlined standards may not be compatible to all scenarios, and engineering judgement should be used in such cases.

The key objectives of the DEM are to:

- *Document existing process information related to the engineering submission of a development application;*
- *Outline requirements and standards for the engineering design of new developments within the City;*
- *Provide guidance and framework for applicants submitting engineering designs and reports in support of development applications;*
- *Provide guidance to City staff when reviewing and commenting on engineering aspects of a development application; and*
- *Identify the role and involvement of City departments and external agencies as part of the development engineering review and approval process.*

The DEM is complemented by Part B Specs (Linear Infrastructure Standards, 2017) that provides, in detail the City's standard specifications.

6.1.1 Road Standards

The DEM, outlines a range of pavement widths, typical AADT volumes, right-of-way widths, and maximum allowable grades for local and collector roadways. Subdivision Geometric Design Criteria for local and collector roadways are presented in Table 9.

TABLE 9 SUBDIVISION GEOMETRIC DESIGN CRITERIA, PART 1

Road Classification	AADT	Pavement Width (m)	Right-of-Way Width (m)
Local	<1,000	8.4, 8.8, 10	17, 18, 20
Collector	<12,000	10	20

Notes:
1. Detailed notes provided in DEM Table 2, page 46.

TABLE 10 SUBDIVISION GEOMETRIC DESIGN CRITERIA, PART 2

Road Classification	Allowable Grade	Minimum Centreline Radius (m)	Minimum SSD	Minimum Tangent @ Intersection	Minimum Tangent Between Curves	Property Line Radius @ Intersection
Local	<1,000	8.4, 8.8, 10	17, 18, 20	10	15	8
Collector	<12,000	10	20	25	30	8

Notes:
1. Detailed notes provided in DEM Table 2, page 46.

6.1.2 Sight Triangles

The use of Transportation Association of Canada (TAC) Stopping Sight Distance (3-second rule) for evaluation of sight triangles at intersections and access points for new developments is adopted by the City of Guelph. The DEM notes that reduction of a sight triangle may be considered for areas located in an “Urban Growth Centre” and the specific locations identified in the Clair Maltby study area below. Reductions to sight triangles still need to be reviewed by a professional engineer for the recommended design and should not create a condition prone to collisions. Adequate space should also continue to be provided for utility/traffic signal equipment and the final dimensions are also subject to minimum requirements set out in the City’s bylaw.

Intersections subject to further consideration for sight triangle in the Secondary Plan area include:

- Victoria Road and Clair Road
- Gordon Street and Clair Road
- Gordon and Poppy Drive

6.1.3 Parking

Off-street parking is outlined in the City’s comprehensive bylaw and repeated in the DEM for surface parking.

According to the DEM, on-street parallel parking should have a minimum of 15 m setback from the near side of an intersection, and a minimum of 9 m setback from the far side of the intersection (measured from the end of curb return), unless the minimum setback needs to be increased to address sight distance or operating speed.

6.1.4 Access Design

The DEM outlines design guidelines for throat width, lane width, radius, and spacing for access to/from residential/commercial/institutional areas and the public road network as summarized in Table 11 and Table 12.

TABLE 11 LAYOUT OF ACCESSES

Access Classification	Roadway Classification	Throat Width, W or Land Width, LW (m)	Radius, R (m)	Distance Between Accesses, S (m)
Multi-Residential	Local/Collector	6.0	6.0	7
	Arterial	7.5		25
Low Volume Commercial and Institutional	Local/Collector	7.5	9.0	23-30
	Arterial	8.0		60
High Volume Commercial and Institutional	Collector	8.0	12.0	60
	Collector (divided access)	3.0 m left 3.6 m through 3.6 m right 1.2 m island	12.0	60
	Arterial	9.0	12.0	100
	Arterial (divided access)	3.0 m left 3.6 m through 3.6 m right 1.2 m island	12.0	100
Industrial	Collector	9.0 (max 15.0)	12.0	40-60
	Arterial			

TABLE 12 NUMBER AND LOCATION OF ACCESSES

Access Classification	Roadway Classification	Distance from Non-Signalized Intersection (m)	Distance from Signalized Intersection (m)
Multi-Residential	Local / Collector	15	30[1]
	Arterial	30	60[2]
Low Volume Commercial and Institutional (2-way access)	Local / Collector	30	30
	Arterial	60	60[3]
High Volume Commercial and Institutional	Collector / Arterial	60	60[3]
Industrial	Collector / Arterial	30	60[3]

Notes:
1. Multi-Residential of up to 30 units
2. Multi-Residential of over 30 units
3. Full movement accesses will not be allowed within 100 m of a signalized intersection on arterial roadways. Site specific turning movement restrictions will be determined by City staff upon application.
4. Should a site require a right in/out access, the layout shall be approved by traffic engineering staff and conform to the most current TAC specifications.

The City's Access Details Figures from the DEM are attached in **Appendix D.**

7.0 EXISTING TRANSIT FRAMEWORK

7.1 TRANSIT GROWTH STRATEGY AND PLAN

The “Guelph Transit Growth Strategy and Plan and Mobility Service Review” was prepared in 2010, and was prepared to assess the transit market, estimate future travel demand (ridership forecasts), outline mobility service and higher-order transit opportunities, and detail associated capital and revenue implications associated with service recommendations. It should be noted that the plan is now seven years old and, at the time of the study, did not forecast any substantial development within the Clair-Maltby Secondary Plan area within the 2031 horizon year period.

Of the report’s key recommendations, that implicates development of the South Guelph area, include:

1. Establish the Gordon / Norfolk / Woolwich spine as a Bus Rapid Transit priority corridor, starting with the implementation of queue jump lanes, traffic signal priority. and express bus services, and additional infrastructure as demand increases (dedicated bus / HOV lanes). Specifically, the report recommends that as transit demand increases, a dedicated transit / HOV lane be provided in each direction of Gordon Street, firstly between Stone Road and Clair Road, and eventually on Gordon Street south of Clair Road. Transit service improvements along the Gordon Street corridor should include improved passenger amenities at transit stops.

2. Introduction of train service on the Guelph Junction Railway, including the introduction of up to 4 stations including a station servicing the Guelph Innovation District (northeast of the Clair-Maltby area) and the downtown.

3. Establish new inter-city / inter-regional bus and rail transit connections, most notably to Kitchener, Waterloo, Cambridge, and potentially, Georgetown, Brampton, Milton, Mississauga, and Hamilton.
4. Work with property owners to establish a 4 to 6 bay bus terminal within the South End Node (Gordon Street and Clair Road).

Recommendations 1 and 2 above establish a transit structure for the City by connecting key existing and emerging nodes via priority corridors.

7.2 MOVING GUELPH FORWARD: GUELPH TRANSIT GROWTH OPPORTUNITIES

This report identifies immediate and recommended route service changes while highlighting potential long-term areas of growth related to service enhancements and infrastructure. The report was released in 2016 and outlines existing trends and service standards, and potential opportunities to make transit more attractive and increase ridership.

The report includes a summary of rider survey data, which indicates among other items, that transit riders are evenly satisfied / dissatisfied with service frequency and on-time arrival, and generally dissatisfied with local service connections to GO (regional service) facilities.

Moving Guelph Forward also describs recommended service changes and future measures that are intended to increase ridership and achieve a 15% transit mode share – consistent with policy objectives of OPA 48 and the Guelph – Wellington Transportation Study. Recommended service changes, in the vicinity of the Clair-Maltby Secondary Plan area include minor alterations to the #5 Clair and #56 Victoria Express bus routes, which will potentially be altered again given the development of the Clair-Maltby precinct. Transit priority measures, to be potentially integrated within the Maltby Secondary Plan area to increase ridership, include:

- Queue jump lanes,
- Reversible lanes,
- Roundabouts,
- Transit signal priority, and
- Reserved bus lanes.

8.0 EXISTING CYCLING AND TRAILS FRAMEWORK

8.1 GUELPH TRAILS MASTER PLAN (2005)

The Guelph Trail Master Plan (GTMP, Fall 2005) was established to provide an overall vision to the developing trail system.

The Goal of the GTMP is to:

"develop a cohesive city wide trail system that will connect people and places through a network that is off-road wherever possible and supported by on-road links where necessary"

The GTMP outlines the following areas of recommendations:

- Establishing the Need for Trails;
- Understanding the Resources;
- Planning for Trails;
- Building Trails; and,
- Supporting Trails.

The GTMP outlines a hierarchy of trail types: Primary, Secondary, Tertiary, and Water Routes for canoeists and kayakers.

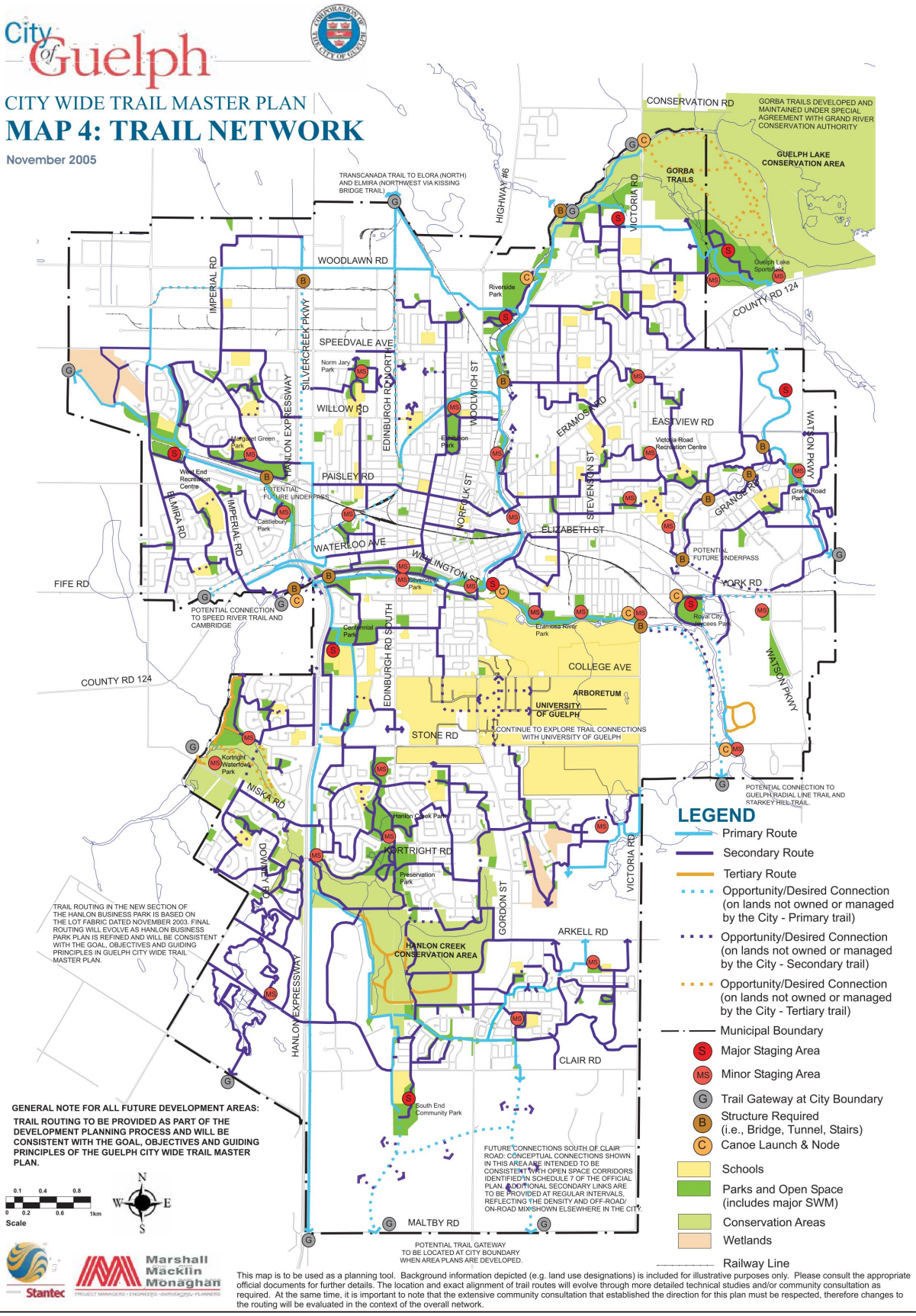
8.1.1 The GTMP Trail Network

The GTMP Trail Network, outlining the hierarchy of trail routes including desire lines for the Clair Maltby study area is presented in Figure 11.

The GTMP Trail Network identifies conceptual connections through the Clair Maltby study area that are generally consistent with the Open Space Corridors outlined in the Citys Official Plan. There are two north-south Primary conceptual connections through the Clair Maltby study area and one east-west Primary conceptual connection crossing Gordon Street midblock between Clair Road and Maltby Road. The north-south connections provide an opportunity to connect to the primary trail network north of Clair Road and also to connect with potential Trail Gateways at the Maltby Road City Boundary. Conceptual secondary connections are shown at regular intervals south of Clair Road.

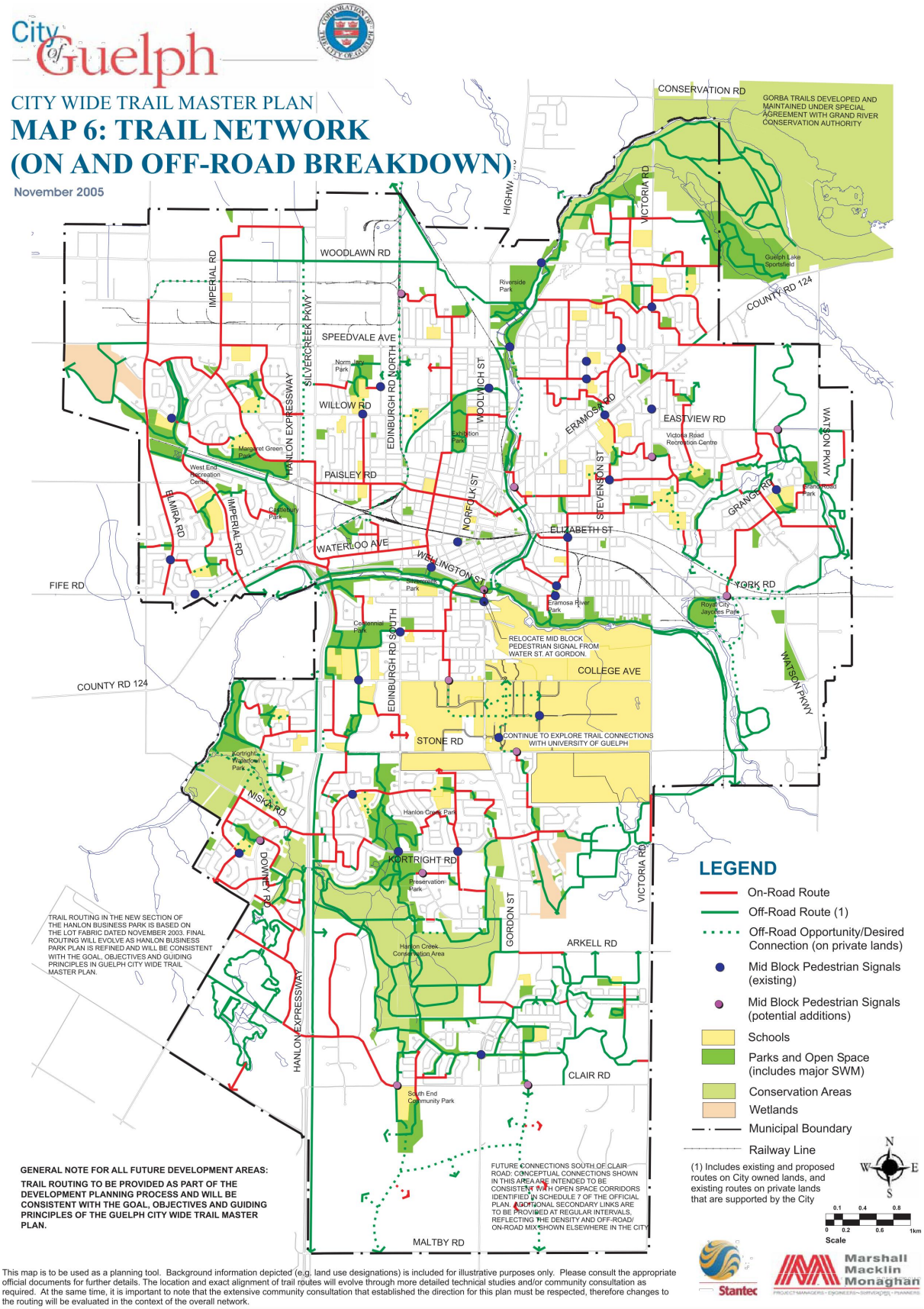
8.1.2 The GTMP Trail Network – On and Off-Road

The GTMP Trail Network, outlining the On and Off-Road Breakdown of trails, is presented in Figure 12**.** The primary trails identified in the Clair Maltby study area are largely intended to be off-road routes, with some local connections secondary connections intended to be on and off-road and located at regular intervals.



Date Plotted: December 18, 2017 Filename: P:\59\76\06 Clair Maltby SP\Graphics\Dec 18-17\Fig11-00-TN.dwg

CITY WIDE TRAIL MASTER PLAN: TRAIL NETWORK



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CITY WIDE TRAIL MASTER PLAN: TRAIL NETWORK (ON AND OFF-ROAD BREAKDOWN)

8.1.3 The GTMP Trail Network – On-Road Cycling Linkages

The GTMP Trail Network, outlining the potential On -Road Cycling Linkages, is presented in Figure 13. The arterial roadways in the Clair Maltby study area, including Clair Road, Maltby Road, Gordon Street, and Victoria Road are all identified as On-Road Bicycle Network linkages. A potential connection south of the City is also identified on this figure at Maltby Road / Victoria Road.

8.1.4 The GTMP Trail Network – Timing of Priorities

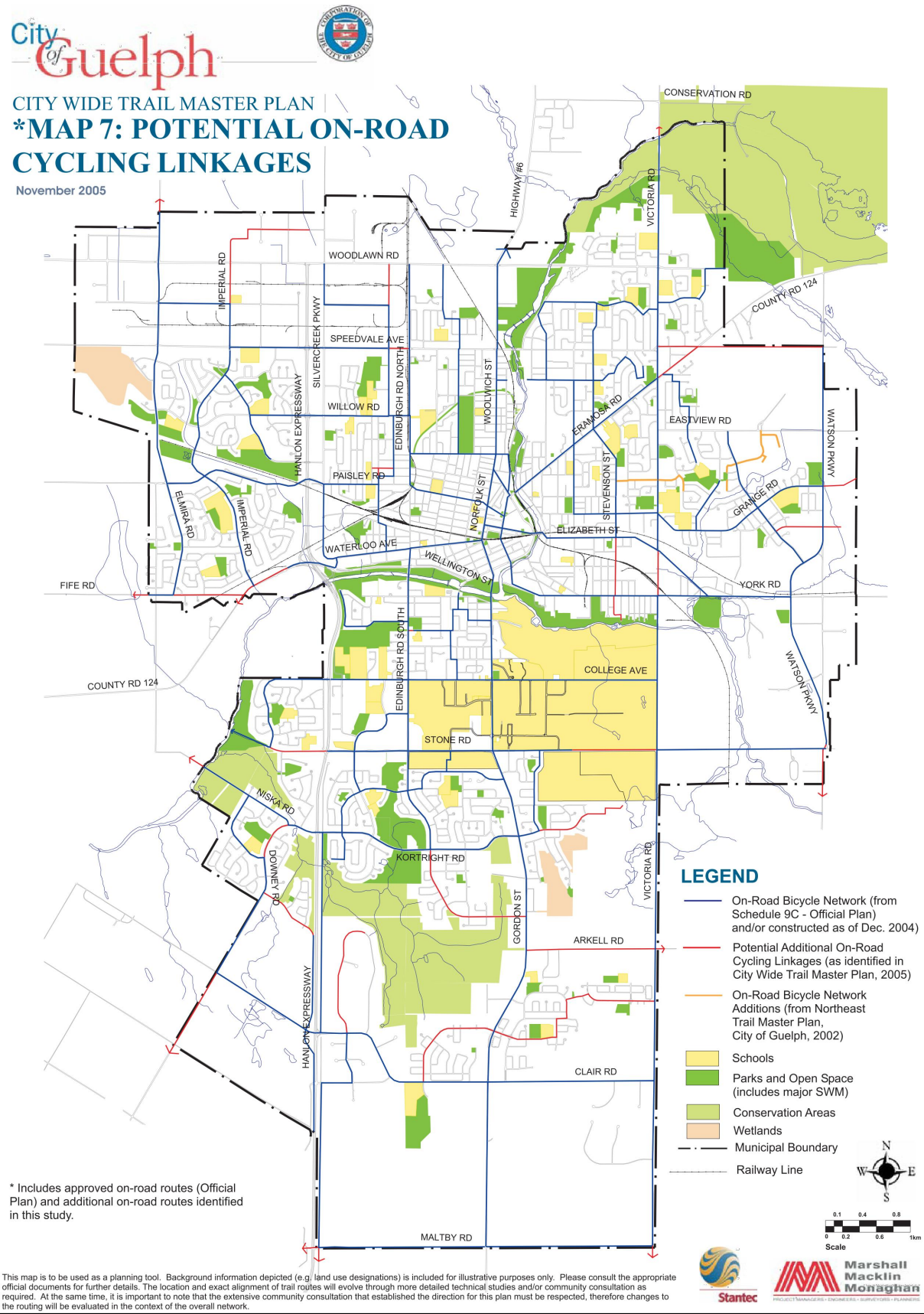
The GTMP Trail Network recommends three timeline phases:

- Short Term (0 to 5 years - 2005-2010)
- Medium Term (5 to 15 years – 2011 to 2021)
- Long Term (beyond year 15 – beyond 2021)

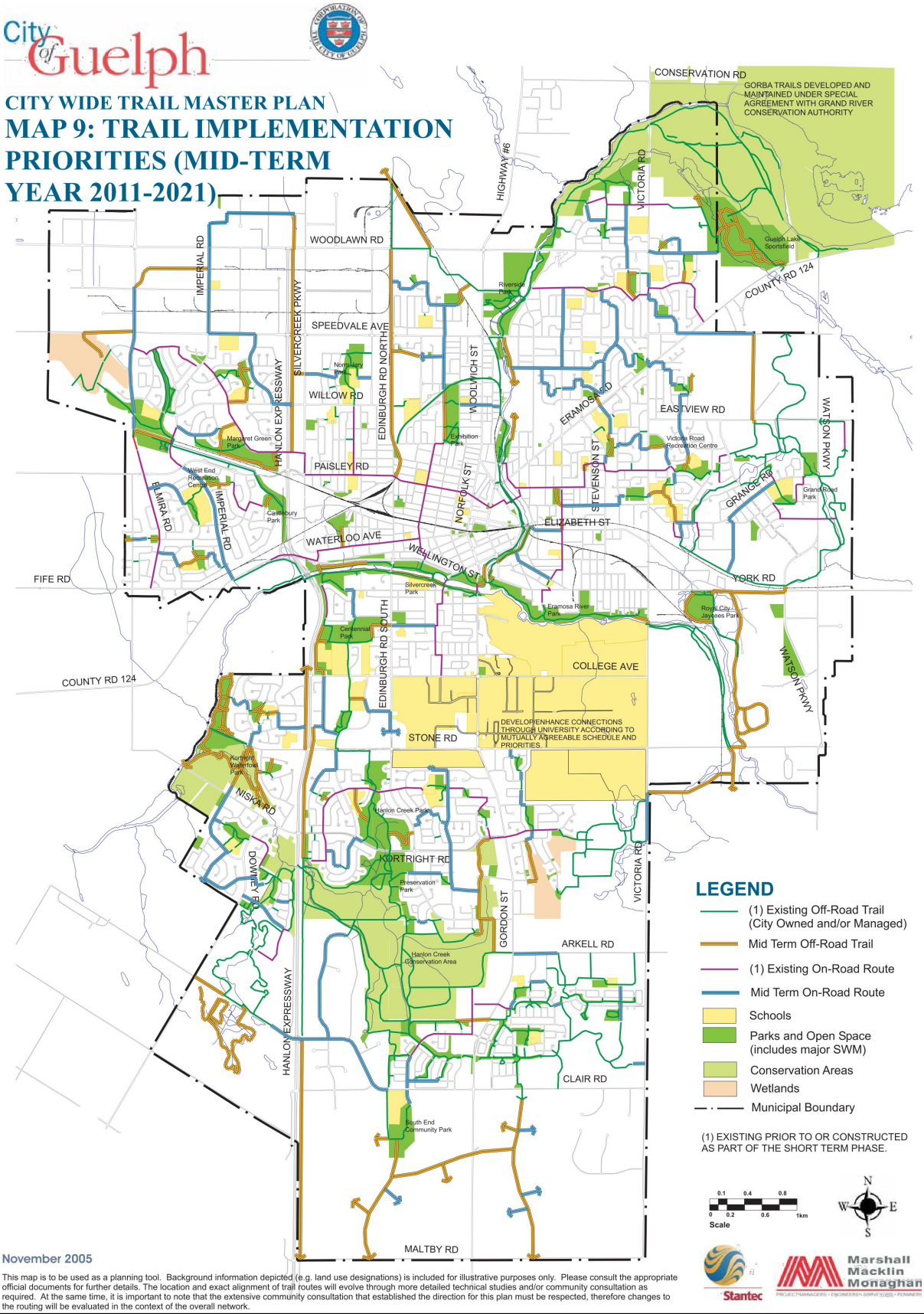
The trail network proposed for the Clair Maltby study area is identified as a "Medium Term" priority, as illustrated in Figure 14.

8.1.5 Building and Supporting Trails

The GTMP outlines available resources for design guidelines and construction details applicable to the trail network. Recommendations are also made for promoting, encouraging trail use, educating users, maintaining, managing, and monitoring trails.



CITY WIDE TRAIL MASTER PLAN: POTENTIAL ON-ROAD CYCLING LINKAGES



Date Plotted: December 18, 2017 Filename: P:\59\76\06 Clair Maltby SP\Graphics\Dec 18-17\Fig14-00-TIP.dwg

CITY WIDE TRAIL MASTER PLAN: TRAIL IMPLEMENTATIONS PRIORITIES (MID-TERM YEAR 2011-2021)

8.2 CYCLING MASTER PLAN – BICYCLE FRIENDLY GUELPH (2012)

The City's Cycling Master Plan (February 2012), is directed by the City's Office Plan, and provides recommendations and strategies that aim to operationalize the visions of the Bicycle-Friendly Guelph Initiative formed by the City.

The City's vision for becoming Canada's most bicycle-friendly communities includes 1) more people cycling, 2) a safer and more connected network, 3) strong culture of cycling, and 4) measured improvements.

The Cycling Master Plan developed the following seven principles:

1. Cycling and safety are not mutually exclusive.
2. Cycling is an essential transportation mode for Guelph.
3. Every street is a cycling street and bicycles are vehicles.
4. Bicycles are unlike other vehicles that share the road.
5. Cycling is for everyone to enjoy.
6. A successful cycling network is a product of a well-integrated transportation network.
7. Transportation choices create opportunities for everyone to get to their destination.

The Cycling Master Plan addresses both physical and social infrastructure needs within the context of the 5E's:

1. Engineering: Enhance the Bikeway Network
2. Education & 3. Encouragement: Promote a bicycle-friendly city
4. Enforcement: Protect a cycling-friendly environment
5. Evaluation: Monitor progress in achieving targets and goals; and

The Cycling Master Plan provides 22 actionable recommendations within the 5E's for City staff, stakeholders, and residents to achieve implementation of the City's visons.

8.2.1 Engineering Principles

The Cycling Master Plan's recommendations for Safe and Continuous Infrastructure (Engineering) outlines tools for selecting types of bikeways relative to vehicular volume, vehicular speed, and local context that influence cyclist safety and comfort levels relative to other on-street facilities and vehicles.

Bikeway Treatments

The Cycling Master Plan identifies several types of bikeway treatments for consideration by the City of Guelph:

- Signed Routes
- Bicycle Boulevards
- Shared-Use Lanes (Sharrows)
- Advisory or Suggested Lanes
- Bike Lanes and Paved Shoulders
- Multi-Use Boulevard Trails, and,
- Cycle Tracks / Physically-Separated Bike Lanes

Intersection Treatments

The plan also recommends that the design of intersections should also take into account the many possible movements of cyclists at intersections including:

- General intersection guidelines to address visibility where there is a higher presence of conflicts between cyclists, motorists, and pedestrians;
- Accommodating Left Turns at signalized and unsignalized intersections; and,
- Specific cases where two arterial roads intersect and all intersections with multi-use boulevard trails.

Cycling Network Plan

The recommended Cycling Network Plan from the Cycling Master Plan is provided in Figure 15.

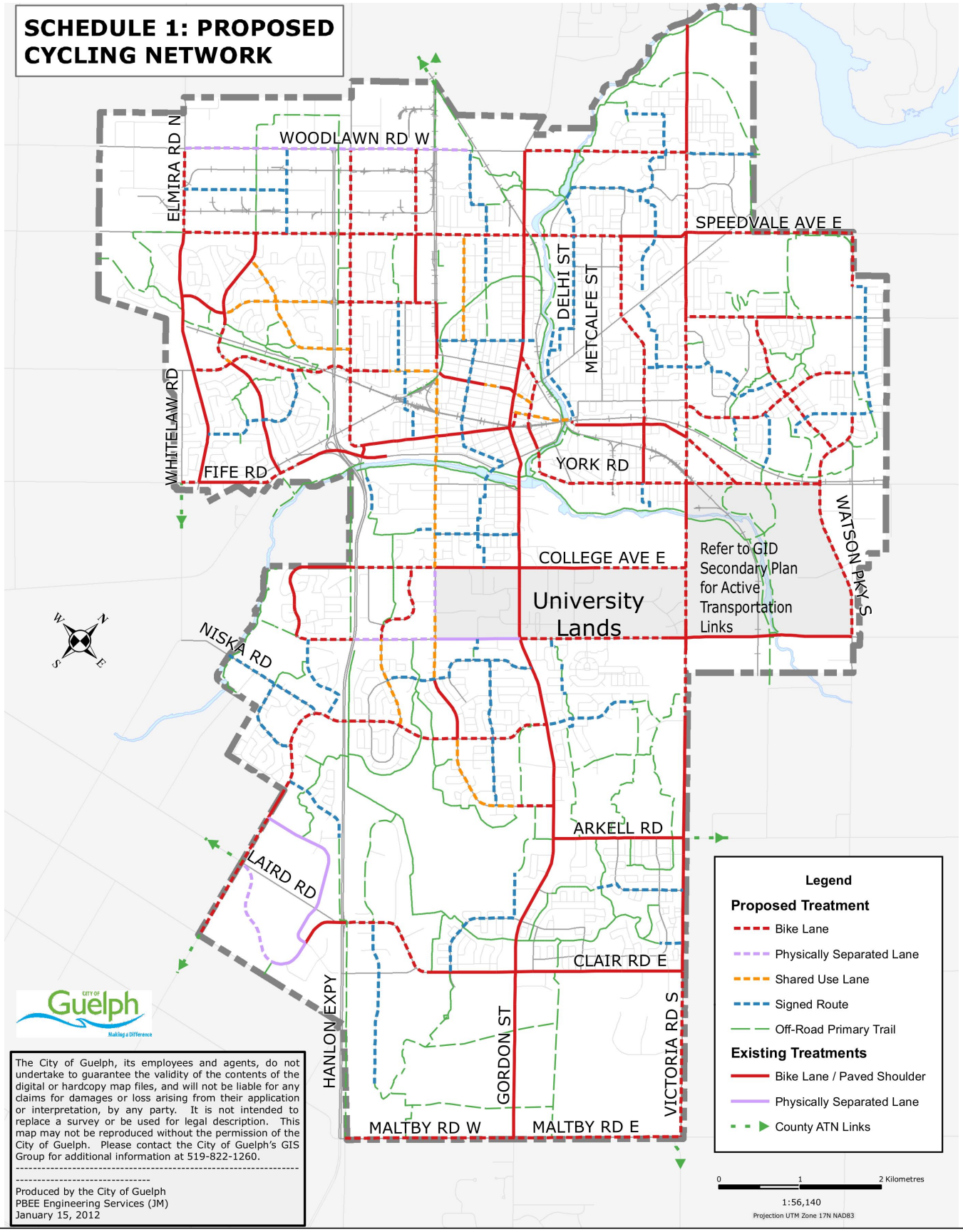
This Cycling Network Plan identifies several existing and proposed surface treatments for the Clair Maltby study area. Existing and proposed cycling treatments within the study area include:

- **Existing Bike Lanes / Paved Shoulder** are identified along both Clair Road East and Gordon Street within the study area.

- **Proposed 1 metre Paved Shoulder** is proposed along east-west Maltby Road and along north-south Victoria Road South (between Clair Road and Maltby Road)

- **Off-Road Primary Trails** are proposed at two locations running east-west across Gordon Street that will make connections to the proposed north-south signed routes along Southgate Drive. North-south off-road trails are also proposed within the study area that will connect to proposed signed routes along Clairfields Drive West, existing trails north of Clair Road, as well as at two locations potentially crossing Maltby Road to the south.

- **County ATN Links** are proposed at the southeast corner of the study area at the intersection of Maltby Road East and Victoria Road South.



PROPOSED CYCLING NETWORK - 2013 GUELPH CYCLING MASTER PLAN

End-of-Trip Facilities Recommendations

The Cycling Master Plan outlines guidelines for providing end-of-trip facilities (bike parking facilities). They have identified two classes of bicycle parking as follows:

- Class One: Long-term bicycle parking
- Class Two: Short-term bicycle parking
- Additional Class: Artistic bicycle parking

The Cycling Master Plan outlines recommended Bicycles Parking Requirements for each Class of parking, by type of land use. Recommendations for General Rack Spacing and Rack Spacing within the Public Right-of-Way are also recommended as part of this section of the Cycling Master Plan.

8.2.2 Education and Encouragement

The Cycling Master Plan recommends complementing the guidelines for providing a safe cycling environment with complementary encouragement and education with a set of recommended objectives and actions.

8.2.3 Enforcement

The Cycling Master Plan recommends continued and improved actions to cycling enforcement as a means to reduce incidents and provide front-line education to both drivers and cyclists.

8.2.4 Evaluation

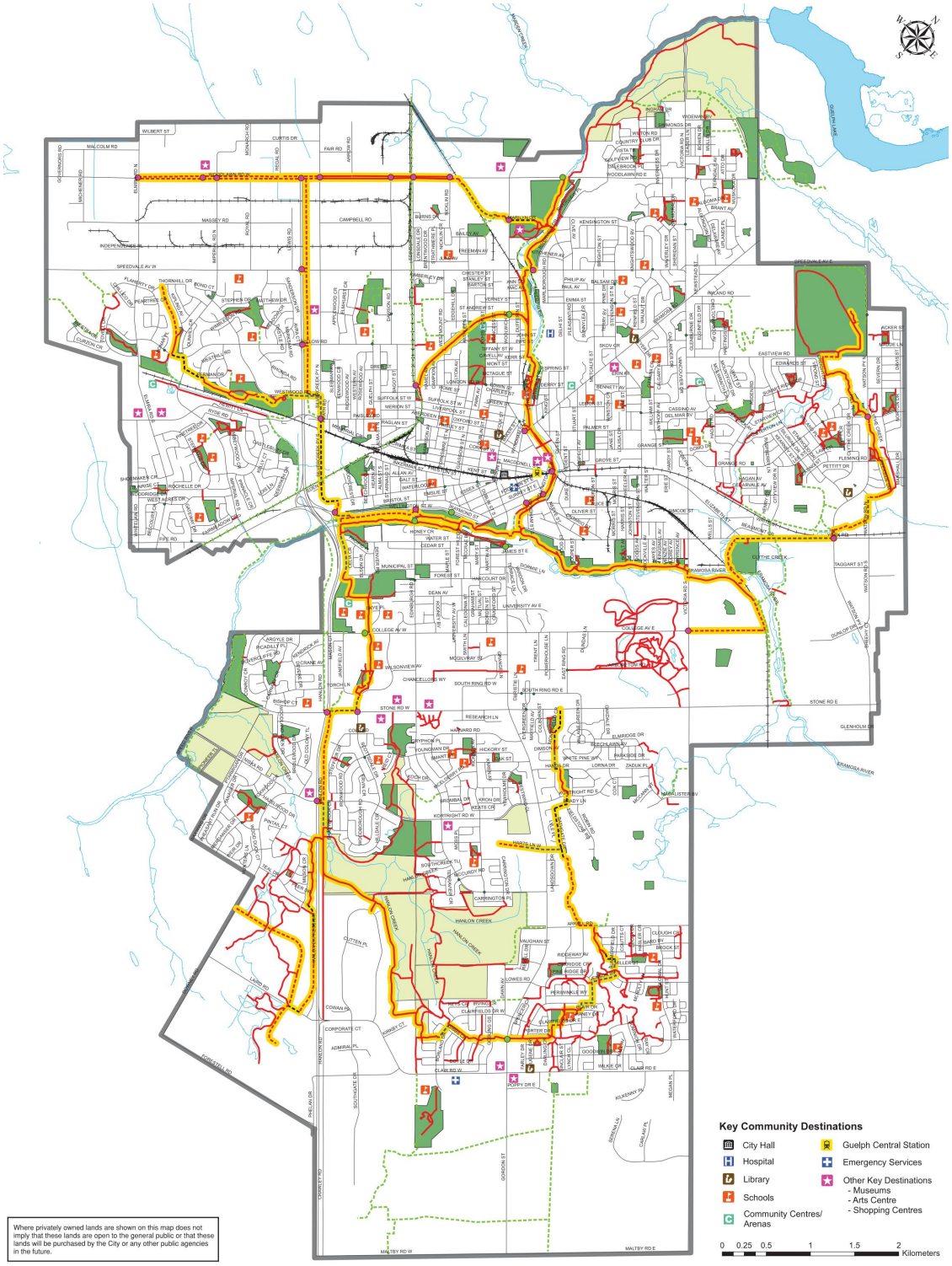
The Cycling Master Plan recommends actions to monitor and measure success in order to guide future planning and policy decisions.

8.3 ACTIVE TRANSPORTATION NETWORK STUDY (2017)

The Active Transportation Network Study (ATN Study, January 2017) builds on the Primary Trails system of the Guelph Trails Master Plan (2005) and the infrastructure (Engineering) objectives of the Cycling Master Plan (2012).

The ATN Study was prepared by MMM Group / Paradigm Transportation Solutions on behalf of the City of Guelph to assess the feasibility of upgrading and maintaining existing and proposed Primary Trails in Guelph – notably the trail network identified in the City's Draft Proposed Active Transportation Network (ATN).

The ATN's Recommended Active Transportation Network is presented in Figure 16. However, given that the ATN largely reviewed the primary trail system identified by the Trail Master Plan and Cycling Master Plan, the planned trails identified in the Clair Maltby study were outside of the scope of the ATN.



Date Plotted: June 6, 2018 Filename: P:\59\76\06 Clair Maltby SP\Graphics\Fig23-00-RATN.dwg

RECOMMENDED ACTIVE TRANSPORTATION NETWORK

BA Group

Clair Maltby Secondary Plan
5976-06 December 2017

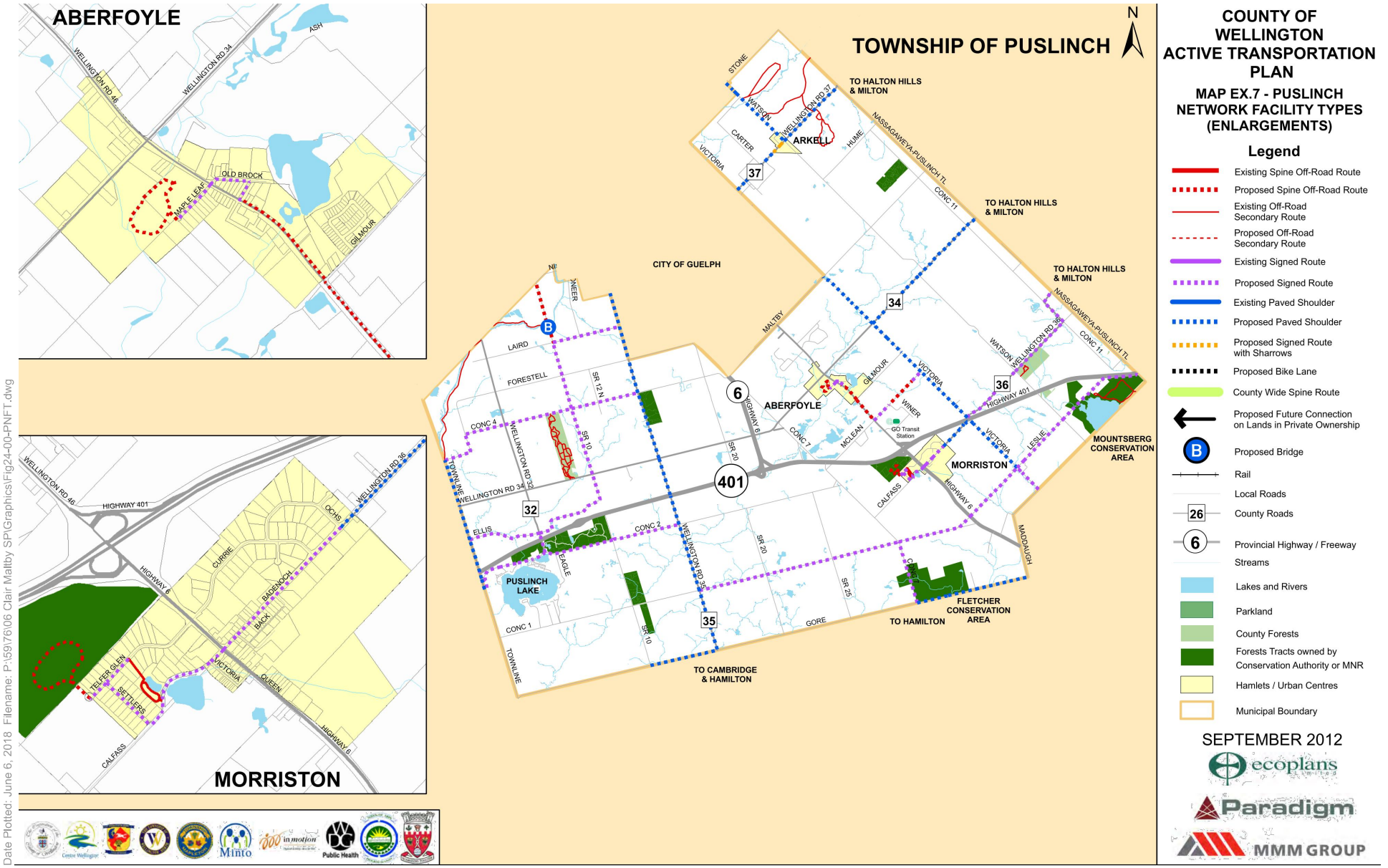
Figure 16

8.4 WELLINGTON COUNTY ACTIVE TRANSPORTATION PLAN

The Wellington County Active Transportation Plan (ATP, September 2012) provides guidelines and strategies that aim to meet the County's goals in fostering a healthy and more sustainably community, notably including an Active Transportation Network (ATN) that connects the County's communities.

The Township of Puslinch, within Wellington County, is directly adjacent to the Clair Maltby study area.

The County of Wellington Active Transportation Plan for Puslinch is illustrated in Figure 17. A proposed paved shoulder condition is recommended along Victoria Road, connecting with the southeast corner of the Clair Maltby study area.



Date Plotted: June 6, 2018 Filename: P:\59\76\06 Clair Maltby SP\Graphics\Fig24-00-PNFT.dwg

COUNTY OF WELLINGTON ACTIVE TRANSPORTATION PLAN: MAP EX. 7 PUSLINCH NETWORK FACILITY TYPES (ENLARGEMENTS)

Appendix A – Transportation Tomorrow Survey (TTS) Details

2006 GTA TTS Zones

BA Group

Clair-Maltby Background Mobility Study - Phase 1
5976-06 November 2017

Figure A-1

Wed Dec 13 2017 17:41:18 GMT-0500 (Eastern Standard Time)

Frequency Distribution Query Form - Trip - 2011
Field: Primary travel mode of trip - mode_prime

Filters:
Start time of trip - start_time In 700-900
and
(2006 GTA zone of destination - gta06_dest In 8069-8076
or
2006 GTA zone of origin - gta06_orig In 8069-8076)

Table: Trip 2011

Row:	Count:	Expanded:
Transit excluding GO rail	4	104
Cycle	5	129
Auto driver	212	4740
Auto passenger	34	729
School bus	33	683
Walk	11	222
Total:	299	6608

Mode Split Summary: Two-way AM Trips			Check:	
Auto Driver	4740	**71.7%**	5222	69.7%
Auto Pass.	729	**11.0%**	815	10.9%
Transit	104	**1.6%**	104	1.4%
Walk	222	**3.4%**	301	4.0%
Cycle	129	**2.0%**	205	2.7%
Other	683	**10.3%**	846	11.3%
	6607		7493	

Wed Dec 13 2017 17:40:57 GMT-0500 (Eastern Standard Time)

Frequency Distribution Query Form - Trip - 2011
Field: Primary travel mode of trip - mode_prime

Filters:
Start time of trip - start_time In 1600-1800
and
(2006 GTA zone of destination - gta06_dest In 8069-8076
or
2006 GTA zone of origin - gta06_orig In 8069-8076)

Table: Trip 2011

Row:	Count:	Expanded:
Transit excluding GO	4	93
Cycle	1	23
Auto driver	248	5435
GO rail only	3	80
Joint GO rail and loca	1	30
Auto passenger	53	1021
School bus	4	82
Total:	314	6763

Mode Split Summary: Two-way PM Trips			Check:	
Auto Driver	5435	**80.4%**	6027	80.6%
Auto Pass.	1021	**15.1%**	1140	15.3%
Transit	203	**3.0%**	203	2.7%
Walk	0	**0.0%**	0	0.0%
Cycle	23	**0.3%**	23	0.3%
Other	82	**1.2%**	82	1.1%
	6764		7475	

Wed Dec 13 2017 17:25:59 GMT-0500 (Eastern Standard Time)

Frequency Distribution Query Form - Trip - 2011
Field: Primary travel mode of trip - mode_prime

Filters:
Start time of trip - start_time In 700-900
and
2006 GTA zone of destination - gta06_dest In 8069-8076

Table: Trip 2011

Row:	Count:	Expanded:
Transit excluding C	1	21
Cycle	3	76
Auto driver	61	1307
Auto passenger	8	154
School bus	8	163
Walk	4	79
Total:	85	1801

Mode Split Summary: Inbound AM Trips

Auto Driver	1307	**72.6%**
Auto Pass.	154	**8.6%**
Transit	21	**1.2%**
Walk	79	**4.4%**
Cycle	76	**4.2%**
Other	163	**9.1%**
	1800	

Wed Dec 13 2017 17:25:27 GMT-0500 (Eastern Standard Time)

Frequency Distribution Query Form - Trip - 2011
Field: Primary travel mode of trip - mode_prime

Filters:
Start time of trip - start_time In 700-900
and
2006 GTA zone of origin - gta06_orig In 8069-8076

Table: Trip 2011

Row:	Count:	Expanded:
Transit excluding GO rail	3	83
Cycle	5	129
Auto driver	173	3915
Auto passenger	30	661
School bus	33	683
Walk	11	222
Total:	255	5693

Mode Split Summary: Outbound AM Trips

Auto Driver	3915	**68.8%**
Auto Pass.	661	**11.6%**
Transit	83	**1.5%**
Walk	222	**3.9%**
Cycle	129	**2.3%**
Other	683	**12.0%**
	5693	

Wed Dec 13 2017 17:26:20 GMT-0500 (Eastern Standard Time)

Frequency Distribution Query Form - Trip - 2011
Field: Primary travel mode of trip - mode_prime

Filters:
Start time of trip - start_time In 1600-1800
and
2006 GTA zone of destination - gta06_dest In 8069-8076

Table: Trip 2011

Row:	Count:	Expanded:
Transit excluding GC	4	93
Cycle	1	23
Auto driver	176	3901
GO rail only	3	80
Joint GO rail and loc	1	30
Auto passenger	29	571
School bus	4	82
Total:	218	4779

Mode Split Summary: Inbound PM Trips

Auto Driver	3901	**81.6%**
Auto Pass.	571	**11.9%**
Transit	203	**4.2%**
Walk	0	**0.0%**
Cycle	23	**0.5%**
Other	82	**1.7%**
	4780	

Wed Dec 13 2017 17:25:04 GMT-0500 (Eastern Standard Time)

Frequency Distribution Query Form - Trip - 2011
Field: Primary travel mode of trip - mode_prime

Filters:
Start time of trip - start_time In 1600-1800
and
2006 GTA zone of origin - gta06_orig In 8069-8076

Table: Trip 2011

Row:	Count:	Expanded:
Auto drive	99	2126
Auto passe	30	569
Total:	129	2695

Mode Split Summary: Outbound AM Trips

Auto Driver	2126	**78.9%**
Auto Pass.	569	**21.1%**
Transit	0	**0.0%**
Walk	0	**0.0%**
Cycle	0	**0.0%**
Other	0	**0.0%**
	2695	

Mode Split Summary: Two-way, All Peak Travel Hours

Auto Driver	11249	**75.2%**
Auto Pass.	1955	**13.1%**
Transit	307	**2.1%**
Walk	301	**2.0%**
Cycle	228	**1.5%**
Other	928	**6.2%**
	14968	

Thu Dec 14 2017 11:17:38 GMT-0500 (Eastern Standard Time) - Run Time: 2159ms

Cross Tabulation Query Form - Trip - 2011

Row: 2006 GTA zone of origin - gta06_orig
Column: Primary travel mode of trip - mode_prime

Filters:
2006 GTA zone of destination - gta06_dest In 8069-8076
and
Start time of trip - start_time In 700-900

Trip 2011
Table:

	Transit excluding GO rail	Cycle	Auto driver	Auto passenger	School bus	Walk	Total Trips from TTS Zone	Orientation	N	S	E	W	
3646	0	0	30	0	0	0	30	S		30			
4127	0	0	27	0	0	0	27	S		27			
4148	0	0	24	0	0	0	24	S		24			
7153	0	0	16	0	0	0	16	S / W		8		8	
7442	0	0	19	0	0	0	19	S		19			
8014	0	0	18	0	0	0	18	N	18				
8015	0	0	22	0	0	0	22	N	22				
8035	0	0	30	0	0	0	30	N	30				
8037	0	0	29	0	0	0	29	N	29				
8038	0	0	9	0	0	0	9	N	9				
8043	0	0	14	18	0	0	32	N	32				
8069	0	0	60	0	0	20	80	N	80				
8072	0	46	197	43	0	20	306	N	306				
8073	0	0	95	0	0	20	115	N	115				
8074	0	30	23	0	0	18	71	N	71				
8075	0	0	23	0	0	0	23	N	23				
8076	0	0	84	43	163	0	290	N	290				
8080	0	0	44	0	0	0	44	N	44				
8085	0	0	19	0	0	0	19	N	19				
8086	0	0	23	0	0	0	23	N	23				
8087	0	0	14	0	0	0	14	W				14	
8090	0	0	0	19	0	0	19	N	19				
8091	0	0	19	0	0	0	19	N	19				
8100	0	0	30	0	0	0	30	N	30				
8105	0	0	23	0	0	0	23	N	23				
8114	0	0	23	0	0	0	23	N	23				
8118	0	0	14	0	0	0	14	N	14				
8121	0	0	30	0	0	0	30	N	30				
8125	0	0	13	0	0	0	13	N	13				
8152	0	0	17	17	0	0	34	N	34				
8168	0	0	28	0	0	0	28	N	28				
8170	0	0	21	0	0	0	21	N	21				
8173	0	0	28	0	0	0	28	N	28				
8182	21	0	21	0	0	0	42	N	42				
8190	0	0	49	0	0	0	49	N	49				
8191	0	0	23	0	0	0	23	N	23				
8199	0	0	19	0	0	0	19	W				19	
8205	0	0	23	0	0	0	23	N	23				
8310	0	0	38	0	0	0	38	S		38			
8311	0	0	13	13	0	0	26	S		26			
8335	0	0	13	0	0	0	13	N	13				
8344	0	0	16	0	0	0	16	N	16				
8380	0	0	8	0	0	0	8	E			8		
8905	0	0	19	0	0	0	19	S		19			
Total	21	76	1308	153	163	78	1799		1559	191	8	41	1799
									87%	11%	0%	2%	

	Transit excluding GO rail	Cycle	Auto driver	Auto passenger	School bus	Walk	Total Trips from TTS Zone
Local Area	0	76	696	105	163	78	1118
Downtown Guelph	0	0	80	0	0	0	80
Rest of Guelph	21	0	309	35	0	0	365
Waterloo Region	0	0	35	0	0	0	35
Peel / Halton Regions	0	0	81	0	0	0	81
City of Toronto	0	0	0	0	0	0	0
Wellington County	0	0	88	13	0	0	101
Other	0	0	19	0	0	0	19
Total Check:	21	76	1308	153	163	78	1799
	1%	4%	73%	9%	9%	4%	

Thu Dec 14 2017 11:15:51 GMT-0500 (Eastern Standard Time) - Run Time: 2547ms

Cross Tabulation Query Form - Trip - 2011

Row: 2006 GTA zone of destination - gta06_dest
Column: Primary travel mode of trip - mode_prime

Filters:
2006 GTA zone of origin - gta06_orig In 8069-8076
and
Start time of trip - start_time In 700-900

Trip 2011
Table:

	Transit excluding GO rail	Cycle	Auto driver	Auto passenger	School bus	Walk	Total Trips to TTS Zone	Orientation	N	S	E	W	
21	0	0	13	0	0	0	13	S		13			
49	0	0	30	0	0	0	30	S		30			
53	0	0	49	0	0	0	49	S		49			
69	0	0	23	0	0	0	23	S		23			
81	0	0	14	0	0	0	14	S		14			
313	0	0	21	0	0	0	21	S		21			
3351	0	0	23	0	0	0	23	S		23			
3357	0	0	19	30	0	0	49	S		49			
3616	0	0	14	0	0	0	14	S		14			
3618	0	0	19	0	0	0	19	S		19			
3694	0	0	30	0	0	0	30	S		30			
3709	0	0	22	0	0	0	22	S		22			
3721	0	0	23	0	0	0	23	S		23			
3835	0	0	30	0	0	0	30	S		30			
4035	0	0	19	0	0	0	19	S		19			
4079	0	0	30	0	0	0	30	S		30			
4123	0	0	23	0	0	0	23	S		23			
4125	0	0	23	0	0	0	23	S		23			
4136	0	0	37	0	0	0	37	S		37			
4160	0	0	30	0	0	0	30	S		30			
4178	0	0	19	0	0	0	19	S		19			
4190	0	0	19	0	0	0	19	S		19			
5135	0	0	0	23	0	0	23	S		23			
7007	0	0	23	0	0	0	23	S / W		11.5		11.5	
7008	0	0	19	0	0	0	19	S / W		9.5		9.5	
7049	0	0	30	0	0	0	30	S / W		15		15	
7050	0	0	23	0	0	0	23	S / W		11.5		11.5	
7055	0	0	23	0	0	0	23	S / W		11.5		11.5	
7113	0	0	13	0	0	0	13	S / W		6.5		6.5	
7135	0	0	23	0	0	0	23	S / W		11.5		11.5	
7141	0	0	60	0	0	0	60	S / W		30		30	
7223	0	0	23	0	0	0	23	S		23			
7259	0	0	23	0	0	0	23	S / W		11.5		11.5	
7305	0	0	19	20	0	0	39	S		39			
7333	0	0	23	0	0	0	23	S		23			
7364	0	0	19	0	0	0	19	S		19			
7440	0	0	19	0	0	0	19	S		19			
7458	0	0	19	0	0	0	19	S		19			
7478	0	0	23	0	0	0	23	S		23			
8008	0	0	72	0	0	0	72	N	72				
8014	0	0	53	0	20	0	73	N	73				
8016	0	0	29	0	0	0	29	N	29				
8025	0	0	13	0	0	0	13	N	13				
8026	0	0	0	0	20	0	20	N	20				
8035	0	0	53	30	0	0	83	N	83				
8037	0	0	23	0	0	0	23	N	23				
8039	0	0	0	0	51	0	51	N	51				
8044	30	0	0	0	0	0	30	N	30				
8056	0	23	107	23	0	0	153	N	153				
8057	53	30	154	33	0	0	270	N	270				
8064	0	0	23	0	0	0	23	N	23				
8065	0	0	23	0	0	0	23	N	23				
8066	0	0	30	0	0	0	30	N	30				
8069	0	0	83	0	0	0	83	N	83				
8070	0	0	23	0	0	0	23	N	23				
8071	0	0	72	23	0	18	113	N	113				
8072	0	46	102	0	0	20	168	N	168				
8073	0	0	137	64	163	41	405	N	405				
8075	0	0	42	0	0	0	42	N	42				
8076	0	30	23	0	0	0	53	N	53				
8079	0	0	19	0	0	0	19	N	19				
8080	0	0	42	0	41	0	83	N	83				
8083	0	0	49	0	0	0	49	N	49				
8084	0	0	46	0	0	0	46	N	46				
8085	0	0	19	0	0	0	19	N	19				
8086	0	0	53	0	0	0	53	N	53				
8087	0	0	19	23	0	0	42	W				42	
8089	0	0	14	0	0	0	14	N	14				
8090	0	0	80	0	0	0	80	N	80				
8091	0	0	19	0	0	0	19	N	19				
8093	0	0	23	0	0	0	23	N	23				
8094	0	0	23	0	0	0	23	N	23				
8095	0	0	75	19	0	0	94	N	94				
8100	0	0	23	0	0	0	23	N	23				
8105	0	0	60	20	61	0	141	N	141				
8107	0	0	69	82	224	0	375	N	375				
8108	0	0	23	0	0	0	23	N	23				
8109	0	0	30	0	0	0	30	N	30				
8114	0	0	30	30	0	0	60	N	60				
8117	0	0	46	0	0	0	46	N	46				
8118	0	0	14	19	0	0	33	N	33				
8121	0	0	95	53	0	0	148	N	148				
8122	0	0	30	0	0	0	30	N	30				
8123	0	0	19	20	0	0	39	N	39				
8125	0	0	60	0	0	0	60	N	60				
8126	0	0	23	0	0	0	23	N	23				
8131	0	0	23	0	0	0	23	N	23				
8137	0	0	30	0	0	0	30	N	30				
8139	0	0	23	0	0	0	23	N	23				
8142	0	0	46	0	0	0	46	N	46				
8154	0	0	60	0	0	0	60	N	60				
8171	0	0	0	0	20	0	20	N	20				
8174	0	0	9	0	0	0	9	N	9				
8175	0	0	80	0	0	0	80	N	80				
8179	0	0	23	0	0	0	23	N	23				
8181	0	0	30	0	0	0	30	N	30				
8186	0	0	23	0	0	0	23	N	23				
8187	0	0	23	20	0	0	43	N	43				
8188	0	0	68	0	0	0	68	N	68				
8189	0	0	19	0	0	0	19	N	19				
8190	0	0	23	23	0	0	46	N	46				
8191	0	0	38	0	0	0	38	W				38	
8195	0	0	23	23	0	0	46	S		46			
8196	0	0	42	61	41	61	205	N	205				
8197	0	0	23	0	0	0	23	N	23				
8199	0	0	42	20	20	82	164	W				164	
8205	0	0	14	0	0	0	14	N	14				
8311	0	0	13	0	0	0	13	S		13			
8317	0	0	23	0	0	0	23	S		23			
8335	0	0	19	0	0	0	19	N	19				
8336	0	0	23	0	0	0	23	N	23				
8339	0	0	17	0	0	0	17	N	17				
8344	0	0	30	0	0	0	30	N	30				
8351	0	0	0	0	20	0	20	N	20				
8365	0	0	19	0	0	0	19	E			19		
8376	0	0	14	0	0	0	14	E			14		
8403	0	0	49	0	0	0	49	N / E	12.3		36.8		
8568	0	0	30	0	0	0	30	N / E	7.5		22.5		
8912	0	0	19	0	0	0							
9065	0	0	19	0	0	0							
Total	83	129	3914	659	681	222	5650		4247	949	92.3	363	5650
									75%	17%	2%	6%	

	Transit excluding GO rail	Cycle	Auto driver	Auto passenger	School bus	Walk	Total Trips to TTS Zone
	53	129	1649	391	550	222	2994
Local Area							
Downtown Guelph	0	0	317	122	0	0	439
Rest of Guelph	30	0	761	73	111	0	975
Waterloo Region	0	0	382	20	0	0	402
Peel / Halton	0	0	380	30	0	0	410
City of Toronto	0	0	150	0	0	0	150
Wellington County	0	0	158	0	20	0	178
Other	0	0	117	23	0	0	102
Total Check:	83	129	3914	659	681	222	5650
	1%	2%	69%	12%	12%	4%	

Thu Dec 14 2017 11:17:16 GMT-0500 (Eastern Standard Time) - Run Time: 2173ms

Cross Tabulation Query Form - Trip - 2011

Row: 2006 GTA zone of origin - gta06_orig
Column: Primary travel mode of trip - mode_prime

Filters:
2006 GTA zone of destination - gta06_dest In 8069-8076
and
Start time of trip - start_time In 1600-1800

Trip 2011
Table:

	Transit excluding GO rail	Cycle	Auto driver	GO rail only	Joint GO rail and local transit	Auto passenger	School bus	Total Trips from TTS Zone	Orientation	N	S	E	W	
36	0	0	0	30	0	0	0	30	S		30			
51	0	0	19	0	0	0	0	19	S		19			
53	0	0	30	0	0	0	0	30	S		30			
57	0	0	0	19	0	0	0	19	S		19			
65	0	0	23	0	0	0	0	23	S		23			
69	0	0	0	0	30	0	0	30	S		30			
77	0	0	0	30	0	0	0	30	S		30			
476	23	0	0	0	0	0	0	23	S		23			
3348	0	0	19	0	0	0	0	19	S		19			
3351	0	0	23	0	0	0	0	23	S		23			
3609	0	0	19	0	0	0	0	19	S		19			
3618	0	0	19	0	0	0	0	19	S		19			
3633	0	0	19	0	0	0	0	19	S		19			
3653	0	0	23	0	0	0	0	23	S		23			
3704	0	0	23	0	0	0	0	23	S		23			
3709	0	0	23	0	0	0	0	23	S		23			
3721	0	0	19	0	0	0	0	19	S		19			
3835	0	0	49	0	0	0	0	49	S		49			
4078	0	0	14	0	0	14	0	28	S		28			
4079	0	0	30	0	0	0	0	30	S		30			
4115	0	0	30	0	0	0	0	30	S		30			
4123	0	0	23	0	0	0	0	23	S		23			
4141	0	0	23	0	0	0	0	23	S		23			
4160	0	0	30	0	0	0	0	30	S		30			
4178	0	0	38	0	0	19	0	57	S		57			
4190	0	0	19	0	0	0	0	19	S		19			
5062	0	0	0	0	0	14	0	14	S		14			
5184	0	0	19	0	0	0	0	19	S		19			
7007	0	0	23	0	0	0	0	23	S / W		11.5		11.5	
7008	0	0	19	0	0	0	0	19	S / W		9.5		9.5	
7049	0	0	30	0	0	0	0	30	S / W		15		15	
7097	0	0	49	0	0	0	0	49	S / W		24.5		24.5	
7135	0	0	23	0	0	0	0	23	S / W		11.5		11.5	
7141	0	0	30	0	0	0	0	30	S / W		15		15	
7160	0	0	23	0	0	0	0	23	S / W		11.5		11.5	
7223	0	0	23	0	0	0	0	23	S		23			
7235	0	0	53	0	0	0	0	53	S		53			
7236	0	0	30	0	0	0	0	30	S		30			
7259	0	0	23	0	0	0	0	23	S		23			
7364	0	0	19	0	0	0	0	19	S		19			
7368	0	0	19	0	0	0	0	19	S		19			
7440	0	0	19	0	0	0	0	19	S		19			
7458	0	0	19	0	0	0	0	19	S		19			
7478	0	0	23	0	0	0	0	23	S		23			
8004	0	0	19	0	0	0	0	19	N	19				
8008	0	0	114	0	0	0	0	114	N	114				
8013	0	0	23	0	0	0	0	23	N	23				
8014	0	0	43	0	0	19	0	62	N	62				
8016	0	0	29	0	0	0	0	29	N	29				
8018	0	0	18	0	0	0	0	18	N	18				
8025	0	0	13	0	0	0	0	13	N	13				
8031	0	0	19	0	0	0	0	19	N	19				
8033	0	0	18	0	0	0	0	18	N	18				
8035	0	0	53	0	0	30	0	83	N	83				
8037	0	0	23	0	0	0	0	23	N	23				
8039	0	0	23	0	0	51	0	74	N	74				
8043	0	0	14	0	0	0	0	14	N	14				
8044	30	0	0	0	0	0	0	30	N	30				
8056	0	23	42	0	0	0	0	65	N	65				
8057	19	0	86	0	0	0	0	105	N	105				
8059	0	0	23	0	0	0	0	23	N	23				
8063	0	0	23	0	0	0	0	23	N	23				
8064	0	0	23	0	0	0	0	23	N	23				
8065	0	0	12	0	0	14	0	26	N	26				
8066	0	0	14	0	0	14	0	28	N	28				
8067	0	0	14	0	0	14	0	28	N	28				
8069	0	0	60	0	0	20	0	80	N	80				
8070	0	0	46	0	0	0	0	46	N	46				
8071	0	0	19	0	0	0	0	19	N	19				
8072	0	0	182	0	0	41	0	223	N	223				
8073	0	0	99	0	0	23	0	122	N	122				
8075	0	0	97	0	0	14	0	111	N	111				
8076	0	0	90	0	0	20	0	110	N	110				
8079	0	0	61	0	0	0	0	61	N	61				
8080	0	0	52	0	0	0	0	52	N	52				
8081	0	0	14	0	0	0	0	14	N	14				
8083	0	0	19	0	0	0	0	19	N	19				
8084	0	0	46	0	0	0	0	46	N	46				
8086	0	0	129	0	0	0	0	129	W				129	
8087	0	0	36	0	0	40	0	76	W				76	
8089	0	0	14	0	0	0	0	14	N	14				
8090	0	0	19	0	0	0	0	19	N	19				
8093	0	0	23	0	0	0	0	23	N	23				
8094	0	0	23	0	0	0	0	23	N	23				
8095	0	0	53	0	0	0	0	53	N	53				
8097	0	0	28	0	0	0	0	28	N	28				
8098	0	0	23	0	0	20	0	43	N	43				
8100	0	0	23	0	0	0	0	23	N	23				
8101	0	0	14	0	0	0	0	14	N	14				
8105	0	0	23	0	0	0	0	23	N	23				
8107	20	0	20	0	0	0	61	101	N	101				
8109	0	0	14	0	0	14	0	28	N	28				
8117	0	0	23	0	0	0	0	23	N	23				
8118	0	0	37	0	0	39	0	76	N	76				
8121	0	0	105	0	0	67	0	172	N	172				
8122	0	0	30	0	0	0	0	30	N	30				
8125	0	0	49	0	0	0	0	49	N	49				
8131	0	0	23	0	0	0	0	23	N	23				
8135	0	0	14	0	0	0	0	14	N	14				
8137	0	0	30	0	0	0	0	30	N	30				
8139	0	0	44	0	0	0	0	44	N	44				
8142	0	0	49	0	0	0	0	49	N	49				
8144	0	0	19	0	0	0	0	19	N	19				
8154	0	0	30	0	0	0	0	30	N	30				
8159	0	0	23	0	0	0	0	23	N	23				
8175	0	0	19	0	0	0	0	19	N	19				
8179	0	0	23	0	0	0	0	23	N	23				
8180	0	0	30	0	0	0	0	30	N	30				
8181	0	0	30	0	0	0	0	30	N	30				
8186	0	0	23	0	0	0	0	23	N	23				
8187	0	0	23	0	0	0	0	23	N	23				
8188	0	0	38	0	0	0	0	38	N	38				
8190	0	0	23	0	0	23	0	46	N	46				
8191	0	0	19	0	0	0	0	19	N	19				
8194	0	0	23	0	0	0	0	23	W				23	
8195	0	0	23	0	0	23	0	46	S		46			
8196	0	0	0	0	0	0	20	20	W				20	
8197	0	0	53	0	0	0	0	53	N	53				
8199	0	0	23	0	0	0	0	23	W				23	
8317	0	0	23	0	0	0	0	23	S		23			
8336	0	0	23	0	0	0	0	23	N	23				
8344	0	0	30	0	0	0	0	30	N	30				
8351	0	0	16	0	0	16	0	32	N	32				
8361	0	0	19	0	0	0	0	19	E			19		
8403	0	0	19	0	0	0	0	19	N / E	4.75		14.25		
8568	0	0	30	0	0	0	0	30	N / E	7.5		22.5		
8613	0	0	19	0	0	19	0	38	N / E	9.5		28.5		
9032	0	0	20	0	0	0	0							
9066	0	0	19	0	0	0	0							
9998	0	0	23	0	0	0	0							
Total	92	23	3899	79	30	568	81	4710		3148	1109	84.25	369.5	4710
										66.8%	23.5%	1.8%	7.8%	

	Transit excluding GO rail	Cycle	Auto driver	GO rail only	Joint GO rail and local transit	Auto passenger	School bus	Total Trips from TTS Zone
	39	23	1586	0	0	257	81	1986
Local Area								
Downtown Guelph	0	0	244	0	0	106	0	350
Rest of Guelph	30	0	869	0	0	123	0	1022
Waterloo Region	0	0	425	0	0	0	0	425
Peel / Halton	0	0	443	0	0	33	0	476
City of Toronto	23	0	72	79	30	0	0	204
Wellington County	0	0	111	0	0	16	0	127
Other	0	0	149	0	0	33	0	120
Total Checl	92	23	3899	79	30	568	81	4710
	2%	0%	83%	2%	1%	12%	2%	

Thu Dec 14 2017 11:16:45 GMT-0500 (Eastern Standard Time) - Run Time: 2270ms

Cross Tabulation Query Form - Trip - 2011

Row: 2006 GTA zone of destination - gta06_dest
Column: Primary travel mode of trip - mode_prime

Filters:
2006 GTA zone of origin - gta06_orig In 8069-8076
and
Start time of trip - start_time In 1600-1800

Trip 2011
Table:

	Auto driver	Auto passenger	Total Trips from TTS Zone	Orientation	N	S	E	W	
3369	21	55	76	S		76			
3646	30	0	30	S		30			
4147	23	0	23	S		23			
7013	23	0	23	S / W		11.5		11.5	
7147	30	0	30	S / W		15		15	
7153	16	0	16	S / W		8		8	
7283	13	17	30	S / W		15		15	
7319	30	0	30	S		30			
7324	38	0	38	S		38			
7389	19	0	19	S		19			
8013	23	0	23	N	23				
8014	76	20	96	N	96				
8015	22	0	22	N	22				
8017	29	0	29	N	29				
8035	23	0	23	N	23				
8037	29	0	29	N	29				
8043	14	18	32	N	32				
8051	0	14	14	N	14				
8057	14	0	14	N	14				
8059	23	0	23	N	23				
8065	17	0	17	N	17				
8069	0	20	20	N	20				
8071	42	0	42	N	42				
8072	271	78	349	N	349				
8073	128	0	128	N	128				
8075	37	20	57	N	57				
8076	114	0	114	N	114				
8078	19	0	19	N	19				
8080	19	0	19	N	19				
8081	14	0	14	N	14				
8082	53	20	73	N	73				
8083	23	20	43	N	43				
8084	52	20	72	N	72				
8085	42	0	42	N	42				
8086	65	20	85	W				85	
8094	19	0	19	N	19				
8095	63	17	80	N	80				
8098	23	0	23	N	23				
8099	23	0	23	N	23				
8102	19	0	19	N	19				
8109	14	14	28	N	28				
8114	30	0	30	N	30				
8118	14	0	14	N	14				
8121	72	20	92	N	92				
8129	19	41	60	N	60				
8139	28	0	28	N	28				
8142	23	20	43	N	43				
8168	28	0	28	N	28				
8182	42	21	63	N	63				
8191	23	0	23	N	23				
8197	46	0	46	N	46				
8199	19	20	39	W				39	
8303	15	15	30	E			30		
8310	38	0	38	S		38			
8311	13	13	26	S		26			
8333	10	10	20	S		20			
8335	13	0	13	N	13				
8336	17	17	34	N	34				
8344	47	0	47	N	47				
8351	33	16	49	N	49				
8380	8	0	8	N / E	2		6		
8905	19	0	19	S		19			
9053	19	19							
Total	2129	565	2656		2078	369	36	174	2656
					78%	14%	1%	7%	

	Auto driver	Auto passenger	Total Trips to TTS Zone
Local Area	1159	249	1408
Downtown Guelph	116	20	136
Rest of Guelph	379	134	513
Waterloo Region	169	17	186
Peel / Halton	74	55	129
City of Toronto	0	0	0
Wellington County	194	71	265
Other	38	19	19
Total Checl	2129	565	2656
	80%	21%	

WEEKDAY MORNING TRIP DISTIBUTION

	Transit excluding GO rail	Cycle	Auto driver	Auto passenger	School bus	Walk	Total Trips from TTS Zone	
	53	205	2345	496	713	300	4112	55%
Local Area	1%	5%	57%	12%	17%	7%		
Downtown	0	0	397	122	0	0	519	7%
Guelph	0%	0%	76%	24%	0%	0%		
Rest of	51	0	1070	108	111	0	1340	18%
Guelph	4%	0%	80%	8%	8%	0%		
Waterloo	0	0	417	20	0	0	437	6%
Region	0%	0%	95%	5%	0%	0%		
Peel / Halton	0	0	461	30	0	0	491	7%
Regions	0%	0%	94%	6%	0%	0%		
City of	0	0	150	0	0	0	150	2%
Toronto	0%	0%	100%	0%	0%	0%		
Wellington	0	0	246	13	20	0	279	4%
County	0%	0%	88%	5%	7%	0%		
	0	0	136	23	0	0	121	2%
Other	0%	0%	112%	19%	0%	0%		
Total Check:	104	205	4976	799	824	300	7449	check: 7449
	1%	3%	67%	11%	11%	4%		

WEEKDAY AFTERNOON TRIP DISTIBUTION

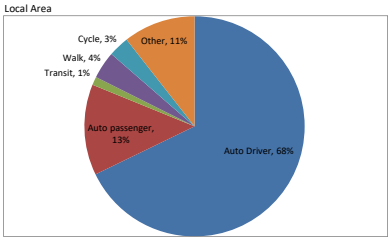
	Transit excluding GO rail	Cycle	Auto driver	GO rail only	Joint GO rail and local transit	Auto passenger	School bus	Total Trips from TTS Zone		
	39	23	2745	0	0	506	81	3394	46%	
Local Area	1%	1%	81%	0%	0%	15%	2%			
Downtown Guelph	0	0	360	0	0	126	0	486	7%	
	0%	0%	74%	0%	0%	26%	0%			
Rest of Guelph	30	0	1248	0	0	257	0	1535	21%	
	2%	0%	81%	0%	0%	17%	0%			
Waterloo Region	0	0	594	0	0	17	0	611	8%	
	0%	0%	97%	0%	0%	3%	0%			
Peel / Halton	0	0	517	0	0	88	0	605	8%	
	0%	0%	85%	0%	0%	15%	0%			
City of Toronto	23	0	72	79	30	0	0	204	3%	
	11%	0%	35%	39%	15%	0%	0%			
Wellington County	0	0	305	0	0	87	0	392	5%	
	0%	0%	78%	0%	0%	22%	0%			
	0	0	187	0	0	52	0	139	2%	
Other	0%	0%	135%	0%	0%	37%	0%			
Total Checl	92	23	5723	79	30	1046	81	7366	check:	7366
	1%	0%	78%	1%	0%	14%	1%			

Auto driver	Auto passenger

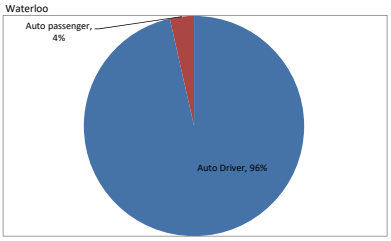
TWO-WAY PEAK PERIOD TRIP DISTIBUTION

	Transit excluding GO rail	Cycle	Auto driver	GO rail only	Joint GO rail and local transit	Auto passenger	School bus	Walk	Total Trips from TTS Zone			Auto Driver	Auto passenger	Transit	Walk	Cycle	Other	
	92	228	5090	0	0	1002	794	300	7506	50.7%								
Local Area	1%	3%	68%	0%	0%	13%	11%	4%				68%	13%	1%	4%	3%	11%	100%
Downtow	0	0	757	0	0	248	0	0	1005	6.8%								
n Guelph	0%	0%	75%	0%	0%	25%	0%	0%				75%	25%	0%	0%	0%	0%	100%
Rest of	81	0	2318	0	0	365	111	0	2875	19.4%								
Guelph	3%	0%	81%	0%	0%	13%	4%	0%				81%	13%	3%	0%	0%	4%	100%
Waterloo	0	0	1011	0	0	37	0	0	1048	7.1%								
Region	0%	0%	96%	0%	0%	4%	0%	0%				96%	4%	0%	0%	0%	0%	100%
Peel /	0	0	978	0	0	118	0	0	1096	7.4%								
Halton	0%	0%	89%	0%	0%	11%	0%	0%				89%	11%	0%	0%	0%	0%	100%
City of	23	0	222	79	30	0	0	0	354	2.4%								
Toronto	6%	0%	63%	22%	8%	0%	0%	0%				63%	0%	37%	0%	0%	0%	100%
Wellingto	0	0	551	0	0	100	20	0	671	4.5%								
n County	0%	0%	82%	0%	0%	15%	3%	0%				82%	15%	0%	0%	0%	3%	100%
	0	0	323	0	0	75	0	0	260	1.8%								
Other	0%	0%	124%	0%	0%	29%	0%	0%				124%	29%	0%	0%	0%	0%	153%
Total Checl	196	228	10699	79	30	1845	905	300	14815		check:	14815	14815					
	1%	2%	72%	1%	0%	12%	6%	2%										
	81	0	3075	0	0	613	111	0	3880	26%								
	2%	0%	79%	0%	0%	16%	3%	0%				79%	16%	2%	0%	0%	3%	100%

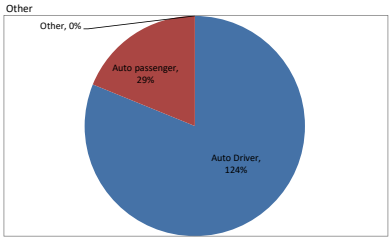
Local Area



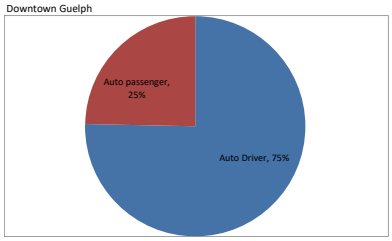
Waterloo



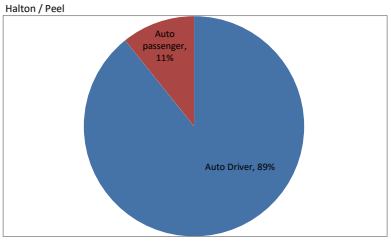
Other



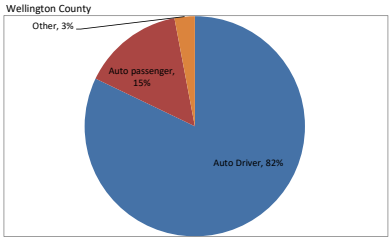
Downtown Guelph



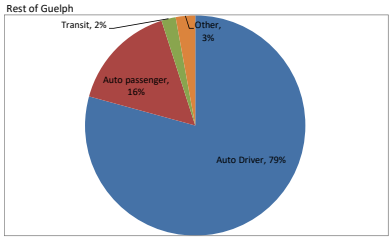
Halton / Peel



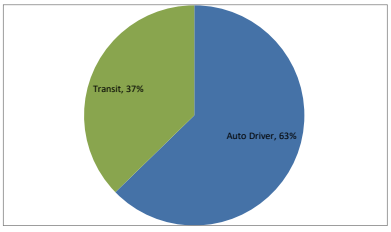
Wellington County



Rest of Guelph



Toronto



N	S	E	W	
11031.5	2616.5	220.5	946.5	14815
74%	18%	1%	6%	

Appendix B – Detailed Collision Data

Collision Details Report

From: January 1, 2012 **To:** March 31, 2017

Location ..... CLAIR RD W @ GORDON ST **Municipality.....** GUELPH

Traffic Control.... Traffic signal **Total Collisions....** 69

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
12-03079	2012-Jan-18, Wed,09:00	Clear	Rear end	Non-fatal injury	North	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:					North		Stopped	Passenger van	Other motor vehicle	Driving properly	Daylight
12-12101	2012-Mar-04, Sun,23:35	Clear	Angle	P.D. only	South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Other	
Comments:					East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Other	Dark, artificial
12-501569641S	2012-Mar-09, Fri,08:25	Snow	Rear end		South	Loose snow	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:					South	Loose snow	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
12-501587590S	2012-May-17, Thu,14:30	Clear	Rear end		South	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:					South	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Following too close	Daylight
12-501595303S	2012-Jun-12, Tue,17:15	Clear	SMV other		South	Dry	Stopped	Automobile, station wagon	Cyclist	Driving properly	
Comments:											Daylight
12-501605073S	2012-Jul-13, Fri,12:15	Clear	Rear end		East	Dry	Turning right	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:					East	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
12-47925	2012-Sep-09, Sun,11:09	Clear	Angle	Non-fatal injury	West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:					North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Disobeyed traffic control	Daylight
12-501620497S	2012-Sep-09, Sun,14:00	Clear	Turning movement		South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:					North	Dry	Turning left	Pick-up truck	Other motor vehicle	Failed to yield right-of-way	Daylight
12-54333	2012-Oct-12, Fri,05:19	Clear	Turning movement	P.D. only	West	Dry	Going ahead	Pick-up truck	Other motor vehicle	Driving properly	
Comments:					East	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	Dark

12-64639	2012-Dec-11, Tue,09:35	Snow	Angle	P.D. only	North	Wet	Going ahead	Truck - closed	Other motor vehicle	Disobeyed traffic control	
Comments:					West	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
1313233	2013-Mar-22, Fri,18:52	Clear	Rear end	P.D. only	North	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:	Road #1: GORDON ST	Road #2: CLAIR RD E			North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Speed too fast for condition	Dusk
13-501691571s	2013-Apr-19, Fri,17:00	Clear	Rear end		South	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Other	
Comments:					South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
13-501708279s	2013-Jun-10, Mon,00:00	Clear	Rear end		West	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:					West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	Daylight
501708279	2013-Jun-10, Mon,16:00	Clear	Rear end	Non-reportable	West	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: CLAIR ROAD E	Road #2: CLAIR ROAD E			West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		Daylight
13-13233 **	2013-Jun-22, Sat,18:52	Clear	Rear end	P.D. only	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Speed too fast for condition	
Comments:	CHARGED: D1 HTA 130 POT #1197527B				North	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	Dusk
501713459	2013-Jun-25, Tue,06:45	Clear	Rear end	Non-reportable	South	Wet	Stopped	Passenger van	Other motor vehicle		
Comments:	Road #1: GORDON ST	Road #2: GORDON ST			South	Wet	Slowing or stopping	Automobile, station wagon	Other motor vehicle		Daylight
1336985	2013-Aug-07, Wed,19:15	Clear	Sideswipe	P.D. only	North	Dry	Turning right	Automobile, station wagon	Cyclist	Driving properly	
Comments:	Road #1: GORDON ST	Road #2: CLAIR ROAD E			North	Dry	Going ahead	Bicycle	Other motor vehicle	Failed to yield right-of-way	Daylight
13-36985	2013-Aug-07, Wed,19:15	Clear	SMV other	Non-fatal injury	North	Dry	Going ahead	Bicycle		Failed to yield right-of-way	
Comments:	LINE 31 - V1 HAD NO REAR BRAKE (CABLE UNHOOKED) CHARGED: D1 PON #2775027B SEC. 139 (1) HTA				North	Dry		Automobile, station wagon	Cyclist	Driving properly	Daylight
13-501728773s	2013-Aug-08, Thu,17:30	Clear	Rear end		North	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Other	
Comments:					North	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
501731387	2013-Aug-15, Thu,02:00	Clear	Rear end	Non-reportable	North	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: GORDON ST	Road #2: GORDON ST			North	Dry	Slowing or stopping	Passenger van	Other motor vehicle		Dark, artificial

13-42655**	2013-Sep-09, Mon,05:38	Clear	SMV other	P.D. only	South	Dry	Pulling onto shoulder or toward curb	Automobile, station wagon	Ran off road	Lost control	
Comments:	CHARGED: D1 32(1) HTA, 2(1)(A) C.A.I.A TELEPHONE POLE, GUIDE WIRE RIPPED OFF										Dark
1344314	2013-Sep-16, Mon,20:30	Clear	SMV unattended vehicle	Non-reportable	West	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: CLAIR RD E	Road #2: CLAIR RD E									Dark, artificial
13-501742645s	2013-Sep-16, Mon,20:30	Clear	Rear end		West	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:					West		Going ahead	Unknown		Following too close	Dark
1349516	2013-Oct-13, Sun,05:03	Rain	SMV unattended vehicle	P.D. only	North	Wet	Turning right	Automobile, station wagon	Skidding/sliding	Improper turn	
Comments:	Road #1: GORDON ST	Road #2: CLAIR RD E				Wet					Dark
13-49516	2013-Oct-13, Sun,05:03	Rain	SMV other	P.D. only	North	Wet	Turning right	Automobile, station wagon	Skidding/sliding	Improper turn	
Comments:	CHARGED: D1 SEC 130 HTA PON#2775625B										Dark
1356784	2013-Nov-24, Sun,10:30	Snow	Rear end	Non-reportable	North	Ice	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: GORDON ST	Road #2: GORDON ST			North	Ice	Slowing or stopping	Automobile, station wagon	Skidding/sliding		Daylight
14254	2014-Jan-02, Thu,18:21	Clear	Turning movement	P.D. only	South	Wet	Turning left	Pick-up truck	Other motor vehicle	Failed to yield right-of-way	
Comments:	Road #1: GORDON ST	Road #2: CLAIR RD W			North	Wet	Going ahead	Pick-up truck	Other motor vehicle	Driving properly	Dark, artificial
142012	2014-Jan-13, Mon,07:57	Clear	Turning movement	Non-reportable	West	Wet	Going ahead	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: CLAIR RD W	Road #2: CLAIR RD W			West	Wet	Turning right	Automobile, station wagon	Other motor vehicle		Daylight
14004254	2014-Jan-26, Sun,09:57	Clear	Approaching	P.D. only	North	Slush	Going ahead	Automobile, station wagon	Pole (utility, power)	Driving properly	
Comments:	Road #1: GORDON ST	Road #2: CLAIR RD E			South	Slush	Turning left	Automobile, station wagon	Other	Improper turn	Daylight
14004386	2014-Jan-27, Mon,10:00	Clear	Angle	P.D. only	South	Loose snow	Going ahead	Automobile, station wagon	Other motor vehicle	Disobeyed traffic control	
Comments:	Road #1: GORDON ST	Road #2: CLAIR RD E			West	Loose snow	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
501801711	2014-Feb-01, Sat,12:40	Snow	Rear end	Non-reportable	North	Wet	Stopped	Passenger van	Other motor vehicle		
Comments:	Road #1: GORDON ST	Road #2: GORDON ST			North	Wet					Daylight
14005368	2014-Feb-01, Sat,13:00	Snow	SMV other	P.D. only	North	Loose snow	Slowing or stopping	Automobile, station wagon	Pole (sign, parking meter)	Speed too fast for condition	
Comments:	Road #1: GORDON ST	Road #2: CLAIR RD W				Loose snow					Daylight

14010272	2014-Mar-03, Mon,14:00	Clear	Angle	Non-reportable	North	Dry	Turning left	Ambulance	Other motor vehicle		
Comments:	Road #1: CLAIR RD E	Road #2: CLAIR RD E			West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		Daylight
501820599	2014-Mar-10, Mon,15:00	Clear	Rear end	Non-reportable	North	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: GORDON ST	Road #2: GORDON ST			North	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle		Daylight
14011646	2014-Mar-12, Wed,09:59	Snow	SMV other	P.D. only	North	Loose snow	Turning right	Passenger van	Other	Speed too fast for condition	
Comments:	Road #1: CLAIR RD E	Road #2: GORDON ST				Loose snow					Daylight
14015614	2014-Apr-03, Thu,15:18	Clear	Turning movement	Non-fatal injury	North	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:	Road #1: GORDON ST	Road #2: CLAIR RD W			South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
501837595	2014-Apr-17, Thu,17:30	Clear	Sideswipe	Non-reportable	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: GORDON ST	Road #2: GORDON ST			North	Dry	Changing lanes	Automobile, station wagon	Other motor vehicle		Daylight
14030787	2014-Jun-23, Mon,18:18	Rain	Turning movement	P.D. only	East	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:	Road #1: CLAIR RD E	Road #2: GORDON ST			West	Wet	Turning left	Automobile, station wagon	Other motor vehicle	Improper turn	Daylight
14030806	2014-Jun-23, Mon,20:12	Rain	SMV other	P.D. only	West	Wet	Turning right	Truck - tractor	Pole (sign, parking meter)	Improper turn	
Comments:	Road #1: CLAIR RD E	Road #2: GORDON ST				Wet					Daylight
14044011	2014-Sep-04, Thu,17:45	Clear	Rear end	Non-reportable	South	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: GORDON ST	Road #2: GORDON ST			South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		Daylight
14045068	2014-Sep-09, Tue,17:17	Clear	Sideswipe	P.D. only	East	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:	Road #1: CLAIR RD W	Road #2: GORDON ST			East	Dry	Changing lanes	Truck - tractor	Other motor vehicle	Improper lane change	Daylight
501906850	2014-Oct-22, Wed,17:00	Clear	Rear end	Non-reportable	North	Dry	Stopped	Passenger van	Other motor vehicle		
Comments:	Road #1: GORDON ST	Road #2: GORDON ST			North	Dry					Daylight
501923890	2014-Nov-27, Thu,20:00	Snow	Rear end	Non-reportable	West	Ice	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: CLAIR RD W	Road #2: CLAIR RD W			West	Ice					Dark, artificial
14063021	2014-Dec-24, Wed,05:26	Rain	Angle	Non-fatal injury	West	Wet	Going ahead	Pick-up truck	Other motor vehicle	Driving properly	
Comments:	Road #1: GORDON ST	Road #2: CLAIR RD E			South	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Dark, artificial

501958335	2015-Feb-12, Thu,15:45	Clear	Sideswipe	Non-reportable	North	Dry	Slowing or stopping	Passenger van	Other motor vehicle		
Comments:	Road #1: GORDON ST	Road #2: GORDON ST			North	Dry					Daylight
501959344	2015-Feb-14, Sat,13:00	Clear	Sideswipe	Non-reportable	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: GORDON ST	Road #2: GORDON ST			North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		Daylight
15008007	2015-Feb-20, Fri,18:10	Clear	Turning movement	Non-fatal injury	East	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Other	
Comments:	d1 charged				West	Dry	Going ahead	Passenger van	Other motor vehicle	Driving properly	Dusk
15016262	2015-Apr-13, Mon,18:00	Rain	Sideswipe	Non-reportable	East	Wet	Going ahead	Pick-up truck	Other motor vehicle		
Comments:	Road #1: CLAIR RD E	Road #2: CLAIR RD E			East	Wet	Changing lanes	Automobile, station wagon	Other motor vehicle		Daylight
15021903A	2015-May-15, Fri,19:31	Clear	Turning movement	Non-fatal injury	North	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:	d1 charged				South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
15021903	2015-May-15, Fri,19:31	Clear	Turning movement	Non-fatal injury	North	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:	d1 charged				South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
502002088A	2015-May-25, Mon,12:15	Clear	Rear end	Non-reportable	East	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:					East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		Daylight
502002088	2015-May-25, Mon,12:15	Clear	Rear end	Non-reportable	East	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:					East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		Daylight
502006645	2015-Jun-04, Thu,06:00	Clear	Rear end	Non-reportable	East	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:					East	Dry					Daylight
15043305	2015-Sep-14, Mon,08:58	Clear	Rear end	P.D. only	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:	d1 charged				North	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
15044486	2015-Sep-19, Sat,15:10	Clear	Rear end	P.D. only	West	Wet	Going ahead	Automobile, station wagon	Other motor vehicle		
Comments:					West	Wet	Going ahead	Automobile, station wagon	Other motor vehicle		Daylight

502064738	2015-Oct-30, Fri,17:00	Clear	Rear end	Non-reportable	North	Dry	Stopped	Pick-up truck	Other motor vehicle		
Comments:					North	Dry	Stopped	Automobile, station wagon	Other motor vehicle		Daylight
15051958	2015-Nov-01, Sun,15:31	Clear	Angle	Non-fatal injury	South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Disobeyed traffic control	
Comments:	d1 charged				West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
15053891	2015-Nov-13, Fri,18:45	Rain	Turning movement	P.D. only	West	Wet	Turning left	Passenger van	Other motor vehicle	Driving properly	
Comments:	d1 charged				West	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Dark, artificial
15056451	2015-Nov-29, Sun,01:25	Clear	SMV other	P.D. only	West	Dry	Going ahead	Automobile, station wagon	Pole (utility, power)	Other	
Comments:	d1 charged					Dry					Dark
15057350	2015-Dec-04, Fri,16:39	Clear	Angle	Non-fatal injury	West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Disobeyed traffic control	
Comments:	d1 charged			d2 charged	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Dusk
15057465	2015-Dec-05, Sat,08:45	Fog, mist, smoke, dust	Rear end	Non-fatal injury	North	Wet	Changing lanes	Automobile, station wagon	Other motor vehicle	Improper lane change	
Comments:					North	Wet	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Other	Daylight
502093430	2016-Jan-10, Sun,18:30	Snow	Rear end	Non-reportable	East	Ice	Slowing or stopping	Automobile, station wagon	Other motor vehicle		
Comments:					East	Ice	Going ahead	Automobile, station wagon	Other motor vehicle		Dark, artificial
16003885	2016-Jan-25, Mon,13:35	Clear	Rear end	Non-fatal injury	South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:	d1-charged				South	Wet	Stopped	Passenger van	Other motor vehicle	Driving properly	Daylight
16013848	2016-Mar-23, Wed,21:08	Clear	Turning movement	P.D. only	East	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:					West	Dry	Going ahead	Passenger van	Other motor vehicle	Driving properly	Dark, artificial
502129547	2016-Apr-10, Sun,20:00	Freezing Rain	Rear end		North	Ice	Slowing or stopping	Automobile, station wagon	Other motor vehicle		
Comments:					North	Ice	Stopped	Automobile, station wagon	Other motor vehicle		Dark, artificial
502204755	2016-Oct-14, Fri,17:30	Clear	Rear end	Non-reportable	South	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:					South	Dry					Daylight

502209067	2016-Oct-22, Sat,20:00	Clear	Rear end	Non-reportable	West	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle		
Comments:					West	Dry	Stopped	Automobile, station wagon	Other motor vehicle		Dark, artificial
502219191	2016-Nov-16, Wed,12:30	Clear	Other	Non-reportable	West	Dry	Reversing	Automobile, station wagon	Other motor vehicle		
Comments:					East	Dry	Stopped	Automobile, station wagon	Other motor vehicle		Daylight
16061845	2016-Dec-12, Mon,19:00	Clear	Turning movement	Non-reportable	South	Wet	Turning left	Automobile, station wagon	Other motor vehicle		
Comments:	d1 charged				North	Wet	Going ahead	Automobile, station wagon	Other motor vehicle		Dark, artificial

Collision Details Report

From: January 1, 2012 **To:** March 31, 2017

Location ..... CLAIR RD W @ LAIRD RD **Municipality.....** GUELPH

Traffic Control.... Stop sign **Total Collisions....** 4

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
12-501609147S	2012-Jul-30, Mon,12:32	Clear	Rear end		East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:					East	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
13-12702	2013-Mar-19, Tue,10:06	Snow	SMV other	P.D. only	East	Loose snow	Slowing or stopping	Automobile, station wagon	Pole (utility, power)	Speed too fast for condition	
Comments:						Loose snow					Daylight
13-18565	2013-Apr-23, Tue,20:28	Clear	Sideswipe	P.D. only	North	Dry	Turning right	Tow truck	Other motor vehicle	Improper lane change	
Comments:	CHARGED: JOHN HALL - START FROM STOPPED POSITION NOT IN SAFETY, 142(2) HTA				North	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Driving properly	Dusk
13-501713749s	2013-Jun-25, Tue,19:30	Rain	Rear end		East	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:					East	Wet	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight

Collision Details Report

From: January 1, 2012 **To:** March 31, 2017

Location ..... CLAIR RD E @ FARLEY DR **Municipality.....** GUELPH

Traffic Control.... Traffic signal **Total Collisions....** 13

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
12-42187	2012-Aug-11, Sat,15:30	Rain	Angle	Non-fatal injury	East	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Disobeyed traffic control	
Comments:					North	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
1356588	2013-Nov-23, Sat,09:45	Snow	SMV other	Non-reportable	West	Slush	Going ahead	Passenger van	Skidding/sliding	Speed too fast for condition	
Comments:	Road #1: CLAIR RD E	Road #2: FARLEY DR				Slush					Daylight
1357139	2013-Nov-23, Sat,09:50	Snow	SMV unattended vehicle	Non-reportable	North	Ice	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: CLAIR RD E	Road #2: CLAIR RD E				Ice					Daylight
501836603	2014-Apr-16, Wed,09:00	Clear	Rear end	Non-reportable	South	Dry	Turning right	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: FARLEY DR	Road #2: FARLEY DR			South	Dry	Stopped	Automobile, station wagon	Other motor vehicle		Daylight
14048226	2014-Sep-25, Thu,06:39	Clear	Angle	P.D. only	East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Disobeyed traffic control	
Comments:	Road #1: CLAIR RD E	Road #2: FARLEY DR			South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Dawn
15041370	2015-Sep-04, Fri,16:50	Clear	Turning movement	P.D. only	East	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:					West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
16009138	2016-Feb-20, Sat,13:00	Clear	Turning movement	P.D. only	West	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:	d2-charged				East	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	Daylight
16012219	2016-Mar-15, Tue,13:22	Clear	Turning movement	P.D. only	East	Dry	Turning left	Pick-up truck	Other motor vehicle	Failed to yield right-of-way	
Comments:	d1-charged				West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
16040747	2016-Aug-24, Wed,08:30	Clear	Angle	Non-fatal injury	South	Dry	Going ahead	Bicycle	Other motor vehicle	Disobeyed traffic control	
Comments:					East	Dry	Going ahead	Automobile, station wagon	Cyclist	Driving properly	Daylight

502190116	2016-Sep-10, Sat,13:27	Clear	Turning movement	Non-reportable	North	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		
Comments:					West	Dry	Turning left	Automobile, station wagon	Other motor vehicle		Daylight
16053945	2016-Nov-02, Wed,21:55	Clear	Turning movement	Non-fatal injury	East	Wet	Turning left	Automobile, station wagon	Other motor vehicle	Other	
Comments:	d1 charged				West	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Dark, artificial
16055850	2016-Nov-14, Mon,15:28	Clear	Turning movement	P.D. only	East	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:	d1 charged				West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
17001674	2016-Dec-19, Mon,14:30	Clear	Turning movement	Non-reportable	West	Dry	Going ahead	Passenger van	Other motor vehicle		
Comments:	d2 charged				West	Dry	Changing lanes	Automobile, station wagon	Other motor vehicle		Daylight

Collision Details Report

From: January 1, 2012 **To:** March 31, 2017

Location ..... CLAIR RD E @ VICTORIA RD S **Municipality.....** GUELPH

Traffic Control.... Stop sign **Total Collisions....** 12

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
12-501575422S	2012-Apr-01, Sun,10:20	Clear	Angle		South	Wet	Turning right	Automobile, station wagon	Other motor vehicle	Speed too fast for condition	
Comments:					East	Wet	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
13-07923	2013-Feb-16, Sat,15:45	Clear	Angle	P.D. only	South	Wet	Turning right	Automobile, station wagon	Other motor vehicle	Speed too fast for condition	
Comments:					East	Wet	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
13-501690910s	2013-Apr-17, Wed,08:30	Clear	Rear end		South	Dry	Going ahead	Unknown		Driving properly	
Comments:					South	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Following too close	Daylight
13-41575	2013-Jul-04, Thu,15:15	Clear	Angle	P.D. only	South	Dry	Turning right	Automobile, station wagon	Other motor vehicle	Improper turn	
Comments:	CHARGED: D1 S.141 (2) HTA PON# 1195626B				East	Dry	Slowing or stopping	Pick-up truck	Other motor vehicle	Driving properly	Daylight
1354335	2013-Nov-10, Sun,03:40	Rain	SMV other	P.D. only	East	Wet	Slowing or stopping	Automobile, station wagon	Steel guide rail	Speed too fast for condition	
Comments:	Road #1: CLAIR RD E, GUELP		Road #2: VICTORIA RD S			Wet					Dark, artificial
13-54335	2013-Nov-10, Sun,03:40	Rain	SMV other	Non-fatal injury	East	Wet	Slowing or stopping	Automobile, station wagon	Curb	Speed too fast for condition	
Comments:											Dark, artificial
141081	2014-Jan-07, Tue,14:10	Clear	Rear end	Non-reportable	South	Ice	Slowing or stopping	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: VICTORIA RD S & CLAIR RD E GUELPH VICTORIA RD S & CLAIR RD E GUELPH		Road #2:		South	Ice	Stopped	Automobile, station wagon	Other motor vehicle		Daylight
50185889	2014-Jun-15, Sun,16:50	Clear	Angle	Non-reportable	South	Dry	Going ahead	Motorcycle	Other motor vehicle		
Comments:	Road #1: VICTORIA RD S		Road #2: VICTORIA RD S		East	Dry	Turning left	Automobile, station wagon	Other motor vehicle		Daylight
14030788	2014-Jun-23, Mon,16:19	Rain	Approaching	P.D. only	East	Wet	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:	Road #1: CLAIR RD E		Road #2: VICTORIA RD S		West	Wet	Turning right	Automobile, station wagon	Other motor vehicle	Speed too fast for condition	Daylight

14054348	2014-Oct-31, Fri,14:45	Rain	Angle	P.D. only	East	Wet	Turning left	Automobile, station wagon	Other motor vehicle	Failed to yield right-of-way	
Comments:	Road #1: CLAIR RD E		Road #2: VICTORIA RD S		South	Wet	Going ahead	Pick-up truck	Other motor vehicle	Driving properly	Daylight
15039629	2015-Aug-25, Tue,23:20	Clear	SMV other	P.D. only	East	Dry	Going ahead	Automobile, station wagon	Steel guide rail	Other	
Comments:	d1 charged					Dry					Dark
502055091	2015-Oct-06, Tue,17:00	Clear	Rear end	Non-reportable	East	Dry	Stopped	Passenger van	Other motor vehicle		
Comments:					East	Dry	Going ahead	Truck - closed	Other motor vehicle		Daylight

Collision Details Report

From: January 1, 2012 **To:** March 31, 2017

Location ..... CLAIR RD W @ CLAIRFIELDS DR W **Municipality.....** GUELPH

Traffic Control.... Traffic signal **Total Collisions....** 13

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
12-501561016S	2012-Feb-08, Wed,08:15	Clear	Rear end		West	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:					West	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
13-501696443s	2013-May-06, Mon,07:40	Clear	Rear end		South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:					South	Dry	Stopped	Unknown	Other motor vehicle	Driving properly	Daylight
501696443	2013-May-06, Mon,07:40	Clear	Rear end	Non-reportable	South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: CLAIRFIELDS DR		Road #2: CLAIRFIELDS DR		South	Dry	Stopped		Other motor vehicle		Daylight
1359695	2013-Dec-11, Wed,12:00	Snow	Angle	Non-reportable	East	Loose snow	Slowing or stopping	Passenger van	Skidding/sliding		
Comments:	Road #1: CLAIR RD W		Road #2: CLAIR RD W		North	Slush	Stopped	School bus	Other motor vehicle		Daylight
501970219	2015-Mar-05, Thu,15:25	Clear	Sideswipe	Non-reportable	West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: CLAIR RD W		Road #2: CLAIR RD W		West	Dry	Changing lanes	Automobile, station wagon	Other motor vehicle		Daylight
501996511	2015-May-13, Wed,15:05	Clear	Sideswipe	Non-reportable	West	Dry	Stopped	Pick-up truck	Other motor vehicle		
Comments:					West	Dry	Turning left	School bus	Other motor vehicle		Daylight
502039616	2015-Aug-27, Thu,16:35	Clear	Rear end	Non-reportable	West	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:					West	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle		Daylight
502070671	2015-Nov-13, Fri,17:35	Clear	Angle	Non-reportable	West	Dry	Going ahead	Automobile, station wagon	Skidding/sliding		
Comments:					South	Dry	Stopped	Automobile, station wagon	Other motor vehicle		Dark, artificial
502072008	2015-Nov-17, Tue,05:45	Clear	Rear end	Non-reportable	West	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:					West	Dry					Dark, artificial

502093617	2016-Jan-10, Sun,17:45	Strong wind	Rear end	Non-reportable	East	Ice	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:					East	Ice					Dark
502094098	2016-Jan-12, Tue,12:40	Snow	Rear end	Non-reportable	East	Ice	Slowing or stopping	Automobile, station wagon	Other motor vehicle		
Comments:					East	Packed snow	Stopped	Automobile, station wagon	Other motor vehicle		Daylight
502101937	2016-Jan-29, Fri,11:00	Clear	Turning movement	Non-reportable	North	Dry	Turning right	Automobile, station wagon	Other motor vehicle		
Comments:					East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		Daylight
16062009	2016-Dec-12, Mon,08:15	Clear	Sideswipe	Non-reportable	West	Loose snow	Going ahead	Truck - closed	Other motor vehicle		
Comments:	d2 charged				West	Wet	Going ahead	Automobile, station wagon	Other motor vehicle		Daylight

Collision Details Report

From: January 1, 2012 **To:** March 31, 2017

Location ..... BEAVER MEADOW DR @ CLAIR RD E **Municipality.....** GUELPH

Traffic Control.... **Total Collisions....** 1

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
12-21783	2012-Apr-23, Mon,11:22	Clear	SMV other	Non-fatal injury	East	Dry	Going ahead	Automobile, station wagon	Pole (utility, power)	Failed to yield right-of-way	
Comments:						Dry					Daylight

Collision Details Report

From: January 1, 2012 **To:** March 31, 2017

Location ..... GORDON ST @ MALTBY RD E **Municipality.....** GUELPH

Traffic Control.... **Total Collisions....** 5

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
1356949	2013-Nov-23, Sat,12:00	Snow	SMV other	Non-reportable	East	Ice	Going ahead	Automobile, station wagon	Skidding/sliding		
Comments:	Road #1: MALTBY RD E	Road #2: MALTBY RD E				Ice					Daylight
14007199	2014-Feb-12, Wed,17:00	Clear	SMV other	P.D. only	West	Packed snow	Slowing or stopping	Passenger van	Pole (sign, parking meter)	Lost control	
Comments:	Road #1: MALTBY RD E	Road #2: GORDON ST				Dry					Daylight
14051130	2014-Oct-11, Sat,17:55	Clear	Angle	Non-fatal injury	South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:	Road #1: GORDON ST	Road #2: MALTBY RD E			East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Disobeyed traffic control	Daylight
15059744	2015-Dec-19, Sat,08:04	Clear	Angle	Non-fatal injury	East	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Disobeyed traffic control	
Comments:	d1-charged				North	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
16001977	2016-Jan-14, Thu,01:30	Snow	SMV other	P.D. only	East	Loose snow	Slowing or stopping	Pick-up truck	Ran off road	Speed too fast for condition	
Comments:						Ice					Dark

Collision Details Report

From: January 1, 2012 **To:** March 31, 2017

Location ..... GORDON ST @ POPPY DR **Municipality.....** GUELPH

Traffic Control.... Traffic signal **Total Collisions....** 2

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
12-20170	2012-Apr-15, Sun,11:27	Rain	Angle	Non-fatal injury	North	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Disobeyed traffic control	
Comments:	D1 CHARGED: SECTION 144(18) HTA PON# 8242161A				West	Wet	Turning left	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
12-501647502s	2012-Dec-01, Sat,09:00	Clear	Angle		West	Packed snow	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:					North	Packed snow	Going ahead	Automobile, station wagon			Daylight

Collision Details Report

From: January 1, 2012 **To:** March 31, 2017

Location ..... VICTORIA RD S @ MALTBY RD E **Municipality.....** GUELPH

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

Collision ID	Date/Day/Time	Environment	Impact Type	Classification	Direction	Surface Cond'n	Vehicle Manoeuver	Vehicle type	First Event	Driver Action	No. Ped
12-501578669S	2012-Apr-14, Sat,09:30	Clear	Rear end		South	Wet	Going ahead	Automobile, station wagon	Other motor vehicle	Following too close	
Comments:					South	Dry	Stopped	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
1352809	2013-Nov-01, Fri,09:00	Clear	Rear end	Non-reportable	South	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:	Road #1: VICTORIA RD S	Road #2: VICTORIA RD S			South						Daylight
15005190	2015-Feb-04, Wed,22:33	Snow	SMV other	P.D. only	South	Loose snow	Going ahead	Automobile, station wagon	Steel guide rail	Speed too fast for condition	
Comments:	Road #1: VICTORIA RD S	Road #2: MALTBY RD E				Loose snow					Dark
502043335	2015-Sep-08, Tue,08:15	Rain	SMV other	Non-reportable	South	Wet	Slowing or stopping	Automobile, station wagon			
Comments:						Wet					Daylight
15047987	2015-Oct-08, Thu,16:30	Clear	Turning movement	Non-fatal injury	South	Dry	Turning right	Automobile, station wagon	Other motor vehicle	Other	
Comments:	d1 charged				South	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle	Driving properly	Daylight
15049840	2015-Oct-20, Tue,11:18	Clear	Turning movement	P.D. only	West	Dry	Going ahead	Automobile, station wagon	Other motor vehicle	Driving properly	
Comments:	d2 charged				South	Dry	Turning left	Automobile, station wagon	Other motor vehicle	Improper turn	Daylight
502082229	2015-Dec-11, Fri,10:00	Clear	Rear end	Non-reportable	South	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:					South	Dry	Going ahead	Pick-up truck	Other motor vehicle		Daylight
502098039	2016-Jan-14, Thu,16:30	Clear	Rear end	Non-reportable	South	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		
Comments:					South	Dry	Stopped	Automobile, station wagon	Other motor vehicle		Daylight
16008748	2016-Feb-24, Wed,09:45	Snow	SMV other	P.D. only	South	Packed snow	Slowing or stopping	Automobile, station wagon	Steel guide rail	Speed too fast for condition	
Comments:						Packed snow					Daylight

502136435	2016-Apr-29, Fri,09:00	Clear	Rear end		North	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:					North	Dry	Slowing or stopping	Automobile, station wagon	Other motor vehicle		Daylight
502155172	2016-Jun-15, Wed,07:15	Clear	Rear end	Non-reportable	East	Dry	Going ahead	Automobile, station wagon	Other motor vehicle		
Comments:					East	Dry					Daylight
502159487	2016-Jun-25, Sat,09:00	Clear	Rear end	Non-reportable	South	Dry	Stopped	Automobile, station wagon	Other motor vehicle		
Comments:					South	Dry					Daylight
16057677	2016-Nov-23, Wed,19:45	Snow	SMV other	Non-reportable	South	Loose snow	Slowing or stopping	Automobile, station wagon	Skidding/sliding		
Comments:	metal guide rail					Loose snow					Dark
16057381	2016-Nov-23, Wed,21:45	Freezing Rain	SMV other	P.D. only	South	Ice	Slowing or stopping	Automobile, station wagon	Skidding/sliding	Speed too fast for condition	
Comments:						Ice					Dark, artificial
16057382	2016-Nov-23, Wed,23:55	Freezing Rain	SMV other	P.D. only	South	Ice	Going ahead	Automobile, station wagon	Skidding/sliding	Speed too fast for condition	
Comments:						Ice					Dark, artificial

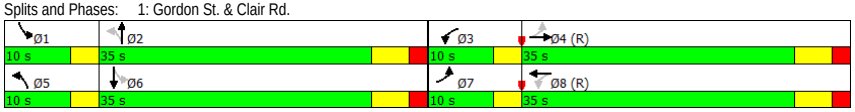
Appendix C – Synchro Analysis Worksheets

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	145	293	178	580	109	478	73	361
Future Volume (vph)	145	293	178	580	109	478	73	361
Lane Group Flow (vph)	163	429	200	713	122	615	82	660
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Minimum Split (s)	9.5	24.0	9.5	24.0	9.5	24.0	9.5	24.0
Total Split (s)	10.0	35.0	10.0	35.0	10.0	35.0	10.0	35.0
Total Split (%)	11.1%	38.9%	11.1%	38.9%	11.1%	38.9%	11.1%	38.9%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
v/c Ratio	0.56	0.41	0.50	0.64	0.40	0.58	0.24	0.57
Control Delay	20.9	16.6	12.1	16.9	18.1	27.1	15.4	21.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.9	16.6	12.1	16.9	18.1	27.1	15.4	21.0
Queue Length 50th (m)	11.2	16.5	10.7	24.8	12.3	47.0	8.0	38.8
Queue Length 95th (m)	21.2	24.8	16.4	35.8	22.6	63.8	16.1	55.8
Internal Link Dist (m)		775.0		194.1		153.6		314.0
Turn Bay Length (m)	75.0		25.0		50.0		140.0	
Base Capacity (vph)	289	1046	401	1120	303	1067	340	1154
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.41	0.50	0.64	0.40	0.58	0.24	0.57

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green, Master Intersection
Natural Cycle: 70
Control Type: Pretimed

Splits and Phases: 1: Gordon St. & Clair Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	293	89	178	580	54	109	478	69	73	361	226
Future Volume (vph)	145	293	89	178	580	54	109	478	69	73	361	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0		3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.99		1.00	0.98		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1701	3150		1623	3455		1655	3274		1752	3245	
Flt Permitted	0.25	1.00		0.45	1.00		0.28	1.00		0.31	1.00	
Satd. Flow (perm)	445	3150		777	3455		492	3274		576	3245	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	163	329	100	200	652	61	122	537	78	82	406	254
RTOR Reduction (vph)	0	32	0	0	7	0	0	13	0	0	109	0
Lane Group Flow (vph)	163	397	0	200	706	0	122	602	0	82	551	0
Confl. Peds. (#/hr)	10		5	5		10	3		3	3		3
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	6%	8%	17%	11%	3%	2%	9%	5%	28%	3%	3%	6%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.0	29.0		36.0	29.0		36.0	29.0		36.0	29.0	
Effective Green, g (s)	36.0	29.0		36.0	29.0		36.0	29.0		36.0	29.0	
Actuated g/C Ratio	0.40	0.32		0.40	0.32		0.40	0.32		0.40	0.32	
Clearance Time (s)	3.0	6.0		3.0	6.0		3.0	6.0		3.0	6.0	
Lane Grp Cap (vph)	275	1015		376	1113		287	1054		321	1045	
v/s Ratio Prot	c0.05	0.13		0.04	c0.20		c0.03	c0.18		0.02	0.17	
v/s Ratio Perm	0.19			0.17			0.14			0.08		
v/c Ratio	0.59	0.39		0.53	0.63		0.43	0.57		0.26	0.53	
Uniform Delay, d1	18.7	23.7		18.7	26.0		18.0	25.3		17.3	24.9	
Progression Factor	0.87	0.72		0.50	0.55		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.0	1.1		5.1	2.7		4.6	2.2		1.9	1.9	
Delay (s)	25.3	18.3		14.5	16.9		22.5	27.6		19.2	26.8	
Level of Service	C	B		B	B		C	C		B	C	
Approach Delay (s)		20.2			16.4			26.8			26.0	
Approach LOS		C			B			C			C	

Intersection Summary

HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	65.9%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	4	1	11	1	5	639	9	627
Future Volume (vph)	4	1	11	1	5	639	9	627
Lane Group Flow (vph)	0	7	0	36	5	722	10	682
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	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)	24.0	24.0	24.0	24.0	9.5	24.0	9.5	24.0
Total Split (s)	30.0	30.0	30.0	30.0	10.0	50.0	10.0	50.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	11.1%	55.6%	11.1%	55.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	3.0	6.0	3.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
v/c Ratio		0.04		0.21	0.01	0.24	0.01	0.22
Control Delay		26.8		20.4	1.8	3.0	1.8	3.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		26.8		20.4	1.8	3.0	1.8	3.0
Queue Length 50th (m)		0.6		1.6	0.0	0.0	0.1	0.0
Queue Length 95th (m)		4.3		9.9	0.7	33.7	1.1	31.6
Internal Link Dist (m)		247.7		256.4		1837.2		153.6
Turn Bay Length (m)					65.0		27.0	
Base Capacity (vph)		629		584	747	3061	725	3080
Starvation Cap Reductn		0		0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.01		0.06	0.01	0.24	0.01	0.22

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 68.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Gordon St. & Poppy Dr.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1	2	11	1	21	5	639	25	9	627	0
Future Volume (vph)	4	1	2	11	1	21	5	639	25	9	627	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		3.0	6.0		3.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.96			0.91		1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1741			1674		1770	3519		1770	3539	
Flt Permitted		1.00			0.95		0.39	1.00		0.38	1.00	
Satd. Flow (perm)		1791			1621		731	3519		703	3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	1	2	12	1	23	5	695	27	10	682	0
RTOR Reduction (vph)	0	2	0	0	22	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	5	0	0	14	0	5	720	0	10	682	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		2.8			2.8		57.0	55.9		57.0	55.9	
Effective Green, g (s)		2.8			2.8		57.0	55.9		57.0	55.9	
Actuated g/C Ratio		0.04			0.04		0.76	0.75		0.76	0.75	
Clearance Time (s)		6.0			6.0		3.0	6.0		3.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		67			60		572	2629		551	2644	
v/s Ratio Prot							0.00	c0.20		c0.00	0.19	
v/s Ratio Perm		0.00			c0.01		0.01			0.01		
v/c Ratio		0.08			0.23		0.01	0.27		0.02	0.26	
Uniform Delay, d1		34.8			35.0		2.1	3.0		2.1	3.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			2.0		0.0	0.3		0.0	0.2	
Delay (s)		35.2			36.9		2.1	3.3		2.1	3.2	
Level of Service		D			D		A	A		A	A	
Approach Delay (s)		35.2			36.9			3.3			3.2	
Approach LOS		D			D			A			A	

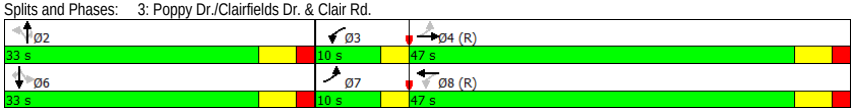
Intersection Summary			
HCM 2000 Control Delay	4.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	29	293	203	571	49	16	108	27	26	126
Future Volume (vph)	29	293	203	571	49	16	108	27	26	126
Lane Group Flow (vph)	32	385	221	634	0	70	117	0	57	137
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4	3	8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	7	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	24.0	9.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	10.0	47.0	10.0	47.0	33.0	33.0	33.0	33.0	33.0	33.0
Total Split (%)	11.1%	52.2%	11.1%	52.2%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max	Max	Max
v/c Ratio	0.07	0.24	0.37	0.36		0.16	0.21		0.12	0.24
Control Delay	7.8	14.0	7.7	9.8		24.5	5.8		23.8	5.6
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	7.8	14.0	7.7	9.8		24.5	5.8		23.8	5.6
Queue Length 50th (m)	2.2	19.5	11.3	18.9		9.3	0.0		7.5	0.0
Queue Length 95th (m)	5.7	29.0	18.7	26.7		19.8	12.1		16.8	12.9
Internal Link Dist (m)		186.5		775.0		114.2			150.9	
Turn Bay Length (m)	55.0		45.0				20.0			20.0
Base Capacity (vph)	499	1589	595	1777		433	556		478	570
Starvation Cap Reductn	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.06	0.24	0.37	0.36		0.16	0.21		0.12	0.24

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 45 (50%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 3: Poppy Dr./Clairfields Dr. & Clair Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	293	62	203	571	12	49	16	108	27	26	126
Future Volume (vph)	29	293	62	203	571	12	49	16	108	27	26	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0			6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	0.97		1.00	1.00			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.98	1.00
Satd. Flow (prot)	1770	3447		1770	3528			1795	1583		1817	1583
Flt Permitted	0.40	1.00		0.49	1.00			0.78	1.00		0.86	1.00
Satd. Flow (perm)	741	3447		905	3528			1446	1583		1596	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	318	67	221	621	13	53	17	117	29	28	137
RTOR Reduction (vph)	0	20	0	0	2	0	0	0	82	0	0	96
Lane Group Flow (vph)	32	365	0	221	632	0	0	70	35	0	57	41
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	44.9	41.0		51.0	44.1			27.0	27.0		27.0	27.0
Effective Green, g (s)	44.9	41.0		51.0	44.1			27.0	27.0		27.0	27.0
Actuated g/C Ratio	0.50	0.46		0.57	0.49			0.30	0.30		0.30	0.30
Clearance Time (s)	3.0	6.0		3.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	414	1570		580	1728			433	474		478	474
v/s Ratio Prot	0.00	0.11		c0.03	0.18							
v/s Ratio Perm	0.04			c0.19				c0.05	0.02		0.04	0.03
v/c Ratio	0.08	0.23		0.38	0.37			0.16	0.07		0.12	0.09
Uniform Delay, d1	11.5	14.9		9.7	14.3			23.2	22.6		22.9	22.6
Progression Factor	1.00	1.00		0.72	0.65			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	0.3		0.3	0.5			0.8	0.3		0.5	0.4
Delay (s)	11.6	15.3		7.4	9.8			24.0	22.9		23.4	23.0
Level of Service	B	B		A	A			C	C		C	C
Approach Delay (s)		15.0			9.1			23.3			23.1	
Approach LOS		B			A			C			C	

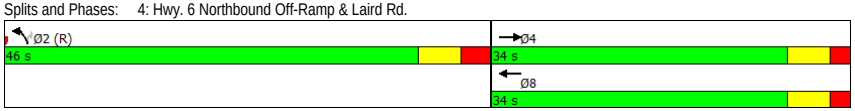
Intersection Summary				
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.32			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	44.9%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Configurations				
Traffic Volume (vph)	646	396	43	304
Future Volume (vph)	646	396	43	304
Lane Group Flow (vph)	718	440	48	338
Turn Type	NA	NA	Prot	Perm
Protected Phases	4	8	2	
Permitted Phases				2
Minimum Split (s)	24.0	24.0	25.0	25.0
Total Split (s)	34.0	34.0	46.0	46.0
Total Split (%)	42.5%	42.5%	57.5%	57.5%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0	7.0
Lead/Lag				
Lead-Lag Optimize?				
v/c Ratio	0.59	0.38	0.07	0.46
Control Delay	19.6	20.8	11.2	12.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.6	20.8	11.2	12.9
Queue Length 50th (m)	44.7	27.3	3.9	26.0
Queue Length 95th (m)	62.4	39.8	9.4	47.5
Internal Link Dist (m)	282.0	205.6	157.0	
Turn Bay Length (m)				100.0
Base Capacity (vph)	1214	1148	727	739
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	0.59	0.38	0.07	0.46

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle: 50
Control Type: Pretimed

Splits and Phases: 4: Hwy. 6 Northbound Off-Ramp & Laird Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	646	0	0	396	43	304
Future Volume (vph)	646	0	0	396	43	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0			6.0	7.0	7.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3471			3282	1492	1442
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3471			3282	1492	1442
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	718	0	0	440	48	338
RTOR Reduction (vph)	0	0	0	0	0	36
Lane Group Flow (vph)	718	0	0	440	48	302
Heavy Vehicles (%)	4%	2%	2%	10%	21%	12%
Turn Type	NA			NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	28.0			28.0	39.0	39.0
Effective Green, g (s)	28.0			28.0	39.0	39.0
Actuated g/C Ratio	0.35			0.35	0.49	0.49
Clearance Time (s)	6.0			6.0	7.0	7.0
Lane Grp Cap (vph)	1214			1148	727	702
v/s Ratio Prot	c0.21			0.13	0.03	
v/s Ratio Perm						c0.21
v/c Ratio	0.59			0.38	0.07	0.43
Uniform Delay, d1	21.3			19.5	10.9	13.3
Progression Factor	0.81			1.00	1.00	1.00
Incremental Delay, d2	2.1			1.0	0.2	1.9
Delay (s)	19.3			20.5	11.0	15.2
Level of Service	B			C	B	B
Approach Delay (s)	19.3			20.5	14.7	
Approach LOS	B			C	B	

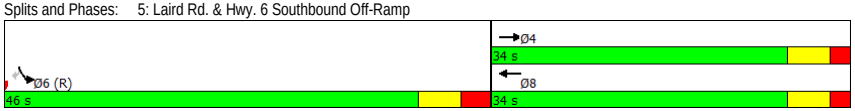
Intersection Summary				
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0	
Intersection Capacity Utilization	47.5%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBT	WBT	SBL	SBR
Lane Configurations				
Traffic Volume (vph)	232	241	429	37
Future Volume (vph)	232	241	429	37
Lane Group Flow (vph)	273	284	505	44
Turn Type	NA	NA	Prot	Perm
Protected Phases	4	8	6	
Permitted Phases				6
Minimum Split (s)	24.0	24.0	25.0	25.0
Total Split (s)	34.0	34.0	46.0	46.0
Total Split (%)	42.5%	42.5%	57.5%	57.5%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0	7.0
Lead/Lag				
Lead-Lag Optimize?				
v/c Ratio	0.22	0.24	0.31	0.06
Control Delay	18.9	22.2	13.1	3.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.9	22.2	13.1	3.9
Queue Length 50th (m)	15.8	12.5	23.8	0.0
Queue Length 95th (m)	23.4	23.3	31.8	4.5
Internal Link Dist (m)	199.6	282.0	265.0	
Turn Bay Length (m)				40.0
Base Capacity (vph)	1226	1180	1625	786
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	0.22	0.24	0.31	0.06

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle: 50
Control Type: Pretimed

Splits and Phases: 5: Laird Rd. & Hwy. 6 Southbound Off-Ramp



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	232	241	0	429	37
Future Volume (vph)	0	232	241	0	429	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		7.0	7.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frpb, ped/bikes		1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3505	3374		3335	1568
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3505	3374		3335	1568
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	273	284	0	505	44
RTOR Reduction (vph)	0	0	0	0	0	23
Lane Group Flow (vph)	0	273	284	0	505	21
Confl. Peds. (#/hr)	1			1		
Heavy Vehicles (%)	2%	3%	7%	2%	5%	3%
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		28.0	28.0		39.0	39.0
Effective Green, g (s)		28.0	28.0		39.0	39.0
Actuated g/C Ratio		0.35	0.35		0.49	0.49
Clearance Time (s)		6.0	6.0		7.0	7.0
Lane Grp Cap (vph)		1226	1180		1625	764
v/s Ratio Prot		0.08	c0.08		c0.15	
v/s Ratio Perm						0.01
v/c Ratio		0.22	0.24		0.31	0.03
Uniform Delay, d1		18.3	18.5		12.4	10.7
Progression Factor		1.00	1.17		1.00	1.00
Incremental Delay, d2		0.4	0.5		0.5	0.1
Delay (s)		18.7	22.0		12.9	10.7
Level of Service		B	C		B	B
Approach Delay (s)		18.7	22.0		12.7	
Approach LOS		B	C		B	

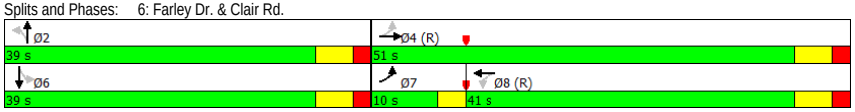
Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	101	291	27	593	30	13	25	20
Future Volume (vph)	101	291	27	593	30	13	25	20
Lane Group Flow (vph)	117	391	31	761	35	22	29	192
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	7	4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	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)	9.5	29.0	29.0	29.0	26.0	26.0	26.0	26.0
Total Split (s)	10.0	51.0	41.0	41.0	39.0	39.0	39.0	39.0
Total Split (%)	11.1%	56.7%	45.6%	45.6%	43.3%	43.3%	43.3%	43.3%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
v/c Ratio	0.20	0.16	0.05	0.33	0.42	0.13	0.21	0.62
Control Delay	2.3	1.7	1.5	1.4	52.0	29.2	39.6	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.3	1.7	1.5	1.4	52.0	29.2	39.6	17.8
Queue Length 50th (m)	1.6	3.2	0.3	3.5	6.2	2.6	5.0	3.9
Queue Length 95th (m)	5.6	9.1	m1.0	7.1	14.3	8.7	12.0	20.2
Internal Link Dist (m)		194.1		562.0		132.3		165.7
Turn Bay Length (m)	130.0		50.0		45.0		20.0	
Base Capacity (vph)	583	2464	671	2293	319	600	517	698
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.16	0.05	0.33	0.11	0.04	0.06	0.28

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 88 (98%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Farley Dr. & Clair Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	291	46	27	593	61	30	13	6	25	20	145
Future Volume (vph)	101	291	46	27	593	61	30	13	6	25	20	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.95		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	3191		1800	3367		1801	1625		1802	1613	
Flt Permitted	0.33	1.00		0.52	1.00		0.46	1.00		0.74	1.00	
Satd. Flow (perm)	612	3191		987	3367		872	1625		1410	1613	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	117	338	53	31	690	71	35	15	7	29	23	169
RTOR Reduction (vph)	0	6	0	0	5	0	0	6	0	0	153	0
Lane Group Flow (vph)	117	385	0	31	756	0	35	16	0	29	39	0
Confl. Peds. (#/hr)	3		2	2		3	2		1	1		2
Heavy Vehicles (%)	3%	11%	7%	0%	6%	0%	0%	8%	17%	0%	0%	1%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	69.3	69.3		60.6	60.6		8.7	8.7		8.7	8.7	
Effective Green, g (s)	69.3	69.3		60.6	60.6		8.7	8.7		8.7	8.7	
Actuated g/C Ratio	0.77	0.77		0.67	0.67		0.10	0.10		0.10	0.10	
Clearance Time (s)	3.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	543	2457		664	2267		84	157		136	155	
v/s Ratio Prot	c0.01	0.12			c0.22			0.01			0.02	
v/s Ratio Perm	0.15			0.03			c0.04			0.02		
v/c Ratio	0.22	0.16		0.05	0.33		0.42	0.10		0.21	0.25	
Uniform Delay, d1	2.7	2.7		5.0	6.2		38.3	37.1		37.5	37.6	
Progression Factor	0.70	0.56		0.21	0.15		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.1		0.1	0.4		3.3	0.3		0.8	0.9	
Delay (s)	2.1	1.7		1.2	1.3		41.6	37.4		38.3	38.5	
Level of Service	A	A		A	A		D	D		D	D	
Approach Delay (s)		1.8			1.3			40.0			38.5	
Approach LOS		A			A			D			D	

Intersection Summary

HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.33			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	57.0%	ICU Level of Service	B	
Analysis Period (min)	15			

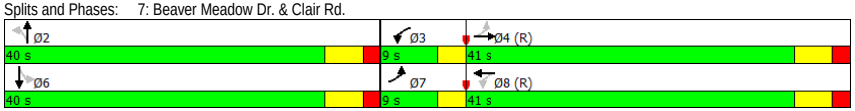
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	62	253	15	578	24	11	27	6
Future Volume (vph)	62	253	15	578	24	11	27	6
Lane Group Flow (vph)	76	333	18	734	0	75	33	124
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	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)	9.5	24.0	9.5	24.0	24.0	24.0	24.0	24.0
Total Split (s)	9.0	41.0	9.0	41.0	40.0	40.0	40.0	40.0
Total Split (%)	10.0%	45.6%	10.0%	45.6%	44.4%	44.4%	44.4%	44.4%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max
v/c Ratio	0.23	0.21	0.04	0.53		0.13	0.07	0.18
Control Delay	11.7	13.0	10.7	22.3		12.2	18.4	5.0
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	11.7	13.0	10.7	22.3		12.2	18.4	5.0
Queue Length 50th (m)	5.8	13.5	1.5	53.4		4.8	3.8	0.8
Queue Length 95th (m)	10.5	18.4	4.4	63.1		12.2	8.9	9.4
Internal Link Dist (m)		562.0		1234.2		176.3		140.6
Turn Bay Length (m)	55.0		30.0					
Base Capacity (vph)	333	1556	474	1372		571	505	677
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.23	0.21	0.04	0.53		0.13	0.07	0.18

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 44 (49%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 7: Beaver Meadow Dr. & Clair Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	253	20	15	578	24	24	11	27	27	6	96
Future Volume (vph)	62	253	20	15	578	24	24	11	27	27	6	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99			0.94		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1752	3457		1503	3349			1630		1797	1601	
Flt Permitted	0.27	1.00		0.55	1.00			0.88		0.71	1.00	
Satd. Flow (perm)	490	3457		872	3349			1457		1340	1601	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	76	309	24	18	705	29	29	13	33	33	7	117
RTOR Reduction (vph)	0	6	0	0	3	0	0	21	0	0	73	0
Lane Group Flow (vph)	76	327	0	18	731	0	0	54	0	33	51	0
Confl. Peds. (#/hr)	2		1	1		2			2	2		
Heavy Vehicles (%)	3%	3%	5%	20%	7%	8%	0%	9%	11%	0%	0%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.4	38.6		38.6	36.2			34.0		34.0	34.0	
Effective Green, g (s)	43.4	38.6		38.6	36.2			34.0		34.0	34.0	
Actuated g/C Ratio	0.48	0.43		0.43	0.40			0.38		0.38	0.38	
Clearance Time (s)	3.0	6.0		3.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	303	1482		390	1347			550		506	604	
v/s Ratio Prot	c0.01	0.09		0.00	c0.22						0.03	
v/s Ratio Perm	0.11			0.02				c0.04		0.02		
v/c Ratio	0.25	0.22		0.05	0.54			0.10		0.07	0.08	
Uniform Delay, d1	13.4	16.2		14.9	20.6			18.1		17.9	18.0	
Progression Factor	0.92	0.81		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.3		0.0	1.6			0.4		0.2	0.3	
Delay (s)	12.8	13.5		14.9	22.1			18.5		18.1	18.3	
Level of Service	B	B		B	C			B		B	B	
Approach Delay (s)		13.4			22.0			18.5			18.2	
Approach LOS		B			C			B			B	

Intersection Summary

HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.32			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	49.2%	ICU Level of Service	A	
Analysis Period (min)	15			

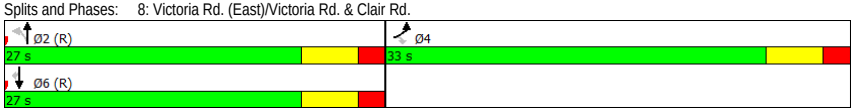
c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	228	40	39	226	230	433
Future Volume (vph)	228	40	39	226	230	433
Lane Group Flow (vph)	265	47	45	263	267	503
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Minimum Split (s)	23.0	23.0	7.0	7.0	7.0	7.0
Total Split (s)	33.0	33.0	27.0	27.0	27.0	27.0
Total Split (%)	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
v/c Ratio	0.37	0.06	0.13	0.42	0.41	0.58
Control Delay	12.8	4.0	14.6	17.3	17.2	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	4.0	14.6	17.3	17.2	4.8
Queue Length 50th (m)	19.1	0.2	3.5	22.6	22.9	0.0
Queue Length 95th (m)	32.7	4.5	9.3	38.2	38.4	14.6
Internal Link Dist (m)	1234.2			2005.5	465.2	
Turn Bay Length (m)		10.0	65.0			20.0
Base Capacity (vph)	718	729	345	633	652	865
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.06	0.13	0.42	0.41	0.58

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 40
Control Type: Pretimed

Splits and Phases: 8: Victoria Rd. (East)/Victoria Rd. & Clair Rd.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	228	40	39	226	230	433
Future Volume (vph)	228	40	39	226	230	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1597	1568	1641	1810	1863	1538
Flt Permitted	0.95	1.00	0.57	1.00	1.00	1.00
Satd. Flow (perm)	1597	1568	988	1810	1863	1538
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	265	47	45	263	267	503
RTOR Reduction (vph)	0	24	0	0	0	327
Lane Group Flow (vph)	265	23	45	263	267	176
Heavy Vehicles (%)	13%	3%	10%	5%	2%	5%
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	27.0	27.0	21.0	21.0	21.0	21.0
Effective Green, g (s)	27.0	27.0	21.0	21.0	21.0	21.0
Actuated g/C Ratio	0.45	0.45	0.35	0.35	0.35	0.35
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Grp Cap (vph)	718	705	345	633	652	538
v/s Ratio Prot	c0.17			c0.15	0.14	
v/s Ratio Perm		0.01	0.05			0.11
v/c Ratio	0.37	0.03	0.13	0.42	0.41	0.33
Uniform Delay, d1	10.9	9.2	13.3	14.8	14.8	14.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	0.8	2.0	1.9	1.6
Delay (s)	12.3	9.3	14.1	16.8	16.7	15.9
Level of Service	B	A	B	B	B	B
Approach Delay (s)	11.9			16.4	16.2	
Approach LOS	B			B	B	

Intersection Summary

HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	344	8	102	697	7	36
Future Volume (Veh/h)	344	8	102	697	7	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	374	9	111	758	8	39
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			383		1358	378
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			383		1358	378
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		95	94
cM capacity (veh/h)			1175		148	668

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	383	869	47
Volume Left	0	111	8
Volume Right	9	0	39
cSH	1700	1175	419
Volume to Capacity	0.23	0.09	0.11
Queue Length 95th (m)	0.0	2.5	3.0
Control Delay (s)	0.0	2.3	14.7
Lane LOS		A	B
Approach Delay (s)	0.0	2.3	14.7
Approach LOS			B

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	74.2%	ICU Level of Service		D
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	13	19	6	4	5	36	615	10	3	631	48
Future Volume (Veh/h)	23	13	19	6	4	5	36	615	10	3	631	48
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	25	14	20	6	4	5	39	661	11	3	678	52
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1456	1460	704	1476	1475	661	730			672		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1456	1460	704	1476	1475	661	730			672		
tC, single (s)	*6.3	*5.8	*5.8	*5.6	*5.4	*5.0	4.1			4.8		
tC, 2 stage (s)												
tF (s)	*3.2	*3.1	*3.0	*3.0	*3.0	*3.0	2.2			2.8		
p0 queue free %	83	92	96	97	98	99	96			100		
cM capacity (veh/h)	148	185	510	183	217	623	869			677		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	59	15	700	11	733
Volume Left	25	6	39	0	3
Volume Right	20	5	0	11	52
cSH	208	253	869	1700	677
Volume to Capacity	0.28	0.06	0.04	0.01	0.00
Queue Length 95th (m)	9.0	1.5	1.1	0.0	0.1
Control Delay (s)	29.1	20.1	1.2	0.0	0.1
Lane LOS	D	C	A		A
Approach Delay (s)	29.1	20.1	1.1		0.1
Approach LOS	D	C			

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	69.3%	ICU Level of Service		C
Analysis Period (min)	15			

* User Entered Value

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	30	8	256	23	4	211
Future Volume (Veh/h)	30	8	256	23	4	211
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	33	9	281	25	4	232
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			42		624	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			42		624	38
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			82		99	78
cM capacity (veh/h)			1573		371	1032

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	42	306	236
Volume Left	0	281	4
Volume Right	9	0	232
cSH	1700	1573	1002
Volume to Capacity	0.02	0.18	0.24
Queue Length 95th (m)	0.0	5.2	7.3
Control Delay (s)	0.0	7.3	9.7
Lane LOS		A	A
Approach Delay (s)	0.0	7.3	9.7
Approach LOS			A

Intersection Summary				
Average Delay	7.7			
Intersection Capacity Utilization	42.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	225	11	14	22	18	276
Future Volume (Veh/h)	225	11	14	22	18	276
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	239	12	15	23	19	294
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	38				516	26
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	38				516	26
tC, single (s)	4.2				6.6	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.7	3.3
p0 queue free %	84				95	72
cM capacity (veh/h)	1534				410	1046

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	251	38	313
Volume Left	239	0	19
Volume Right	0	23	294
cSH	1534	1700	956
Volume to Capacity	0.16	0.02	0.33
Queue Length 95th (m)	4.4	0.0	11.5
Control Delay (s)	7.5	0.0	10.6
Lane LOS	A		B
Approach Delay (s)	7.5	0.0	10.6
Approach LOS			B

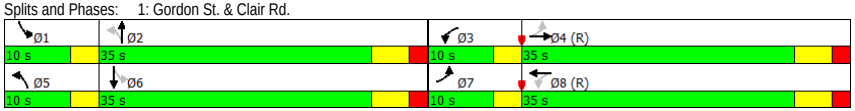
Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	44.4%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	252	614	113	391	155	483	173	537
Future Volume (vph)	252	614	113	391	155	483	173	537
Lane Group Flow (vph)	265	749	119	508	163	683	182	693
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	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)	9.5	24.0	9.5	24.0	9.5	24.0	9.5	24.0
Total Split (s)	10.0	35.0	10.0	35.0	10.0	35.0	10.0	35.0
Total Split (%)	11.1%	38.9%	11.1%	38.9%	11.1%	38.9%	11.1%	38.9%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	Max	None	Max
v/c Ratio	0.67	0.66	0.46	0.46	0.54	0.61	0.57	0.62
Control Delay	41.6	43.7	17.5	20.9	21.6	26.3	22.4	27.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	43.7	17.5	20.9	21.6	26.3	22.4	27.5
Queue Length 50th (m)	49.3	75.3	13.5	33.3	16.8	50.2	18.9	53.1
Queue Length 95th (m)	73.9	94.8	25.1	48.2	29.4	69.1	32.3	72.1
Internal Link Dist (m)		775.0		194.1		153.6		314.0
Turn Bay Length (m)	75.0		25.0		50.0		140.0	
Base Capacity (vph)	397	1141	262	1116	304	1118	319	1117
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.66	0.45	0.46	0.54	0.61	0.57	0.62

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green, Master Intersection
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 1: Gordon St. & Clair Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	252	614	98	113	391	91	155	483	166	173	537	122
Future Volume (vph)	252	614	98	113	391	91	155	483	166	173	537	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0		3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.97		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1780	3485		1611	3394		1735	3352		1803	3401	
Flt Permitted	0.39	1.00		0.23	1.00		0.26	1.00		0.27	1.00	
Satd. Flow (perm)	729	3485		387	3394		477	3352		507	3401	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	265	646	103	119	412	96	163	508	175	182	565	128
RTOR Reduction (vph)	0	14	0	0	22	0	0	38	0	0	22	0
Lane Group Flow (vph)	265	735	0	119	486	0	163	645	0	182	671	0
Confl. Peds. (#/hr)	17		7	7		17	2		11	11		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	1%	2%	12%	3%	1%	4%	1%	8%	0%	2%	7%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.1	29.1		35.9	29.0		36.0	29.0		36.0	29.0	
Effective Green, g (s)	36.1	29.1		35.9	29.0		36.0	29.0		36.0	29.0	
Actuated g/C Ratio	0.40	0.32		0.40	0.32		0.40	0.32		0.40	0.32	
Clearance Time (s)	3.0	6.0		3.0	6.0		3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	374	1126		248	1093		288	1080		303	1095	
v/s Ratio Prot	c0.06	0.21		0.04	0.14		0.04	0.19		c0.05	c0.20	
v/s Ratio Perm	c0.23			0.15			0.18			0.19		
v/c Ratio	0.71	0.65		0.48	0.44		0.57	0.60		0.60	0.61	
Uniform Delay, d1	20.5	26.1		18.4	24.1		18.5	25.6		18.6	25.8	
Progression Factor	1.94	1.59		0.84	0.86		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.6	2.7		1.4	1.3		2.5	2.4		3.3	2.6	
Delay (s)	45.2	44.3		16.9	22.0		21.1	28.0		22.0	28.3	
Level of Service	D	D		B	C		C	C		C	C	
Approach Delay (s)		44.5			21.0			26.7			27.0	
Approach LOS		D			C			C			C	

Intersection Summary

HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.66			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0	
Intersection Capacity Utilization	74.2%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	2	0	46	5	5	816	38	708
Future Volume (vph)	2	0	46	5	5	816	38	708
Lane Group Flow (vph)	0	3	0	96	5	942	41	773
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	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)	24.0	24.0	24.0	24.0	9.5	24.0	9.5	24.0
Total Split (s)	30.0	30.0	30.0	30.0	10.0	50.0	10.0	50.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	11.1%	55.6%	11.1%	55.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	3.0	6.0	3.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Max	None	Max
v/c Ratio		0.01		0.47	0.01	0.38	0.08	0.29
Control Delay		0.0		27.4	2.8	7.4	2.9	5.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay		0.0		27.4	2.8	7.4	2.9	5.0
Queue Length 50th (m)		0.0		7.5	0.2	34.2	1.1	16.3
Queue Length 95th (m)		0.0		21.2	0.9	56.0	3.7	42.7
Internal Link Dist (m)		247.7		256.4		1837.2		153.6
Turn Bay Length (m)					65.0		27.0	
Base Capacity (vph)		538		506	627	2468	517	2666
Starvation Cap Reductn		0		0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.01		0.19	0.01	0.38	0.08	0.29

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 73.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Gordon St. & Poppy Dr.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	1	46	5	38	5	816	51	38	708	3
Future Volume (vph)	2	0	1	46	5	38	5	816	51	38	708	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		3.0	6.0		3.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		0.95			0.94		1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1722			1711		1770	3508		1770	3537	
Flt Permitted		0.84			0.83		0.36	1.00		0.27	1.00	
Satd. Flow (perm)		1496			1466		668	3508		500	3537	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	0	1	50	5	41	5	887	55	41	770	3
RTOR Reduction (vph)	0	3	0	0	37	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	59	0	5	939	0	41	773	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.2			7.2		52.8	51.7		57.8	54.2	
Effective Green, g (s)		7.2			7.2		52.8	51.7		57.8	54.2	
Actuated g/C Ratio		0.09			0.09		0.68	0.67		0.75	0.70	
Clearance Time (s)		6.0			6.0		3.0	6.0		3.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		138			136		470	2340		431	2473	
v/s Ratio Prot							0.00	c0.27		c0.00	0.22	
v/s Ratio Perm		0.00			c0.04		0.01			0.07		
v/c Ratio		0.00			0.43		0.01	0.40		0.10	0.31	
Uniform Delay, d1		31.9			33.2		3.9	5.9		2.8	4.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			2.2		0.0	0.5		0.1	0.3	
Delay (s)		31.9			35.4		4.0	6.4		2.9	4.8	
Level of Service		C			D		A	A		A	A	
Approach Delay (s)		31.9			35.4			6.4			4.7	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

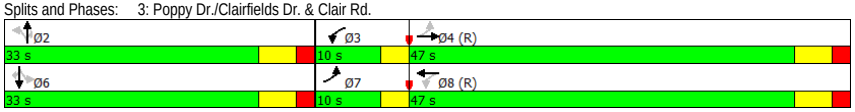
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	106	803	24	428	11	3	36	21	3	77
Future Volume (vph)	106	803	24	428	11	3	36	21	3	77
Lane Group Flow (vph)	115	886	26	515	0	15	39	0	26	84
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4	3	8		2			6	
Permitted Phases	4		8		2		2	6		6
Detector Phase	7	4	3	8	2	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	24.0	9.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	10.0	47.0	10.0	47.0	33.0	33.0	33.0	33.0	33.0	33.0
Total Split (%)	11.1%	52.2%	11.1%	52.2%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max	Max	Max
v/c Ratio	0.22	0.48	0.07	0.31		0.03	0.07		0.06	0.16
Control Delay	8.8	15.5	11.3	19.2		22.6	2.1		23.0	6.3
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	8.8	15.5	11.3	19.2		22.6	2.1		23.0	6.3
Queue Length 50th (m)	8.2	45.5	2.7	37.8		1.9	0.0		3.4	0.0
Queue Length 95th (m)	15.4	77.4	m5.2	48.6		6.6	2.7		9.4	10.3
Internal Link Dist (m)		186.5		775.0		114.2			150.9	
Turn Bay Length (m)	55.0		45.0				20.0			20.0
Base Capacity (vph)	524	1851	387	1674		481	526		460	533
Starvation Cap Reductn	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.22	0.48	0.07	0.31		0.03	0.07		0.06	0.16

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 86.4 (96%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Poppy Dr./Clairfields Dr. & Clair Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	803	12	24	428	46	11	3	36	21	3	77
Future Volume (vph)	106	803	12	24	428	46	11	3	36	21	3	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0			6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3531		1770	3488			1791	1583		1784	1583
Flt Permitted	0.41	1.00		0.27	1.00			0.86	1.00		0.82	1.00
Satd. Flow (perm)	757	3531		505	3488			1606	1583		1535	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	873	13	26	465	50	12	3	39	23	3	84
RTOR Reduction (vph)	0	1	0	0	9	0	0	0	27	0	0	59
Lane Group Flow (vph)	115	885	0	26	506	0	0	15	12	0	26	25
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	51.0	45.4		45.0	42.4			27.0	27.0		27.0	27.0
Effective Green, g (s)	51.0	45.4		45.0	42.4			27.0	27.0		27.0	27.0
Actuated g/C Ratio	0.57	0.50		0.50	0.47			0.30	0.30		0.30	0.30
Clearance Time (s)	3.0	6.0		3.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	491	1781		289	1643			481	474		460	474
v/s Ratio Prot	c0.01	c0.25		0.00	0.15							
v/s Ratio Perm	0.12			0.04				0.01	0.01		c0.02	0.02
v/c Ratio	0.23	0.50		0.09	0.31			0.03	0.02		0.06	0.05
Uniform Delay, d1	9.2	14.7		11.7	14.7			22.3	22.2		22.4	22.4
Progression Factor	1.00	1.00		1.47	1.29			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	1.0		0.1	0.4			0.1	0.1		0.2	0.2
Delay (s)	9.5	15.7		17.3	19.4			22.4	22.3		22.7	22.6
Level of Service	A	B		B	B			C	C		C	C
Approach Delay (s)		15.0			19.3			22.3			22.6	
Approach LOS		B			B			C			C	

Intersection Summary

HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.34			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	48.1%	ICU Level of Service	A	
Analysis Period (min)	15			

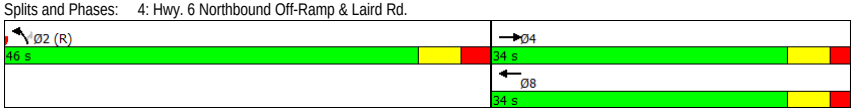
c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Configurations				
Traffic Volume (vph)	563	664	25	163
Future Volume (vph)	563	664	25	163
Lane Group Flow (vph)	626	738	28	181
Turn Type	NA	NA	Prot	Perm
Protected Phases	4	8	2	
Permitted Phases				2
Minimum Split (s)	24.0	24.0	25.0	25.0
Total Split (s)	34.0	34.0	46.0	46.0
Total Split (%)	42.5%	42.5%	57.5%	57.5%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0	7.0
Lead/Lag				
Lead-Lag Optimize?				
v/c Ratio	0.52	0.61	0.03	0.25
Control Delay	18.4	24.2	10.9	6.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.4	24.2	10.9	6.5
Queue Length 50th (m)	35.6	50.6	2.2	6.5
Queue Length 95th (m)	51.0	69.0	6.3	17.6
Internal Link Dist (m)	282.0	205.6	157.0	
Turn Bay Length (m)				100.0
Base Capacity (vph)	1203	1203	879	719
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	0.52	0.61	0.03	0.25

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle: 50
Control Type: Pretimed

Splits and Phases: 4: Hwy. 6 Northbound Off-Ramp & Laird Rd.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	563	0	0	664	25	163
Future Volume (vph)	563	0	0	664	25	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0			6.0	7.0	7.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3438			3438	1805	1369
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3438			3438	1805	1369
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	626	0	0	738	28	181
RTOR Reduction (vph)	0	0	0	0	0	52
Lane Group Flow (vph)	626	0	0	738	28	129
Heavy Vehicles (%)	5%	2%	2%	5%	0%	18%
Turn Type	NA			NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases						2
Actuated Green, G (s)	28.0			28.0	39.0	39.0
Effective Green, g (s)	28.0			28.0	39.0	39.0
Actuated g/C Ratio	0.35			0.35	0.49	0.49
Clearance Time (s)	6.0			6.0	7.0	7.0
Lane Grp Cap (vph)	1203			1203	879	667
v/s Ratio Prot	0.18			c0.21	0.02	
v/s Ratio Perm						c0.09
v/c Ratio	0.52			0.61	0.03	0.19
Uniform Delay, d1	20.7			21.5	10.7	11.6
Progression Factor	0.80			1.00	1.00	1.00
Incremental Delay, d2	1.6			2.3	0.1	0.6
Delay (s)	18.1			23.9	10.7	12.2
Level of Service	B			C	B	B
Approach Delay (s)	18.1			23.9	12.0	
Approach LOS	B			C	B	

Intersection Summary

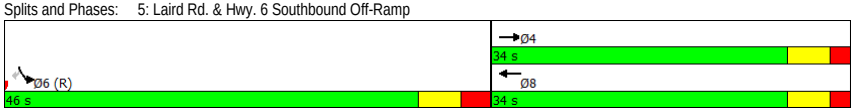
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	SBL	SBR
Lane Configurations				
Traffic Volume (vph)	250	395	344	40
Future Volume (vph)	250	395	344	40
Lane Group Flow (vph)	272	429	374	43
Turn Type	NA	NA	Prot	Perm
Protected Phases	4	8	6	
Permitted Phases				6
Minimum Split (s)	24.0	24.0	25.0	25.0
Total Split (s)	34.0	34.0	46.0	46.0
Total Split (%)	42.5%	42.5%	57.5%	57.5%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	7.0	7.0
Lead/Lag				
Lead-Lag Optimize?				
v/c Ratio	0.22	0.34	0.23	0.06
Control Delay	18.9	31.7	12.3	3.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.9	31.7	12.3	3.9
Queue Length 50th (m)	15.8	26.4	16.9	0.0
Queue Length 95th (m)	24.8	40.9	25.2	4.9
Internal Link Dist (m)	199.6	282.0	265.0	
Turn Bay Length (m)				40.0
Base Capacity (vph)	1226	1250	1610	750
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	0.22	0.34	0.23	0.06

Intersection Summary
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2: and 6:SBL, Start of Green
Natural Cycle: 50
Control Type: Pretimed

Splits and Phases: 5: Laird Rd. & Hwy. 6 Southbound Off-Ramp



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	250	395	0	344	40
Future Volume (vph)	0	250	395	0	344	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		7.0	7.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3505	3574		3303	1495
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3505	3574		3303	1495
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	272	429	0	374	43
RTOR Reduction (vph)	0	0	0	0	0	22
Lane Group Flow (vph)	0	272	429	0	374	21
Heavy Vehicles (%)	2%	3%	1%	2%	6%	8%
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		28.0	28.0		39.0	39.0
Effective Green, g (s)		28.0	28.0		39.0	39.0
Actuated g/C Ratio		0.35	0.35		0.49	0.49
Clearance Time (s)		6.0	6.0		7.0	7.0
Lane Grp Cap (vph)		1226	1250		1610	728
v/s Ratio Prot		0.08	c0.12		c0.11	
v/s Ratio Perm						0.01
v/c Ratio		0.22	0.34		0.23	0.03
Uniform Delay, d1		18.3	19.2		11.8	10.7
Progression Factor		1.00	1.60		1.00	1.00
Incremental Delay, d2		0.4	0.6		0.3	0.1
Delay (s)		18.7	31.3		12.2	10.7
Level of Service		B	C		B	B
Approach Delay (s)		18.7	31.3		12.0	
Approach LOS		B	C		B	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

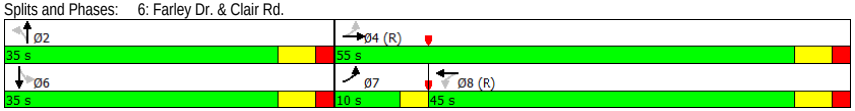
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	232	527	48	305	111	106	56	73
Future Volume (vph)	232	527	48	305	111	106	56	73
Lane Group Flow (vph)	244	787	51	400	117	148	59	236
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	7	4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	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)	9.5	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	10.0	55.0	45.0	45.0	35.0	35.0	35.0	35.0
Total Split (%)	11.1%	61.1%	50.0%	50.0%	38.9%	38.9%	38.9%	38.9%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio	0.42	0.42	0.18	0.27	0.36	0.25	0.15	0.38
Control Delay	16.0	15.1	14.3	12.5	27.5	20.8	23.2	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	15.1	14.3	12.5	27.5	20.8	23.2	13.3
Queue Length 50th (m)	31.0	49.1	6.9	27.1	16.2	17.0	7.6	15.0
Queue Length 95th (m)	46.7	64.8	16.3	38.4	32.0	32.2	17.1	34.3
Internal Link Dist (m)		194.1		563.0		111.7		152.1
Turn Bay Length (m)	125.0		50.0		45.0		20.0	
Base Capacity (vph)	583	1864	289	1484	321	598	383	619
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.42	0.18	0.27	0.36	0.25	0.15	0.38

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 50.4 (56%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Farley Dr. & Clair Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	527	220	48	305	75	111	106	34	56	73	151
Future Volume (vph)	232	527	220	48	305	75	111	106	34	56	73	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.98	1.00		0.98	1.00	
Frt	1.00	0.96		1.00	0.97		1.00	0.96		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1799	3330		1793	3371		1742	1815		1704	1667	
Flt Permitted	0.47	1.00		0.35	1.00		0.54	1.00		0.66	1.00	
Satd. Flow (perm)	890	3330		668	3371		998	1815		1189	1667	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	244	555	232	51	321	79	117	112	36	59	77	159
RTOR Reduction (vph)	0	51	0	0	24	0	0	13	0	0	83	0
Lane Group Flow (vph)	244	736	0	51	376	0	117	135	0	59	153	0
Confl. Peds. (#/hr)	6		8	8		6	16		15	15		16
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	3%	1%	0%	4%	0%	2%	0%	0%	4%	0%	0%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	49.0	49.0		39.0	39.0		29.0	29.0		29.0	29.0	
Effective Green, g (s)	49.0	49.0		39.0	39.0		29.0	29.0		29.0	29.0	
Actuated g/C Ratio	0.54	0.54		0.43	0.43		0.32	0.32		0.32	0.32	
Clearance Time (s)	3.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	555	1813		289	1460		321	584		383	537	
v/s Ratio Prot	c0.03	0.22			0.11			0.07			0.09	
v/s Ratio Perm	c0.20			0.08			c0.12			0.05		
v/c Ratio	0.44	0.41		0.18	0.26		0.36	0.23		0.15	0.29	
Uniform Delay, d1	10.9	12.0		15.6	16.3		23.4	22.3		21.8	22.8	
Progression Factor	1.49	1.41		0.79	0.82		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.5		1.3	0.4		3.2	0.9		0.9	1.3	
Delay (s)	16.7	17.4		13.7	13.8		26.6	23.3		22.6	24.1	
Level of Service	B	B		B	B		C	C		C	C	
Approach Delay (s)		17.2			13.8			24.7			23.8	
Approach LOS		B			B			C			C	

Intersection Summary

HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.43			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0	
Intersection Capacity Utilization	67.3%	ICU Level of Service	C	
Analysis Period (min)	15			

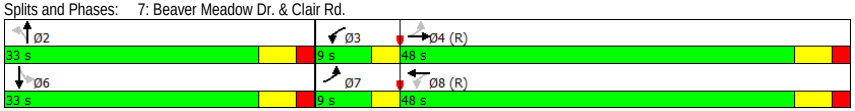
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	108	593	16	398	22	3	16	8
Future Volume (vph)	108	593	16	398	22	3	16	8
Lane Group Flow (vph)	111	630	16	437	0	48	16	68
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	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)	9.5	24.0	9.5	24.0	24.0	24.0	24.0	24.0
Total Split (s)	9.0	48.0	9.0	48.0	33.0	33.0	33.0	33.0
Total Split (%)	10.0%	53.3%	10.0%	53.3%	36.7%	36.7%	36.7%	36.7%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	Max	Max	Max	Max
v/c Ratio	0.20	0.33	0.03	0.26		0.10	0.04	0.13
Control Delay	5.7	9.0	7.5	14.2		15.3	22.8	8.5
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	5.7	9.0	7.5	14.2		15.3	22.8	8.5
Queue Length 50th (m)	4.0	13.8	1.1	23.8		3.4	2.1	1.0
Queue Length 95th (m)	7.4	65.3	3.6	34.1		11.6	6.9	10.6
Internal Link Dist (m)		563.0		1233.2		183.8		182.6
Turn Bay Length (m)	55.0		30.0					
Base Capacity (vph)	564	1926	505	1709		466	402	519
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.20	0.33	0.03	0.26		0.10	0.04	0.13

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 86.4 (96%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 7: Beaver Meadow Dr. & Clair Rd.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	593	18	16	398	26	22	3	21	16	8	58
Future Volume (vph)	108	593	18	16	398	26	22	3	21	16	8	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	6.0		3.0	6.0			6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00		0.99	1.00	
Frt	1.00	1.00		1.00	0.99			0.94		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1768	3521		1769	3501			1682		1757	1593	
Flt Permitted	0.46	1.00		0.41	1.00			0.87		0.73	1.00	
Satd. Flow (perm)	850	3521		766	3501			1504		1342	1593	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	111	611	19	16	410	27	23	3	22	16	8	60
RTOR Reduction (vph)	0	2	0	0	5	0	0	15	0	0	42	0
Lane Group Flow (vph)	111	628	0	16	432	0	0	33	0	16	26	0
Confl. Peds. (#/hr)	2		1	1		2	3		3	3		3
Confl. Bikes (#/hr)			1			2						
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	51.0	46.8		44.4	43.2			27.0		27.0	27.0	
Effective Green, g (s)	51.0	46.8		44.4	43.2			27.0		27.0	27.0	
Actuated g/C Ratio	0.57	0.52		0.49	0.48			0.30		0.30	0.30	
Clearance Time (s)	3.0	6.0		3.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	530	1830		391	1680			451		402	477	
v/s Ratio Prot	c0.01	c0.18		0.00	0.12						0.02	
v/s Ratio Perm	0.11			0.02				c0.02		0.01		
v/c Ratio	0.21	0.34		0.04	0.26			0.07		0.04	0.05	
Uniform Delay, d1	9.1	12.6		11.7	13.9			22.5		22.3	22.4	
Progression Factor	0.64	0.73		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.5		0.0	0.4			0.3		0.2	0.2	
Delay (s)	6.0	9.7		11.7	14.3			22.8		22.5	22.6	
Level of Service	A	A		B	B			C		C	C	
Approach Delay (s)		9.1			14.2			22.8			22.6	
Approach LOS		A			B			C			C	

Intersection Summary

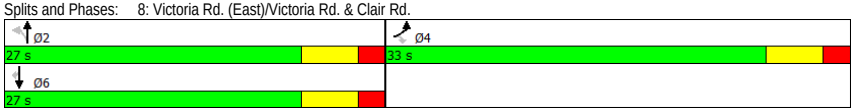
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	416	57	76	308	204	339
Future Volume (vph)	416	57	76	308	204	339
Lane Group Flow (vph)	438	60	80	324	215	357
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	33.0	33.0	27.0	27.0	27.0	27.0
Total Split (%)	55.0%	55.0%	45.0%	45.0%	45.0%	45.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	Min	Min
v/c Ratio	0.67	0.09	0.22	0.57	0.37	0.50
Control Delay	16.7	5.7	13.8	17.7	14.5	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.7	5.7	13.8	17.7	14.5	4.7
Queue Length 50th (m)	24.2	1.1	4.1	18.8	11.6	0.0
Queue Length 95th (m)	60.8	7.0	15.1	50.3	33.0	15.1
Internal Link Dist (m)	1233.2			2005.5	465.2	
Turn Bay Length (m)		10.0	65.0			20.0
Base Capacity (vph)	1167	1117	632	973	993	971
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.05	0.13	0.33	0.22	0.37

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 42
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Victoria Rd. (East)/Victoria Rd. & Clair Rd.



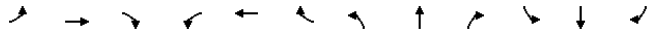
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	416	57	76	308	204	339
Future Volume (vph)	416	57	76	308	204	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1703	1615	1805	1827	1863	1509
Flt Permitted	0.95	1.00	0.62	1.00	1.00	1.00
Satd. Flow (perm)	1703	1615	1185	1827	1863	1509
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	438	60	80	324	215	357
RTOR Reduction (vph)	0	21	0	0	0	244
Lane Group Flow (vph)	438	39	80	324	215	113
Heavy Vehicles (%)	6%	0%	0%	4%	2%	7%
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	16.2	16.2	13.0	13.0	13.0	13.0
Effective Green, g (s)	16.2	16.2	13.0	13.0	13.0	13.0
Actuated g/C Ratio	0.39	0.39	0.32	0.32	0.32	0.32
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	669	635	373	576	587	476
v/s Ratio Prot	c0.26			c0.18	0.12	
v/s Ratio Perm		0.02	0.07			0.07
v/c Ratio	0.65	0.06	0.21	0.56	0.37	0.24
Uniform Delay, d1	10.2	7.8	10.4	11.7	10.9	10.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.0	0.3	1.3	0.4	0.3
Delay (s)	12.5	7.8	10.6	13.0	11.3	10.7
Level of Service	B	A	B	B	B	B
Approach Delay (s)	12.0			12.5	10.9	
Approach LOS	B			B	B	

Intersection Summary				
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	41.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	800	4	30	485	1	117
Future Volume (Veh/h)	800	4	30	485	1	117
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	870	4	33	527	1	127
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			874		1465	872
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			874		1465	872
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		99	64
cM capacity (veh/h)			772		135	350

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	874	560	128
Volume Left	0	33	1
Volume Right	4	0	127
cSH	1700	772	346
Volume to Capacity	0.51	0.04	0.37
Queue Length 95th (m)	0.0	1.1	13.3
Control Delay (s)	0.0	1.2	21.4
Lane LOS		A	C
Approach Delay (s)	0.0	1.2	21.4
Approach LOS			C

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	64.1%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	10	48	6	6	0	35	946	12	5	710	30
Future Volume (Veh/h)	31	10	48	6	6	0	35	946	12	5	710	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	34	11	52	7	7	0	38	1028	13	5	772	33
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1906	1916	788	1960	1919	1028	805			1041		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1906	1916	788	1960	1919	1028	805			1041		
tC, single (s)	*4.8	*4.6	*4.4	*5.6	*5.0	6.2	4.1			4.3		
tC, 2 stage (s)												
tF (s)	*3.2	*3.0	*3.0	3.5	*3.5	3.3	2.2			2.4		
p0 queue free %	80	94	92	92	95	100	95			99		
cM capacity (veh/h)	170	196	625	92	149	287	815			603		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	97	14	1066	13	810
Volume Left	34	7	38	0	5
Volume Right	52	0	0	13	33
cSH	286	114	815	1700	603
Volume to Capacity	0.34	0.12	0.05	0.01	0.01
Queue Length 95th (m)	11.6	3.3	1.2	0.0	0.2
Control Delay (s)	23.9	41.0	1.4	0.0	0.2
Lane LOS	C	E	A		A
Approach Delay (s)	23.9	41.0	1.4		0.2
Approach LOS	C	E			

Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	86.0%	ICU Level of Service	E	
Analysis Period (min)	15			

* User Entered Value

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	32	8	216	18	6	330
Future Volume (Veh/h)	32	8	216	18	6	330
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	34	8	227	19	6	347
Pedestrians					1	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			43		512	39
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			43		512	39
tC, single (s)			4.1		6.7	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.8	3.3
p0 queue free %			86		99	66
cM capacity (veh/h)			1571		403	1029

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	42	246	353
Volume Left	0	227	6
Volume Right	8	0	347
cSH	1700	1571	1002
Volume to Capacity	0.02	0.14	0.35
Queue Length 95th (m)	0.0	4.0	12.8
Control Delay (s)	0.0	7.2	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	7.2	10.5
Approach LOS			B

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	47.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	345	17	10	31	35	230
Future Volume (Veh/h)	345	17	10	31	35	230
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	363	18	11	33	37	242
Pedestrians					1	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	45				772	28
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	45				772	28
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	77				87	77
cM capacity (veh/h)	1555				280	1046

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	381	44	279
Volume Left	363	0	37
Volume Right	0	33	242
cSH	1555	1700	768
Volume to Capacity	0.23	0.03	0.36
Queue Length 95th (m)	7.3	0.0	13.3
Control Delay (s)	7.7	0.0	12.3
Lane LOS	A		B
Approach Delay (s)	7.7	0.0	12.3
Approach LOS			B

Intersection Summary				
Average Delay	9.1			
Intersection Capacity Utilization	49.5%	ICU Level of Service		A
Analysis Period (min)	15			

Appendix D – Access Design Guidelines

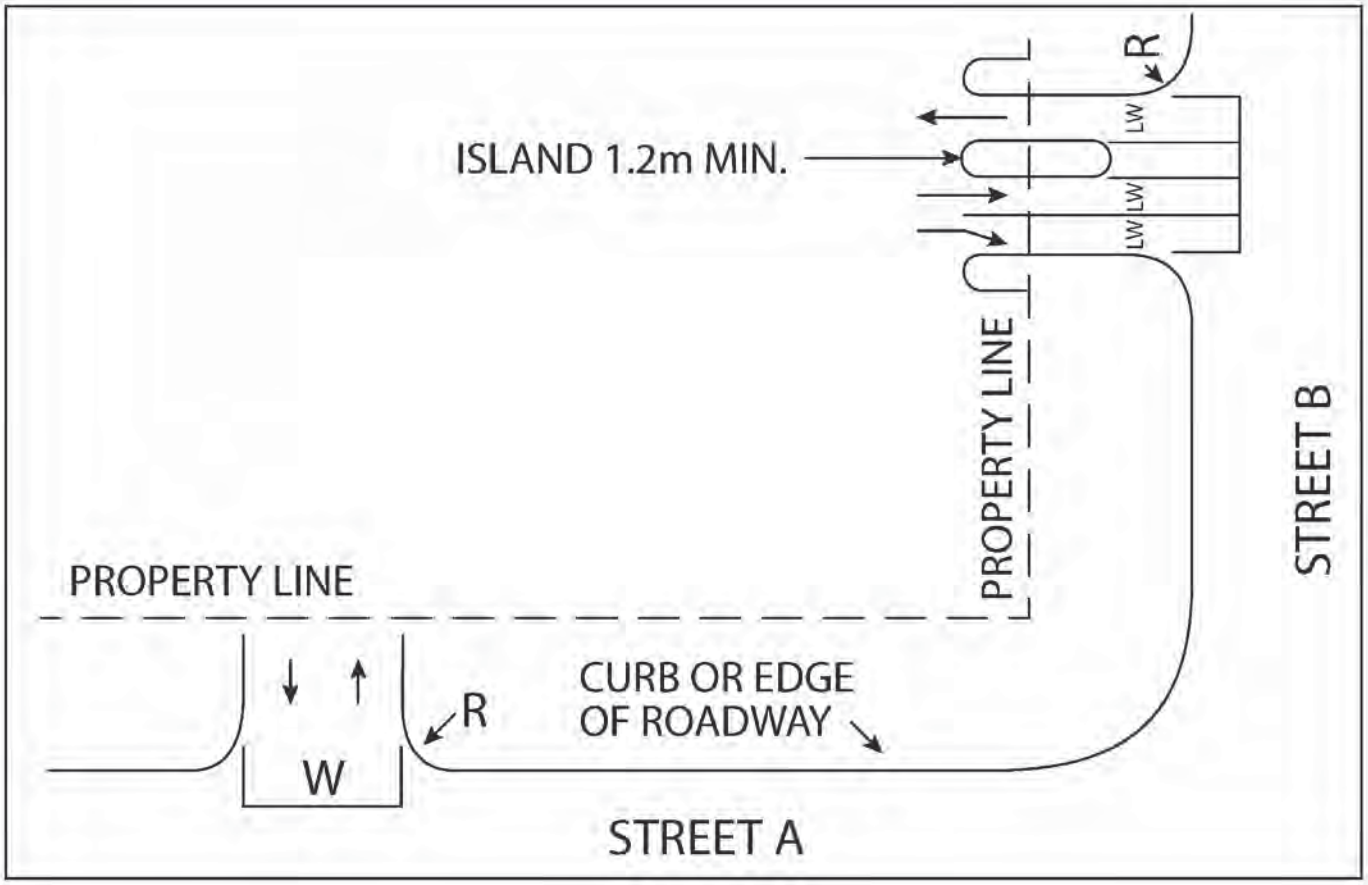


Figure 8
Access Details 1

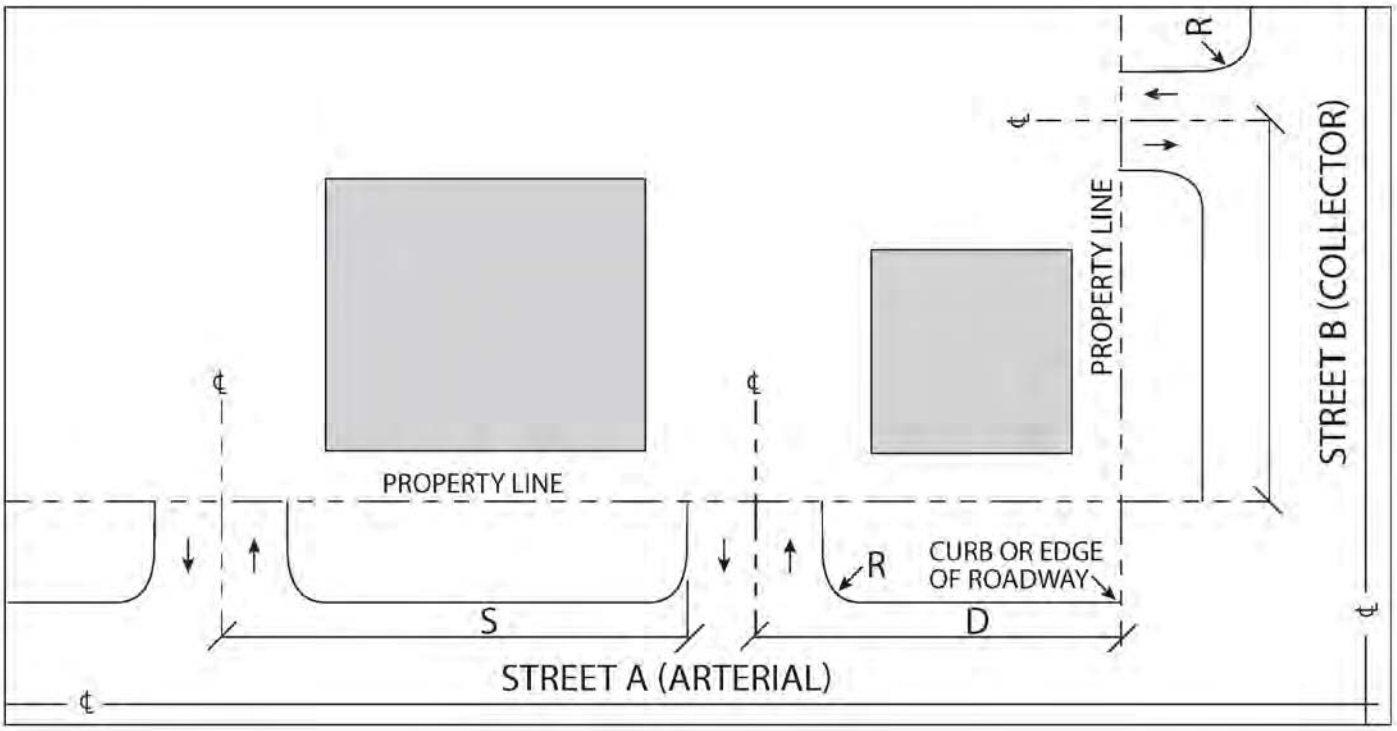


Figure 9
Access Details 2

Appendix E – Existing Traffic Data

Turning Movement Count (3 . CLAIR RD & GORDON ST)

Start Time	E Approach CLAIR RD						S Approach GORDON ST						W Approach CLAIR RD						N Approach GORDON ST						Int. Total (15 min)	Int. Total (1 hr)
	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	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total		
07:00:00	3	76	48	0	2	127	9	47	15	0	1	71	26	38	21	0	0	85	39	111	4	0	2	154	437	
07:15:00	4	108	56	0	2	168	13	63	28	0	0	104	30	37	23	0	0	90	53	93	11	0	3	157	519	
07:30:00	7	126	65	0	0	198	15	67	28	0	0	110	24	41	26	0	1	91	52	102	5	0	1	159	558	
07:45:00	14	161	58	0	0	233	25	76	24	0	0	125	30	58	21	0	0	109	53	112	11	0	3	176	643	2157
08:00:00	15	128	46	0	2	189	13	112	30	0	2	155	15	63	34	0	1	112	45	84	12	0	3	141	597	2317
08:15:00	7	134	41	0	0	182	25	128	18	0	0	171	23	66	23	0	0	112	51	82	15	0	5	148	613	2411
08:30:00	22	185	49	0	1	256	15	103	40	0	1	158	32	83	34	0	1	149	65	101	13	0	1	179	742	2595
08:45:00	10	133	42	0	0	185	16	135	21	0	2	172	19	81	54	0	1	154	65	94	33	0	1	192	703	2655
BREAK																										
16:00:00	18	86	24	0	0	128	35	128	30	0	3	193	28	147	60	0	2	235	22	119	42	0	1	183	739	
16:15:00	26	106	34	0	2	166	31	132	25	1	0	189	23	163	43	0	0	229	29	122	40	0	4	191	775	
16:30:00	20	80	26	0	6	126	45	132	36	0	1	213	23	168	60	0	0	251	37	135	46	0	6	218	808	
16:45:00	27	97	30	0	1	154	37	167	54	0	0	258	21	134	60	0	0	215	24	139	29	1	2	193	820	3142
17:00:00	19	115	26	0	2	160	42	149	35	0	5	226	27	174	74	0	2	275	31	129	46	0	3	206	867	3270
17:15:00	25	99	31	0	2	155	42	135	30	0	1	207	27	138	58	0	0	223	30	134	52	1	6	217	802	3297
17:30:00	15	116	26	0	3	157	44	135	30	0	3	209	20	156	63	0	4	239	21	124	38	0	7	183	788	3277
17:45:00	19	82	28	0	3	129	38	131	34	0	7	203	10	115	47	0	5	172	27	129	42	0	2	198	702	3159
Grand Total	251	1832	630	0	26	2713	445	1840	478	1	26	2764	378	1662	701	0	17	2741	644	1810	439	2	50	2895	**11113**	-
Approach%	9.3%	67.5%	23.2%	0%		-	16.1%	66.6%	17.3%	0%		-	13.8%	60.6%	25.6%	0%		-	22.2%	62.5%	15.2%	0.1%		-	-	-
Totals %	2.3%	16.5%	5.7%	0%		24.4%	4%	16.6%	4.3%	0%		24.9%	3.4%	15%	6.3%	0%		24.7%	5.8%	16.3%	4%	0%		26.1%	-	-
Heavy	6	45	66	0		-	66	49	25	0		-	32	59	21	0		-	43	35	5	0		-	-	-
Heavy %	2.4%	2.5%	10.5%	0%		-	14.8%	2.7%	5.2%	0%		-	8.5%	3.5%	3%	0%		-	6.7%	1.9%	1.1%	0%		-	-	-
Bicycles	0	1	0	0		-	0	3	0	0		-	0	0	0	0		-	0	0	0	0		-	-	-
Bicycle %	0%	0.1%	0%	0%		-	0%	0.2%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: CLAIR RD & GORDON ST
Date: Wed, Nov 22, 2017 Deployment Lead: Theo Daglis

BA Group
45 St. Clair Avenue West, Suite 300
Toronto ON, CANADA, M4V 1K9

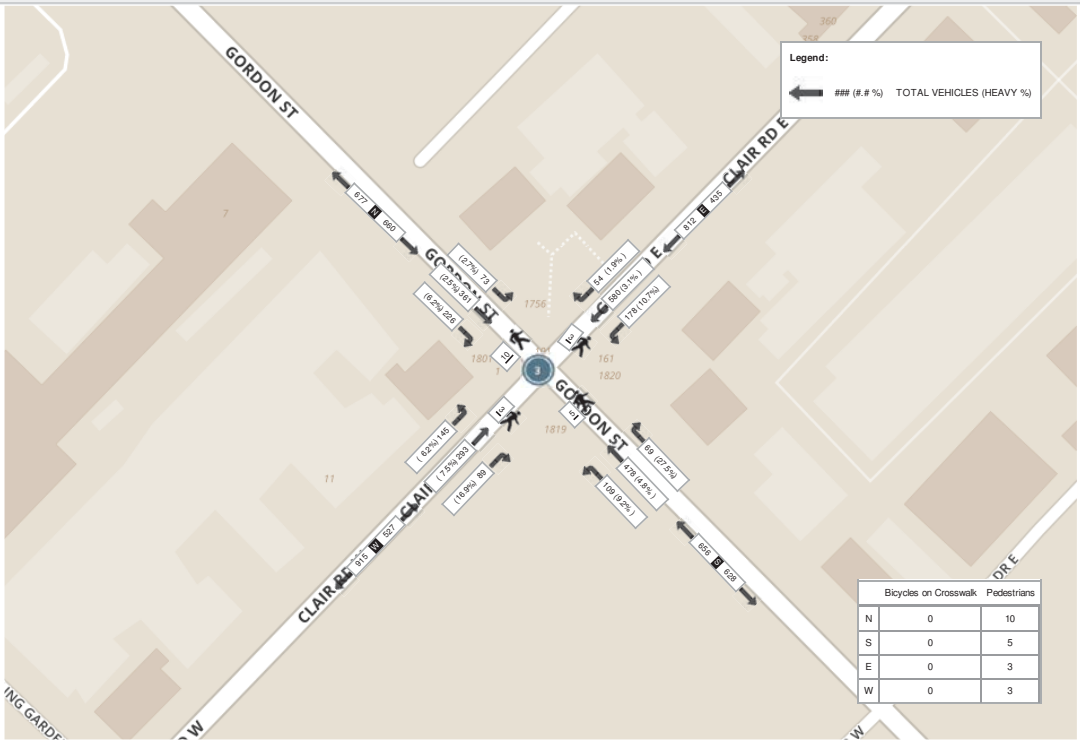
Peak Hour: 08:00 AM - 09:00 AM Weather: Mostly Cloudy (-1.9 °C)

Start Time	E Approach CLAIR RD						S Approach GORDON ST						W Approach CLAIR RD						N Approach GORDON ST						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	
08:00:00	15	128	46	0	2	189	13	112	30	0	2	155	15	63	34	0	1	112	45	84	12	0	3	141	597
08:15:00	7	134	41	0	0	182	25	128	18	0	0	171	23	66	23	0	0	112	51	82	15	0	5	148	613
08:30:00	22	185	49	0	1	256	15	103	40	0	1	158	32	83	34	0	1	149	65	101	13	0	1	179	742
08:45:00	10	133	42	0	0	185	16	135	21	0	2	172	19	81	54	0	1	154	65	94	33	0	1	192	703
Grand Total	54	580	178	0	3	812	69	478	109	0	5	656	89	293	145	0	3	527	226	361	73	0	10	660	**2655**
Approach%	6.7%	71.4%	21.9%	0%		-	10.5%	72.9%	16.6%	0%		-	16.9%	55.6%	27.5%	0%		-	34.2%	54.7%	11.1%	0%		-	-
Totals %	2%	21.8%	6.7%	0%		30.6%	2.6%	18%	4.1%	0%		24.7%	3.4%	11%	5.5%	0%		19.8%	8.5%	13.6%	2.7%	0%		24.9%	-
PHF	0.61	0.78	0.91	0		0.79	0.69	0.89	0.68	0		0.95	0.7	0.88	0.67	0		0.86	0.87	0.89	0.55	0		0.86	-
Heavy	1	18	19	0		38	19	23	10	0		52	15	22	9	0		46	14	9	2	0		25	-
Heavy %	1.9%	3.1%	10.7%	0%		4.7%	27.5%	4.8%	9.2%	0%		7.9%	16.9%	7.5%	6.2%	0%		8.7%	6.2%	2.5%	2.7%	0%		3.8%	-
Lights	53	562	159	0		774	50	455	99	0		604	74	271	136	0		481	212	352	71	0		635	-
Lights %	98.1%	96.9%	89.3%	0%		95.3%	72.5%	95.2%	90.8%	0%		92.1%	83.1%	92.5%	93.8%	0%		91.3%	93.8%	97.5%	97.3%	0%		96.2%	-
Single-Unit Trucks	0	0	14	0		14	10	10	0	0		20	9	10	0	0		19	0	0	2	0		2	-
Single-Unit Trucks %	0%	0%	7.9%	0%		1.7%	14.5%	2.1%	0%	0%		3%	10.1%	3.4%	0%	0%		3.6%	0%	0%	2.7%	0%		0.3%	-
Buses	1	17	1	0		19	2	11	6	0		19	0	7	6	0		13	11	9	0	0		20	-
Buses %	1.9%	2.9%	0.6%	0%		2.3%	2.9%	2.3%	5.5%	0%		2.9%	0%	2.4%	4.1%	0%		2.5%	4.9%	2.5%	0%	0%		3%	-
Articulated Trucks	0	1	4	0		5	7	2	4	0		13	6	5	3	0		14	3	0	0	0		3	-
Articulated Trucks %	0%	0.2%	2.2%	0%		0.6%	10.1%	0.4%	3.7%	0%		2%	6.7%	1.7%	2.1%	0%		2.7%	1.3%	0%	0%	0%		0.5%	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	5	-	-	-	-	-	3	-	-	-	-	-	10	-	-
Pedestrians%	-	-	-	-	14.3%		-	-	-	-	23.8%		-	-	-	-	14.3%		-	-	-	-	47.6%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Road	0	1	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

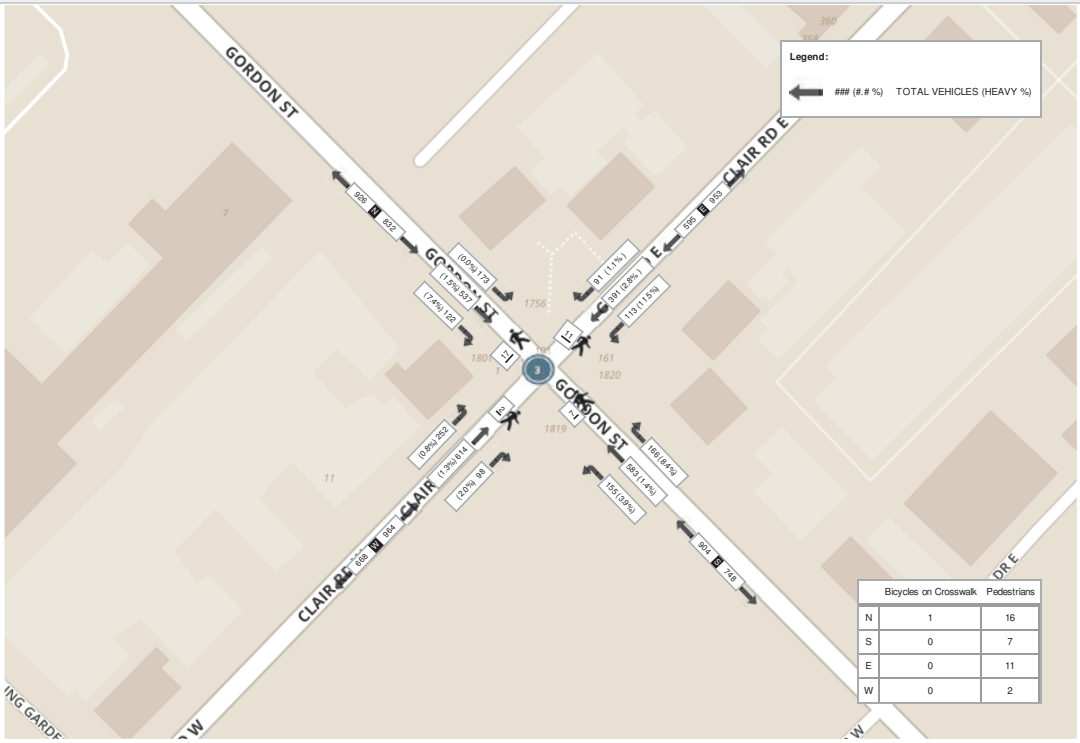
Peak Hour: 04:30 PM - 05:30 PM Weather: Partly Cloudy (-3 °C)

Start Time	E Approach CLAIR RD						S Approach GORDON ST						W Approach CLAIR RD						N Approach GORDON ST						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	
16:30:00	20	80	26	0	6	126	45	132	36	0	1	213	23	168	60	0	0	251	37	135	46	0	6	218	808
16:45:00	27	97	30	0	1	154	37	167	54	0	0	258	21	134	60	0	0	215	24	139	29	1	2	193	820
17:00:00	19	115	26	0	2	160	42	149	35	0	5	226	27	174	74	0	2	275	31	129	46	0	3	206	867
17:15:00	25	99	31	0	2	155	42	135	30	0	1	207	27	138	58	0	0	223	30	134	52	1	6	217	802
Grand Total	91	391	113	0	11	595	166	583	155	0	7	904	98	614	252	0	2	964	122	537	173	2	17	834	**3297**
Approach%	15.3%	65.7%	19%	0%		-	18.4%	64.5%	17.1%	0%		-	10.2%	63.7%	26.1%	0%		-	14.6%	64.4%	20.7%	0.2%		-	-
Totals %	2.8%	11.9%	3.4%	0%		18%	5%	17.7%	4.7%	0%		27.4%	3%	18.6%	7.6%	0%		29.2%	3.7%	16.3%	5.2%	0.1%		25.3%	-
PHF	0.84	0.85	0.91	0		0.93	0.92	0.87	0.72	0		0.88	0.91	0.88	0.85	0		0.88	0.82	0.97	0.83	0.5		0.96	-
Heavy	1	11	13	0		25	14	8	6	0		28	2	8	2	0		12	9	8	0	0		17	-
Heavy %	1.1%	2.8%	11.5%	0%		4.2%	8.4%	1.4%	3.9%	0%		3.1%	2%	1.3%	0.8%	0%		1.2%	7.4%	1.5%	0%	0%		2%	-
Lights	90	380	100	0		570	152	575	149	0		876	96	606	250	0		952	113	529	173	2		817	-
Lights %	98.9%	97.2%	88.5%	0%		95.8%	91.6%	98.6%	96.1%	0%		96.9%	98%	98.7%	99.2%	0%		98.8%	92.6%	98.5%	100%	100%		98%	-
Single-Unit Trucks	1	9	8	0		18	5	3	3	0		11	2	7	1	0		10	1	4	0	0		5	-
Single-Unit Trucks %	1.1%	2.3%	7.1%	0%		3%	3%	0.5%	1.9%	0%		1.2%	2%	1.1%	0.4%	0%		1%	0.8%	0.7%	0%	0%		0.6%	-
Buses	0	0	1	0		1	1	4	1	0		6	0	1	0	0		1	8	4	0	0		12	-
Buses %	0%	0%	0.9%	0%		0.2%	0.6%	0.7%	0.6%	0%		0.7%	0%	0.2%	0%	0%		0.1%	6.6%	0.7%	0%	0%		1.4%	-
Articulated Trucks	0	2	4	0		6	8	1	2	0		11	0	0	1	0		1	0	0	0	0		0	-
Articulated Trucks %	0%	0.5%	3.5%	0%		1%	4.8%	0.2%	1.3%	0%		1.2%	0%	0%	0.4%	0%		0.1%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	11	-	-	-	-	-	7	-	-	-	-	-	2	-	-	-	-	-	16	-	-
Pedestrians%	-	-	-	-	29.7%		-	-	-	-	18.9%		-	-	-	-	5.4%		-	-	-	-	43.2%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	2.7%		-
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Peak Hour: 08:00 AM - 09:00 AM Weather: Mostly Cloudy (-1.9 °C)



Peak Hour: 04:30 PM - 05:30 PM Weather: Partly Cloudy (-3 °C)



Turning Movement Count (2 . LAIRD RD & HANLON PKWY NB OFF RAMP)

Start Time	W Approach				SW Approach	S Approach				N Approach		E Approach						N Approach HANLON PKWY NBON RAMP (FROM WB LAIRD)							E Approach LAIRD RD							S Approach HANLON PKWY NB OFF RAMP						SW Approach HANLON PKWY NBON RAMP (FROM EB LAIRD)							W Approach LAIRD RD							Int. Total (15 min)	Int. Total (1 hr)
	Bear Right W:SW	Thru W:E	Peds W:	Approach Total	Approach Total	Left S:W	Right S:E	Peds S:	Approach Total	Peds N:	Approach Total	Thru E:W	Right E:N	Peds E:	Approach Total	Right N:W	Bear Right N:SW	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Bear Left E:SW	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	Hard Left S:SW	U-Turn S:S	Peds S:	Approach Total	Hard Right SW:S	Bear Right SW:E	Bear Left SW:N	Hard Left SW:W	U-Turn SW:SW	Peds SW:	Approach Total	Hard Right W:SW	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	81	0	0	0	0	150	59	0	10	0	0	0	69	0	0	0	0	0	0	0	1	0	106	0	0	0	107	326	
07:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	91	0	0	0	0	137	53	0	7	0	0	0	60	0	0	0	0	0	0	0	2	0	122	0	0	0	124	321	
07:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	115	0	0	0	0	209	71	0	14	0	0	0	85	0	0	0	0	0	0	0	4	0	149	0	0	0	153	447	
07:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	120	0	0	0	0	187	90	0	11	0	0	0	101	0	0	0	0	0	0	0	1	0	183	0	0	0	184	472	1566
08:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	88	0	0	0	0	155	74	0	11	0	0	0	85	0	0	0	0	0	0	0	2	0	137	0	0	0	139	379	1619
08:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	73	0	0	0	0	146	69	0	7	0	0	0	76	0	0	0	0	0	0	0	3	0	177	0	0	0	180	402	1700
08:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	86	0	0	0	0	175	89	0	8	0	0	0	97	0	0	0	0	0	0	0	1	0	143	0	0	0	144	416	1669
08:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69	80	0	0	0	0	169	77	0	3	0	0	0	80	0	0	0	0	0	0	0	3	0	170	0	0	0	173	422	1619
BREAK																																																				
16:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	162	164	0	0	0	0	326	36	0	5	0	0	1	43	0	0	0	0	0	0	0	5	0	95	0	0	0	100	469	
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	124	156	0	0	0	0	280	35	0	7	0	0	0	42	0	0	0	0	0	0	0	3	0	140	0	0	0	143	465	
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	178	183	0	0	0	0	361	43	0	4	0	0	0	47	0	0	0	0	0	0	0	14	0	145	0	0	0	159	567	
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128	132	0	0	0	0	260	33	0	8	0	0	0	41	0	0	0	0	0	0	0	3	0	145	0	0	0	148	449	1950
17:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	175	193	0	0	0	0	368	52	0	6	0	0	0	58	0	0	0	0	0	0	0	8	0	133	0	0	0	141	567	2048
17:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	134	99	0	0	0	0	233	42	0	7	0	0	0	49	0	0	0	0	0	0	0	10	0	129	0	0	0	139	421	2004
17:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	102	101	0	0	0	0	203	53	0	7	0	0	0	60	0	0	0	0	0	0	0	7	0	159	0	0	0	166	429	1866
17:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	77	0	0	0	0	173	35	0	6	0	0	0	41	0	0	0	0	0	0	0	3	0	118	0	0	0	121	335	1752
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1693	1839	0	0	0	0	3532	913	0	121	0	0	1	1034	0	0	0	0	0	0	0	70	0	2251	0	0	0	2321	**6887**	-
Approach%	0%	0%		-	0%	0%	0%		-		-	0%	0%		-	0%	0%	0%	0%	0%		-	47.9%	52.1%	0%	0%	0%		-	88.3%	0%	11.7%	0%	0%		-	0%	0%	0%	0%	0%		-	3%	0%	97%	0%	0%		-	-	-
Totals %	0%	0%		0%	0%	0%	0%		0%		0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	24.6%	26.7%	0%	0%	0%		51.3%	13.3%	0%	1.8%	0%	0%		15%	0%	0%	0%	0%	0%		0%	1%	0%	32.7%	0%	0%		33.7%	-	-
Heavy	0	0		-	0	0		-	-		-	0	0		-	0	0	0	0	0		-	69	152	0	0	0		-	137	0	12	0	0		-	0	0	0	0	0		-	4	0	98	0	0		-	-	-
Heavy %	0%	0%		-	0%	0%		-	-		-	0%	0%		-	0%	0%	0%	0%	0%		-	4.1%	8.3%	0%	0%	0%		-	15%	0%	9.9%	0%	0%		-	0%	0%	0%	0%	0%		-	5.7%	0%	4.4%	0%	0%		-	-	-
Bicycles	0	0		-	0	0		-	-		-	0	0		-	0	0	0	0	0		-	0	1	0	0	0		-	0	0	0	0	0		-	0	0	0	0	0		-	0	0	0	0	0		-	-	-
Bicycle %	0%	0%		-	0%	0%		-	-		-	0%	0%		-	0%	0%	0%	0%	0%		-	0%	0.1%	0%	0%	0%		-	0%	0%	0%	0%	0%		-	0%	0%	0%	0%	0%		-	0%	0%	0%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: LAIRD RD & HANLON PKWY NB OFF RAMP
Date: Wed, Nov 22, 2017 Deployment Lead: Theo Daglis

BA Group
45 St. Clair Avenue West, Suite 300
Toronto ON, CANADA, M4V 1K9

Peak Hour: 07:30 AM - 08:30 AM Weather: Mostly Cloudy (-1.9 °C)

Start Time	W Approach				SW Approach	S Approach				N Approach		E Approach				N Approach HANLON PKWY NBON RAMP (FROM WB LAIRD)								E Approach LAIRD RD							S Approach HANLON PKWY NB OFF RAMP							SW Approach HANLON PKWY NBON RAMP (FROM EB LAIRD)							W Approach LAIRD RD							Int. Total (15 min)
	Bear Right	Thru	Peds	Approach Total	Approach Total	Left	Right	Peds	Approach Total	Peds	Approach Total	Thru	Right	Peds	Approach Total	Right	Bear Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Bear Left	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	Hard Left	U-Turn	Peds	Approach Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Peds	Approach Total	Hard Right	Right	Thru	Left	U-Turn	Peds	Approach Total	
07:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	115	0	0	0	0	209	71	0	14	0	0	0	85	0	0	0	0	0	0	0	4	0	149	0	0	0	153	447
07:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	120	0	0	0	0	187	90	0	11	0	0	0	101	0	0	0	0	0	0	0	1	0	183	0	0	0	184	472
08:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	88	0	0	0	0	155	74	0	11	0	0	0	85	0	0	0	0	0	0	0	2	0	137	0	0	0	139	379
08:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	73	0	0	0	0	146	69	0	7	0	0	0	76	0	0	0	0	0	0	0	3	0	177	0	0	0	180	402
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	301	396	0	0	0	0	697	304	0	43	0	0	0	347	0	0	0	0	0	0	0	10	0	646	0	0	0	656	1700
Approach%	0%	0%		-	-	0%	0%		-		-	0%	0%		-	0%	0%	0%	0%	0%		-	43.2%	56.8%	0%	0%	0%		-	87.6%	0%	12.4%	0%	0%		-	0%	0%	0%	0%	0%		-	1.5%	0%	98.5%	0%	0%		-	
Totals %	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17.7%	23.3%	0%	0%	0%	0%	41%	17.9%	0%	2.5%	0%	0%	0%	20.4%	0%	0%	0%	0%	0%	0%	0%	0.6%	0%	38%	0%	0%	0%	38.6%	-
PHF	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0.8	0.83	0	0	0	0	0.83	0.84	0	0.77	0	0	0	0.86	0	0	0	0	0	0	0	0.63	0	0.88	0	0	0	0.89	-
Heavy	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	23	41	0	0	0	0	64	36	0	9	0	0	0	45	0	0	0	0	0	0	0	0	0	25	0	0	0	25	-
Heavy %	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7.6%	10.4%	0%	0%	0%	0%	9.2%	11.8%	0%	20.9%	0%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3.8%	0%	0%	0%	3.8%	-
Lights	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	278	355	0	0	0	0	633	268	0	34	0	0	0	302	0	0	0	0	0	0	0	10	0	621	0	0	0	631	-
Lights %	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	92.4%	89.6%	0%	0%	0%	0%	90.8%	88.2%	0%	79.1%	0%	0%	0%	87%	0%	0%	0%	0%	0%	0%	0%	100%	0%	96.1%	0%	0%	0%	96.2%	-
Single-Unit Trucks	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	12	11	0	0	0	0	23	8	0	5	0	0	0	13	0	0	0	0	0	0	0	0	0	12	0	0	0	12	-
Single-Unit Trucks %	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	2.8%	0%	0%	0%	0%	3.3%	2.6%	0%	11.6%	0%	0%	0%	3.7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1.9%	0%	0%	0%	1.8%	-
Buses	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	5	7	0	0	0	0	12	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	6	0	0	0	6	-
Buses %	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1.7%	1.8%	0%	0%	0%	0%	1.7%	0%	0%	2.3%	0%	0%	0%	0.3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.9%	0%	0%	0%	0.9%	-
Articulated Trucks	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	6	23	0	0	0	0	29	28	0	3	0	0	0	31	0	0	0	0	0	0	0	0	0	7	0	0	0	7	-
Articulated Trucks %	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	5.8%	0%	0%	0%	0%	4.2%	9.2%	0%	7%	0%	0%	0%	8.9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1.1%	0%	0%	0%	1.1%	-
Pedestrians	-	-	0	-	-	-	-	0	-	0	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
Pedestrians%	-	-	0%		-	-	-	0%		0%		-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-
Bicycles on Road	0	0	0	-	-	0	0	0	-	0	-	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	-
Bicycles on Road%	-	-	0%		-	-	-	0%		0%		-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: LAIRD RD & HANLON PKWY NB OFF RAMP
Date: Wed, Nov 22, 2017 Deployment Lead: Theo Daglis

BA Group
45 St. Clair Avenue West, Suite 300
Toronto ON, CANADA, M4V 1K9

Peak Hour: 04:15 PM - 05:15 PM Weather: Partly Cloudy (-3 °C)

Start Time	W Approach				SW Approach	S Approach				N Approach		E Approach				N Approach HANLON PKWY NBON RAMP (FROM WB LAIRD)								E Approach LAIRD RD							S Approach HANLON PKWY NB OFF RAMP							SW Approach HANLON PKWY NBON RAMP (FROM EB LAIRD)							W Approach LAIRD RD							Int. Total (15 min)
	Bear Right	Thru	Peds	Approach Total	Approach Total	Left	Right	Peds	Approach Total	Peds	Approach Total	Thru	Right	Peds	Approach Total	Right	Bear Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Bear Left	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	Hard Left	U-Turn	Peds	Approach Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Peds	Approach Total	Hard Right	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	124	156	0	0	0	0	280	35	0	7	0	0	0	42	0	0	0	0	0	0	0	3	0	140	0	0	0	143	465
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	178	183	0	0	0	0	361	43	0	4	0	0	0	47	0	0	0	0	0	0	0	14	0	145	0	0	0	159	567
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128	132	0	0	0	0	260	33	0	8	0	0	0	41	0	0	0	0	0	0	0	3	0	145	0	0	0	148	449
17:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	175	193	0	0	0	0	368	52	0	6	0	0	0	58	0	0	0	0	0	0	0	8	0	133	0	0	0	141	567
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	605	664	0	0	0	0	1269	163	0	25	0	0	0	188	0	0	0	0	0	0	0	28	0	563	0	0	0	591	2048
Approach%	0%	0%		-	-	0%	0%		-		-	0%	0%		-	0%	0%	0%	0%	0%		-	47.7%	52.3%	0%	0%	0%		-	86.7%	0%	13.3%	0%	0%		-	0%	0%	0%	0%	0%		-	4.7%	0%	95.3%	0%	0%		-	
Totals %	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29.5%	32.4%	0%	0%	0%	0%	62%	8%	0%	1.2%	0%	0%	0%	9.2%	0%	0%	0%	0%	0%	0%	0%	1.4%	0%	27.5%	0%	0%	0%	28.9%	-
PHF	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0.85	0.86	0	0	0	0	0.86	0.78	0	0.78	0	0	0	0.81	0	0	0	0	0	0	0	0.5	0	0.97	0	0	0	0.93	-
Heavy	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	13	35	0	0	0	0	48	30	0	0	0	0	0	30	0	0	0	0	0	0	0	1	0	26	0	0	0	27	-
Heavy %	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2.1%	5.3%	0%	0%	0%	0%	3.8%	18.4%	0%	0%	0%	0%	0%	16%	0%	0%	0%	0%	0%	0%	0%	3.6%	0%	4.6%	0%	0%	0%	4.6%	-
Lights	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	592	629	0	0	0	0	1221	133	0	25	0	0	0	158	0	0	0	0	0	0	0	27	0	537	0	0	0	564	-
Lights %	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	97.9%	94.7%	0%	0%	0%	0%	96.2%	81.6%	0%	100%	0%	0%	0%	84%	0%	0%	0%	0%	0%	0%	0%	96.4%	0%	95.4%	0%	0%	0%	95.4%	-
Single-Unit Trucks	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	7	17	0	0	0	0	24	8	0	0	0	0	0	8	0	0	0	0	0	0	0	1	0	15	0	0	0	16	-
Single-Unit Trucks %	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1.2%	2.6%	0%	0%	0%	0%	1.9%	4.9%	0%	0%	0%	0%	0%	4.3%	0%	0%	0%	0%	0%	0%	0%	3.6%	0%	2.7%	0%	0%	0%	2.7%	-
Buses	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0	0	0	4	-
Buses %	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.2%	0%	0%	0%	0%	0%	0.1%	0.6%	0%	0%	0%	0%	0%	0.5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.7%	0%	0%	0%	0.7%	-
Articulated Trucks	0	0		0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	5	18	0	0	0	0	23	21	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	7	0	0	0	7	-
Articulated Trucks %	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.8%	2.7%	0%	0%	0%	0%	1.8%	12.9%	0%	0%	0%	0%	0%	11.2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1.2%	0%	0%	0%	1.2%	-
Pedestrians	-	-	0	-	-	-	-	0	-	0	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
Pedestrians%	-	-	0%		-	-	-	0%		0%		-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-
Bicycles on Road	0	0	0	-	-	0	0	0	-	0	-	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	-
Bicycles on Road%	-	-	0%		-	-	-	0%		0%		-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-

Peak Hour: 07:30 AM - 08:30 AM Weather: Mostly Cloudy (-1.9 °C)

Spectrum

Turning Movement Count
Location Name: LAIRD RD & HANLON PKWY NB OFF RAMP
Date: Wed, Nov 22, 2017 Deployment Lead: Theo Daglis

BA Group
45 St. Clair Avenue West, Suite 300
Toronto ON, CANADA, M4V 1K9

Peak Hour: 04:15 PM - 05:15 PM Weather: Partly Cloudy (-3 °C)

Turning Movement Count (2 . LAIRD RD & HANLON PKWY BF O)) RAMPS

Start Time	W Approach				B Approach		NE Approach	N Approach				E Approach				N Approach HANLON PKWY BROMM(AF P						
	(aig WIB	ti:S WIe	PTud Wh	Ass:poci tpgl	PTud Bh	Ass:poci tpgl	Ass:poci tpgl	(aig NIW	LTfg NIe	PTud Nh	Ass:poci tpgl	ti:S eIW	RTo: (aig eINe	PTud eh	Ass:poci tpgl	(aig NIW	ti:S NIB	LTfg NIe	Ho:u LTfg NINe	U- tS:n NIN	PTud Nh	Ass:poci tpgl
07I00I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	98	0	0	0	91
07I26I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	40	0	0	0	47
07I50I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	209	0	0	2	225
07I86I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	251	0	0	0	260
04I00I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	43	0	0	0	10
04I26I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	203	0	0	0	225
04I50I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	206	0	0	0	224
04I86I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0	230	0	0	0	258
R(eAK																						
29I00I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	61	0	0	0	92
29I26I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	13	0	0	0	203
29I50I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	48	0	0	0	19
29I86I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	10	0	0	0	11
27I00I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	74	0	0	0	47
27I26I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	40	0	0	0	44
27I50I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	19	0	0	0	11
27I86I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	71	0	0	0	41
5 ranG Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	251	0	2869	0	0	2	2616
Approach6	0%	0%		-		-	-	0%	0%		-	0%	0%		-	4.7%	0%	12.5%	0%	0%		-
Total7 6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	5.2%	0%	53%	0%	0%		56%
Heav%	0	0		-		-	-	0	0		-	0	0		-	8	0	72	0	0		-
Heav%6	0%	0%		-		-	-	0%	0%		-	0%	0%		-	3.1%	0%	8.1%	0%	0%		-
Fic%cle7	0	0		-		-	-	0	0		-	0	0		-	0	0	0	0	0		-
Fic%cle 6	0%	0%		-		-	-	0%	0%		-	0%	0%		-	0%	0%	0%	0%	0%		-

Start Time	NE Approach HANLON PKWY BRON (AF PIM(OF WRLAD) E							E Approach LAD) ( )							B Approach HANLON PKWY BRON (AF PIM(OF eRLAD) E							W Approach LAD) ( )							Int. Total (21 minS	Int. Total (2 hrS
	Ho:u (aig NeIN	RTo: (aig NeIW	RTo: LTfg NeIB	Ho:u LTfg NeIe	U- tS:n NeINe	PTud Neh	Ass:poci tpgl	Ho:u (aig eINe	(aig eIN	ti:S eIW	LTfg eIB	U- tS:n eIe	PTud eh	Ass:poci tpgl	(aig BIe	RTo: (aig BINe	ti:S BIN	LTfg BIW	U- tS:n BIB	PTud Bh	Ass:poci tpgl	(aig WIB	ti:S WIe	RTo: LTfg WINe	LTfg WIN	U- tS:n WIW	PTud Wh	Ass:poci tpgl		
07I00I00	0	0	0	0	0	0	0	88	0	89	0	0	0	10	0	0	0	0	0	0	0	9	51	0	0	0	0	86	308	
07I26I00	0	0	0	0	0	0	0	90	0	57	0	0	0	17	0	0	0	0	0	0	0	6	81	0	0	0	0	68	354	
07I50I00	0	0	0	0	0	0	0	99	0	66	0	0	0	232	0	0	0	0	0	0	0	9	63	0	0	0	0	64	313	
07I86I00	0	0	0	0	0	0	0	68	0	40	0	0	0	258	0	0	0	0	0	0	0	23	87	0	0	0	0	61	585	2077
04I00I00	0	0	0	0	0	0	0	59	0	98	0	0	0	200	0	0	0	0	0	0	0	9	66	0	0	0	0	92	362	2238
04I26I00	0	0	0	0	0	0	0	80	0	83	0	0	0	43	0	0	0	0	0	0	0	5	74	0	0	0	0	42	379	2293
04I50I00	0	0	0	0	0	0	0	55	0	92	0	0	0	18	0	0	0	0	0	0	0	8	59	0	0	0	0	80	363	2233
04I86I00	0	0	0	0	0	0	0	55	0	89	0	0	0	71	0	0	0	0	0	0	0	0	67	0	0	0	0	67	370	2081
R(eAK																														
29I00I00	0	0	0	0	0	0	0	12	0	48	0	0	0	276	0	0	0	0	0	0	0	6	86	0	0	0	0	60	349	
29I26I00	0	0	0	0	0	0	0	79	0	13	0	0	0	294	0	0	0	0	0	0	0	4	60	0	0	0	0	64	534	
29I50I00	0	0	0	0	0	0	0	77	0	209	0	0	0	245	0	0	0	0	0	0	0	29	78	0	0	0	0	10	591	
29I86I00	0	0	0	0	0	0	0	63	0	48	0	0	0	259	0	0	0	0	0	0	0	6	64	0	0	0	0	95	314	2342
27I00I00	0	0	0	0	0	0	0	46	0	225	0	0	0	214	0	0	0	0	0	0	0	20	94	0	0	0	0	74	595	2564
27I26I00	0	0	0	0	0	0	0	62	0	96	0	0	0	229	0	0	0	0	0	0	0	1	94	0	0	0	0	77	342	2522
27I50I00	0	0	0	0	0	0	0	87	0	92	0	0	0	204	0	0	0	0	0	0	0	1	70	0	0	0	0	71	349	2334
27I86I00	0	0	0	0	0	0	0	80	0	84	0	0	0	44	0	0	0	0	0	0	0	2	80	0	0	0	0	82	324	2284
5 ranG Total	0	0	0	0	0	0	0	446	0	2048	0	0	0	2191	0	0	0	0	0	0	0	206	449	0	0	0	0	112	d111	-
Approach6	0%	0%	0%	0%	0%		-	88.1%	0%	66.2%	0%	0%		-	0%	0%	0%	0%	0%		-	20.9%	41.8%	0%	0%	0%		-	8	-
Total7 6	0%	0%	0%	0%	0%		0%	21.8%	0%	35.4%	0%	0%		85.3%	0%	0%	0%	0%	0%		0%	3.5%	21.6%	0%	0%	0%		32.4%	8	-
Heav%	0	0	0	0	0		-	224	0	88	0	0		-	0	0	0	0	0		-	7	50	0	0	0		-	8	-
Heav%6	0%	0%	0%	0%	0%		-	25.5%	0%	8.2%	0%	0%		-	0%	0%	0%	0%	0%		-	9.7%	5.8%	0%	0%	0%		-	8	-
Fic%cle7	0	0	0	0	0		-	0	0	2	0	0		-	0	0	0	0	0		-	0	0	0	0	0		-	8	-
Fic%cle 6	0%	0%	0%	0%	0%		-	0%	0%	0.2%	0%	0%		-	0%	0%	0%	0%	0%		-	0%	0%	0%	0%	0%		-	8	-

Pea- Hoursyks: y AM 8y0s: y AM WeathersMo7tl%ClouG%(82.3 9CS

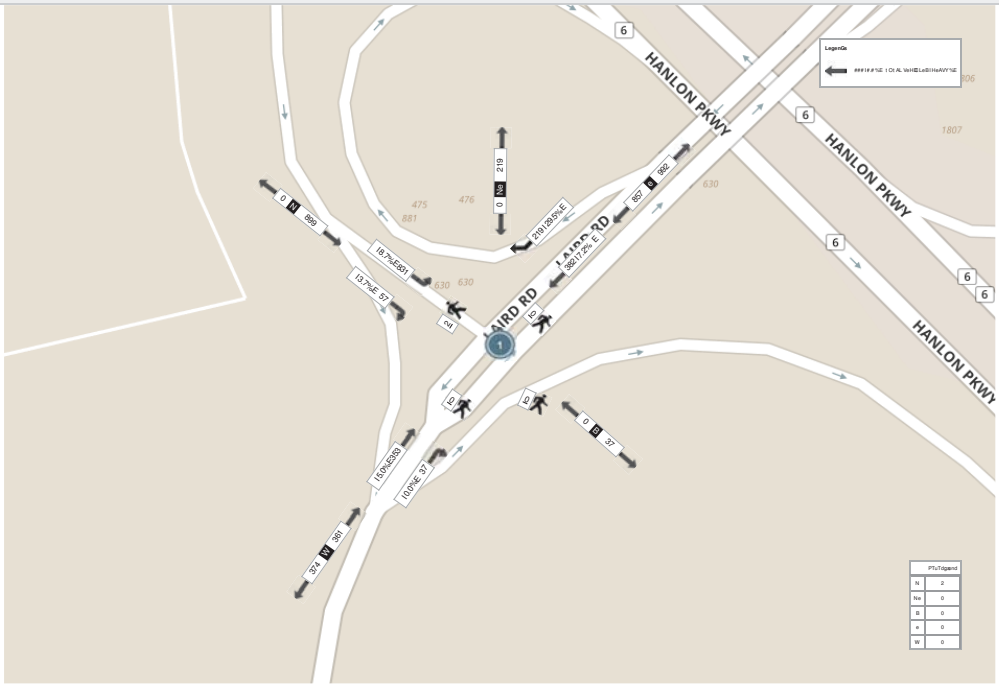
Start Time	W Approach				B Approach		NE Approach	N Approach				E Approach				N Approach HANLON PKWY BROMM(AF P						
	(aig	ti:S	PTud	Ass:poci tpgl	PTud	Ass:poci tpgl	Ass:poci tpgl	(aig	LTfg	PTud	Ass:poci tpgl	ti:S	RTo: (aig	PTud	Ass:poci tpgl	(aig	ti:S	LTfg	Ho:u LTfg	U- tS:n	PTud	Ass:poci tpgl
07I50I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	209	0	0	2	225
07I86I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	251	0	0	0	260
04I00I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	43	0	0	0	10
04I26I00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	203	0	0	0	225
5 ranGTotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	0	831	0	0	2	899
Approach6	0%	0%		-		-	-	0%	0%		-	0%	0%		-	7.1%	0%	13.2%	0%	0%		-
Total7 6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	5.3%	0%	59.1%	0%	0%		80.2%
PH)	0	0		0		0	0	0	0		0	0	0		0	0.48	0	0.77	0	0		0.74
Heav%	0	0		0		0	0	0	0		0	0	0		0	2	0	30	0	0		32
Heav%6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	3.7%	0%	8.7%	0%	0%		8.6%
Light7	0	0		0		0	0	0	0		0	0	0		0	59	0	801	0	0		886
Light7 6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	17.5%	0%	16.5%	0%	0%		16.6%
Bingle84 nit Truc- 7	0	0		0		0	0	0	0		0	0	0		0	2	0	1	0	0		20
Bingle84 nit Truc- 7 6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	3.7%	0%	3.2%	0%	0%		3.2%
Fu7e7	0	0		0		0	0	0	0		0	0	0		0	0	0	9	0	0		9
Fu7e7 6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	0%	0%	2.8%	0%	0%		2.5%
ArticulateGTruc- 7	0	0		0		0	0	0	0		0	0	0		0	0	0	6	0	0		6
ArticulateGTruc- 7 6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	0%	0%	2.3%	0%	0%		2.2%
PeGe7trian7	-	-	0	-	0	-	-	-	-	0	-	-	-	0	-	-	-	-	-	-	2	-
PeGe7trian76	-	-	0%		0%			-	-	0%		-	-	0%		-	-	-	-	-	200%	
Fic%cle7 on RoaG	0	0	0	-	0	-	-	0	0	0	-	0	0	0	-	0	0	0	0	0	0	-
Fic%cle7 on RoaG6	-	-	0%		0%			-	-	0%		-	-	0%		-	-	-	-	-	0%	

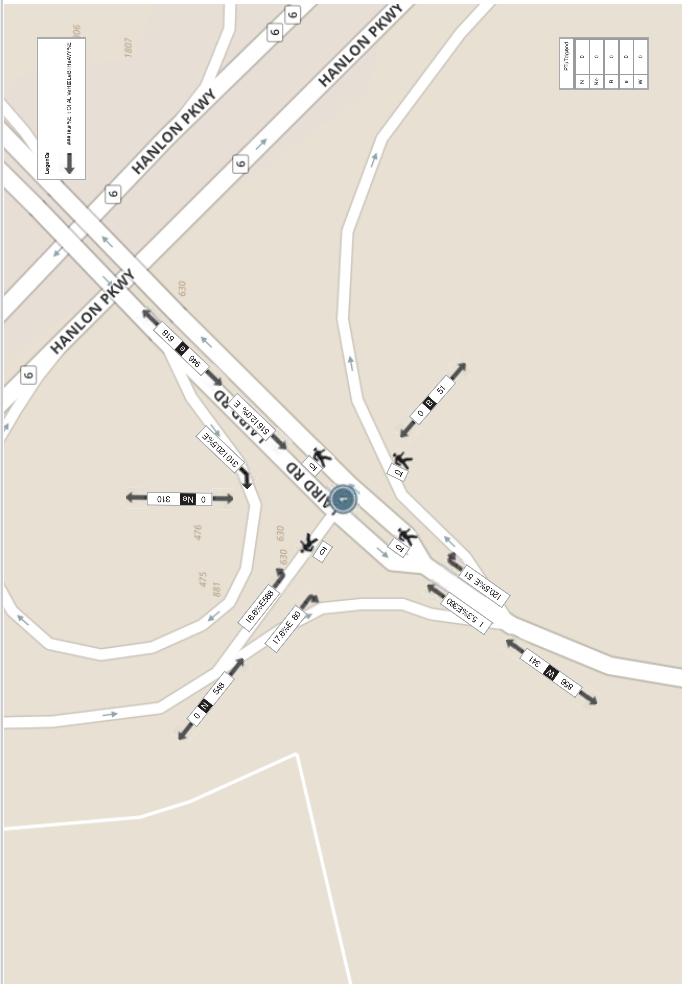
Start Time	NE Approach HANLON PKWY BRON (AF PIM(OF WRLAD) E							E Approach LAD) ( )							B Approach HANLON PKWY BRON (AF PIM(OF eRLAD) E							W Approach LAD) ( )							Int. Total (21 minS
	Ho:u (aig	RTo: (aig	RTo: LTfg	Ho:u LTfg	U- tS:n	PTud	Ass:poci tpgl	Ho:u (aig	(aig	ti:S	LTfg	U- tS:n	PTud	Ass:poci tpgl	(aig	RTo: (aig	ti:S	LTfg	U- tS:n	PTud	Ass:poci tpgl	(aig	ti:S	RTo: LTfg	LTfg	U- tS:n	PTud	Ass:poci tpgl	
07I50I00	0	0	0	0	0	0	0	99	0	66	0	0	0	232	0	0	0	0	0	0	0	9	63	0	0	0	0	64	313
07I86I00	0	0	0	0	0	0	0	68	0	40	0	0	0	258	0	0	0	0	0	0	0	23	87	0	0	0	0	61	585
04I00I00	0	0	0	0	0	0	0	59	0	98	0	0	0	200	0	0	0	0	0	0	0	9	66	0	0	0	0	92	362
04I26I00	0	0	0	0	0	0	0	80	0	83	0	0	0	43	0	0	0	0	0	0	0	5	74	0	0	0	0	42	379
5 ranGTotal	0	0	0	0	0	0	0	219	0	382	0	0	0	857	0	0	0	0	0	0	0	37	353	0	0	0	0	361	22°U
Approach6	0%	0%	0%	0%	0%		-	88.1%	0%	66.2%	0%	0%		-	0%	0%	0%	0%	0%		-	20.8%	41.9%	0%	0%	0%		-	8
Total7 6	0%	0%	0%	0%	0%		0%	29.1%	0%	30.7%	0%	0%		57.9%	0%	0%	0%	0%	0%		0%	3.5%	30%	0%	0%	0%		33.5%	8
PH)	0	0	0	0	0		0	0.78	0	0.76	0	0		0.43	0	0	0	0	0		0	0.69	0.78	0	0	0		0.4	8
Heav%	0	0	0	0	0		0	53	0	27	0	0		81	0	0	0	0	0		0	0	7	0	0	0		7	8
Heav%6	0%	0%	0%	0%	0%		0%	29.5%	0%	7.2%	0%	0%		22.3%	0%	0%	0%	0%	0%		0%	0%	5%	0%	0%	0%		3.7%	8
Light7	0	0	0	0	0		0	298	0	338	0	0		544	0	0	0	0	0		0	37	336	0	0	0		363	8
Light7 6	0%	0%	0%	0%	0%		0%	45.7%	0%	13.1%	0%	0%		44.4%	0%	0%	0%	0%	0%		0%	200%	17%	0%	0%	0%		17.5%	8
Bingle84 nit Truc- 7	0	0	0	0	0		0	4	0	4	0	0		29	0	0	0	0	0		0	0	6	0	0	0		6	8
Bingle84 nit Truc- 7 6	0%	0%	0%	0%	0%		0%	8.2%	0%	5.5%	0%	0%		5.7%	0%	0%	0%	0%	0%		0%	0%	3.3%	0%	0%	0%		2.1%	8
Fu7e7	0	0	0	0	0		0	3	0	9	0	0		4	0	0	0	0	0		0	0	0	0	0	0		0	8
Fu7e7 6	0%	0%	0%	0%	0%		0%	2%	0%	3.6%	0%	0%		2.4%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	8
ArticulateGTruc- 7	0	0	0	0	0		0	33	0	5	0	0		36	0	0	0	0	0		0	0	3	0	0	0		3	8
ArticulateGTruc- 7 6	0%	0%	0%	0%	0%		0%	22.3%	0%	2.3%	0%	0%		6.7%	0%	0%	0%	0%	0%		0%	0%	0.1%	0%	0%	0%		0.4%	8
PeGe7trian7	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	8
PeGe7trian76	-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		8
Fic%cle7 on RoaG	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	8
Fic%cle7 on RoaG6	-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		8

Pea- Hoursyds21 PM 8y1s21 PM WeathersPart!%ClouG%(8 9CS

Start Time	W Approach				BApproach	NE Approach	N Approach			E Approach				N Approach HANLON PKWYBROMM(AF P						NE Approach HANLON PKWYBRON (AFPIM(OF WRLAD) E							E Approach LAD) ( )					B Approach HANLON PKWYBRON (AFPIM(OF eRLAD) E							W Approach LAD) ( )					Int. Total (21 minS
	(a l g	t i : S	PTud	Ave:pool t pgl	PTud	Ave:pool t pgl	Ave:pool t pgl	(a l g	LTtg	PTud	Ave:pool t pgl	t i : S	RTtc (a l g	PTud	Ave:pool t pgl	(a l g	t i : S	LTtg	Hou:u LTtg	U-t S:n	PTud	Ave:pool t pgl	Hou:u (a l g	RTtc (a l g	RTtc LTtg	Hou:u LTtg	U-t S:n	PTud	Ave:pool t pgl	Hou:u (a l g	(a l g	t i : S	LTtg	U-t S:n	PTud	Ave:pool t pgl	(a l g	RTtc (a l g	t i : S	LTtg	U-t S:n	PTud	Ave:pool t pgl	(a l g	t i : S	RTtc LTtg	LTtg	U-t S:n	PTud	Ave:pool t pgl	
2SE680	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	13	0	0	0	203	0	0	0	0	0	0	0	79	0	13	0	0	0	294	0	0	0	0	0	0	0	4	60	0	0	0	0	64	534
2SE680	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	48	0	0	0	19	0	0	0	0	0	0	0	77	0	209	0	0	0	245	0	0	0	0	0	0	0	29	78	0	0	0	0	10	591
2SE680	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	10	0	0	0	11	0	0	0	0	0	0	0	62	0	48	0	0	0	259	0	0	0	0	0	0	0	6	64	0	0	0	0	95	314
2T6080	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	74	0	0	0	47	0	0	0	0	0	0	0	46	0	225	0	0	0	214	0	0	0	0	0	0	0	20	94	0	0	0	0	74	595
S nonGTotal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	0	588	0	0	0	548	0	0	0	0	0	0	0	310	0	516	0	0	0	946	0	0	0	0	0	0	0	51	360	0	0	0	0	341	2: 10
Approach6	0%	0%		-		-	-	0%	0%		-	0%	0%		-	20.8%	0%	41.9%	0%	0%		-	0%	0%	0%	0%	0%		-	83.5%	0%	67.7%	0%	0%		-	0%	0%	0%	0%	0%		-	25.6%	49.6%	0%	0%	0%		-	8
Total7 6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	3.1%	0%	36.5%	0%	0%		34.5%	0%	0%	0%	0%	0%		0%	32.8%	0%	31.2%	0%	0%		60.8%	0%	0%	0%	0%	0%		0%	3.1%	24.8%	0%	0%	0%		32.5%	8
PH)	0	0		0		0	0	0	0		0	0	0		0	0.45	0	0.15	0	0		0.18	0	0	0	0	0		0	0.46	0	0.47	0	0		0.49	0	0	0	0	0		0	0.92	0.48	0	0	0		0.4	8
Heav%	0	0		0		0	0	0	0		0	0	0		0	5	0	21	0	0		33	0	0	0	0	0		0	50	0	8	0	0		58	0	0	0	0	0		0	8	4	0	0	0		23	8
Heav%6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	7.8%	0%	4.6%	0%	0%		6.7%	0%	0%	0%	0%	0%		0%	20.5%	0%	2%	0%	0%		6%	0%	0%	0%	0%	0%		0%	20.5%	5.3%	0%	0%	0%		8.3%	8
Light7	0	0		0		0	0	0	0		0	0	0		0	57	0	536	0	0		593	0	0	0	0	0		0	390	0	512	0	0		962	0	0	0	0	0		0	56	383	0	0	0		377	8
Light7 6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	13.6%	0%	18.6%	0%	0%		18.5%	0%	0%	0%	0%	0%		0%	41.7%	0%	11%	0%	0%		16%	0%	0%	0%	0%	0%		0%	41.7%	19.4%	0%	0%	0%		16.4%	8
SingleBi nit Truc-7	0	0		0		0	0	0	0		0	0	0		0	3	0	20	0	0		23	0	0	0	0	0		0	22	0	8	0	0		26	0	0	0	0	0		0	2	9	0	0	0		7	8
SingleBi nit Truc-7 6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	6%	0%	3.1%	0%	0%		5.2%	0%	0%	0%	0%	0%		0%	5.4%	0%	2%	0%	0%		3.3%	0%	0%	0%	0%	0%		0%	3.9%	3.8%	0%	0%	0%		3.8%	8
Fu7e7	0	0		0		0	0	0	0		0	0	0		0	0	0	3	0	0		3	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	3	0	0	0		3	8
Fu7e7 6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	0%	0%	0.9%	0%	0%		0.6%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%	0%		0.7%	8
ArticulateGTruc-7	0	0		0		0	0	0	0		0	0	0		0	2	0	7	0	0		4	0	0	0	0	0		0	21	0	0	0	0		21	0	0	0	0	0		0	5	0	0	0	0		5	8
ArticulateGTruc-7 6	0%	0%		0%		0%	0%	0%	0%		0%	0%	0%		0%	3.6%	0%	3%	0%	0%		3.2%	0%	0%	0%	0%	0%		0%	9.9%	0%	0%	0%	0%		3.4%	0%	0%	0%	0%	0%		0%	7.7%	0%	0%	0%	0%		2%	8
PeGeTrbn7	-	-	0	-	0	-	-	-	-	0	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	8
PeGeTrbn76	-	-	0%		0%		-	-	-	0%		-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		8
Fic%le7 on RoaG	0	0	0	-	0	-	-	0	0	0	-	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	-	8
Fic%le7 on RoaG6	-	-	0%		0%			-	-	0%		-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		8

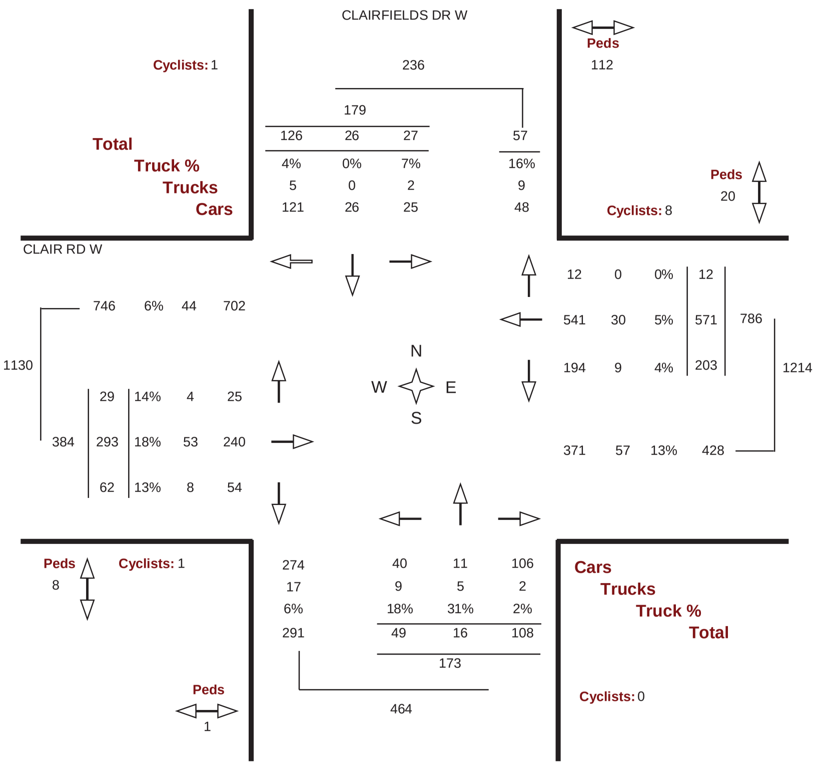
Pea- Hoursyks:y AM 8y0s:y AM WeathersMo7t!%ClouG%(82.3 9CS





Turning Movements Report - AM Period

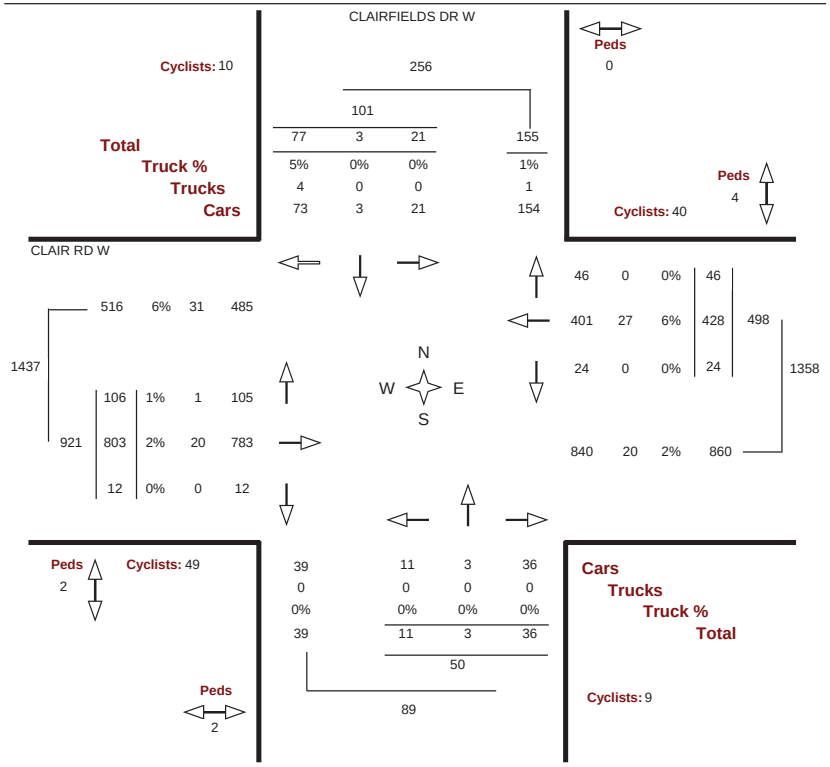
Location.......	CLAIR RD W @ CLAIRFIELDS DR W	**GeoID.......**	I730
Municipality.	GUELPH	**Count Date.**	Thursday, 17 September, 2015
Traffic Cont.		**Count Time.**	07:00 AM — 09:00 AM
Major Dir.....	None	**Peak Hour..**	08:00 AM — 09:00 AM



Turning Movements Report - Full Study

Location..... CLAIR RD W @ CLAIRFIELDS DR W
Municipality. GUELPH
Traffic Cont.
Major Dir..... None

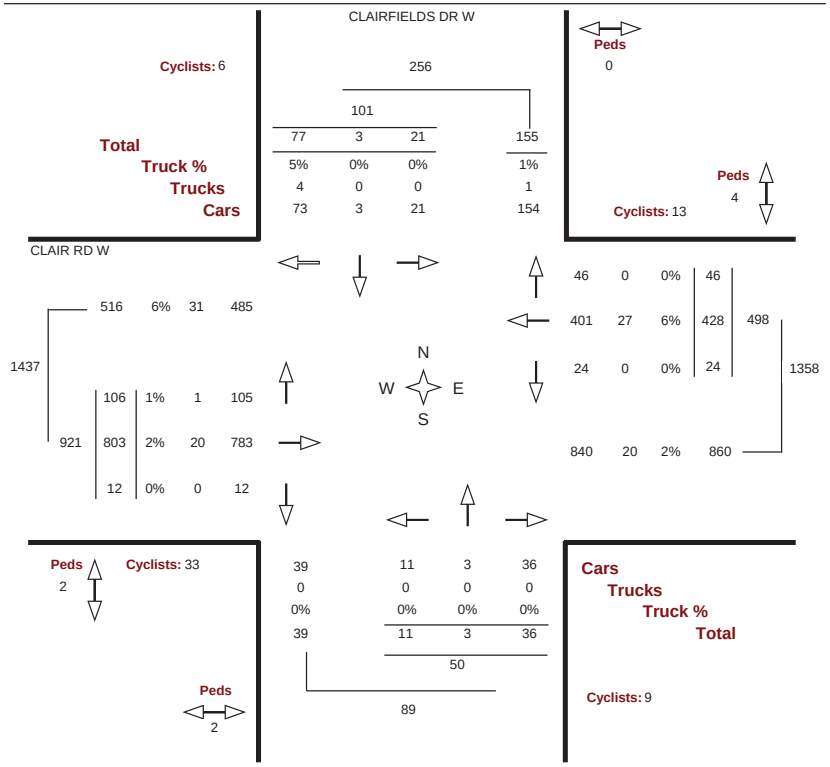
GeoID..... I730
Count Date. Thursday, 17 September, 2015
Count Time. 07:00 AM — 06:00 PM
Peak Hour.. 04:30 PM — 05:30 PM



Turning Movements Report - PM Period

Location..... CLAIR RD W @ CLAIRFIELDS DR W
Municipality. GUELPH
Traffic Cont.
Major Dir..... None

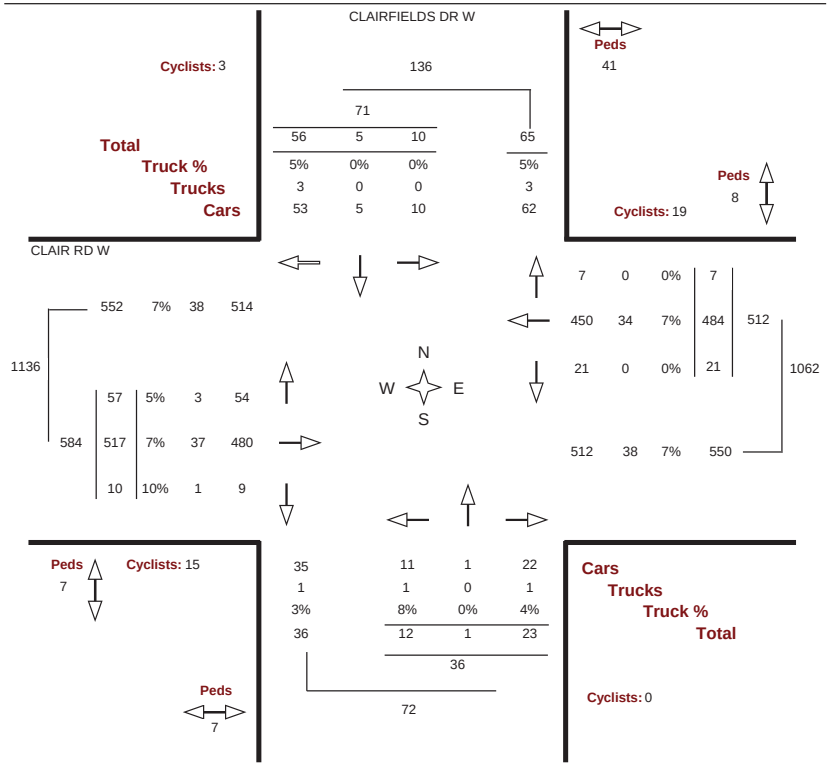
GeoID..... I730
Count Date. Thursday, 17 September, 2015
Count Time. 03:00 PM — 06:00 PM
Peak Hour.. 04:30 PM — 05:30 PM



Turning Movements Report - MD Period

Location..... CLAIR RD W @ CLAIRFIELDS DR W
Municipality. GUELPH
Traffic Cont.
Major Dir..... None

GeoID..... I730
Count Date. Thursday, 17 September, 2015
Count Time. 11:00 AM — 02:00 PM
Peak Hour.. 12:00 PM — 01:00 PM



Poppy Dr & Gordon St

Morning Peak Diagram

Specified Period
From: 6:30:00
To: 9:30:00

One Hour Peak
From: 7:45:00
To: 8:45:00

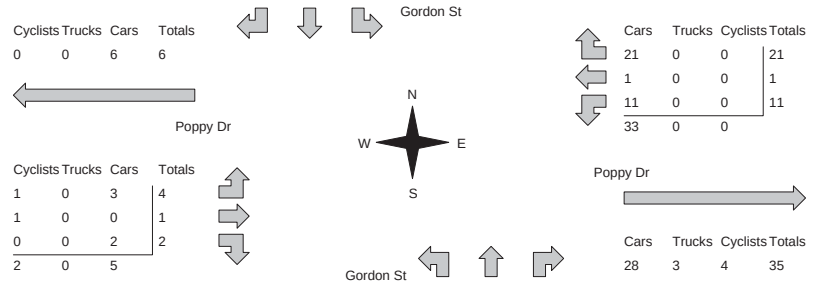
Municipality: Guelph
Site #: 0000006804
Intersection: Gordon St & Poppy Dr
TFR File #: 1
Count date: 13-Sep-2016

Weather conditions:
Clear

Person(s) who counted:
Lena

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

Major Road: Gordon St runs N/S



Comments

Poppy Dr & Gordon St

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:15:00
To: 13:15:00

Municipality: Guelph
Site #: 0000006804
Intersection: Gordon St & Poppy Dr
TFR File #: 1
Count date: 13-Sep-2016

Weather conditions:
Clear

Person(s) who counted:
Lena

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

Major Road: Gordon St runs N/S

North Leg Total: 1055
North Entering: 511
North Peds: 0
Peds Cross: ⋈

	Cars	Trucks	Cyclists	Totals
Cyclists	0	21	0	21
Trucks	0	12	1	13
Cars	2	442	33	477
Totals	2	475	34	

	Cars	Trucks	Cyclists	Totals
Cyclists				21
Trucks				15
Cars				508
Totals				544

East Leg Total: 171
East Entering: 99
East Peds: 1
Peds Cross: ⧖

Gordon St

Cyclists	Trucks	Cars	Totals
0	0	6	6

Poppy Dr

	Cars	Trucks	Cyclists	Totals
	60	2	0	62
	4	0	0	4
	33	0	0	33
	97	2	0	

N
W E
S

Cyclists	Trucks	Cars	Totals
0	0	0	0
0	0	1	1
0	0	4	4
0	0	5	

Poppy Dr

	Cars	Trucks	Cyclists	Totals
	69	2	1	72

Gordon St

Peds Cross: ⧖
West Peds: 0
West Entering: 5
West Leg Total: 11

	Cars	Trucks	Cyclists	Totals
Cars	479			
Trucks	12			
Cyclists	21			
Totals	512			

	Cars	Trucks	Cyclists	Totals
Cars	0	448	35	483
Trucks	0	13	1	14
Cyclists	0	21	1	22
Totals	0	482	37	

Peds Cross: ⋈
South Peds: 0
South Entering: 519
South Leg Total: 1031

Comments

Poppy Dr & Gordon St

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Guelph
Site #: 0000006804
Intersection: Gordon St & Poppy Dr
TFR File #: 1
Count date: 13-Sep-2016

Weather conditions:
Clear

Person(s) who counted:
Lena

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

Major Road: Gordon St runs N/S

North Leg Total: 1605
North Entering: 749
North Peds: 0
Peds Cross: ⋈

	Cars	Trucks	Cyclists	Totals
Cyclists	0	13	0	13
Trucks	0	14	0	14
Cars	3	681	38	722
Totals	3	708	38	

	Cars	Trucks	Cyclists	Totals
Cyclists				18
Trucks				6
Cars				832
Totals				856

East Leg Total: 178
East Entering: 89
East Peds: 2
Peds Cross: ⧖

Gordon St

Cyclists	Trucks	Cars	Totals
0	0	8	8

Poppy Dr

	Cars	Trucks	Cyclists	Totals
	38	0	0	38
	5	0	0	5
	45	1	0	46
	88	1	0	

N
W E
S

Cyclists	Trucks	Cars	Totals
0	1	1	2
0	0	0	0
0	0	1	1
0	1	2	

Poppy Dr

	Cars	Trucks	Cyclists	Totals
	89	0	0	89

Gordon St

Peds Cross: ⧖
West Peds: 0
West Entering: 3
West Leg Total: 11

	Cars	Trucks	Cyclists	Totals
Cars	727			
Trucks	15			
Cyclists	13			
Totals	755			

	Cars	Trucks	Cyclists	Totals
Cars	0	793	51	844
Trucks	0	5	0	5
Cyclists	0	18	0	18
Totals	0	816	51	

Peds Cross: ⋈
South Peds: 0
South Entering: 867
South Leg Total: 1622

Comments

Poppy Dr & Gordon St

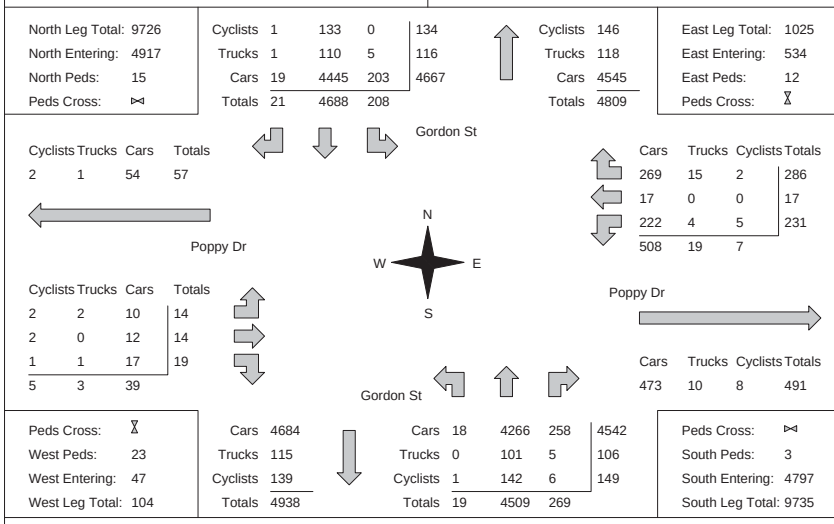
Total Count Diagram

Municipality: Guelph
Site #: 0000006804
Intersection: Gordon St & Poppy Dr
TFR File #: 1
Count date: 13-Sep-2016

Weather conditions: Clear
Person(s) who counted: Lena

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

Major Road: Gordon St runs N/S



Comments

Poppy Dr & Gordon St
Traffic Count Summary

Intersection: Gordon St & Poppy Dr | **Count Date:** 13-Sep-2016 | **Municipality:** Guelph

North Approach Totals (Includes Cars, Trucks, & Cyclists)

Hour Ending	Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
7:00:00	6	276	0	282	1	433
8:00:00	5	671	4	680	0	1127
9:00:00	12	607	1	620	3	1259
12:00:00	20	487	3	510	1	981
13:00:00	42	460	6	508	7	1022
15:00:00	14	237	1	252	0	521
16:00:00	35	573	2	610	1	1292
17:00:00	30	675	3	708	0	1505
18:00:00	44	702	1	747	2	1574
Totals:	208	4688	21	4917	15	9714

South Approach Totals (Includes Cars, Trucks, & Cyclists)

Hour Ending	Left	Thru	Right	Grand Total	Total Peds
7:00:00	1	137	13	151	1
8:00:00	6	430	11	447	0
9:00:00	3	610	26	639	1
12:00:00	2	444	25	471	0
13:00:00	0	472	42	514	0
15:00:00	1	248	20	269	0
16:00:00	1	640	41	682	0
17:00:00	2	760	35	797	1
18:00:00	3	768	56	827	0
Totals:	19	4509	269	4797	3

East Approach Totals (Includes Cars, Trucks, & Cyclists)

Hour Ending	Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
7:00:00	7	0	6	13	0	14
8:00:00	10	0	17	27	2	33
9:00:00	15	1	24	40	4	44
12:00:00	26	2	26	54	1	59
13:00:00	34	4	61	99	1	109
15:00:00	22	1	29	52	0	52
16:00:00	31	3	33	67	1	73
17:00:00	51	3	41	95	3	105
18:00:00	35	3	49	87	0	92
Totals:	231	17	286	534	12	581

West Approach Totals (Includes Cars, Trucks, & Cyclists)

Hour Ending	Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	1	1	1
8:00:00	3	0	3	6	6
9:00:00	2	1	1	4	2
12:00:00	1	2	2	5	2
13:00:00	0	3	7	10	0
15:00:00	0	0	0	0	0
16:00:00	1	4	1	6	4
17:00:00	5	2	3	10	2
18:00:00	2	2	1	5	6
Totals:	14	14	19	47	23

Calculated Values for Traffic Crossing Major Street

Hours Ending:	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00
Crossing Values:	13	22	30	45	23	37	60	42

Turning Movement Count (1 . CLAIR RD & FARLEY DR)

Start Time	N Approach FARLEY DR						E Approach CLAIR RD						S Approach FARLEY DR						W Approach CLAIR RD						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	29	0	5	0	0	34	7	86	1	0	0	94	0	4	2	0	0	6	5	32	6	0	0	43	177	
07:15:00	38	3	6	0	0	47	5	103	2	0	0	110	2	2	4	0	0	8	10	35	6	0	0	51	216	
07:30:00	44	2	9	0	0	55	27	126	0	0	0	153	3	2	5	0	1	10	1	46	13	0	2	60	278	
07:45:00	47	1	7	0	1	55	22	153	4	0	0	179	2	2	4	0	0	8	9	37	22	0	0	68	310	981
08:00:00	27	1	9	0	0	37	10	127	3	0	0	140	0	3	6	0	1	9	8	72	16	0	0	96	282	1086
08:15:00	30	5	6	0	1	41	14	131	6	0	0	151	1	3	5	0	1	9	9	69	24	0	1	102	303	1173
08:30:00	43	3	3	0	1	49	20	195	9	0	0	224	3	3	7	0	0	13	9	75	25	0	0	109	395	1290
08:45:00	45	11	7	0	1	63	17	140	9	0	1	166	2	4	12	0	0	18	20	75	36	0	1	131	378	1358
BREAK																										
16:00:00	40	12	10	0	1	62	11	54	7	0	1	72	9	14	28	0	0	51	40	144	52	0	1	236	421	
16:15:00	32	17	10	0	1	59	17	79	4	0	0	100	14	18	28	0	1	60	43	110	55	0	1	208	427	
16:30:00	27	20	16	0	2	63	12	74	6	0	5	92	7	15	25	0	2	47	63	136	54	0	6	253	455	
16:45:00	38	21	5	0	1	64	14	85	15	0	3	114	12	27	23	0	3	62	58	119	50	0	4	227	467	1770
17:00:00	42	20	18	0	1	80	27	78	10	0	2	115	7	28	22	0	0	57	44	129	51	0	5	224	476	1825
17:15:00	27	20	13	0	0	60	12	71	12	0	4	95	8	27	35	0	1	70	57	148	57	0	2	262	487	1885
17:30:00	44	12	20	0	4	76	22	71	11	0	6	104	10	24	31	0	4	65	61	131	74	0	5	266	511	1941
17:45:00	27	18	13	0	3	58	10	65	11	0	7	86	10	22	29	0	3	61	67	107	51	0	1	225	430	1904
Grand Total	580	166	157	0	17	903	247	1638	110	0	29	1995	90	198	266	0	17	554	504	1465	592	0	29	2561	**6013**	-
Approach%	64.2%	18.4%	17.4%	0%		-	12.4%	82.1%	5.5%	0%		-	16.2%	35.7%	48%	0%		-	19.7%	57.2%	23.1%	0%		-	-	-
Totals %	9.6%	2.8%	2.6%	0%		15%	4.1%	27.2%	1.8%	0%		33.2%	1.5%	3.3%	4.4%	0%		9.2%	8.4%	24.4%	9.8%	0%		42.6%	-	-
Heavy	3	0	2	0		-	2	93	0	0		-	2	2	5	0		-	8	87	11	0		-	-	-
Heavy %	0.5%	0%	1.3%	0%		-	0.8%	5.7%	0%	0%		-	2.2%	1%	1.9%	0%		-	1.6%	5.9%	1.9%	0%		-	-	-
Bicycles	0	0	0	0		-	0	0	0	0		-	0	1	0	0		-	0	1	0	0		-	-	-
Bicycle %	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0.5%	0%	0%		-	0%	0.1%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: CLAIR RD & FARLEY DR
Date: Tue, Dec 19, 2017 Deployment Lead: Theo Daglis

BA Group
45 St. Clair Avenue West, Suite 300
Toronto ON, CANADA, M4V 1K9

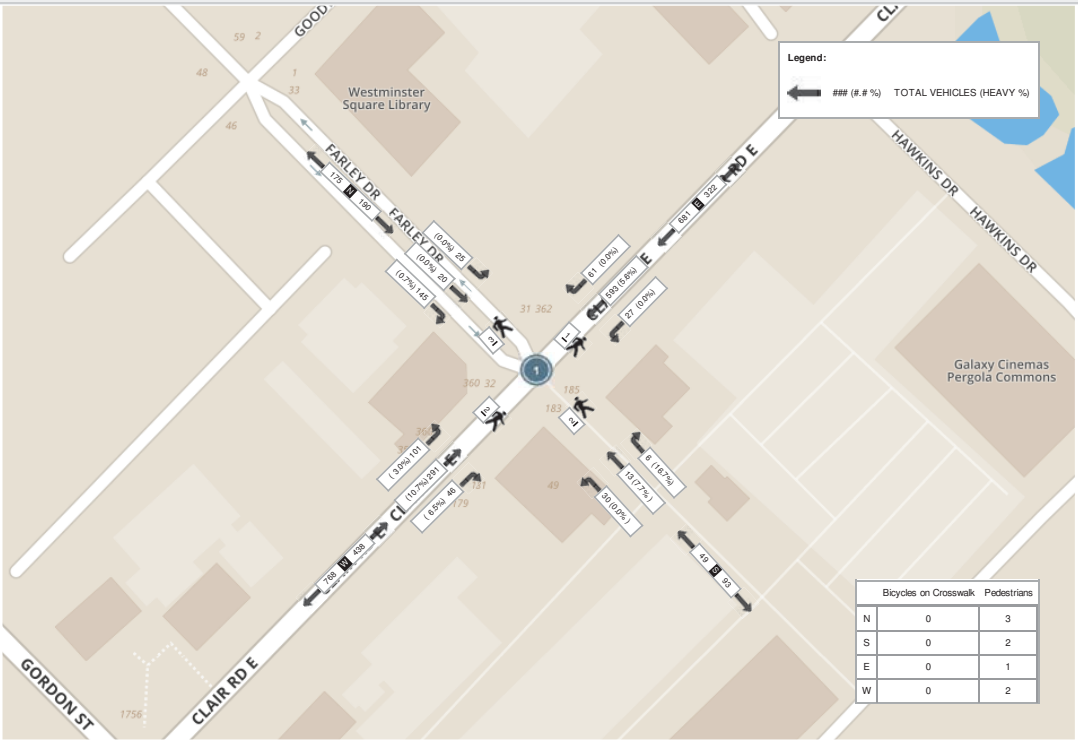
Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast (2.1 °C)

Start Time	N Approach FARLEY DR						E Approach CLAIR RD						S Approach FARLEY DR						W Approach CLAIR RD						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	
08:00:00	27	1	9	0	0	37	10	127	3	0	0	140	0	3	6	0	1	9	8	72	16	0	0	96	282
08:15:00	30	5	6	0	1	41	14	131	6	0	0	151	1	3	5	0	1	9	9	69	24	0	1	102	303
08:30:00	43	3	3	0	1	49	20	195	9	0	0	224	3	3	7	0	0	13	9	75	25	0	0	109	395
08:45:00	45	11	7	0	1	63	17	140	9	0	1	166	2	4	12	0	0	18	20	75	36	0	1	131	378
Grand Total	145	20	25	0	3	190	61	593	27	0	1	681	6	13	30	0	2	49	46	291	101	0	2	438	**1358**
Approach%	76.3%	10.5%	13.2%	0%		-	9%	87.1%	4%	0%		-	12.2%	26.5%	61.2%	0%		-	10.5%	66.4%	23.1%	0%		-	-
Totals %	10.7%	1.5%	1.8%	0%		14%	4.5%	43.7%	2%	0%		50.1%	0.4%	1%	2.2%	0%		3.6%	3.4%	21.4%	7.4%	0%		32.3%	-
PHF	0.81	0.45	0.69	0		0.75	0.76	0.76	0.75	0		0.76	0.5	0.81	0.63	0		0.68	0.58	0.97	0.7	0		0.84	-
Heavy	1	0	0	0		1	0	33	0	0		33	1	1	0	0		2	3	31	3	0		37	-
Heavy %	0.7%	0%	0%	0%		0.5%	0%	5.6%	0%	0%		4.8%	16.7%	7.7%	0%	0%		4.1%	6.5%	10.7%	3%	0%		8.4%	-
Lights	144	20	25	0		189	61	560	27	0		648	5	12	30	0		47	43	260	98	0		401	-
Lights %	99.3%	100%	100%	0%		99.5%	100%	94.4%	100%	0%		95.2%	83.3%	92.3%	100%	0%		95.9%	93.5%	89.3%	97%	0%		91.6%	-
Single-Unit Trucks	1	0	0	0		1	0	8	0	0		8	1	1	0	0		2	3	14	1	0		18	-
Single-Unit Trucks %	0.7%	0%	0%	0%		0.5%	0%	1.3%	0%	0%		1.2%	16.7%	7.7%	0%	0%		4.1%	6.5%	4.8%	1%	0%		4.1%	-
Buses	0	0	0	0		0	0	7	0	0		7	0	0	0	0		0	0	8	2	0		10	-
Buses %	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1%	0%	0%	0%	0%		0%	0%	2.7%	2%	0%		2.3%	-
Articulated Trucks	0	0	0	0		0	0	18	0	0		18	0	0	0	0		0	0	9	0	0		9	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	3%	0%	0%		2.6%	0%	0%	0%	0%		0%	0%	3.1%	0%	0%		2.1%	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	2	-	-
Pedestrians%	-	-	-	-	37.5%		-	-	-	-	12.5%		-	-	-	-	25%		-	-	-	-	25%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Peak Hour: 04:45 PM - 05:45 PM Weather: Mostly Cloudy (2.8 °C)

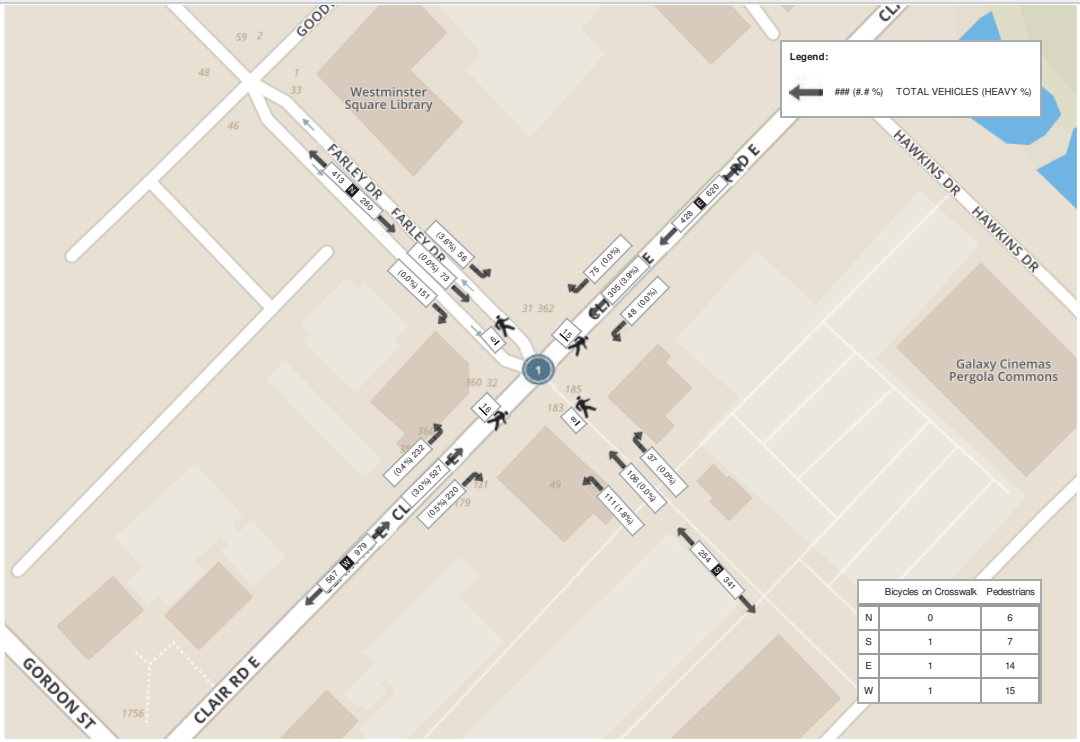
Start Time	N Approach FARLEY DR						E Approach CLAIR RD						S Approach FARLEY DR						W Approach CLAIR RD						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:45:00	38	21	5	0	1	64	14	85	15	0	3	114	12	27	23	0	3	62	58	119	50	0	4	227	467
17:00:00	42	20	18	0	1	80	27	78	10	0	2	115	7	28	22	0	0	57	44	129	51	0	5	224	476
17:15:00	27	20	13	0	0	60	12	71	12	0	4	95	8	27	35	0	1	70	57	148	57	0	2	262	487
17:30:00	44	12	20	0	4	76	22	71	11	0	6	104	10	24	31	0	4	65	61	131	74	0	5	266	511
Grand Total	151	73	56	0	6	280	75	305	48	0	15	428	37	106	111	0	8	254	220	527	232	0	16	979	**1941**
Approach%	53.9%	26.1%	20%	0%		-	17.5%	71.3%	11.2%	0%		-	14.6%	41.7%	43.7%	0%		-	22.5%	53.8%	23.7%	0%		-	-
Totals %	7.8%	3.8%	2.9%	0%		14.4%	3.9%	15.7%	2.5%	0%		22.1%	1.9%	5.5%	5.7%	0%		13.1%	11.3%	27.2%	12%	0%		50.4%	-
PHF	0.86	0.87	0.7	0		0.88	0.69	0.9	0.8	0		0.93	0.77	0.95	0.79	0		0.91	0.9	0.89	0.78	0		0.92	-
Heavy	0	0	2	0		2	0	12	0	0		12	0	0	2	0		2	1	16	1	0		18	-
Heavy %	0%	0%	3.6%	0%		0.7%	0%	3.9%	0%	0%		2.8%	0%	0%	1.8%	0%		0.8%	0.5%	3%	0.4%	0%		1.8%	-
Lights	151	73	54	0		278	75	293	48	0		416	37	106	109	0		252	219	511	231	0		961	-
Lights %	100%	100%	96.4%	0%		99.3%	100%	96.1%	100%	0%		97.2%	100%	100%	98.2%	0%		99.2%	99.5%	97%	99.6%	0%		98.2%	-
Single-Unit Trucks	0	0	2	0		2	0	6	0	0		6	0	0	2	0		2	1	2	1	0		4	-
Single-Unit Trucks %	0%	0%	3.6%	0%		0.7%	0%	2%	0%	0%		1.4%	0%	0%	1.8%	0%		0.8%	0.5%	0.4%	0.4%	0%		0.4%	-
Buses	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	2	0	0		2	-
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.2%	-
Articulated Trucks	0	0	0	0		0	0	6	0	0		6	0	0	0	0		0	0	12	0	0		12	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	2%	0%	0%		1.4%	0%	0%	0%	0%		0%	0%	2.3%	0%	0%		1.2%	-
Pedestrians	-	-	-	-	6	-	-	-	-	-	14	-	-	-	-	-	7	-	-	-	-	-	15	-	-
Pedestrians%	-	-	-	-	13.3%		-	-	-	-	31.1%		-	-	-	-	15.6%		-	-	-	-	33.3%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	2.2%		-	-	-	-	2.2%		-	-	-	-	2.2%		-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast (2.1 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	3
S	0	2
E	0	1
W	0	2

Peak Hour: 04:45 PM - 05:45 PM Weather: Mostly Cloudy (2.8 °C)



Turning Movement Count (2 . CLAIR RD & BEAVER MEADOW DR)

Start Time	N Approach BEAVER MEADOW DR						E Approach CLAIR RD						S Approach BEAVER MEADOW DR						W Approach CLAIR RD						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	24	0	2	0	0	26	1	69	3	0	1	73	2	1	1	0	0	4	2	30	5	0	0	37	140	
07:15:00	18	0	4	0	0	22	0	94	5	0	0	99	4	1	6	0	0	11	0	38	4	0	0	42	174	
07:30:00	20	2	0	0	0	22	4	137	4	0	0	145	4	2	3	0	0	9	4	51	12	0	0	67	243	
07:45:00	25	0	6	0	0	31	2	148	3	1	0	154	5	1	4	0	0	10	2	41	4	0	0	47	242	799
08:00:00	17	1	9	0	0	27	1	120	3	0	0	124	6	3	5	0	0	14	5	63	10	0	0	78	243	902
08:15:00	27	1	11	0	0	39	6	124	3	0	2	133	8	6	12	0	1	26	6	63	17	0	0	86	284	1012
08:30:00	35	2	2	0	0	39	8	197	7	0	0	212	7	1	3	0	0	11	4	61	20	0	0	85	347	1116
08:45:00	17	2	5	0	2	24	9	137	2	0	0	148	6	1	4	0	0	11	5	66	15	0	0	86	269	1143
BREAK																										
16:00:00	10	1	5	0	0	16	3	70	3	0	1	76	5	2	2	0	0	9	6	141	20	1	0	168	269	
16:15:00	10	0	2	0	0	12	3	92	6	0	1	101	9	1	5	0	0	15	5	141	18	0	0	164	292	
16:30:00	13	2	5	0	1	20	8	87	5	0	0	100	6	1	6	0	0	13	5	161	21	0	0	187	320	
16:45:00	12	4	5	0	1	21	5	106	4	0	0	115	2	0	6	0	0	8	6	131	29	0	0	166	310	1191
17:00:00	24	1	3	0	0	28	8	105	2	0	3	115	6	2	4	0	0	12	5	145	28	0	0	178	333	1255
17:15:00	9	1	3	0	0	13	5	100	5	0	0	110	7	0	6	0	1	13	2	156	30	1	3	189	325	1288
17:30:00	13	2	5	0	0	20	4	97	6	0	0	107	3	1	4	0	0	8	3	158	22	1	0	184	319	1287
17:45:00	4	1	2	0	0	7	3	95	3	0	0	101	2	1	2	0	0	5	8	118	23	1	0	150	263	1240
Grand Total	278	20	69	0	4	367	70	1778	64	1	8	1913	82	24	73	0	2	179	68	1564	278	4	3	1914	**4373**	-
Approach%	75.7%	5.4%	18.8%	0%		-	3.7%	92.9%	3.3%	0.1%		-	45.8%	13.4%	40.8%	0%		-	3.6%	81.7%	14.5%	0.2%		-	-	-
Totals %	6.4%	0.5%	1.6%	0%		8.4%	1.6%	40.7%	1.5%	0%		43.7%	1.9%	0.5%	1.7%	0%		4.1%	1.6%	35.8%	6.4%	0.1%		43.8%	-	-
Heavy	4	0	4	0		-	2	97	5	0		-	5	1	1	0		-	2	92	4	0		-	-	-
Heavy %	1.4%	0%	5.8%	0%		-	2.9%	5.5%	7.8%	0%		-	6.1%	4.2%	1.4%	0%		-	2.9%	5.9%	1.4%	0%		-	-	-
Bicycles	0	0	0	0		-	0	2	0	0		-	0	0	0	0		-	1	1	0	0		-	-	-
Bicycle %	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	0%	0%	0%	0%		-	1.5%	0.1%	0%	0%		-	-	-

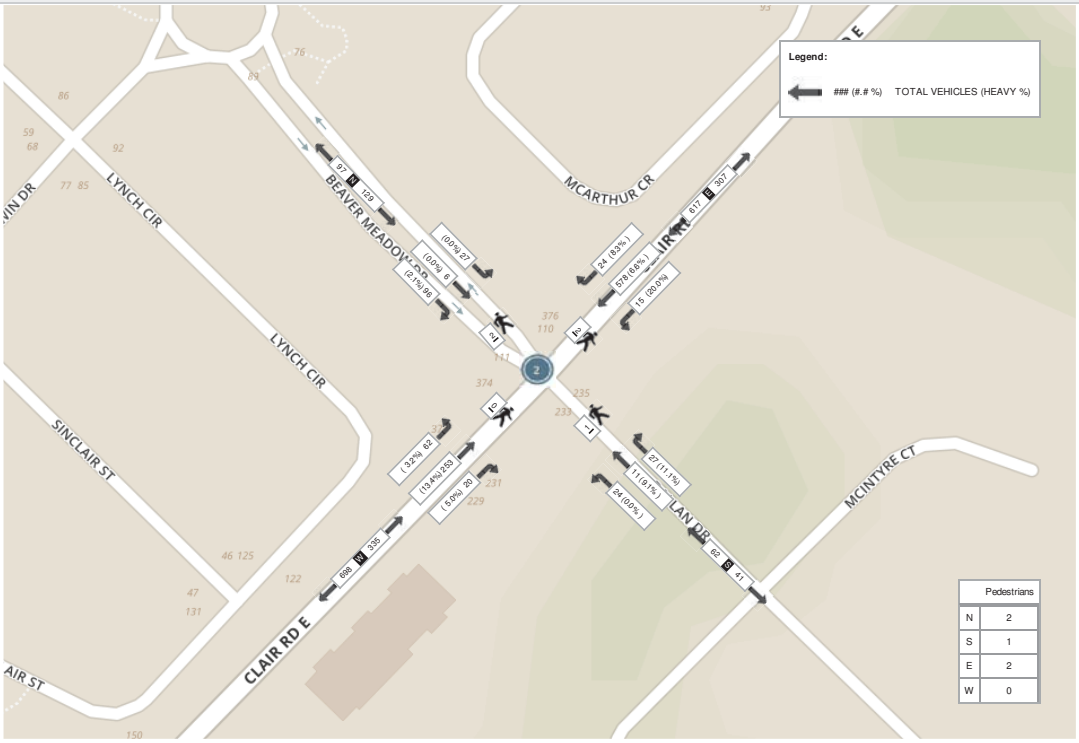
Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast (2.1 °C)

Start Time	N Approach BEAVER MEADOW DR						E Approach CLAIR RD						S Approach BEAVER MEADOW DR						W Approach CLAIR RD						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	
08:00:00	17	1	9	0	0	27	1	120	3	0	0	124	6	3	5	0	0	14	5	63	10	0	0	78	243
08:15:00	27	1	11	0	0	39	6	124	3	0	2	133	8	6	12	0	1	26	6	63	17	0	0	86	284
08:30:00	35	2	2	0	0	39	8	197	7	0	0	212	7	1	3	0	0	11	4	61	20	0	0	85	347
08:45:00	17	2	5	0	2	24	9	137	2	0	0	148	6	1	4	0	0	11	5	66	15	0	0	86	269
Grand Total	96	6	27	0	2	129	24	578	15	0	2	617	27	11	24	0	1	62	20	253	62	0	0	335	**1143**
Approach%	74.4%	4.7%	20.9%	0%		-	3.9%	93.7%	2.4%	0%		-	43.5%	17.7%	38.7%	0%		-	6%	75.5%	18.5%	0%		-	-
Totals %	8.4%	0.5%	2.4%	0%		11.3%	2.1%	50.6%	1.3%	0%		54%	2.4%	1%	2.1%	0%		5.4%	1.7%	22.1%	5.4%	0%		29.3%	-
PHF	0.69	0.75	0.61	0		0.83	0.67	0.73	0.54	0		0.73	0.84	0.46	0.5	0		0.6	0.83	0.96	0.78	0		0.97	-
Heavy	2	0	0	0		2	2	38	3	0		43	3	1	0	0		4	1	34	2	0		37	-
Heavy %	2.1%	0%	0%	0%		1.6%	8.3%	6.6%	20%	0%		7%	11.1%	9.1%	0%	0%		6.5%	5%	13.4%	3.2%	0%		11%	-
Lights	94	6	27	0		127	22	540	12	0		574	24	10	24	0		58	19	219	60	0		298	-
Lights %	97.9%	100%	100%	0%		98.4%	91.7%	93.4%	80%	0%		93%	88.9%	90.9%	100%	0%		93.5%	95%	86.6%	96.8%	0%		89%	-
Single-Unit Trucks	0	0	0	0		0	0	8	2	0		10	1	0	0	0		1	0	16	0	0		16	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	1.4%	13.3%	0%		1.6%	3.7%	0%	0%	0%		1.6%	0%	6.3%	0%	0%		4.8%	-
Buses	2	0	0	0		2	2	9	1	0		12	1	1	0	0		2	0	9	2	0		11	-
Buses %	2.1%	0%	0%	0%		1.6%	8.3%	1.6%	6.7%	0%		1.9%	3.7%	9.1%	0%	0%		3.2%	0%	3.6%	3.2%	0%		3.3%	-
Articulated Trucks	0	0	0	0		0	0	21	0	0		21	1	0	0	0		1	1	9	0	0		10	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	3.6%	0%	0%		3.4%	3.7%	0%	0%	0%		1.6%	5%	3.6%	0%	0%		3%	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	40%		-	-	-	-	40%		-	-	-	-	20%		-	-	-	-	0%		-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

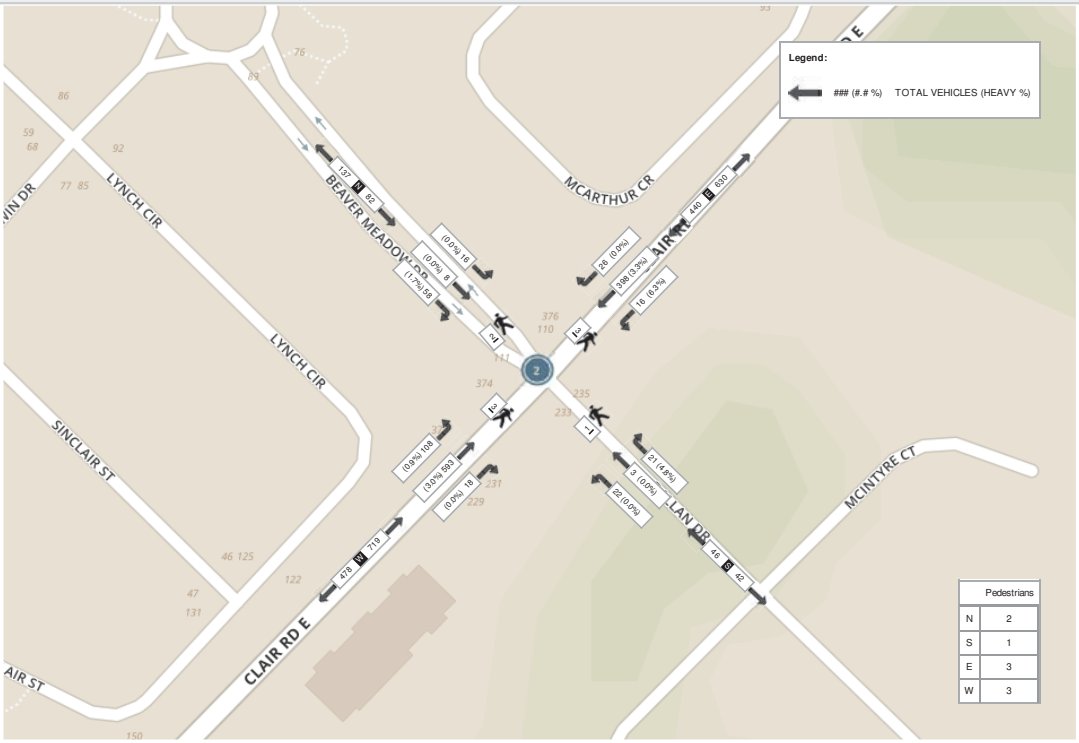
Peak Hour: 04:30 PM - 05:30 PM Weather: Mostly Cloudy (2.8 °C)

Start Time	N Approach BEAVER MEADOW DR						E Approach CLAIR RD						S Approach BEAVER MEADOW DR						W Approach CLAIR RD						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	
16:30:00	13	2	5	0	1	20	8	87	5	0	0	100	6	1	6	0	0	13	5	161	21	0	0	187	320
16:45:00	12	4	5	0	1	21	5	106	4	0	0	115	2	0	6	0	0	8	6	131	29	0	0	166	310
17:00:00	24	1	3	0	0	28	8	105	2	0	3	115	6	2	4	0	0	12	5	145	28	0	0	178	333
17:15:00	9	1	3	0	0	13	5	100	5	0	0	110	7	0	6	0	1	13	2	156	30	1	3	189	325
Grand Total	58	8	16	0	2	82	26	398	16	0	3	440	21	3	22	0	1	46	18	593	108	1	3	720	**1288**
Approach%	70.7%	9.8%	19.5%	0%		-	5.9%	90.5%	3.6%	0%		-	45.7%	6.5%	47.8%	0%		-	2.5%	82.4%	15%	0.1%		-	-
Totals %	4.5%	0.6%	1.2%	0%		6.4%	2%	30.9%	1.2%	0%		34.2%	1.6%	0.2%	1.7%	0%		3.6%	1.4%	46%	8.4%	0.1%		55.9%	-
PHF	0.6	0.5	0.8	0		0.73	0.81	0.94	0.8	0		0.96	0.75	0.38	0.92	0		0.88	0.75	0.92	0.9	0.25		0.95	-
Heavy	1	0	0	0		1	0	13	1	0		14	1	0	0	0		1	0	18	1	0		19	-
Heavy %	1.7%	0%	0%	0%		1.2%	0%	3.3%	6.3%	0%		3.2%	4.8%	0%	0%	0%		2.2%	0%	3%	0.9%	0%		2.6%	-
Lights	57	8	16	0		81	26	385	15	0		426	20	3	22	0		45	18	575	107	1		701	-
Lights %	98.3%	100%	100%	0%		98.8%	100%	96.7%	93.8%	0%		96.8%	95.2%	100%	100%	0%		97.8%	100%	97%	99.1%	100%		97.4%	-
Single-Unit Trucks	1	0	0	0		1	0	7	1	0		8	0	0	0	0		0	0	5	1	0		6	-
Single-Unit Trucks %	1.7%	0%	0%	0%		1.2%	0%	1.8%	6.3%	0%		1.8%	0%	0%	0%	0%		0%	0%	0.8%	0.9%	0%		0.8%	-
Buses	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	0	3	0	0		3	-
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	4.8%	0%	0%	0%		2.2%	0%	0.5%	0%	0%		0.4%	-
Articulated Trucks	0	0	0	0		0	0	6	0	0		6	0	0	0	0		0	0	10	0	0		10	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1.5%	0%	0%		1.4%	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.4%	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	3	-	-
Pedestrians%	-	-	-	-	22.2%		-	-	-	-	33.3%		-	-	-	-	11.1%		-	-	-	-	33.3%		-
Bicycles on Road	0	0	0	0	0	-	0	2	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast (2.1 °C)



Peak Hour: 04:30 PM - 05:30 PM Weather: Mostly Cloudy (2.8 °C)



Turning Movement Count (6 . CLAIR ROAD E & VICTORIA RD S)

Start Time	S Approach VICTORIA RD S					W Approach CLAIR ROAD E					N Approach VICTORIA RD S					Int. Total (15 min)	Int. Total (1 hr)
	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Left W:N	U-Turn W:W	Peds W:	Approach Total	Right N:W	Thru N:S	U-Turn N:N	Peds N:	Approach Total		
07:00:00	16	4	0	0	20	12	33	0	0	45	47	59	0	0	106	171	
07:15:00	23	8	0	0	31	19	33	0	0	52	86	63	0	0	149	232	
07:30:00	41	15	0	0	56	13	34	0	0	47	93	73	0	0	166	269	
07:45:00	50	10	0	0	60	15	61	0	0	76	135	75	0	0	210	346	1018
08:00:00	52	10	0	0	62	9	59	0	0	68	84	56	0	0	140	270	1117
08:15:00	67	11	0	0	78	8	57	0	0	65	107	51	0	0	158	301	1186
08:30:00	57	8	0	0	65	8	51	0	0	59	107	48	0	0	155	279	1196
08:45:00	48	19	0	0	67	11	50	0	0	61	91	60	0	0	151	279	1129
BREAK																	
16:00:00	62	10	0	0	72	14	86	0	0	100	68	38	0	0	106	278	
16:15:00	66	12	0	0	78	13	109	0	0	122	81	56	0	0	137	337	
16:30:00	77	15	0	0	92	18	105	0	0	123	66	61	0	0	127	342	
16:45:00	78	18	0	0	96	11	103	0	0	114	76	47	0	0	123	333	1290
17:00:00	79	21	0	0	100	13	99	0	0	112	96	50	0	0	146	358	1370
17:15:00	74	22	0	0	96	15	109	0	0	124	101	46	0	0	147	367	1400
17:30:00	58	12	0	0	70	15	91	0	0	106	81	43	0	0	124	300	1358
17:45:00	70	16	0	0	86	11	70	0	0	81	64	28	0	0	92	259	1284
Grand Total	918	211	0	0	1129	205	1150	0	0	1355	1383	854	0	0	2237	**4721**	-
Approach%	81.3%	18.7%	0%		-	15.1%	84.9%	0%		-	61.8%	38.2%	0%		-	-	-
Totals %	19.4%	4.5%	0%		23.9%	4.3%	24.4%	0%		28.7%	29.3%	18.1%	0%		47.4%	-	-
Heavy	39	7	0		-	5	104	0		-	87	27	0		-	-	-
Heavy %	4.2%	3.3%	0%		-	2.4%	9%	0%		-	6.3%	3.2%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: CLAIR ROAD E & VICTORIA RD S
Date: Wed, Nov 22, 2017 Deployment Lead: Theo Daglis

BA Group
45 St. Clair Avenue West, Suite 300
Toronto ON, CANADA, M4V 1K9

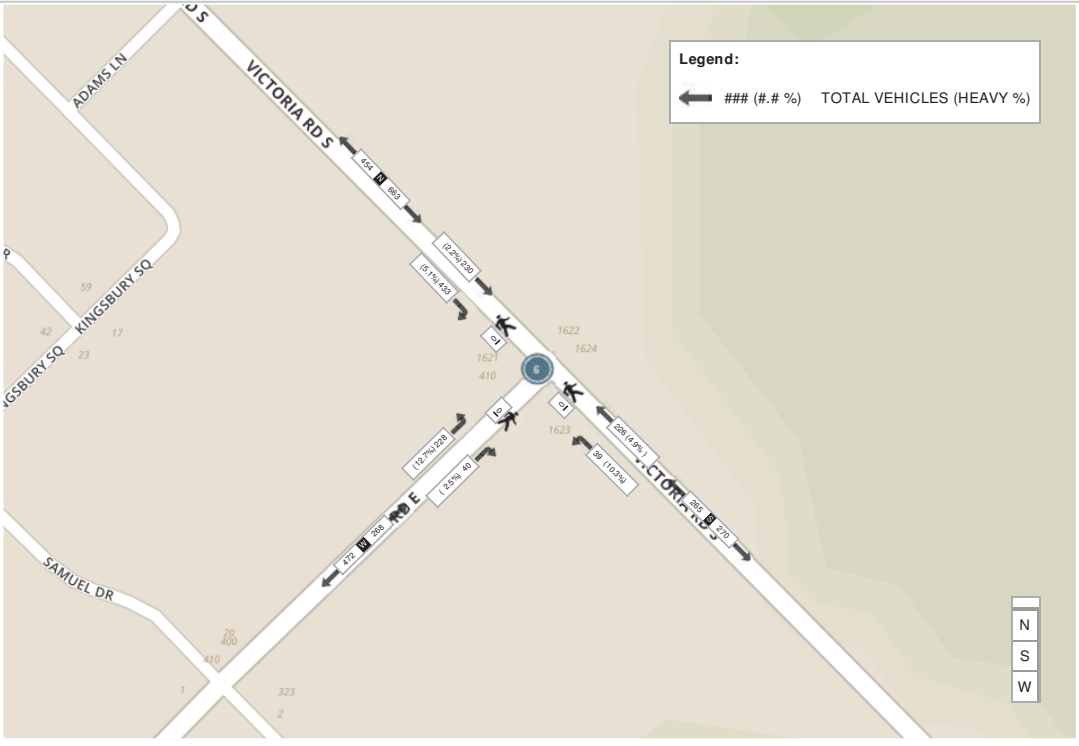
Peak Hour: 07:45 AM - 08:45 AM Weather: Mostly Cloudy (-1.9 °C)

Start Time	S Approach VICTORIA RD S					W Approach CLAIR ROAD E					N Approach VICTORIA RD S					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
07:45:00	50	10	0	0	60	15	61	0	0	76	135	75	0	0	210	346
08:00:00	52	10	0	0	62	9	59	0	0	68	84	56	0	0	140	270
08:15:00	67	11	0	0	78	8	57	0	0	65	107	51	0	0	158	301
08:30:00	57	8	0	0	65	8	51	0	0	59	107	48	0	0	155	279
Grand Total	226	39	0	0	265	40	228	0	0	268	433	230	0	0	663	**1196**
Approach%	85.3%	14.7%	0%		-	14.9%	85.1%	0%		-	65.3%	34.7%	0%		-	-
Totals %	18.9%	3.3%	0%		22.2%	3.3%	19.1%	0%		22.4%	36.2%	19.2%	0%		55.4%	-
PHF	0.84	0.89	0		0.85	0.67	0.93	0		0.88	0.8	0.77	0		0.79	-
Heavy	11	4	0		15	1	29	0		30	22	5	0		27	-
Heavy %	4.9%	10.3%	0%		5.7%	2.5%	12.7%	0%		11.2%	5.1%	2.2%	0%		4.1%	-
Lights	215	35	0		250	39	199	0		238	411	225	0		636	-
Lights %	95.1%	89.7%	0%		94.3%	97.5%	87.3%	0%		88.8%	94.9%	97.8%	0%		95.9%	-
Single-Unit Trucks	5	0	0		5	0	14	0		14	15	2	0		17	-
Single-Unit Trucks %	2.2%	0%	0%		1.9%	0%	6.1%	0%		5.2%	3.5%	0.9%	0%		2.6%	-
Buses	6	4	0		10	1	2	0		3	5	2	0		7	-
Buses %	2.7%	10.3%	0%		3.8%	2.5%	0.9%	0%		1.1%	1.2%	0.9%	0%		1.1%	-
Articulated Trucks	0	0	0		0	0	13	0		13	2	1	0		3	-
Articulated Trucks %	0%	0%	0%		0%	0%	5.7%	0%		4.9%	0.5%	0.4%	0%		0.5%	-

Peak Hour: 04:30 PM - 05:30 PM Weather: Partly Cloudy (-3 °C)

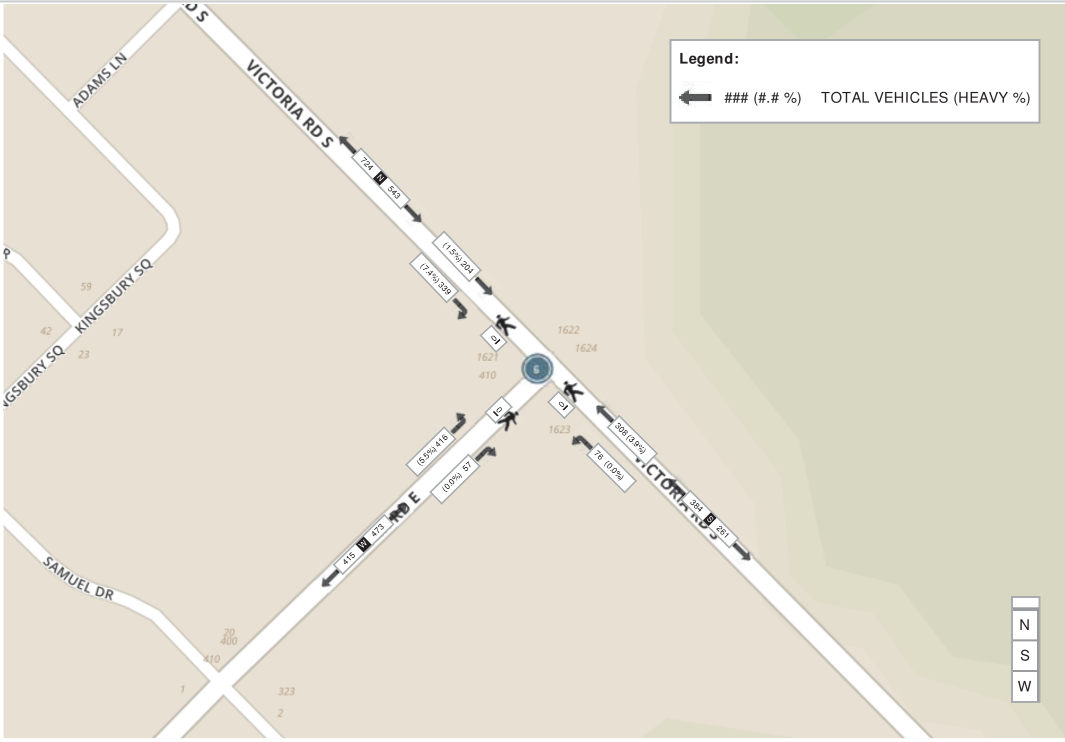
Start Time	S Approach VICTORIA RD S					W Approach CLAIR ROAD E					N Approach VICTORIA RD S					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
16:30:00	77	15	0	0	92	18	105	0	0	123	66	61	0	0	127	342
16:45:00	78	18	0	0	96	11	103	0	0	114	76	47	0	0	123	333
17:00:00	79	21	0	0	100	13	99	0	0	112	96	50	0	0	146	358
17:15:00	74	22	0	0	96	15	109	0	0	124	101	46	0	0	147	367
Grand Total	308	76	0	0	384	57	416	0	0	473	339	204	0	0	543	**1400**
Approach%	80.2%	19.8%	0%		-	12.1%	87.9%	0%		-	62.4%	37.6%	0%		-	-
Totals %	22%	5.4%	0%		27.4%	4.1%	29.7%	0%		33.8%	24.2%	14.6%	0%		38.8%	-
PHF	0.97	0.86	0		0.96	0.79	0.95	0		0.95	0.84	0.84	0		0.92	-
Heavy	12	0	0		12	0	23	0		23	25	3	0		28	-
Heavy %	3.9%	0%	0%		3.1%	0%	5.5%	0%		4.9%	7.4%	1.5%	0%		5.2%	-
Lights	296	76	0		372	57	393	0		450	314	201	0		515	-
Lights %	96.1%	100%	0%		96.9%	100%	94.5%	0%		95.1%	92.6%	98.5%	0%		94.8%	-
Single-Unit Trucks	5	0	0		5	0	14	0		14	17	2	0		19	-
Single-Unit Trucks %	1.6%	0%	0%		1.3%	0%	3.4%	0%		3%	5%	1%	0%		3.5%	-
Buses	6	0	0		6	0	2	0		2	0	1	0		1	-
Buses %	1.9%	0%	0%		1.6%	0%	0.5%	0%		0.4%	0%	0.5%	0%		0.2%	-
Articulated Trucks	1	0	0		1	0	7	0		7	8	0	0		8	-
Articulated Trucks %	0.3%	0%	0%		0.3%	0%	1.7%	0%		1.5%	2.4%	0%	0%		1.5%	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Mostly Cloudy (-1.9 °C)



BA Group
45 St. Clair Avenue West, Suite 300
Toronto ON, CANADA, M4V 1K9

Peak Hour: 04:30 PM - 05:30 PM Weather: Partly Cloudy (-3 °C)



RENWTpr s
62Nl tK%oi TNEGS- r SNl SdtvNVr itSN3l l
VpTp- tpNCL vN%EL EOEvN3 6, Nl* 9

Turning Movement Count (7 . MALTBY RD & GORDON ST)

Start Time	E Approach BEAVR NDO						S Approach WCDOCLMIV						W Approach BEAVR NDO						N Approach WCDOCLMIV						Int. Total (15 min)	Int. Total (1 hr)
	Dight N:L	VhTr N:u	ASat N:l	f UVr T- N:N	n SPd N:	EssTpoahWptoc	Dight l :N	VhTr l :L	ASat l :u	f UVr T- l :l	n SPd l :	EssTpoahWptoc	Dight u :l	VhTr u :N	ASat u :L	f UVr T- u :u	n SPd u :	EssTpoahWptoc	Dight L:u	VhTr L:l	ASat L:N	f UVr T- L:L	n SPd L:	EssTpoahWptoc		
l 0:l l :l l	l	l	l	l	l	l	7	02	0	l	l	46	1	7	7	l	l	2	4	10l	1	l	l	109	734	
l 0:12:l l	l	7	l	l	l	7	l	92	1l	l	l	1l 2	5	5	5	l	l	9	7l	130	l	l	l	140	5l 5	
l 0:5l :l l	7	7	l	l	l	6	7	95	2	l	l	1l l	4	7	4	l	l	14	75	131	l	l	l	146	5l 3	
l 0:62:l l	1	5	l	l	l	6	5	170	6	l	l	156	4	1	2	l	l	16	10	149	7	l	l	7l 4	53l	1750
l 4:l l :l l	7	1	1	l	l	6	2	135	15	l	l	141	3	6	3	1	l	10	4	165	l	l	l	121	525	1577
l 4:12:l l	l	l	5	l	l	5	1	126	9	l	l	136	6	6	2	l	l	15	4	152	1	l	l	166	576	1565
l 4:5l :l l	7	l	7	l	l	6	1	101	1l	l	l	147	1	6	0	7	l	16	12	136	l	l	l	109	509	1613
l 4:62:l l	l	5	l	l	l	5	l	154	7	l	l	16l	2	5	1l	l	l	14	11	150	1	l	l	169	51l	1533
888RDNE* 888																										
13:l l :l l	1	l	1	l	l	7	5	7l 0	0	l	l	710	1l	7	6	l	l	13	11	160	5	1	l	137	590	
13:12:l l	l	7	1	l	l	5	7	143	9	l	l	190	1l	5	9	l	l	77	6	103	7	l	l	147	6l 6	
13:5l :l l	l	1	7	l	l	5	5	773	11	l	l	76l	11	1	4	l	l	7l	2	14l	1	l	l	143	669	
13:62:l l	l	l	7	l	l	7	2	706	1l	l	l	749	9	5	2	l	l	10	6	149	1	l	l	196	2l 7	1027
10:l l :l l	l	5	l	l	l	5	l	774	17	l	l	76l	16	5	2	l	l	77	11	10l	7	l	l	145	664	14l 5
10:12:l l	l	7	7	l	l	6	6	714	7	l	l	776	16	5	15	l	l	5l	1l	101	1	l	l	147	66l	1459
10:5l :l l	7	1	1	l	l	6	1	753	1l	l	l	760	9	1	0	l	l	10	9	123	l	l	l	132	655	1475
10:62:l l	l	2	1	l	l	3	l	192	5	l	l	194	3	7	1l	l	l	14	5	129	5	l	l	132	540	10l 4
Grand Total	1l	72	13	l	l	21	57	7043	176	l	l	7967	119	61	1l 0	5	l	70l	130	7316	14	1	l	74l l	**6063**	U
Approach%	19K3.	69.	51K6.	l .		U	1K1.	96K0.	6K7.	l .		U	66K1.	12K7.	59K3.	1K1.		U	3.	95K6.	l K3.	l .		U	-	U
Totals %	l K7.	l K6.	l K5.	l .		l K4.	l K2.	63.	7.	l .		64K2.	7.	l K0.	1K4.	l .		6K2.	7K4.	65K1.	l K6.	l .		63K7.	-	U
Heavy	7	1	1	l		U	2	156	7	l		U	6	3	3	l		U	5	17l	2	l		U	-	U
Heavy %	7l .	6.	3K5.	l .		U	12K3.	6K4.	1K3.	l .		U	5K6.	16K3.	2K3.	l .		U	1K4.	6K3.	70K4.	l .		U	-	U
Bicycles	l	l	l	l		U	l	l	l	l		U	l	1	l	l		U	l	l	l	l		U	-	U
Bicycle %	l .	l .	l .	l .		U	l .	l .	l .	l .		U	l .	7K6.	l .	l .		U	l .	l .	l .	l .		U	-	U

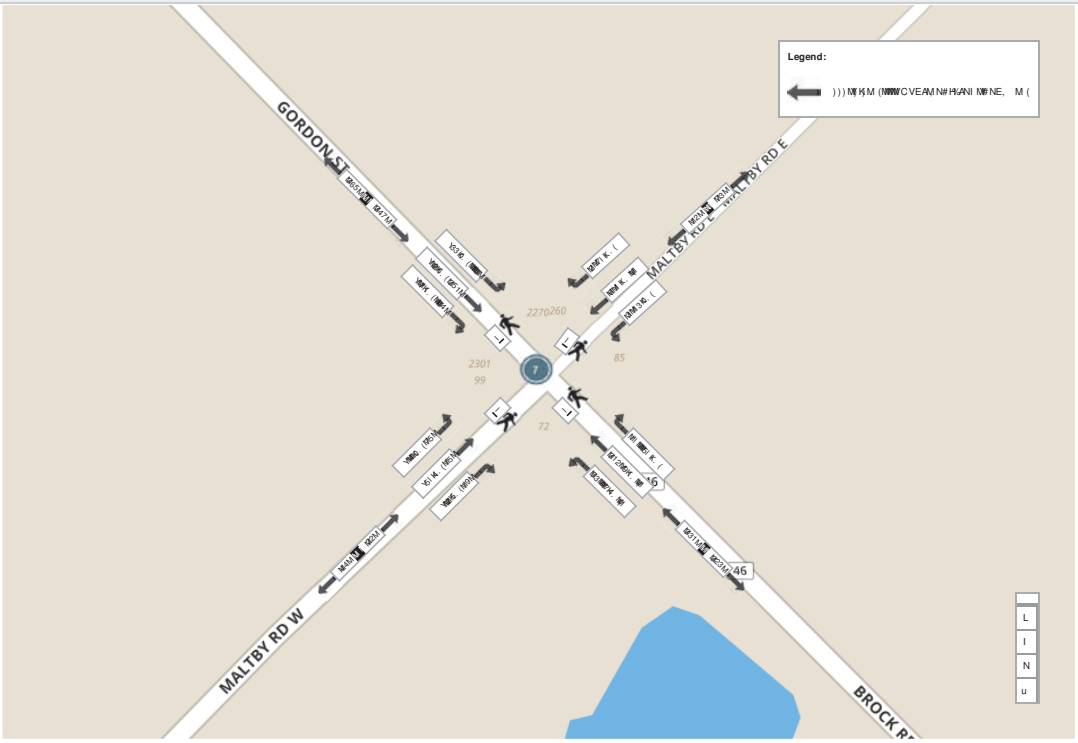
Peak Hour: 07:45 AM - 08:45 AMNWWWeather: Mostly Cloudy (-1.9 °C)

Start Time	E Approach BEAVR NDO						S Approach WCDOCLMIV						W Approach BEAVR NDO						N Approach WCDOCLMIV						Int. Total (15 min)
	Dight	VhTr	ASat	f UVr T-	n SPd	EssTpoahNWptoc	Dight	VhTr	ASat	f UVr T-	n SPd	EssTpoahNWptoc	Dight	VhTr	ASat	f UVr T-	n SPd	EssTpoahNWptoc	Dight	VhTr	ASat	f UVr T-	n SPd	EssTpoahNWptoc	
I0:62:II	1	5	I	I	I	6	5	170	6	I	I	156	4	1	2	I	I	16	10	149	7	I	I	7I 4	53I
I4:II:II	7	1	1	I	I	6	2	135	15	I	I	141	3	6	3	1	I	10	4	165	I	I	I	121	525
I4:12:II	I	I	5	I	I	5	1	126	9	I	I	136	6	6	2	I	I	15	4	152	1	I	I	166	576
I4:5I:II	7	I	7	I	I	6	1	101	1I	I	I	147	1	6	0	7	I	16	12	136	I	I	I	109	509
Grand Total	2	6	3	I	I	12	1I	312	53	I	I	331	19	15	75	5	I	24	64	351	5	I	I	347	**1416**
Approach%	55K6.	73K0.	6I.	I.		U	1K2.	95.	2K6.	I.		U	57K4.	77K6.	59K0.	2K7.		U	0.	97K2.	IK6.	I.		U	-
Totals %	IK6.	IK6.	IK6.	I.		1K1.	IK0.	65K6.	7K2.	I.		63K0.	1K6.	IK9.	1K3.	IK7.		6K1.	5K6.	66K3.	IK7.	I.		64K7.	-
PHF	IK35	IK55	IK2	I		IK96	IK2	IK9	IK39	I		IK91	IK29	IK41	IK47	IK54		IK42	IK01	IK45	IK54	I		IK47	-
Heavy	1	I	1	I		7	5	23	1	I		3I	1	6	7	I		0	1	56	7	I		50	-
Heavy %	7I.	I.	13K0.	I.		15K6.	5I.	9K1.	7K4.	I.		9K1.	2K6.	5IK4.	4K0.	I.		17K1.	7K1.	2K6.	33K0.	I.		2K6.	-
Lights	6	6	2	I		15	0	229	52	I		3I 1	14	9	71	5		21	60	290	1	I		362	-
Lights %	4I.	1II.	45K6.	I.		43K0.	0I.	9IK9.	90K7.	I.		9IK9.	96K0.	39K7.	91K6.	1II.		40K9.	90K9.	96K3.	55K6.	I.		96K3.	-
Single-Unit Trucks	I	I	1	I		1	5	71	I	I		76	I	5	7	I		2	1	10	I	I		14	-
Single-Unit Trucks %	I.	I.	13K0.	I.		3K0.	5I.	5K6.	I.	I.		5K3.	I.	75K1.	4K0.	I.		4K3.	7K1.	7K0.	I.	I.		7K3.	-
Buses	1	I	I	I		1	I	7I	I	I		7I	1	1	I	I		7	I	3	7	I		4	-
Buses %	7I.	I.	I.	I.		3K0.	I.	5K6.	I.	I.		5.	2K6.	0K0.	I.	I.		5K6.	I.	1.	33K0.	I.		1K7.	-
Articulated Trucks	I	I	I	I		I	I	12	1	I		13	I	I	I	I		I	I	11	I	I		11	-
Articulated Trucks %	I.	I.	I.	I.		I.	I.	7K6.	7K4.	I.		7K6.	I.	I.	I.	I.		I.	I.	1K0.	I.	I.		1K3.	-
Bicycles on Road	I	I	I	I	I	U	I	I	I	I	I	U	I	I	I	I	I	U	I	I	I	I	I	U	-
Bicycles on Road%	U	U	U	U	.	M	U	U	U	U	.	M	U	U	U	U	.	M	U	U	U	U	.	M	-

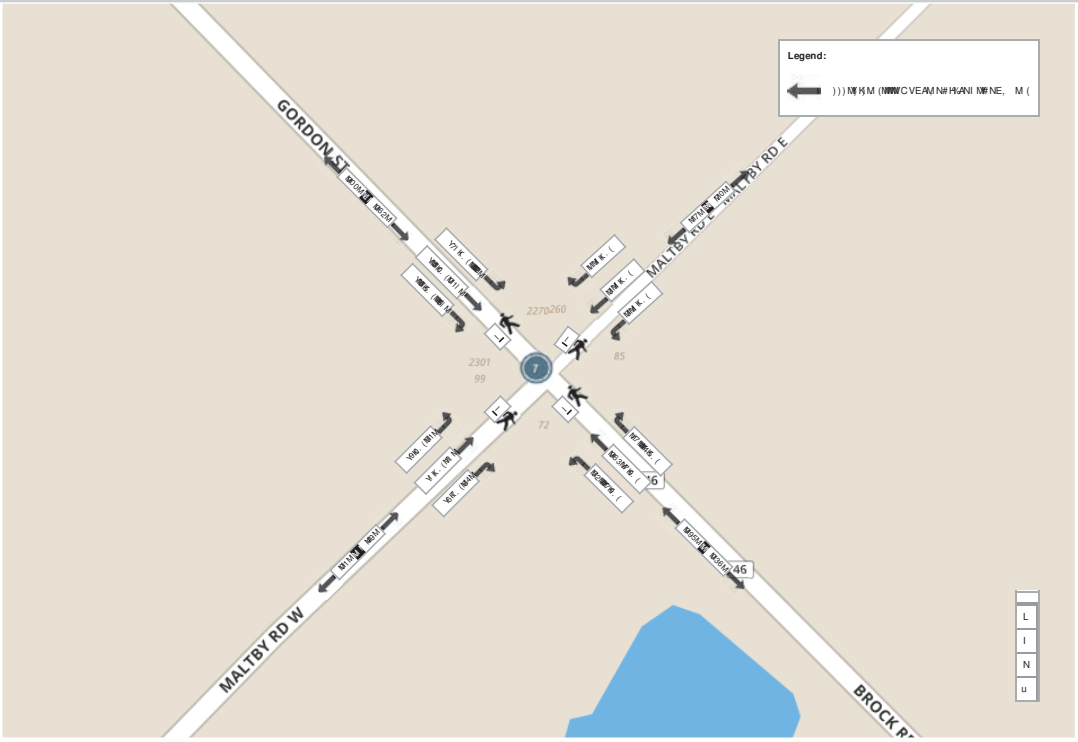
Peak Hour: 04:30 PM - 05:30 PMNWWWeather: Partly Cloudy (-3 °C)

Start Time	E Approach BEAVR NDO						S Approach WCDOCLMIV						W Approach BEAVR NDO						N Approach WCDOCLMIV						Int. Total (15 min)
	Dight	VhTr	ASat	f UVr T-	n SPd	EssTpoahNWptoc	Dight	VhTr	ASat	f UVr T-	n SPd	EssTpoahNWptoc	Dight	VhTr	ASat	f UVr T-	n SPd	EssTpoahNWptoc	Dight	VhTr	ASat	f UVr T-	n SPd	EssTpoahNWptoc	
13:5I:II	I	1	7	I	I	5	5	773	11	I	I	76I	11	1	4	I	I	7I	2	14I	1	I	I	143	669
13:62:II	I	I	7	I	I	7	2	706	1I	I	I	749	9	5	2	I	I	10	6	149	1	I	I	196	2I 7
10:II:II	I	5	I	I	I	5	I	774	17	I	I	76I	16	5	2	I	I	77	11	10I	7	I	I	145	664
10:12:II	I	7	7	I	I	6	6	714	7	I	I	776	16	5	15	I	I	5I	1I	101	1	I	I	147	66I
Grand Total	I	3	3	I	I	17	17	963	52	I	I	995	64	1I	51	I	I	49	5I	01I	2	I	I	062	**1839**
Approach%	I.	2I.	2I.	I.		U	1K7.	92K6.	5K2.	I.		U	25K9.	11K7.	56K4.	I.		U	6.	92K6.	IK0.	I.		U	-
Totals %	I.	IK6.	IK6.	I.		IK0.	IK0.	21K6.	1K9.	I.		26.	7K3.	IK2.	1K0.	I.		6K4.	1K3.	54K3.	IK6.	I.		6IK2.	-
PHF	I	IK2	IK02	I		IK02	IK3	IK43	IK05	I		IK43	IK43	IK45	IK3	I		IK06	IK34	IK96	IK35	I		IK93	-
Heavy	I	I	I	I		I	1	70	1	I		79	7	I	5	I		2	1	73	1	I		74	-
Heavy %	I.	I.	I.	I.		I.	4K6.	7K9.	7K9.	I.		7K9.	6K7.	I.	9K0.	I.		2K3.	5K6.	5K0.	7I.	I.		5K4.	-
Lights	I	3	3	I		17	11	919	56	I		936	63	1I	74	I		46	79	346	6	I		010	-
Lights %	I.	1II.	1II.	I.		1II.	91K0.	90K1.	90K1.	I.		90K1.	92K4.	1II.	9IK6.	I.		96K6.	93K0.	93K6.	4I.	I.		93K7.	-
Single-Unit Trucks	I	I	I	I		I	I	9	1	I		1I	7	I	I	I		7	1	13	1	I		14	-
Single-Unit Trucks %	I.	I.	I.	I.		I.	I.	1.	7K9.	I.		1.	6K7.	I.	I.	I.		7K7.	5K6.	7K6.	7I.	I.		7K6.	-
Buses	I	I	I	I		I	I	3	I	I		3	I	I	5	I		5	I	2	I	I		2	-
Buses %	I.	I.	I.	I.		I.	I.	IK3.	I.	I.		IK3.	I.	I.	9K0.	I.		5K6.	I.	IK0.	I.	I.		IK0.	-
Articulated Trucks	I	I	I	I		I	1	17	I	I		15	I	I	I	I		I	I	2	I	I		2	-
Articulated Trucks %	I.	I.	I.	I.		I.	4K6.	1K6.	I.	I.		1K6.	I.	I.	I.	I.		I.	I.	IK0.	I.	I.		IK0.	-
Bicycles on Road	I	I	I	I	I	U	I	I	I	I	I	U	I	I	I	I	I	U	I	I	I	I	I	U	-
Bicycles on Road%	U	U	U	U	.	M	U	U	U	U	.	M	U	U	U	U	.	M	U	U	U	U	.	M	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Mostly Cloudy (-1.9 °C)



Peak Hour: 04:30 PM - 05:30 PM Weather: Partly Cloudy (-3 °C)



Turning Movement Count (8 . MALTBY RD & VICTORIA RD S (NORTH LEG))

Start Time	N Approach VICTORIA RD S LEORTh ru: N					E Approach e ArTft RD					W Approach e ArTft RD					Int. Total (15 min)	Int. Total (1 hr)
	RWU-n ERd	rspn ERu	oaTcli ERE	gs07 EP	A11I642- T6m43	RWU-n uRE	T-Ic uRd	oaTcli uRu	gs07 uP	A11I642- T6m43	T-Ic d Ru	rspn d RE	oaTcli d Rd	gs07 d P	A11I642- T6m43		
59P55P55	89	9	5	5	9*	B	K	5	5	.	B	B%	5	5	BK	%5B	
59P%P55	9%	%B	5	5	GK	.	K	5	5	G	%	B9	5	5	BG	%8v	
59PK5P55	G5	.	5	5	G	8	.	5	5	%%	K	*K	5	5	*8	%B	
59P.P55	95	v	5	5	9v	.	B	5	5	9	B	.*	5	5	.8	%B	.5.
5GP55P55	8.	K	5	5	8G	*	8	5	5	%5	*	8v	5	5	9K	%%	..*
5GP%P55	8%	%	5	5	8B	9	%	5	5	G	B	.v	5	5	8%	%K%	.88
5GPK5P55	*8	%	5	5	*9	*	%	5	5	.	B	.8	5	5	.G	%85	.K*
5GP.P55	85	%8	5	5	98	v	K	5	5	%B	K	*v	5	5	.B	%5	.KB
,,,fRuAM,,																	
%8P55P55	*%	G	5	5	*v	%5	B	5	5	%B	*	9G	5	5	GB	%K	
%8P%P55	.K	9	5	5	85	.	K	5	5	G	B	.G	5	5	85	%BG	
%8PK5P55	8v	%5	5	5	9v	%%	5	5	5	%%	*	G%	5	5	G	%9.	
%8P.P55	..	v	5	%	8*	B	.	5	5	9	.	v%	5	5	v8	%89	8%K
%9P55P55	.B	%5	5	5	8B	v	%	5	5	%5	*	v%	5	5	v.	%89	8K9
%9P%P55	.*	8	5	5	85	v	*	5	5	%K	*	GB	5	5	GB	%v	88G
%9PK5P55	*v	*	5	5	.K	.	K	5	5	G	*	8K	5	5	89	%BG	8B%
%9P.P55	K%	.	5	5	K8	9	*	5	5	%%	B	9.	5	5	99	%B*	.9G
Grand Total	vB*	%%K	5	%	%5K9	%55	*8	5	5	%8	*G	vv9	5	5	%5*.	**2228**	a
Approach%	Gvn%&	%5nv&	5&		a	8Gn&	K%n&	5&		a	*n8&	v.n&	5&		a	-	a
Totals %	*%n&	.n%&	5&		*8n&	*n&	Bn%&	5&		8n8&	Bn8&	**n9&	5&		*8nv&	-	a
Heavy	B.	%5	5		a	.	8	5		a	K	*B	5		a	-	a
Heavy %	Bn9&	Gn6&	5&		a	.&	%K&	5&		a	8nK&	*nB&	5&		a	-	a
Bicycles	5	5	5		a	5	5	5		a	%	5	5		a	-	a
Bicycle %	5&	5&	5&		a	5&	5&	5&		a	Bn%&	5&	5&		a	-	a

Spectrum

TcliWUJe 6ys(sinC6cin
r624nN9l E4(sPe ArTft RD) VICTORIA RD S LEORTh ru: N
D4nsPd s0YE6y BBYE5%9 Ds13S#(sinrs40PT-s6D4U3W

fA: I6c1
*. SmC3tWAysicsd s7nYScWt K55
T6I6in6OEYCAEADAYe *V%Mv

Peak Hour: 07:30 AM - 08:30 AM Weather: Mostly Cloudy (-1.9 °C)

Start Time	N Approach VICTORIA RD S LEORTh ru: N					E Approach e ArTft RD					W Approach e ArTft RD					Int. Total (15 min)
	RWU-n	rspn	oaTcli	gs07	A11I642- T6m43	RWU-n	T-Ic	oaTcli	gs07	A11I642- T6m43	T-Ic	rspn	oaTcli	gs07	A11I642- T6m43	
59PK5P55	G5	.	5	5	G	8	.	5	5	%%	K	*K	5	5	*8	%B
59P.P55	95	v	5	5	9v	.	B	5	5	9	B	.*	5	5	.8	%B
5GP55P55	8.	K	5	5	8G	*	8	5	5	%5	*	8v	5	5	9K	%%
5GP%P55	8%	%	5	5	8B	9	%	5	5	G	B	.v	5	5	8%	%K%
Grand Total	B98	%G	5	5	Bv*	BB	%	5	5	K8	%%	BB.	5	5	BK8	**566**
Approach%	vKnv&	8n%&	5&		a	8%n&	KGnv&	5&		a	*n8&	v.nK&	5&		a	-
Totals %	*GnG&	KnB&	5&		.%v&	Knv&	Bn&	5&		8n%&	%v&	Kvn6&	5&		*%98&	-
PHF	5n68	5n	5		5n68	5n8v	5nG	5		5n6B	5n8v	5n6B	5		5n6%	-
Heavy	9	*	5		%%	K	K	5		8	B	%9	5		%v	-
Heavy %	Bn&	BBnB&	5&		Kn8&	%Kn8&	B%n&	5&		%8n8&	%GnB&	9n8&	5&		Gn%&	-
Lights	B8v	%	5		BGK	%v	%%	5		K5	v	B5G	5		B%9	-
Lights %	v9n&	99n6&	5&		v8nK&	GBn&	9Gn8&	5&		GKnK&	G%n6&	vBn&	5&		v%v&	-
Single-Unit Trucks	*	5	5		*	5	%	5		%	%	v	5		%5	-
Single-Unit Trucks %	%n&	5&	5&		%n&	5&	9n%&	5&		Bn6&	vn%&	*&	5&		*nB&	-
Buses	B	*	5		8	K	B	5		.	%	G	5		v	-
Buses %	5n8&	BBnB&	5&		B&	%Kn8&	%nK&	5&		%Knv&	vn%&	Kn8&	5&		Kn6&	-
Articulated Trucks	%	5	5		%	5	5	5		5	5	5	5		5	-
Articulated Trucks %	5n&	5&	5&		5nK&	5&	5&	5&		5&	5&	5&	5&		5&	-
Pedestrians	a	a	a	5	a	a	a	a	5	a	a	a	a	5	a	-
Pedestrians%	a	a	a	5&		a	a	a	5&		a	a	a	5&		-
Bicycles on Road	5	5	5	5	a	5	5	5	5	a	5	5	5	5	a	-
Bicycles on Road%	a	a	a	5&		a	a	a	5&		a	a	a	5&		-

Peak Hour: 04:30 PM - 05:30 PM Weather: Partly Cloudy (-3 °C)

Start Time	N Approach VICTORIA RD S LEORTh ru: N					E Approach e ArTft RD					W Approach e ArTft RD					Int. Total (15 min)
	RWJ-n	rspn	oaTcli	gs07	A11l642- T6m43	RWJ-n	T-lc	oaTcli	gs07	A11l642- T6m43	T-lc	rspn	oaTcli	gs07	A11l642- T6m43	
%8PK5P55	8v	%5	5	5	9v	%%	5	5	5	%%	*	G%	5	5	G.	%9.
%8P.P55	. .	v	5	%	8*	B	.	5	5	9	.	v%	5	5	v8	%89
%9P55P55	. B	%5	5	5	8B	v	%	5	5	%5	*	v%	5	5	v.	%89
%9P%P55	.*	8	5	5	85	v	*	5	5	%K	*	GB	5	5	G8	%v
Grand Total	BK5	K.	5	%	B8.	K%	%5	5	5	*%	%9	K*.	5	5	K8B	**668**
Approach%	G8nG&	%KvnB&	5&		a	9.n8&	B*n&	5&		a	*n9&	v.nK&	5&		a	-
Totals %	K*n&	.nB&	5&		Kvn9&	*n8&	%n&	5&		8n%&	Bn&	.%n8&	5&		.*nB&	-
PHF	5nGK	5nGG	5		5nG*	5n9	5n	5		5n9v	5nG	5nv.	5		5nv*	-
Heavy	.	%	5		8	%	5	5		%	5	%%	5		%%	-
Heavy %	BnB&	Bnv&	5&		BnK&	KnB&	5&	5&		Bn&	5&	KnB&	5&		K&	-
Lights	BB.	K*	5		B. v	K5	%5	5		*5	%9	KK*	5		K. %	-
Lights %	v9nG&	v9n%&	5&		v9n9&	v8nG&	%55&	5&		v9nB&	%55&	v8nG&	5&		v9&	-
Single-Unit Trucks	*	5	5		*	5	5	5		5	5	.	5		.	-
Single-Unit Trucks %	%n8&	5&	5&		%n&	5&	5&	5&		5&	5&	%n&	5&		%n&	-
Buses	5	%	5		%	%	5	5		%	5	.	5		.	-
Buses %	5&	Bnv&	5&		5n&	KnB&	5&	5&		Bn&	5&	%n&	5&		%n&	-
Articulated Trucks	%	5	5		%	5	5	5		5	5	%	5		%	-
Articulated Trucks %	5n&	5&	5&		5n&	5&	5&	5&		5&	5&	5nK&	5&		5nK&	-
Pedestrians	a	a	a	%	a	a	a	a	5	a	a	a	a	5	a	-
Pedestrians%	a	a	a	%55&		a	a	a	5&		a	a	a	5&		-
Bicycles on Road	5	5	5	5	a	5	5	5	5	a	%	5	5	5	a	-
Bicycles on Road%	a	a	a	5&		a	a	a	5&		a	a	a	5&		-

Peak Hour: 07:30 AM - 08:30 AM Weather: Mostly Cloudy (-1.9 °C)

Peak Hour: 04:30 PM - 05:30 PM Weather: Partly Cloudy (-3 °C)

Turning Movement Count (9 . MALTBY RD & VICTORIA RD S (SOUTH LEG))

Start Time	W Approach				S Approach				E Approach				Int. Total (15 min)	Int. Total (1 hr)
	VICTO R A	DTSL R AE	hr u: R A	NeeS t WTUDf O-	nr PO AR	VICTO AE	hr u: A	NeeS t WTUDf O-	DTSL EAR	nr PO EA	hr u: EA	NeeS t WTUDf O-		
dsAddAdd	p	o	d	a	p	cl	d	pc	o	ai	d	al	l a	
dsAci Add	d	i	d	i	d	po	d	po	i	ag	d	s0	cdp	
dsA0dAdd	c	l	d	cd	c	0g	d	0l	o	ss	d	gc	c0d	
dsAoi Add	p	s	d	l	c	i 0	d	i o	s	a0	d	sd	c00	oac
dgAddAdd	i	s	d	cp	p	aa	d	ag	s	i l	d	aa	coa	i cc
dgAci Add	d	s	d	s	d	i o	d	i o	i	i s	d	ap	cp0	i 0p
dgA0dAdd	0	g	d	cc	p	i d	d	i p	p	os	d	ol	ccp	i co
dgAoi Add	0	o	d	s	c	i p	d	i 0	i	i a	d	ac	cpc	i dp
7771 V EN6 777														
caAddAdd	d	g	d	g	d	si	d	si	o	0s	d	oc	cpo	
caAci Add	0	i	d	g	d	i o	d	i o	o	i p	d	i a	ccg	
caA0dAdd	p	l	d	cc	c	ss	d	sg	i	ao	d	al	ci g	
caAoi Add	p	cd	d	cp	o	gs	d	l c	i	i 0	d	i g	cac	i ac
csAddAdd	c	g	d	l	c	gi	c	ga	o	os	d	i c	coa	i g0
csAci Add	0	i	d	g	d	gc	d	gc	o	i p	d	i a	coi	acd
csA0dAdd	d	a	d	a	d	ap	d	ap	a	oa	d	i p	cpd	i sp
csAoi Add	0	0	d	a	0	so	d	ss	o	0c	d	0i	ccg	i pl
Grand Total	0d	cdi	d	c0i	cg	l i c	c	l al	si	gso	d	l ol	**2053**	4
Approach%	pp2p3	ss2g3		4	c2l 3	l g2c3		4	s2l 3	l p2c3		4	-	4
Totals %	c2l 3	i 2c3		a2a3	d2l 3	oa203		os2p3	02s3	op2a3		oa2p3	-	4
Heavy	0	i		4	p	pp		4	o	pd		4	-	4
Heavy %	cd3	o2g3		4	cc2c3	p203		4	i 203	p203		4	-	4
Bicycles	d	c		4	d	d		4	d	d		4	-	4
Bicycle %	d3	c3		4	d3	d3		4	d3	d3		4	-	4

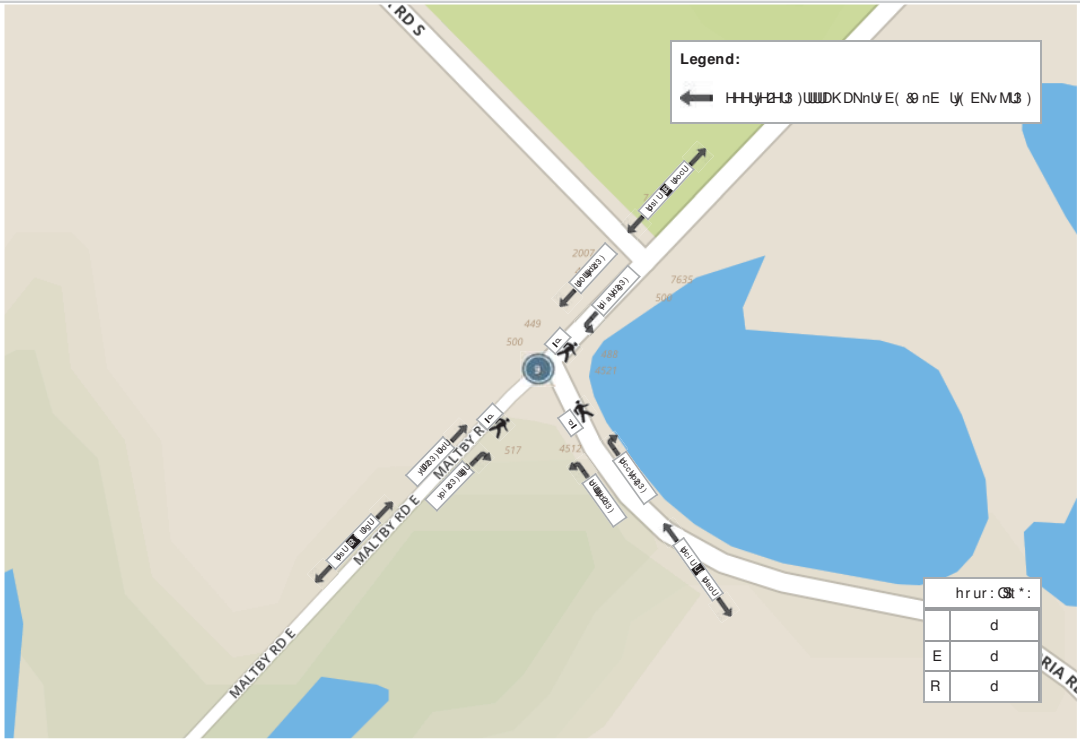
Peak Hour: 07:30 AM - 08:30 AMUUUWeather: Mostly Cloudy (-1.9 °C)

Start Time	W Approach				S Approach				E Approach				Int. Total (15 min)
	VICTO	DTSL	hru:	NeeSt WTUDfO-	nrPO	VICTO	hru:	NeeSt WTUDfO-	DTSL	nrPO	hru:	NeeSt WTUDfO-	
dsA0dAdd	c	l	d	cd	c	0g	d	0l	o	ss	d	gc	c0d
dsAoi Add	p	s	d	l	c	i 0	d	i o	s	a0	d	sd	c00
dgAddAdd	i	s	d	cp	p	aa	d	ag	s	i l	d	aa	coa
dgAci Add	d	s	d	s	d	i o	d	i o	i	i s	d	ap	cp0
Grand Total	g	0d	d	0g	o	pcc	d	pci	p0	pi a	d	psl	**532**
Approach%	pc2c3	sg2l 3		4	c2l 3	l g2c3		4	g2p3	l c2g3		4	-
Totals %	c2l 3	i 2a3		s2c3	d2g3	0l 2s3		od2o3	o203	og2c3		i p2o3	-
PHF	d2o	d2g0		d2sl	d2l	d2g		d2sl	d2gp	d2g0		d2ga	-
Heavy	p	c		0	d	a		a	d	p		p	-
Heavy %	pi 3	0203		s2l 3	d3	p2g3		p2g3	d3	d2g3		d2s3	-
Lights	a	pl		0i	o	pdi		pdl	p0	pi o		pss	-
Lights %	si 3	l a2s3		l p2c3	cdd3	l s2p3		l s2p3	cdd3	l l 2p3		l l 203	-
Single-Unit Trucks	d	d		d	d	d		d	d	d		d	-
Single-Unit Trucks %	d3	d3		d3	d3	d3		d3	d3	d3		d3	-
Buses	p	c		0	d	a		a	d	p		p	-
Buses %	pi 3	0203		s2l 3	d3	p2g3		p2g3	d3	d2g3		d2s3	-
Articulated Trucks	d	d		d	d	d		d	d	d		d	-
Articulated Trucks %	d3	d3		d3	d3	d3		d3	d3	d3		d3	-
Pedestrians	4	4	d	4	4	4	d	4	4	4	d	4	-
Pedestrians%	4	4	d3	U	4	4	d3	U	4	4	d3	U	-
Bicycles on Road	d	d	d	4	d	d	d	4	d	d	d	4	-
Bicycles on Road%	4	4	d3	U	4	4	d3	U	4	4	d3	U	-

Peak Hour: 04:30 PM - 05:30 PMUUUWeather: Partly Cloudy (-3 °C)

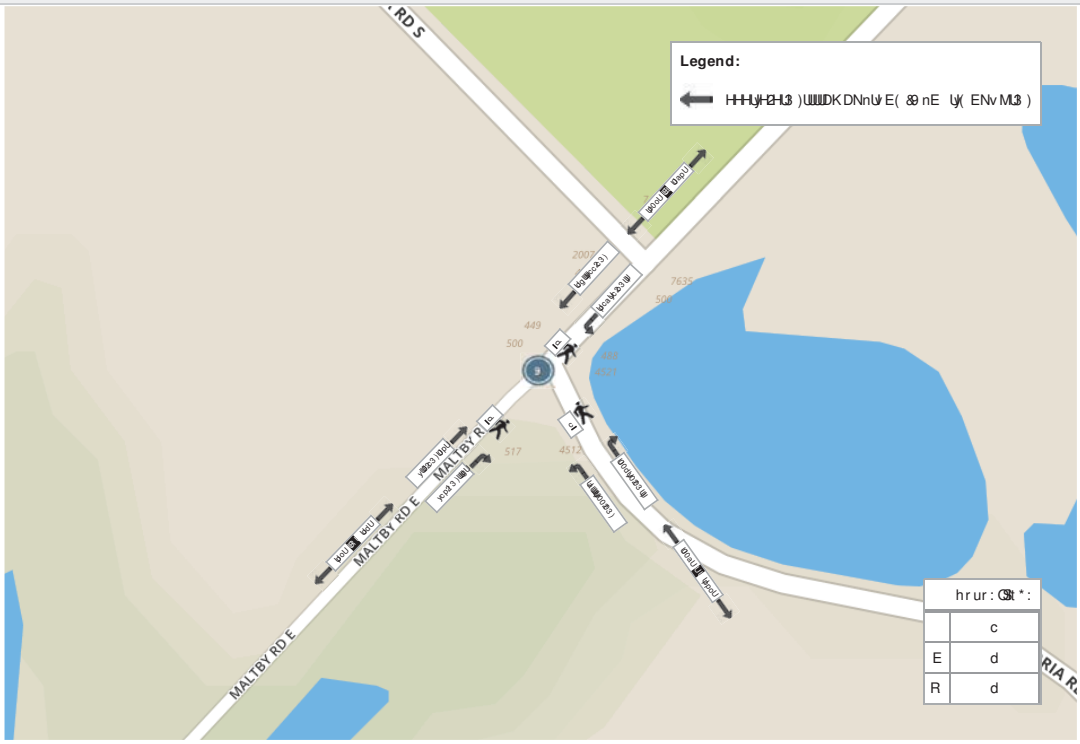
Start Time	W Approach				S Approach				E Approach				Int. Total (15 min)
	VICTO	DTSL	hru:	NeeSt WTUDfO-	nrPO	VICTO	hru:	NeeSt WTUDfO-	DTSL	nrPO	hru:	NeeSt WTUDfO-	
caA0dAdd	p	l	d	cc	c	ss	d	sg	i	ao	d	al	ci g
caAoi Add	p	cd	d	cp	o	gs	d	l c	i	i 0	d	i g	cac
csAddAdd	c	g	d	l	c	gi	c	ga	o	os	d	i c	coa
csAci Add	0	i	d	g	d	gc	d	gc	o	i p	d	i a	coi
Grand Total	g	0p	d	od	a	00d	c	00a	cg	pca	d	p0o	**610**
Approach%	pd3	gd3		4	c2g3	l g2p3		4	s2s3	l p203		4	-
Totals %	c203	i 2p3		a2a3	c3	i o2c3		i i 2c3	03	0i 2o3		0g2o3	-
PHF	d2as	d2g		d2g0	d20g	d2l i		d2l p	d2l	d2go		d2gi	-
Heavy	c	c		p	p	cc		c0	p	0		i	-
Heavy %	cp2l 3	02c3		i 3	00203	0203		02l 3	cc2c3	c2o3		p2c3	-
Lights	s	0c		0g	o	0cl		0p0	ca	pc0		ppl	-
Lights %	gs2l 3	l a2l 3		l i 3	aa2s3	l a2s3		l a2c3	gg2l 3	l g2a3		l s2l 3	-
Single-Unit Trucks	d	d		d	p	a		g	p	0		i	-
Single-Unit Trucks %	d3	d3		d3	00203	c2g3		p2o3	cc2c3	c2o3		p2c3	-
Buses	c	d		c	d	i		i	d	d		d	-
Buses %	cp2l 3	d3		p2l 3	d3	c2l 3		c2l 3	d3	d3		d3	-
Articulated Trucks	d	c		c	d	d		d	d	d		d	-
Articulated Trucks %	d3	02c3		p2l 3	d3	d3		d3	d3	d3		d3	-
Pedestrians	4	4	d	4	4	4	c	4	4	4	d	4	-
Pedestrians%	4	4	d3	U	4	4	cdd3	U	4	4	d3	U	-
Bicycles on Road	d	c	d	4	d	d	d	4	d	d	d	4	-
Bicycles on Road%	4	4	d3	U	4	4	d3	U	4	4	d3	U	-

Peak Hour: 07:30 AM - 08:30 AM Weather: Mostly Cloudy (-1.9 °C)



	d
E	d
R	d

Peak Hour: 04:30 PM - 05:30 PM Weather: Partly Cloudy (-3 °C)

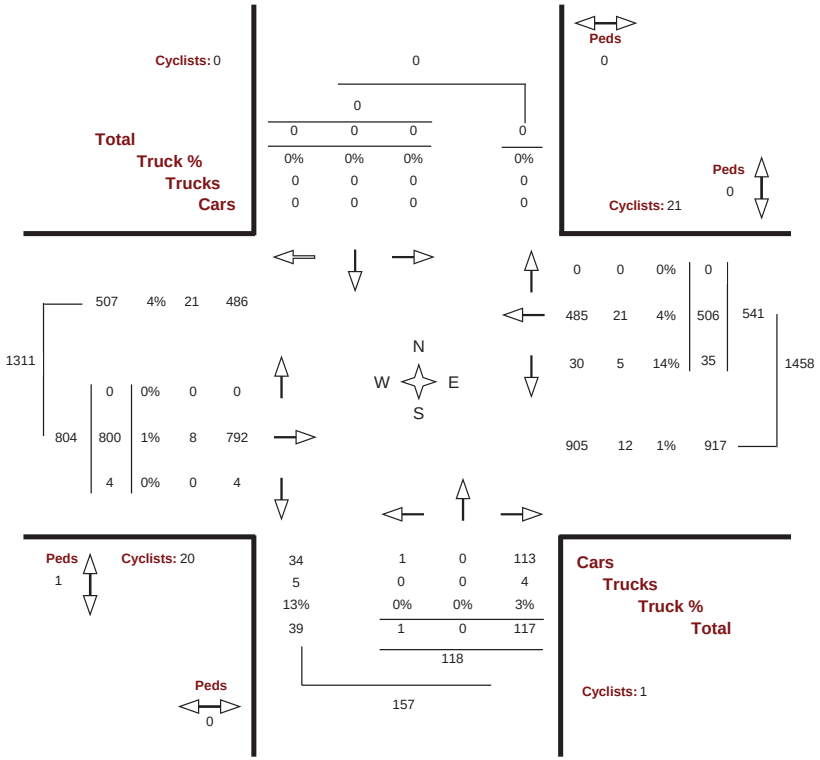


	c
E	d
R	d

Turning Movements Report - Full Study

Location..... CLAIR RD W @ LAIRD RD
Municipality. GUELPH
Traffic Cont.
Major Dir..... None

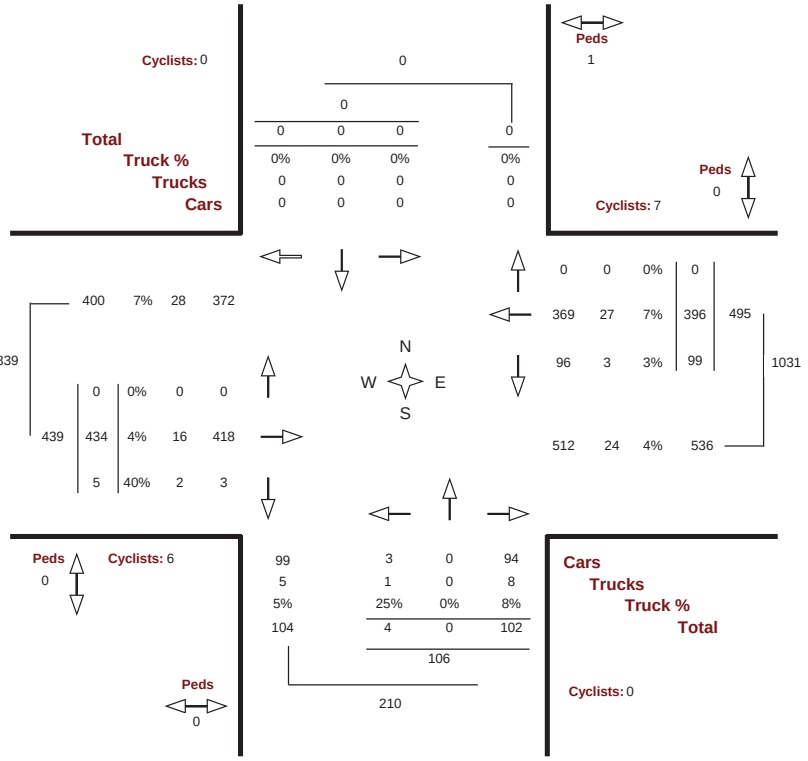
GeoID..... I725
Count Date. Thursday, 08 October, 2015
Count Time. 07:00 AM — 06:00 PM
Peak Hour.. 04:30 PM — 05:30 PM



Turning Movements Report - MD Period

Location..... CLAIR RD W @ LAIRD RD
Municipality. GUELPH
Traffic Cont.
Major Dir..... None

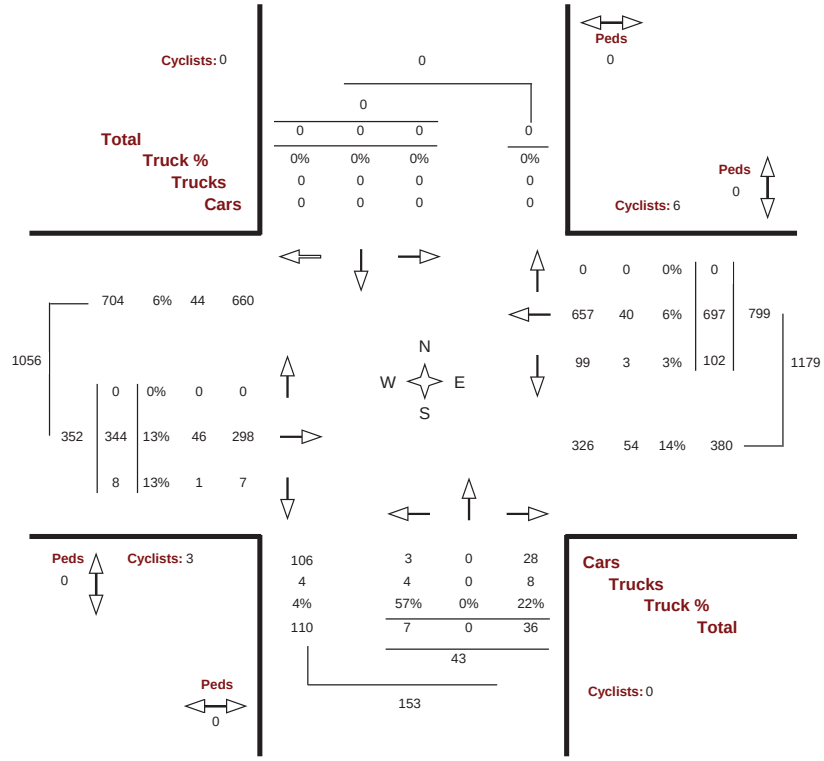
GeoID..... I725
Count Date. Thursday, 08 October, 2015
Count Time. 11:00 AM — 02:00 PM
Peak Hour.. 12:00 PM — 01:00 PM



Turning Movements Report - AM Period

Location..... CLAIR RD W @ LAIRD RD
Municipality. GUELPH
Traffic Cont.
Major Dir..... None

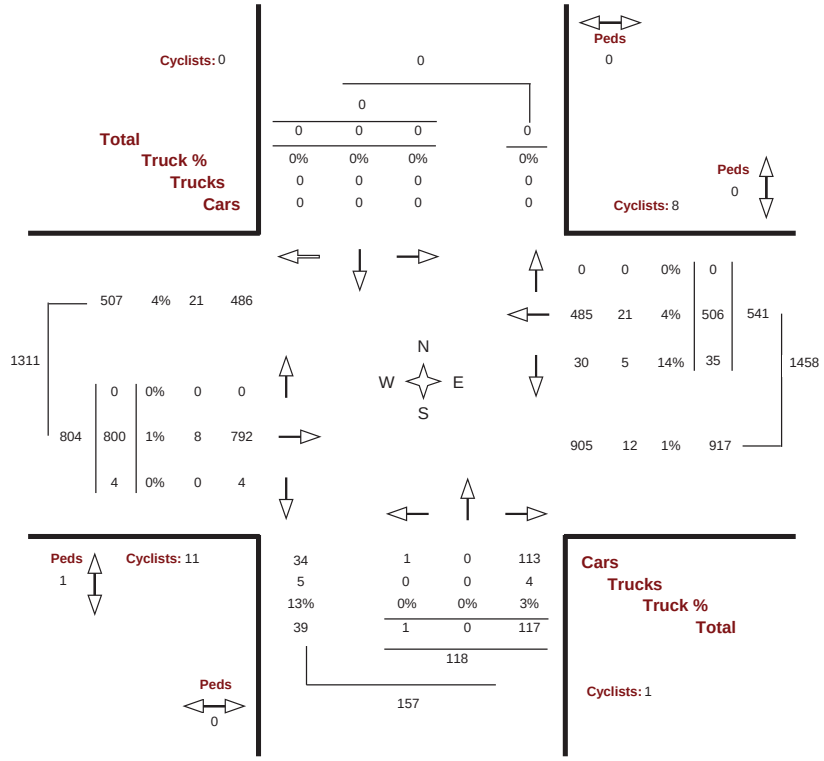
GeoID..... I725
Count Date. Thursday, 08 October, 2015
Count Time. 07:00 AM — 09:00 AM
Peak Hour.. 08:00 AM — 09:00 AM



Turning Movements Report - PM Period

Location..... CLAIR RD W @ LAIRD RD
Municipality. GUELPH
Traffic Cont.
Major Dir..... None

GeoID..... I725
Count Date. Thursday, 08 October, 2015
Count Time. 03:00 PM — 06:00 PM
Peak Hour.. 04:30 PM — 05:30 PM



Appendix F – Vehicle Delay Surveys

Project No: 5976-06
Project: Clair Maltby Secondary Plan
Study Location: Maltby Rd EB to Gordon St
Municipality: City of Guelph
Study Date: Wednesday November 22, 2017
Study Time: 7:00-9:00 & 16:00-18:00

Delay Study

	Overall Delay (sec)	Left Turn Delay (sec)	Through Delay (sec)	Right Turn Delay (sec)	Courtesy Gap (sec) Left Turn	Courtesy Gap (sec) Through	Courtesy Gap (sec) Right Turn	2-Stage Gap (sec) Left Turn	2-Stage Gap (sec) Through	2-Stage Gap (sec) Right Turn
2-HR Period 07:00-00:30										
Minimum Delay	0	0	0	0	0	0	0	0	0	0
Average Delay	21	27	30	8	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
85th Percentile	46	54	79	15	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
95th Percentile	78	74	105	23	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Maximum Delay	122	122	111	44	0	0	0	0	0	0
Total Vehicles Measured	105	45	23	37	0	0	0	0	0	0
Total from Traffic Count	105	46	23	36	n/a	n/a	n/a	n/a	n/a	n/a
Sample	100%	98%	100%	103%	n/a	n/a	n/a	n/a	n/a	n/a
AM Peak Hour 7:45 - 8:45										
Minimum Delay	0	0	4	0	0	0	0	0	0	0
Average Delay	29	35	47	10	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
85th Percentile	62	62	100	19	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
95th Percentile	101	79	108	35	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Maximum Delay	122	122	111	44	0	0	0	0	0	0
Total Vehicles Measured	55	22	13	20	0	0	0	0	0	0
Total from Traffic Count	55	23	13	19	n/a	n/a	n/a	n/a	n/a	n/a
Sample	100%	96%	100%	105%	n/a	n/a	n/a	n/a	n/a	n/a
2-HR Period 16:00-18:00										
Minimum Delay	0	0	0	0	0	0	0	0	0	0
Average Delay	27	39	34	16	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
85th Percentile	53	74	62	33	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
95th Percentile	81	89	87	48	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Maximum Delay	164	164	162	125	0	0	0	0	0	0
Total Vehicles Measured	164	62	18	84	0	0	0	0	0	0
Total from Traffic Count	162	61	18	83	n/a	n/a	n/a	n/a	n/a	n/a
Sample	101%	102%	100%	101%	n/a	n/a	n/a	n/a	n/a	n/a
PM Peak Hour 16:30 - 17:30										
Minimum Delay	0	3	6	0	0	0	0	0	0	0
Average Delay	24	32	39	16	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
85th Percentile	43	59	57	27	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
95th Percentile	64	77	118	41	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Maximum Delay	164	164	162	106	0	0	0	0	0	0
Total Vehicles Measured	89	31	10	48	0	0	0	0	0	0
Total from Traffic Count	89	31	10	48	n/a	n/a	n/a	n/a	n/a	n/a
Sample	100%	100%	100%	100%	n/a	n/a	n/a	n/a	n/a	n/a

Project No: 5976-06
Project: Clair Maltby Secondary Plan
Study Location: Maltby Rd WB to Gordon St
Municipality: City of Guelph
Study Date: Wednesday November 22, 2017
Study Time: 7:00-9:00 & 16:00-18:00

Delay Study

	Overall Delay (sec)	Left Turn Delay (sec)	Through Delay (sec)	Right Turn Delay (sec)	Courtesy Gap (sec) Left Turn	Courtesy Gap (sec) Through	Courtesy Gap (sec) Right Turn	2-Stage Gap (sec) Left Turn	2-Stage Gap (sec) Through	2-Stage Gap (sec) Right Turn
2-HR Period 07:30-09:30										
Minimum Delay	0	6	0	0	0	0	0	0	0	0
Average Delay	17	29	15	10	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
85th Percentile	30	46	26	21	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
95th Percentile	43	47	30	25	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Maximum Delay	47	47	30	27	0	0	0	0	0	0
Total Vehicles Measured	24	6	11	7	0	0	0	0	0	0
Total from Traffic Count	24	6	11	7	n/a	n/a	n/a	n/a	n/a	n/a
Sample	100%	100%	100%	100%	n/a	n/a	n/a	n/a	n/a	n/a
AM Peak Hour 7:45 - 8:45										
Minimum Delay	0	6	7	0	0	0	0	0	0	0
Average Delay	20	29	19	10	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
85th Percentile	34	46	26	20	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
95th Percentile	46	47	28	25	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Maximum Delay	47	47	29	27	0	0	0	0	0	0
Total Vehicles Measured	15	6	4	5	0	0	0	0	0	0
Total from Traffic Count	15	6	4	5	n/a	n/a	n/a	n/a	n/a	n/a
Sample	100%	100%	100%	100%	n/a	n/a	n/a	n/a	n/a	n/a
2-HR Period 16:00-18:00										
Minimum Delay	0	0	2	0	0	0	0	0	0	0
Average Delay	37	32	46	4	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
85th Percentile	70	58	92	8	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
95th Percentile	108	68	121	11	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Maximum Delay	150	74	150	12	0	0	0	0	0	0
Total Vehicles Measured	30	10	17	3	0	0	0	0	0	0
Total from Traffic Count	27	10	14	3	n/a	n/a	n/a	n/a	n/a	n/a
Sample	111%	100%	121%	100%	n/a	n/a	n/a	n/a	n/a	n/a
PM Peak Hour 16:30 - 17:30										
Minimum Delay	0	0	5	-	0	0	0	0	0	0
Average Delay	41	27	51	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
85th Percentile	73	41	93	-	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
95th Percentile	116	63	130	-	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Maximum Delay	150	74	150	-	0	0	0	0	0	0
Total Vehicles Measured	15	6	9	0	0	0	0	0	0	0
Total from Traffic Count	12	6	6	0	n/a	n/a	n/a	n/a	n/a	n/a
Sample	125%	100%	150%	#DIV/0!	n/a	n/a	n/a	n/a	n/a	n/a

Appendix G – Corridor Growth Traffic Analysis Calculations

Background Traffic Growth/Decline Summary

Location: **Gordon Street Background Growth, South of Clair Road**
Time Period: **2008** to **2017**
Analyst: **IFC**

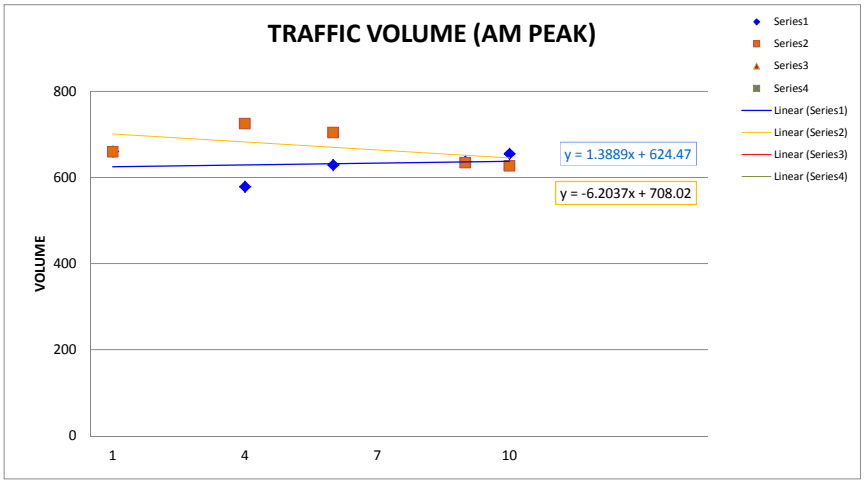
Weekday AM Peak Hour	
Direction	***Percent Change***
Northbound	0.20%
Southbound	-0.80%
Eastbound	0.00%
Westbound	0.00%

Weekday PM Peak Hour	
Direction	***Percent Change***
Northbound	0.62%
Southbound	0.80%
Eastbound	0.00%
Westbound	0.00%

Gordon Street Background Growth, South of Clair Road

Gordon Street Background Growth, South of Clair Road

Movement	1		4		6		9		10	
	2008		2011		2013		2016		2017	
	am	pm	am	pm	am	pm	am	pm	am	pm
NBT	661	832	579	813	630	1111	638	831	656	904
SBT	660	702	726	697	705	1005	635	757	628	748

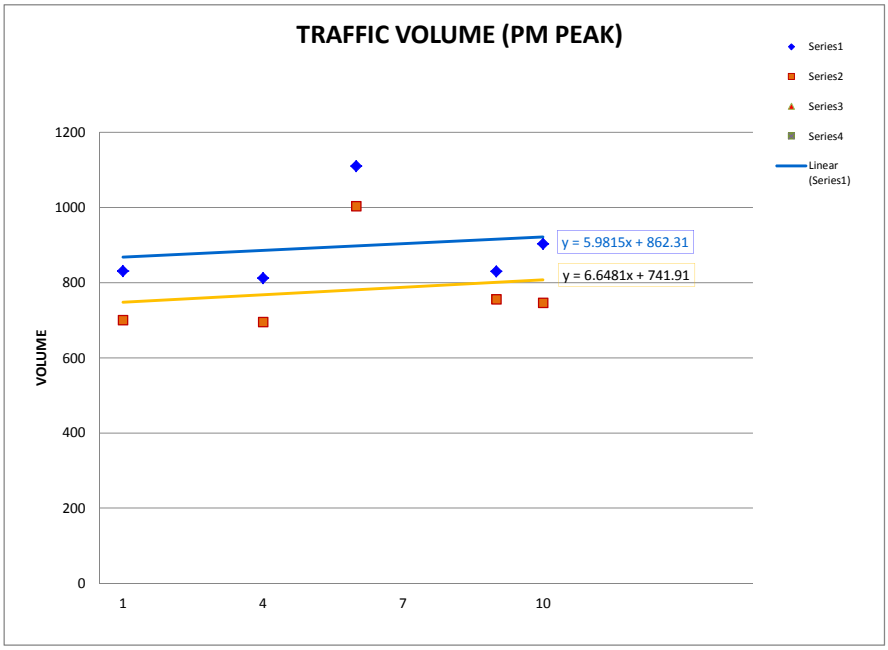


Year	X	Y
2008	1	626
2017	10	638
Year	X	Y
2008	1	702
2017	10	646

Growth/year NB	
1	0.20%

Growth/year SB	
-6	-0.80%

N-S Average	-0.3%



Year	X	Y
2008	1	868
2017	10	922
Year	X	Y
2008	1	749
2017	10	808

Growth/year NB	
5	0.62%

Growth/year SB	
6	0.80%

N-S Average	0.7%
E-W Average	0.0%
Total Average	0.4%

Background Traffic Growth/Decline Summary

Location: **Gordon Street Background Growth, North of Maltby Road**
Time Period: **2008** to **2017**
Analyst: **IFC**

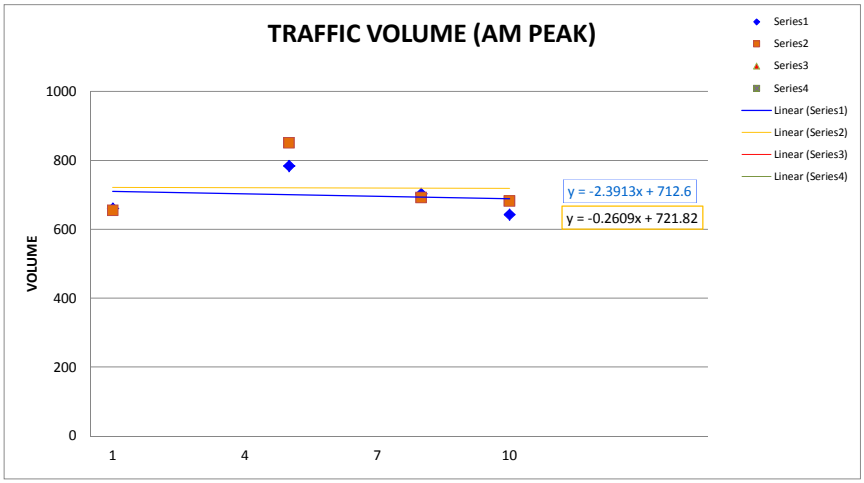
Weekday AM Peak Hour	
Direction	***Percent Change***
Northbound	-0.30%
Southbound	-0.03%
Eastbound	0.00%
Westbound	0.00%

Weekday PM Peak Hour	
Direction	***Percent Change***
Northbound	0.47%
Southbound	0.27%
Eastbound	0.00%
Westbound	0.00%

Gordon Street Background Growth, North of Maltby Road

Gordon Street Background Growth, North of Maltby Road

Movement	1		5		8		10		10	
	2008		2012		2015		2017			
	am	pm	am	pm	am	pm	am	pm	am	pm
NBT	661	1074	785	1019	704	1371	643	977		
SBT	655	845	851	852	693	1109	682	745		

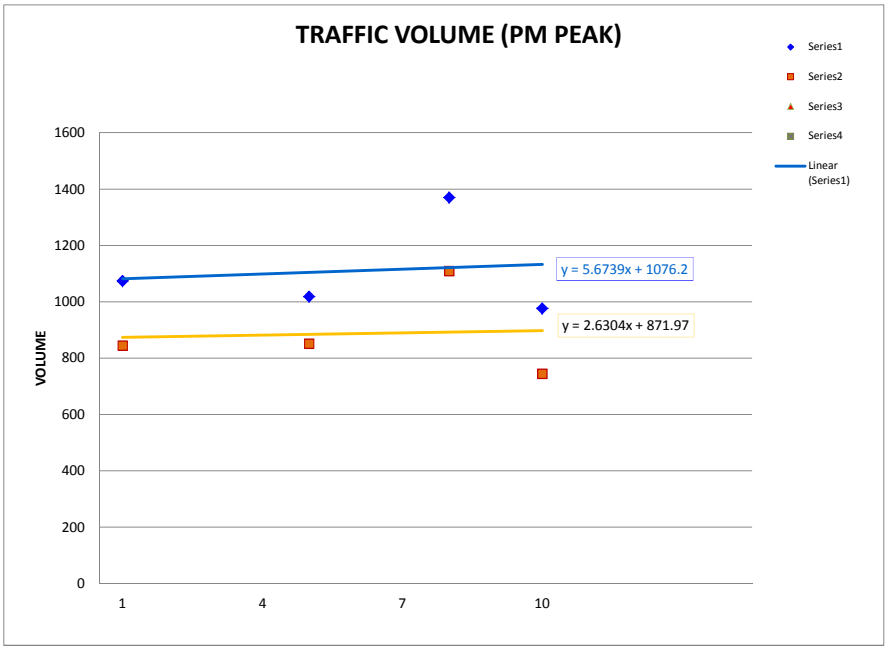


Year	X	Y
2008	1	710
2017	10	689
Year	X	Y
2008	1	722
2017	10	719

Growth/year NB	
-2	-0.30%

Growth/year SB	
0	-0.03%

N-S Average	0%



Year	X	Y
2008	1	1082
2017	10	1133
Year	X	Y
2008	1	875
2017	10	898

Growth/year NB	
5	0.47%

Growth/year SB	
2	0.27%

N-S Average	0%
E-W Average	0%
Total Average	0%

Background Traffic Growth/Decline Summary

Location: **Clair Road Background Growth, East of Gordon Street**
Time Period: **2008** to **2017**
Analyst: **IFC**

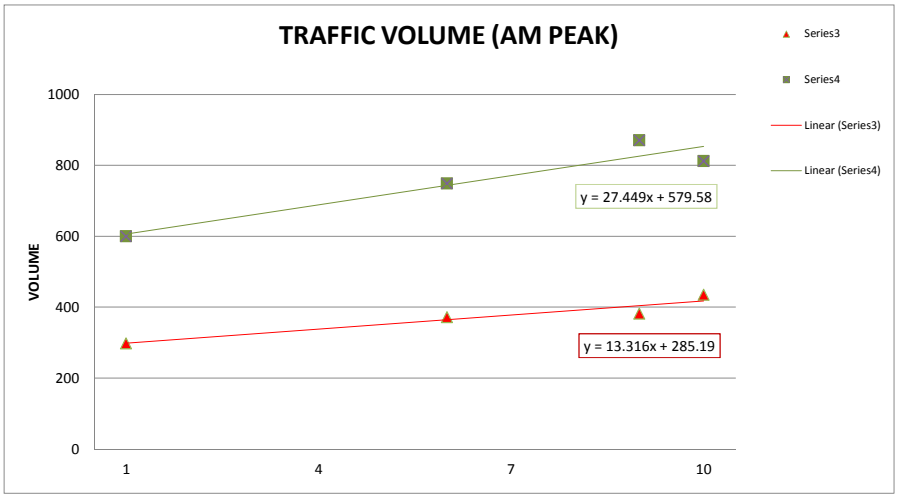
Weekday AM Peak Hour	
Direction	***Percent Change***
Northbound	0.00%
Southbound	0.00%
Eastbound	4.01%
Westbound	4.07%

Weekday PM Peak Hour	
Direction	***Percent Change***
Northbound	0.00%
Southbound	0.00%
Eastbound	4.07%
Westbound	5.37%

Clair Road Background Growth, East of Gordon Street

Clair Road Background Growth, East of Gordon Street

Movement	1		6		9		10		10	
	2008		2013		2016		2017			
	am	pm	am	pm	am	pm	am	pm	am	pm
EBT	298	662	372	1049	382	978	435	953		
WBT	600	370	749	639	871	592	812	595		

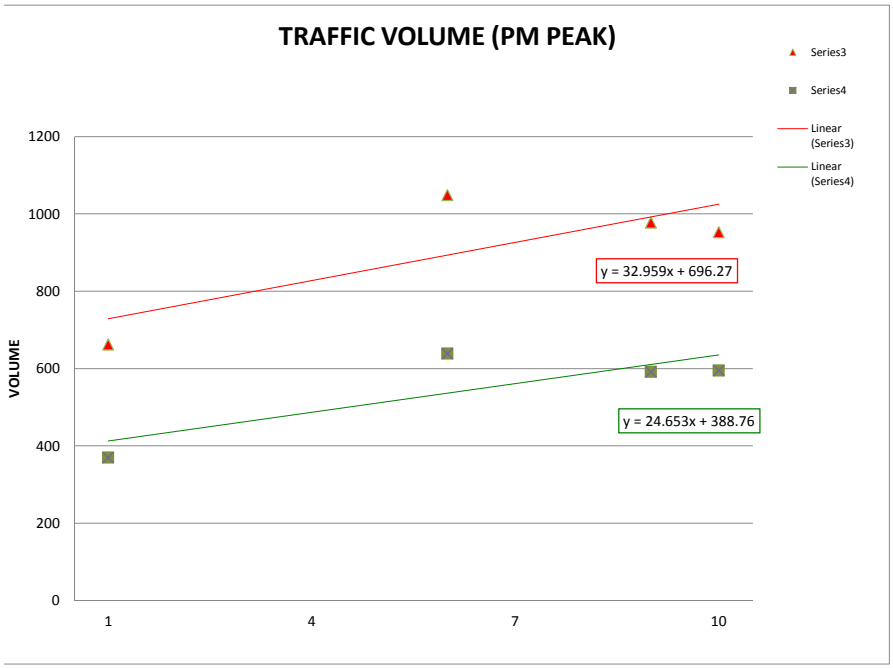


Year	X	Y
2008	1	299
2017	10	418
Year	X	Y
2008	1	607
2017	10	854

Growth/year EB	
12	4.01%

Growth/year WB	
25	4.07%

E-W Average	4.0%



Year	X	Y
2008	1	729
2017	10	1026
Year	X	Y
2008	1	413
2017	10	635

Growth/year EB	
30	4.07%

Growth/year WB	
22	5.37%

E-W Average	4.7%

Background Traffic Growth/Decline Summary

Location: **Clair Road Background Growth, West of Gordon Street**
Time Period: **2008** to **2017**
Analyst: **IFC**

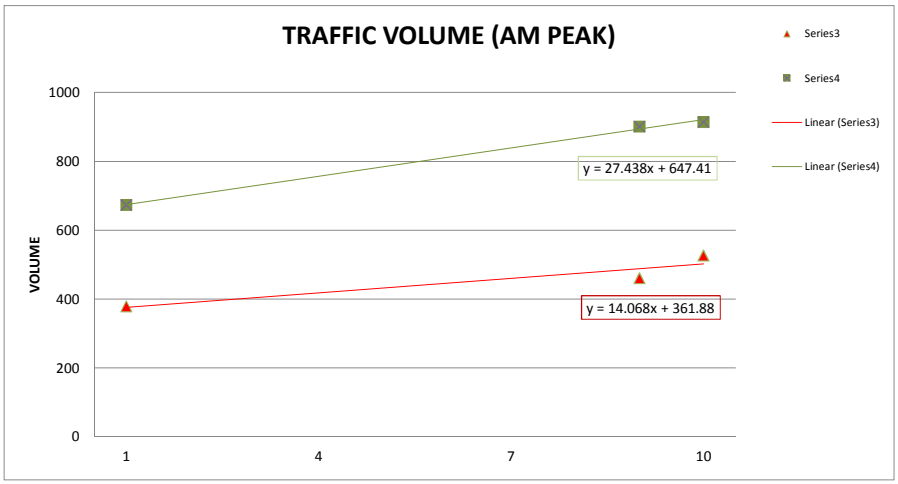
Weekday AM Peak Hour	
Direction	***Percent Change***
Northbound	0.00%
Southbound	0.00%
Eastbound	3.51%
Westbound	3.66%

Weekday PM Peak Hour	
Direction	***Percent Change***
Northbound	0.00%
Southbound	0.00%
Eastbound	3.39%
Westbound	3.97%

Clair Road Background Growth, West of Gordon Street

Clair Road Background Growth, West of Gordon Street

Movement	1		6		9		10		10	
	2008		2013		2016		2017			
	am	pm	am	pm	am	pm	am	pm	am	pm
EBT	379	726			461	957	527	964		
WBT	674	465			902	600	915	668		

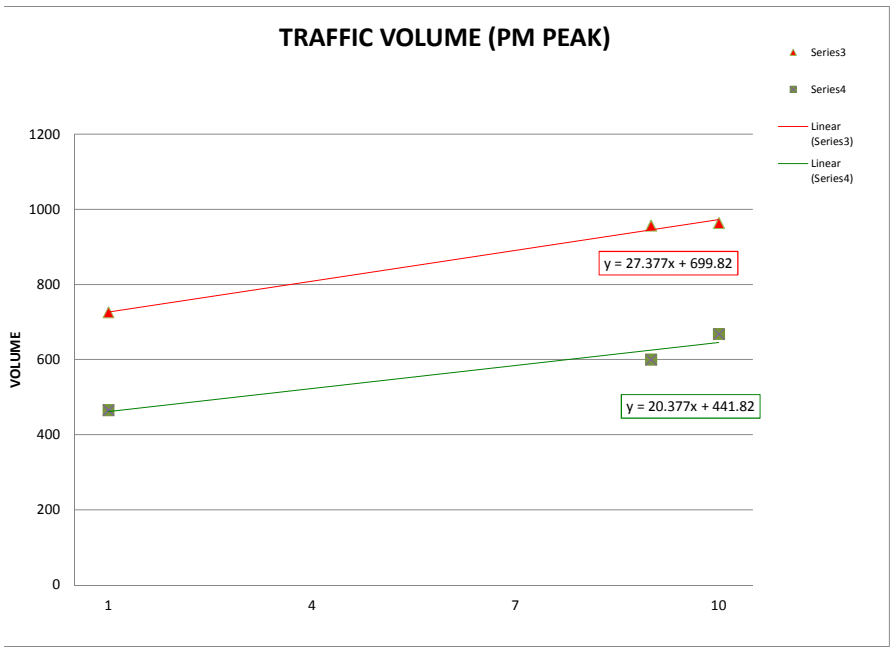


Year	X	Y
2008	1	377
2017	10	509
Year	X	Y
2008	1	675
2017	10	922

Growth/year EB	
13	3.51%

Growth/year WB	
25	3.66%

E-W Average	3.6%



Year	X	Y
2008	1	727
2017	10	974
Year	X	Y
2008	1	462
2017	10	646

Growth/year EB	
25	3.39%

Growth/year WB	
18	3.97%

E-W Average	3.7%

Background Traffic Growth/Decline Summary

Location: **Victoria Road Background Growth, South of Clair Road**
Time Period: **2008** to **2017**
Analyst: **IFC**

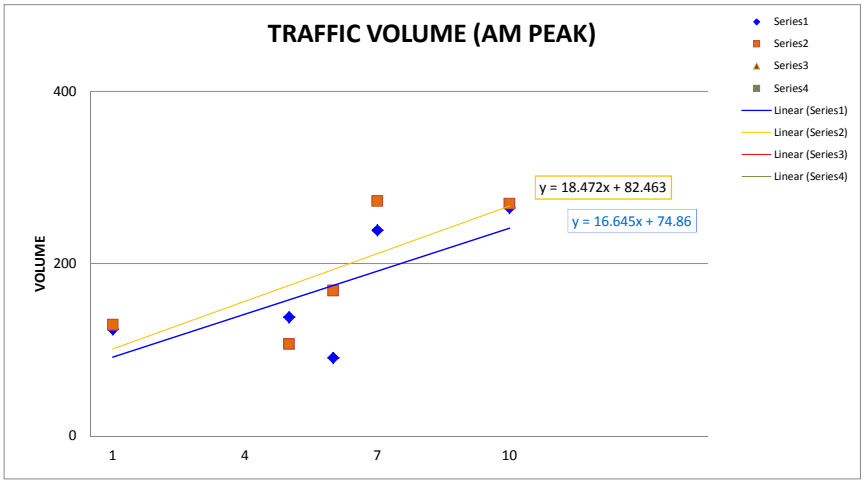
Weekday AM Peak Hour	
Direction	***Percent Change***
Northbound	16.37%
Southbound	16.47%
Eastbound	0.00%
Westbound	0.00%

Weekday PM Peak Hour	
Direction	***Percent Change***
Northbound	25.48%
Southbound	11.40%
Eastbound	0.00%
Westbound	0.00%

Victoria Road Background Growth, South of Clair Road

Victoria Road Background Growth, South of Clair Road

Movement	1		5		6		7		10	
	2008		2012		2013		2014		2017	
	am	pm	am	pm	am	pm	am	pm	am	pm
NBT	124	171	138	89	91	142	239	338	265	384
SBT	129	128	107	191	169	178	273	279	270	261

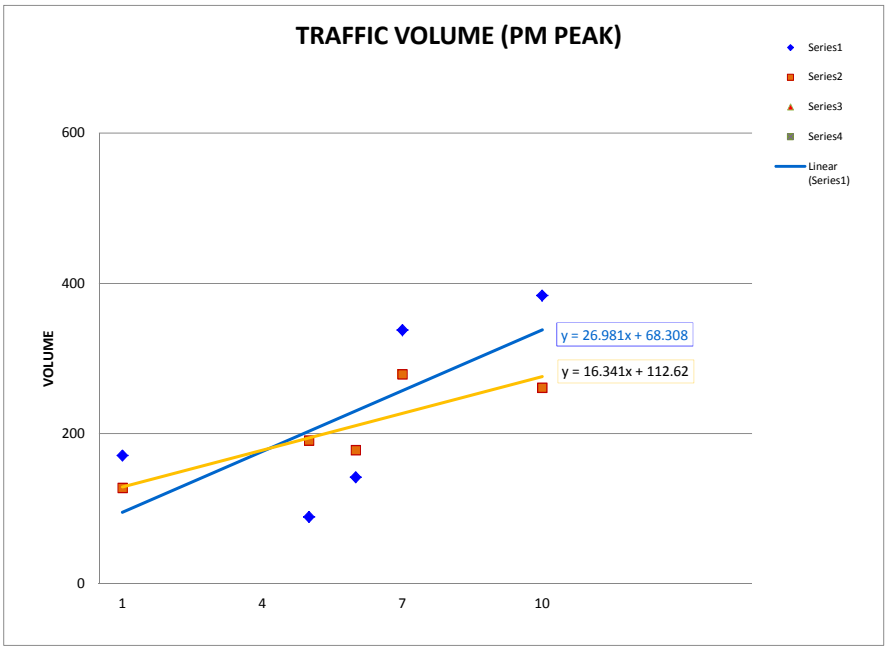


Year	X	Y
2008	1	92
2017	10	241
Year	X	Y
2008	1	101
2017	10	267

Growth/year NB	
15	16.37%

Growth/year SB	
17	16.47%

N-S Average	16%



Year	X	Y
2008	1	95
2017	10	338
Year	X	Y
2008	1	129
2017	10	276

Growth/year NB	
24	25.48%

Growth/year SB	
15	11.40%

N-S Average	18%
E-W Average	0%
Total Average	9%

Appendix A – Transportation Tomorrow Survey (TTS) Details

Appendix B – Detailed Collision Data

Appendix C – Synchro Analysis Worksheets

Appendix D – Access Design Guidelines

Appendix E – Existing Traffic Data

Appendix F – Vehicle Delay Surveys

Appendix G – Corridor Growth Traffic Analysis Calculations