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Restoration



# Brookstreet Apartments

## 359 Terry Fox Drive & 525 Legget Drive, Ottawa

### Transportation Impact Assessment

**Brookstreet Apartments**  
**359 Terry Fox Drive and 525 Legget Drive**  
**Transportation Impact Assessment**

Prepared By:

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October 2021

Novatech File: 120202  
Ref: R-2021-110

October 8, 2021

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

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

Dear Mr. Giampa:

**Reference: 359 Terry Fox Drive and 525 Legget Drive**  
**Transportation Impact Assessment**  
**Novatech File No. 120202**

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We are pleased to submit the following Transportation Impact Assessment (TIA) on behalf of Wesley Clover International (Brookstreet Hotel), in support of Zoning By-Law Amendment and Site Plan Control applications at 359 Terry Fox Drive and 525 Legget Drive, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2017).

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

Yours truly,

**NOVATECH**



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



## **TIA Plan Reports**

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

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

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

### **CERTIFICATION**

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

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

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Dated at Ottawa this 8th day of October, 2021.  
(City)

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

Professional Title: Project Coordinator, Transportation/Traffic

*B. Byvelds*

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

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## **EXECUTIVE SUMMARY**

This Transportation Impact Assessment (TIA) has been prepared for a proposed development at 359 Terry Fox Drive and 525 Legget Drive on behalf of Wesley Clover International (Brookstreet Hotel), in support of Zoning By-Law Amendment and Site Plan Control applications. The Subject Site is a redevelopment of portions of 359 Terry Fox Drive and 525 Legget Drive (Brookstreet Hotel). A new parcel will be created through a severance process that will consist of the existing easterly access to 359 Terry Fox Drive and a portion of the area of 525 Legget Drive between an existing parking garage and the stormwater pond to the east.

The existing uses at 359 Terry Fox Drive include light industrial and office uses, and the existing uses at 525 Legget Drive include the Brookstreet Hotel, and accessory small commercial and office uses. Based on the location of the existing driveways, the subject site could be accessed via a driveway to 525 Legget Drive, two driveways to 555 Legget Drive, and two driveways to 359 Terry Fox Drive. The easterly access to 359 Terry Fox Drive, which will become part of the proposed parcel, is proposed to be the primary access to the development.

The subject site is designated as 'Urban Employment Area' on Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Business Park Industrial Zone (Kanata North Business Park)' (IP6). The subject site is not within any Community Design Plan or Secondary Plan areas. A Zoning By-Law Amendment is required to permit the proposed use. The draft City of Ottawa Official Plan includes proposed policies that will permit a higher density of development and greater degree of mixed uses, including residential within new 'activity centres' that are generally located within 600 metres of planned transit stations. The goal of the activity centres is to create a place to live, work, learn and play and provide access daily needs without a car. The City of Ottawa Official Plan includes a transit station at the intersection of March Road and Terry Fox as part of the future Bus Rapid Transit.

The proposed development consists of a single 30-storey high-rise residential building with 256 rental dwellings and approximately 3,850 ft<sup>2</sup> gross floor area (GFA) of rooftop restaurant space. The proposed development will provide a unique residential rental accommodation within the Kanata North Economic District, a technology park which employs over 20,000 people. The rental units will offer apartments within short walking or cycling distance of major employers, and will act as the catalyst for one of the City's proposed activity centres within the district. The residential tower will also be directly connected to the Brookstreet Hotel and will provide a unique experience for residents, as tenants will have access to amenities such as restaurants, fitness facilities, a spa, and recreational facilities.

A total of 381 parking spaces will be provided in a new two-level underground parking garage. The balance of the required parking for the apartment will be provided by allocating parking spaces from the ground floor of the existing five-level above-ground parking structure located east of the new building. A vehicular connection will be provided from the proposed access driveway of the apartment to the existing parking structure. The proposed development does not include any new road accesses as the site is already served by accesses to 525 Legget Drive, 555 Legget Drive, and 359 Terry Fox Drive. The properties share access agreements for vehicular and pedestrian access, and parking as they are meant to function as a planned combined development.

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. Analysis will be completed for the 2024 build-out year and 2029 horizon year.

The study area for this report includes the boundary roadways Terry Fox Drive and Legget Drive, as well as the intersections at March Road/Morgan's Grant Way/Shirley's Brook Drive, March Road/Terry Fox Drive, March Road/Solandt Road, Terry Fox Drive/Legget Drive, Legget Drive/Solandt Road, and Terry Fox Drive/Helmsdale Drive.

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

Forecasting

- The proposed development is projected to generate 106 new person trips (including 39 vehicle trips) during the AM peak hour and 143 new person trips (including 60 vehicle trips) during the PM peak hour.

Development Design and Parking

- New pedestrian facilities will wrap around the proposed building, and will connect to the existing pathway network to the south and east of the subject site. A new connection between the existing sidewalk on Terry Fox Drive and the pathway network along the eastern property line will also be constructed. The proposed building will also connect directly to the Brookstreet Hotel, allowing residents and visitors to access all amenities of the hotel through an internal connection.
- Measuring from the main entrance, the bus stops within 400m of stops #6149, #6159, and #7997, and within 600m of stop #4972. These stops are served by some or all of OC Routes 63, 66, 110, and 166.
- The proposed development meets all required Transportation Demand Management-Supportive Development Design and Infrastructure measures.
- Pick-ups and drop-offs will be facilitated in a designated loop immediately east of the existing parking structure and northeast of the proposed tower. A connection to the parking spaces within the parking structure will be provided within this loop as well. Access to the new underground parking spaces underneath the proposed tower will be provided via a new ramp aligned with the primary access to Terry Fox Drive.
- The existing on-site fire route will be maintained. Garbage and recycling rooms will be provided on the first level of the new underground parking garage.
- The proposed development will effectively create a new four-legged intersection within the site. Stop control will be provided on the east and west approaches to allow for free flow conditions in/out of the parking garage.
- The minimum number of vehicle parking spaces required per the City's ZBL will be met through a combination of new and reallocated existing parking spaces. Bicycle parking will be provided in a designated area on the first level of the new underground parking garage. The 130 bicycle parking spaces proposed meets the minimum requirements of the City's *Zoning By-Law* (ZBL).

Boundary Streets

- The results of the segment MMLoS analysis can be summarized as follows:
  - Neither boundary street meets the target pedestrian level of service (PLOS) C;
  - Both boundary streets meet the target bicycle level of service (BLOS) C;

- Both boundary streets achieve a transit level of service (TLOS) E;
- Both boundary streets meet the target truck level of service (TkLOS) D.
- Sidewalks are currently provided on the south side of Terry Fox Drive and the east side of Legget Drive. The sidewalk on Terry Fox Drive achieves a PLOS E and the sidewalk on Legget Drive achieves a PLOS A. Per Exhibit 4 of the *MMLOS Guidelines*, the target PLOS C can be achieved for both sides of Terry Fox Drive and the west side of Legget Drive by implementing sidewalks with a minimum width of 2.0m and a boulevard width greater than 2.0m. This is identified for the City's consideration.

#### Access Intersections

- The proposed development will not include any alterations to the existing driveways that access 359 Terry Fox Drive or 525 Legget Drive. The primary access for the proposed development generally meets the provisions of the City's *Private Approach By-Law*, except for Sections 25(c) and 25(u).
- The primary access currently operates at an acceptable vehicular level of service (Auto LOS) C, and is anticipated to continue operating acceptably in the future. It is recommended that a westbound left turn lane into the primary access is not required.

#### Transportation Demand Management

- The proponent has committed to providing the following TDM measures:
  - Display local area maps with walking/cycling access routes and key destinations at major entrances;
  - Display relevant transit schedules and route maps at entrances;
  - Unbundle parking cost from monthly rent;
  - Provide a multimodal travel option information package to new residents.

#### Transit

- The proposed development is projected to generate 23 transit trips during the AM peak hour and 24 transit trips during the PM peak hour. Based on these volumes, no capacity issues are anticipated on OC Routes 63, 66, 110, and 166.

#### Intersection MMLOS

- The results of the intersection MMLOS analysis can be summarized as follows:
  - No study area intersections meet the target PLOS;
  - No study area intersections meet the target BLOS;
  - No study area intersections meet the target TLOS;
  - All study area intersections meet the target TkLOS;
  - March Road/Morgan's Grant Way/Shirley's Brook Drive and March Road/Terry Fox Drive meet the target Auto LOS, while March Road/Solandt Road, Legget Drive/Solandt Road, and Legget Drive/Terry Fox Drive do not.
- All approaches at all study area intersections do not meet the target PLOS C. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

- Most approaches at all study area intersections do not meet the target BLOS B/C based on left turn characteristics. Along the March Road corridor, all right turns are channelized, and therefore two-stage left turn bike boxes can be implemented without requiring a restriction to right turns on red (RTOR). The target BLOS can be met at Legget Drive/Solandt Road through the implementation of curbside bike lanes. These measures are identified for the City's consideration.
- The future March Road bus rapid transit (BRT) improvements are anticipated to improve the TLOS of the study area intersections along March Road to the target TLOS B/D.

#### Existing Intersection Analysis

- During the AM peak hour, the following movements are identified as over-capacity:
  - March Road/Terry Fox Drive
    - Southbound left turn;
  - March Road/Solandt Road
    - Northbound left turn and southbound through.
- During the PM peak hour, the following movements are identified as over-capacity:
  - March Road/Solandt Road
    - Northbound left turn, northbound through, eastbound right turn, and westbound left turn;
  - Legget Drive/Terry Fox Drive
    - Northbound left turn/right turn;
  - Legget Drive/Solandt Road
    - Southbound through/right turn.
- During the AM peak hour, the average (50<sup>th</sup>-percentile) and maximum (95<sup>th</sup>-percentile) queue lengths of the southbound left turn movement at March Road/Terry Fox Drive and the northbound left turn movement at March Road/Solandt Road exceed the storage lengths provided for those movements. Synchro also identifies that the average and maximum queue lengths of the southbound through movement at March Road/Solandt Road extends beyond the auxiliary left turn lane.
- During the PM peak hour, the average and maximum queue lengths of the eastbound right turn movement and the maximum queue length of the westbound left turn movement at March Road/ Solandt Road exceed the storage lengths provided. The average and maximum queue lengths of the northbound through movement at March Road/Solandt Road and the southbound through/right turn movement at Legget Drive/Solandt Road extends beyond the auxiliary left turn lanes and block at least one upstream access. Synchro also identifies that the maximum queue length of the northbound left turn/right turn movement at Legget Drive/Terry Fox Drive is approximately 105m, which is equivalent to 15 vehicles if an average vehicle length of 7m is assumed.
- Auxiliary westbound left turn and eastbound right turn lanes at Legget Drive/Terry Fox Drive are warranted, and can be accommodated within the existing ROW of Terry Fox Drive. Signalization of this intersection is currently 84% warranted, however it is recommended from a safety perspective based on delay.

- Existing conditions at Legget Road/Solandt Road suggest that an auxiliary southbound right turn lane may be required. Based on the existing ROW of Legget Drive, a southbound right turn lane can be accommodated at Legget Drive/Solandt Road.

#### Background Intersection Analysis

- Traffic throughout the study area could be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate times of travel for drivers using the study area roadways to make use of off-peak capacity, and alternate routes of travel. It is assumed that the March Road BRT corridor will be implemented by the horizon year 2029, per the 2031 Affordable Network. This will increase the transit modal share and decrease the auto modal share by the
- As congestion increases within the study area, some motorists may alter their travel to occur outside of the peak hours. Additionally, it is possible that commuter volumes will be reduced as more people work from home. These shifts in travel habits may result in a reduction of peak hour traffic volumes. As congestion increases within the study area, some motorists may choose alternate routes of travel outside of the study area.
- During the AM peak hour, the following volume reductions are required to meet the target Auto LOS D by the horizon year 2029:
  - March Road/Terry Fox Drive
    - Southbound left turn: reduction of 60 vehicles required;
  - March Road/Solandt Road
    - Northbound left turn: reduction of 40 vehicles required;
    - Southbound through/right turn: reduction of 520 vehicles required.
- During the PM peak hour, the following volume reductions are required to meet the target Auto LOS D by the horizon year 2029:
  - March Road/Terry Fox Drive
    - Northbound through: reduction of 30 vehicles required;
    - Eastbound left turn: reduction of 10 vehicles required;
    - Westbound right turn: reduction of 20 vehicles required;
  - March Road/Solandt Road
    - Northbound left turn: reduction of 10 vehicles required;
    - Northbound through: reduction of 680 vehicles required;
    - Southbound through/right turn: reduction of 20 vehicles required;
    - Eastbound right turn: reduction of 210 vehicles required;
    - Westbound left turn: reduction of 260 vehicles required;
  - Legget Drive/Terry Fox Drive
    - Northbound left/right turn: reduction of 110 vehicles required;
  - Legget Drive/Solandt Road
    - Southbound through/right turn: reduction of 30 vehicles required.

#### Total Intersection Analysis

- Traffic generated by the proposed development is anticipated to have marginal operational effects for most movements within the study area. The most significant impact identified is the northbound left turn/right turn movement at Legget Drive/Terry Fox Drive during the PM peak hour.

## 1.0 SCREENING

### 1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared for a proposed development at 359 Terry Fox Drive and 525 Legget Drive on behalf of Wesley Clover International (Brookstreet Hotel), in support of Zoning By-Law Amendment and Site Plan Control applications. The Subject Site is a redevelopment of portions of 359 Terry Fox Drive and 525 Legget Drive (Brookstreet Hotel). A new parcel will be created through a severance process that will consist of the existing easterly access to 359 Terry Fox Drive and a portion of the area of 525 Legget Drive between an existing parking garage and the stormwater pond to the east.

The existing uses at 359 Terry Fox Drive include light industrial and office uses, and the existing uses at 525 Legget Drive include the Brookstreet Hotel, and accessory small commercial and office uses. Based on the location of the existing driveways, the subject site could be accessed via a driveway to 525 Legget Drive, two driveways to 555 Legget Drive, and two driveways to 359 Terry Fox Drive. The easterly access to 359 Terry Fox Drive, which will become part of the proposed parcel, is proposed to be the primary access to the development.

The subject site is surrounded by the following:

- Office uses, followed by Terry Fox Drive to the north,
- The Marshes Golf Club, followed by office uses and Solandt Road to the south,
- The Marshes Golf Club, followed by office uses and Terry Fox Drive to the east, and
- Legget Drive, followed by office uses and March Road to the west.

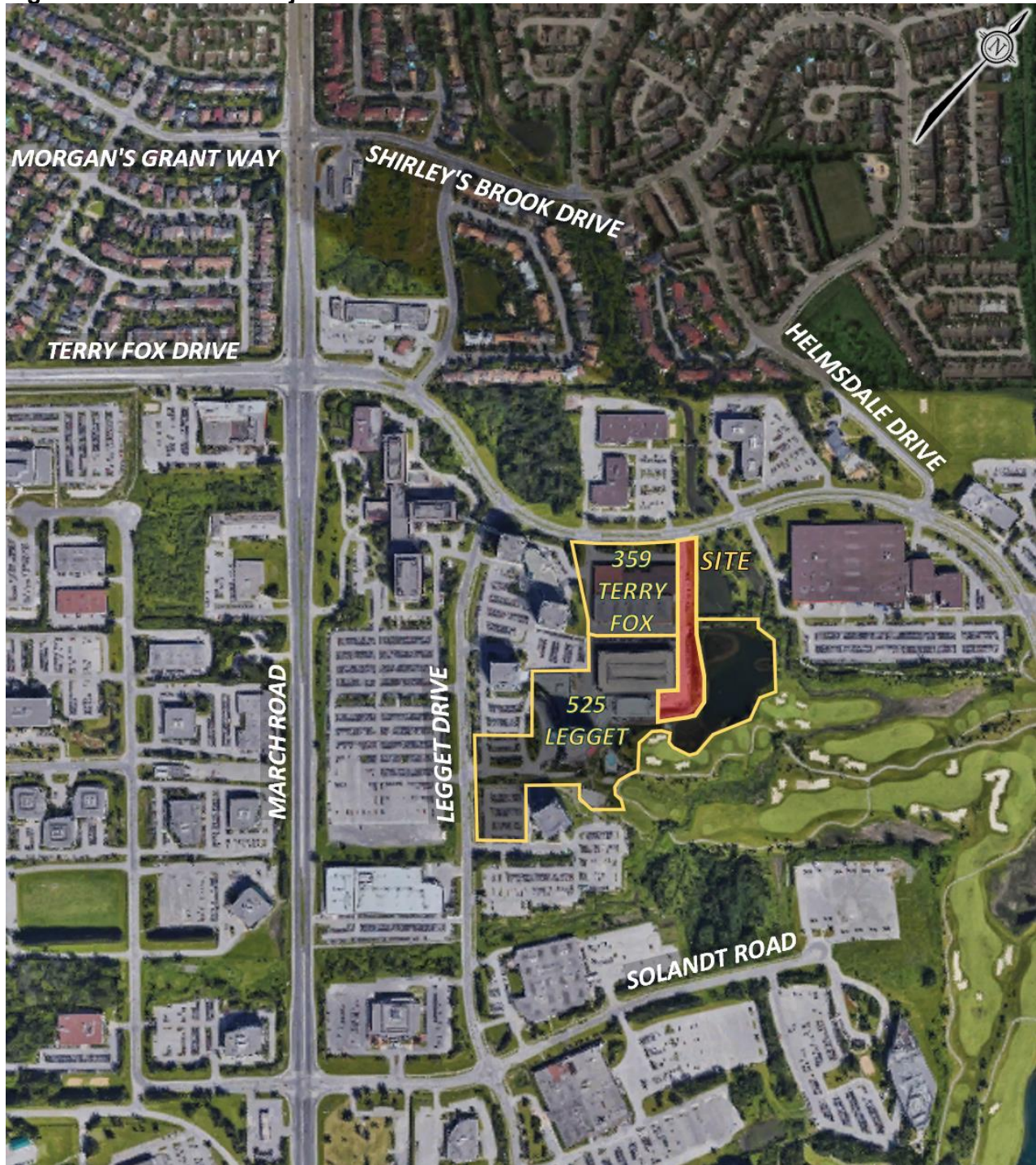
An aerial of the vicinity around the subject site is provided in **Figure 1**. A copy of the preliminary site plan is included in **Appendix A**.

### 1.2 Proposed Development

The subject site is designated as 'Urban Employment Area' on Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Business Park Industrial Zone (Kanata North Business Park)' (IP6). The subject site is not within any Community Design Plan or Secondary Plan areas. A Zoning By-Law Amendment is required to permit the proposed use. The draft City of Ottawa Official Plan includes proposed policies that will permit a higher density of development and greater degree of mixed uses, including residential within new 'activity centres' that are generally located within 600 metres of planned transit stations. The goal of the activity centres is to create a place to live, work, learn and play and provide access daily needs without a car. The City of Ottawa Official Plan includes a transit station at the intersection of March Road and Terry Fox as part of the future Bus Rapid Transit.

The proposed development consists of a single 30-storey high-rise residential building with 256 rental dwellings and approximately 3,850 ft<sup>2</sup> gross floor area (GFA) of rooftop restaurant space. The proposed development will provide a unique residential rental accommodation within the Kanata North Economic District, a technology park which employs over 20,000 people. The rental units will offer apartments within short walking or cycling distance of major employers, and will act as the catalyst for one of the City's proposed activity centres within the district. The residential tower will also be directly connected to the Brookstreet Hotel and will provide a unique experience for residents, as tenants will have access to amenities such as restaurants, fitness facilities, a spa, and recreational facilities.

Figure 1: View of the Subject Site



A total of 381 parking spaces will be provided in a new two-level underground parking garage. The balance of the required parking for the apartment will be provided by allocating parking spaces from the ground floor of the existing five-level above-ground parking structure located east of the new building. A vehicular connection will be provided from the proposed access driveway of the apartment to the existing parking structure. The proposed development does not include any new road accesses as the site is already served by accesses to 525 Legget Drive, 555 Legget Drive, and 359 Terry Fox Drive. The properties share access agreements for vehicular and pedestrian access, and parking as they are meant to function as a planned combined development. The new building and underground parking will be constructed in a single phase, with a buildout year of 2024.

### 1.3 Screening Form

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

- Trip Generation Trigger – The development is anticipated to generate over 60 peak hour person trips; further assessment is **required** based on this trigger.
- Location Triggers – The development does not propose a new connection to a designated Rapid Transit or Transit Priority (RTTP) corridor or a Spine Cycling Route, and is not located within a Design Priority Area or Transit-Oriented Development Zone; further assessment is **not required** based on this trigger.
- Safety Triggers – The proposed development does not meet any of the safety triggers; further assessment is **not required** based on this trigger.

## 2.0 SCOPING

### 2.1 Existing Conditions

#### 2.1.1 Roadways

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

March Road is an arterial roadway that generally runs on a north-south alignment within the study area, running between Dunrobin Road and Highway 417. West of Dunrobin Road, the roadway runs on an east-west alignment until Appleton Sideroad in the Town of Mississippi Mills, where it continues as Ottawa Street. South of Highway 417, the roadway continues on a north-south alignment as Eagleson Road. Within the study area, March Road has a four-lane divided urban cross-section, sidewalks on both sides of the roadway, on-street bike lanes, and a posted speed limit of 80 km/h. March Road is classified as a truck route, allowing full loads. Street parking is not permitted.

Terry Fox Drive travels between Eagleson Road and Herzberg Road, and is classified as an arterial roadway west of March Road and major collector roadway east of March Road. Within the study area, Terry Fox Drive generally runs on an east-west alignment, on-street bike lanes, and a posted speed limit of 50 or 60 km/h. Terry Fox Drive has a four-lane divided urban cross-section west of March Road, and a two-lane divided urban cross-section with a grass median east of March Road. Sidewalks are provided on the south side of Terry Fox Drive west of Helmsdale Drive, and on both sides of Terry Fox Drive east of Helmsdale Drive. West of March Road, Terry Fox Drive is classified



as a truck route, allowing full loads. Between March Road and Herzberg Road, Terry Fox Drive is not classified as a truck route. Street parking is not permitted.

Morgan's Grant Way is a collector roadway that generally runs on an east-west alignment within the study area, running between Flamborough Way and March Road. East of March Road, the roadway continues as Shirley's Brook Drive. Within the study area, Morgan's Grant Way has a two-lane undivided urban cross-section, sidewalk on the south side of the roadway, and a posted speed limit of 40 km/h. Morgan's Grant Way is not classified as a truck route. Street parking is not permitted on either side of the roadway for the 60m immediately west of March Road, and is not permitted on the north side of the roadway for an additional 50m.

Shirley's Brook Drive is a collector roadway that generally runs on an east-west alignment within the study area, running between March Road and Helmsdale Drive. The roadway intersects with Helmsdale Drive in two locations, as it forms a loop east of Helmsdale Drive. West of March Road, the roadway continues as Morgan's Grant Way. Within the study area, Shirley's Brook Drive has a two-lane undivided urban cross-section, sidewalk on the south side of the roadway, and a posted speed limit of 40 km/h. Shirley's Brook Drive is not classified as a truck route. Street parking is permitted.

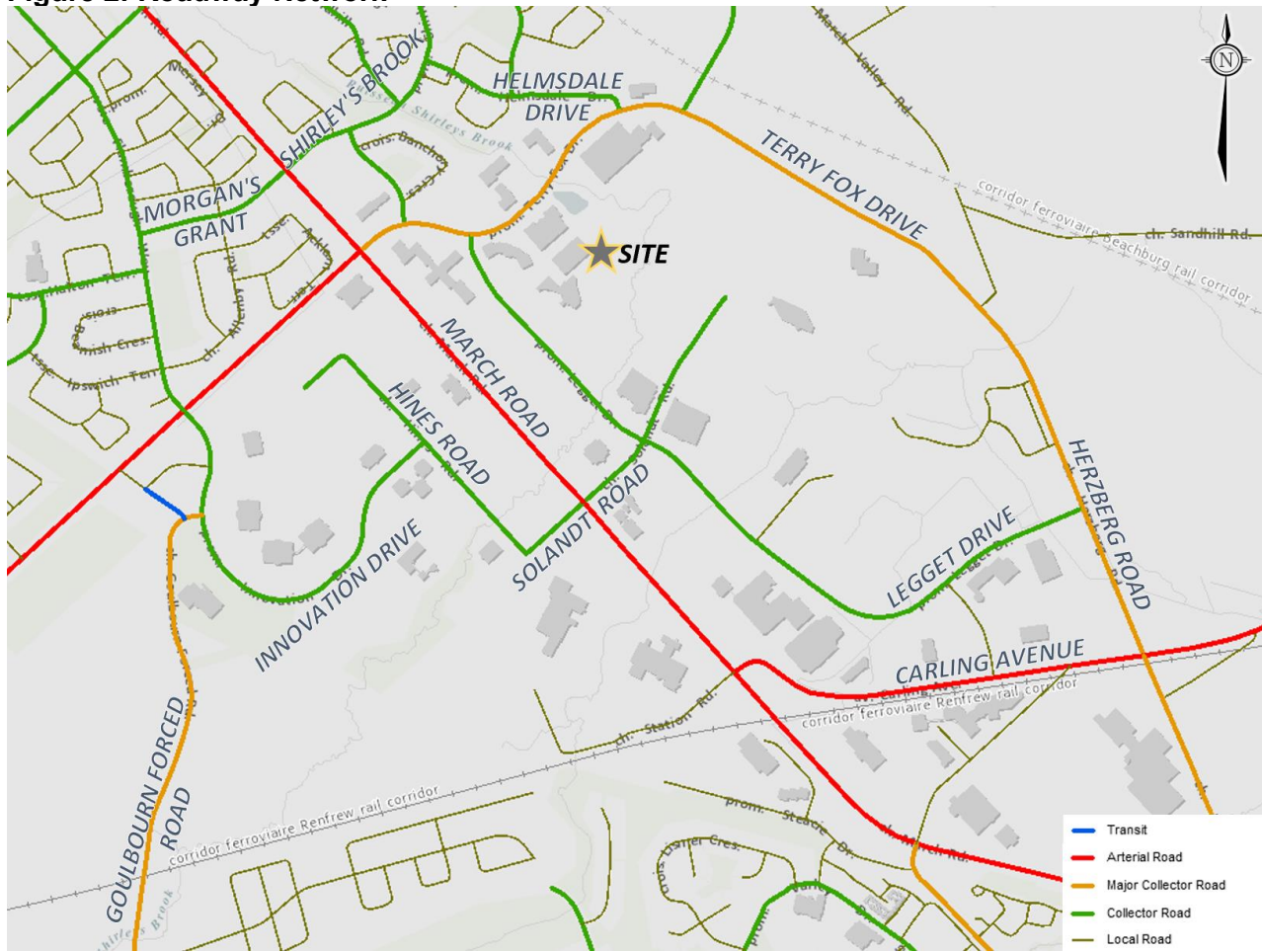
Solandt Road is a collector roadway that generally runs on an east-west alignment, starting at Hines Road and terminating approximately 450m east of Legget Drive. Within the study area, Solandt Road has a two-lane urban cross-section and an unposted regulatory speed limit of 50 km/h under the Highway Traffic Act. Sidewalks are provided along the north side for the entire distance of Solandt Road, as well as the south side between March Road and Legget Drive. Solandt Road is not classified as a truck route. Street parking is permitted.

Legget Drive is a collector roadway that generally runs on a north-south alignment within the study area, running between Terry Fox Drive and Herzberg Road. Within the study area, Legget Drive has a two-lane urban cross-section, on-street bike lanes north of Solandt Road and a posted speed limit of 50 km/h. Sidewalks are provided along the east side for the entire distance of Legget Drive, as well as the west side between Solandt Road and Herzberg Road. Legget Drive is not classified as a truck route. Street parking is permitted on both sides of Legget Drive south of Solandt Road and prohibited north of Solandt Road.

Helmsdale Drive is a collector roadway that runs generally on an east-west alignment between Shirley's Brook Drive and Terry Fox Drive within the residential community north of the Kanata North Business Park. Within the study area, Helmsdale Drive has a two-lane undivided urban cross-section, an asphalt sidewalk on the south side of the roadway, and a posted speed limit of 40 km/h. Helmsdale Drive is not classified as a truck route. East of the intersection with Shirley's Brook Drive/Kimbolton Crescent, street parking is not permitted.

The roadway of the greater area surrounding the subject site is illustrated in **Figure 2**.

Figure 2: Roadway Network



2.1.2 Intersections

March Road/Morgan's Grant Way/  
Shirley's Brook Drive

- Signalized four-legged intersection
- North/South Approaches (March Road): one left turn lane, three through lanes, one bike lane, and one channelized right turn lane
- East Approach (Shirley's Brook Drive): one left turn lane, one through lane, and one channelized right turn lane
- West Approach (Morgan's Grant Way): one shared left turn/through lane and one channelized right turn lane
- Standard crosswalks on all approaches



March Road/Terry Fox Drive

- Signalized four-legged intersection
- North Approach (March Road): one left turn lane, three through lanes, one bike lane, and one channelized right turn lane
- South Approach (March Road): two left turn lanes, three through lanes, one bike lane, and one channelized right turn lane
- East/West Approaches (Terry Fox Drive): two left turn lanes, two through lanes, one bike lane, and one channelized right turn lane
- Standard crosswalks on all approaches



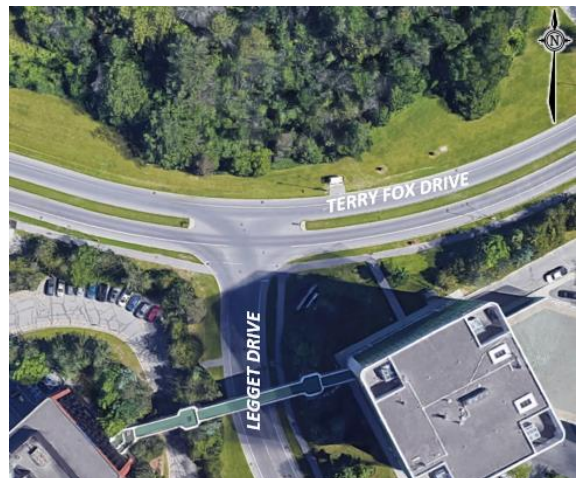
March Road/Solandt Road

- Signalized four-legged intersection
- North/South Approaches (March Road): one left turn lane, two through lanes, one bike lane, and one channelized right turn lane
- East Approach (Solandt Road): two left turn lanes, and one shared through/channelized right turn lane
- West Approach (Solandt Road): one left turn lane, one through lane, and one channelized right turn lane
- Standard crosswalks on all approaches



Legget Drive/Terry Fox Drive

- Unsignalized three-legged intersection
- Legget Drive is stop-controlled
- South Approach (Legget Drive): one shared left turn/right turn lane and a bike lane
- East Approach (Terry Fox Drive): one shared left turn/through lane and a bike lane
- West Approach (Terry Fox Drive): one shared through/right turn lane and a bike lane
- Standard crosswalk on south approach



Legget Drive/Solandt Road

- Signalized four-legged intersection
- North/South Approaches (Legget Drive): one left turn lane and one shared through/right turn lane
- East/West Approaches (Solandt Road): one left turn lane and one shared through/right turn lane
- Standard crosswalks on all approaches



Terry Fox Drive/Helmsdale Drive

- Unsignalized four-legged intersection
- Helmsdale Drive/Access to 359 Terry Fox Drive is stop-controlled
- North Approach (Helmsdale Drive): one shared left turn/through/right turn lane and a bike lane
- South Approach (359 Terry Fox Drive): one shared left turn/through/right turn lane
- East/West Approaches (Terry Fox Drive): one shared left turn/through/right turn lane and bike lanes
- Standard crosswalk on north approach



**2.1.3 Driveways**

In accordance with the *2017 TIA Guidelines*, a review of adjacent driveways (i.e. within 200m) along the boundary roads has been conducted. This review excludes any driveways that can be used to access the subject site.

**Terry Fox Drive, North Side:**

- Two accesses to offices at 362 Terry Fox Drive
- Two accesses to offices at 350 Terry Fox Drive

**Terry Fox Drive, South Side:**

- One access to offices at 349 Terry Fox Drive

**Legget Drive, East Side:**

- Two accesses to offices at 515 Legget Drive

**Legget Drive, West Side:**

- Three accesses to offices and parking at 570-600 March Road
- Two accesses to offices at 500 March Road

### 2.1.4 Pedestrian and Cycling Facilities

Concrete sidewalks are provided on both sides of March Road. Asphalt sidewalks are provided on one or both sides of Terry Fox Drive, Morgan's Grant Way, Shirley's Brook Drive, Solandt Road, Legget Drive, and Helmsdale Drive, as described in Section 2.1.1. A pedestrian crossover (PXO) is provided at the west approach of Terry Fox Drive/March Valley Road, east of the study area. Bike lanes are provided on March Road, Terry Fox Drive, and on Legget Drive between Terry Fox Drive and approximately 70m north of Solandt Road. There are no dedicated cycling facilities on Morgan's Grant Way, Shirley's Brook Drive, Solandt Road, or Helmsdale Drive.

March Road and Terry Fox Drive are classified as Spine Routes in the City's primary cycling network, while Morgan's Grant Way, Shirley's Brook Drive (between March Road and the first intersection with Helmsdale Drive), Legget Drive, and Helmsdale Drive are classified as Local Routes. Solandt Road is also classified as a Local Route west of Legget Drive, and has no cycling route designation east of Legget Drive.

The pedestrian and cycling network of the greater area surrounding the subject site is illustrated in **Figure 3**.

### 2.1.5 Area Traffic Management

There are no Area Traffic Management (ATM) studies within the study area that have been completed or are currently in progress. Centreline flex posts are provided on Shirley's Brook Drive between McKinley Drive and Sandhill Road.

### 2.1.6 Transit

OC Transpo bus stops in proximity of the subject site are summarized as follows:

#### Legget Drive/Ad. 515

- Stop #4974 – for routes 63, 66, 110, and 166  
(located on the east side of Legget Drive, approximately 200m north of Solandt Road)

#### Legget Drive/Solandt Road

- Stop #6150 – for routes 63, 66, 110, and 166  
(located on the west side of Legget Drive, approximately 200m north of Solandt Road)

#### Legget Drive/Terry Fox Drive

- Stop #4972 – for routes 63, 66, 110, and 166  
(located on the west side of Legget Drive, approximately 100m south of Terry Fox Drive)
- Stop #6149 – for routes 63, 66, 110, and 166  
(located on the east side of Legget Drive, approximately 130m south of Terry Fox Drive)
- Stop #1515 – for routes 66 and 166  
(located on the north side of Terry Fox Drive, approximately 30m east of Legget Drive)
- Stop #6159 – for routes 66 and 166  
(located on the south side of Terry Fox Drive, approximately 50m east of Legget Drive)

Terry Fox Drive/Ad. 359

- Stop #1513 – for routes 66 and 166  
(located on the north side of Terry Fox Drive, approximately 250m west of Helmsdale Drive)
- Stop #7997 – for routes 66 and 166  
(located on the south side of Terry Fox Drive, approximately 250m west of Helmsdale Drive)

Locations of bus stops in proximity of the site are shown in **Figure 4**.

**Figure 3: Pedestrian and Cycling Network**

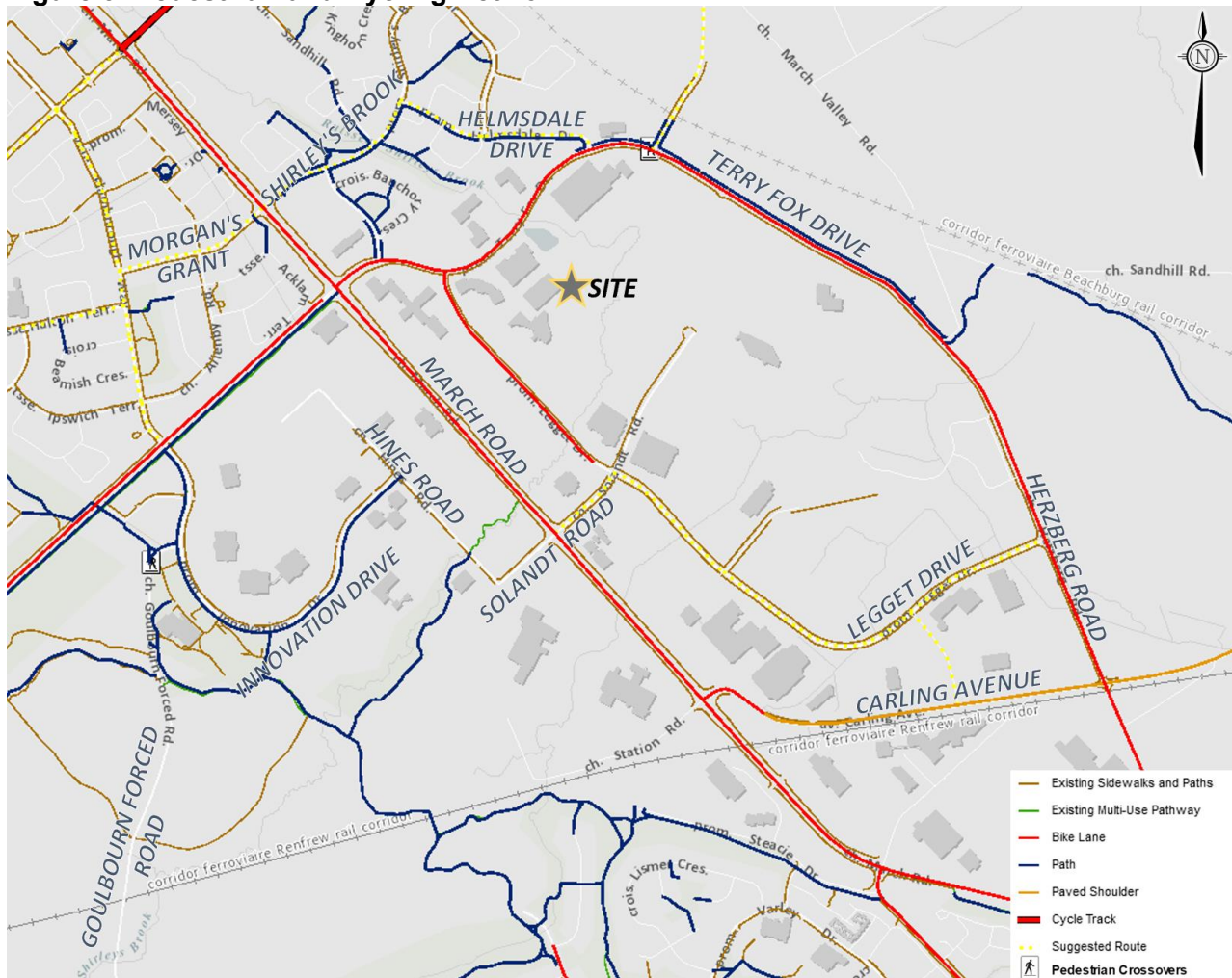


Figure 4: OC Transpo Bus Stop Locations



OC Transpo Route 63 is a rapid route which travels through the Briarbrook community and either Sacre-Couer/Laurier in Gatineau or Tunney's Pasture Station. The route operates on 15 to 30 minute headways on weekdays, and the route operates on 30 to 60 minute headways on weekends.

OC Transpo Route 66 is a local route which travels between Solandt Loop and either Sacre-Couer/Laurier in Gatineau or Tunney's Pasture Station. During the weekday AM peak, the route runs toward Solandt Loop on 15 minute headways. During the weekday PM peak, the route runs in the opposite direction on 30 minute headways. The route does not operate outside of these hours.

OC Transpo Route 110 is a local route which travels between Innovation Station and Fallowfield Station. On weekdays, the route operates every 30 minutes from 6:00am to 9:30pm. The route does not operate outside of these hours, or on weekends.

OC Transpo Route 166 is a local route which travels between Innovation Station and Eagleson Station. During the weekday AM peak, a single bus destined to Innovation Station is scheduled to arrive in the study area around 7:50am. During the weekday PM peak, a single bus destined to Eagleson Station is scheduled to arrive in the study area around 5:10pm. The route does not operate outside of these single buses.

Detailed route information and an excerpt from the OC Transpo System Map are included in **Appendix C**.

### 2.1.7 Existing Traffic Volumes

Weekday traffic counts completed by the City of Ottawa were used to determine the existing pedestrian, cyclist, and vehicular traffic volumes at the study area intersections. Traffic count data is included in **Appendix D**, and traffic volumes within the study area are shown in **Figure 5**. Counts at each study area intersection were completed on the following dates:

- |   |                   |
|---|-------------------|
| • March Road/Morgan's Grant Way/Shirley's Brook Drive | August 10, 2016   |
| • March Road/Terry Fox Drive                          | April 11, 2018    |
| • March Road/Solandt Road                             | August 10, 2016   |
| • Legget Drive/Terry Fox Drive                        | February 20, 2019 |
| • Legget Drive/Solandt Road                           | April 11, 2017    |
| • Terry Fox Drive/Helmsdale Drive                     | November 22, 2016 |

Based on the 2019 traffic count at Legget Drive/Terry Fox Drive, the average annual daily traffic (AADT) of Legget Drive is approximately 2,630 vehicles per day, and the AADT of Terry Fox Drive is approximately 10,950 vehicles per day.

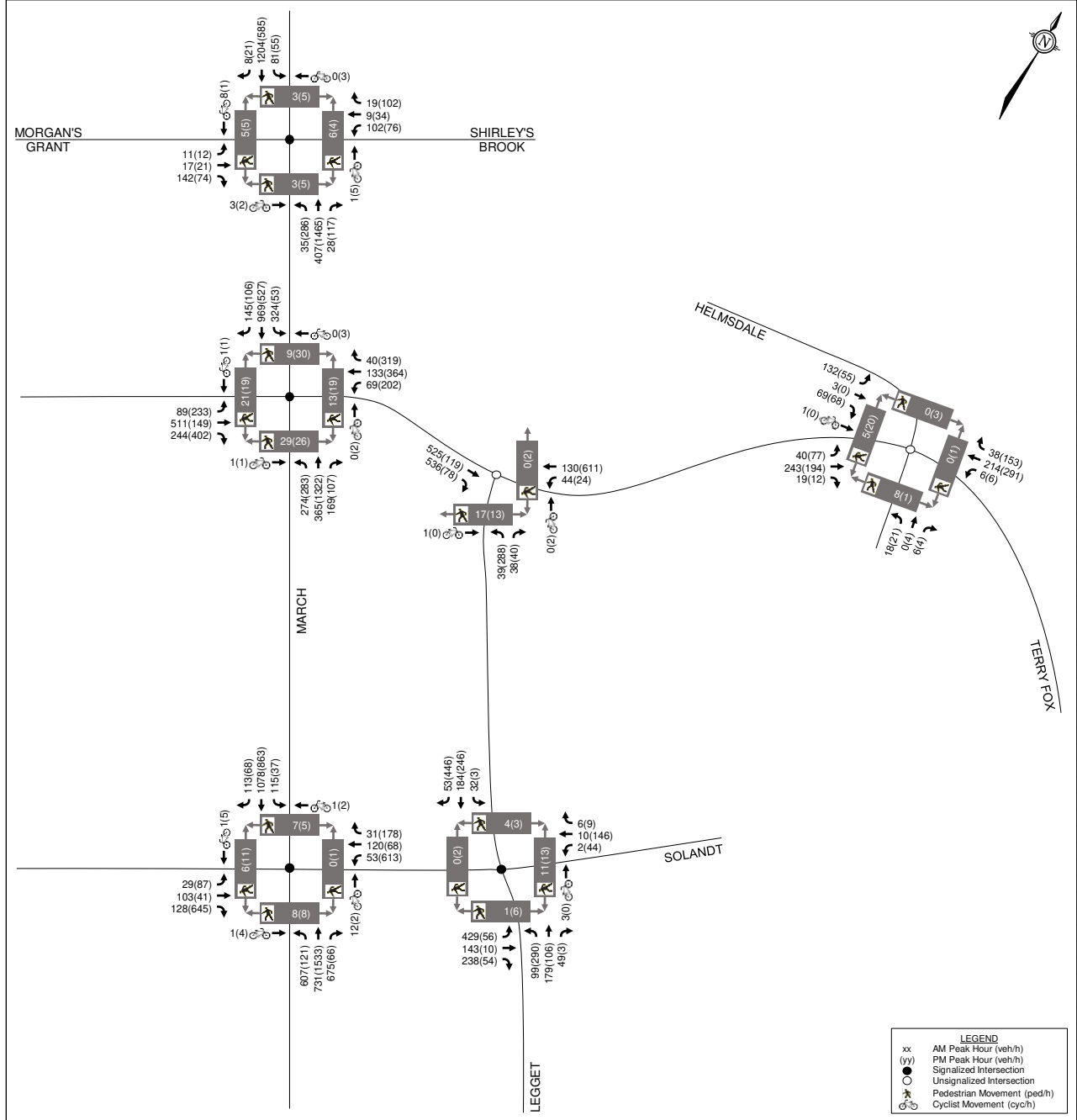
### 2.1.8 Collision Records

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

The collision data has been evaluated to determine if there are any identifiable collision patterns, which are defined in the *2017 TIA Guidelines* as 'more than six collisions in five years' for any one movement. The number of collisions at each intersection from January 1, 2015 to December 31, 2019 is summarized in **Table 1**.



Figure 5: Existing Traffic Volumes



**Table 1: Reported Collisions**

Intersection/ Street Segment	Impact Types						Total
	Approach	Angle	Rear End	Sideswipe	Turning Movement	SMV <sup>(1)</sup> / Other	
March Road/Morgan's Grant Way/Shirley's Brook Drive	-	2	14	2	18	2	<b>38</b>
March Road/ Terry Fox Drive	1	2	36	7	4	6	<b>56</b>
March Road/ Solandt Road	-	2	24	4	22	1	<b>53</b>
Legget Drive/ Terry Fox Drive	-	4	3	-	-	-	<b>7</b>
Legget Drive/ Solandt Road	-	1	2	-	-	1	<b>4</b>
Terry Fox Drive/ Helmsdale Drive	-	3	1	-	-	-	<b>4</b>
March Road btwn Terry Fox Drive and Solandt Road	-	1	7	3	-	9	<b>20</b>
Legget Drive btwn Terry Fox Drive and Solandt Road	-	1	-	-	1	1	<b>3</b>
Solandt Road btwn March Road and Legget Drive	-	-	-	-	1	-	<b>1</b>
Terry Fox Drive btwn March Road and Legget Drive	-	2	1	-	-	2	<b>5</b>
Terry Fox Drive btwn Legget Drive and Helmsdale Drive	-	2	3	1	1	3	<b>10</b>

1. SMV = Single Motor Vehicle

**March Road/Morgan's Grant Way/Shirley's Brook Drive**

A total of 38 collisions were reported at this intersection over the last five years, of which there were two angle impacts, 14 rear-end impacts, two sideswipe impacts, 18 turning movement impacts, and two single vehicle/other impacts. Ten of the collisions caused injuries, but none caused fatalities. Fifteen of the 38 collisions occurred in poor driving conditions.

Of the 14 rear-end impacts, six involved northbound vehicles (six through incidents), two involved southbound vehicles (two through incidents), two involved eastbound vehicles (one through incident and one right turn incident), and four involved westbound vehicles (two through incidents and two right turn incidents). The northbound approach meets the six-vehicle threshold to be considered a collision pattern. High traffic volumes and a posted speed limit of 80 km/h on March Road may have been factors in these collisions.

Of the 18 turning movement impacts, nine involved left turns from the northbound approach, eight involved left turns from the southbound approach, and one involved a left turn from the westbound approach. The northbound and southbound approaches exceed the threshold to be considered collision patterns. Northbound and southbound left turns from March Road onto Morgan's Grant Way or Shirley's Brook Drive currently have protected plus permitted phasing. Dual northbound left turn lanes and fully protected phasing are provided at March Road/Terry Fox Drive. When the fully protected phase is red at March Road/Terry Fox Drive, it is possible that vehicles choose to make their northbound left turn onto Morgan's Grant Way rather than wait for the next cycle to turn left onto Terry Fox Drive. The provision of fully protected left turns at March Road/Morgan's Grant Way/Shirley's Brook Drive may reduce the frequency of these collisions and result in fewer northbound left turns at this intersection, but would likely downgrade performance of the northbound and southbound through movements.

*March Road/Terry Fox Drive*

A total of 56 collisions were reported at this intersection over the last five years, of which there was one approaching impact, two angle impacts, 36 rear-end impacts, seven sideswipe impacts, four turning movement impacts, and six single vehicle/other impacts. Thirteen collisions resulted in injuries, but none caused fatalities. Twenty-nine of the 56 collisions occurred in poor driving conditions. None of the collisions involved pedestrians or cyclists.

Of the 36 rear-end impacts, 18 occurred at the northbound approach, eight occurred at the southbound approach, five occurred at the eastbound approach, and five occurred at the westbound approach. Rear-end impacts at the northbound and southbound approaches exceed the threshold to be considered a collision pattern. High traffic volumes on March Road, as well as a posted speed limit of 80 km/h, may have been factors in these collisions. There does not appear to be any apparent geometric factors that would make rear-end impacts more likely at this intersection.

Of the seven sideswipe impacts, three occurred at the northbound approach, two occurred at the eastbound approach, and two occurred at the westbound approach.

*March Road/Solandt Road*

A total of 53 collisions were reported at this intersection over the last five years, of which there were two angle impacts, 24 rear-end impacts, four sideswipe impacts, 22 turning movement impacts, and one single vehicle/other impact. Six collisions resulted in injuries, but none caused fatalities. Twenty-four of the 53 collisions occurred in poor driving conditions. None of the collisions involved pedestrians or cyclists.

Of the 24 rear-end impacts, seven occurred at the northbound approach, nine occurred at the southbound approach, four occurred at the eastbound approach, and four occurred at the westbound approach. Rear-end impacts at the northbound and southbound approach exceed the threshold to be considered a collision pattern. Similar to the discussion of the previous intersection, high traffic volumes and operating speeds on March Road may have been factors in these collisions.

Of the 22 turning movement impacts, ten involved a left turning vehicle at the northbound approach, seven involved a left turning vehicle at the southbound approach, three involved a U-turning at the southbound approach, one involved a U-turning vehicle at the eastbound approach, and one involved a left turning vehicle at the westbound approach. Turning movement impacts at the northbound and southbound approaches exceed the threshold to be considered a collision pattern. Eleven of the 20 northbound/southbound impacts occurred in poor driving conditions, suggesting that environmental conditions may have been a factor in these collisions. Other likely factors include the posted 80 km/h speed limit on March Road, and the significant left turn/opposing through volumes on March Road during the peak hours (especially the AM peak hour), which may result in drivers misjudging gaps in traffic or taking more risks when attempting a left turn. It should be noted that dual left turn lanes are typically considered at 300 vehicles per hour (vph), and this threshold is doubled on the northbound approach during the AM peak hour.

*Legget Drive/Terry Fox Drive*

A total of seven collisions were reported at this intersection over the last five years, of which there were four angle impacts and three rear-end impacts. One collision resulted in injuries, but none resulted in fatalities. Four of the seven collisions occurred in poor driving conditions. None of the collisions involved pedestrians or cyclists.

*Legget Drive/Solandt Road*

A total of four collisions were reported at this intersection over the last five years, of which there was one angle impact, two rear-end impacts, and one single vehicle/other impact. No collisions resulted in injuries or fatalities. Three of the four collisions occurred in poor driving conditions. None of the collisions involved pedestrians or cyclists.

*Terry Fox Drive/Helmsdale Drive*

A total of four collisions were reported at this intersection over the last five years, of which there were three angle impacts and one rear-end impact. One collision resulted in injuries, but none resulted in fatalities. One collision occurred in poor driving conditions. None of the collisions involved pedestrians or cyclists.

*March Road between Terry Fox Drive and Solandt Road*

A total of 20 collisions were reported along this segment over the last five years, of which there was one angle impact, seven rear-end impacts, three sideswipe impacts, and nine single vehicle/other impacts. Seven of the collisions resulted in injuries, but none resulted in fatalities. Twelve of the collisions occurred in poor driving conditions. None of the collisions involved pedestrians, and one involved a cyclist.

Of the seven rear-end impacts, five involved northbound vehicles and two involved southbound vehicles.

Of the nine single vehicle/other impacts, two involved a single northbound vehicles and seven involved a single southbound vehicle. Four of the seven southbound incidents occurred in poor driving conditions, suggesting that environmental conditions may have been a factor in these collisions.

*Legget Drive between Terry Fox Drive and Solandt Road*

A total of three collisions were reported along this segment over the last five years, of which there was one angle impact, one turning movement impact, and one single vehicle/other impact. Two collisions resulted in injuries, but none resulted in fatalities. None of the collisions occurred in poor driving conditions, and none of the collisions involved pedestrians or cyclists.

*Solandt Road between March Road and Legget Drive*

One turning movement impact was reported along this segment over the last five years. This collision did not result in injuries or fatalities, occurred in poor driving conditions, and did not involve pedestrians or cyclists.

*Terry Fox Drive between March Road and Legget Drive*

A total of five collisions were reported along this segment over the last five years, of which there were two angle impacts, one rear-end impact, and two single vehicle/other impacts. Three collisions resulted in injuries, but none resulted in fatalities. Two of the five collisions occurred in poor driving conditions. None of the collisions involved pedestrians or cyclists.

*Terry Fox Drive between Legget Drive and Helmsdale Drive*

A total of ten collisions were reported along this segment over the last five years, of which there were two angle impacts, three rear-end impacts, one sideswipe impact, one turning movement impact, and three single vehicle/other impacts. Three collisions resulted in injuries, but none resulted in fatalities. Six of the ten collisions occurred in poor driving conditions. None of the collisions involved pedestrians, and one collision involved a cyclist.

## 2.2 Planned Conditions

### 2.2.1 Planned Transportation Projects

The City's 2013 Transportation Master Plan (TMP) does not identify any upcoming roadway projects within the study area in its 2031 Affordable Road Network.

The City's 2013 TMP identifies transit improvements in its 2031 Affordable Network and 2031 Network Concept. In the Network Concept, at-grade bus rapid transit (BRT) will be provided on March Road between Highway 417 and the urban boundary. In the Affordable Network, at-grade BRT will be provided on March Road between Highway 417 and Solandt Road, and transit priority measures such as transit priority signals and queue jump lanes will be provided on March Road between Solandt Road and the urban boundary, which will allow for future conversion to BRT.

An excerpt of the Affordable Network and Network Concept maps from the City's 2013 TMP are shown in **Figure 6** and **Figure 7**.

The City's 2013 Cycling Plan identifies multiple Phase 2 (2020-2025) cycling infrastructure projects within the vicinity of the Kanata Research Park. These projects involve the implementation of bike lanes on Flamborough Way, Innovation Drive, Hines Road, Solandt Road, and Legget Drive, in order to improve connectivity between the residential and employment areas in northern Kanata.

The City's 2013 Pedestrian Plan does not identify any pedestrian infrastructure projects within the vicinity of the Kanata Research Park.

### 2.2.2 Other Area Developments

In proximity of the proposed development, there are multiple other residential and mixed-use developments are under construction, approved, or in the approval process. Other developments in the area include the following.

#### 706-714 March Road

A TIA was prepared by CGH in December 2020, in support of a development including a 4,165 m<sup>2</sup> GFA supermarket, 350 m<sup>2</sup> GFA fast-food restaurant with drive-through, and 1,500 m<sup>2</sup> GFA of multi-unit commercial space. The TIA identified a buildout year of 2023.

#### 788 March Road

A TIA and three subsequent addenda were prepared by Parsons (originally submitted in August 2018, with the addenda submitted in October 2018, December 2018, and March 2020), in support of a development including 92 apartment dwellings. The TIA identified a buildout year of 2023.

#### 910 March Road

A TIA was prepared by CGH in January 2021, in support of a development including a 1,835 m<sup>2</sup> hardware store, a 234 m<sup>2</sup> restaurant with drive-through, a 191 m<sup>2</sup> coffee shop with drive-through, a 416 m<sup>2</sup> retail store, and a 249 m<sup>2</sup> gas bar. The TIA identified a buildout year of 2022.

#### 2707 Solandt Road

A TIA was prepared by Novatech in January 2020, in support of a development that includes an eight-storey, 198,615 ft<sup>2</sup> office building. The TIA identified a buildout year of 2021.

Figure 6: Excerpt of the 2031 Affordable RTTP Network

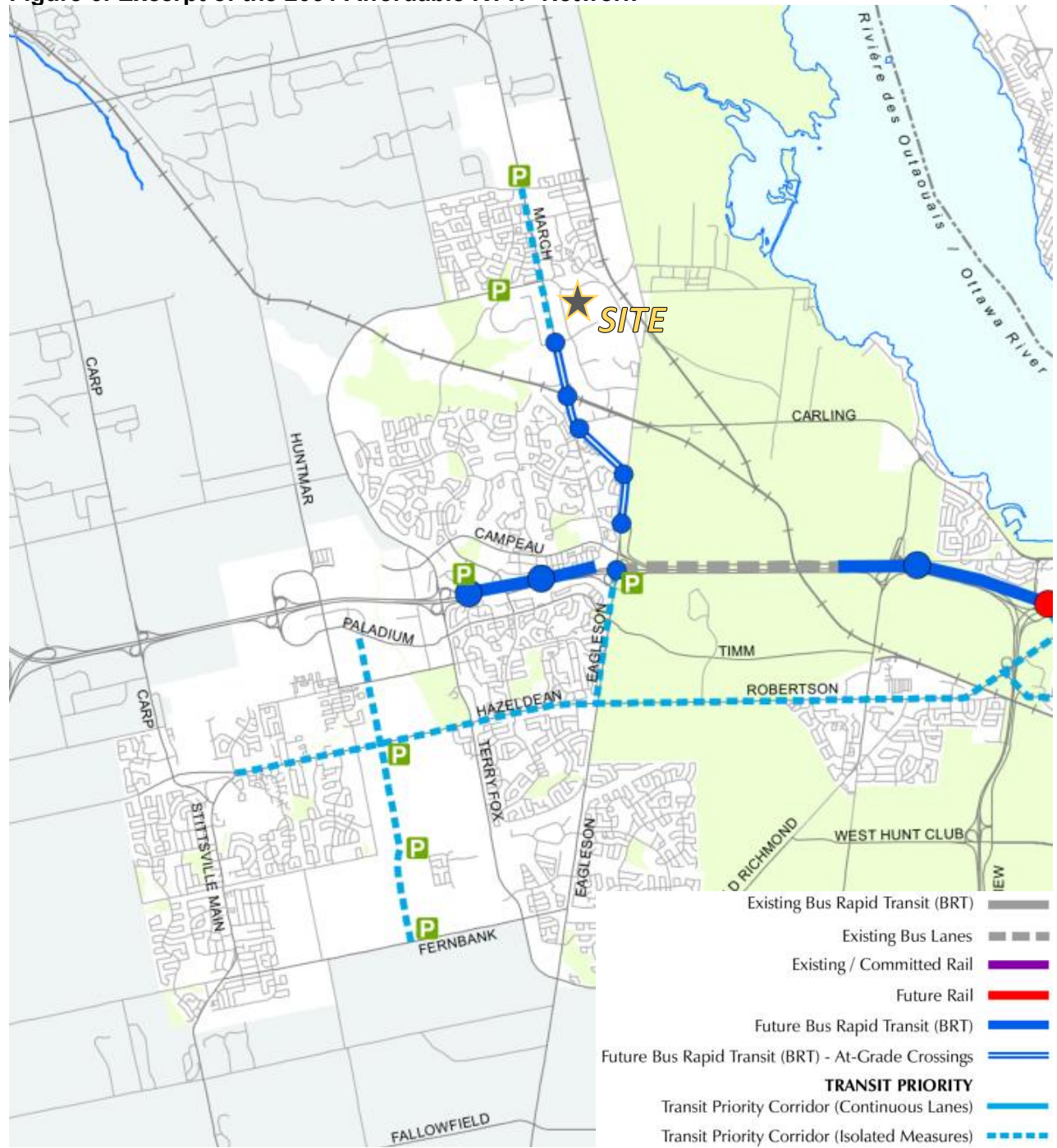
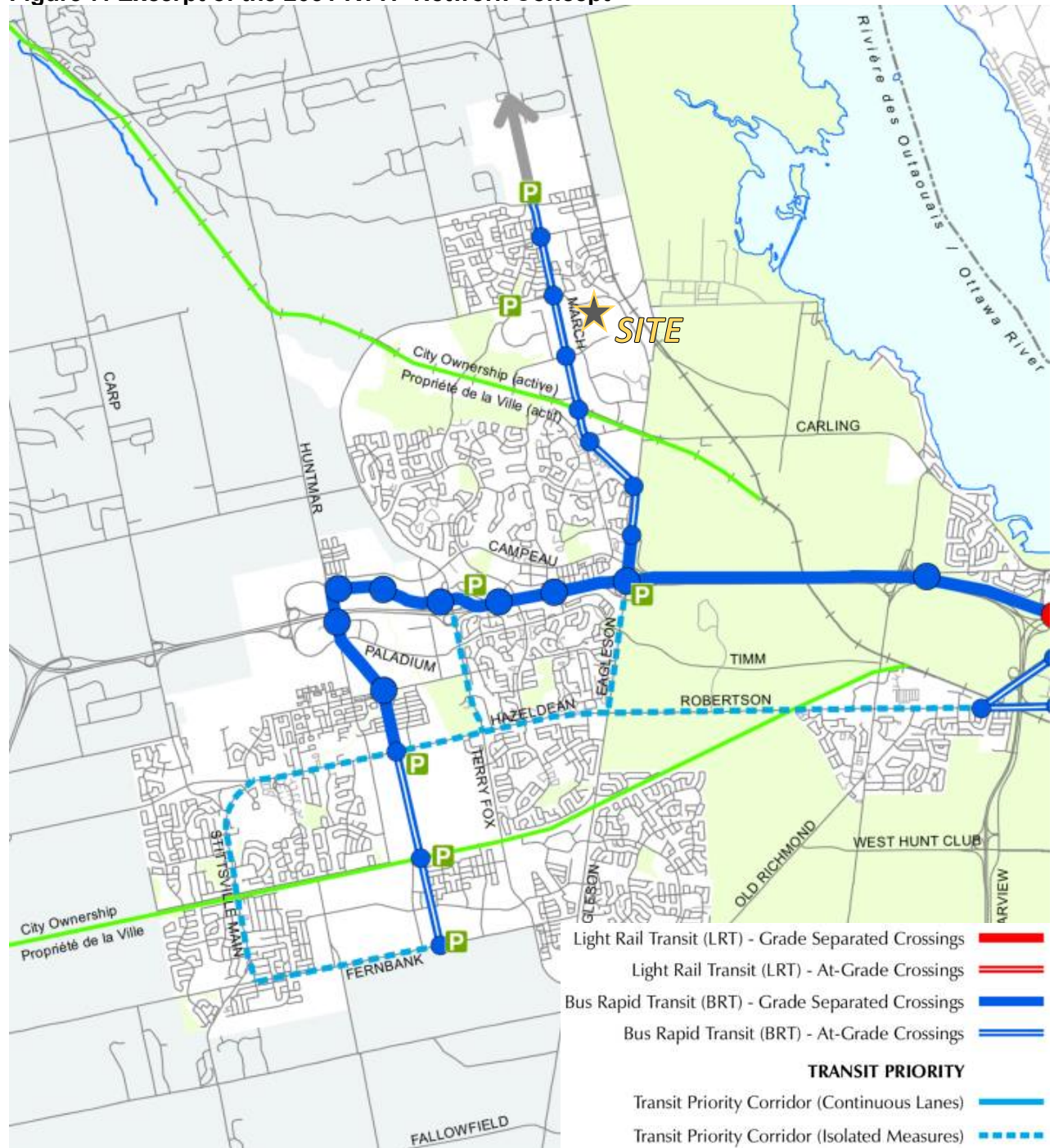


Figure 7: Excerpt of the 2031 RTTP Network Concept



*3026 Solandt Road*

A TIA was prepared by CIMA+ in March 2020, in support of a development that includes a five-storey, 100,000 ft<sup>2</sup> office building. The TIA identified a buildout year of 2021.

*Kanata North Urban Expansion Area (KNUEA)*

The KNUEA TMP was prepared by Novatech in June 2016, and estimated that the development of the Kanata North lands has the potential to consist of 960 single-detached homes, 950 street townhomes, 1,040 multi-unit residential dwellings, 400,000 ft<sup>2</sup> GFA of commercial space, three elementary schools, one high school, and a 500-space park and ride.

Subsequent TIA reports have been prepared in support of all developments within the KNUEA, and cumulatively account for traffic generated by 980 single-detached homes, 1,282 townhomes, 2,170 multi-unit residential units, and 145,600 ft<sup>2</sup> GFA of commercial space. Compared to the TMP, this equates to 20 additional single-detached homes, 332 additional townhomes, 1,130 additional multi-unit residential dwellings, and 254,400 ft<sup>2</sup> GFA less of commercial space. A summary of each TIA is summarized as follows.

*927 March Road*

A TIA was prepared by Stantec in November 2020, in support of a subdivision that includes 35 single-detached homes, 78 townhomes, 1,838 apartment dwellings, and 65,600 ft<sup>2</sup> GFA of commercial space. The TIA identified that the subdivision will be built in seven phases, with an ultimate buildout year of 2034.

*936 March Road*

A TIA was prepared by CGH in April 2020, in support of a subdivision that includes 353 single-detached homes and 575 townhomes. The TIA did not identify phasing, but estimated an ultimate buildout year of 2023.

*1020 and 1070 March Road*

A TIA was prepared by Stantec in May 2020, in support of a subdivision that includes 297 single-detached homes, 315 townhomes, 116 apartment dwellings, 80,000 ft<sup>2</sup> GFA of commercial space, and an elementary school of approximately 580 students. The TIA did not identify phasing, but estimated an ultimate buildout year of 2031.

*1053, 1075, and 1145 March Road*

A TIA was prepared by Novatech in October 2018, in support of a subdivision that includes 295 single-detached homes, 314 townhomes, and 216 multi-unit dwellings. The TIA did not identify phasing, but estimated an ultimate buildout year of 2026.

## **2.3 Study Area and Time Periods**

The study area for this report includes the boundary roadways Terry Fox Drive and Legget Drive, as well as the following intersections:

- March Road/Morgan's Grant Way/Shirley's Brook Drive
- March Road/Terry Fox Drive
- March Road/Solandt Road
- Terry Fox Drive/Legget Drive
- Legget Drive/Solandt Road
- Terry Fox Drive/Helmsdale Drive



The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the ‘worst case’ combination of site generated traffic and adjacent street traffic. Analysis will be completed for the 2024 build-out year and 2029 horizon year.

## 2.4 Exemptions Review

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

**Table 2: TIA Exemptions**

Module	Element	Exemption Criteria	Status
<b>Design Review Component</b>			
<b>4.1</b> Development Design	4.1.2 Circulation and Access	• Only required for site plans	Not Exempt
	4.1.3 New Street Networks	• Only required for plans of subdivision	Exempt
<b>4.2</b> Parking	4.2.1 Parking Supply	• Only required for site plans	Not Exempt
	4.2.2 Spillover Parking	• Only required for site plans where parking supply is 15% below unconstrained demand	Exempt
<b>Network Impact Component</b>			
<b>4.5</b> Transportation Demand Management	<i>All elements</i>	• Not required for non-residential site plans expected to have fewer than 60 employees and/or students on location at any given time	Not Exempt
<b>4.6</b> Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	• Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	Not Exempt
<b>4.8</b> Network Concept	<i>All elements</i>	• Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by the established zoning	Exempt

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

### Design Review Component

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

### Network Impact Component

- Module 4.5: Transportation Demand Management
- Module 4.6: Neighbourhood Traffic Management
- Module 4.7: Transit
- Module 4.9: Intersection Design

### 3.0 FORECASTING

#### 3.1 Development-Generated Travel Demand

##### 3.1.1 Trip Generation

The proposed development will include a total of 256 high-rise dwellings and 3,850 ft<sup>2</sup> GFA of rooftop restaurant space. Trips generated by the residential use have been estimated using the *TRANS Trip Generation Manual Summary Report*, prepared in October 2020 by WSP Global Inc. The manual includes data to estimate the trip generation and mode shares for residential uses, divided into single-family detached housing, low-rise multifamily housing (one or two storeys), and high-rise multifamily housing (three or more storeys). Trips generated by the restaurant use have been estimated using the *ITE Trip Generation Manual, 10<sup>th</sup> Edition*, specific to the Quality Restaurant land use (land use code 931). Relevant excerpts from the *TRANS Trip Generation Manual* and *ITE Trip Generation Manual* are included in **Appendix F**.

The *TRANS Trip Generation Manual* identifies the subject site as being located within the Kanata/Stittsville district, which has the following observed mode shares for High-Rise Multifamily Housing during the peak hours.

##### **AM Peak Hour**

- Auto Driver: 43%
- Auto Passenger: 26%
- Transit: 28%
- Cyclist: 0%
- Pedestrian: 4%

##### **PM Peak Hour**

- Auto Driver: 55%
- Auto Passenger: 19%
- Transit: 21%
- Cyclist: 0%
- Pedestrian: 5%

As stated in Section 1.2, the proposed residential units are intended to primarily serve the demand for rental units from employees of the businesses in the Kanata Research Park (KRP). Providing a short distance between work and home is anticipated to encourage residents/visitors to walk to/from work. Further, there is existing and planned bicycle infrastructure within the study area that encourages cycling as a mode of transportation. Therefore, compared to the observed shares for this district, the cyclist and pedestrian shares have been increased, while the driver and transit shares have been decreased.

The mode shares for the proposed restaurant are assumed to be roughly consistent with the modal shares outlined in the *2011 TRANS O-D Survey Report*, specific to all trips within the Kanata/Stittsville district during the PM peak hour.

The assumed mode shares for the proposed development are summarized as follows:

##### **Residential Dwellings**

- Auto Driver: 40% during peak hours;
- Auto Passenger: 20% during peak hours;
- Transit: 20% during peak hours;
- Cyclist: 5% during peak hours;
- Pedestrian: 15% during peak hours.

##### **Rooftop Restaurant**

- Auto Driver: 55% during peak hours;
- Auto Passenger: 25% during peak hours;
- Transit: 5% during peak hours;
- Cyclist: 5% during peak hours;
- Pedestrian: 10% during peak hours.

Residential Trip Generation

For the High-Rise Multifamily Housing land use, the process of converting the trip generation estimates from peak period to peak hour is shown in the following tables. The estimated number of person trips generated by the proposed dwellings for the AM and PM peak periods are shown in **Table 3**. A breakdown of these trips by modal share is shown in **Table 4**.

**Table 3: Proposed Residential – Peak Period Trip Generation**

Land Use	TRANS Rate	Units	AM Peak Period (ppp <sup>(1)</sup> )			PM Peak Period (ppp)		
			IN	OUT	TOT	IN	OUT	TOT
High-Rise Multifamily Housing	AM: 0.80 PM: 0.90	256	64	141	205	133	97	230

1. ppp: Person Trips per Peak Period

**Table 4: Proposed Residential – Peak Period Trips by Mode Share**

Travel Mode	Mode Share	AM Peak Period			PM Peak Period		
		IN	OUT	TOT	IN	OUT	TOT
<b>Peak Period Person Trips</b>		<b>64</b>	<b>141</b>	<b>205</b>	<b>133</b>	<b>97</b>	<b>230</b>
Auto Driver	40%	26	56	82	53	39	92
Auto Passenger	20%	13	28	41	27	19	46
Transit	20%	13	28	41	27	19	46
Cyclist	5%	3	7	10	6	5	11
Pedestrian	15%	9	22	31	20	15	35

Table 4 of the *TRANS Trip Generation Manual* includes adjustment factors to convert the estimated number of trips generated for each mode from peak period to peak hour. A breakdown of the peak hour trips by mode is shown in **Table 5**.

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

Travel Mode	Adj. Factor		AM Peak Hour			PM Peak Hour		
	AM	PM	IN	OUT	TOT	IN	OUT	TOT
Auto Driver	0.48	0.44	12	27	39	23	17	40
Auto Passenger	0.48	0.44	6	14	20	12	9	21
Transit	0.55	0.47	7	16	23	13	9	22
Cyclist	0.58	0.48	2	4	6	3	2	5
Pedestrian	0.58	0.52	6	12	18	10	8	18
<b>Peak Hour Person Trips</b>			<b>33</b>	<b>73</b>	<b>106</b>	<b>61</b>	<b>45</b>	<b>106</b>

From the previous table, the proposed high-rise dwellings are estimated to generate 106 person trips during both peak hours, including 39 vehicle trips during the AM peak hour and 40 vehicle trips during the PM peak hour.

Restaurant Trip Generation

For the Quality Restaurant land use, the trip generation estimates are shown in the following tables. The estimated number of person trips generated by the proposed restaurant during the peak hours is shown in **Table 6**. A breakdown of these trips by modal share is shown in **Table 7**.

**Table 6: Proposed Restaurant – Peak Hour Trip Generation**

Land Use	ITE Code	GFA	AM Peak Hour (pph <sup>(1)</sup> )			PM Peak Hour (pph)		
			IN	OUT	TOT	IN	OUT	TOT
Quality Restaurant	931	3,850 ft <sup>2</sup>	-	-	0	25	12	37

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

**Table 7: Proposed Restaurant – Peak Hour Trips by Mode Share**

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOT	IN	OUT	TOT
<b>Peak Hour Person Trips</b>		-	-	<b>0</b>	<b>25</b>	<b>12</b>	<b>37</b>
Auto Driver	55%	-	-	0	14	6	20
Auto Passenger	25%	-	-	0	6	3	9
Transit	5%	-	-	0	1	1	2
Cyclist	5%	-	-	0	1	1	2
Pedestrian	10%	-	-	0	3	1	4

From the previous table, the proposed restaurant is estimated to generate 37 person trips (including 20 vehicle trips) during the PM peak hour. The restaurant is not anticipated to generate any person trips during the AM peak hour.

Trip Generation Summary

It is recognized that as a multi-use building on a property that will be connected to a hotel and adjacent to multiple office/light industrial uses, the proposed development is likely to generate internally captured trips (for example, residents of the building may walk to the hotel/offices next door or the restaurant on the roof). However, no deduction has been made to account for internally captured trips. Therefore, all trips generated by the proposed development is assumed to have an origin or destination beyond the subject site, 359 Terry Fox Drive, or 525 Legget Drive. This simplifying assumption also allows for a more conservative analysis.

The estimated number of peak hour trips by the proposed development is shown in **Table 8**.

**Table 8: Proposed Development – Peak Hour Trips**

Travel Mode	AM Peak Hour			PM Peak Hour		
	IN	OUT	TOT	IN	OUT	TOT
<b>Residential Person Trips</b>	<b>33</b>	<b>73</b>	<b>106</b>	<b>61</b>	<b>45</b>	<b>106</b>
Auto Driver	12	27	39	23	17	40
Auto Passenger	6	14	20	12	9	21
Transit	7	16	23	13	9	22
Cyclist	2	4	6	3	2	5
Pedestrian	6	12	18	10	8	18
<b>Restaurant Person Trips</b>	<b>-</b>	<b>-</b>	<b>0</b>	<b>25</b>	<b>12</b>	<b>37</b>
Auto Driver	-	-	0	14	6	20
Auto Passenger	-	-	0	6	3	9
Transit	-	-	0	1	1	2
Cyclist	-	-	0	1	1	2
Pedestrian	-	-	0	3	1	4
<b>Total Additional Trips</b>	<b>33</b>	<b>73</b>	<b>106</b>	<b>86</b>	<b>57</b>	<b>143</b>
Auto Driver	12	27	39	37	23	60
Auto Passenger	6	14	20	18	12	30
Transit	7	16	23	14	10	24
Cyclist	2	4	6	4	3	7
Pedestrian	6	12	18	13	9	22

In total, the proposed development is projected to generate 106 new person trips (including 39 vehicle trips) during the AM peak hour and 143 new person trips (including 60 vehicle trips) during the PM peak hour.

### 3.1.2 Trip Distribution

The assumed distribution of trips generated by the proposed development has been derived from existing traffic patterns within the study area and logical trip routing. For the residential use, the existing typical commuter pattern has been considered (i.e. outbound volumes during the AM peak hour and inbound volumes during the PM peak hour). For the restaurant use, the two-way midday peak hour volumes have been considered. The assumed trip distributions for each use are summarized as follows:

#### Residential Distribution

- 15% to/from the north via March Road;
- 25% to/from the south via March Road;
- 10% to/from the south via Legget Drive;
- 20% to/from the east via Terry Fox Drive;
- 15% to/from the west via Terry Fox Drive;
- 15% to/from the west via Solandt Road.

#### Restaurant Distribution

- 30% to/from the north via March Road;
- 25% to/from the south via March Road;
- 5% to/from the south via Legget Drive;
- 15% to/from the east via Terry Fox Drive;
- 15% to/from the west via Terry Fox Drive;
- 10% to/from the west via Solandt Road.

### 3.1.3 Trip Assignment

While the subject site can be accessed via existing driveways to 359 Terry Fox Drive, 525 Legget Drive, or 555 Legget Drive, it has been assumed that all new trips generated by the proposed development will utilize the easterly access to 359 Terry Fox Drive, which will be landscaped and designed to be the primary access (i.e. a ‘grand entrance’) to the proposed development. Therefore, all trips to/from the proposed development have been assigned to the existing easterly access to 359 Terry Fox Drive.

## 3.2 Background Traffic

### 3.2.1 Existing Site Traffic

Existing traffic volumes generated by the commercial building at 359 Terry Fox Drive has been estimated using the *ITE Trip Generation Manual, 10<sup>th</sup> Edition*, specific to the General Office Building and Manufacturing land uses (land use codes 710 and 140, respectively). This commercial building includes 35,000 ft<sup>2</sup> GFA of office space and 65,000 ft<sup>2</sup> GFA of light manufacturing space. The mode shares for the existing building are assumed to be roughly consistent with the modal shares outlined in the *2020 TRANS Trip Generation Manual*, specific to the employment generator mode shares of the Kanata/Stittsville district.

The estimated number of person trips generated by the existing commercial building at 359 Terry Fox Drive during the peak hours is shown in **Table 9**. A breakdown of these trips by modal share is shown in **Table 10**.

**Table 9: Existing Uses at 359 Terry Fox Drive – Peak Hour Trip Generation**

Land Use	ITE Code	GFA	AM Peak Hour (pph <sup>(1)</sup> )			PM Peak Hour (pph)		
			IN	OUT	TOT	IN	OUT	TOT
General Office	710	35,000 ft <sup>2</sup>	65	10	75	9	45	54
Manufacturing	140	65,000 ft <sup>2</sup>	40	11	51	18	38	56
<b>Total</b>			<b>105</b>	<b>21</b>	<b>126</b>	<b>27</b>	<b>83</b>	<b>110</b>

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

**Table 10: Existing Uses at 359 Terry Fox Drive – Peak Hour Trips by Mode Share**

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOT	IN	OUT	TOT
<b>Peak Hour Person Trips</b>		<b>105</b>	<b>21</b>	<b>126</b>	<b>27</b>	<b>83</b>	<b>110</b>
Auto Driver	85%	90	17	107	23	71	94
Auto Passenger	5%	5	2	7	2	4	6
Transit	5%	5	1	6	1	4	5
Cyclist	0%	-	-	0	-	-	0
Pedestrian	5%	5	1	6	1	4	5

From the previous table, the existing uses at 359 Terry Fox Drive are estimated to generate 126 person trips (including 107 vehicle trips) during the AM peak hour, and 110 person trips (including 94 vehicle trips) during the PM peak hour. These trips have been assigned equally to the two accesses to 359 Terry Fox Drive, and have been distributed 80% to/from the west via Terry Fox Drive and 20% to/from the east via Terry Fox Drive.

### 3.2.2 Other Area Developments

As first discussed in Section 2.2.2, there are multiple development applications for sites in proximity of the proposed development that are under construction, approved, or in the approval process. Traffic generated by these developments have been accounted for as background traffic. Relevant excerpts for the transportation studies in support of each development listed below are included in **Appendix G**.

#### 706-714 March Road

The development includes a 4,165 m<sup>2</sup> GFA supermarket, 350 m<sup>2</sup> GFA fast-food restaurant with drive-through, and 1,500 m<sup>2</sup> GFA of multi-unit commercial space. The associated TIA identified a buildout year of 2023. Therefore, volumes generated by this development have been added to the 2024 and 2029 background volumes.

#### 788 March Road

The development includes 92 apartment dwellings, and the associated TIA identified a buildout year of 2023. Therefore, volumes generated by this development have been added to the 2024 and 2029 background volumes.

#### 910 March Road

The development includes a 1,835 m<sup>2</sup> hardware store, a 234 m<sup>2</sup> restaurant with drive-through, a 191 m<sup>2</sup> coffee shop with drive-through, a 416 m<sup>2</sup> retail store, and a 249 m<sup>2</sup> gas bar. The associated TIA identified a buildout year of 2022. Therefore, volumes generated by this development have been added to the 2024 and 2029 background volumes.

#### 2707 Solandt Road

The development includes an eight-storey, 198,615 ft<sup>2</sup> office building. The associated TIA identified a buildout year of 2021. Therefore, volumes generated by this development have been added to the 2024 and 2029 background volumes.

#### 3026 Solandt Road

The development includes a five-storey, 100,000 ft<sup>2</sup> office building. The associated TIA identified a buildout year of 2021. Therefore, volumes generated by this development have been added to the 2024 and 2029 background volumes.

### Kanata North Urban Expansion Area (KNUEA)

The KNUEA TMP was prepared by Novatech in June 2016, and estimated that the development of the Kanata North lands has the potential to consist of 960 single-detached homes, 950 street townhomes, 1,040 multi-unit residential dwellings, 400,000 ft<sup>2</sup> GFA of commercial space, three elementary schools, one high school, and a 500-space park and ride. The TMP originally identified a buildout year of 2026, however subsequent TIA reports have been prepared in support of developments within the KNUEA. These reports cumulatively account for traffic generated by 980 single-detached homes, 1,282 townhomes, 2,170 multi-unit residential units, and 145,600 ft<sup>2</sup> GFA of commercial space. Compared to the TMP, this equates to 20 additional single-detached homes, 332 additional townhomes, 1,130 additional multi-unit residential dwellings, and 254,400 ft<sup>2</sup> GFA less of commercial space. Therefore, the site-generated volumes identified in these TIA reports (included below) have been considered, rather than the volumes considered in the original TMP.

### 927 March Road

The subdivision includes 35 single-detached homes, 78 townhomes, 1,838 apartment dwellings, and 65,600 ft<sup>2</sup> GFA of commercial space. The TIA identified that the first two phases (i.e. 33 townhomes and 600 apartment dwellings) will be built out by 2024, and the first four phases (i.e. 28 single-detached homes, 33 townhomes, and 936 apartment dwellings) will be built out by 2029. For the purposes of this assessment, volumes generated by 35% of this development have been added to the 2024 background volumes, and volumes generated by 55% of this development have been added to the 2029 background volumes.

### 936 March Road

The subdivision includes 353 single-detached homes and 575 townhomes. The TIA did not identify phasing, but estimated an ultimate buildout year of 2023. Therefore, volumes generated by this development have been added to the 2024 and 2029 background volumes.

### 1020 and 1070 March Road

The subdivision includes 297 single-detached homes, 315 townhomes, 116 apartment dwellings, 80,000 ft<sup>2</sup> GFA of commercial space, and an elementary school of approximately 580 students. The TIA did not identify phasing, but estimated an ultimate buildout year of 2031. For the purposes of this assessment, volumes generated by 25% of this development have been added to the 2024 background volumes, and volumes generated by 75% of this development have been added to the 2029 background volumes.

### 1053, 1075, and 1145 March Road

The subdivision includes 295 single-detached homes, 314 townhomes, and 216 multi-unit dwellings. The TIA did not identify phasing, but estimated an ultimate buildout year of 2026. For simplicity, volumes generated by 50% of this development have been added to the 2024 background volumes, and volumes generated by 100% of this development have been added to the 2029 background volumes.

## **3.2.3 General Background Growth Rate**

A rate of background growth for the arterial and major collector roadways within the study area has been established, through a review of City traffic count data at March Road/Solandt Road from July 2010, June 2011, March 2013, and August 2016. The data indicates a 0.5% per annum growth rate on March Road. A review of the City's Strategic Long-Range Model (comparing snapshots of 2011 and 2031 AM peak hour volumes, which are included in **Appendix H**) was also conducted. A review of the long-range snapshots estimate growth between 0% and 1% per annum in the traffic volumes

on March Road, Terry Fox Drive, Morgan's Grant Way, and Shirley's Brook Drive. Therefore, an annual background growth rate of 0.5% has been applied to these roadways.

Section 2.3 of the 2013 TMP projects a 22% increase in employment within the 'Kanata/Stittsville' area, equating to an annual growth rate of approximately 1%. To maintain a conservative analysis, an annual background growth rate of 1% has been applied to Legget Drive and Solandt Road to account for potential growth within the office park. No background growth has been applied to Helmsdale Drive.

### 3.2.4 March Road BRT Corridor

The assumed existing transit modal shares within the study area follow the modal shares outlined in the Existing Conditions report of the KNUEA TMP. The TMP included a Transportation Area of Interest (TAI) screenline located immediately south of Terry Fox Drive between Second Line Road and March Valley Road, where person trips for vehicle and non-auto modes were estimated using observed traffic, transit rider, cyclist, and pedestrian volumes. Passenger volumes were estimated using a private vehicle occupancy of 1.2. This analysis was performed because the KNUEA is located at the boundary between the Kanata/Stittsville and Rural West regions as shown in the *2011 TRANS O-D Survey Report*.

The results of this exercise indicated that, at the TAI screenline, the existing transit share is 7% and 5% in the weekday AM and PM peak hours, respectively. Existing mode shares at the TAI screenline were not found to be reflective of the mode shares presented for the Kanata/Stittsville district, since the rapid transit stations within Kanata/Stittsville are centralized along Highway 417, which is approximately 4.5km south of the screenline. Conversely, the existing shares are more aligned with those presented for the Rural West district. As the TAI screenline was located immediately south of Terry Fox Drive, and is therefore located within the study area, the existing transit shares of 7% in the AM peak hour and 5% in the PM peak hour have been assumed for this study.

Exhibit 2.13 of the City's 2013 TMP identifies a transit share target of 21% within the Kanata/Stittsville district by 2031. Within the study area, it is anticipated that the 21% transit share target will be achieved through the implementation of the planned RTTP projects on March Road, as described in Section 2.2.1. Consistent with the KNUEA TMP, a reduction in the background vehicular volumes has been made in the 2029 horizon year only, to reflect the 21% transit share target and the planned implementation of transit priority measures on March Road.

A functional design of median BRT lanes on March Road was included as part of the *West Transitway Connection – Highway 417/Eagleson Road to North of Maxwell Bridge Road* Environmental Project Report (EPR), prepared by Delcan in October 2013. The relevant pages of the functional design are included in **Appendix I**.

### 3.3 Volume Figures

The figures below present the following traffic conditions:

- Proposed site-generated traffic volumes are shown in **Figure 8**;
- Existing site-generated volumes at the primary access are shown in **Figure 9**;
- Total site-generated volumes at the primary access are shown in **Figure 10**;
- Other area development-generated traffic volumes in 2024 are shown in **Figure 11**;



- Other area development-generated traffic volumes in 2029 are shown in **Figure 12**;
- Background traffic volumes in 2024 are shown in **Figure 13**;
- Background traffic volumes in 2029 are shown in **Figure 14**;
- Total traffic volumes in 2024 are shown in **Figure 15**;
- Total traffic volumes in 2029 are shown in **Figure 16**.

**Figure 8: Proposed Site-Generated Volumes**

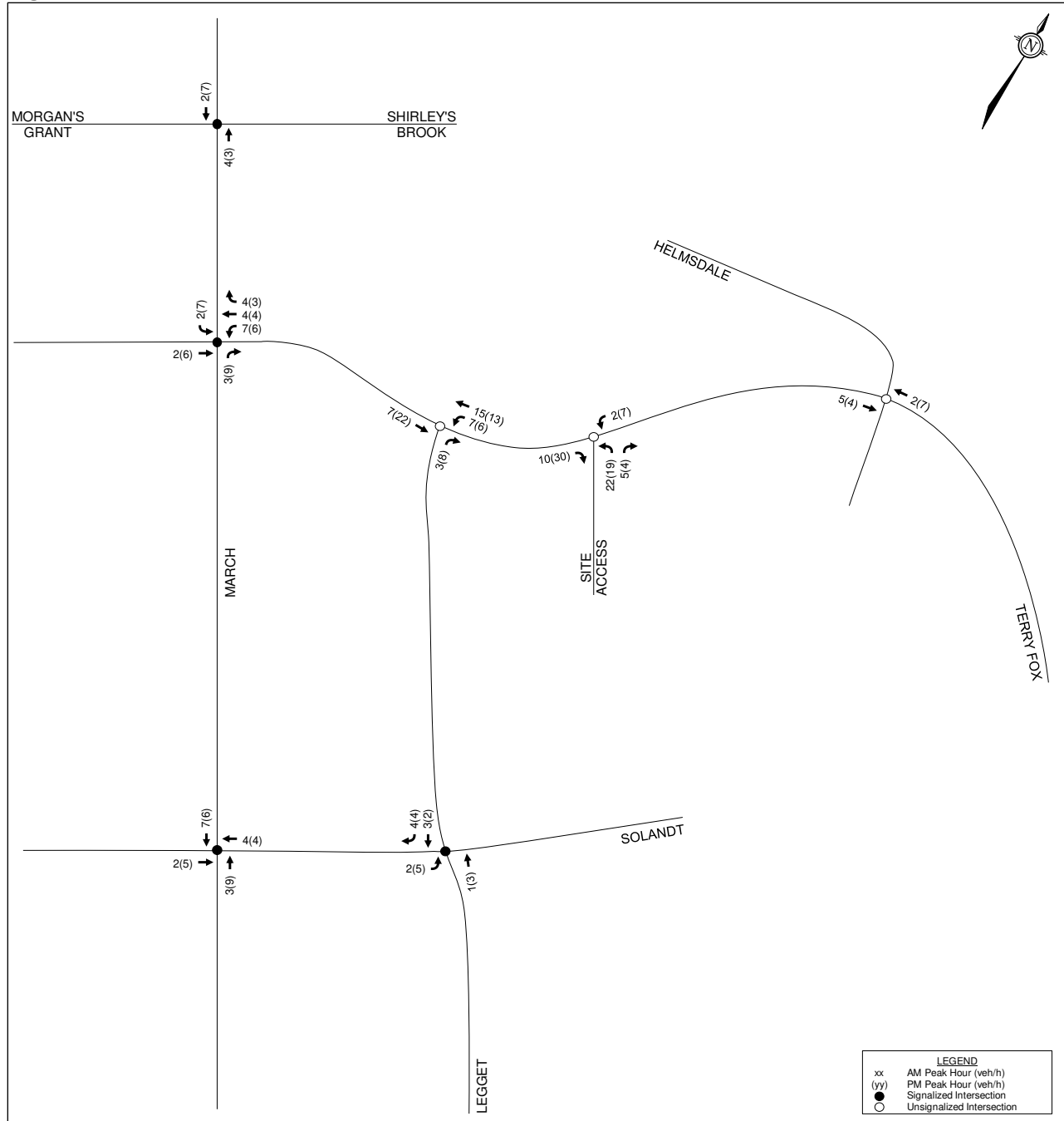


Figure 9: Existing Site-Generated Volumes at Primary Access

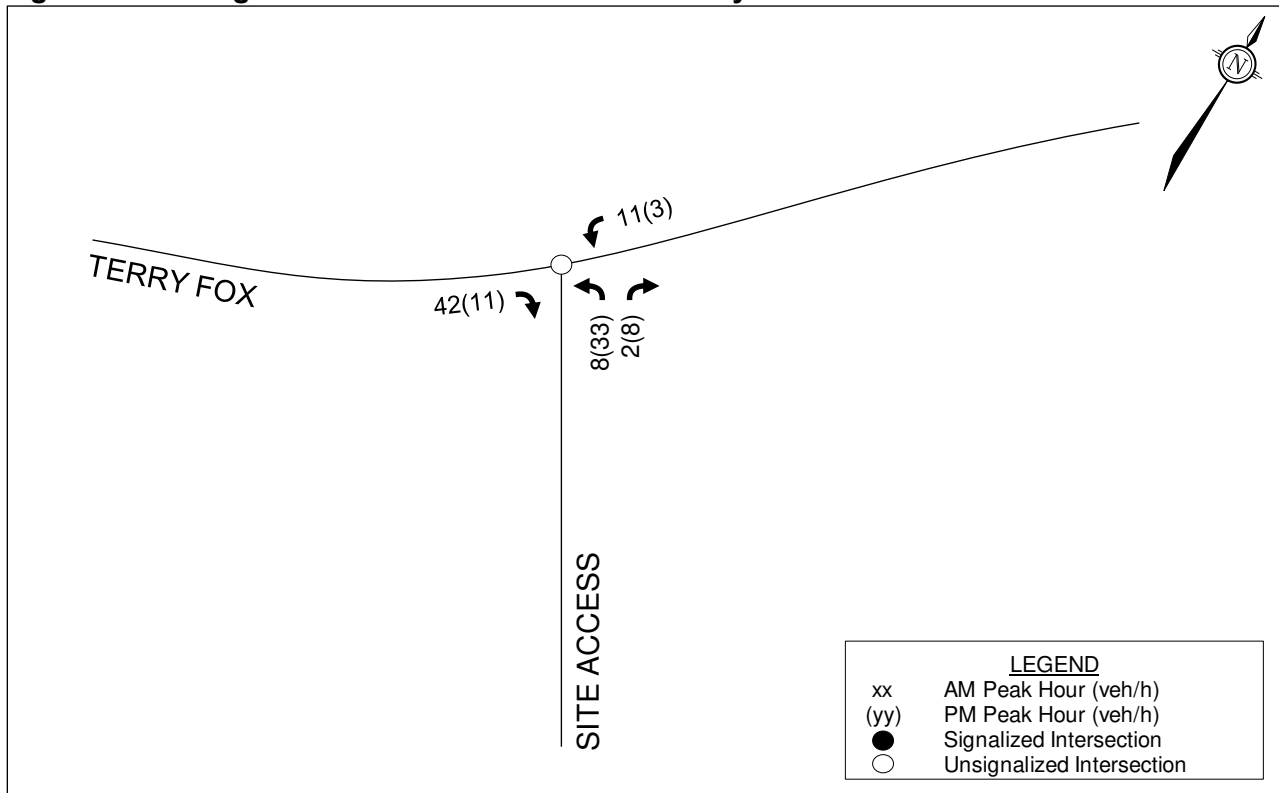


Figure 10: Total Site-Generated Volumes at Primary Access

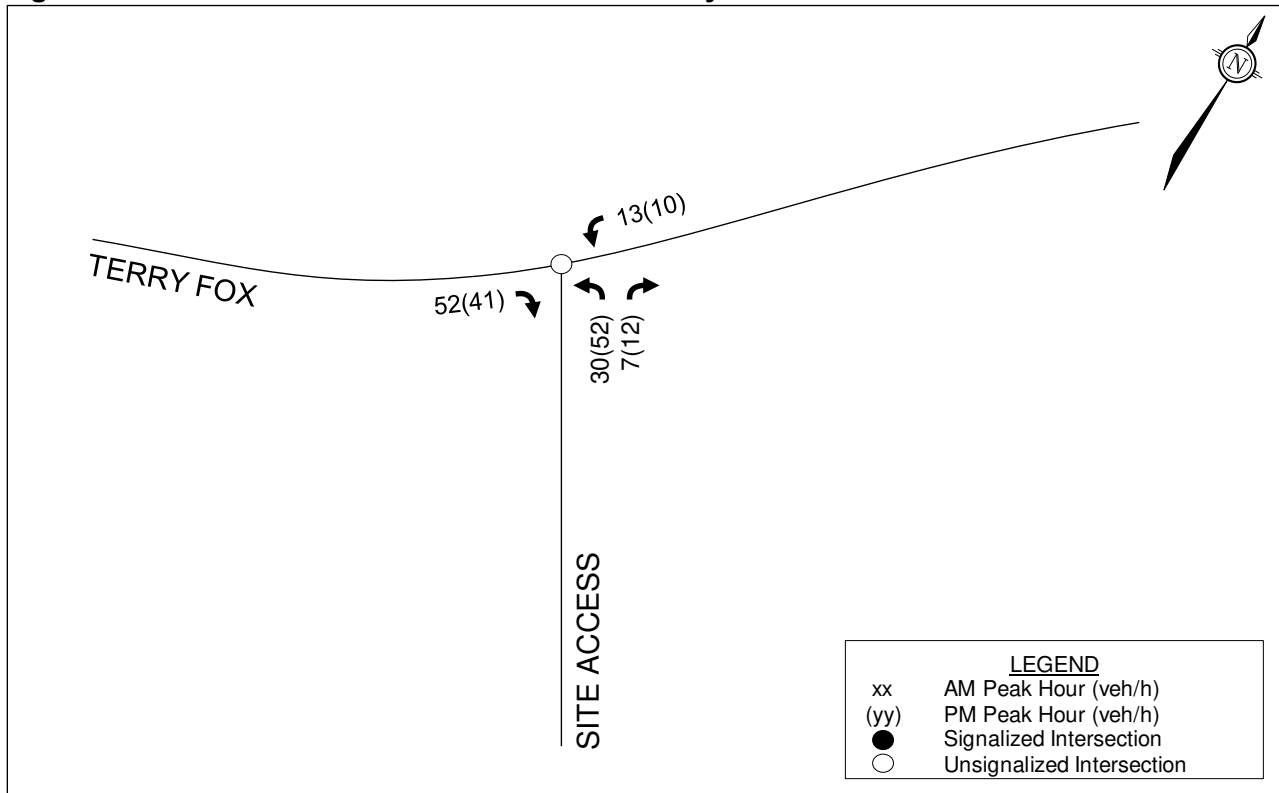


Figure 11: 2024 Other Area Development-Generated Volumes

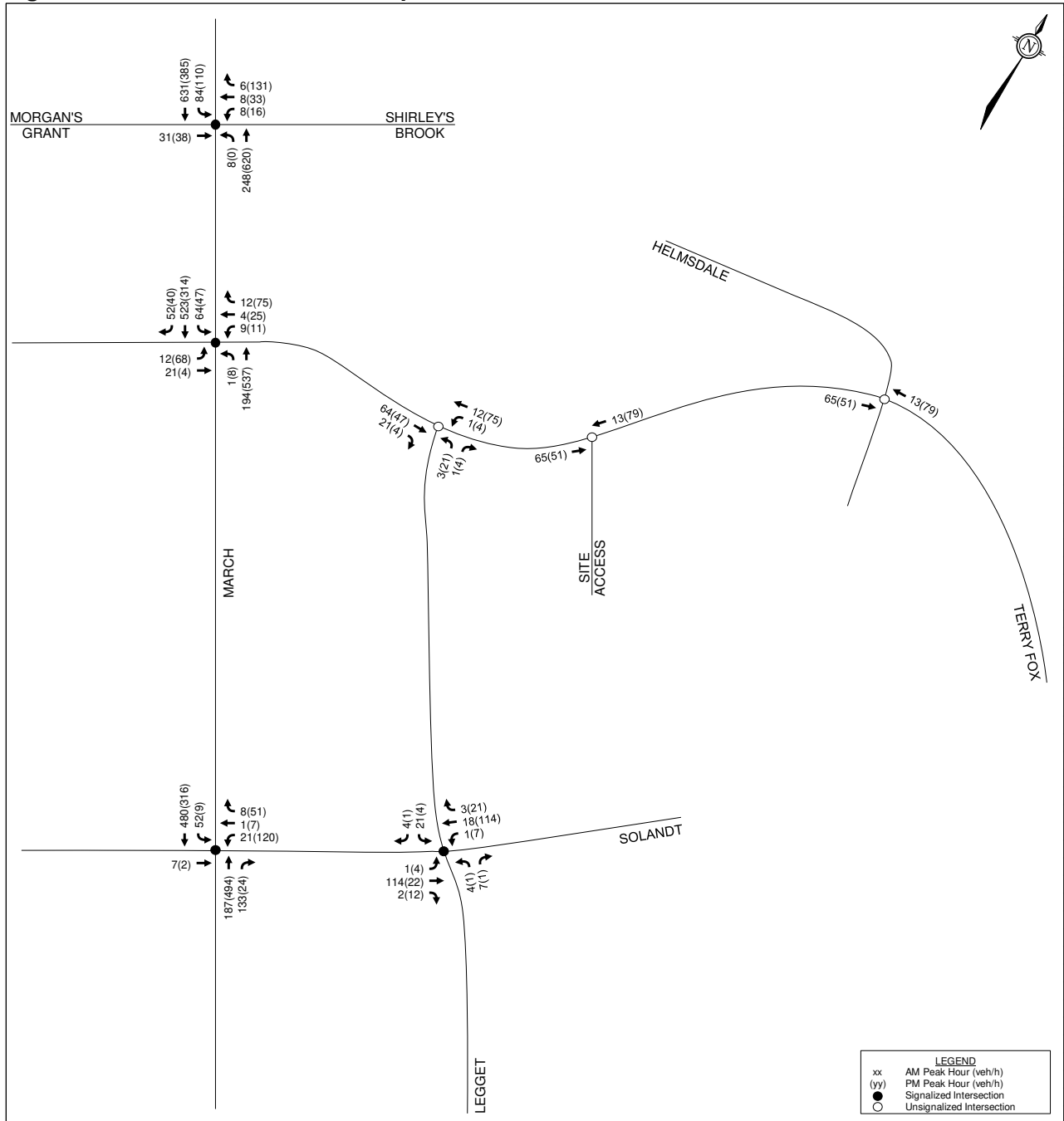


Figure 12: 2029 Other Area Development-Generated Volumes

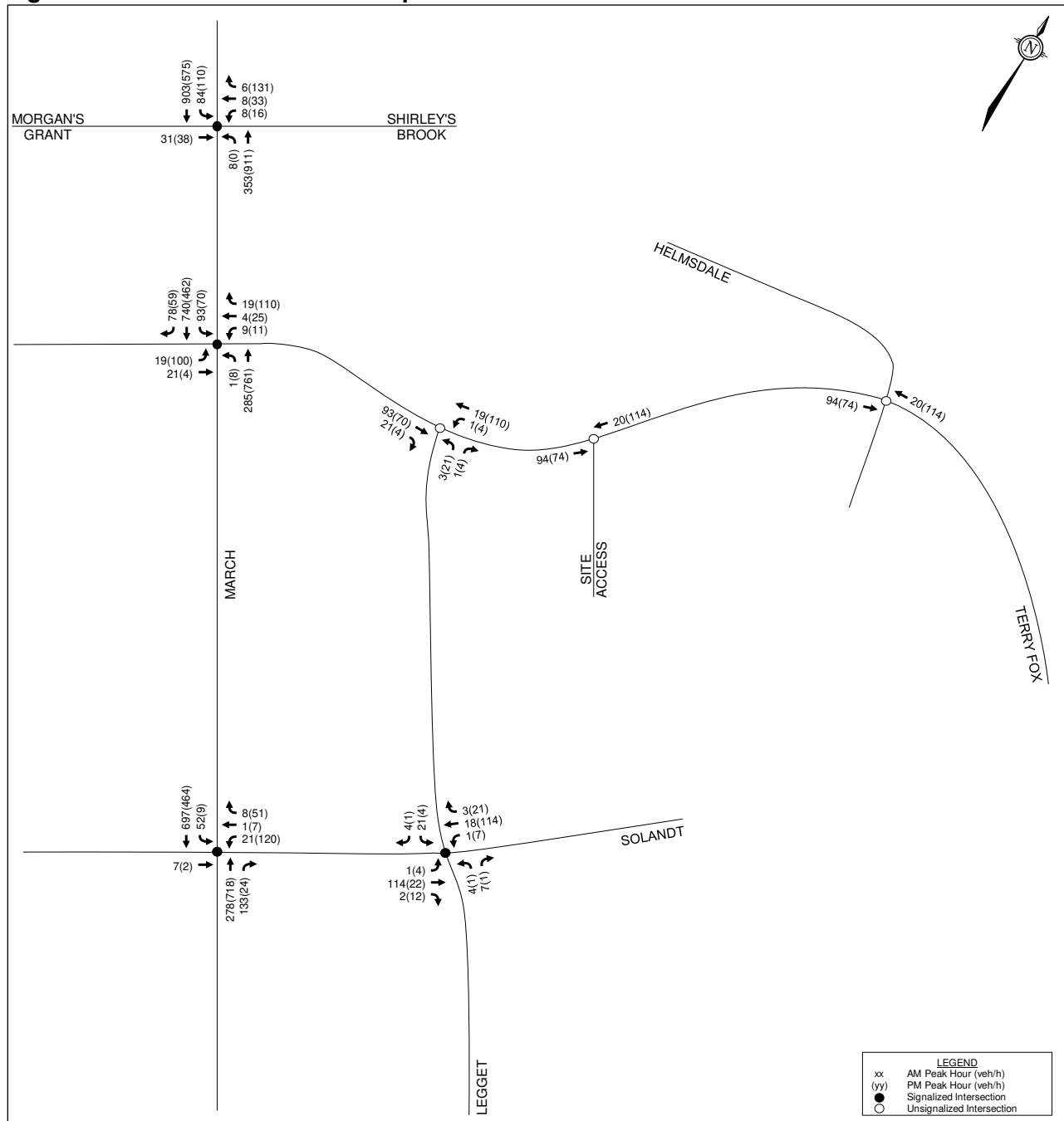


Figure 13: 2024 Background Traffic Volumes

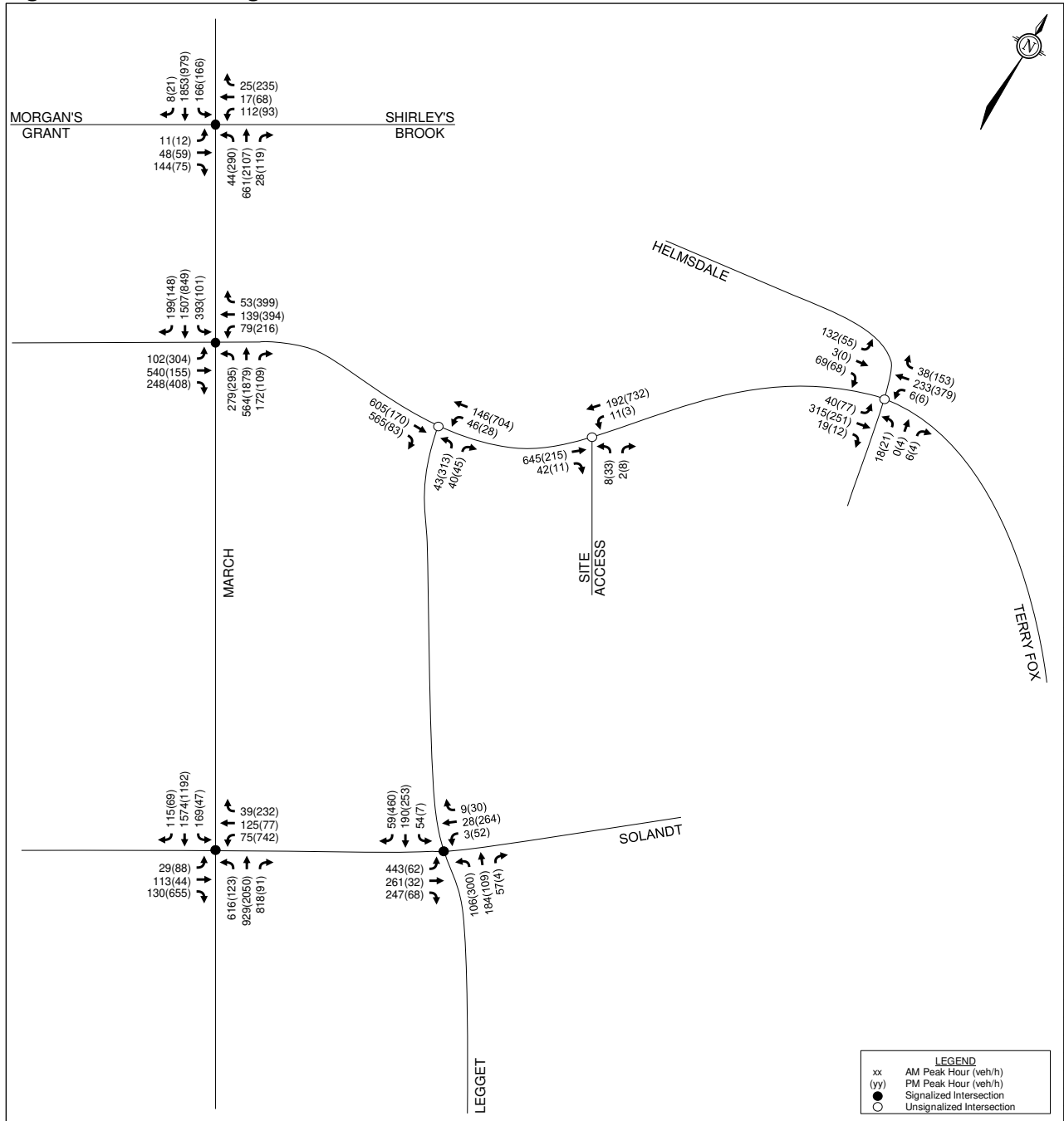


Figure 14: 2029 Background Traffic Volumes

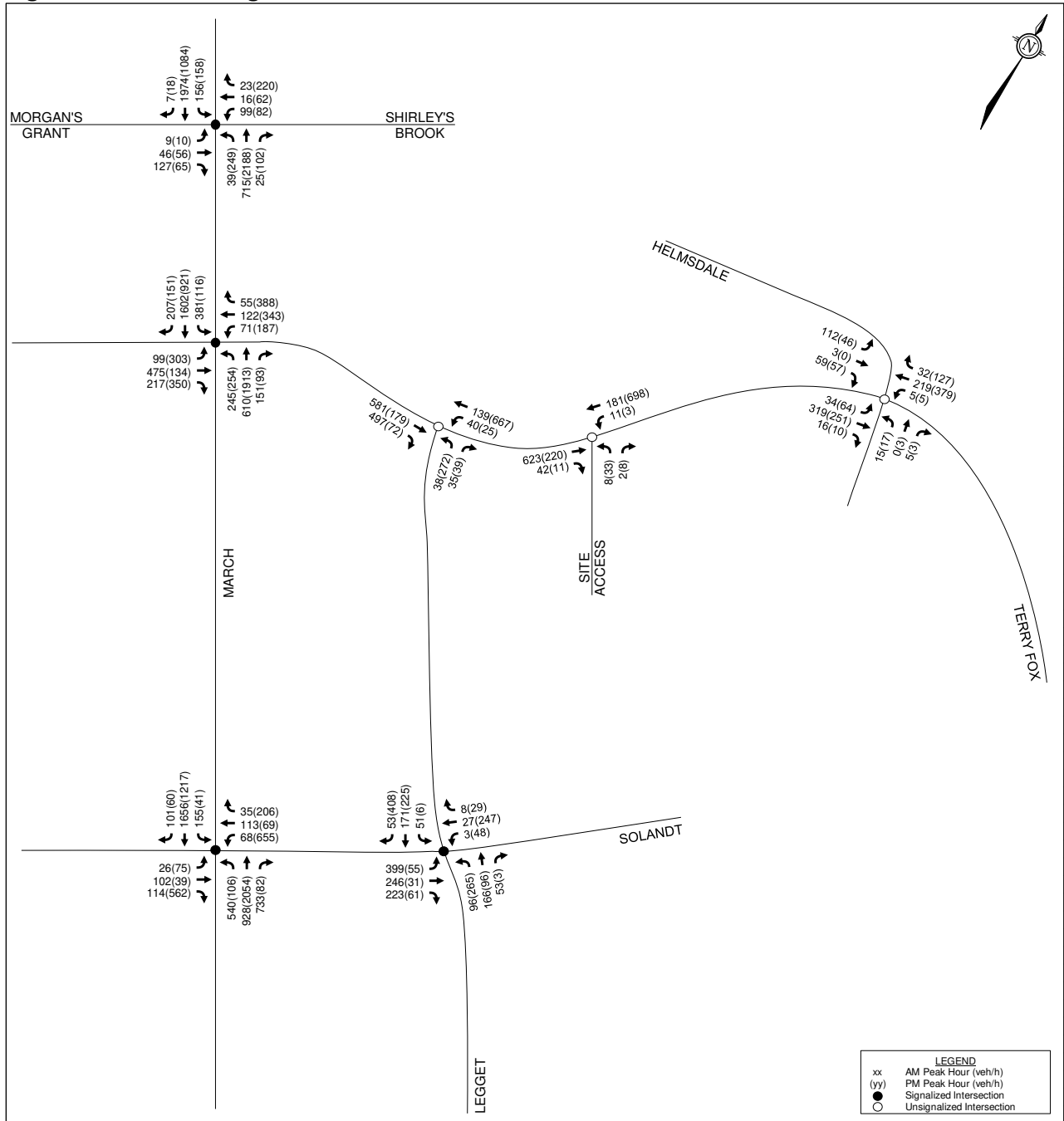


Figure 15: 2024 Total Traffic Volumes

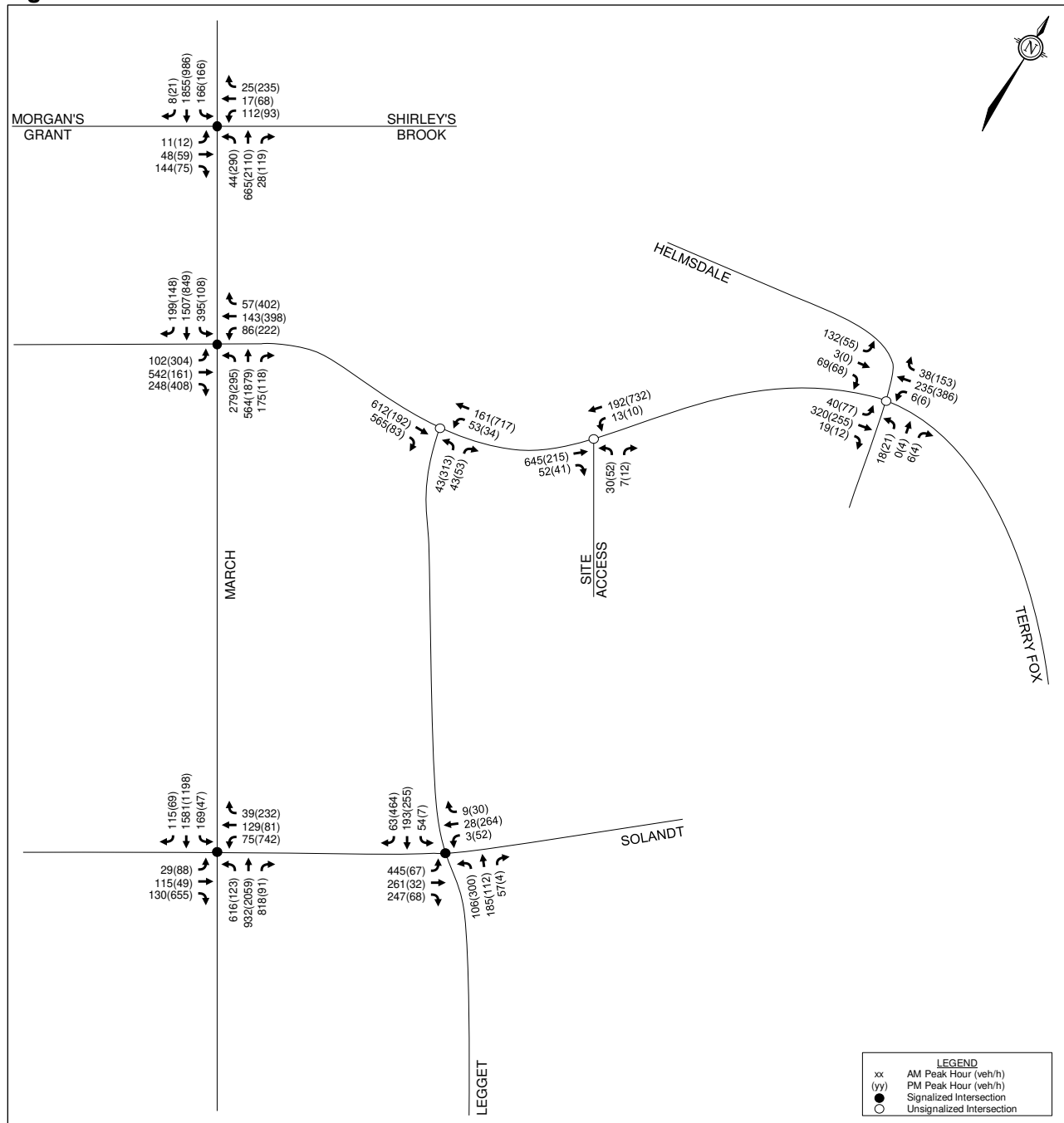
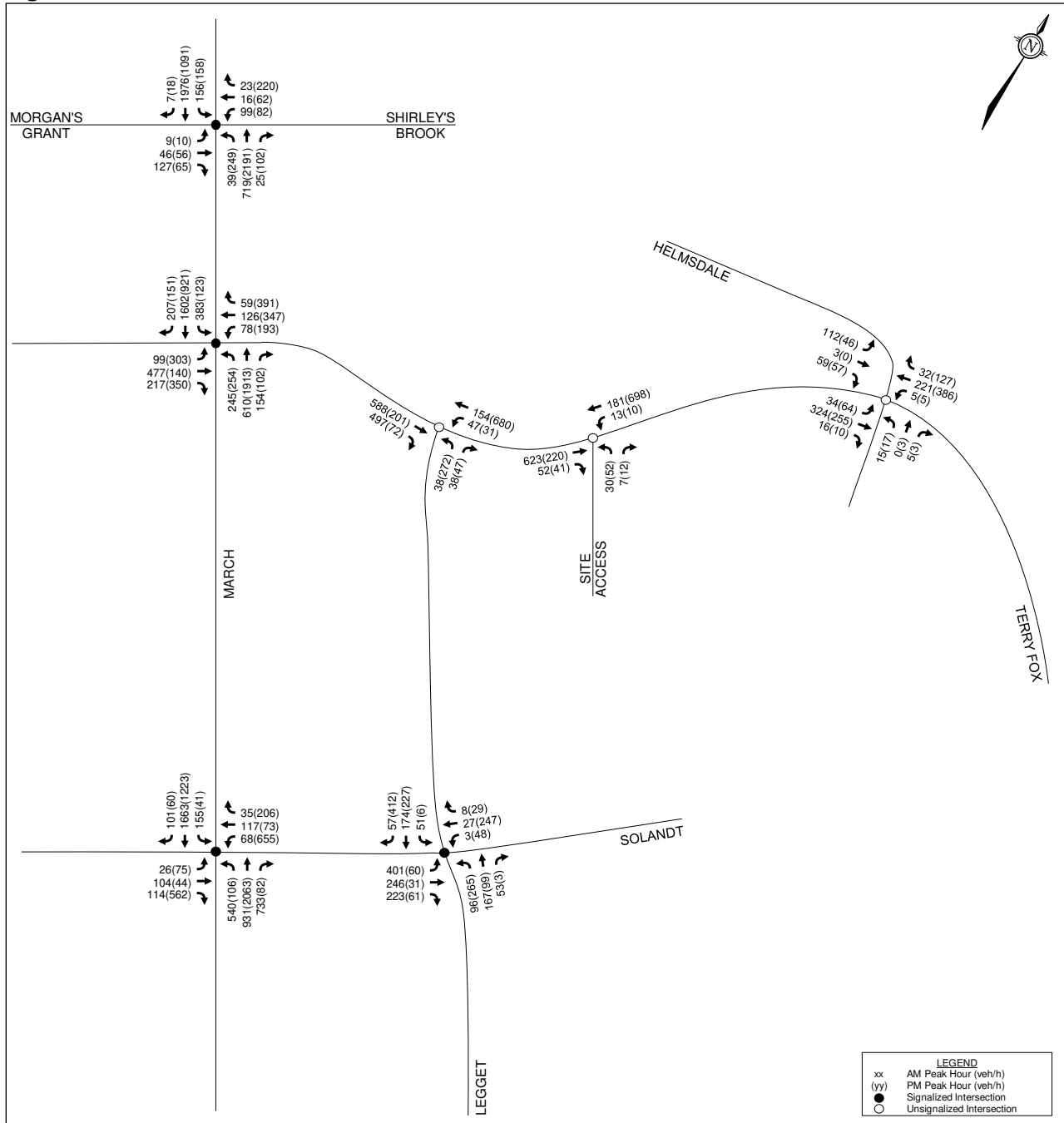


Figure 16: 2029 Total Traffic Volumes



### 3.4 Demand Rationalization

A review of the existing and background intersection operations has been conducted to determine where traffic volumes exceed capacity within the study area. The intersection parameters used in the analysis are consistent with the *2017 TIA Guidelines* (Saturated Flow Rate: 1,800 vphpl, Peak Hour Factor: 0.9 in existing conditions and 1.0 in future conditions). Per Exhibit 22 of the *Multi-Modal Level of Service (MMLOS) Guidelines*, the target vehicular level of service (Auto LOS) at all study area intersection is an Auto LOS D, which equates to a vehicle-to-capacity (v/c) ratio of 0.90



at signalized intersections, and a maximum delay of 35 seconds at unsignalized intersections. Signal timing plans have been obtained from the City, and are included in **Appendix J**.

**3.4.1 Existing Traffic Conditions**

Intersection capacity analysis has been conducted for the existing traffic conditions. The results of the analysis are summarized in **Table 11** and **Table 12** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix K**.

**Table 11: Existing Traffic Operations**

Intersection	Period	Critical Movements			Intersection		
		Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
March Road/Morgan's Grant Way/Shirley's Brook Drive <sup>(1)</sup>	AM	0.62	B	WBL	0.43	17 sec	A
	PM	0.55	A	NBL	0.34	11 sec	A
March Road/Terry Fox Drive <sup>(1)</sup>	AM	<b>1.10</b>	<b>F</b>	<b>SBL</b>	0.67	46 sec	B
	PM	0.80	C	NBT	0.75	33 sec	C
March Road/Solandt Road <sup>(1)</sup>	AM	<b>1.09</b>	<b>F</b>	<b>NBL</b>	1.11	61 sec	F
		<b>1.20</b>	<b>F</b>	<b>SBT</b>			
	PM	<b>0.92</b>	<b>E</b>	<b>NBL</b>	1.26	126 sec	F
		<b>1.15</b>	<b>F</b>	<b>NBT</b>			
		<b>1.84</b>	<b>F</b>	<b>EBR</b>			
		<b>0.97</b>	<b>E</b>	<b>WBL</b>			
Legget Drive/Terry Fox Drive <sup>(2)</sup>	AM	30 sec	D	NBL/R	-		
	PM	<b>136 sec</b>	<b>F</b>	<b>NBL/R</b>			
Legget Drive/Solandt Road <sup>(1)</sup>	AM	0.74	C	EBL	0.63	19 sec	B
	PM	<b>1.11</b>	<b>F</b>	<b>SBT/R</b>	<b>0.91</b>	<b>62 sec</b>	<b>E</b>
Terry Fox Drive/Helmsdale Drive <sup>(2)</sup>	AM	21 sec	C	SBL/T/R	-		
	PM	23 sec	C	NBL/T/R			
Terry Fox Drive/Site Access <sup>(2)</sup>	AM	16 sec	C	NBL/R	-		
	PM	16 sec	C	NBL/R			

- 1. Signalized intersection
- 2. Unsignalized intersection

**Table 12: Existing Queues**

Intersection	Mvmt	Storage/Spacing <sup>(1)</sup>	AM Peak			PM Peak		
			v/c / Delay [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)	v/c / Delay [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)
March Road/Terry Fox Drive	NBT	280m	0.29 [A]	21	39	0.76 [C]	130	m120
	SBL	110m	<b>1.10 [F]</b>	~119	#171	0.46 [A]	10	28
March Road/Solandt Road	NBL	165m	<b>1.09 [F]</b>	~175	#266	<b>0.92 [E]</b>	19	#49
	NBT	210m	0.36 [A]	42	62	<b>1.15 [F]</b>	~248	#287
	SBL	155m	0.70 [B]	8	#52	0.76 [C]	8	m#23
	SBT	540m	<b>1.20 [F]</b>	~182	#210	0.82 [D]	117	143
	EBR	60m	0.46 [A]	0	16	<b>1.84 [F]</b>	~232	#300
	WBL	85m	0.35 [A]	7	14	<b>0.97 [E]</b>	83	#117
Legget Drive/Terry Fox Drive	NBL/R	70m	31 s [D]	-	12	<b>136 s [F]</b>	-	106
Legget Drive/Solandt Road	NBL	50m	0.43 [A]	8	29	0.71 [C]	35	68
	SBT/R	100m	0.55 [A]	19	56	<b>1.11 [F]</b>	~146	#230

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

From the previous tables, there are multiple movements within the study area that exceed the target v/c ratio or delay during the AM and/or PM peak hours. A summary of the critical queueing during the peak hours at the study area intersections is provided below.

During the AM peak hour, the average (50<sup>th</sup>-percentile) and maximum (95<sup>th</sup>-percentile) queue lengths of the southbound left turn movement at March Road/Terry Fox Drive and the northbound left turn movement at March Road/Solandt Road exceed the storage lengths provided for those movements. Synchro also identifies that the average and maximum queue lengths of the southbound through movement at March Road/Solandt Road extends beyond the auxiliary left turn lane.

During the PM peak hour, the average and maximum queue lengths of the eastbound right turn movement and the maximum queue length of the westbound left turn movement at March Road/Solandt Road exceed the storage lengths provided. The average and maximum queue lengths of the northbound through movement at March Road/Solandt Road and the southbound through/right turn movement at Legget Drive/Solandt Road extends beyond the auxiliary left turn lanes and block at least one upstream access. Synchro also identifies that the maximum queue length of the northbound left turn/right turn movement at Legget Drive/Terry Fox Drive is approximately 105m, which is equivalent to 15 vehicles if an average vehicle length of 7m is assumed.

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

#### AM Peak Hour

- March Road/Terry Fox Drive
  - Southbound left turn (v/c: 1.10): reduction of 60 vehicles required.
- March Road/Solandt Road
  - Northbound left turn (v/c: 1.09): reduction of 110 vehicles required;
  - Southbound through (v/c: 1.20): reduction of 270 vehicles required.

#### PM Peak Hour

- March Road/Solandt Road
  - Northbound left turn (v/c: 0.92): reduction of 10 vehicles required;
  - Northbound through (v/c: 1.15): reduction of 220 vehicles required;
  - Eastbound right turn (v/c: 1.84): reduction of 360 vehicles required;
  - Westbound left turn (v/c: 0.97): reduction of 70 vehicles required.
- Legget Drive/Terry Fox Drive
  - Northbound left/right turn (136 sec delay): reduction of 130 vehicles required.
- Legget Drive/Solandt Road
  - Southbound through/right turn (v/c: 1.11): reduction of 140 vehicles required.

Detailed results of an alternative Synchro scenario with these reduced volumes is included in **Appendix K**.

The *Transportation Association of Canada’s (TAC) Geometric Design Guide* includes left turn lane storage graphs, which identify the appropriate left turn storage length for an approach based on the proportion of left turn volumes, opposing volumes, and speed. Based on the relevant graph, a 15m auxiliary westbound left turn lane is warranted at Legget Drive/Terry Fox Drive. The right turn lane storage length equation ( $S = NL/30$ ) identifies that, assuming a vehicle length of 7m, 125m of storage is required for the eastbound right turn movement. Based on the existing ROW of Terry Fox Drive, a westbound left turn lane and an eastbound right turn lane can be accommodated at Legget Drive/Terry Fox Drive.

The *Ontario Traffic Manual (OTM) – Book 12* includes warrant criteria for signaling an intersection, which has been reviewed to determine the extent to which warrants are currently met at Legget Drive/Terry Fox Drive. If any warrant meets the 100% justification threshold, a traffic signal may be considered. Based on the existing traffic volumes shown in **Figure 5**, the results show that the ‘Delay to Cross Traffic’ warrant is currently 84% justified, and is the closest warrant to meeting the threshold. As no warrant criteria for a traffic signal have been met, it is recommended that the City consider a traffic signal from a safety perspective based on delay. The relevant Ministry of Transportation of Ontario (MTO) left turn lane storage graphs and OTM traffic signal warrant calculations for Legget Drive/Terry Fox Drive are included in **Appendix L**.

At Legget Drive/Solandt Road, the existing conditions also suggest that an auxiliary southbound right turn lane may be required. Using the TAC right turn lane equation ( $S = NL/30$ ), approximately 105m of right turn lane storage would be required. Based on the existing ROW of Legget Drive, a southbound right turn lane can be accommodated at Legget Drive/Solandt Road.

In the background traffic conditions that follow, scenarios with and without the mitigations described above are included.

**3.4.2 2024 Background Traffic Conditions**

Intersection capacity analysis has been conducted for the 2024 background traffic conditions, based on existing intersection geometry. The results of the analysis are summarized in **Table 13** and **Table 14** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix M**.

**Table 13: 2024 Background Traffic Operations**

Intersection	Period	Critical Movements			Intersection		
		Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
March Road/Morgan’s Grant Way/Shirley’s Brook Drive <sup>(1)</sup>	AM	0.63	B	WBL	0.57	16 sec	A
	PM	0.72	C	NBT/SBL	0.71	15 sec	C
March Road/Terry Fox Drive <sup>(1)</sup>	AM	<b>1.19</b>	<b>F</b>	<b>SBL</b>	0.69	51 sec	B
	PM	<b>1.11</b>	<b>F</b>	<b>NBT</b>	<b>0.98</b>	<b>53 sec</b>	<b>E</b>
March Road/Solandt Road <sup>(1)</sup>	AM	<b>0.99</b>	<b>E</b>	<b>NBL</b>	<b>1.34</b>	<b>117 sec</b>	<b>F</b>
		<b>1.04</b>	<b>F</b>	<b>SBL</b>			
		<b>1.57</b>	<b>F</b>	<b>SBT</b>			
	PM	<b>0.99</b>	<b>E</b>	<b>NBL</b>	<b>1.36</b>	<b>155 sec</b>	<b>F</b>
		<b>1.38</b>	<b>F</b>	<b>NBT</b>			
		<b>1.02</b>	<b>F</b>	<b>SBT</b>			
		<b>1.68</b>	<b>F</b>	<b>EBR</b>			
			<b>1.06</b>	<b>F</b>	<b>WBL</b>		
Legget Drive/Terry Fox Drive <sup>(2)</sup>	AM	31 sec	D	NBL/R	-		
	PM	<b>177 sec</b>	<b>F</b>	<b>NBL/R</b>			

Intersection	Period	Critical Movements			Intersection		
		Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
Legget Drive/ Solandt Road <sup>(1)</sup>	AM	0.71	C	EBL	0.59	19 sec	A
	PM	<b>1.08</b>	<b>F</b>	<b>SBT/R</b>	<b>0.91</b>	<b>59 sec</b>	<b>E</b>
Terry Fox Drive/ Helmsdale Drive <sup>(2)</sup>	AM	21 sec	C	SBL/T/R	-		
	PM	24 sec	C	NBL/T/R			
Terry Fox Drive/ Site Access <sup>(2)</sup>	AM	16 sec	C	NBL/R	-		
	PM	18 sec	C	NBL/R			

- 1. Signalized intersection
- 2. Unsignalized intersection

**Table 14: 2024 Background Queues**

Intersection	Mvmt	Storage/ Spacing <sup>(1)</sup>	AM Peak			PM Peak		
			v/c / Delay [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)	v/c / Delay [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)
March Road/ Terry Fox Drive	NBT	280m	0.39 [A]	31	52	<b>1.11 [F]</b>	~217	<b>m#150</b>
	SBL	110m	<b>1.19 [F]</b>	~136	<b>#199</b>	0.62 [B]	25	42
	SBT	275m	0.82 [D]	129	#161	0.53 [A]	39	64
March Road/ Solandt Road	NBL	165m	<b>0.99 [E]</b>	~145	<b>#235</b>	<b>0.99 [E]</b>	17	<b>#53</b>
	NBT	210m	0.41 [A]	50	74	<b>1.38 [F]</b>	~337	<b>#375</b>
	SBL	155m	<b>1.04 [F]</b>	~25	<b>m#63</b>	0.87 [D]	11	m#27
	SBT	540m	<b>1.57 [F]</b>	~268	<b>#306</b>	<b>1.02 [F]</b>	~158	<b>#199</b>
	EBR	60m	0.44 [A]	0	16	<b>1.68 [F]</b>	~201	<b>#268</b>
	WBL	85m	0.44 [A]	9	16	<b>1.06 [F]</b>	~99	<b>#134</b>
Legget Drive/ Terry Fox Drive	NBL/R	70m	31 s [D]	-	12	<b>177 s [F]</b>	-	<b>119</b>
Legget Drive/ Solandt Road	NBL	50m	0.40 [A]	8	26	0.73 [C]	37	74
	SBT/R	100m	0.53 [A]	18	50	<b>1.08 [F]</b>	~143	<b>#241</b>

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

From the previous tables, there are multiple movements within the study area that exceed the target v/c ratio or delay during the AM and/or PM peak hours. A summary of the critical queueing during the peak hours at the study area intersections is provided below.

During the AM peak hour, the average and maximum queue lengths of the southbound left turn movement at March Road/Terry Fox Drive, and the maximum queue length of the northbound left turn movement at March Road/Solandt Road exceed the storage lengths provided for those movements. The average and maximum queue lengths of the southbound through movements at March Road/Terry Fox Drive and March Road/Solandt Road extends beyond their respective auxiliary southbound left turn lanes.

During the PM peak hour, the average and maximum queue lengths of the eastbound right turn and westbound left turn movements at March Road/Solandt Road exceed the storage lengths provided. The average and maximum queue lengths of the northbound through and southbound through movements at March Road/Solandt Road and the southbound through/right turn movement at Legget Drive/Solandt Road extends beyond the auxiliary left turn lanes. Synchro also identifies that the maximum queue length of the northbound left turn/right turn movement at Legget Drive/Terry Fox Drive is approximately 119m, which is equivalent to 17 vehicles if an average vehicle length of 7m is assumed.

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

AM Peak Hour

- March Road/Terry Fox Drive
  - Southbound left turn (v/c: 1.19): reduction of 100 vehicles required.
- March Road/Solandt Road
  - Northbound left turn (v/c: 0.99): reduction of 60 vehicles required;
  - Southbound left turn (v/c: 1.04): reduction of 30 vehicles required;
  - Southbound through (v/c: 1.57): reduction of 670 vehicles required.

PM Peak Hour

- March Road/Terry Fox Drive
  - Northbound through (v/c: 1.11): reduction of 350 vehicles required.
- March Road/Solandt Road
  - Northbound left turn (v/c: 0.99): reduction of 10 vehicles required;
  - Northbound through (v/c: 1.38): reduction of 600 vehicles required;
  - Southbound through (v/c: 1.02): reduction of 140 vehicles required;
  - Eastbound right turn (v/c: 1.68): reduction of 340 vehicles required;
  - Westbound left turn (v/c: 1.06): reduction of 130 vehicles required.
- Legget Drive/Terry Fox Drive
  - Northbound left/right turn (177 sec delay): reduction of 170 vehicles required.
- Legget Drive/Solandt Road
  - Southbound through/right turn (v/c: 1.08): reduction of 130 vehicles required.

Detailed results of an alternative Synchro scenario with these reduced volumes is included in **Appendix M**.

As stated in Section 3.4.1, a mitigated scenario has been analyzed. This scenario includes an auxiliary southbound right turn lane at Legget Drive/Solandt Road, auxiliary eastbound right turn and westbound left turn lanes at Legget Drive/Terry Fox Drive, and signalization of Legget Drive/Terry Fox Drive. The results of this analysis are summarized in **Table 15**.

**Table 15: 2024 Background Traffic Operations – Mitigated Scenario**

Intersection	Period	Critical Movements			Intersection		
		Max v/c	LOS	Mvmt	v/c	Delay	LOS
Legget Drive/ Terry Fox Drive	AM	0.48	A	EBT/EBR	0.45	7 sec	A
	PM	0.83	D	WBT	0.71	22 sec	C
Legget Drive/ Solandt Road	AM	0.71	C	EBL	0.59	18 sec	A
	PM	0.70	B	SBR	0.61	21 sec	B

**3.4.3 2029 Background Traffic Conditions**

Intersection capacity analysis has been conducted for the 2029 background traffic conditions. A reduction in the background vehicular volumes has been made in the 2029 horizon year, to reflect a higher transit modal share as a result of rapid transit and transit priority measures that will be implemented on March Road. Within the study area and the City’s Affordable Network, median bus lanes are anticipated on March Road at Solandt Road, and transit priority measures are anticipated on March Road north of Solandt Road. Therefore, the intersection geometry at March Road/Solandt

Road and the signal timings at March Road/Morgan’s Grant Way/Shirley’s Brook Drive, March Road/Terry Fox Drive, and March Road/Solandt Road have been adjusted to reflect these measures. Other parameters have also been adjusted, consistent with the transportation assessments conducted by Delcan as part of the *West Transitway Connection* EPR. It should be noted that the transportation assessments evaluated the transitway alternatives based on person travel time rather than Auto LOS.

Adjustments to the March Road/Morgan’s Grant Way/Shirley’s Brook Drive and March Road/Terry Fox Drive intersections are summarized as follows:

- Reduction of speed limit on March Road from 80 km/h to 60 km/h;
- Amber plus all-red timings adjusted to reflect increased clearance requirements and changes in the speed limit on March Road;
- Cycle length increased to 150 seconds, with splits and offsets optimized.

Adjustments to the March Road/Solandt Road intersection are summarized as follows:

- Adjustments to all right turn curb radii and turn lane lengths as required;
- Removal of the existing northbound right turn lane, southbound right turn lane, and one of the westbound left turn lanes;
- Addition of one auxiliary westbound right turn lane;
- Reduction of speed limit on March Road from 80 km/h to 60 km/h;
- Minimum pedestrian crossing times for eastbound/westbound pedestrians consistent with a two-stage crossing;
- Northbound/southbound left turn phases adjusted to become fully protected;
- Eastbound left turn phase adjusted to become permitted (no fully protected phase);
- Westbound left turn phase adjusted to become permitted in the AM peak hour and protected plus permitted in the PM peak hour (no fully protected phase);
- Amber plus all-red timings adjusted to reflect increased clearance requirements and changes in the speed limit on March Road;
- Cycle length increased to 150 seconds, with splits and offsets optimized.

The results of the analysis are summarized in **Table 16** and **Table 17** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix M**.

**Table 16: 2029 Background Traffic Operations**

Intersection	Period	Critical Movements			Intersection		
		Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
March Road/Morgan’s Grant Way/Shirley’s Brook Drive <sup>(1)</sup>	AM	0.64	B	WBL	0.57	14 sec	A
	PM	0.72	C	SBL	0.69	15 sec	B
March Road/Terry Fox Drive <sup>(1)</sup>	AM	<b>0.94</b>	<b>E</b>	<b>SBL</b>	0.64	43 sec	B
		<b>0.93</b>	<b>E</b>	<b>NBT</b>			
	PM	<b>0.92</b>	<b>E</b>	<b>EBL</b>	<b>0.92</b>	<b>37 sec</b>	<b>E</b>
		<b>0.92</b>	<b>E</b>	<b>WBR</b>			

Intersection	Period	Critical Movements			Intersection		
		Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
March Road/ Solandt Road <sup>(1)</sup>	AM	0.96	E	NBL	1.16	85 sec	F
		1.28	F	SBT			
	PM	0.98	E	NBL	1.36	156 sec	F
		1.42	F	NBT/R			
		0.97	E	SBT/R			
		1.24	F	EBR			
		1.30	F	WBL			
Legget Drive/ Terry Fox Drive <sup>(2)</sup>	AM	25 sec	C	NBL/R	-		
	PM	100 sec	F	NBL/R			
Legget Drive/ Solandt Road <sup>(1)</sup>	AM	0.66	B	EBL	0.54	17 sec	A
	PM	0.94	E	SBT/R	0.80	39 sec	C
Terry Fox Drive/ Helmsdale Drive <sup>(2)</sup>	AM	18 sec	C	SBL/T/R	-		
	PM	22 sec	C	NBL/T/R			
Terry Fox Drive/ Site Access <sup>(2)</sup>	AM	16 sec	C	NBL/R	-		
	PM	17 sec	C	NBL/R			

- 1. Signalized intersection
- 2. Unsignalized intersection

**Table 17: 2029 Background Queues**

Intersection	Mvmt	Storage/ Spacing <sup>(1)</sup>	AM Peak			PM Peak		
			v/c / Delay [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)	v/c / Delay [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)
March Road/ Terry Fox Drive	NBT	280m	0.41 [A]	62	75	0.93 [E]	71	m26
	SBL	110m	0.94 [E]	104	#167	0.78 [C]	34	#75
	EBL	120m	0.53 [A]	14	23	0.92 [E]	43	#69
	WBL	75m	0.42 [A]	10	18	0.78 [C]	26	#43
	WBR	75m	0.13 [A]	0	0	0.92 [E]	62	#111
March Road/ Solandt Road	NBL	165m	0.96 [E]	142	#253	0.98 [E]	30	#66
	NBT/R	210m	0.83 [D]	161	227	1.42 [F]	~425	#462
	SBL	155m	0.73 [C]	45	m#75	0.75 [C]	10	m#26
	SBT/R	540m	1.28 [F]	~323	#357	0.97 [E]	180	#226
	EBR	60m	0.43 [A]	0	13	1.24 [F]	~166	#232
	WBL	85m	0.55 [A]	18	30	1.30 [F]	~229	#297
Legget Drive/ Terry Fox Drive	NBL/R	70m	25 s [D]	-	8	100 s [F]	-	80
Legget Drive/ Solandt Road	NBL	50m	0.35 [A]	6	21	0.66 [B]	16	48
	SBT/R	100m	0.48 [A]	14	39	0.94 [E]	95	#199

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

From the previous tables, there are multiple movements within the study area that exceed the target v/c ratio or delay during the AM and/or PM peak hours. A summary of the critical queueing during the peak hours at the study area intersections is provided below.

During the AM peak hour, the maximum queue lengths of the southbound left turn movement at March Road/Terry Fox Drive and the northbound left turn movement at March Road/Solandt Road exceed the storage lengths provided for those movements. The average and maximum queue lengths of the southbound through movement at March Road/Solandt Road extends beyond the auxiliary southbound left turn lane.

During the PM peak hour, the maximum queue length of the westbound right turn movement at March Road/Terry Fox Drive and the average and maximum queue lengths of the eastbound right turn and westbound left turn movements at March Road/Solandt Road exceed the storage lengths provided. The average and maximum queue lengths of the northbound through and southbound through movements at March Road/Solandt Road and the southbound through/right turn movement at Legget Drive/Solandt Road extends beyond the auxiliary left turn lanes. Synchro also identifies that the maximum queue length of the northbound left turn/right turn movement at Legget Drive/Terry Fox Drive is approximately 80m, which is equivalent to 11 or 12 vehicles if an average vehicle length of 7m is assumed.

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

#### AM Peak Hour

- March Road/Terry Fox Drive
  - Southbound left turn (v/c: 0.94): reduction of 60 vehicles required.
- March Road/Solandt Road
  - Northbound left turn (v/c: 0.96): reduction of 40 vehicles required;
  - Southbound through/right turn (v/c: 1.28): reduction of 520 vehicles required.

#### PM Peak Hour

- March Road/Terry Fox Drive
  - Northbound through (v/c: 0.93): reduction of 30 vehicles required;
  - Eastbound left turn (v/c: 0.92): reduction of 10 vehicles required;
  - Westbound right turn (v/c: 0.92): reduction of 20 vehicles required.
- March Road/Solandt Road
  - Northbound left turn (v/c: 0.98): reduction of 10 vehicles required;
  - Northbound through (v/c: 1.42): reduction of 680 vehicles required;
  - Southbound through/right turn (v/c: 0.97): reduction of 20 vehicles required;
  - Eastbound right turn (v/c: 1.24): reduction of 210 vehicles required;
  - Westbound left turn (v/c: 1.30): reduction of 260 vehicles required.
- Legget Drive/Terry Fox Drive
  - Northbound left/right turn (100 sec delay): reduction of 110 vehicles required.
- Legget Drive/Solandt Road
  - Southbound through/right turn (v/c: 0.94): reduction of 30 vehicles required.

Detailed results of an alternative Synchro scenario with these reduced volumes is included in **Appendix M**.

As stated in Section 3.4.1, a mitigated scenario has been analyzed. This scenario includes an auxiliary southbound right turn lane at Legget Drive/Solandt Road, auxiliary eastbound right turn and westbound left turn lanes at Legget Drive/Terry Fox Drive, and signalization of Legget Drive/Terry Fox Drive. The results of this analysis are summarized in **Table 18**.



**Table 18: 2029 Background Traffic Operations – Mitigated Scenario**

Intersection	Period	Critical Movements			Intersection		
		Max v/c	LOS	Mvmt	v/c	Delay	LOS
Legget Drive/ Terry Fox Drive	AM	0.47	A	EBT	0.41	10 sec	A
	PM	0.81	D	WBT	0.71	19 sec	C
Legget Drive/ Solandt Road	AM	0.66	B	EBL	0.54	16 sec	A
	PM	0.66	B	WBT/R	0.55	18 sec	A

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

Increased Use of Non-Auto Modes

For the purposes of this study, it has been assumed that median bus lanes will be implemented on March Road south of Solandt Road and transit priority measures will be implemented on March road north of Solandt Road, by the horizon year 2029. This is consistent with the 2031 RTTP Affordable Network, as described in Section 2.2.1. As shown in Section 3.2.4 and **Figure 14**, reductions to traffic volumes to reflect the improved transit share have already been applied. It should be noted that the proposed development will allow for people who work within the Kanata Research Park to also live there, and the short distances between home and work encourages cycling or walking as primary methods of travel.

Alternate Travel Times

As congestion increases within the study area, some motorists may alter their travel to occur outside of the peak hours. Additionally, it is possible that commuter volumes will be reduced as more people work from home. These shifts in travel habits may result in a reduction of peak hour traffic volumes.

Alternate Routes of Travel

As congestion increases within the study area, some motorists may choose alternate routes of travel outside of the study area. Within the study area, the main north-south corridor is March Road, and alternate roadways in the greater area include Terry Fox Drive, Herzberg Road, Second Line Road, and Huntmar Drive. The main east-west corridor to access the Kanata Research Park is Highway 417, and alternate roadways include Carling Avenue, Timm Road/Katimavik Road/ Palladium Drive, and Robertson Road/Hazeldean Road.

## 4.0 ANALYSIS

### 4.1 Development Design

#### 4.1.1 Design for Sustainable Modes

New pedestrian facilities will wrap around the proposed building, and will connect to the existing pathway network to the south and east of the subject site. A new connection between the existing sidewalk on Terry Fox Drive and the pathway network along the eastern property line will also be constructed. The proposed building will also connect directly to the Brookstreet Hotel, allowing residents to access all amenities of the hotel through an internal connection (including restaurants, fitness facilities, spa, golf course, and meeting and event space). Similarly, visitors of the hotel can access the proposed rooftop restaurant using the same internal connection. Pedestrians travelling between the proposed building and Legget Drive can use this internal connection or existing pathways and sidewalks to connect to Legget Drive.

Bicycle parking will be provided in a designated area on the first level of the new underground parking garage. The number of bicycle parking spaces, as well as the minimum bicycle parking requirements per the City's *Zoning By-Law (ZBL)*, is reviewed further in Section 4.2.

The nearest bus stops to the subject site are shown in Section 2.1.6 and **Figure 4**. OC Transpo's service design guideline for peak period services is to provide service within a five-minute (400m) walk of home, work, or school for 95% of urban residents. Measuring from the main entrance, the bus stops within 400m are stops #6159 and #7997, which are both served by OC Routes 66 and 166, and stop #6149, which are served by OC Routes 63, 66, 110, and 166. The main entrance is also within approximately 600m walking distance of stop #4972, which are served by OC Routes 63, 66, 110, and 166.

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

- Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort;
- Provide lighting, landscaping, and benches along walking and cycling routes between building entrances and streets, sidewalks, and trails;
- Provide a designated area for carpool drivers to drop off or pick up passengers without using fire lanes or other no-stopping zones;
- Provide on-site amenities to minimize midday or mid-commute errands.

#### 4.1.2 Circulation and Access

Pick-ups and drop-offs will be facilitated in a designated loop immediately east of the existing parking structure and northeast of the proposed tower. A connection to the parking spaces within the parking structure will be provided at this loop as well. Access to the new underground parking spaces underneath the proposed tower will be provided via a new ramp aligned with the primary access to Terry Fox Drive.

The existing on-site fire route includes the north-south drive aisle from the primary access to Terry Fox Drive, and the east-west drive aisle immediately north of the existing parking structure and the Brookstreet Hotel. This fire route will be maintained.

Garbage and recycling rooms will be provided on the first level of the new underground parking garage.

The proposed development will effectively create a new four-legged intersection within the site. This intersection includes a northbound approach from the new underground parking garage, a westbound approach from the pick-up/drop-off loop and new parking garage, a southbound approach immediately east of the existing industrial building at 359 Terry Fox Drive, and an eastbound approach formed by the southern drive aisle adjacent to the parking structure merging with the northern drive aisle. Stop control will be provided on the east and west approaches to allow for free flow conditions in/out of the parking garage.

#### 4.2 Parking

The subject site is located in Area C of Schedules 1 and 1A of the ZBL. Minimum vehicular and bicycle parking rates for the proposed development are identified in Sections 101, 102, and 111 of the ZBL, and summarized in **Table 19**.

**Table 19: Required and Proposed Parking**

Land Use	Rate	Units/GFA	Required	Provided
<i>Minimum Vehicle Parking</i>				
Dwelling, High-Rise	1.2 spaces per unit (residents)	256 units	307	307
	0.2 spaces per unit (visitors)		51	52
Restaurant	10 spaces per 100 m <sup>2</sup> GFA	358 m <sup>2</sup>	36	36
<b>Total</b>			<b>394</b>	<b>395</b>
<i>Minimum Bicycle Parking</i>				
Dwelling, High-Rise	0.5 spaces per unit	256 units	128	130
Restaurant	1.0 spaces per 250 m <sup>2</sup> GFA	358 m <sup>2</sup>	2	
<b>Total</b>			<b>130</b>	<b>130</b>

Based on the previous table, the proposed number of vehicle and bicycle parking spaces meet the minimum requirements of the ZBL. Since the new underground parking garage will only include 110 parking spaces, the remainder of the required parking will be provided within two levels of the adjacent existing parking structure. There is sufficient capacity in the structure and surrounding parcels that all parking rates are still complied with.

#### 4.3 Boundary Streets

This section provides a review of the boundary streets Terry Fox Drive and Legget Drive. The *MMLOS Guidelines*, produced by IBI Group, in October 2015 were used to evaluate the levels of service for each alternative mode of transportation on Terry Fox Drive and Legget Drive. The boundary streets are located within the Urban Employment Area, per Schedule B of the City’s Official Plan. Therefore, the boundary streets have been evaluated against the MMLOS targets associated with the ‘Employment Area’ land use designation, and are based on existing conditions.

A detailed segment MMLOS review of the boundary streets is included in **Appendix O**. A summary of the segment MMLOS analysis for Terry Fox Drive and Legget Drive are provided in **Table 20**.

**Table 20: Segment MMLOS Summary**

Segment	PLOS		BLOS		TLOS		TkLOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Terry Fox Drive	F	C	C	C	E	-	B	D
Legget Drive	F		C		E		B	

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

- Neither boundary street meets the target pedestrian level of service (PLOS) C;
- Both boundary streets meet the target bicycle level of service (BLOS) C;
- Both boundary streets achieve a transit level of service (TLOS) E;
- Both boundary streets meet the target truck level of service (TkLOS) D.

Sidewalks are currently provided on the south side of Terry Fox Drive and the east side of Legget Drive. The sidewalk on Terry Fox Drive achieves a PLOS E and the sidewalk on Legget Drive achieves a PLOS A. Per Exhibit 4 of the *MMLOS Guidelines*, the target PLOS C can be achieved for both sides of Terry Fox Drive and the west side of Legget Drive by implementing sidewalks with a minimum width of 2.0m and a boulevard width greater than 2.0m. This is identified for the City’s consideration.

**4.4 Access Intersections**

**4.4.1 Access Design**

The proposed development will not include any alterations to the existing driveways that access 359 Terry Fox Drive or 525 Legget Drive. The primary access to the proposed development has been reviewed, using the provisions of the City’s *Private Approach By-Law (PABL)*.

Section 25(a) of the PABL identifies that a maximum of three two-way private approaches may be permitted for sites with 151m to 240m of frontage. As two two-way approaches are currently provided, this requirement is met.

Section 25(c) of the PABL identifies a maximum width requirement of 9m for any two-way private approach, as measured at the street line. The primary access exceeds this requirement at the street line, as it measures approximately 10.6m in width before narrowing to 6.7m on-site. The width of the access at the property line is a result of the requirement of larger access radii to accommodate trucks accessing the existing industrial building at 359 Terry Fox Drive. A waiver to Section 25(c) of the PABL is requested.

Section 25(g) of the PABL identifies a minimum separation requirement of 9m between a two-way private approach and any other private approach to the same site, as measured at the street line. The nearest edges of the two accesses to 359 Terry Fox Drive are approximately 105m apart, measuring at the street line. Therefore, this requirement is met.

Section 25(m)(ii) of the PABL identifies that, for a property that abuts or is within 46m of an arterial or major collector roadway, there are minimum distance requirements between a private approach and the nearest intersecting street line, and between any two private approaches to the same property. These requirements vary depending on the land use and the number of parking spaces provided. For apartment buildings, office buildings, hotels, and/or industrial developments with 300 or more parking spaces, the minimum requirement is 75m. This requirement is met by the existing accesses.

Section 25(p) of the PABL identifies a minimum separation requirement of 3m between a private approach and the nearest property line. As the primary access is approximately 9m from the eastern property line, this requirement is met.

Section 25(u) of the PABL identifies a maximum grade requirement of 2% for the first 9m inside the street line. The primary access exceeds this requirement, as the grade for the first 9m inside the street line is approximately 3% to 4%. While this requirement is exceeded, it should be noted that this grade does not affect sight lines for vehicles exiting the site and does not create a traffic hazard. A waiver to Section 25(u) of the PABL is requested.

**4.4.2 Access Operations**

Analysis of the primary access intersection operations have been conducted in Synchro, with the results summarized in **Table 21**. The intersection parameters used in the analysis are consistent with the *2017 TIA Guidelines* (Saturated Flow Rate: 1,800 vphpl, Peak Hour Factor: 0.9 in existing conditions and 1.0 in future conditions).

**Table 21: Primary Access Operations**

Scenario	AM Peak Hour			PM Peak Hour		
	Delay	LOS	Mvmt	Delay	LOS	Mvmt
2021 Existing Traffic	16 sec	C	NBL/R	16 sec	C	NBL/R
2024 Background Traffic	16 sec	C	NBL/R	18 sec	C	NBL/R
2029 Background Traffic	16 sec	C	NBL/R	17 sec	C	NBL/R
2024 Total Traffic	17 sec	C	NBL/R	20 sec	C	NBL/R
2029 Total Traffic	17 sec	C	NBL/R	19 sec	C	NBL/R

Based on the previous table, the primary access currently operates at an acceptable Auto LOS C, and is anticipated to continue operating at an Auto LOS C in the future.

A review of the most relevant left turn lane storage graphs included in the *TAC Geometric Design Guide* has been conducted to determine if a westbound left turn lane at the primary access to Terry Fox Drive is warranted. In this scenario, the most relevant graph of the *Geometric Design Guide* is Exhibit 9A-6, which is used for roadways with a design speed of 60 km/h and 5% of the advancing volume turning left. As the 2024 total traffic volumes involve the highest volumes in this TIA, these volumes have been used in the review.

During the AM peak hour, approximately 6% of the westbound volumes at the primary access turn left into the subject site (i.e. 13 left turning vehicles and 192 through vehicles). Per Exhibit 9A-6, a westbound left turn lane is not warranted.

During the PM peak hour, approximately 1.5% of the westbound volumes at the primary access turn left into the subject site (i.e. 10 left turning vehicles and 732 through vehicles). Per Exhibit 9A-6, a 15m westbound left turn is warranted. However, since the percentage of left turns in the advancing volumes is substantially lower than 5%, the findings of the warrant graph should be treated with caution. As only 10 vehicles are projected to perform the westbound left turn movement during the PM peak hour (equating to approximately one vehicle every six minutes), the provision of a westbound left turn lane is anticipated to be highly conservative. Furthermore, a westbound left turn lane is not recommended at the primary access to Terry Fox Drive based on the following rationale:

1. Similar proportions of left turns are likely observed at every access along Terry Fox Drive (such as the Ericsson building at 349 Terry Fox Drive), and left turn lanes are not provided.
2. There is no westbound left turn lane currently provided at Legget Drive/Terry Fox Drive, which carries significantly higher volumes. Based on the collision history at this intersection, vehicles turning left onto Legget Drive do not currently create any traffic hazards. It is noted that a warranted westbound left turn lane, as well as signalization, was identified in Section 3.4.1.
3. The majority of drivers within the Kanata Research Park are employees of the park who drive Terry Fox Drive daily. These drivers are conscious of the characteristics of Terry Fox Drive, which generally does not provide auxiliary turn lanes at any accesses.

## 4.5 Transportation Demand Management

### 4.5.1 Context for TDM

The residential unit breakdown of the proposed development can be summarized as follows:

- 32 studio units;
- 130 one-bedroom units;
- 92 two-bedroom units;
- 2 three-bedroom units.

### 4.5.2 Need and Opportunity

The subject site is designated as 'Urban Employment Area' on Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Business Park Industrial Zone (Kanata North Business Park)' (IP6). As first discussed in Section 3.1.1, the mode shares for the proposed residential units are assumed to include lower driver shares and higher cyclist and pedestrian shares than the surveyed mode shares of the Kanata/Stittsville district (as outlined in the *TRANS Trip Generation Manual*).

Comparing the surveyed driver shares for Kanata/Stittsville (43% during the AM peak hour and 55% during the PM peak hour) and the assumed residential shares (40% during the peak hours), failure to meet the assumed driver share targets would equate to the following increases in two-way traffic volumes generated by the proposed residences:

- AM Peak Hour: an additional 4 vehicle trips (increasing from 39 to 43 vehicle trips);
- PM Peak Hour: an additional 18 vehicle trips (increasing from 40 to 58 vehicle trips).

As shown in Sections 3.4.1, 3.4.2, and 3.4.3, there are existing peak hour congestion issues within the study area, particularly at March Road/Solandt Road, and these issues are anticipated to continue in the future. A failure to meet the proposed mode share targets by the proposed development may marginally increase congestion. It is not anticipated that the driver share targets will not be met, given that the purpose of the development is to become an 'activity centre.' The goal of activity centres is to create a place to live, work, learn and play and provide access daily needs without a car. In addition, bus rapid transit along March Road is identified as a future improvement for commuters and residents of Kanata North.

#### 4.5.3 TDM Program

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

- Display local area maps with walking/cycling access routes and key destinations at major entrances;
- Display relevant transit schedules and route maps at entrances;
- Unbundle parking cost from monthly rent;
- Provide a multimodal travel option information package to new residents.

#### 4.6 Neighbourhood Traffic Management

The *2017 TIA Guidelines* identify two-way peak hour traffic volume thresholds for considering a Neighbourhood Traffic Management (NTM) plan should be developed, when the site relies on local or collector roadways for access. The NTM two-way volume thresholds are as follows:

- 120 vph for local roadways;
- 300 vph for collector roadways;
- 600 vph for major collector roadways.

The proposed development will rely on Terry Fox Drive (a major collector roadway) and Legget Drive (a collector roadway) for access. Given that these roadways serve the Kanata North Business Park, they do not function as typical residential collectors.

The typical lane capacities shown in the City's TRANS Long-Range Transportation Model have been used to estimate the directional capacity of these roadways, based on roadway classification and general characteristics (for example, suburban with limited access, urban with on-street parking, etc.). To compare the directional capacity with the NTM thresholds, the two-way NTM thresholds have been halved to represent a one-way volume threshold. The assumed directional capacities (in vehicles per hour per lane, or vphpl) and NTM one-way volume thresholds (in vph) for each roadway can be summarized as follows:

- Terry Fox Drive: 800 vphpl capacity in each direction; 300 vph threshold (38% of capacity);
- Legget Drive: 600 vphpl capacity in each direction; 150 vph threshold (25% of capacity).

It should be noted that any roadway operating at 60% capacity or less (i.e. a v/c ratio of 0.60 or better) is considered to be operating at the best possible Auto LOS A. Therefore, the NTM thresholds are considered to be very low, ranging from 25% to 38% of the assumed directional capacity.

The directional capacity, 2024 total traffic peak hour volumes along the frontage of 359 Terry Fox Drive and 525 Legget Drive, and corresponding v/c ratios for Terry Fox Drive and Legget Drive are summarized as follows:

- Terry Fox Drive (800 vph capacity per direction)
  - Eastbound: 697 vph in AM peak (v/c: 0.87), 256 vph in PM peak (v/c: 0.32)
  - Westbound: 205 vph in AM peak (v/c: 0.26), 742 vph in PM peak (v/c: 0.93)
- Legget Drive (600 vph capacity per direction)
  - Northbound: 86 vph in AM peak (v/c: 0.14), 366 vph in PM peak (v/c: 0.61)
  - Southbound: 618 vph in AM peak (v/c: 1.03), 117 vph in PM peak (v/c: 0.20)

Based on the foregoing, peak hour traffic along both Terry Fox Drive and Legget Drive is anticipated to exceed the City's NTM thresholds and is generally approaching the overall peak directional lane capacity. The high traffic volumes along these roadways are a result of background traffic, as the proposed development will only marginally increase traffic within the study area.

#### 4.7 Transit

Based on the trip generation estimates presented in Section 3.1.1 and **Table 8**, the proposed development is anticipated to generate the following number of transit trips:

- 23 transit trips during the AM peak hour (7 trips in, 16 trips out);
- 24 transit trips during the PM peak hour (14 trips in, 10 trips out).

All site-generated trips are anticipated to board and alight buses at the stops listed in Section 2.1.6, which include stops on Legget Drive and Terry Fox Drive. Based on these volumes, no capacity issues are anticipated on OC Transpo routes 63, 66, 110, and 166.

#### 4.8 Intersection Design

##### 4.8.1 Intersection MMLOS Review

This section provides a review of the study area intersections using complete streets principles. All signalized intersections within the study area have been evaluated for PLOS, BLOS, TLOS, TkLOS, and Auto LOS. Based on Schedule B of the City's Official Plan, the MMLOS targets associated with the 'General Urban Area' designation have been used to evaluate March Road/Morgan's Grant Way/Shirley's Brook Drive, and the targets associated with the 'Employment Area' designation have been used to evaluate March Road/Solandt Road and Legget Drive/Solandt Road. Since March Road/Terry Fox Drive is located in both land use designations, whichever target is stricter has been used in evaluation of this intersection. The full intersection MMLOS analysis is included in **Appendix O**. A summary of the results is shown in **Table 22**.



**Table 22: Intersection MMLOS Summary**

Intersection	PLOS		BLOS		TLOS		TkLOS		Auto LOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
March Road/Morgan’s Grant Way/Shirley’s Brook Drive	F	C	F	B	F	D	A	D	A	D
March Road/Terry Fox Drive	F	C	F	B	F	D	A	B	C	D
March Road/Solandt Road	F	C	F	C	F	B	A	B	F	D
Legget Drive/Solandt Road	F	C	F	C	F	-	C	D	E	D

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

- No study area intersections meet the target PLOS;
- No study area intersections meet the target BLOS;
- No study area intersections meet the target TLOS;
- All study area intersections meet the target TkLOS;
- March Road/Morgan’s Grant Way/Shirley’s Brook Drive and March Road/Terry Fox Drive meet the target Auto LOS, while March Road/Solandt Road and Legget Drive/Solandt Road do not.

March Road/Morgan’s Grant Way/Shirley’s Brook Drive

This intersection does not meet the target PLOS C, BLOS B, or TLOS D.

All approaches have a divided cross-section with a width equivalent to ten lanes crossed or more (assuming a lane width equals 3.5m, per the *MMLOS Guidelines*). There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. The south approach meets the City’s vehicle/pedestrian conflict threshold for zebra-striped crosswalks (greater than 400,000 vehicle/pedestrian conflicts over an eight-hour period). There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

The north, south, and east approaches do not meet the target BLOS C based on left turn characteristics. Per Exhibit 12 of the *MMLOS Guidelines*, the target BLOS B can be achieved at the east approach by reducing the operating speed to 40 km/h (which is the current speed limit on Shirley’s Brook Drive). For left turns from the north and south approaches, cyclists are required to cross multiple lanes of traffic, on a roadway with a posted speed limit of 80 km/h. Given that all right turn movements are channelized at this intersection, the implementation of two-stage left turn bike boxes at all approaches would not require a right turns on red (RTOR) restriction. This would require the stop bars at all approaches to be shifted away from the intersection. These measures are identified for the City’s consideration.

The east approach does not meet the target TLOS D. As Shirley’s Brook Drive is not designated as a transit priority route, no modifications are not recommended for the east approach.

March Road/Terry Fox Drive

This intersection does not meet the target PLOS C, BLOS B, or TLOS D.

All approaches have a divided cross-section with a width equivalent to ten lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. All approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

All approaches do not meet the target BLOS, based on both left and right turn characteristics. Given that all right turn movements are channelized at this intersection, the implementation of two-stage left turn bike boxes at all approaches would not require a RTOR restriction. This would require the stop bars at all approaches to be shifted away from the intersection. This is identified for the City's consideration. Exhibit 12 of the *MMLOS Guidelines* identifies that the target BLOS can be met by shortening the right turn lanes to 50m or shorter. Given the high traffic volumes at this intersection, this is not recommended.

All approaches do not meet the target TLOS D. The east and west approaches do not have a target TLOS, but the approach delays of approximately 39 to 41 seconds during the peak hours are noted. The City's RTTP Affordable Network includes transit priority signals and queue jump lanes on March Road north of Solandt Road, and would be expected to improve the delays for transit vehicles to the target TLOS or better. Future conversion to median BRT is anticipated to further improve the delays for buses travelling along March Road.

#### March Road/Solandt Road

This intersection does not meet the target PLOS C, BLOS C, TLOS B, or Auto LOS D.

All approaches have a divided cross-section with a width equivalent to ten lanes crossed or more. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. The north and south approaches meet the City's vehicle/pedestrian conflict threshold for zebra-striped crosswalks. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

The north, south, and west approaches do not meet the target BLOS C based on both left and right turn characteristics. The east approach does not meet the target BLOS based on left turn characteristics. For left turning cyclists on all approaches, they are required to cross at least one lane of traffic on roads with an operating speed of 50 km/h or greater. Given that all right turn movements are channelized at this intersection, the implementation of two-stage left turn bike boxes at all approaches would not require a RTOR restriction. This would require the stop bars at all approaches to be shifted away from this intersection. This improvement is identified for the City's consideration.

For cyclists interacting with right turning vehicles, the right turn lanes at the north and west approaches are greater than 50m, and the bike lane shifts to the left of the right turn lane at the south approach. Exhibit 12 of the *MMLOS Guidelines* identifies that the target BLOS can be met by shortening the right turn lanes to 50m or shorter. Given the high traffic volumes at this intersection, this is not recommended.

All approaches do not meet the target TLOS D. The east and west approaches do not have a target TLOS, however delays are significant. The City's RTTP Affordable Network includes at-grade median BRT on March Road south of Solandt Road, and transit signal priority and queue jump lanes north of Solandt Road. These initial measures are anticipated to improve the delays for transit vehicles to the target TLOS or better. Future conversion to median BRT along the entire March Road corridor is anticipated to further improve the delays for buses travelling along March Road.

The Auto LOS for the intersection overall achieves an Auto LOS F during the peak hours. Possible mitigations are discussed in Section 3.4.1.

Legget Drive/Solandt Road

This intersection does not meet the target PLOS C, BLOS C, or Auto LOS D.

All approaches have an undivided cross-section with a width equivalent to six lanes crossed. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or reducing the curb radii. No approaches meet the City’s vehicle/pedestrian conflict threshold for zebra-striped crosswalks. There is also limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.

All approaches do not meet the target BLOS C based on left turn characteristics. The 2013 Ottawa Cycling Plan identifies the future implementation of bike lanes on Legget Drive and Solandt Road west of Legget Drive. Exhibit 12 of the *MMLOS Guidelines* identifies that crossing one lane to make a left turn from a curbside bike lane equates to the target BLOS C, provided that the operating speed is reduced to 50 km/h (i.e. the current speed limits of Legget Drive and Solandt Road). This is identified for the City’s consideration.

The Auto LOS for the intersection overall achieves an Auto LOS B during the AM peak hour, but an Auto LOS E during the PM peak hour. Possible mitigations are discussed in Section 3.4.1.

**4.8.2 2024 Total Intersection Operations**

Intersection capacity analysis has been conducted for the 2024 total traffic conditions, based on existing intersection geometry. The results of the analysis are summarized in **Table 23** and **Table 24** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix P**.

**Table 23: 2024 Total Traffic Operations**

Intersection	Period	Critical Movements			Intersection		
		Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
March Road/Morgan’s Grant Way/Shirley’s Brook Drive <sup>(1)</sup>	AM	0.63	B	WBL	0.57	16 sec	A
	PM	0.72	C	NBT/SBL	0.71	15 sec	C
March Road/Terry Fox Drive <sup>(1)</sup>	AM	<b>1.32</b>	<b>F</b>	<b>SBL</b>	0.73	54 sec	C
	PM	<b>1.12</b>	<b>F</b>	<b>NBT</b>	<b>1.01</b>	<b>55 sec</b>	<b>F</b>
March Road/Solandt Road <sup>(1)</sup>	AM	<b>1.00</b>	<b>E</b>	<b>NBL</b>	<b>1.35</b>	<b>118 sec</b>	<b>F</b>
		<b>1.04</b>	<b>F</b>	<b>SBL</b>			
		<b>1.58</b>	<b>F</b>	<b>SBT</b>			
	PM	<b>0.99</b>	<b>E</b>	<b>NBL</b>	<b>1.37</b>	<b>156 sec</b>	<b>F</b>
		<b>1.39</b>	<b>F</b>	<b>NBT</b>			
		<b>1.03</b>	<b>F</b>	<b>SBT</b>			
		<b>1.68</b>	<b>F</b>	<b>EBR</b>			
		<b>1.06</b>	<b>F</b>	<b>WBL</b>			
Legget Drive/Terry Fox Drive <sup>(2)</sup>	AM	34 sec	D	NBL/R	-		
	PM	<b>220 sec</b>	<b>F</b>	<b>NBL/R</b>			
Legget Drive/Solandt Road <sup>(1)</sup>	AM	0.71	C	EBL	0.59	19 sec	A
	PM	<b>1.09</b>	<b>F</b>	<b>SBT/R</b>	<b>0.92</b>	<b>60 sec</b>	<b>E</b>

Intersection	Period	Critical Movements			Intersection		
		Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
Terry Fox Drive/ Helmsdale Drive <sup>(2)</sup>	AM	21 sec	C	SBL/T/R		-	
	PM	25 sec	C	NBL/T/R			
Terry Fox Drive/ Site Access <sup>(2)</sup>	AM	17 sec	C	NBL/R		-	
	PM	20 sec	C	NBL/R			

- 1. Signalized intersection
- 2. Unsignalized intersection

**Table 24: 2024 Total Queues**

Intersection	Mvmt	Storage/ Spacing <sup>(1)</sup>	AM Peak			PM Peak		
			v/c / Delay [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)	v/c / Delay [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)
March Road/ Terry Fox Drive	NBT	280m	0.40 [A]	32	53	<b>1.12 [F]</b>	~219	<b>m#149</b>
	SBL	110m	<b>1.32 [F]</b>	~138	<b>#199</b>	0.65 [B]	27	45
	SBT	275m	0.86 [D]	130	#161	0.53 [A]	39	64
March Road/ Solandt Road	NBL	165m	<b>1.00 [E]</b>	~146	<b>#235</b>	<b>0.99 [E]</b>	17	<b>#53</b>
	NBT	210m	0.42 [A]	50	74	<b>1.39 [F]</b>	~339	<b>#378</b>
	SBL	155m	<b>1.04 [F]</b>	~24	<b>m#60</b>	0.87 [D]	11	m#29
	SBT	540m	<b>1.58 [F]</b>	~270	<b>#309</b>	<b>1.03 [F]</b>	~160	<b>#200</b>
	EBR	60m	0.44 [A]	0	16	<b>1.68 [F]</b>	~201	<b>#268</b>
WBL	85m	0.44 [A]	9	16	<b>1.06 [F]</b>	~99	<b>#134</b>	
Legget Drive/ Terry Fox Drive	NBL/R	70m	34 s [D]	-	13	<b>220 s [F]</b>	-	<b>135</b>
Legget Drive/ Solandt Road	NBL	50m	0.41 [A]	8	27	0.73 [C]	37	74
	SBT/R	100m	0.54 [A]	18	52	<b>1.09 [F]</b>	~146	<b>#244</b>

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

Comparing the previous tables and the 2024 background conditions, traffic generated by the proposed development is anticipated to have marginal operational effects on most movements within the study area.

The most significant impact identified is the northbound left turn/right turn movement at Legget Drive/Terry Fox Drive during the PM peak hour. As this movement was already failing, the movement is more sensitive to every additional vehicle, and explains the increase in delay from 177 seconds to 220 seconds.

An alternative mitigated scenario as first described in Section 3.4.1 is included in **Appendix P**. This scenario includes an auxiliary southbound right turn lane at Legget Drive/Solandt Road, auxiliary eastbound right turn and westbound left turn lanes at Legget Drive/Terry Fox Drive, and signalization of Legget Drive/Terry Fox Drive. The results of this analysis are summarized in **Table 25**.

**Table 25: 2024 Total Traffic Operations – Mitigated Scenario**

Intersection	Period	Critical Movements			Intersection		
		Max v/c	LOS	Mvmt	v/c	Delay	LOS
Legget Drive/ Terry Fox Drive	AM	0.48	A	EBT/EBR	0.44	7 sec	A
	PM	0.84	D	WBT	0.72	22 sec	C
Legget Drive/ Solandt Road	AM	0.71	C	EBL	0.59	18 sec	A
	PM	0.70	B	SBR	0.62	21 sec	B

**4.8.3 2029 Total Intersection Operations**

Intersection capacity analysis has been conducted for the 2024 total traffic conditions, based on the intersection geometry discussed in Section 3.4.3. The results of the analysis are summarized in **Table 26** and **Table 27** for the weekday AM and PM peak hours. Detailed reports are included in **Appendix P**.

**Table 26: 2029 Total Traffic Operations**

Intersection	Period	Critical Movements			Intersection		
		Max v/c or Delay	LOS	Mvmt	v/c	Delay	LOS
March Road/Morgan’s Grant Way/Shirley’s Brook Drive <sup>(1)</sup>	AM	0.64	B	WBL	0.57	14 sec	A
	PM	0.72	C	SBL	0.69	15 sec	B
March Road/ Terry Fox Drive <sup>(1)</sup>	AM	<b>0.94</b>	<b>E</b>	<b>SBL</b>	0.64	43 sec	B
	PM	<b>0.94</b>	<b>E</b>	<b>NBT</b>	<b>0.93</b>	<b>37 sec</b>	<b>E</b>
		<b>0.92</b>	<b>E</b>	<b>EBL</b>			
March Road/ Solandt Road <sup>(1)</sup>	AM	<b>0.97</b>	<b>E</b>	<b>NBL</b>	<b>1.17</b>	<b>86 sec</b>	<b>F</b>
		<b>1.29</b>	<b>F</b>	<b>SBT</b>			
	PM	<b>0.98</b>	<b>E</b>	<b>NBL</b>	<b>1.37</b>	<b>157 sec</b>	<b>F</b>
		<b>1.43</b>	<b>F</b>	<b>NBT/R</b>			
		<b>0.97</b>	<b>E</b>	<b>SBT/R</b>			
		<b>1.24</b>	<b>F</b>	<b>EBR</b>			
		<b>1.31</b>	<b>F</b>	<b>WBL</b>			
Legget Drive/ Terry Fox Drive <sup>(2)</sup>	AM	27 sec	D	NBL/R	-		
	PM	<b>129 sec</b>	<b>F</b>	<b>NBL/R</b>			
Legget Drive/ Solandt Road <sup>(1)</sup>	AM	0.66	B	EBL	0.55	17 sec	A
	PM	<b>0.95</b>	<b>E</b>	<b>SBT/R</b>	0.81	40 sec	D
Terry Fox Drive/ Helmsdale Drive <sup>(2)</sup>	AM	18 sec	C	SBL/T/R	-		
	PM	22 sec	C	NBL/T/R			
Terry Fox Drive/ Site Access <sup>(2)</sup>	AM	17 sec	C	NBL/R	-		
	PM	19 sec	C	NBL/R			

1. Signalized intersection  
 2. Unsignalized intersection

**Table 27: 2029 Total Queues**

Intersection	Mvmt	Storage/ Spacing <sup>(1)</sup>	AM Peak			PM Peak		
			v/c / Delay [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)	v/c / Delay [LOS]	50 <sup>th</sup> % Queue (m)	95 <sup>th</sup> % Queue (m)
March Road/ Terry Fox Drive	NBT	280m	0.42 [A]	62	75	<b>0.94 [E]</b>	<b>71</b>	<b>m26</b>
	SBL	110m	<b>0.94 [E]</b>	<b>105</b>	<b>#170</b>	0.80 [C]	~38	#80
	EBL	120m	0.53 [A]	14	23	<b>0.92 [E]</b>	<b>43</b>	<b>#69</b>
	WBL	75m	0.45 [A]	11	19	0.78 [C]	27	#45
	WBR	75m	0.14 [A]	0	0	<b>0.92 [E]</b>	<b>63</b>	<b>#112</b>
March Road/ Solandt Road	NBL	165m	<b>0.97 [E]</b>	<b>143</b>	<b>#253</b>	<b>0.98 [E]</b>	<b>30</b>	<b>#66</b>
	NBT/R	210m	0.84 [D]	163	228	<b>1.43 [F]</b>	~428	<b>#464</b>
	SBL	155m	0.73 [C]	45	m#75	0.75 [C]	10	m#28
	SBT/R	540m	<b>1.29 [F]</b>	~325	<b>#358</b>	<b>0.97 [E]</b>	<b>181</b>	<b>#227</b>
	EBR	60m	0.42 [A]	0	13	<b>1.24 [F]</b>	~166	<b>#232</b>
	WBL	85m	0.55 [A]	18	30	<b>1.31 [F]</b>	~230	<b>#298</b>
Legget Drive/ Terry Fox Drive	NBL/R	70m	25 s [D]	-	9	<b>129 s [F]</b>	-	<b>93</b>
Legget Drive/ Solandt Road	NBL	50m	0.35 [A]	6	21	0.61 [B]	21	53
	SBT/R	100m	0.50 [A]	14	41	<b>0.95 [E]</b>	<b>97</b>	<b>#202</b>

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

Comparing the previous tables and the 2029 background conditions, traffic generated by the proposed development is anticipated to have marginal operational effects on most movements within the study area.

As discussed in the previous section, the most significant impact identified is the northbound left turn/right turn movement at Legget Drive/Terry Fox Drive during the PM peak hour.

An alternative mitigated scenario as first described in Section 3.4.1 is included in **Appendix P**. This scenario includes an auxiliary southbound right turn lane at Legget Drive/Solandt Road, auxiliary eastbound right turn and westbound left turn lanes at Legget Drive/Terry Fox Drive, and signalization of Legget Drive/Terry Fox Drive. The results of this analysis are summarized in **Table 28**.

**Table 28: 2029 Total Traffic Operations – Mitigated Scenario**

Intersection	Period	Critical Movements			Intersection		
		Max v/c	LOS	Mvmt	v/c	Delay	LOS
Legget Drive/ Terry Fox Drive	AM	0.47	A	EBT	0.42	10 sec	B
	PM	0.81	D	WBT	0.71	20 sec	C
Legget Drive/ Solandt Road	AM	0.67	B	EBL	0.55	16 sec	A
	PM	0.66	B	WBT	0.55	18 sec	A

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

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

### Forecasting

- The proposed development is projected to generate 106 new person trips (including 39 vehicle trips) during the AM peak hour and 143 new person trips (including 60 vehicle trips) during the PM peak hour.

### Development Design and Parking

- New pedestrian facilities will wrap around the proposed building, and will connect to the existing pathway network to the south and east of the subject site. A new connection between the existing sidewalk on Terry Fox Drive and the pathway network along the eastern property line will also be constructed. The proposed building will also connect directly to the Brookstreet Hotel, allowing residents and visitors to access all amenities of the hotel through an internal connection.
- Measuring from the main entrance, the bus stops within 400m of stops #6149, #6159, and #7997, and within 600m of stop #4972. These stops are served by some or all of OC Routes 63, 66, 110, and 166.
- The proposed development meets all required Transportation Demand Management-Supportive Development Design and Infrastructure measures.
- Pick-ups and drop-offs will be facilitated in a designated loop immediately east of the existing parking structure and northeast of the proposed tower. A connection to the parking spaces within the parking structure will be provided within this loop as well. Access to the new underground parking spaces underneath the proposed tower will be provided via a new ramp aligned with the primary access to Terry Fox Drive.
- The existing on-site fire route will be maintained. Garbage and recycling rooms will be provided on the first level of the new underground parking garage.
- The proposed development will effectively create a new four-legged intersection within the site. Stop control will be provided on the east and west approaches to allow for free flow conditions in/out of the parking garage.
- The minimum number of vehicle parking spaces required per the City's ZBL will be met through a combination of new and reallocated existing parking spaces. Bicycle parking will be provided in a designated area on the first level of the new underground parking garage. The 130 bicycle parking spaces proposed meets the minimum requirements of the City's *Zoning By-Law* (ZBL).

### Boundary Streets

- The results of the segment MMLoS analysis can be summarized as follows:
  - Neither boundary street meets the target pedestrian level of service (PLOS) C;
  - Both boundary streets meet the target bicycle level of service (BLOS) C;
  - Both boundary streets achieve a transit level of service (TLOS) E;
  - Both boundary streets meet the target truck level of service (TkLOS) D.

- Sidewalks are currently provided on the south side of Terry Fox Drive and the east side of Legget Drive. The sidewalk on Terry Fox Drive achieves a PLOS E and the sidewalk on Legget Drive achieves a PLOS A. Per Exhibit 4 of the *MMLOS Guidelines*, the target PLOS C can be achieved for both sides of Terry Fox Drive and the west side of Legget Drive by implementing sidewalks with a minimum width of 2.0m and a boulevard width greater than 2.0m. This is identified for the City's consideration.

#### Access Intersections

- The proposed development will not include any alterations to the existing driveways that access 359 Terry Fox Drive or 525 Legget Drive. The primary access for the proposed development generally meets the provisions of the City's *Private Approach By-Law*, except for Sections 25(c) and 25(u).
- The primary access currently operates at an acceptable vehicular level of service (Auto LOS) C, and is anticipated to continue operating acceptably in the future. It is recommended that a westbound left turn lane into the primary access is not required.

#### Transportation Demand Management

- The proponent has committed to providing the following TDM measures:
  - Display local area maps with walking/cycling access routes and key destinations at major entrances;
  - Display relevant transit schedules and route maps at entrances;
  - Unbundle parking cost from monthly rent;
  - Provide a multimodal travel option information package to new residents.

#### Transit

- The proposed development is projected to generate 23 transit trips during the AM peak hour and 24 transit trips during the PM peak hour. Based on these volumes, no capacity issues are anticipated on OC Routes 63, 66, 110, and 166.

#### Intersection MMLOS

- The results of the intersection MMLOS analysis can be summarized as follows:
  - No study area intersections meet the target PLOS;
  - No study area intersections meet the target BLOS;
  - No study area intersections meet the target TLOS;
  - All study area intersections meet the target TkLOS;
  - March Road/Morgan's Grant Way/Shirley's Brook Drive and March Road/Terry Fox Drive meet the target Auto LOS, while March Road/Solandt Road, Legget Drive/Solandt Road, and Legget Drive/Terry Fox Drive do not.
- All approaches at all study area intersections do not meet the target PLOS C. There is limited opportunity in improving the PLOS at each approach without reducing the number of travel lanes or restricting turning movements. There is limited opportunity in improving the delay score for pedestrians without incurring major delays for vehicles.



- Most approaches at all study area intersections do not meet the target BLOS B/C based on left turn characteristics. Along the March Road corridor, all right turns are channelized, and therefore two-stage left turn bike boxes can be implemented without requiring a restriction to right turns on red (RTOR). The target BLOS can be met at Legget Drive/Solandt Road through the implementation of curbside bike lanes. These measures are identified for the City's consideration.
- The future March Road bus rapid transit (BRT) improvements are anticipated to improve the TLOS of the study area intersections along March Road to the target TLOS B/D.

### Existing Intersection Analysis

- During the AM peak hour, the following movements are identified as over-capacity:
  - March Road/Terry Fox Drive
    - Southbound left turn;
  - March Road/Solandt Road
    - Northbound left turn and southbound through.
- During the PM peak hour, the following movements are identified as over-capacity:
  - March Road/Solandt Road
    - Northbound left turn, northbound through, eastbound right turn, and westbound left turn;
  - Legget Drive/Terry Fox Drive
    - Northbound left turn/right turn;
  - Legget Drive/Solandt Road
    - Southbound through/right turn.
- During the AM peak hour, the average (50<sup>th</sup>-percentile) and maximum (95<sup>th</sup>-percentile) queue lengths of the southbound left turn movement at March Road/Terry Fox Drive and the northbound left turn movement at March Road/Solandt Road exceed the storage lengths provided for those movements. Synchro also identifies that the average and maximum queue lengths of the southbound through movement at March Road/Solandt Road extends beyond the auxiliary left turn lane.
- During the PM peak hour, the average and maximum queue lengths of the eastbound right turn movement and the maximum queue length of the westbound left turn movement at March Road/ Solandt Road exceed the storage lengths provided. The average and maximum queue lengths of the northbound through movement at March Road/Solandt Road and the southbound through/right turn movement at Legget Drive/Solandt Road extends beyond the auxiliary left turn lanes and block at least one upstream access. Synchro also identifies that the maximum queue length of the northbound left turn/right turn movement at Legget Drive/Terry Fox Drive is approximately 105m, which is equivalent to 15 vehicles if an average vehicle length of 7m is assumed.
- Auxiliary westbound left turn and eastbound right turn lanes at Legget Drive/Terry Fox Drive are warranted, and can be accommodated within the existing ROW of Terry Fox Drive. Signalization of this intersection is currently 84% warranted, however it is recommended from a safety perspective based on delay.

- Existing conditions at Legget Road/Solandt Road suggest that an auxiliary southbound right turn lane may be required. Based on the existing ROW of Legget Drive, a southbound right turn lane can be accommodated at Legget Drive/Solandt Road.

#### Background Intersection Analysis

- Traffic throughout the study area could be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate times of travel for drivers using the study area roadways to make use of off-peak capacity, and alternate routes of travel. It is assumed that the March Road BRT corridor will be implemented by the horizon year 2029, per the 2031 Affordable Network. This will increase the transit modal share and decrease the auto modal share by the
- As congestion increases within the study area, some motorists may alter their travel to occur outside of the peak hours. Additionally, it is possible that commuter volumes will be reduced as more people work from home. These shifts in travel habits may result in a reduction of peak hour traffic volumes. As congestion increases within the study area, some motorists may choose alternate routes of travel outside of the study area.
- During the AM peak hour, the following volume reductions are required to meet the target Auto LOS D by the horizon year 2029:
  - March Road/Terry Fox Drive
    - Southbound left turn: reduction of 60 vehicles required;
  - March Road/Solandt Road
    - Northbound left turn: reduction of 40 vehicles required;
    - Southbound through/right turn: reduction of 520 vehicles required.
- During the PM peak hour, the following volume reductions are required to meet the target Auto LOS D by the horizon year 2029:
  - March Road/Terry Fox Drive
    - Northbound through: reduction of 30 vehicles required;
    - Eastbound left turn: reduction of 10 vehicles required;
    - Westbound right turn: reduction of 20 vehicles required;
  - March Road/Solandt Road
    - Northbound left turn: reduction of 10 vehicles required;
    - Northbound through: reduction of 680 vehicles required;
    - Southbound through/right turn: reduction of 20 vehicles required;
    - Eastbound right turn: reduction of 210 vehicles required;
    - Westbound left turn: reduction of 260 vehicles required;
  - Legget Drive/Terry Fox Drive
    - Northbound left/right turn: reduction of 110 vehicles required;
  - Legget Drive/Solandt Road
    - Southbound through/right turn: reduction of 30 vehicles required.

#### Total Intersection Analysis

- Traffic generated by the proposed development is anticipated to have marginal operational effects for most movements within the study area. The most significant impact identified is the northbound left turn/right turn movement at Legget Drive/Terry Fox Drive during the PM peak hour.

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

**NOVATECH**

Prepared by:



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

Reviewed by:

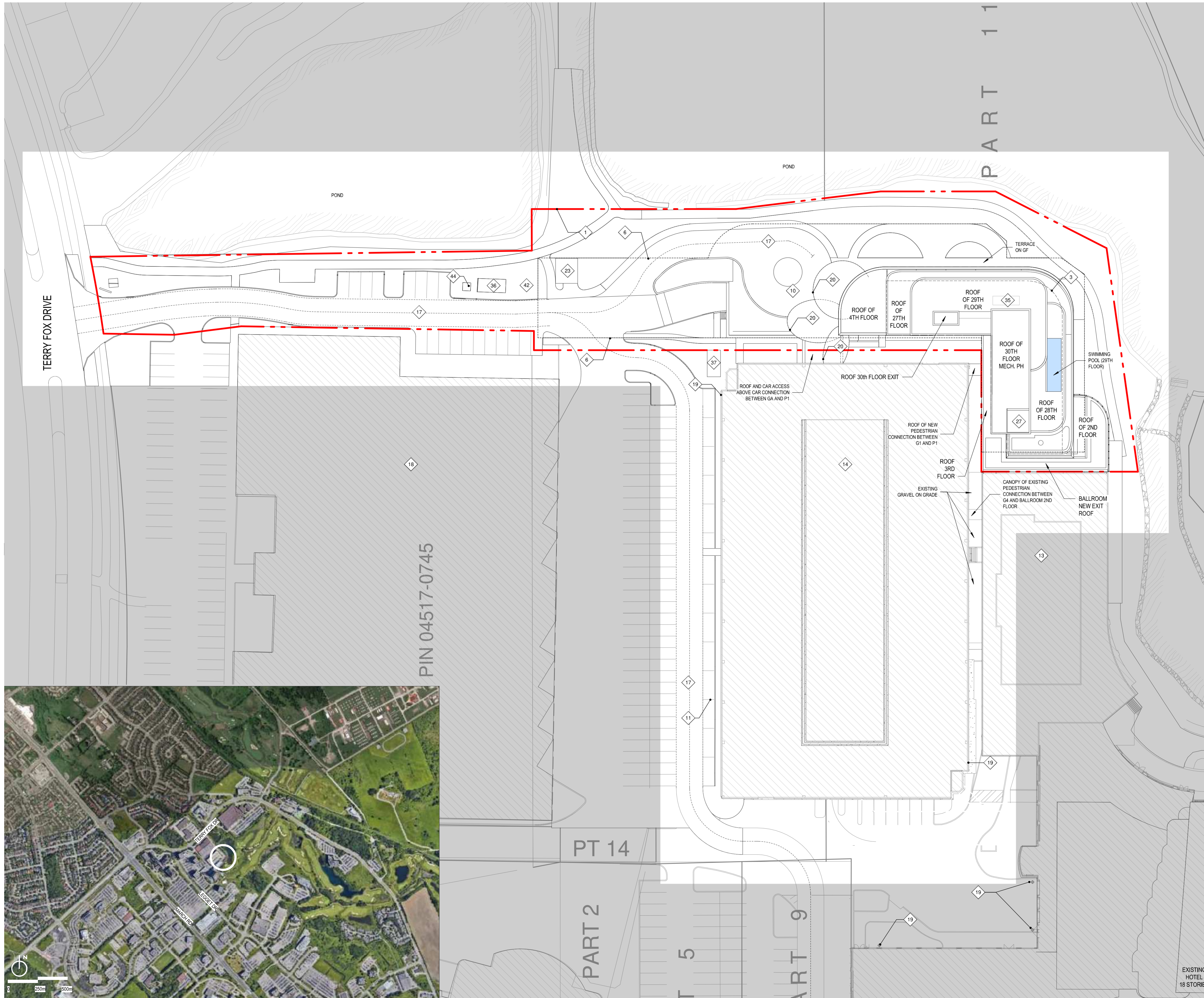


Brad Byvelde, P.Eng.  
Project Coordinator,  
Transportation/Traffic

## **APPENDIX A**

---

Preliminary Site Plan



GENERAL NOTES	
# NOTE	DESCRIPTION
1	PROPERTY LINE
2	LEVELS 2 TO 4 FOOTPRINT
3	TOWER FOOTPRINT
4	GROUND FLOOR FOOTPRINT
5	PARKING P2 FOOTPRINT
6	PUBLIC TERRACE
7	28TH FLOOR FOOTPRINT
8	30TH FLOOR (ROOF PROFILE)
9	GROUND FLOOR DROP OFF ON P1 ROOF, HEATED SLAB
10	EXISTING PARALLEL PARKING ROW
11	EXISTING BALLROOM
12	MULTI LEVEL EXISTING PARKING GARAGE
13	EXISTING PARKING GARAGE NEW ENTRANCE
14	NEW BALLROOM STAIRS EXIT
15	FIRE ROUTE (ONE WAY AT DROP OFF)
16	MONMOUTH EXISTING BUILDING
17	EXISTING WALL HYDRANT
18	CANOPY PROFILE
19	MAJOR OVERLAND FLOW ROUTE UNDER BOARDWALK
20	ELECTRICAL CLOSET SEE ELECTRICAL ENG.
21	AEDICULE STAIRS AN EXHAUST AIR FROM P2
22	BALLROOM EXTENSION FOOTPRINT
23	TRENCH DRAIN
24	COOLING TOWER ON ROOF OF THE 28TH FLOOR. SEE MECHANICAL ENG.
25	SCREEN WALL
26	BRD-FRIENDLY LOW REFLECTANCE GLASS
27	PRIVATE TERRACE
28	GARBAGE CHUTE
29	ROOF ACCESS
30	GENERATOR ON THE ROOF. SEE ELECTRICAL ENG.
31	EXISTING TRANSFORMER (MONMOUTH BUILDING)
32	RESIDENCE TRANSFORMER. SEE ELECTRICAL ENG.
33	GARBAGE COMPACTOR
34	EXISTING HOTEL
35	EXTERIOR SHOWER
36	SNOW STORAGE
37	PARKING P1 FOOTPRINT
38	PROPOSED PAD FOR NEW PUMPHOUSE ELECTRICAL SUPPLY

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4. Les dimensions sur ces documents doivent être lues et non mesurées. / The dimensions on these documents must be read and not measured.

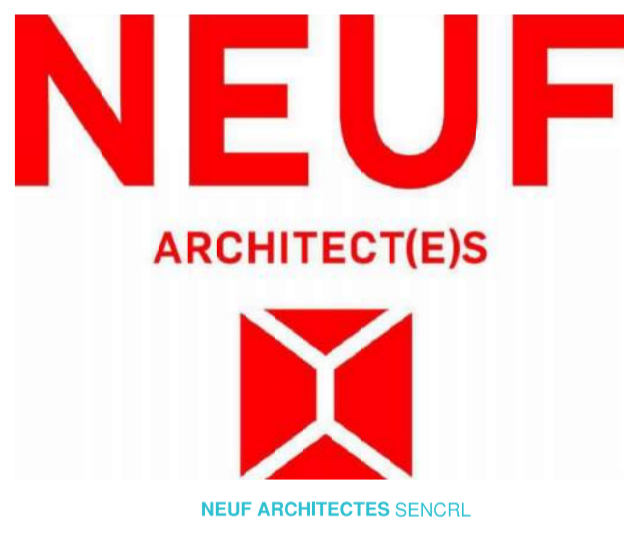
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ARCHITECTE DE PAYSAGE Landscape Architect  
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**NEUF architect(e)s** SENCRIL  
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**SCEAU** / Seal



**CLIENT** Client  
**brookstreet APARTMENTS**

OUVRAGE Project  
**BROOKSTREET APARTMENTS**

EMPLACEMENT Location NO PROJET No.  
525 Legget Drive Kanata 12347  
Ontario K2K 2W2

NO	RÉVISION	DATE (aa-mm-ii)
A	FOR INTERNAL REVIEW - ARCHITECT	2021 02 02
B	FOR INTERNAL REVIEW - ARCHITECT	2021 07 14
C	SITE PLAN APPROVAL	2021 10 04

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CONSTRUCTION

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211004  
TITRE DU DESSIN Drawing Title  
**GENERAL SITE PLAN**

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ÉCHELLE Scale  
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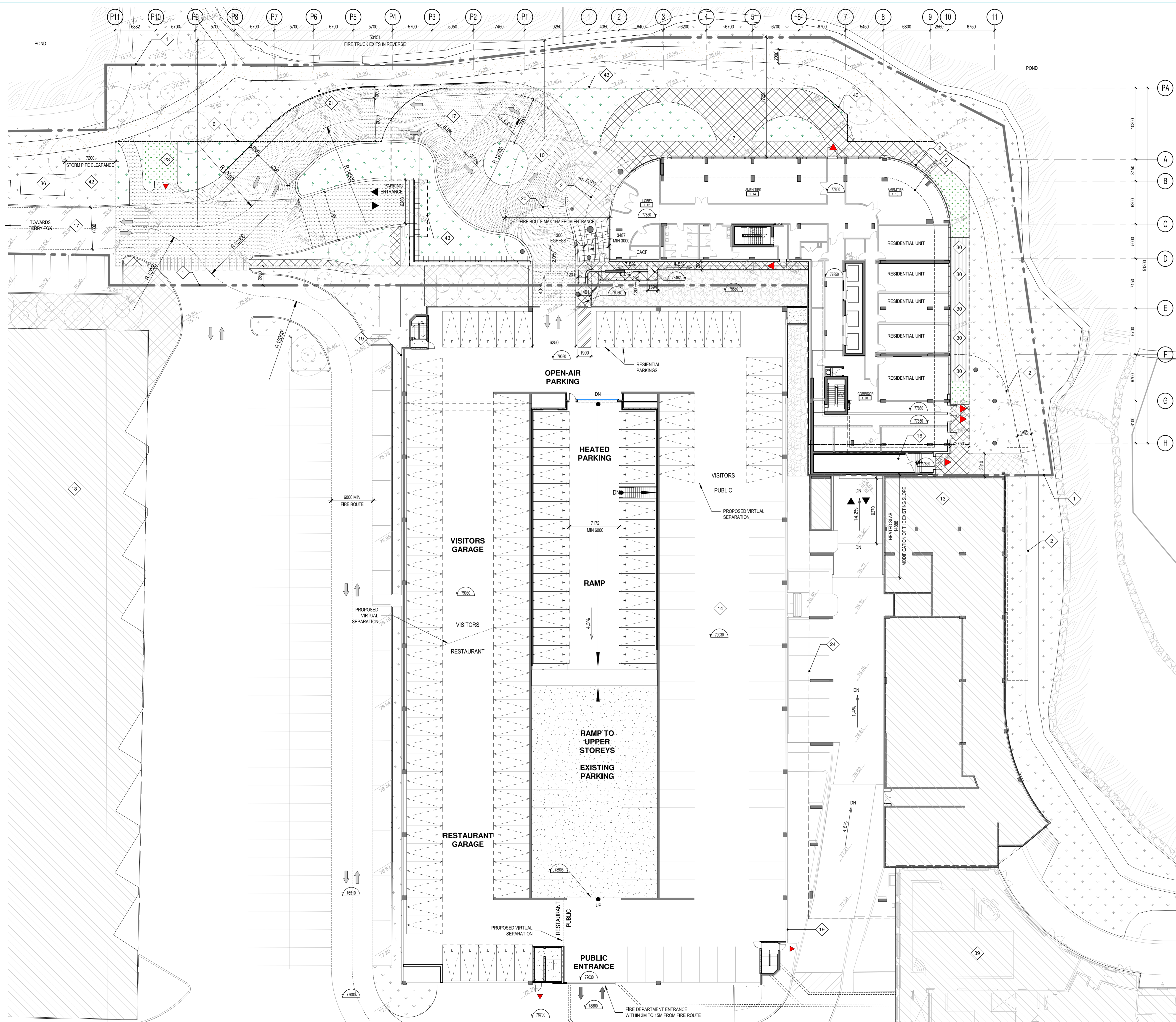
REVISION Revision NO DESSIN Dwg Number  
**C** **A101**

SURFACE LEGEND	
[Symbol]	POND (WATER SURFACE)
[Symbol]	OUT OF INTERVENTION AREA
[Symbol]	INTERVENTION AREA
[Symbol]	EXISTING BUILDING
[Symbol]	EXISTING HOTEL 18 STORES
[Symbol]	PROPERTY LINE

LOCATION MAP

GENERAL SITE PLAN  
1:400

01  
A101



GENERAL NOTES	
# NOTE	DESCRIPTION
1	PROPERTY LINE
2	LEVELS 2 TO 4 FOOTPRINT
3	TOWER FOOTPRINT
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38	PARKING P1 FOOTPRINT
39	PROPOSED PAD FOR NEW PUMPHOUSE ELECTRICAL SUPPLY

ZONING BY LAW		
ZONING PROVISION (APARTMENT DWELLING, HIGH RISE)	PROPOSED RSF (XXXX) H(10)	PROVIDED
MINIMUM LOT WIDTH	15 (m) / 161 (ft)	18 (m) / 192 (ft)
MINIMUM LANDSCAPE AREA	30%	49%
MINIMUM FRONT YARD SETBACK	3 (m) / 9.8 (ft)	169 (m) / 554 (ft)
MINIMUM CORNER YARD SETBACK	3 (m) / 9.8 (ft)	N/A
MINIMUM REAR YARD SETBACK	0 (m) / (ft)	5 (m) / 16 (ft)
MINIMUM INTERIOR SIDE YARD SETBACK	0 (m) / (ft)	0 (m) / (ft)
SECTION 110 LANDSCAPING PROVISIONS FOR PARKING LOTS	1.5 m LANDSCAPED BUFFER NOT ABUTTING A STREET	4.4 (m) / 14.4 (ft)
MAXIMUM BUILDING HEIGHT	115 (m) / 377 (ft)	111.1 (m) / 364.5 (ft)
MINIMUM LOT AREA	540 (m <sup>2</sup> ) / 5 812 (ft <sup>2</sup> )	7075 (m <sup>2</sup> ) / 76 154 (ft <sup>2</sup> )
MINIMUM RESIDENTIAL PARKING	307 MIN PARKING STALLS	307 PARKING STALLS
MINIMUM VISITOR PARKING	52 MIN PARKING STALLS	
MINIMUM RESTAURANT PARKING	36 MIN PARKING STALLS	
TOTAL PARKING	307 MIN PARKING STALLS	
MINIMUM BICYCLE PARKING	130 MIN BICYCLE PARKING	130 BICYCLE PARKING
TOTAL PRIVATE AMENITY SPACE	1 536 (m <sup>2</sup> ) / 16 533 (ft <sup>2</sup> )	3 015 (m <sup>2</sup> ) / 32 453 (ft <sup>2</sup> )
TOTAL COMMUNAL AMENITY AREA	768 (m <sup>2</sup> ) / 8 266 (ft <sup>2</sup> )	768 (m <sup>2</sup> ) / 8 266 (ft <sup>2</sup> )

- CIVIL - PLAN DATED 2021-10-04
- LANDSCAPING - PLAN DATED 2021-10-04
- ALL BICYCLE PARKING WILL BE ON P1

SURFACE LEGEND	
[Symbol]	PEDESTRIAN PATH ON GRADE
[Symbol]	LANDSCAPE ON GRADE
[Symbol]	LANDSCAPING ON SLAB
[Symbol]	ASPHALT
[Symbol]	ASPHALT OVER PARKING LEVEL
[Symbol]	PAVERS OVER PARKING LEVEL
[Symbol]	PAVERS ON GRADE
[Symbol]	GRAVEL ON GRADE
[Symbol]	ROOF
[Symbol]	TERRACE
[Symbol]	EXISTING BUILDING
[Symbol]	OUT OF INTERVENTION AREA
[Symbol]	POND
[Symbol]	EXIT ARROW (EGRESS)

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- Les dimensions sur ces documents doivent être lues et non mesurées. / The dimensions on these documents must be read and not measured.

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ELECTRICAL / Électrique  
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**STRUCTURAL / Structure**  
**CUNLIFFE & ASSOCIATES**  
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**URBANIST ET CIVIL / Urban planner and Civil**  
ARCHITECTE DE PAYSAGE / Landscape Architect  
**NOVATECH**  
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**ARCHITECTE / Architect**  
DESIGN INTERIEUR / Interior Design  
**NEUF architect(e)s** SENCRL  
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1 514 947 1117 NEUFarchitectes.com

**ONTARIO ASSOCIATION OF ARCHITECTS**  
KIM PHAM LICENCE #9005  
2021-10-04

**NEUF ARCHITECT(E)S**

CLIENT / Client

**brookstreet APARTMENTS**

OUVRAGE / Project  
**BROOKSTREET APARTMENTS**

EMPLACEMENT / Location  
525 Legget Drive Kanata  
Ontario K2K 2W2

NO PROJET No. / PROJECT NO.  
12347

NO RÉVISION / REVISION DATE (aa-mm-jj)

A	FOR INTERNAL REVIEW - ARCHITECT	2021 02 02
B	FOR INTERNAL REVIEW - ARCHITECT	2021 07 14
C	SITE PLAN APPROVAL	2021 10 04

DESSINÉ PAR / Drawn by  
MM AT

VERIFIÉ PAR / Checked  
KP BSJ

DATE (aa.mm.jj) / DATE  
21 09 24

ÉCHELLE / Scale  
1 : 250

TITRE DU DESSIN / Drawing Title  
**SITE PLAN - GF AND G2**

RÉVISION / Revision NO DESSIN / Dwg Number  
**C A104**

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## **APPENDIX B**

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TIA Screening Form

## City of Ottawa 2017 TIA Guidelines Screening Form

### 1. Description of Proposed Development

Municipal Address	<b>359 Terry Fox Drive &amp; 525 Legget Drive</b>
Description of Location	<b>Located east of Legget Drive and south of Terry Fox Drive</b>
Land Use Classification	<b>High-Rise Residential &amp; Rooftop Restaurant</b>
Development Size (units)	<b>256 dwellings (residential)</b>
Development Size (m <sup>2</sup> )	<b>358 m<sup>2</sup> or 3,850 ft<sup>2</sup> GFA (restaurant)</b>
Number of Accesses and Locations	<b>No new accesses are proposed; development will utilize existing accesses to Legget Drive and Terry Fox Drive</b>
Phase of Development	<b>1</b>
Buildout Year	<b>2024</b>

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

### 2. Trip Generation Trigger

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

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

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

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



### 3. Location Triggers

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

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

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

### 4. Safety Triggers

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

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

### 5. Summary

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

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

## **APPENDIX C**

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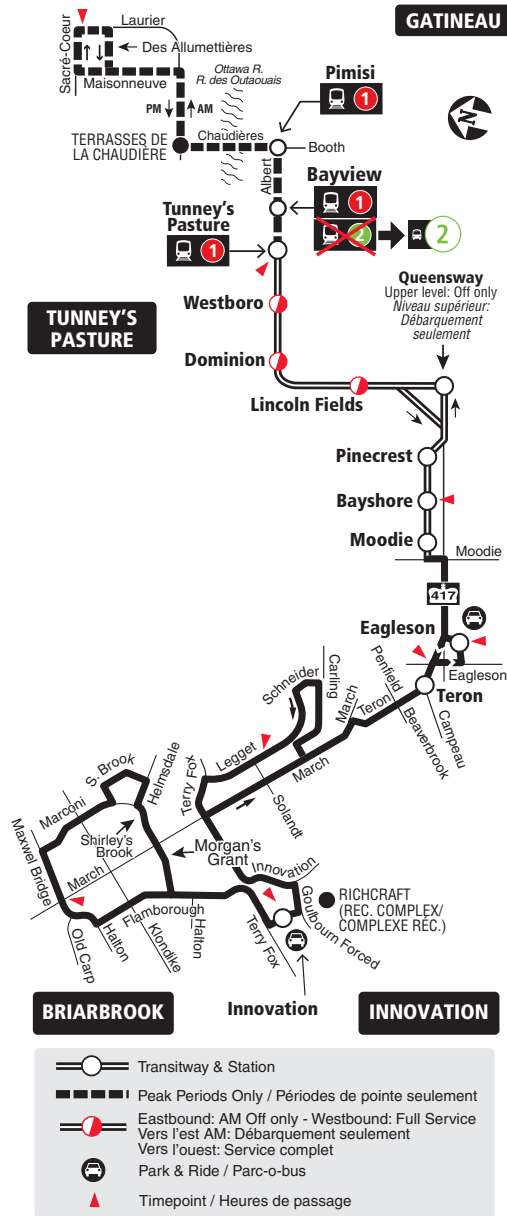
OC Transpo Route Maps



# INNOVATION BRIARBROOK TUNNEY'S PASTURE GATINEAU

7 days a week / 7 jours par semaine

All day service  
Service toute la journée



2021.06



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

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

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

\*Standard message rates may apply / Les tarifs réguliers de messagerie texte peuvent s'appliquer

Customer Service

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

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

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

**Effective June 20, 2021**

**En vigueur 20 juin 2021**



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



# 66

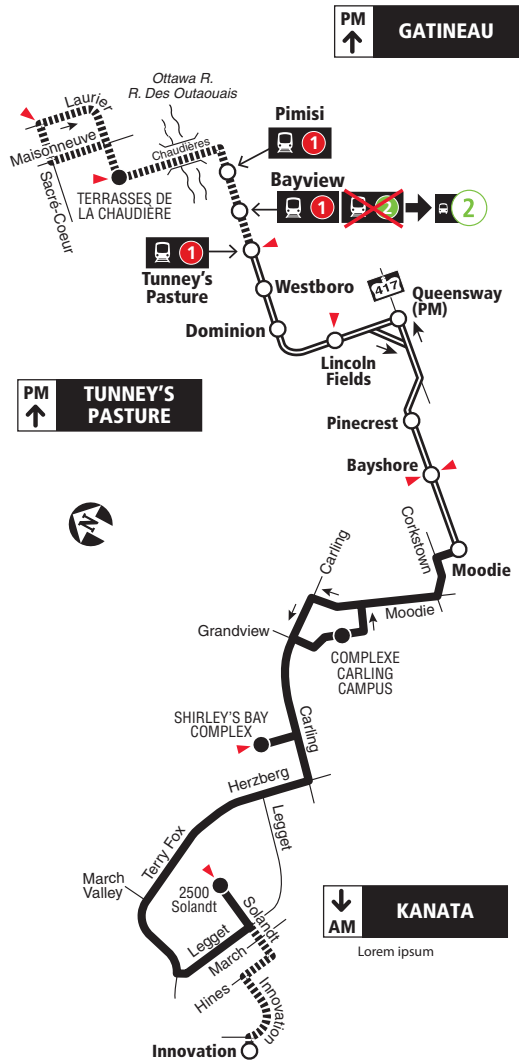
## KANATA TUNNEY'S PASTURE GATINEAU

Local

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



2020.04



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

Text / Texto ..... 560560

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

Customer Service

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

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

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

Effective May 3, 2020

En vigueur 3 mai 2020



INFO 613-741-4390  
octranspo.com



# 110

## FALLOWFIELD INNOVATION

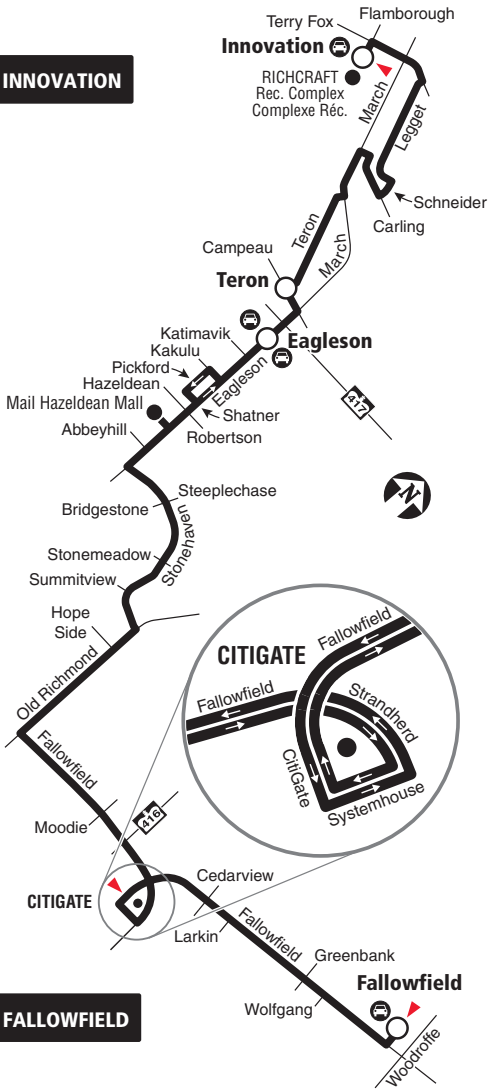
Local

Monday to Friday / Lundi au vendredi

No late evening service

Aucun service en fin de soirée

### INNOVATION



### FALLOWFIELD

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

2021.06

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

Customer Service  
 Service à la clientèle ..... **613-741-4390**  
 Lost and Found / Objets perdus ..... **613-563-4011**  
 Security / Sécurité ..... **613-741-2478**

**Effective June 20, 2021**  
**En vigueur 20 juin 2021**



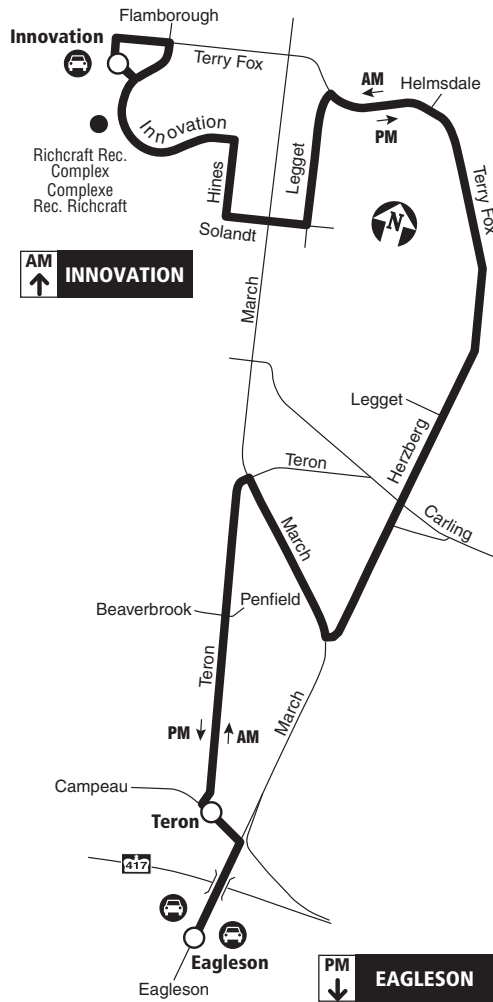
# 166

## INNOVATION EAGLESON

Local

Monday to Friday/ Lundi au vendredi

Limited service / Service limité



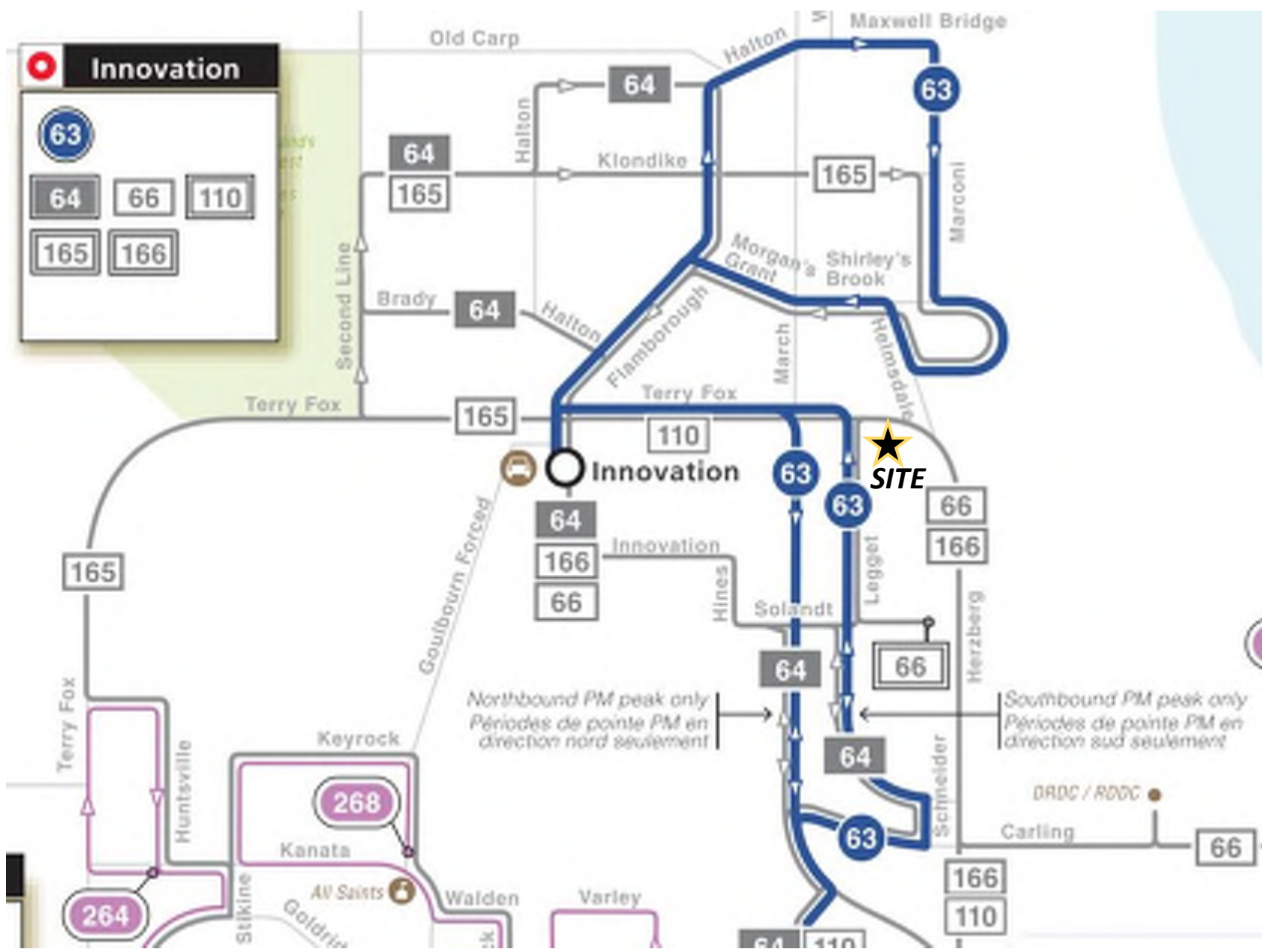
- Station
- Park & Ride / Parc-o-bus

2019.06

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

Customer Service  
 Service à la clientèle ..... **613-741-4390**  
 Lost and Found / Objets perdus..... **613-563-4011**  
 Security / Sécurité ..... **613-741-2478**

**Effective December 25, 2016**  
**En vigueur 25 décembre 2016**



## **APPENDIX D**

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Traffic Count Data



## Turning Movement Count - Peak Hour Diagram

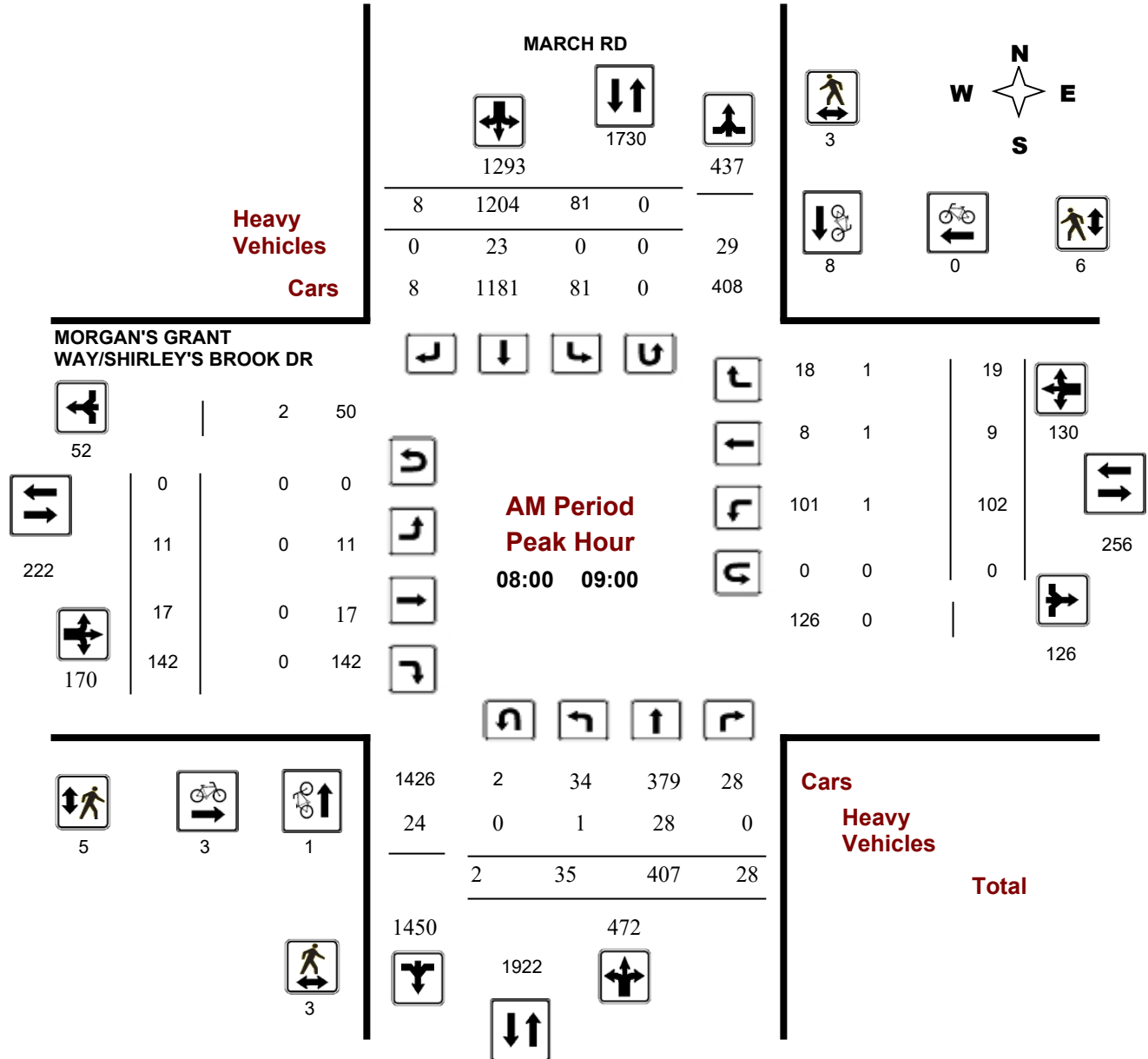
### MARCH RD @ MORGAN'S GRANT WAY/SHIRLEY'S BROOK

**Survey Date:** Wednesday, August 10, 2016

**Start Time:** 07:00

**WO No:** 36160

**Device:** Miovision



## Turning Movement Count - Peak Hour Diagram

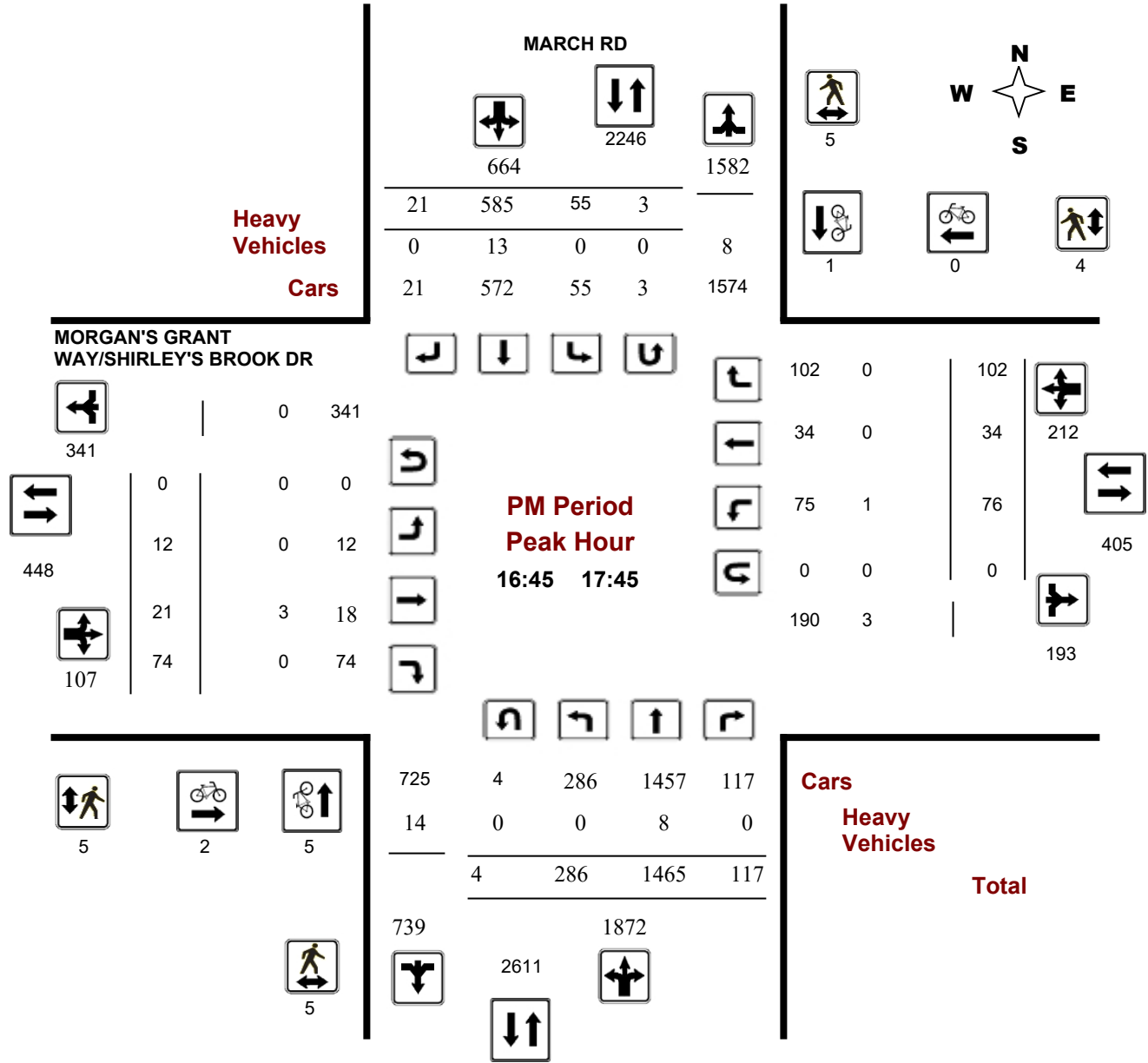
### MARCH RD @ MORGAN'S GRANT WAY/SHIRLEY'S BROOK

**Survey Date:** Wednesday, August 10, 2016

**Start Time:** 07:00

**WO No:** 36160

**Device:** Miovision



**Comments**



# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

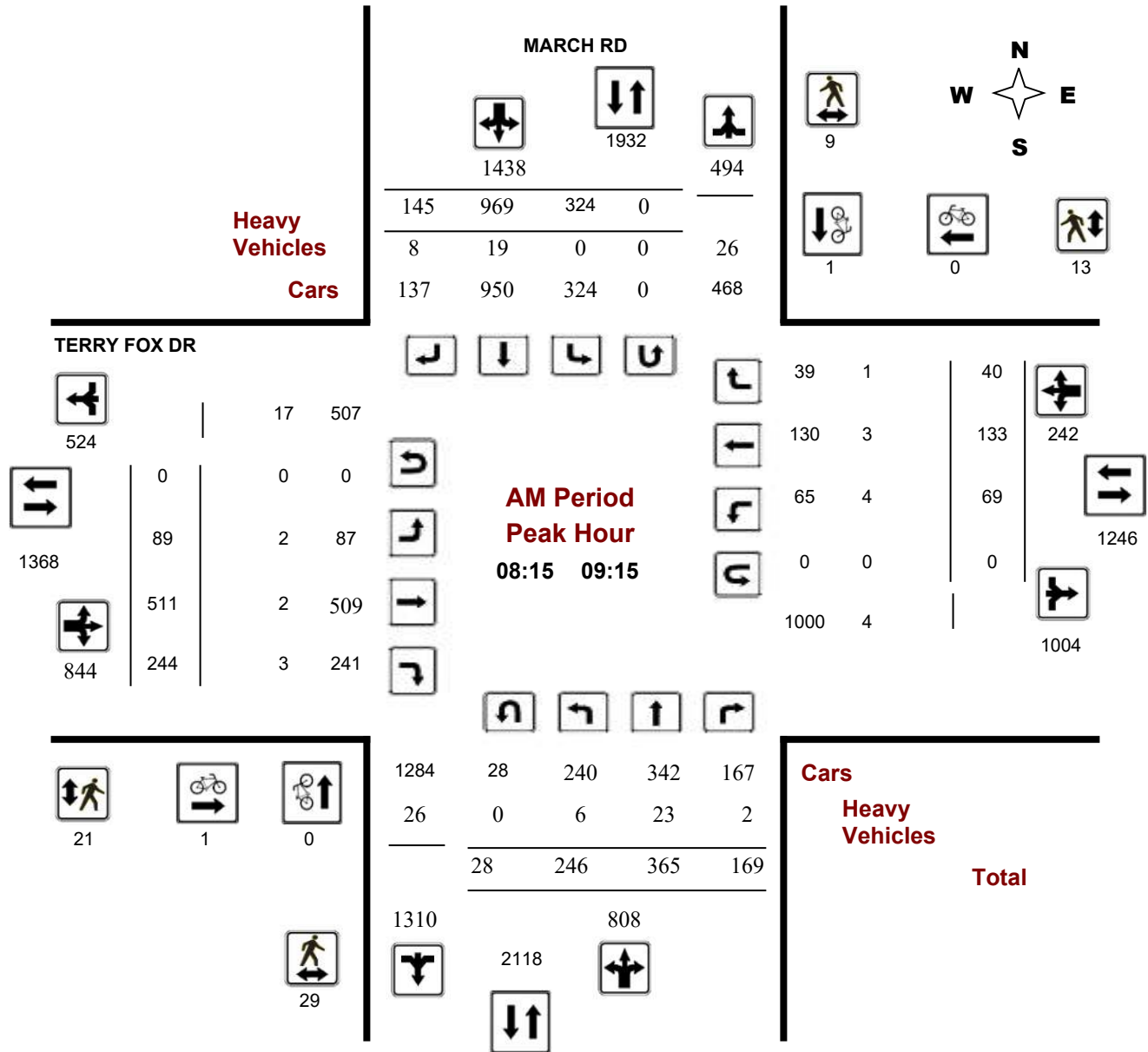
### MARCH RD @ TERRY FOX DR

**Survey Date:** Wednesday, April 11, 2018

**Start Time:** 07:00

**WO No:** 37663

**Device:** Miovision



**Comments**



# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

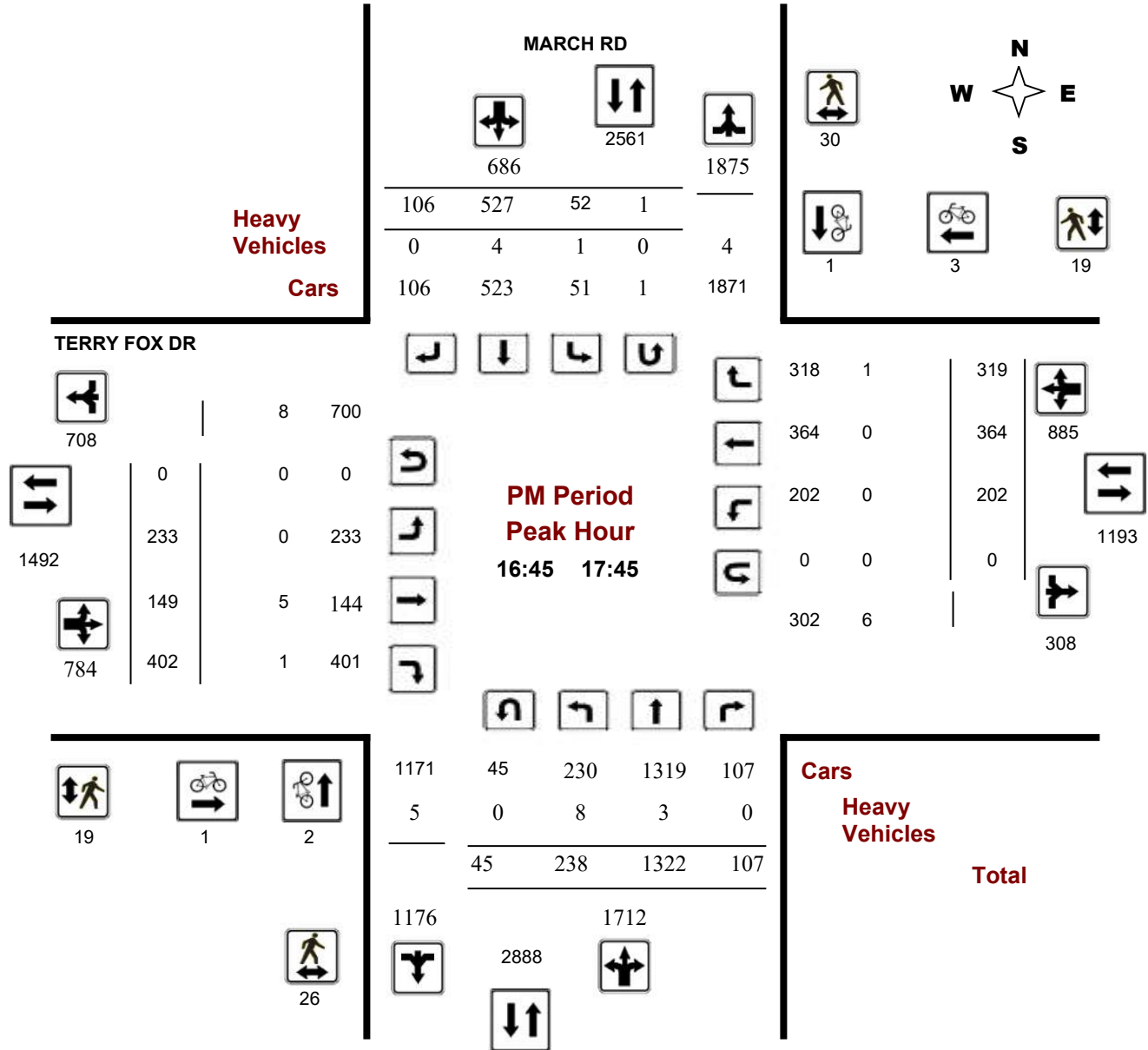
### MARCH RD @ TERRY FOX DR

**Survey Date:** Wednesday, April 11, 2018

**Start Time:** 07:00

**WO No:** 37663

**Device:** Miovision





# Transportation Services - Traffic Services

## Turning Movement Count - Full Study Peak Hour Diagram

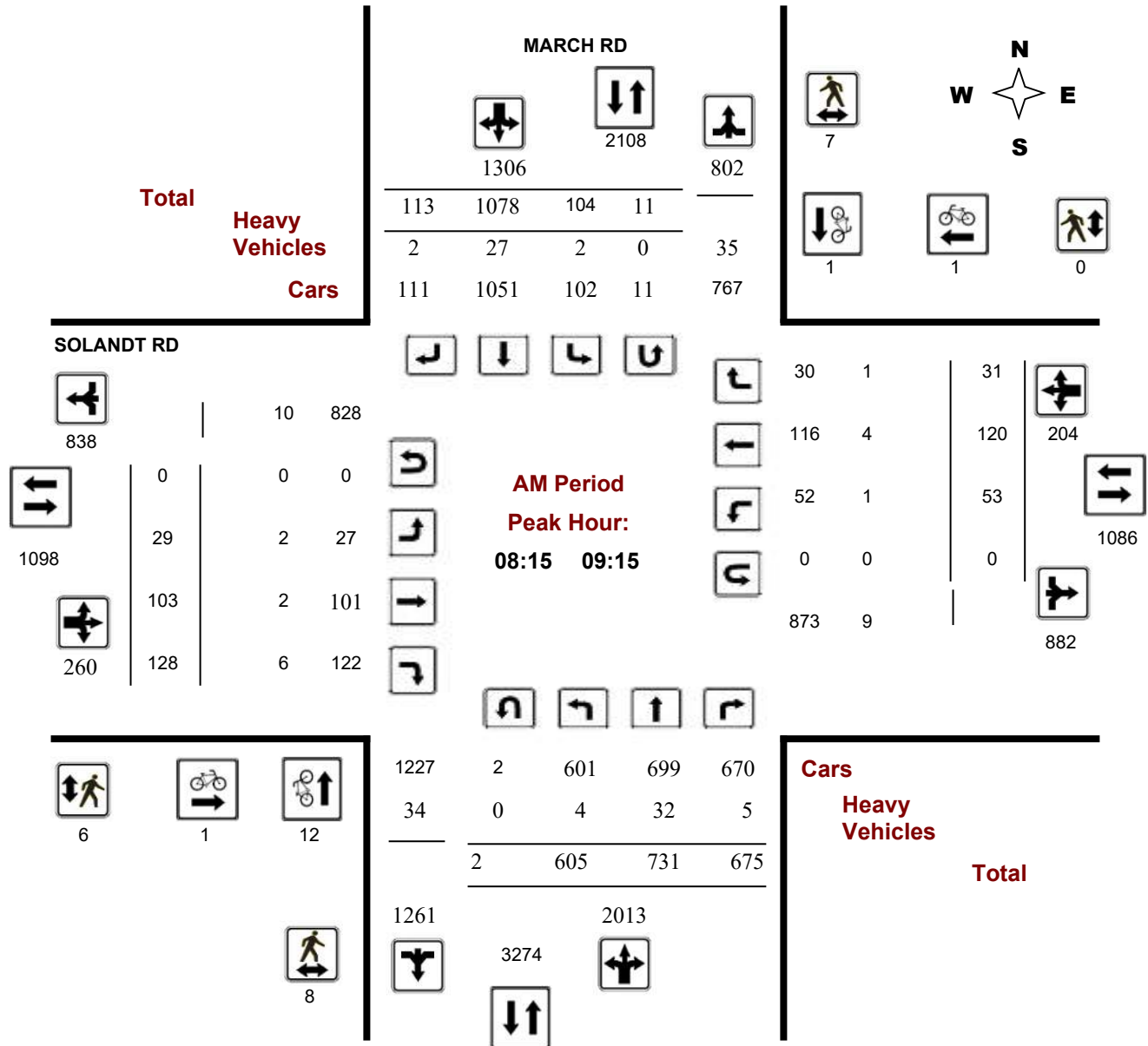
### MARCH RD @ SOLANDT RD

**Survey Date:** Wednesday, August 10, 2016

**Start Time:** 07:00

**WO No:** 36153

**Device:** Miovision





# Transportation Services - Traffic Services

## Turning Movement Count - Full Study Peak Hour Diagram

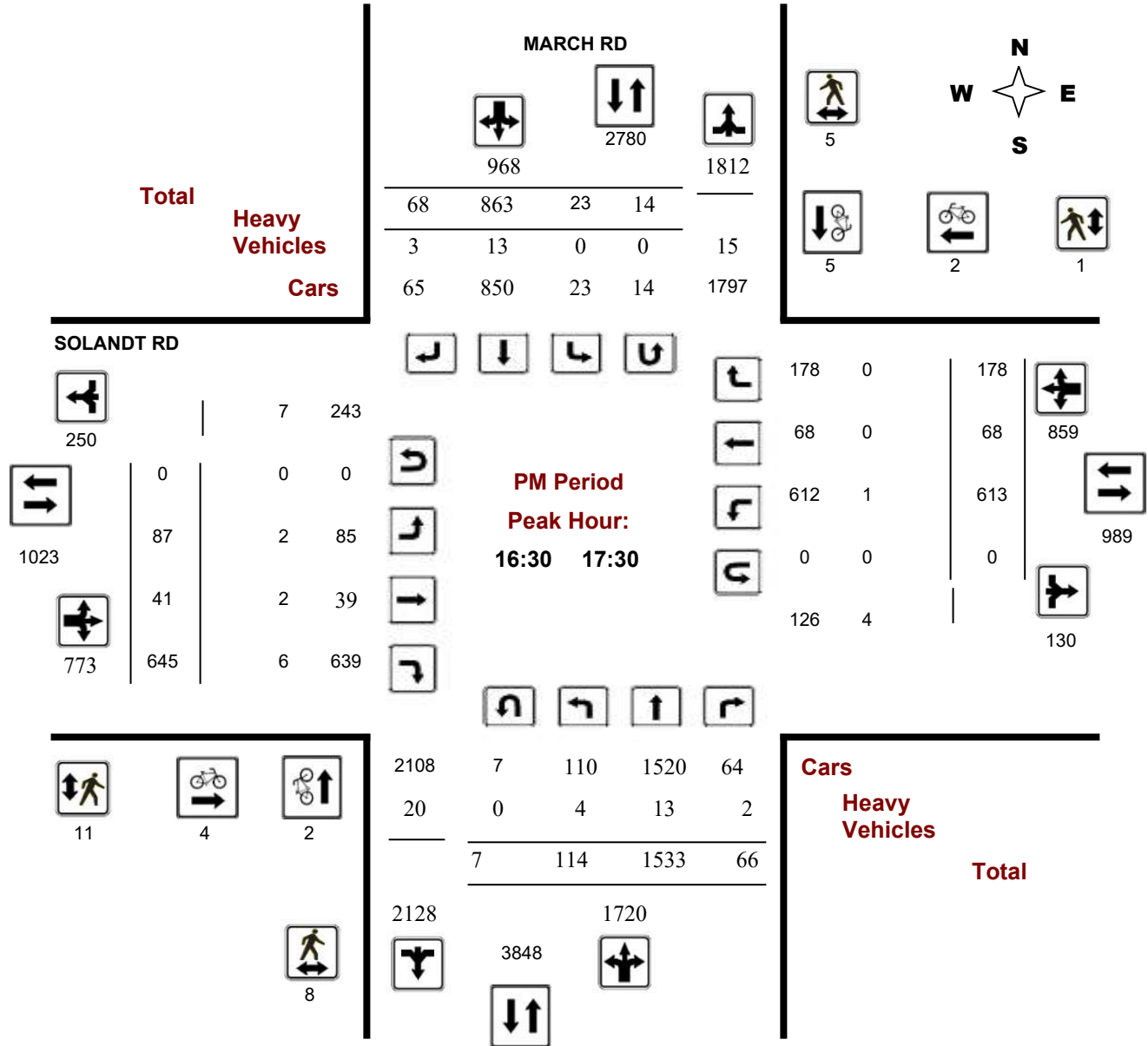
### MARCH RD @ SOLANDT RD

**Survey Date:** Wednesday, August 10, 2016

**Start Time:** 07:00

**WO No:** 36153

**Device:** Miovision





# Transportation Services - Traffic Services

## Turning Movement Count - Full Study Peak Hour Diagram

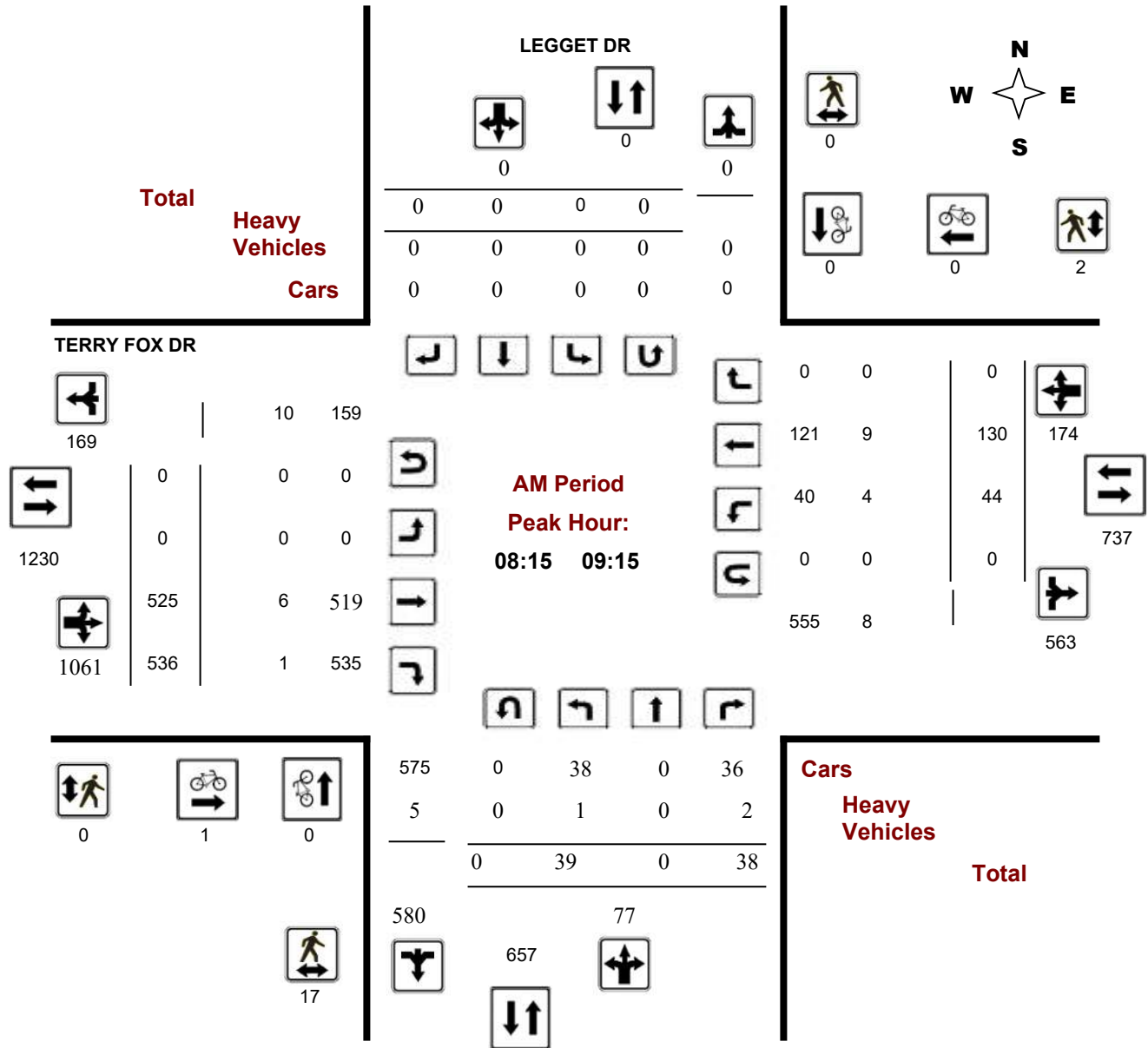
### LEGGET DR @ TERRY FOX DR

**Survey Date:** Wednesday, February 20, 2019

**Start Time:** 07:00

**WO No:** 38360

**Device:** Miovision



**Comments**



# Transportation Services - Traffic Services

## Turning Movement Count - Full Study Peak Hour Diagram

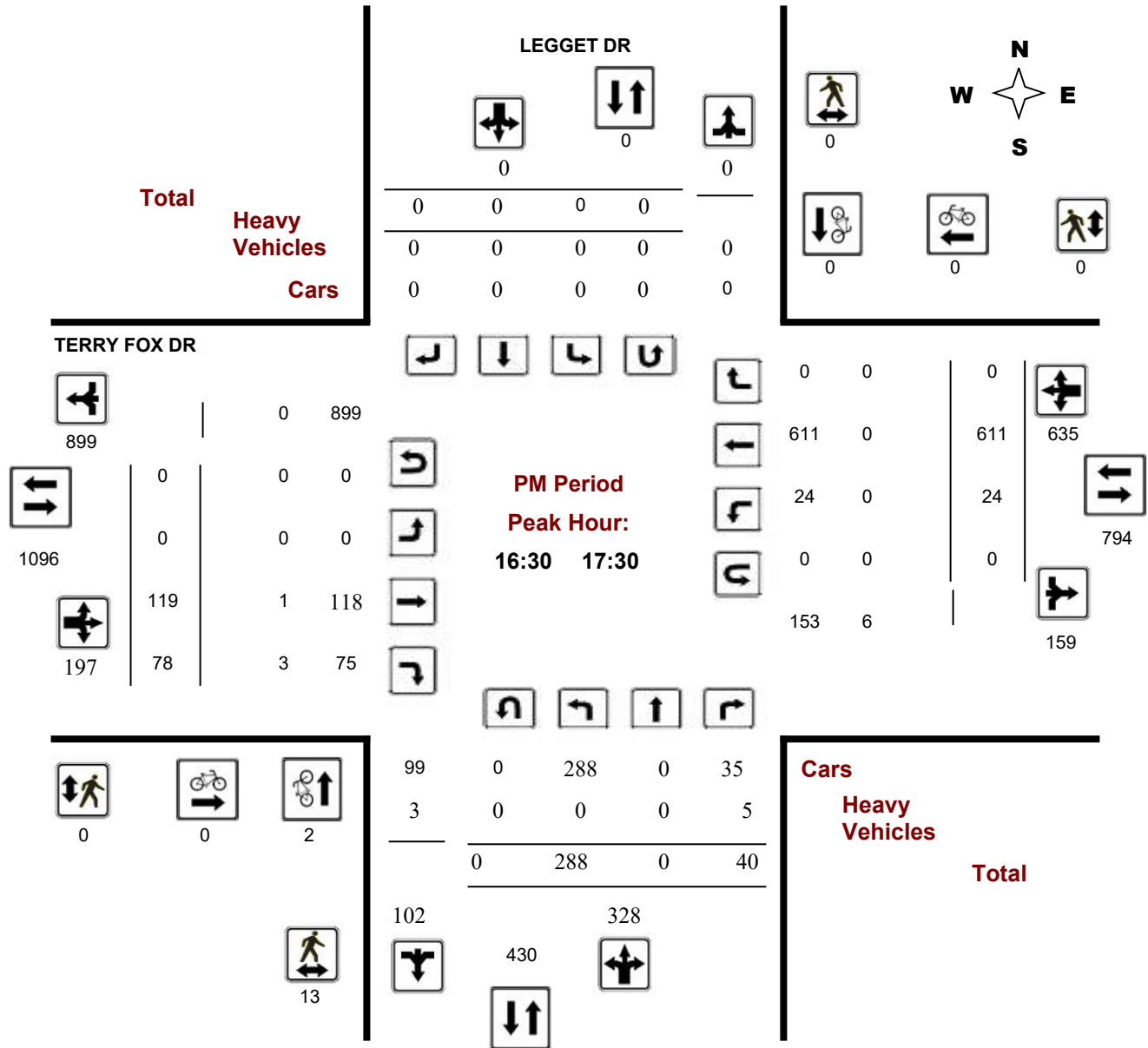
### LEGGET DR @ TERRY FOX DR

**Survey Date:** Wednesday, February 20, 2019

**Start Time:** 07:00

**WO No:** 38360

**Device:** Miovision







Turning Movement Count - Full Study Summary Report

LEGGET DR @ TERRY FOX DR

Survey Date: Wednesday, February 20, 2019

Total Observed U-Turns

AADT Factor

Northbound: 0      Southbound: 0  
Eastbound: 0      Westbound: 1  
1.00

Full Study

Period	LEGGET DR									TERRY FOX DR									Grand Total
	Northbound			Southbound			STR TOT	Eastbound			Westbound			WB TOT	STR TOT				
	LT	ST	RT	NB TOT	LT	ST		RT	SB TOT	LT	ST	RT	EB TOT			LT	ST	RT	
07:00 08:00	27	0	21	48	0	0	0	0	48	0	324	365	689	38	82	0	120	809	857
08:00 09:00	41	0	39	80	0	0	0	0	80	0	476	553	1029	37	122	0	159	1188	1268
09:00 10:00	61	0	28	89	0	0	0	0	89	0	390	370	760	37	105	0	142	902	991
11:30 12:30	208	0	29	237	0	0	0	0	237	0	125	144	269	22	288	0	310	579	816
12:30 13:30	115	0	21	136	0	0	0	0	136	0	228	206	434	21	147	0	168	602	738
15:00 16:00	188	0	27	215	0	0	0	0	215	0	84	89	173	21	239	0	260	433	648
16:00 17:00	301	0	45	346	0	0	0	0	346	0	107	81	188	18	540	0	558	746	1092
17:00 18:00	256	0	37	293	0	0	0	0	293	0	105	69	174	26	553	0	579	753	1046
<b>Sub Total</b>	1197	0	247	1444	0	0	0	0	1444	0	1839	1877	3716	220	2076	0	2296	6012	7456
<b>U Turns</b>				0				0	0				0				1	1	1
<b>Total</b>	1197	0	247	1444	0	0	0	0	1444	0	1839	1877	3716	220	2076	0	2297	6013	7457
<b>EQ 12Hr</b>	1664	0	343	2007	0	0	0	0	2007	0	2556	2609	5165	306	2886	0	3193	8358	10365
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.													<b>1.39</b>						
<b>AVG 12Hr</b>	1664	0	343	2007	0	0	0	0	2007	0	2556	2609	5165	306	2886	0	3193	8358	10365
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.													<b>1.00</b>						
<b>AVG 24Hr</b>	2180	0	450	2629	0	0	0	0	2629	0	3349	3418	6766	401	3780	0	4183	10949	13578
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.													<b>1.31</b>						

Comments:

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.



# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

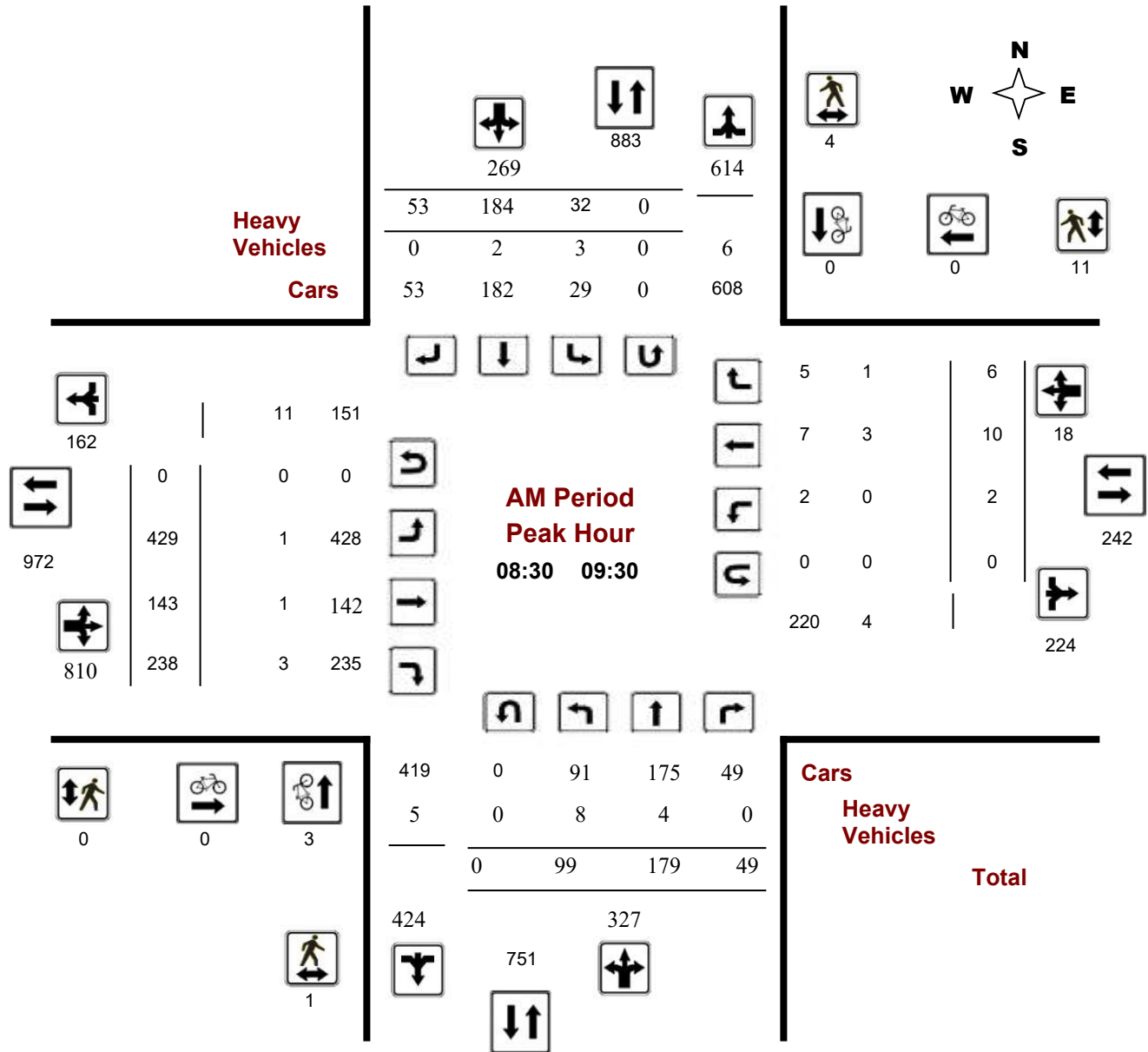
### LEGGET DR @ SOLANDT RD

**Survey Date:** Tuesday, April 11, 2017

**Start Time:** 07:00

**WO No:** 36905

**Device:** Miovision



**Comments**



# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

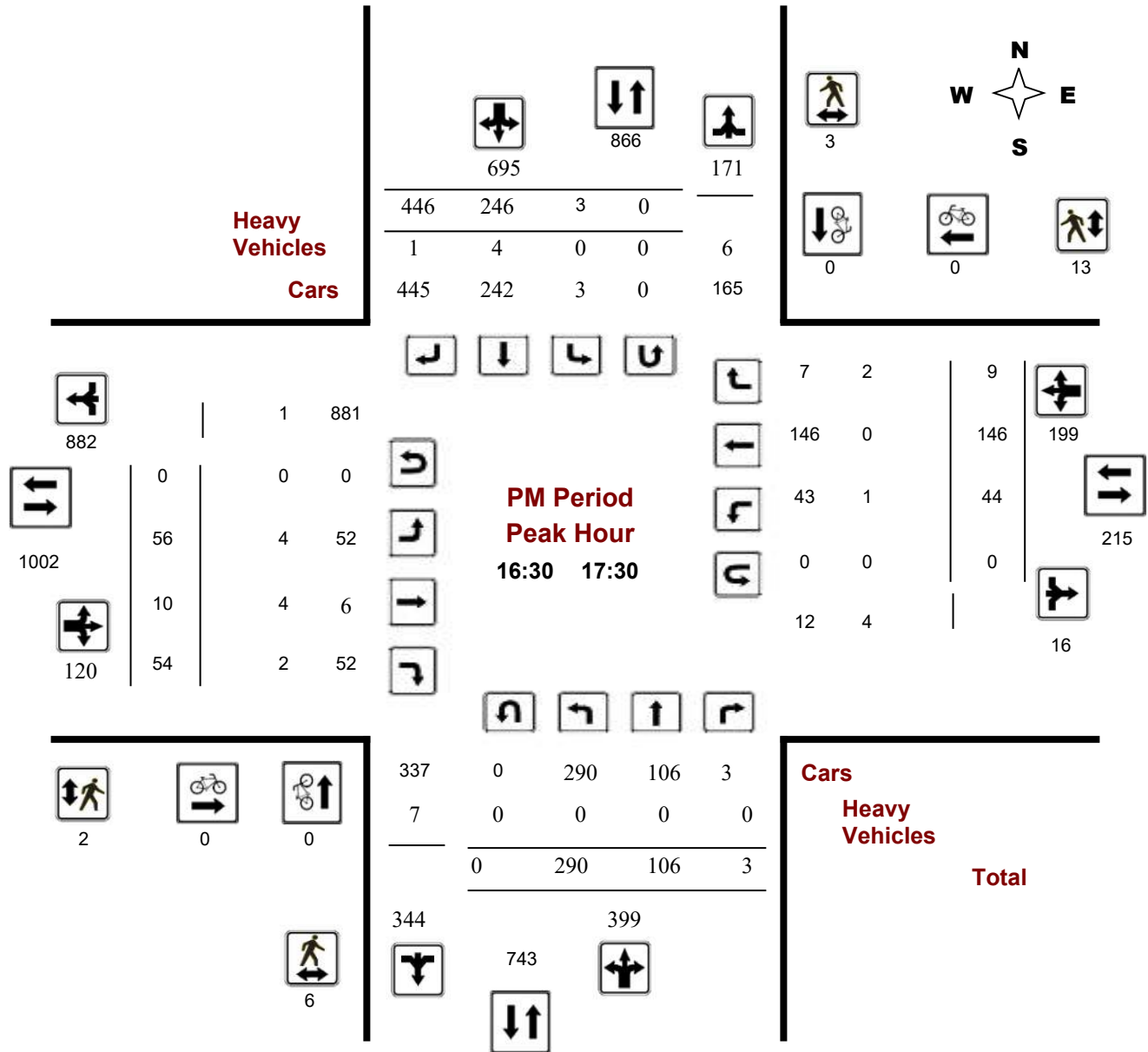
### LEGGET DR @ SOLANDT RD

Survey Date: Tuesday, April 11, 2017

Start Time: 07:00

WO No: 36905

Device: Miovision



Comments



# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

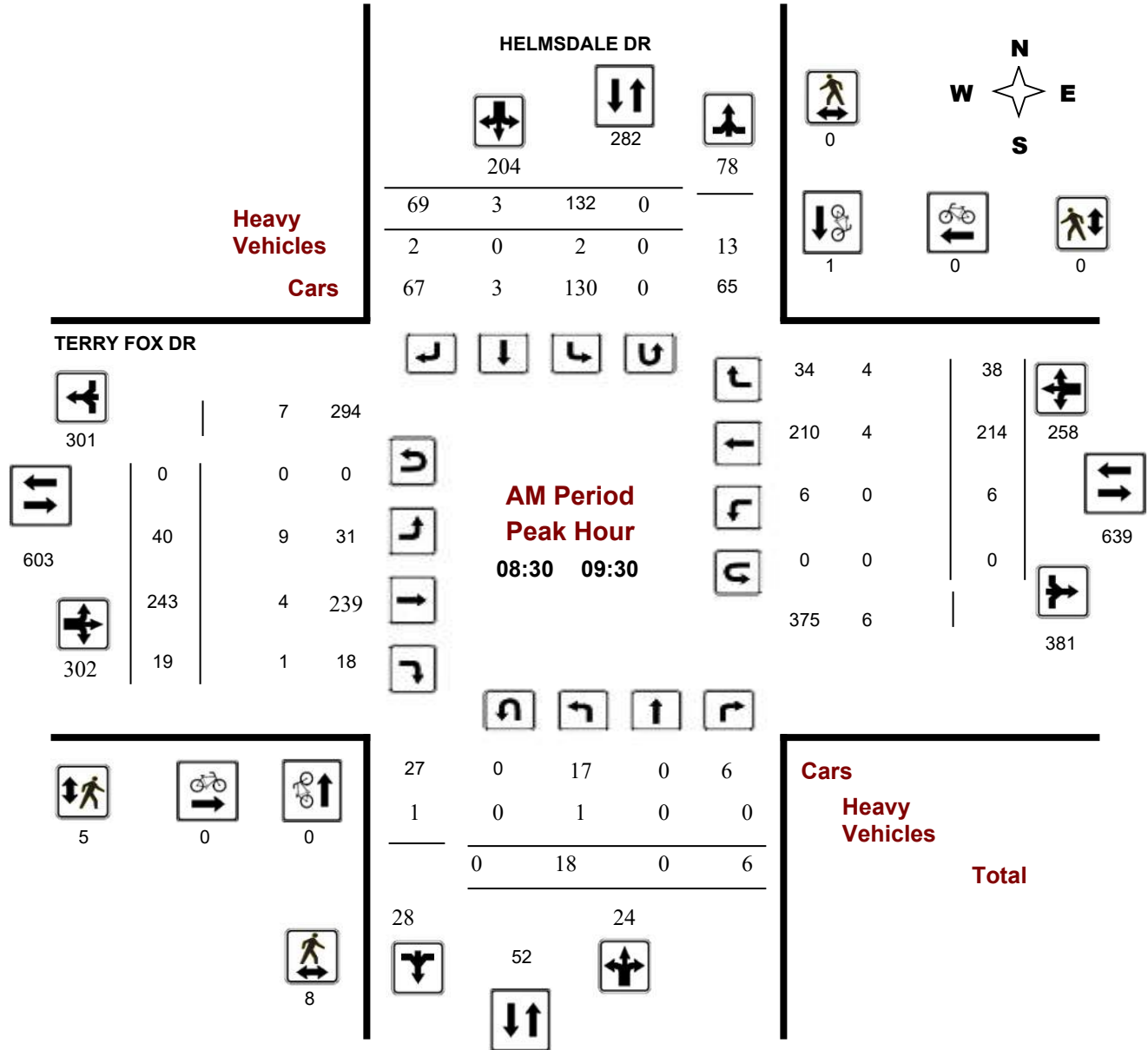
### HELMSDALE DR @ TERRY FOX DR

**Survey Date:** Tuesday, November 22, 2016

**Start Time:** 07:00

**WO No:** 36527

**Device:** Miovision



## Turning Movement Count - Peak Hour Diagram

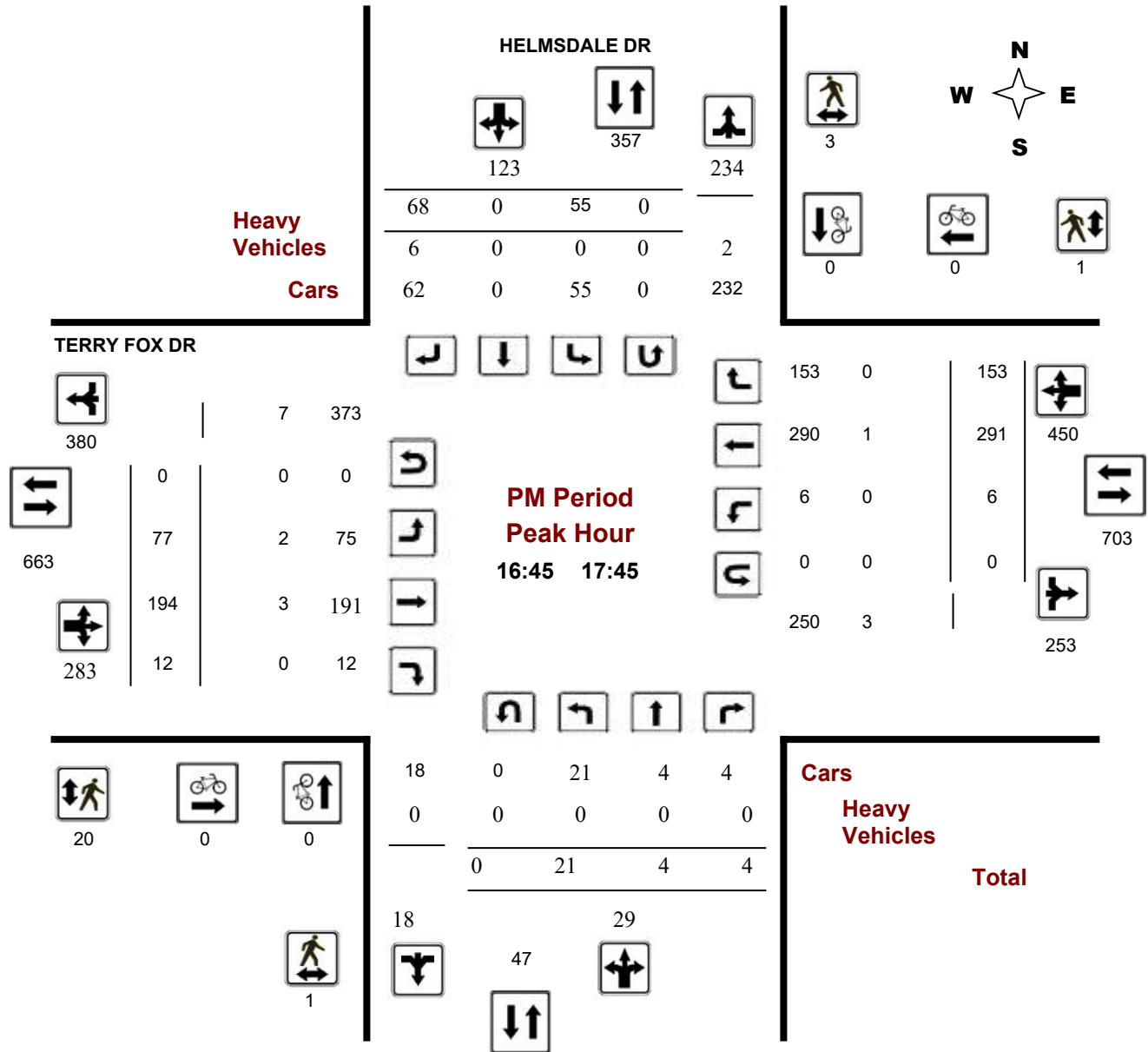
### HELMSDALE DR @ TERRY FOX DR

**Survey Date:** Tuesday, November 22, 2016

**Start Time:** 07:00

**WO No:** 36527

**Device:** Miovision



## **APPENDIX E**

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### Collision Records



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** HELMSDALE DR @ TERRY FOX DR

**Traffic Control:** Stop sign

**Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-15, Sun,13:18	Clear	Angle	Non-fatal injury	Loose snow	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-04, Mon,15:08	Clear	Angle	P.D. only	Slush	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-14, Thu,08:11	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-28, Fri,15:00	Rain	Angle	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** LEGGET DR @ SOLANDT RD

**Traffic Control:** Traffic signal

**Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Nov-02, Thu,17:32	Rain	Angle	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-31, Wed,17:44	Snow	Rear end	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-03, Sat,02:08	Clear	SMV other	P.D. only	Dry	West	Unknown	Automobile, station wagon	Ran off road	0
2018-May-29, Tue,17:20	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Unknown	Unknown	Other motor vehicle	

**Location:** LEGGET DR @ TERRY FOX DR

**Traffic Control:** Stop sign

**Total Collisions:** 7

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

## Collision Details Report - Public Version

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

**Location:** LEGGET DR @ TERRY FOX DR

**Traffic Control:** Stop sign

**Total Collisions:** 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-09, Fri,08:33	Snow	Rear end	P.D. only	Ice	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2016-Apr-05, Tue,16:14	Clear	Angle	Non-fatal injury	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2016-Jun-13, Mon,12:31	Clear	Rear end	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-25, Wed,00:02	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-May-24, Thu,17:14	Clear	Angle	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-29, Tue,16:15	Snow	Angle	P.D. only	Slush	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-21, Wed,17:27	Rain	Angle	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** LEGGET DR btwn TERRY FOX DR & SOLANDT RD

**Traffic Control:** No control

**Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Oct-23, Fri,16:44	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2016-Sep-20, Tue,14:39	Clear	SMV unattended vehicle	P.D. only	Dry	North	Going ahead	Passenger van	Unattended vehicle	0
2016-Dec-23, Fri,09:35	Clear	Angle	Non-fatal injury	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MARCH RD @ SOLANDT RD

**Traffic Control:** Traffic signal

**Total Collisions:** 53

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-12, Mon,07:20	Snow	Turning movement	P.D. only	Loose snow	South	Turning left	Automobile, station wagon	Skidding/sliding	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jan-21, Wed,17:08	Clear	Rear end	P.D. only	Packed snow	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Pick-up truck	Other motor vehicle	
2015-Feb-04, Wed,14:30	Snow	Rear end	P.D. only	Loose snow	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Pick-up truck	Other motor vehicle	
2015-Mar-18, Wed,13:23	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jun-18, Thu,08:04	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-Jul-15, Wed,20:15	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Passenger van	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2015-Jul-17, Fri,17:30	Rain	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2015-Aug-27, Thu,13:56	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Oct-19, Mon,08:52	Clear	Angle	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Dec-09, Wed,10:31	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2015-Dec-29, Tue,20:29	Snow	Sideswipe	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Snow plow	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MARCH RD @ SOLANDT RD

**Traffic Control:** Traffic signal

**Total Collisions:** 53

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Feb-16, Tue,11:02	Snow	Turning movement	P.D. only	Loose snow	West	Turning left	Passenger van	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2016-Feb-23, Tue,15:50	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Mar-02, Wed,19:35	Clear	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2016-Mar-14, Mon,10:46	Rain	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-May-03, Tue,16:55	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Aug-17, Wed,10:51	Clear	Rear end	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Sep-16, Fri,11:14	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Passenger van	Debris falling off vehicle	
2016-Oct-20, Thu,16:28	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2016-Oct-31, Mon,08:05	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Nov-20, Sun,20:27	Drifting Snow	SMV other	P.D. only	Ice	North	Turning left	Automobile, station wagon	Pole (utility, power)	0
2016-Nov-28, Mon,12:27	Clear	Turning movement	P.D. only	Dry	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Feb-16, Thu,19:15	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MARCH RD @ SOLANDT RD

**Traffic Control:** Traffic signal

**Total Collisions:** 53

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Mar-22, Wed,09:35	Clear	Turning movement	Non-fatal injury	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Apr-18, Tue,15:58	Clear	Rear end	Non-fatal injury	Dry	West	Turning right	Motorcycle	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2017-May-09, Tue,09:30	Clear	Rear end	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2017-Jun-02, Fri,07:58	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Jun-13, Tue,17:30	Clear	Turning movement	P.D. only	Dry	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2017-Sep-12, Tue,07:13	Clear	Rear end	P.D. only	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-24, Tue,07:37	Rain	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Oct-31, Tue,15:47	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-20, Wed,15:51	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Dec-21, Thu,10:30	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Jan-31, Wed,17:54	Snow	Rear end	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-26, Mon,19:50	Clear	Turning movement	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MARCH RD @ SOLANDT RD

**Traffic Control:** Traffic signal

**Total Collisions:** 53

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Mar-14, Wed,08:56	Snow	Turning movement	Non-fatal injury	Slush	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Apr-06, Fri,16:40	Rain	Rear end	P.D. only	Wet	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-May-28, Mon,20:50	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Jun-06, Wed,20:24	Clear	Turning movement	P.D. only	Dry	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-09, Thu,09:19	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-24, Fri,15:53	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-09, Tue,06:53	Clear	Rear end	P.D. only	Wet	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-26, Fri,13:38	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-31, Wed,15:43	Rain	Rear end	P.D. only	Wet	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Passenger van	Other motor vehicle	
2019-Jan-11, Fri,07:27	Clear	Turning movement	P.D. only	Dry	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jan-28, Mon,17:24	Clear	Turning movement	Non-fatal injury	Packed snow	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MARCH RD @ SOLANDT RD

**Traffic Control:** Traffic signal

**Total Collisions:** 53

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Apr-01, Mon,12:40	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jun-08, Sat,10:11	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-10, Wed,10:24	Clear	Turning movement	P.D. only	Dry	North	Turning left	Truck and trailer	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-27, Sat,21:52	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-24, Tue,08:59	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-19, Thu,10:15	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-30, Mon,20:00	Freezing Rain	Rear end	P.D. only	Ice	North	Going ahead	Automobile, station wagon	Skidding/sliding	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

**Location:** MARCH RD @ TERRY FOX DR

**Traffic Control:** Traffic signal

**Total Collisions:** 56

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jan-14, Wed,15:14	Clear	Rear end	P.D. only	Dry	North	Turning left	Passenger van	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jan-17, Sat,08:31	Clear	Rear end	P.D. only	Ice	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2015-Feb-01, Sun,17:48	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MARCH RD @ TERRY FOX DR

**Traffic Control:** Traffic signal

**Total Collisions:** 56

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Apr-07, Tue,19:00	Clear	Rear end	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Jun-03, Wed,15:30	Clear	Rear end	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Jun-28, Sun,14:51	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Delivery van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jul-13, Mon,10:34	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2015-Jul-13, Mon,17:45	Clear	Turning movement	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Aug-05, Wed,18:00	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Sep-28, Mon,06:25	Clear	Turning movement	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Truck - dump	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Oct-23, Fri,20:05	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2015-Oct-29, Thu,09:39	Rain	Rear end	P.D. only	Wet	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2015-Dec-14, Mon,17:20	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2016-Jan-12, Tue,17:18	Clear	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MARCH RD @ TERRY FOX DR

**Traffic Control:** Traffic signal

**Total Collisions:** 56

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Apr-05, Tue,08:26	Clear	Rear end	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2016-Apr-14, Thu,07:40	Clear	Rear end	Non-fatal injury	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	
2016-Jul-26, Tue,16:23	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Oct-02, Sun,13:23	Rain	Sideswipe	P.D. only	Wet	West	Turning left	Pick-up truck	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Dec-14, Wed,11:30	Clear	Angle	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-22, Thu,09:33	Snow	Sideswipe	P.D. only	Slush	North	Changing lanes	Automobile, station wagon	Skidding/sliding	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jan-08, Sun,14:48	Clear	Rear end	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Turning right	Pick-up truck	Other motor vehicle	
2017-Apr-24, Mon,14:47	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-May-18, Thu,09:47	Clear	Rear end	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Truck and trailer	Other motor vehicle	
2017-Jun-13, Tue,20:15	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Pick-up truck	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2017-Jun-14, Wed,18:47	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MARCH RD @ TERRY FOX DR

**Traffic Control:** Traffic signal

**Total Collisions:** 56

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Jun-29, Thu,11:53	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jul-24, Mon,15:37	Rain	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2017-Aug-24, Thu,17:49	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-03, Sun,10:39	Rain	Sideswipe	Non-fatal injury	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Sep-20, Wed,16:15	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-27, Wed,14:43	Clear	Rear end	Non-fatal injury	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-04, Wed,17:45	Clear	Sideswipe	P.D. only	Dry	West	Overtaking	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Oct-14, Sat,08:00	Rain	SMV other	P.D. only	Wet	North	Merging	Automobile, station wagon	Curb	0
2017-Oct-20, Fri,19:04	Clear	Other	P.D. only	Dry	West	Reversing	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Dec-02, Sat,18:19	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Passenger van	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Dec-19, Tue,08:32	Clear	SMV other	P.D. only	Loose snow	North	Turning right	Automobile, station wagon	Snowbank/drift	0
2017-Dec-27, Wed,14:55	Clear	SMV other	P.D. only	Ice	South	Going ahead	Automobile, station wagon	Other	0
2018-Jan-14, Sun,12:37	Clear	Rear end	P.D. only	Ice	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MARCH RD @ TERRY FOX DR

**Traffic Control:** Traffic signal

**Total Collisions:** 56

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Jan-21, Sun,21:32	Clear	Angle	P.D. only	Dry	East	Reversing	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Feb-09, Fri,23:12	Snow	Turning movement	Non-fatal injury	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Feb-11, Sun,18:56	Freezing Rain	SMV other	P.D. only	Ice	East	Turning right	Automobile, station wagon	Skidding/sliding	0
2018-Feb-22, Thu,17:20	Clear	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Feb-28, Wed,13:53	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-06, Wed,17:35	Clear	Rear end	P.D. only	Dry	North	Unknown	Motorcycle	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-09, Sat,17:11	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Curb	0
2018-Jun-22, Fri,15:38	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2018-Jul-14, Sat,11:41	Clear	Rear end	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-24, Tue,09:30	Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-14, Wed,19:00	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-18, Tue,08:59	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Dec-21, Fri,16:20	Rain	Rear end	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MARCH RD @ TERRY FOX DR

**Traffic Control:** Traffic signal

**Total Collisions:** 56

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Feb-26, Tue,16:30	Snow	Sideswipe	P.D. only	Ice	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-10, Sun,14:45	Snow	Rear end	P.D. only	Slush	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-26, Wed,09:46	Rain	Approaching	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-05, Tue,18:17	Clear	Sideswipe	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Truck and trailer	Other motor vehicle	
2019-Dec-24, Tue,22:58	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

**Location:** MARCH RD btwn TERRY FOX DR & SOLANDT RD

**Traffic Control:** No control

**Total Collisions:** 20

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-16, Fri,16:08	Clear	SMV other	P.D. only	Slush	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
2015-Apr-13, Mon,07:29	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
2015-May-09, Sat,13:17	Clear	SMV other	Non-fatal injury	Wet	South	Changing lanes	Motorcycle	Skidding/sliding	0
2015-May-25, Mon,21:57	Rain	Sideswipe	Non-fatal injury	Wet	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Nov-15, Sun,21:40	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2015-Nov-15, Sun,23:58	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Animal - wild	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MARCH RD btwn TERRY FOX DR & SOLANDT RD

**Traffic Control:** No control

**Total Collisions:** 20

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jan-15, Fri,17:54	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Jun-17, Fri,06:36	Clear	SMV other	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2016-Jun-30, Thu,16:46	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Bicycle	Other motor vehicle	0
					East	Turning right	Pick-up truck	Cyclist	
2016-Dec-19, Mon,23:58	Clear	Sideswipe	P.D. only	Loose snow	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2017-Feb-14, Tue,11:55	Snow	Rear end	Non-fatal injury	Wet	North	Merging	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-May-20, Sat,07:57	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jun-05, Mon,08:55	Clear	Rear end	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Going ahead	Truck and trailer	Other motor vehicle	
2018-Oct-30, Tue,17:12	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-18, Thu,03:22	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2019-May-23, Thu,16:30	Rain	Rear end	P.D. only	Wet	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-04, Sun,11:40	Clear	SMV other	Non-fatal injury	Dry	North	Going ahead	Motorcycle	Skidding/sliding	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MARCH RD btwn TERRY FOX DR & SOLANDT RD

**Traffic Control:** No control

**Total Collisions:** 20

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Nov-16, Sat,19:07	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Debris on road	0
2019-Nov-26, Tue,07:00	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Animal - wild	0
2019-Dec-31, Tue,07:57	Snow	Rear end	P.D. only	Slush	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

**Location:** MCKINLEY DR @ TERRY FOX DR

**Traffic Control:** Stop sign

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-10, Wed,07:14	Clear	Angle	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-15, Fri,16:45	Clear	Angle	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Delivery van	Other motor vehicle	

**Location:** SOLANDT RD btwn MARCH RD & LEGGET DR

**Traffic Control:** No control

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Oct-02, Tue,16:24	Rain	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** TERRY FOX DR btwn LEGGET DR & HELMSDALE DR

**Traffic Control:** No control

**Total Collisions:** 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-12, Thu,10:28	Snow	SMV other	P.D. only	Loose snow	East	Going ahead	Passenger van	Cable guide rail	0
2015-Feb-12, Thu,13:37	Snow	SMV unattended vehicle	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Unattended vehicle	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** TERRY FOX DR btwn LEGGET DR & HELMSDALE DR

**Traffic Control:** No control

**Total Collisions:** 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-27, Fri,09:12	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Municipal transit bus	Other motor vehicle	
2015-Apr-30, Thu,18:22	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Unknown	Other motor vehicle	0
					West	Stopped	Municipal transit bus	Other motor vehicle	
2016-Apr-16, Sat,03:37	Clear	SMV other	P.D. only	Dry	East	Unknown	Pick-up truck	Ran off road	0
2017-Aug-22, Tue,11:03	Rain	Angle	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-18, Fri,09:20	Snow	Rear end	P.D. only	Packed snow	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jan-23, Wed,08:45	Snow	Rear end	Non-fatal injury	Packed snow	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-03, Sun,17:00	Clear	Angle	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-26, Tue,13:29	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	

**Location:** TERRY FOX DR btwn MARCH RD & MCKINLEY DR

**Traffic Control:** No control

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-May-21, Thu,09:09	Clear	Rear end	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** TERRY FOX DR btwn MCKINLEY DR & LEGGET DR

**Traffic Control:** No control

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-May-26, Sat,06:15	Clear	SMV other	P.D. only	Wet	West	Going ahead	Pick-up truck	Ran off road	0
2019-Aug-24, Sat,15:35	Clear	SMV other	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Curb	0

**Location:** MARCH RD @ MORGAN'S GRANT WAY/SHIRLEY'S BROOK

**Traffic Control:** Traffic signal

**Total Collisions:** 38

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Jan-21, Tue,18:07	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

2014-Feb-14, Fri,08:30	Snow	Turning movement	P.D. only	Slush	West	Turning left	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Mar-28, Fri,16:45	Rain	SMV other	Non-fatal injury	Wet	West	Turning left	Pick-up truck	Pedestrian	1
2014-Apr-20, Sun,14:24	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle	
					West	Turning right	Passenger van	Other motor vehicle	
2014-Jun-26, Thu,18:32	Clear	Turning movement	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Aug-05, Tue,00:36	Clear	SMV other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Pole (sign, parking meter)	
2014-Nov-07, Fri,17:47	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Turning right	Pick-up truck	Other motor vehicle	
2015-Jan-30, Fri,09:00	Snow	Rear end	P.D. only	Slush	East	Turning right	Automobile, station wagon	Other motor vehicle	
					East	Turning right	Passenger van	Other motor vehicle	
2015-Jan-30, Fri,07:38	Snow	Rear end	P.D. only	Packed snow	North	Going ahead	Pick-up truck	Other motor vehicle	
					North	Stopped	Passenger van	Other motor vehicle	

2014-Nov-27, Thu,19:05	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Passenger van	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Apr-15, Wed,13:55	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2015-Jun-27, Sat,13:45	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2015-Jan-16, Fri,09:33	Clear	Turning movement	P.D. only	Slush	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Aug-09, Sun,18:53	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Aug-04, Thu,09:12	Clear	Angle	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Mar-06, Sun,12:03	Clear	Turning movement	Non-fatal injury	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					North	Turning left	Passenger van	Other motor vehicle



2015-Nov-13, Fri,22:05	Rain	Turning movement	P.D. only	Wet	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2016-Jun-17, Fri,13:40	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle
2016-Nov-16, Wed,17:43	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Delivery van	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Stopped	Automobile, station wagon	Debris falling off vehicle
2017-Jun-28, Wed,13:14	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Stopped	Automobile, station wagon	Other motor vehicle
2017-Apr-27, Thu,12:53	Clear	Rear end	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle
					West	Turning right	Automobile, station wagon	Other motor vehicle
2017-Apr-18, Tue,09:31	Clear	Turning movement	P.D. only	Dry	South	Turning left	Passenger van	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-May-17, Wed,16:47	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle
					North	Going ahead	Pick-up truck	Other motor vehicle

2017-Jun-09, Fri,22:27	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

2017-Dec-26, Tue,14:33	Clear	Rear end	P.D. only	Dry	West	Stopped	Automobile, station wagon	Other motor vehicle
					West	Turning left	Delivery van	Other motor vehicle

2017-Sep-28, Thu,08:21	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Passenger van	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle

2017-Sep-21, Thu,17:33	Clear	Turning movement	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle

2017-Nov-28, Tue,17:07	Clear	Turning movement	P.D. only	Dry	North	Turning left	Truck and trailer	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
					East	Turning left	Automobile, station wagon	Other motor vehicle

2018-Jan-30, Tue,15:35	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle
					South	Stopped	Unknown	Other motor vehicle

2018-Feb-28, Wed,09:47	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle
					East	Merging	Automobile, station wagon	Other motor vehicle

2018-Apr-22, Sun,15:30	Clear	Rear end	Non-fatal injury	Dry	North	Slowing or stopping	Motorcycle	Skidding/sliding
					North	Stopped	Automobile, station wagon	Other motor vehicle
2018-May-17, Thu,07:35	Clear	Turning movement	P.D. only	Dry	South	Turning left	Passenger van	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2018-May-25, Fri,17:46	Rain	Sideswipe	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle
2018-Nov-23, Fri,07:54	Clear	Rear end	P.D. only	Ice	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Stopped	Pick-up truck	Other motor vehicle
2018-Dec-06, Thu,06:21	Snow	Angle	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Municipal transit bus	Other motor vehicle
2018-Sep-22, Sat,12:00	Clear	Rear end	P.D. only	Dry	West	Merging	Passenger van	Other motor vehicle
					West	Merging	Automobile, station wagon	Other motor vehicle
2018-Dec-20, Thu,09:55	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Unknown	Other motor vehicle

2018-Aug-15, Wed,22:13 Clear

Turning movement

Non-fatal injury

Dry

South

Turning left

Automobile,  
station wagon

Other motor  
vehicle

North

Going ahead

Automobile,  
station wagon

Other motor  
vehicle

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## **APPENDIX F**

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### Trip Generation Data

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

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

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

## 3 RESIDENTIAL TRIP GENERATION RATES

### 3.1 Development of Residential Trip Rates

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

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

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

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

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

### 3.2 Recommended Residential Trip Generation Rates

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

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

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

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

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

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

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

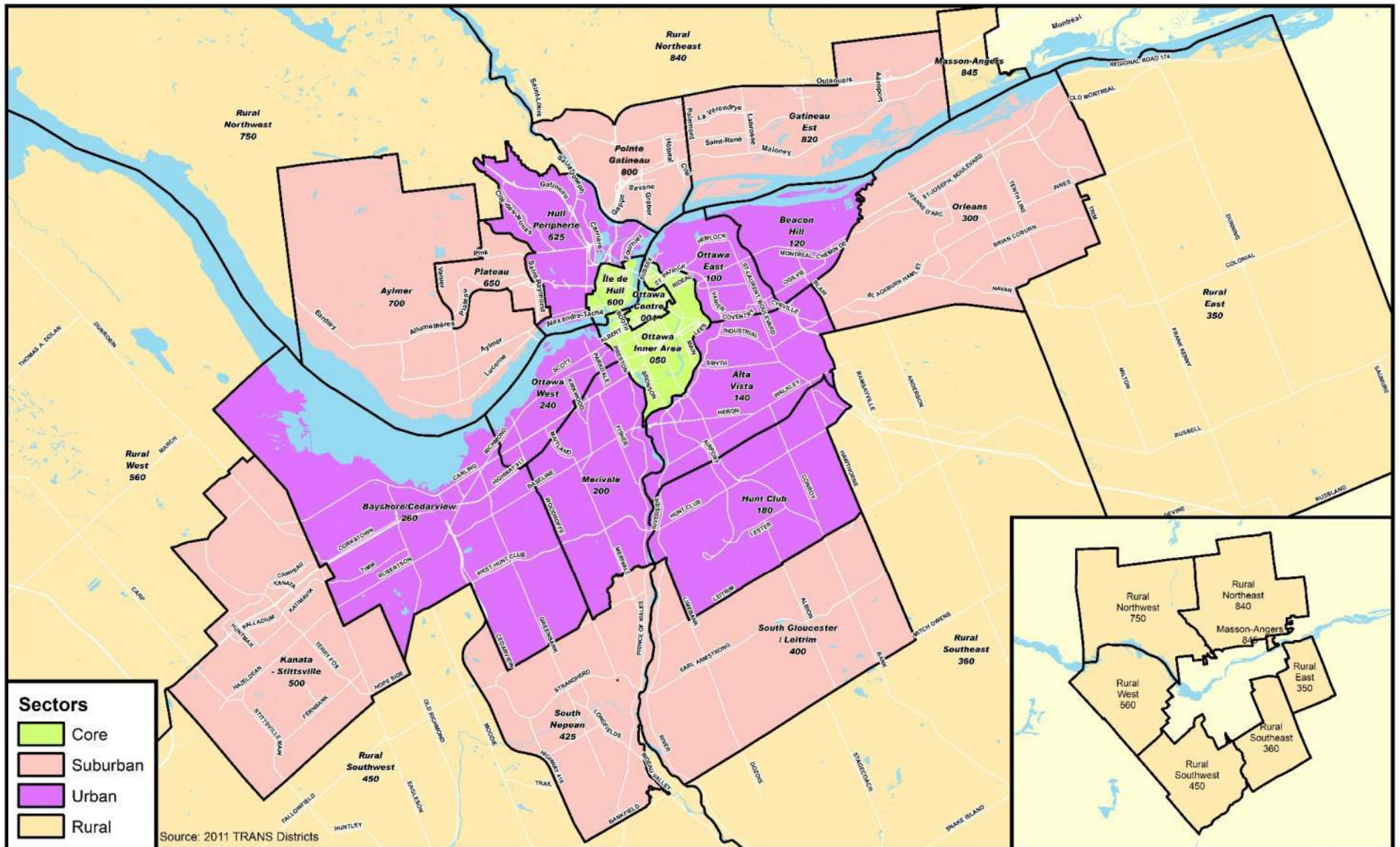


Figure 1: National Capital Region by Sector



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

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

## 5 RESIDENTIAL DIRECTIONAL SPLITS

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

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

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

## 6 NON-RESIDENTIAL MODE SHARE

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

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

## 6.2 Employment Generators

Mode shares for trips to employment generators were developed from the 2011 TRANS Origin-Destination Survey by isolating the ‘travel to work’ trips. However, with the way the data is collected, employment related trips departing the workplace could not be isolated to identify mode share. As a result, peak direction mode shares could only be calculated for the AM peak period. **Table 12** provides the mode share by district during the AM peak period for employment trips in the peak inbound direction. These trips represent trips to the workplace and do not include work-related trips (e.g. for business meetings) or trips classified as working on the road (e.g. delivery trips). Multi-modal trips for employment generators were classified by the mode used to arrive at the workplace (e.g. a park-and-ride trip would be classified as a transit trip since the person arrived at the workplace on transit). Considering the strong likelihood of employees using the same mode of transportation when leaving work, it is fair to equivocate the PM peak period employment generator mode with the AM peak period.

**Table 12: Employment Generator Mode Share by District (AM Peak Period)**

District	Mode				
	Auto Driver	Auto Pass.	Transit	Cycling	Walking
Ottawa Centre	24%	7%	54%	4%	11%
Ottawa Inner Area	45%	7%	29%	8%	11%
Île de Hull	40%	9%	40%	5%	6%
Ottawa East	66%	7%	20%	2%	5%
Beacon Hill	73%	6%	16%	2%	3%
Alta Vista	69%	7%	18%	3%	3%
Hunt Club	83%	5%	10%	1%	1%
Merivale	70%	7%	16%	3%	4%
Ottawa West	54%	8%	28%	5%	5%
Bayshore/Cedarview	77%	6%	10%	3%	4%
Hull Périphérie	75%	7%	12%	3%	3%
Orleans	71%	7%	13%	1%	8%
South Gloucester / Leitrim	89%	7%	2%	1%	1%
South Nepean	80%	10%	5%	1%	4%
Kanata - Stittsville	84%	4%	8%	1%	3%
Plateau	82%	6%	7%	1%	4%
Aylmer	83%	3%	5%	4%	5%
Pointe Gatineau	80%	9%	4%	2%	5%
Gatineau Est	88%	6%	4%	0%	2%

# Land Use: 931

## Quality Restaurant

### Description

This land use consists of high quality, full-service eating establishments with a typical duration of stay of at least one hour. Quality restaurants generally do not serve breakfast; some do not serve lunch; all serve dinner. This type of restaurant often requests and sometimes requires reservations and is generally not part of a chain. Patrons commonly wait to be seated, are served by a waiter/waitress, order from menus and pay for meals after they eat. While some of the study sites have lounge or bar facilities (serving alcoholic beverages), they are ancillary to the restaurant. Fast casual restaurant (Land Use 930) and high-turnover (sit-down) restaurant (Land Use 932) are related uses.

### Additional Data

The outdoor seating area is not included in the overall gross floor area. Therefore, the number of seats may be a more reliable independent variable on which to establish trip generation rates for facilities having significant outdoor seating.

The sites were surveyed in the 1980s and the 1990s in Alberta (CAN), California, Colorado, Florida, Indiana, Kentucky, New Jersey, and Utah.

### Source Numbers

126, 260, 291, 301, 338, 339, 368, 437, 440, 976

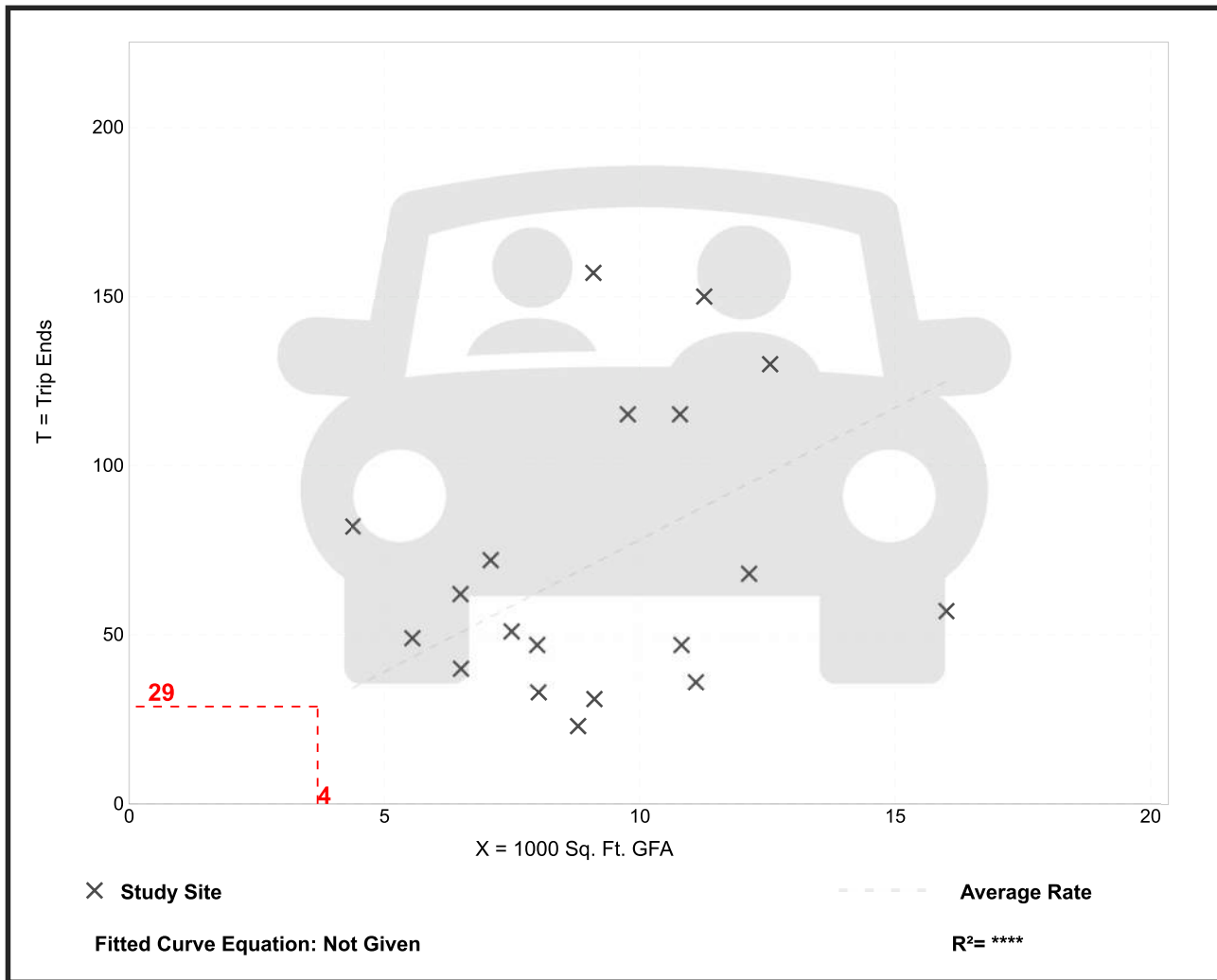
# Quality Restaurant (931)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 19  
 Avg. 1000 Sq. Ft. GFA: 9  
 Directional Distribution: 67% entering, 33% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
7.80	2.62 - 18.68	4.49

## Data Plot and Equation



## **APPENDIX G**

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Other Area Developments

## **OTHER AREA DEVELOPMENTS**

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706-714 March Road (CGH, 2020)

## 1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for TIA Study PM. As shown in the Screening Form, a TIA is required including the Design Review Component and the Network Impact Component.

## 2 Existing and Planned Conditions

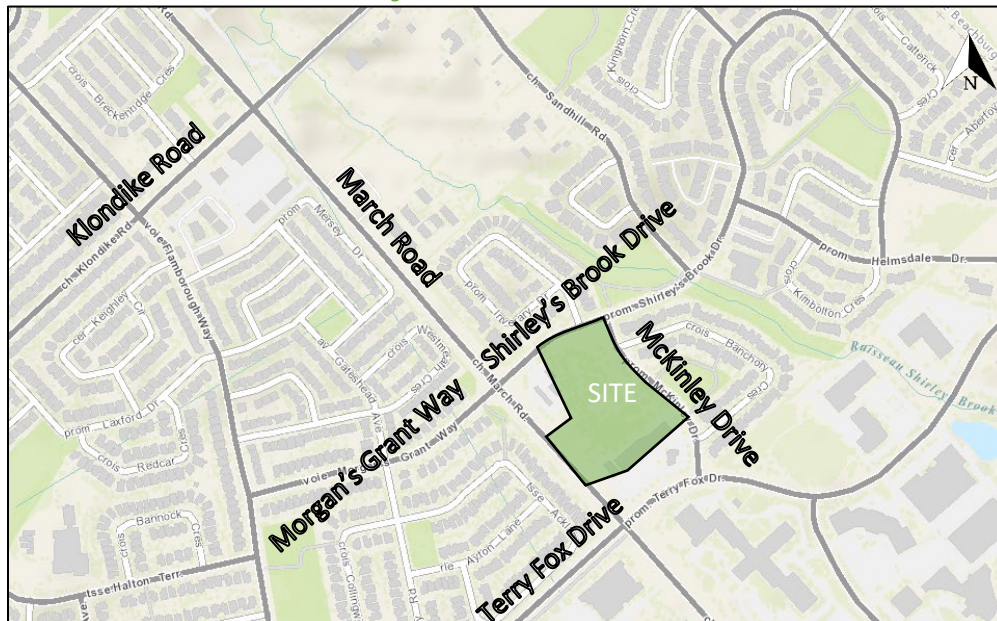
### 2.1 Proposed Development

The subject property, located at 706, 710, and 714 March Road, is currently zoned as General Mixed Use [GM] and Local Commercial [LC] and is currently undeveloped.

The proposed development consists of a 4,165 square metre supermarket, a 350 square-metre fast-food restaurant with a drive-through, and a large multi-unit commercial space that is 1,500 square metres. A total of 225 parking stalls are shown on the site plan.

Access to the site will be accommodated via March Road (190 metres north of Terry Fox Drive), McKinley Drive (235 and 210 metres north of Terry Fox Drive), and Shirley's Brook Drive (100 metres east of March Road). As March road is divided by a median, this access would be restricted to a right in / right out only. The McKinley Drive access 235 metres north of Terry Fox Drive is anticipated to be a full movement access and will serve customers as well as small and medium trucks. Large heavy vehicles serving the supermarket loading docks will also exist the site via this access. The McKinley Drive Access 210 metres north of Terry Fox Drive will be a left-in only access and allow large trucks serving the supermarket to enter the site. The Shirley's Brook Drive access will be east of the end of the left turn lane that is provided for the intersection with March Road, therefore, a full movement access can be considered at this access. For the purposes of this TIA the projected full build-out and occupancy horizon is 2023, and the plus five-year horizon is 2028. Figure 1 illustrates the Study Area Context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan



Source: <http://maps.ottawa.ca/geoOttawa/> Accessed: August 20, 2020



To assign the pass-by trips to the accesses, a ratio of southbound trips as a portion of all traffic on March Road, and northbound trips as a portion of all traffic on March Road was developed. It was determined that 75% of the total traffic is southbound and 25% is northbound in the 2023 AM peak period and 30% of the total traffic is southbound and 70% is northbound in both the 2023 PM and 2023 Saturday peak periods. It was also determined that 75% of the total traffic is southbound and 25% is northbound in the 2028 AM peak period and 30% of the total traffic is southbound and 70% is northbound in both the 2028 PM and 2028 Saturday peak periods. Using these percentages, the traffic volumes have been logically distributed to the access points. Figure 21 illustrates the site pass-by trip volumes.

Figure 22 illustrates the combined impact of the net new site trip generation and pass-by trips.

Figure 20: New Site Generation Auto Volumes

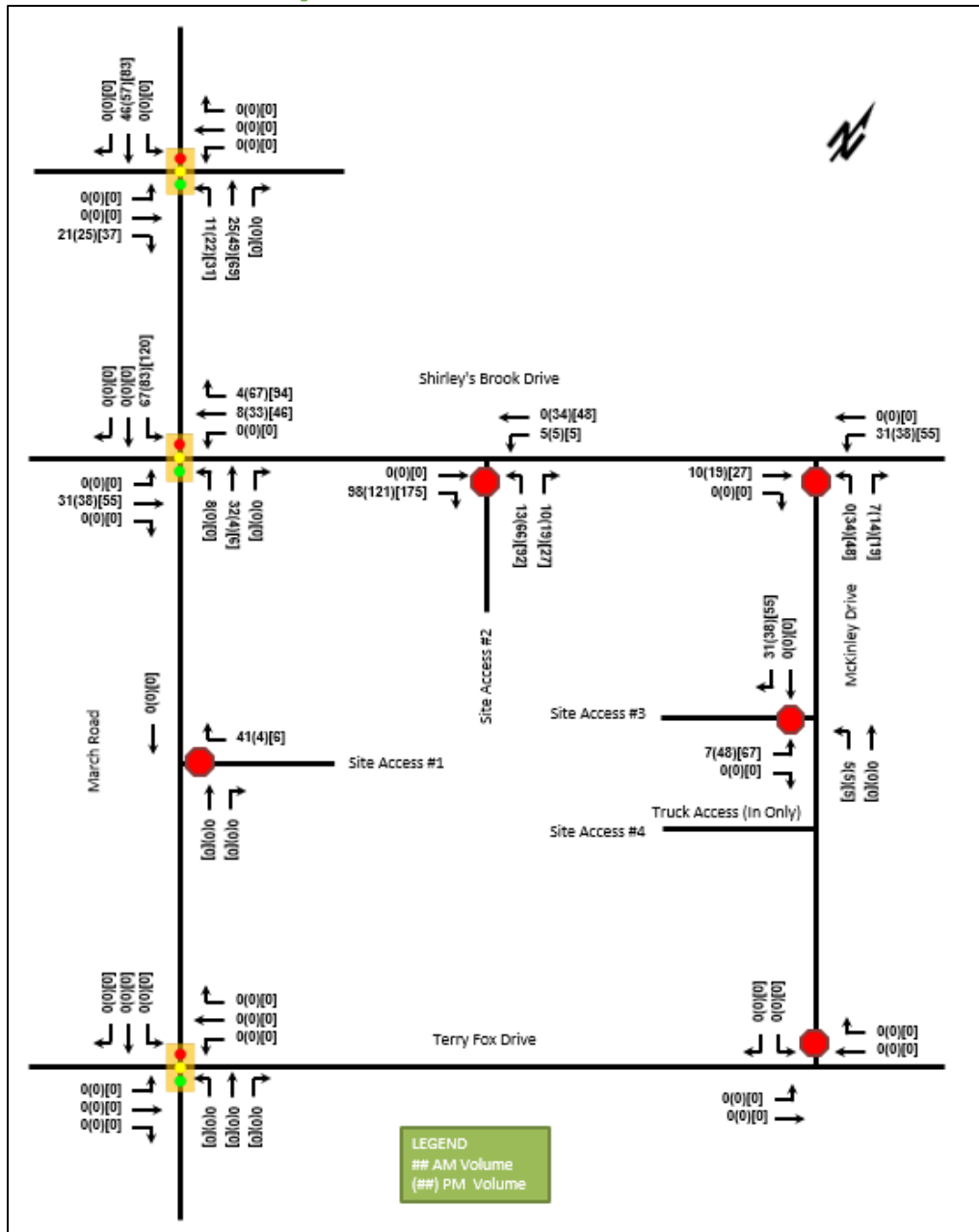


Figure 21: Forecasted Site Pass-by Trip Volumes

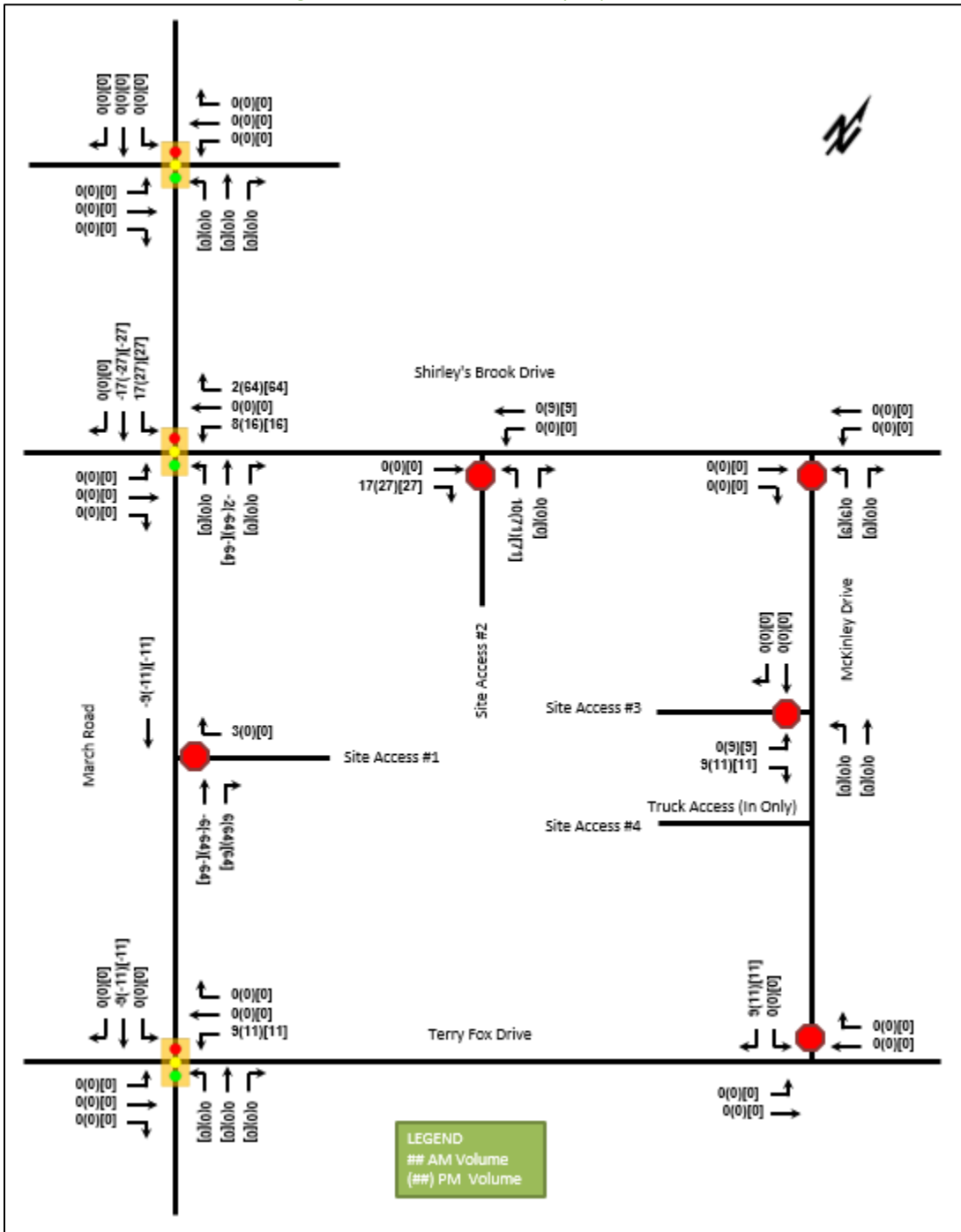
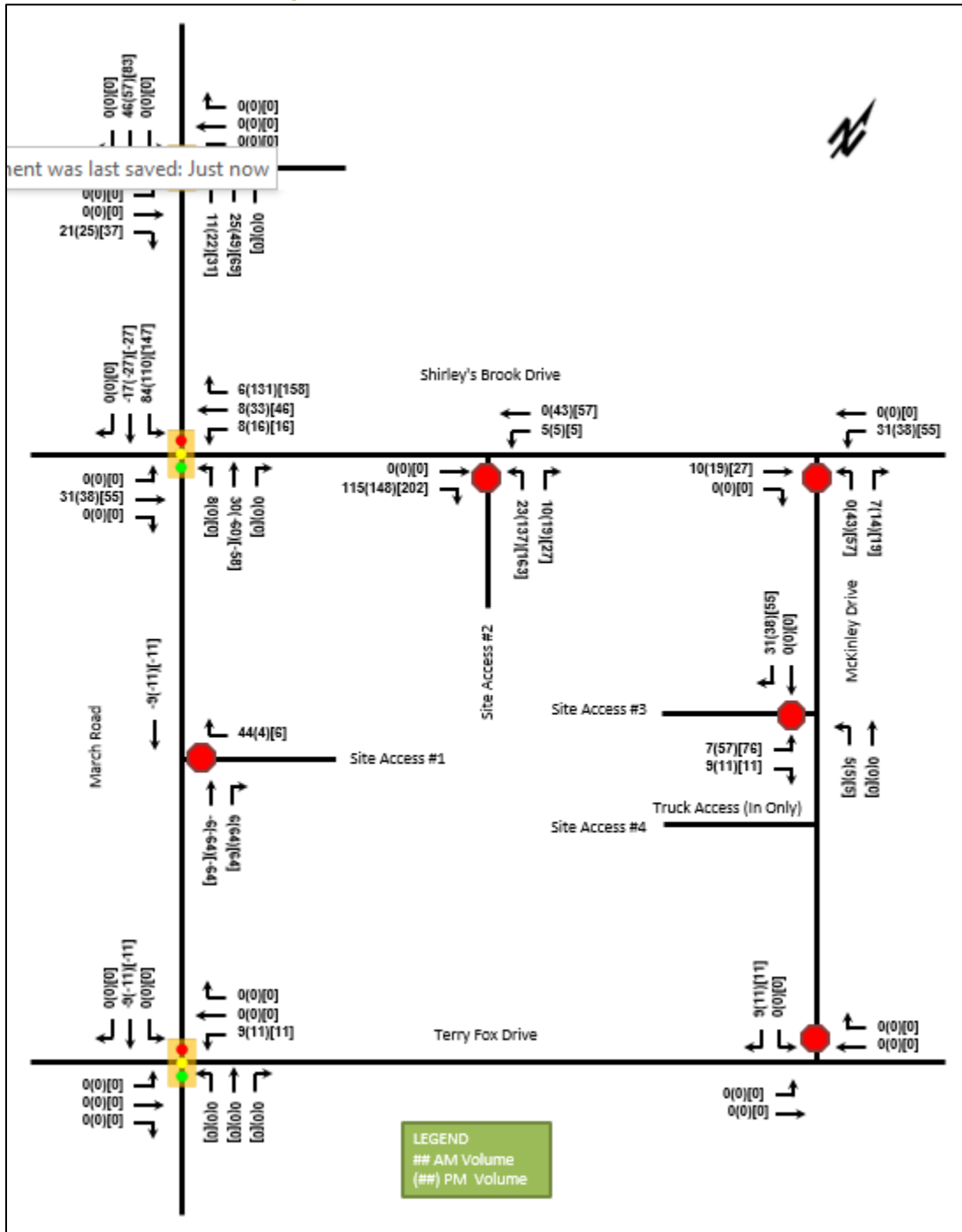


Figure 22: Net New Site Generation Auto Volumes



## **OTHER AREA DEVELOPMENTS**

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788 March Road (Parsons, 2020)

**March 19, 2020**

Ralph Esposito Jr.  
10731854 Canada Inc.  
555 Legget Drive, Suite 304, Tower A, Kanata, ON, K2K 2X3

**Subject: 788 March Road**

**Transportation Impact Assessment Study (October 2018) - Addendum 3**

## 1. Introduction

### 1.1. Context

Recent changes have been made to the original Site Plan (dated July 07, 2018) for this residential project that impact the proposed development's peak hour traffic generation, and result in a different site configuration with respect to access location. This Addendum 3 represents an update to the original TIA and subsequent Addendum 1 to 2 with regard to these two items. The site is now anticipated to be developed in a single phase, and the updated Site Plan can be found in Appendix A.

## 2. Changes to Trip Generation

Site generated traffic is directly related to the number of proposed residential units. There is a proposed decrease in the number of units relative to the original study, and therefore the anticipated trips generated by the site is also expected to decrease. The following sections summarize the expected changes to the trip generation.

### 2.1. Trip Generation – Previous Study (2018)

The values shown in Table 1 below, were taken from the previous Site Plan for the Phase 2 (2023) horizon full buildout horizon where 196 residential units were proposed.

Table 1: Site Person Trip Generation Using OD-Survey Mode Share – Previous Study

Travel Mode	AM Mode Share	AM Peak (persons/h)			PM Peak (persons/h)		
		In	Out	Total	In	Out	Total
Auto Driver	50%	20	49	69	41	28	69
Auto Passenger	10%	3	11	14	8	6	14
Transit	25%	7	20	27	16	12	28
Non-motorized	15%	8	20	28	15	12	27
<b>Total People Trips</b>	<b>100%</b>	<b>38</b>	<b>100</b>	<b>138</b>	<b>80</b>	<b>58</b>	<b>138</b>
Total 'New' High-Rise Condominium (2023) Auto Trips		20	49	69	41	28	69

The total two-way anticipated site generated person trips are 138 for the AM and PM peak hours, and the total two-way vehicle generated trips are 69 trips for the AM and PM peak hours.

### 2.2. Trip Generation – 2020 Updated Site Plan

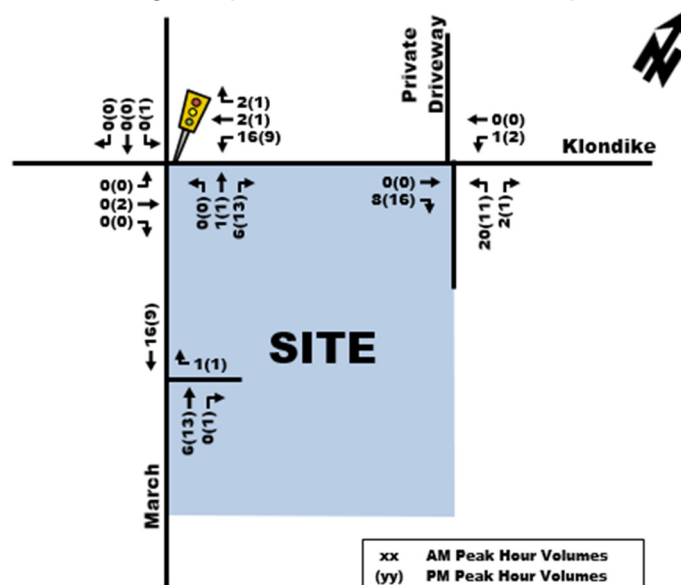
Using the updated Site Plan with the total of 92 proposed residential units and applying the same modal shares and directional splits, the new anticipated person trips are shown in Table 2 below.

Table 2: Site Person Trip Generation Using OD-Survey Mode Share – Updated

Travel Mode	AM Mode Share	AM Peak (persons/h)			PM Peak (persons/h)		
		In	Out	Total	In	Out	Total
Auto Driver	50%	9	23	32	19	13	32
Auto Passenger	10%	1	5	6	4	3	7
Transit	25%	4	13	17	9	7	16
Non-motorized	15%	3	7	10	5	5	10
<b>Total People Trips</b>	<b>100%</b>	<b>17</b>	<b>48</b>	<b>65</b>	<b>37</b>	<b>28</b>	<b>65</b>
Total 'New' High-Rise Condominium (2023) Auto Trips		9	23	32	19	13	32

The total two-way anticipated site generated person trips are 65 for the AM and PM peak hours, and the total two-way vehicle generated trips are 32 trips for the AM and PM peak hours. Figure 1, below shows the updated vehicle volumes assigned to the local roadways within the study area.

Figure 1: Updated Total Site Generated Vehicle Trips



### 2.3. Difference in Forecasted Trips

To understand the difference between the previous Site Plan and the updated Site Plan with regard to trip generation, the forecasted volumes from the original TIA were compared to those associated with the updated Site Plan. Table 3 summarizes the difference (Table 2 - Table 1 values).

## **OTHER AREA DEVELOPMENTS**

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2707 Solandt Road (Novatech, 2020)

## 1.0 INTRODUCTION

This Transportation Impact Assessment has been prepared in support of Site Plan Control and Zoning By-Law Amendment applications for the property located at 2707 Solandt Road. The site is currently vacant.

The subject site is surrounded by the following:

- The Marshes Golf Club to the north and east;
- Solandt Road, followed by offices to the south;
- Offices, followed by Legget Drive to the west.

A view of the subject site is provided in **Figure 1**.

## 2.0 PROPOSED DEVELOPMENT

The proposed development will include an 8-storey, 198,615 ft<sup>2</sup> office building at 2707 Solandt Road, and will connect to the existing parking lot located at 2505 Solandt Road. As the parking lot at 2505 Solandt Road was previously approved in 2009 (SP D07-12-06-007), the Site Plan and re-zoning applications relate to the 2707 Solandt Road property only. A total of 587 parking spaces will be provided on the two sites combined. Access to the proposed development will be provided via two existing driveways to the parking lot at 2505 Solandt Road and two new driveways to 2707 Solandt Road. It is anticipated that the proposed development may be constructed in a single phase, with full occupancy in 2021.

The proposed development is designated as 'Urban Employment Area' in Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the subject site is 'Business Park Industrial Zone (Kanata North Business Park)' (IP6). The proposed development is permitted under the implemented zoning, however a Zoning By-Law Amendment is required to seek relief of the current height limit of 22m.

A copy of the concept plan is included in **Appendix A**.

## 3.0 SCREENING

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

- Trip Generation Trigger – The development is anticipated to generate over 60 peak hour person trips; further assessment is required based on this trigger.
- Location Triggers – The development is not located within a Design Priority Area or Transit-Oriented Development zone, and does not propose a new driveway to a boundary street designated as part of the City's Rapid Transit, Transit Priority, or Spine Cycling networks; further assessment is not required based on this trigger.
- Safety Triggers – No safety triggers outlined in the TIA Screening Form are met; further assessment is not required based on this trigger.



Figure 1: View of the Subject Site

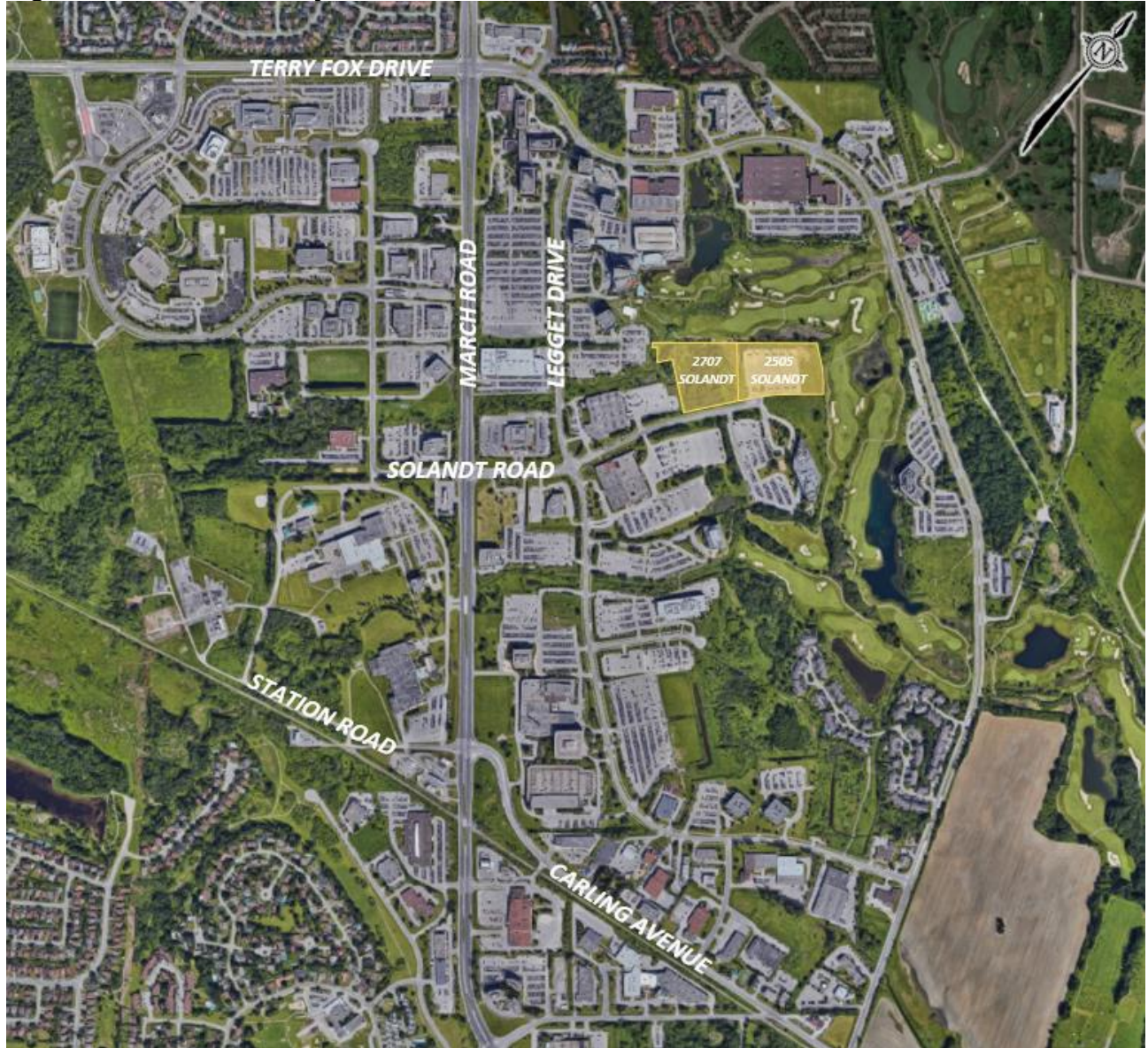
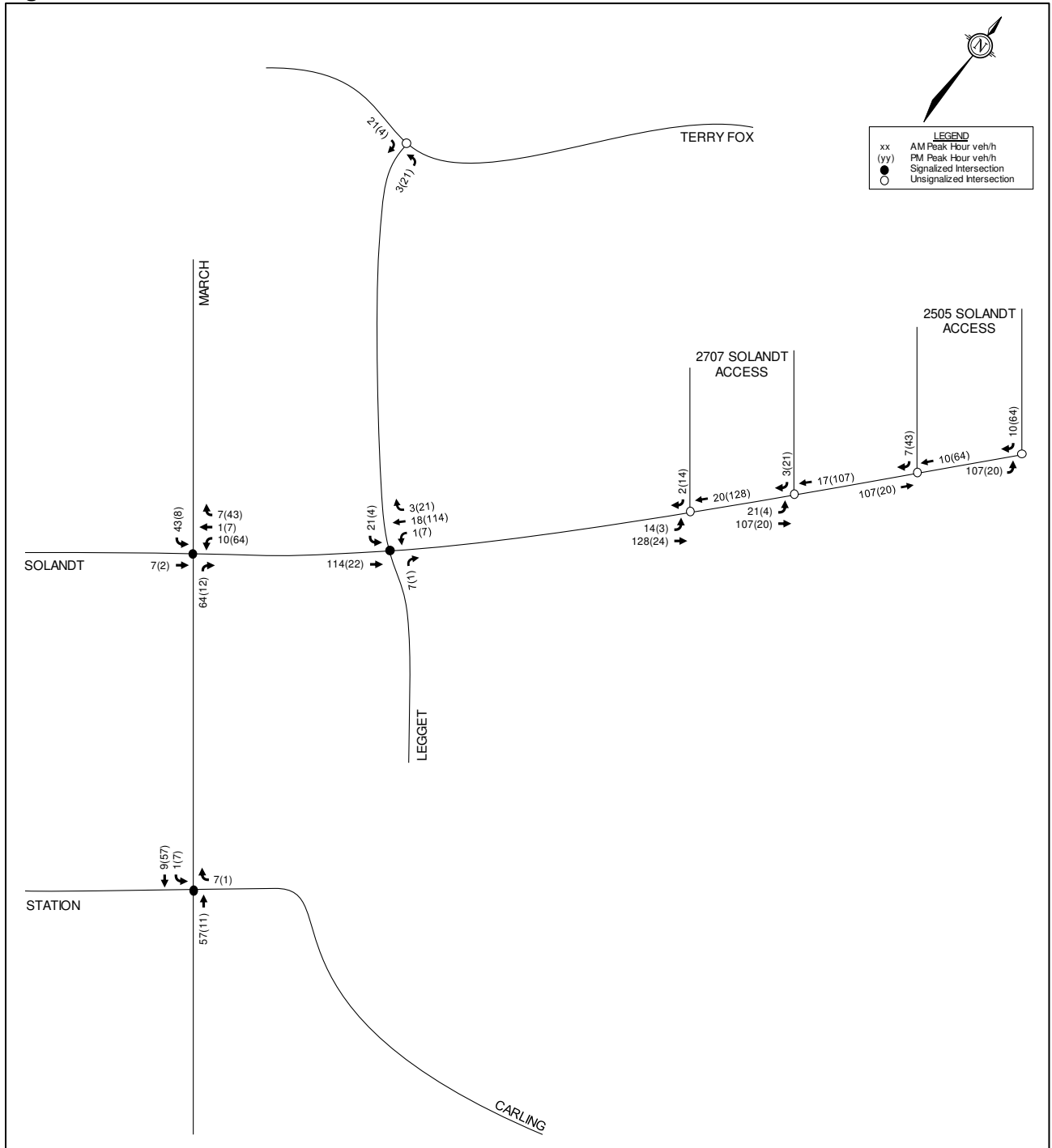


Figure 6: Site-Generated Traffic



## **OTHER AREA DEVELOPMENTS**

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3026 Solandt Road (CIMA+, 2020)

## 1. Step 1 – Screening Form

With respect to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines, the proposed development (described below in Section 2.1) triggered the trip generation and the safety criteria outlined in the City's TIA Step 1 – Screening form. However, based on the location of the proposed development, the location trigger was not met. As only one of three triggers are required, a formal TIA (i.e. completed Steps 1-5) must accompany the subject development application.

## 2. Step 2 – Scoping

### 2.1 Description of Proposed Development

Based on the information provided, it is our understanding that the proponent is proposing a new office building located at 3026 Solandt Road, which is located on a vacant parcel of land that was previously occupied by a similar land use in 2014 (i.e. an office building existed on the subject parcel of land and has since been demolished). The new office building being proposed includes approximately 100,000 ft<sup>2</sup> of total floor area, accompanied by approximately 350 new parking spaces. The proposed development will be built in a single phase with an anticipated buildout year in 2021.

The latest Site Plan shows two direct vehicle driveway connections to Solandt Road, with inter-site connectivity between adjacent land uses to two other driveway connections (i.e. there will be a shared driveway connection to Legget Drive and March Road). All these driveways currently exist and are proposed to be maintained, with the exception of the west driveway connection to Solandt Road is proposed to be relocated towards the east and will function as one-way inbound only. It should be noted that the driveway connections to Solandt Road are currently barricaded.

In the event that inter-site connectivity between adjacent land uses is severed, it has been assumed that all site-generated traffic for the subject development will be assigned to the driveway connections to Solandt Road only. This is considered to be a conservative assumption as the available shared driveway connections to Legget Drive and March Road can provide additional capacity.

The local context of the subject site is provided as **Figure 1** and the proposed Concept Plan is provided as **Figure 2**.



Figure 1: Local Context

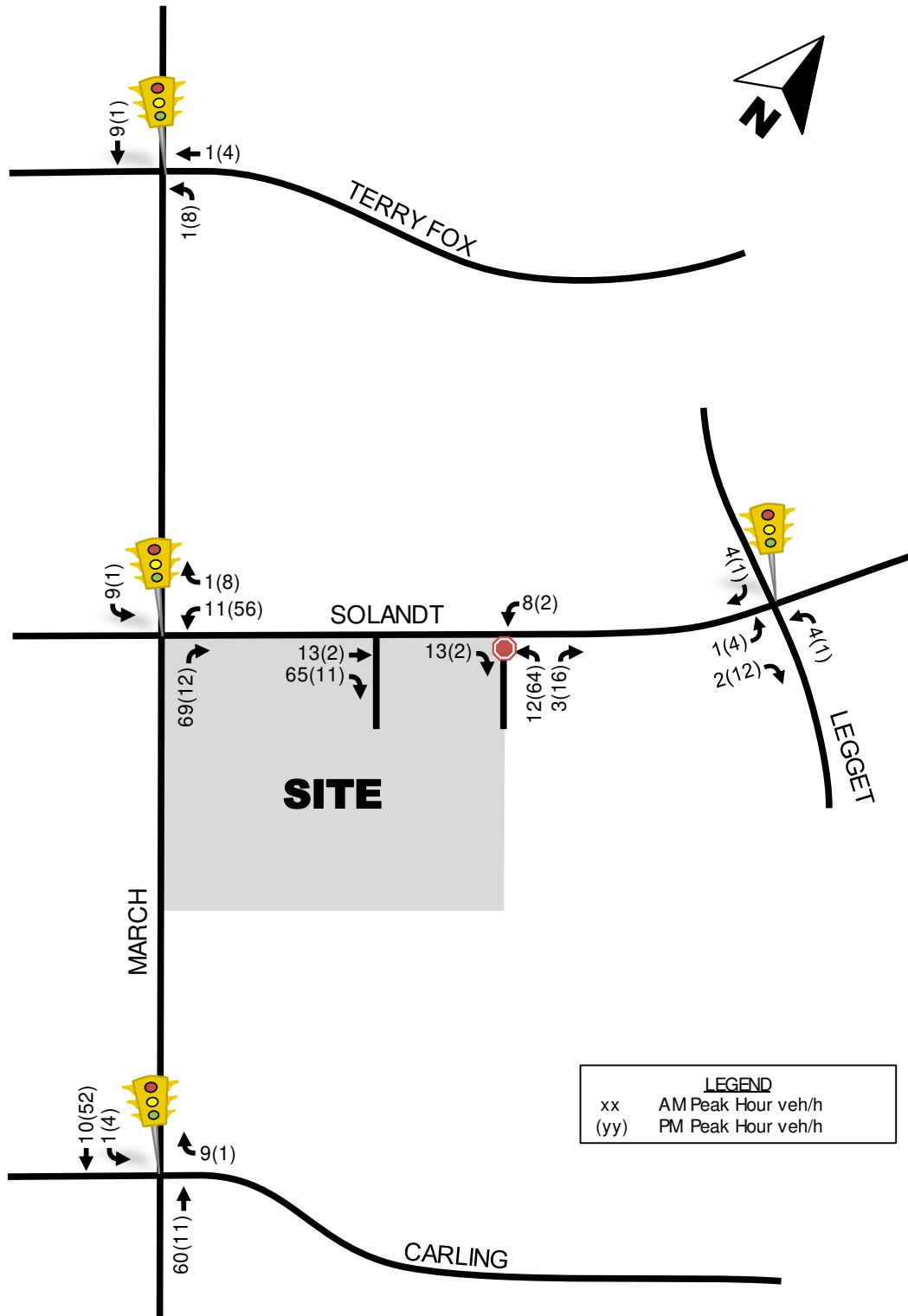


Figure 7: Projected Site-Generated Traffic

## **OTHER AREA DEVELOPMENTS**

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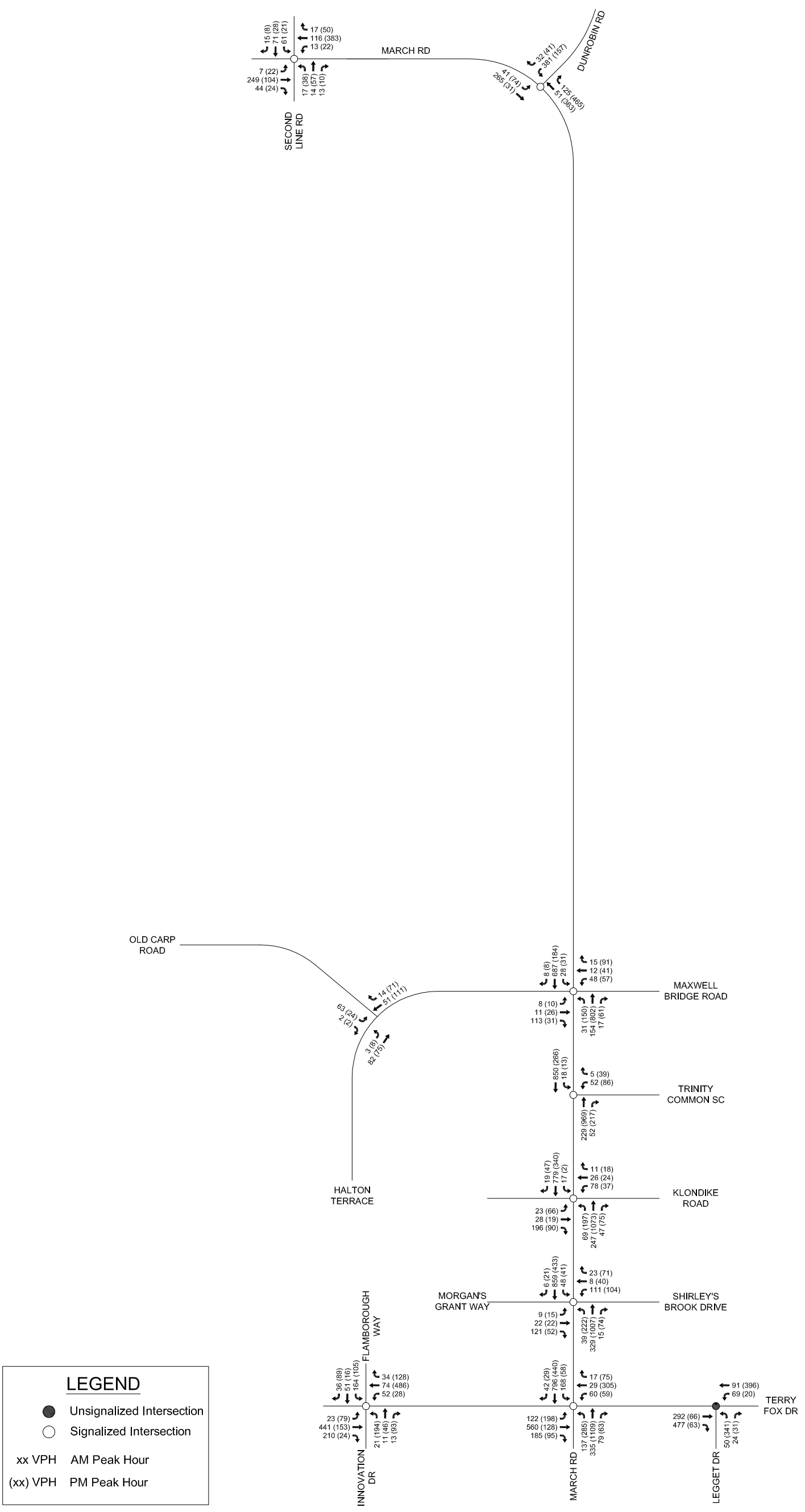
Kanata North Urban Expansion Area (Novatech, 2016)



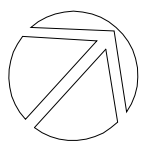
Figure 35 – Demonstration Plan



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**KANATA NORTH**  
COMMUNITY DESIGN PLAN

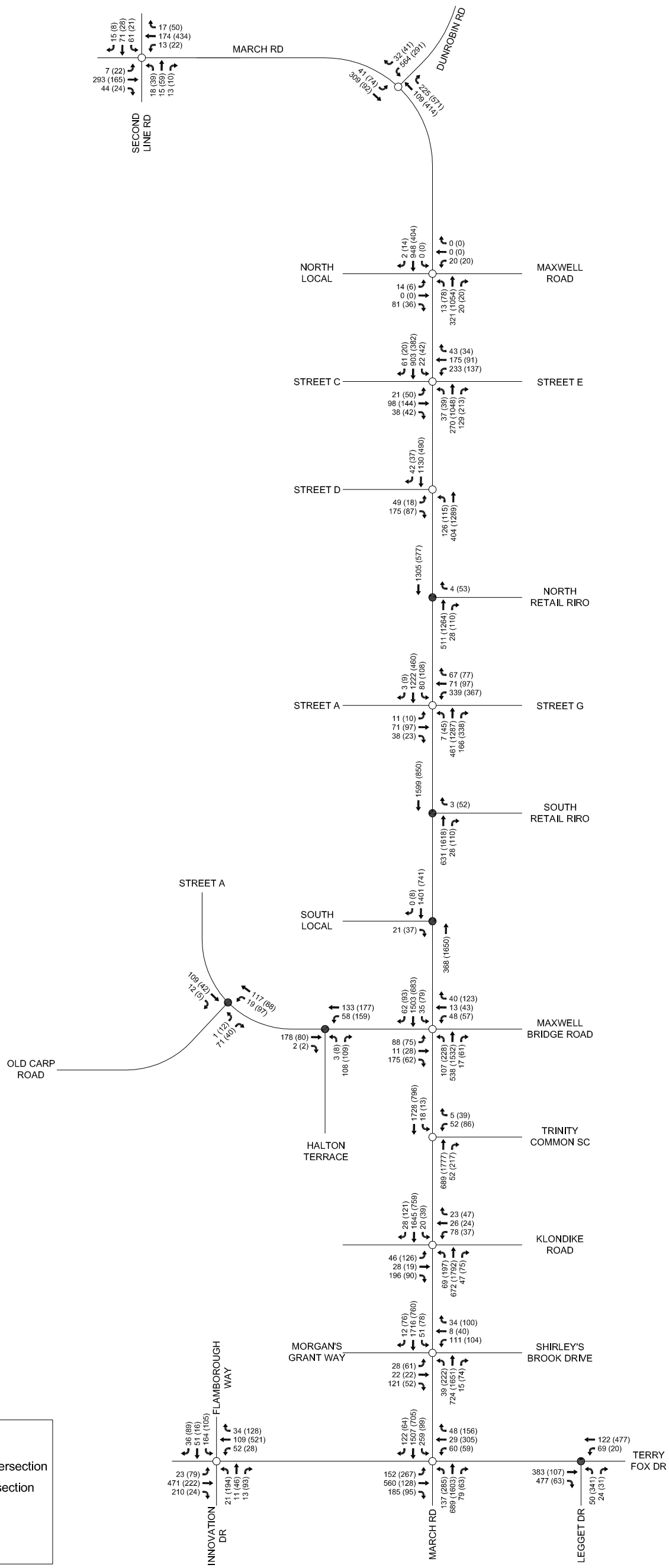


DATE JUN 2016 JOB 112117  
SCALE N.T.S.

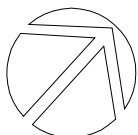
**FIGURE NO. 11**  
2026 BACKGROUND  
TRAFFIC VOLUMES



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**KANATA NORTH**  
COMMUNITY DESIGN PLAN



DATE JUN 2016 JOB 112117  
SCALE N.T.S.

**FIGURE NO. 36**  
2026 TOTAL TRAFFIC VOLUMES



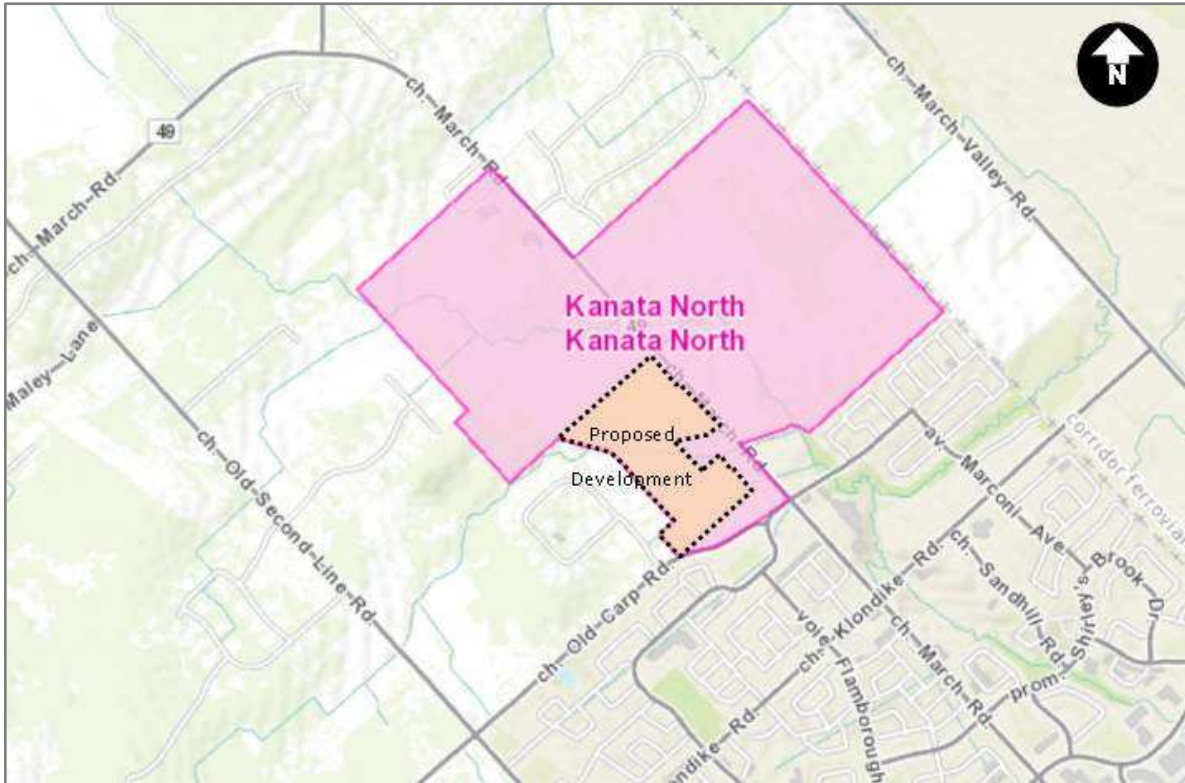
Engineers, Planners & Landscape Architects

## **OTHER AREA DEVELOPMENTS**

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927 March Road (Stantec, 2020)

Figure 1 - Site Location



The build-out years for each phase is outlined in **Table 1** below. The entire development is anticipated to be fully built and occupied by 2034. It is noted that in addition to the units specified in the **Table 1** below, the phasing details for additional units (7 single homes, 45 townhomes, and 38 apartment units) are still unknown and have been considered to be part of the last development phase by 2034.

**Table 1 - Build-Out Per Phase**

Phase	Size	Build-Out Year
1	Mixed-Use Block (2 mid-rise residential buildings, 600 units, SWM Pond Block)	2022
2	Park Block, Townhouses (33 units)	2024
3	Singles Block (28 units)	2026
4	Condo Block Part 1 (3 low-rise residential apartments, 336 units)	2028
5	Condo Block Part 2 (2 low-rise residential apartments, 224 units)	2030
6	Condo Block Part 3 (2 low-rise residential apartments, 320 units)	2032
7	Condo Block Part 4 (2 low-rise residential apartments, 320 units)	2034

**Table 2** outlines the proposed land uses assumed for the analysis to forecast the trips generated by the proposed development which were obtained from the *Institute of Transportation Engineers Trip Generation Manual, 9<sup>th</sup> Edition*. These land use codes are consistent with those used in the approved *Kanata North Community Design Plan Transportation Master Plan* (Novatech, June 2016).

**Table 2 - Proposed Land Uses / Land Use Codes**

Land Use	Size	Land Use Code (LUC)
LUC 210	35 units	Single-Family Detached
LUC 230	78 units	Townhomes
LUC 220	1,838 Units	Mid-Rise Apartments
LUC 826	6,100 m <sup>2</sup> (~65,600 ft <sup>2</sup> )	Specialty Retail

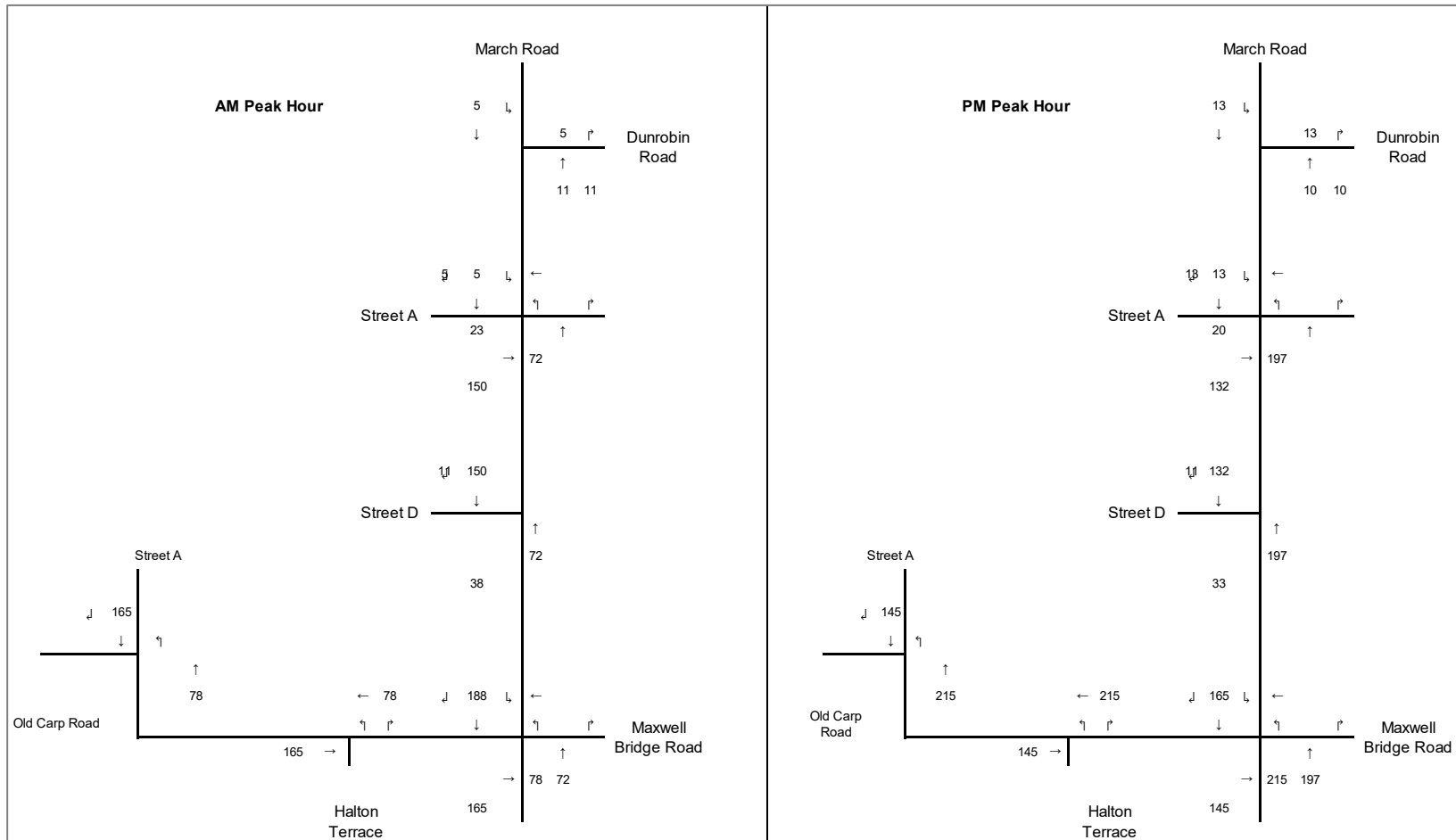
Primary access to the proposed development will be achieved via three new connections. Street A will connect to both March Road and Halton Terrace and Street D will connect to March Road. These new connections are illustrated in **Figure 2** above.

As illustrated in the *Kanata North Community Design Plan Transportation Master Plan* (Novatech 2016), the intersection of March Road at Street A will be signalized and the intersection with March Road at Street D will operate as a right-in / right-out only intersection and will be stop-controlled along the Street D approach.

No turning restrictions are proposed at any of the access locations and the type of traffic control at intersections will be determined during subsequent steps of the TIA process.



Figure 12 - Site Traffic Volumes



## **OTHER AREA DEVELOPMENTS**

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936 March Road (CGH, 2020)

## 1 Screening

This study has been prepared according to the City of Ottawa's 2017 Transportation Impact Assessment (TIA) Guidelines. Accordingly, a Step 1 Screening Form has been prepared and is included as Appendix A, along with the Certification Form for TIA Study PM. As shown in the Screening Form, a TIA is required including the Design Review component and the Network Impact Component.

## 2 Scoping

### 2.1 Existing and Planned Conditions

#### 2.1.1 Proposed Development

The proposed development, located at 936 March Road, is currently a greenfield property within the Kanata North Urban Expansion Area (UEA). The site is in an area that is currently zoned RU Rural Countryside Zone. The current development application would modify the zoning to allow for low-rise residential uses, with a future commercial area along the March Road frontage (commercial area owned by others). The commercial portion has been generally considered in this report, consistent with the Kanata North Community Design Plan, which assumed 300,000 square feet of commercial space. The proposed residential development with a mixture of detached homes and townhouses. The concept plan currently considers a total of approximately 800 units, split between townhouse and detached units. Access to the proposed development will be via one full movements access, located approximately 600 metres north of the signalized intersection of Maxwell Bridge Road / Halton Terrace at March Road. Future accesses are provided to allow connections to the north and the east. These access points are consistent with the Kanata North Community Design Plan (CDP). To the north it is anticipated that this development would connect with the adjacent lands, and the future residential development on those lands. To the east, an access is provided, as per the CDP, however, this is shown as a dead-end connection at the CN Railway Corridor. The anticipated full build-out and occupancy horizon is 2023. No phasing is known at this time. Figure 1 illustrates the Study Area Context. Figure 2 illustrates the proposed concept plan.

Figure 1: Area Context Plan

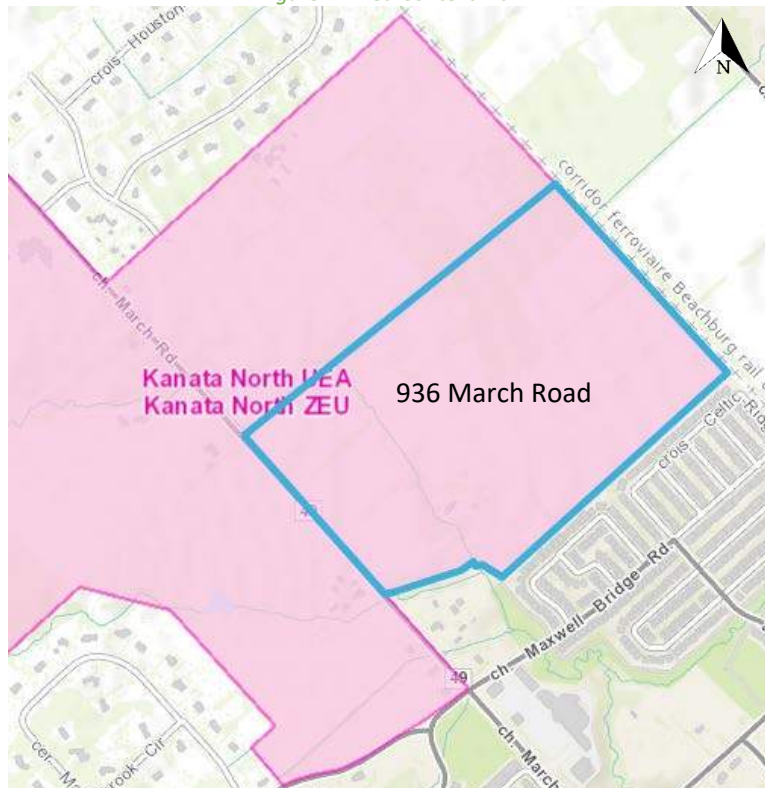
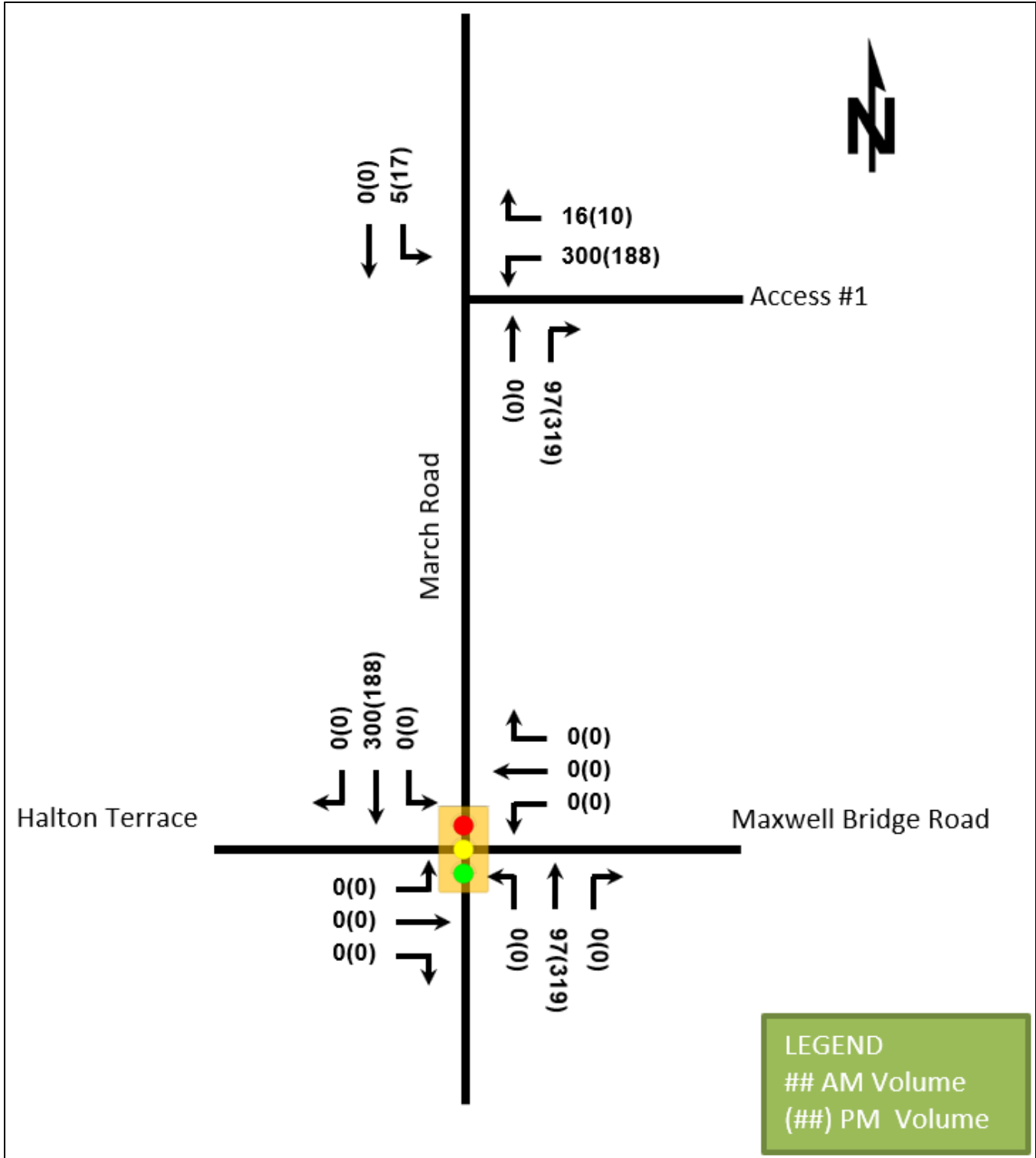




Figure 8: Assignment (Volumes)

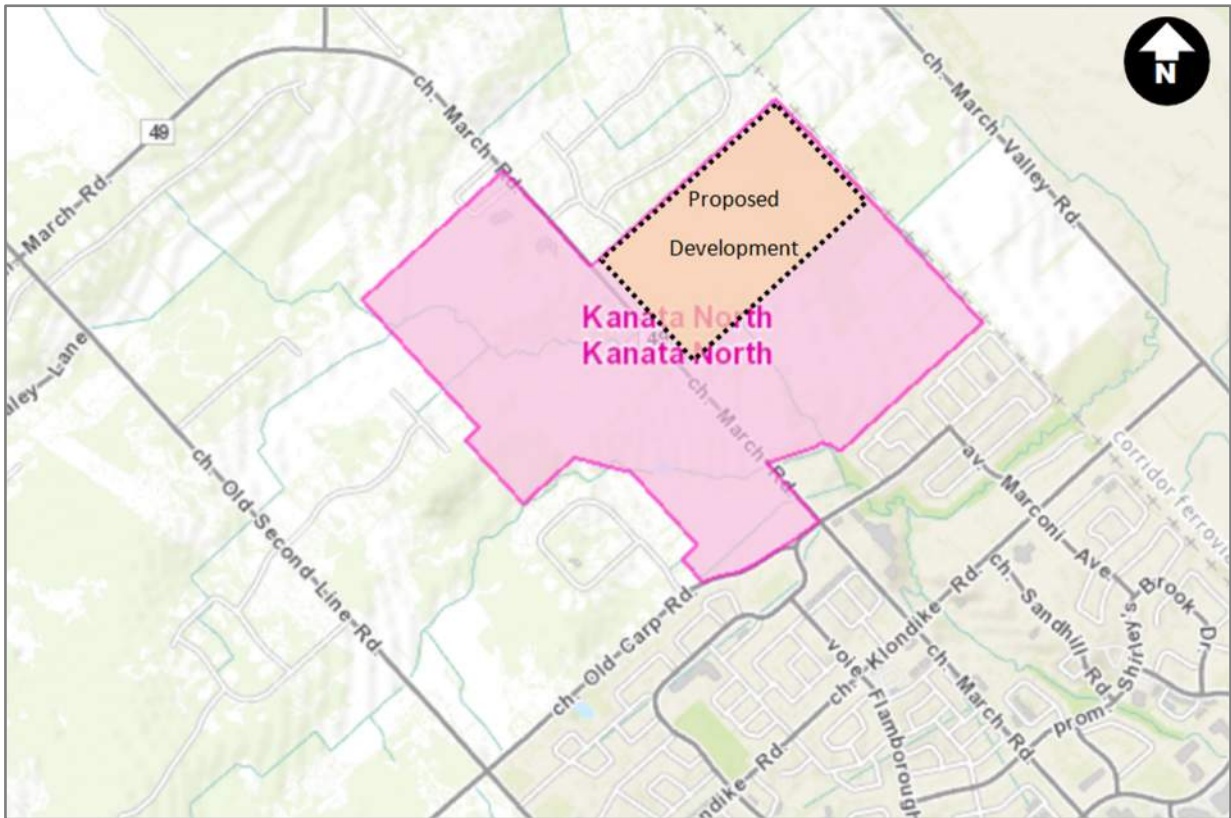


## **OTHER AREA DEVELOPMENTS**

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1020-1070 March Road (Stantec, 2020)

Figure 1 - Site Location



# 1020 AND 1070 MARCH ROAD TRANSPORTATION IMPACT ASSESSMENT

Strategy Report

May 25, 2020

The subdivision is proposed to include 297 single family homes, 315 townhomes, 116 apartment units, one school, and two commercial parcels. Build-out and occupancy is anticipated to occur by 2031. The exact phasing of the development is not known at this time; however, the subdivision will proceed from west to east, starting with the residential units closest to March Road.

**Table 1** outlines the proposed land uses assumed for the analysis to forecast the trips generated by the proposed development which were obtained from the *Institute of Transportation Engineers Trip Generation Manual*. These land use codes are consistent with those used in the approved *Kanata North Community Design Plan Transportation Master Plan* (Novatech, June 2016).

**Table 1 - Proposed Land Uses / Land Use Codes**

Land Use	Size	Land Use Code (LUC)
LUC 210	297 Singles	Single-Family Detached
LUC 230	315 Townhomes	Townhomes
LUC 220	116 Units	Apartments
LUC 520	580 Students <sup>1</sup>	Elementary School
LUC 826	80,000 GFA	Specialty Retail

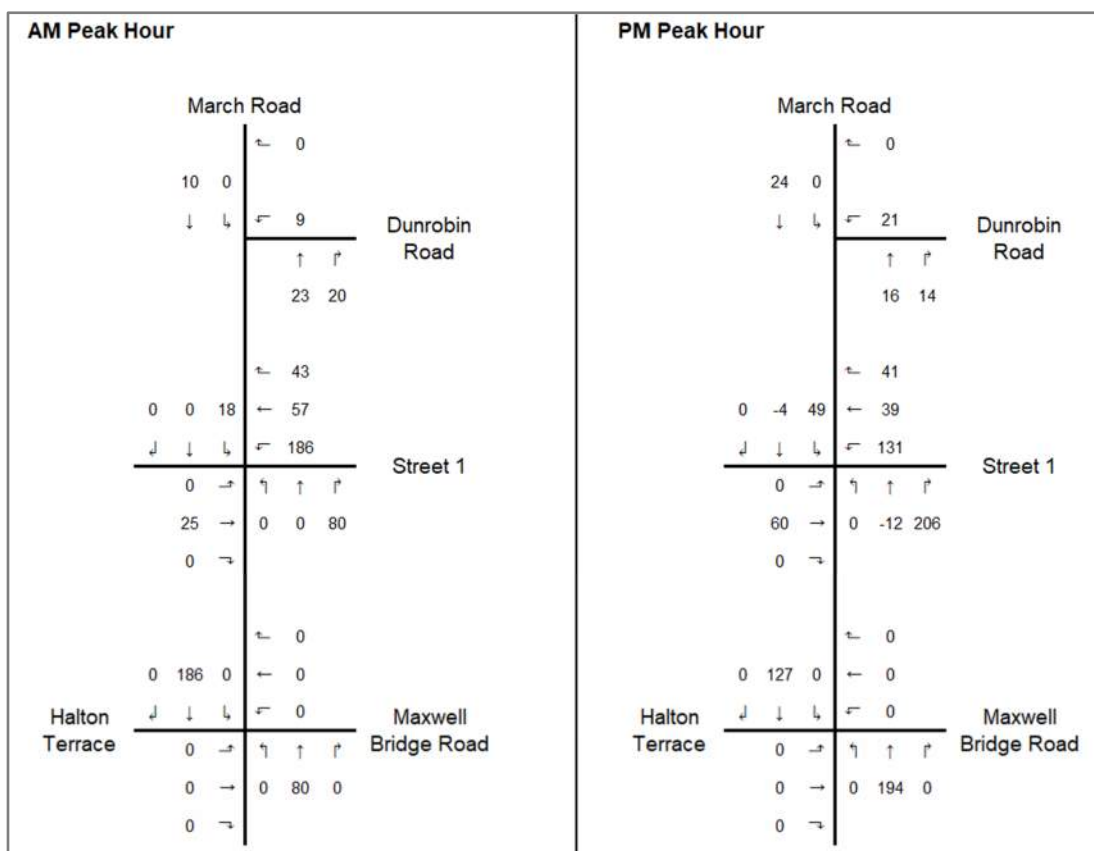
Notes: 1. The size of the proposed school is not yet known at this time, and therefore, the estimated size was taken from the recently completed Kanata North Community Design Plan Transportation Master Plan (Novatech, June 2016).

Primary access to the proposed development will be achieved via a new Street 1 connection to March Road. This access will be a shared access with the proposed future Claridge development on the west side of March Road. A secondary access to will also be provided via Street 8 into the proposed Minto development to the south.

No turning restrictions are proposed at any of the access locations and the type of traffic control at intersections will be determined during subsequent steps of the TIA process.



Figure 9 - Site Traffic Volumes



### 3.2 BACKGROUND NETWORK TRAVEL DEMAND

#### 3.2.1 Transportation Network Plans

As outlined in Table 3 in Section 2.1.3.1, the March Road widening and March Road Transit projects are anticipated to occur within the study area. In the absence of any definitive timelines in the TMP, these transportation improvements are not assumed to be in place for the study horizons of the subject TIA.

#### 3.2.2 Background Growth

Existing traffic volumes were grown at a rate of 0.5% annually, non-compounding, to represent 2031 background traffic volumes. This rate of growth is consistent with the approved *Kanata North Community Design Plan Transportation Master Plan* (Novatech, June 2016).



## **OTHER AREA DEVELOPMENTS**

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1053-1145 March Road (Novatech, 2018)

## 1.0 INTRODUCTION

Novatech has been retained by CU Developments Inc. to prepare a Transportation Impact Assessment (TIA) in support of the application for a Draft Plan of Subdivision and Zoning By-Law Amendment (ZBLA) to allow for the development of lands known as 1053, 1075 and 1145 March Road in Kanata North (the “Subject Lands”).

### 1.1 Site Location and Context

The Subject Lands – legally described as Part of Lot 13 and 14, Concession 3, Township of March – are owned by CU Developments Inc. and encompass approximately 48.05 hectares including several properties under the municipal addresses 1053, 1075 and 1145 March Road. They are located in the northwest quadrant of the Kanata North Urban Expansion Area (KNUEA) (see Figure 1) which is subject to the Kanata North Community Design Plan (CDP), approved by Council on July 13, 2016.

**Figure 1: Site Location**



integrated process was to create a set of guiding documents that would help shape the development of Kanata North. The guiding documents include:

- *Kanata North Community Design Plan, Prepared by Novatech, Report No.: R-2016-020, dated June 28, 2016 (CDP);*
- *Kanata North Master Servicing Study, Prepared by Novatech, Report No.: R-2016-041, dated June 28, 2016 (MSS);*
- *Kanata North Environmental Management Plan, Prepared by Novatech, Report No.: R-2016-017, dated June 28, 2016 (EMP); and*
- *Kanata North Transportation Master Plan, Prepared by Novatech, Report No.: R-2015-161, dated June 28, 2016 (TMP).*

The proposed subdivision and its supporting studies (i.e. the Site Serviceability and Stormwater Management report, the Noise Feasibility Study, and the Transportation Impact Assessment) are consistent with the Kanata North CDP Demonstration Plan and the above-noted guiding documents. Based on the detailed analysis that was conducted for the development proposal, some recommendations from the guiding documents have been modified and updated. For example, minor modifications have been made to the street layout and to the shape of the stormwater management facility. Each supporting study contains details and rationale regarding the specific modifications. These modifications maintain the plan presented in the CDP while proving its conceptual feasibility for the development which has been identified for the KNUEA.

The KNUEA CDP TMP provided an in-depth review of the transportation impacts of the overall development on the area roadways. The KNUEA CDP TMP provided a review of a number of alternative transportation solutions and alternative design concepts. The review included an analysis of alternative park and ride facility locations, alternative intersection controls along March Road, access alternatives to Old Carp Road, alternative access locations along March Road, and internal intersection control alternatives. As discussed at the pre-consultation meeting, this TIA will follow the City's 2017 TIA guidelines. However, the KNUEA CDP TMP will serve as the parent document for the TIA, as many elements of the analysis were completed as part of the TMP and does not need to be duplicated. As such, these sections of the TIA reference the previous analysis presented in the KNUEA CDP TMP. This TIA will provide a supplementary review of aspects of the subdivision to fulfil the requirements of the TIA.

### **1.3 Proposed Development**

The proposed development consists of 825 units including 295 single detached dwellings, 314 townhouse dwellings, and 216 multi-unit residential dwellings to be developed in multiple phases. This subdivision will be the first stage in building out the community envisioned in the Kanata North CDP. The subdivision lands include blocks set aside for street-oriented single detached and townhouse dwellings, a stormwater management pond, a portion of a school block for the French Public School Board of Eastern Ontario (CEPEO), a future fire hall, and a future park and ride facility to be the terminus of the bus rapid transit planned for March Road. A linear neighbourhood park along the western boundary of the site will contain recreational facilities and continue the pathway network through the community.

A concept plan for the Subject Lands is provided in **Figure 2**.



The modal shares associated with the proposed development are anticipated to be consistent with the KNUEA CDP TMP. The transit modal share in the KNUEA CDP TMP was developed based on the 2031 target in the City’s 2013 TMP for the Kanata/Stittsville area. The modal shares identified in the 2011 TRANS O-D Survey Report for the Kanata/Stittsville area were adjusted to reflect the increased transit modal share of 21%, with the auto driver share reduced accordingly. A comparison of the person trips by modal share between the proposed development and the assumed development in the KNUEA CDP TMP is provided in the following table.

**Table 4: Site-Generated Trips by Modal Share**

Travel Mode	Modal Share	AM Peak			PM Peak		
		IN	OUT	TOTAL	IN	OUT	TOTAL
<i>KNUEA CDP TMP</i>							
<b>Total Person Trips</b>		<b>140</b>	<b>531</b>	<b>671</b>	<b>542</b>	<b>294</b>	<b>836</b>
Auto Driver	59%	82	314	396	320	173	493
Auto Passenger	15%	21	79	100	81	44	125
Transit	21%	30	111	141	114	62	176
Non-Auto	5%	7	27	34	27	15	42
<i>Proposed Development</i>							
<b>Total Person Trips</b>		<b>138</b>	<b>434</b>	<b>572</b>	<b>442</b>	<b>259</b>	<b>701</b>
Auto Driver	59%	82	256	338	261	153	414
Auto Passenger	15%	21	65	86	66	39	105
Transit	21%	29	92	121	93	54	147
Non-Auto	5%	6	21	27	22	13	35
<b>Auto Driver (Difference)</b>		<b>0</b>	<b>-58</b>	<b>-58</b>	<b>-59</b>	<b>-20</b>	<b>-79</b>
<b>Auto Passenger (Difference)</b>		<b>0</b>	<b>-14</b>	<b>-14</b>	<b>-15</b>	<b>-5</b>	<b>-20</b>
<b>Transit (Difference)</b>		<b>-1</b>	<b>-19</b>	<b>-20</b>	<b>-21</b>	<b>-8</b>	<b>-29</b>
<b>Non-Auto (Difference)</b>		<b>-1</b>	<b>-6</b>	<b>-7</b>	<b>-5</b>	<b>-2</b>	<b>-7</b>

Based on the foregoing, the proposed development is anticipated to generate approximately 60 to 80 less vehicle trips compared to the assumed development in the KNUEA CDP TMP.

**3.1.2 Trip Distribution**

The distribution of traffic generated by the proposed development is anticipated to be consistent with the distribution presented in the KNUEA CDP TMP, and is summarized as follows:

- 85% to/from the south
- 15% to/from the north

As the trips generated by the proposed development are anticipated to be less than the assumed development in the KNUEA CDP TMP, the site traffic projections in the TMP are considered a

## **APPENDIX H**

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### Strategic Long-Range Model

# TRANS Regional Model

Version 1.13 - Assigned March 6, 2019

## AM Peak Hour Total Traffic Volume Shirley's Brook - Kanata

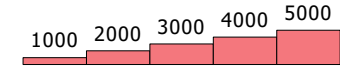
2011 - Base Scenario

User Initials: SG  
Plot Prepared: March 6, 2019  
EMME Scenario: 11132

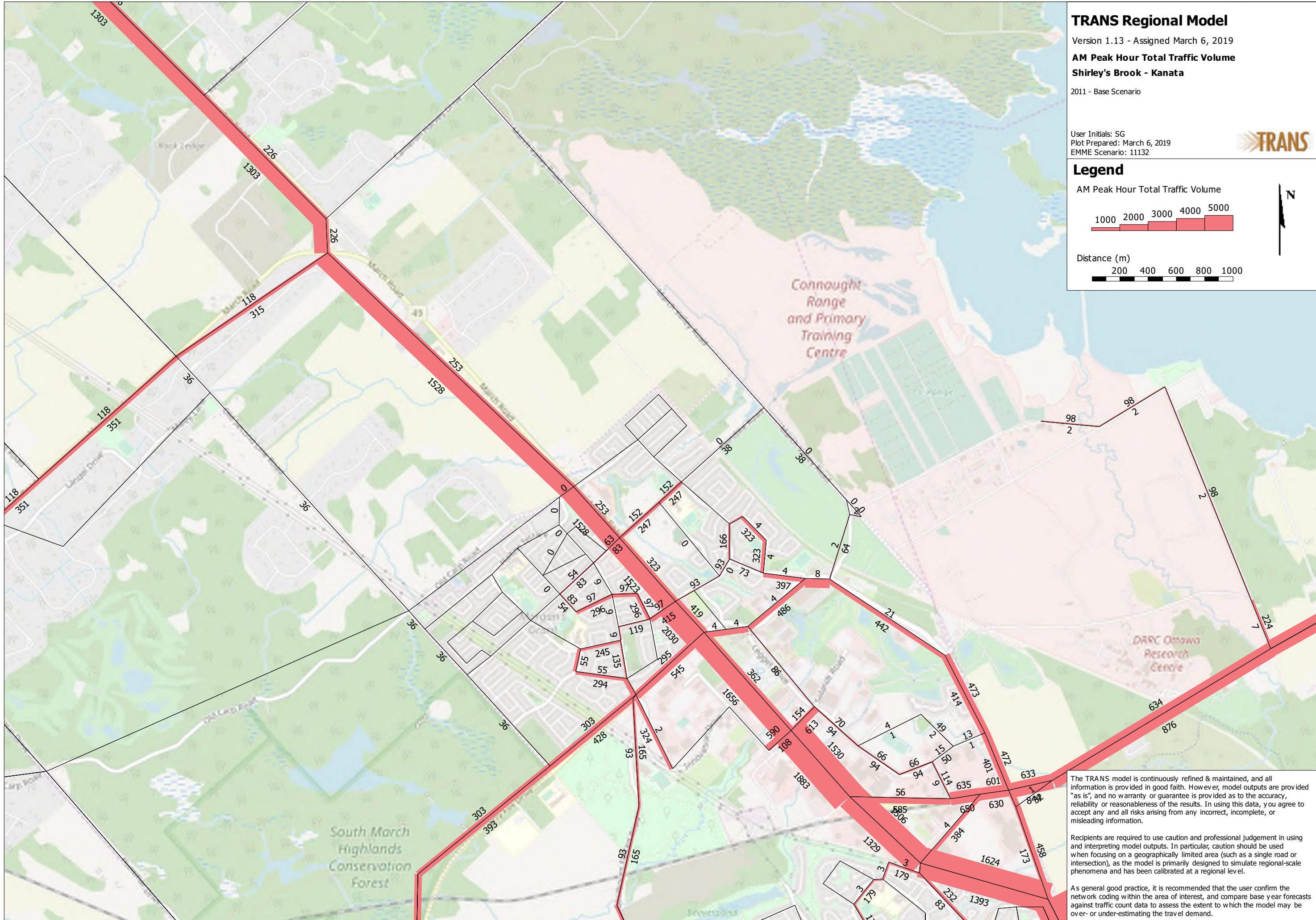
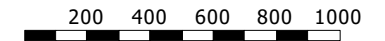


### Legend

AM Peak Hour Total Traffic Volume



Distance (m)



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

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

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

# TRANS Regional Model

Version 1.14 - Assigned March 5, 2019

## AM Peak Hour Total Traffic Volume Shirley's Brook - Kanata

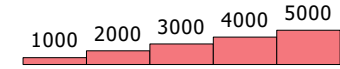
2031 - Base Scenario  
TMP Affordable Road & Transit Network

User Initials: SG  
Plot Prepared: March 6, 2018  
EMME Scenario: 14311

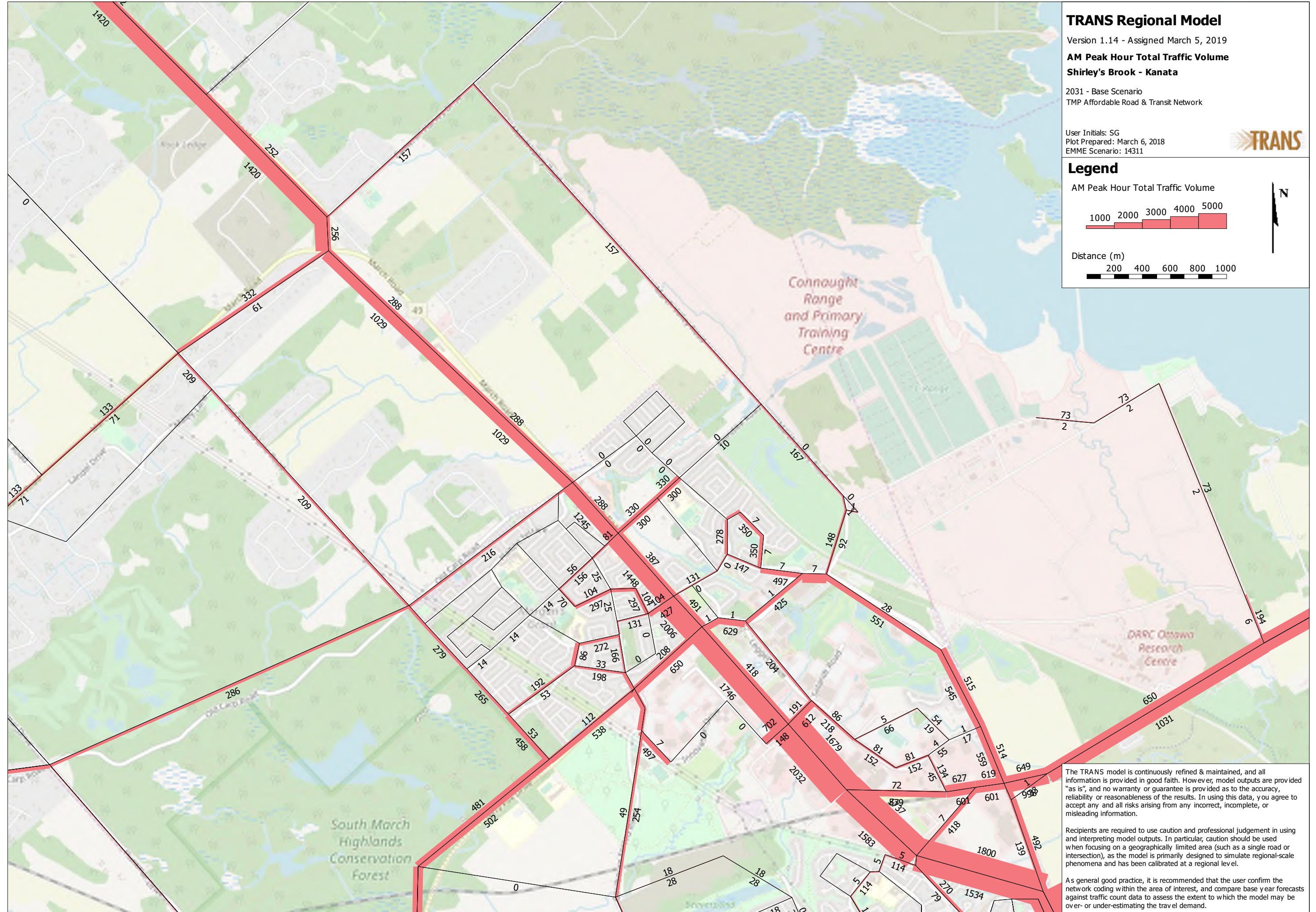
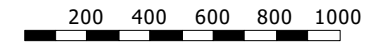


### Legend

AM Peak Hour Total Traffic Volume



Distance (m)



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

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# TRANS Regional Model

Version 1.13 - Assigned March 6, 2019

## AM Peak Hour Total Traffic Volume Shirley's Brook - Kanata

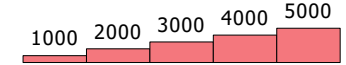
2011 - Base Scenario

User Initials: SG  
Plot Prepared: March 6, 2019  
EMME Scenario: 11132

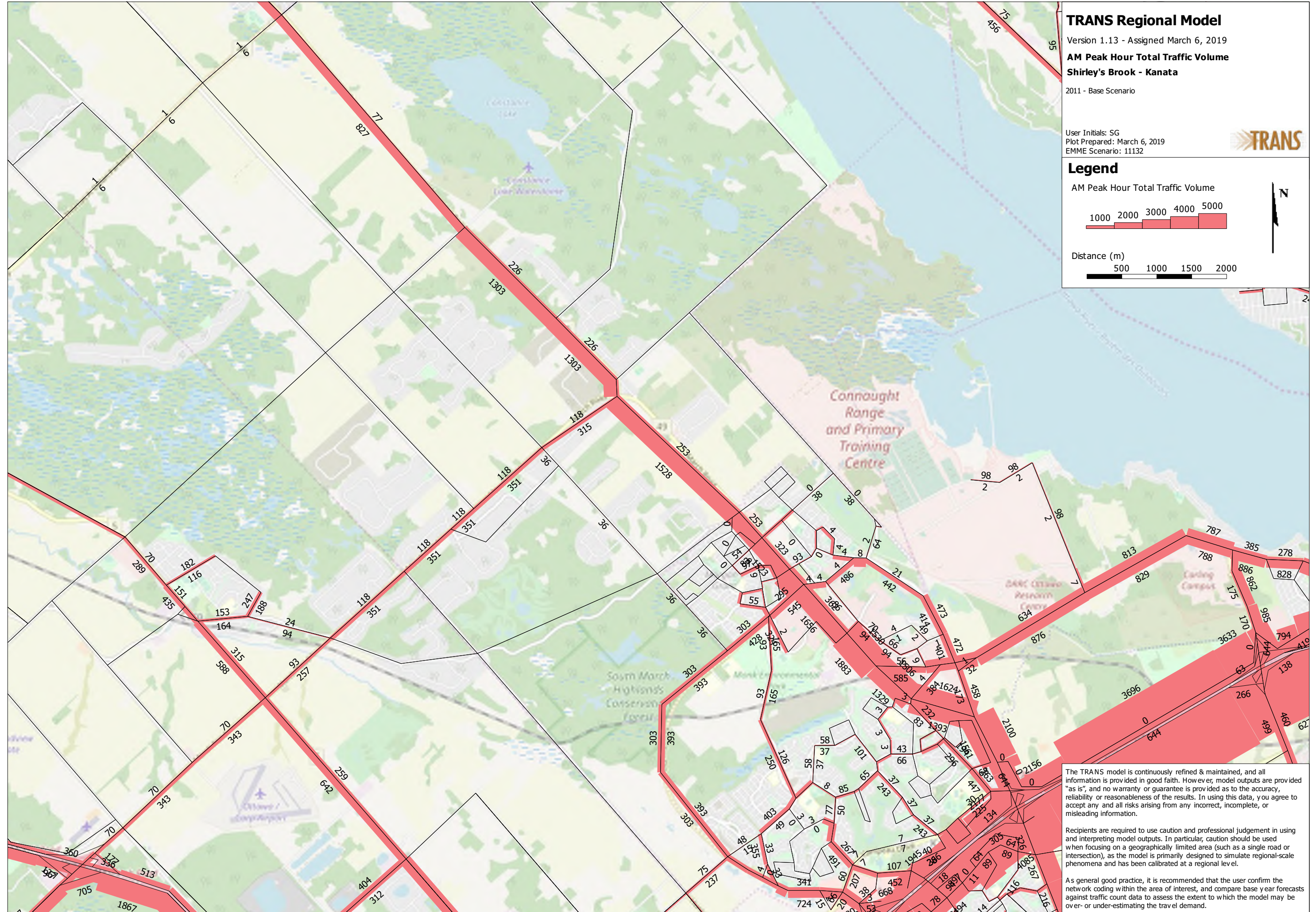
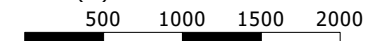


### Legend

AM Peak Hour Total Traffic Volume



Distance (m)



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

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

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

# TRANS Regional Model

Version 1.14 - Assigned March 5, 2019

## AM Peak Hour Total Traffic Volume Shirley's Brook - Kanata

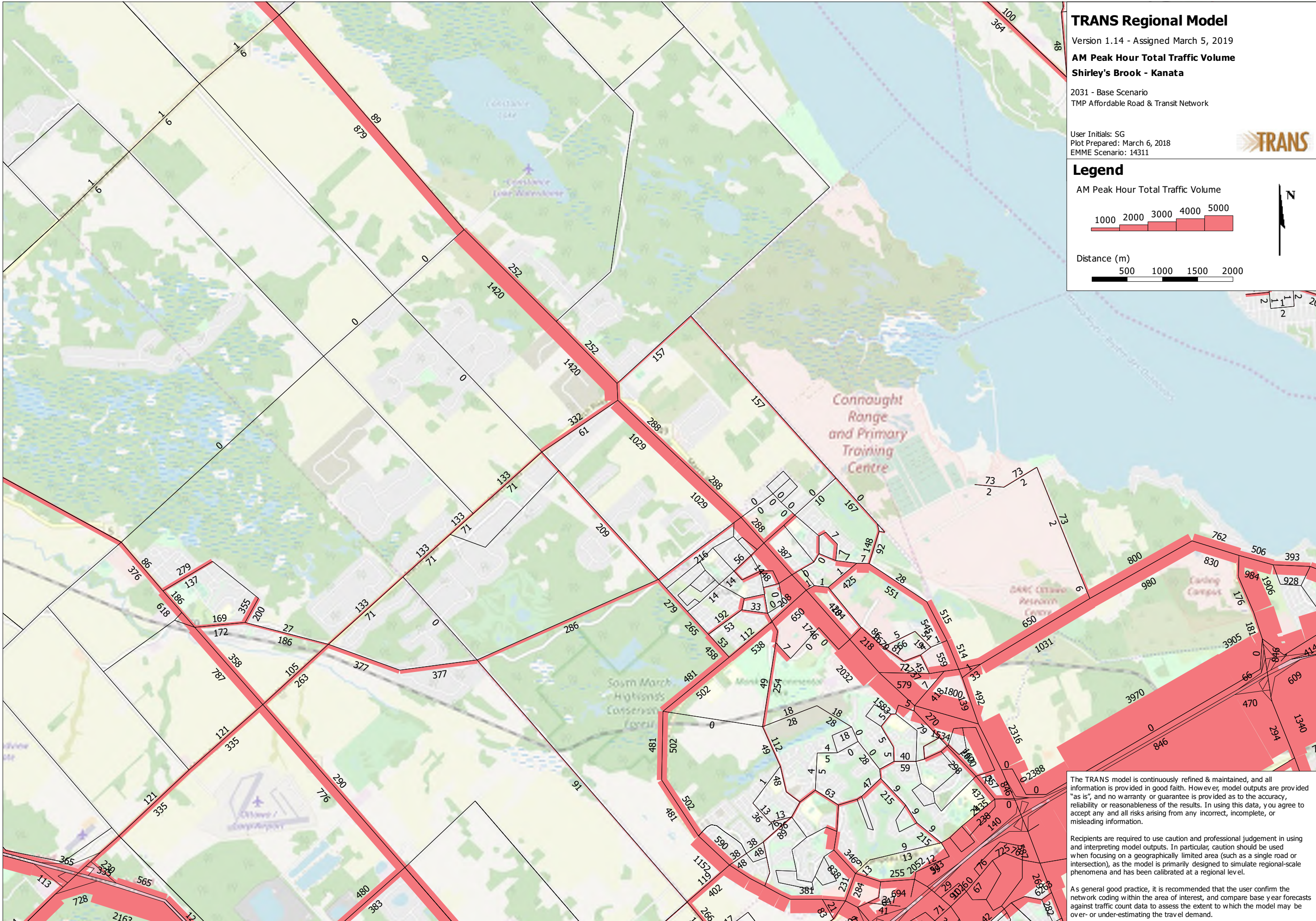
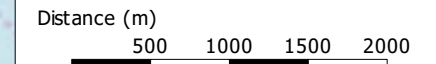
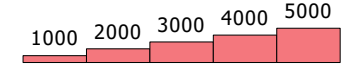
2031 - Base Scenario  
TMP Affordable Road & Transit Network

User Initials: SG  
Plot Prepared: March 6, 2018  
EMME Scenario: 14311



### Legend

AM Peak Hour Total Traffic Volume



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

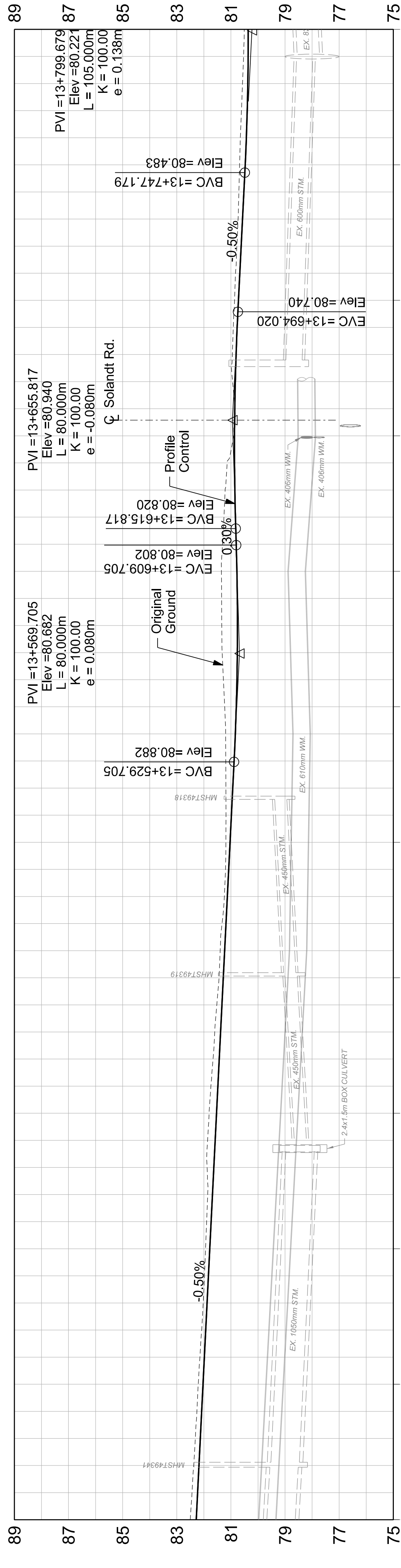
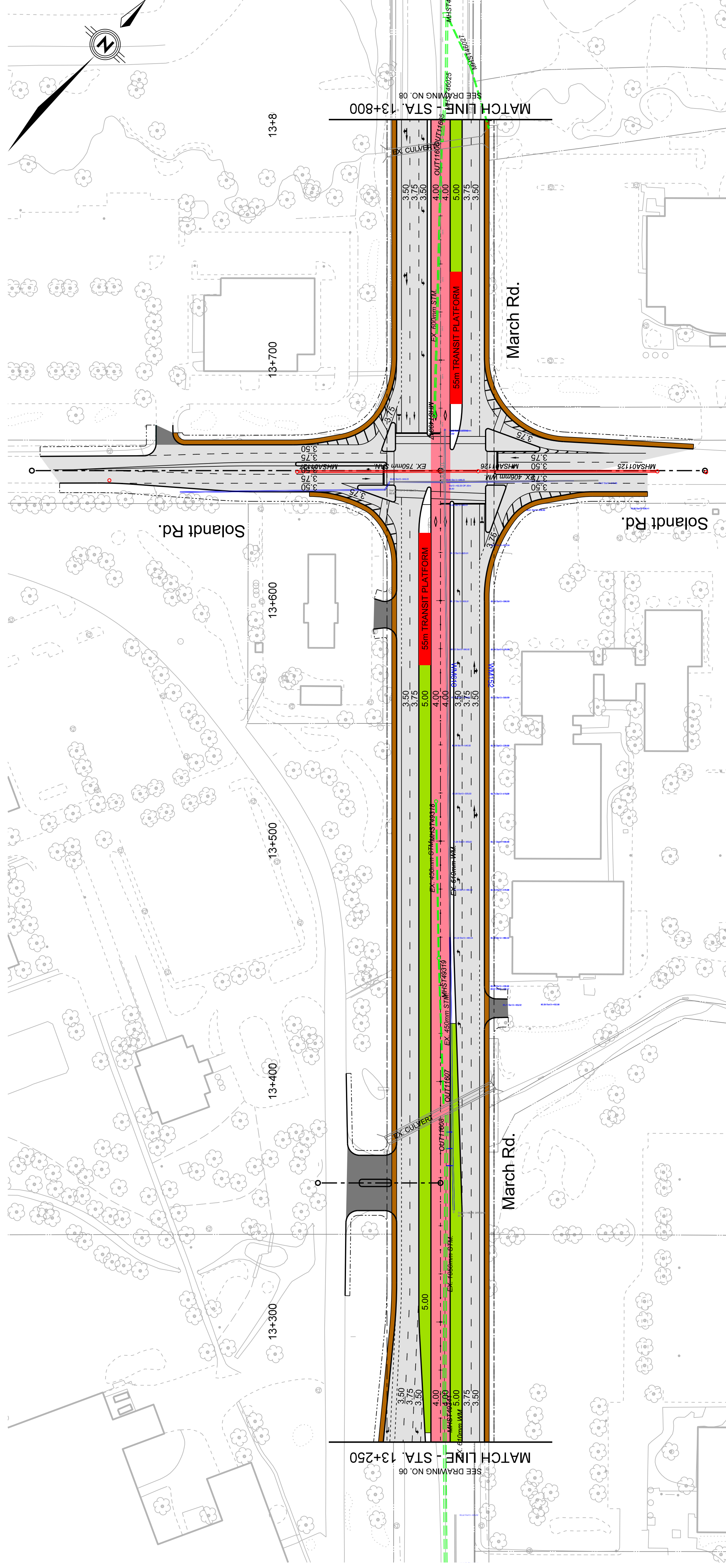
Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena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

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

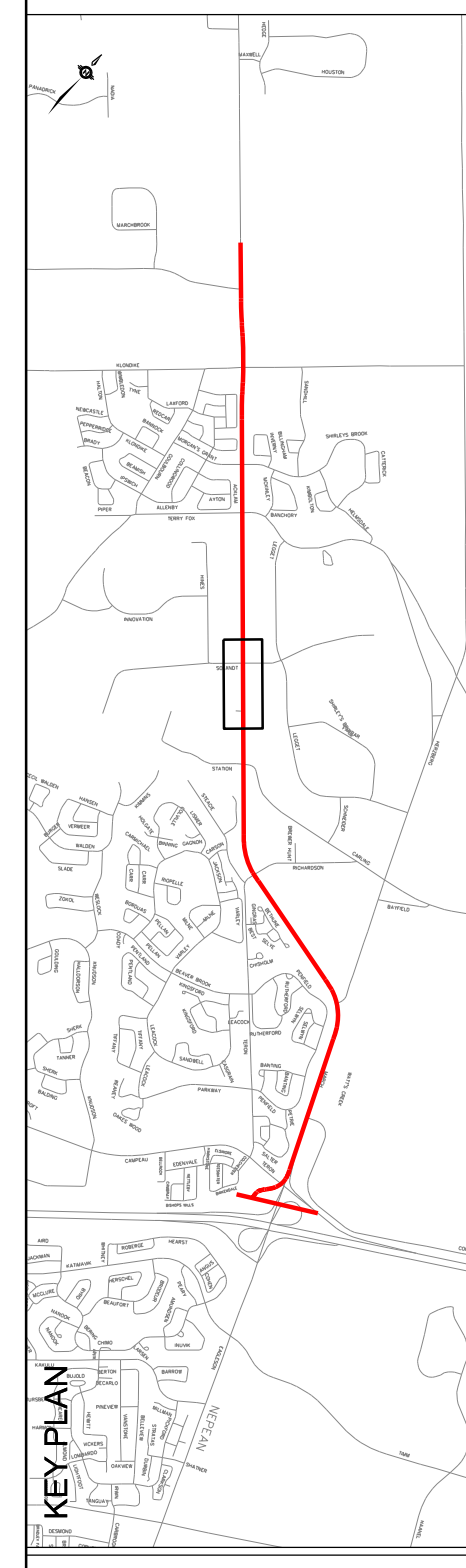
## **APPENDIX I**

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Future March Road Transitway Functional Design



**NOTES:**  
 1. DURING DETAILED DESIGN STAGE SEGREGATED BICYCLE AND TRANSITWAY DESIGN SHALL BE DETERMINED THROUGH THE INTERSECTION OF THE TRANSITWAY WITH MARCH ROAD - CORKSTOWN ROAD TO OLD CARP ROAD.  
 2. METHOD FOR DETERMINING THE RIGHT OF WAY (ROW) FOR THE TRANSITWAY FOR THE MOST PART IS INCLUDED IN THE TRANSPORTATION ACT AND REGULATIONS.  
 - PROPERTY ACQUISITION REQUIRED ON BOTH SIDES OF WIDENING.  
 - ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m.  
 THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.  
 SOUTH OF CORKSTOWN ROAD/MARCH ROAD  
 STATIONWEST TRANSITWAY CONNECTION  
 STATION EAST TRANSITWAY CONNECTION  
 THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.



**LEGEND:**

	TRANSIT STATION		TRANSIT CENTRELINE
	TRANSIT LANES		PROPOSED RIGHT-OF-WAY
	TRAFFIC LANES		STRUCTURE OUTLINE
	SIDEWALK		PEDESTRIAN BRIDGE
	EDGE OF PAVEMENT		BRIDGE ACCESS POINT (SEE SHEET 13)

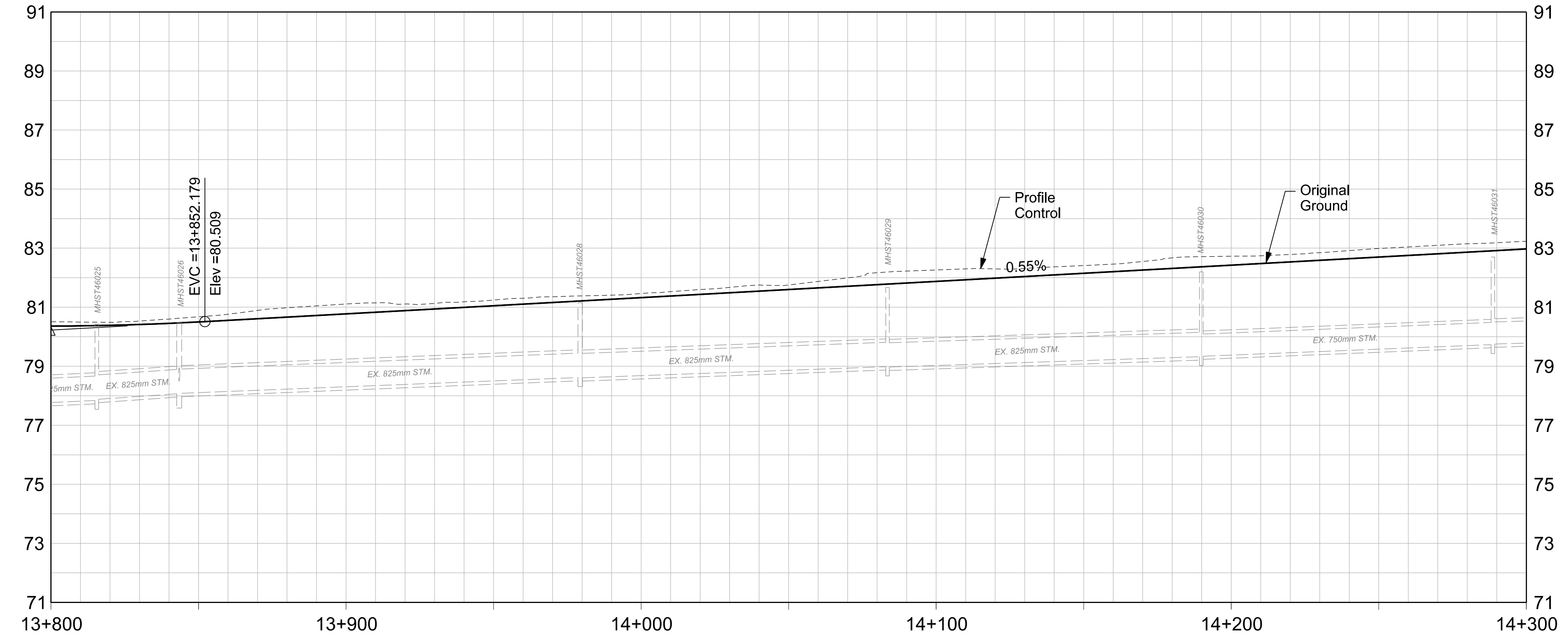
**Delcan**

Date: SEPTEMBER 26 2012  
 Project Manager: DAH  
 Scale: 1" = 20' HORIZONTAL, 1" = 8' VERTICAL

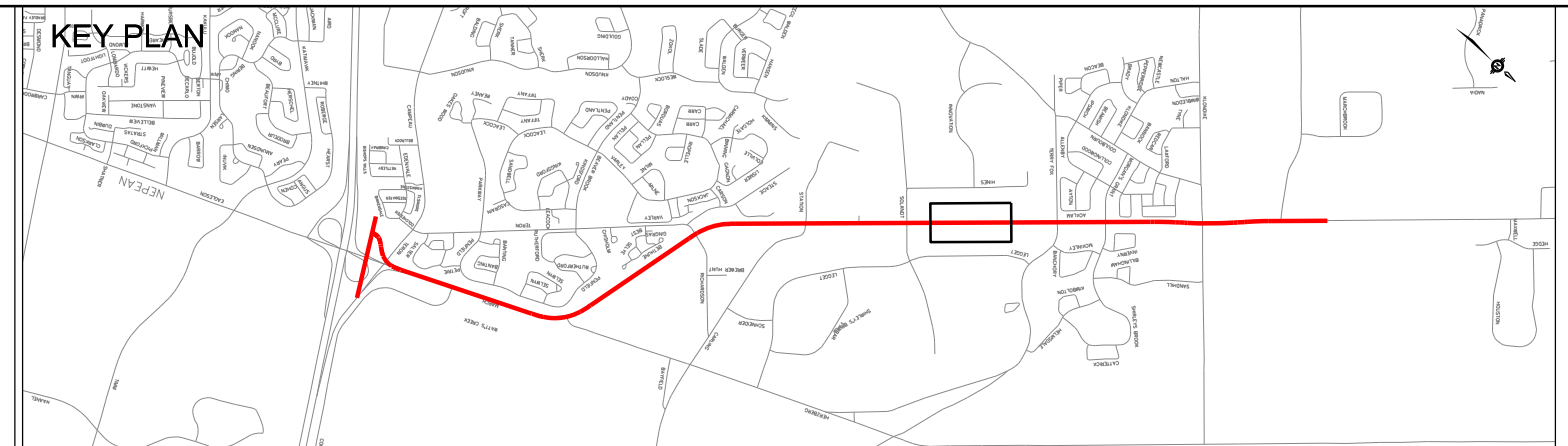
Designed By: MDR / RRG  
 Checked By: RRG  
 Drawn By: MB / RRG

CAD File Name: TO3065TOD-2.0-007.DGN  
 Plot Date: 30/09/2013





**NOTES:**  
 1. DURING DETAILED DESIGN STAGE SEGREGATED BICYCLE FACILITY WILL BE DESIGNED ALONG THE CORRIDOR AND THROUGH THE INTERSECTION.  
 2. METHODOLOGY FOR DETERMINING THE RIGHT OF WAY (ROW): MARCH ROAD - CORKSTOWN ROAD TO OLD CARP ROAD  
 -PROPERTY FOR THE TRANSITWAY FOR THE MOST PART IS INCLUDED WITHIN THE EXISTING MARCH ROAD ROW.  
 -PROPERTY ACQUISITION REQUIRED ON BOTH SIDES OF WIDENING.  
 -ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m.  
 -THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.  
 SOUTH OF CORKSTOWN ROAD/MARCH ROAD STATION/WEST TRANSITWAY CONNECTION  
 -ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m.  
 -THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.



**LEGEND:**

	TRANSIT STATION		TRANSIT CENTRELINE
	TRANSIT LANES		PROPOSED RIGHT-OF-WAY
	TRAFFIC LANES		STRUCTURE OUTLINE
	SIDEWALK		PEDESTRIAN BRIDGE
	EDGE OF PAVEMENT		BRIDGE ACCESS POINT SEE SHEET 13

**Delcan**

Date: SEPTEMBER 26 2012	Designed By: MDR / RRG	Drawn By: MB / RRG
Project Manager: DAH	Discipline Engineer: DAH	Checked By: RRG

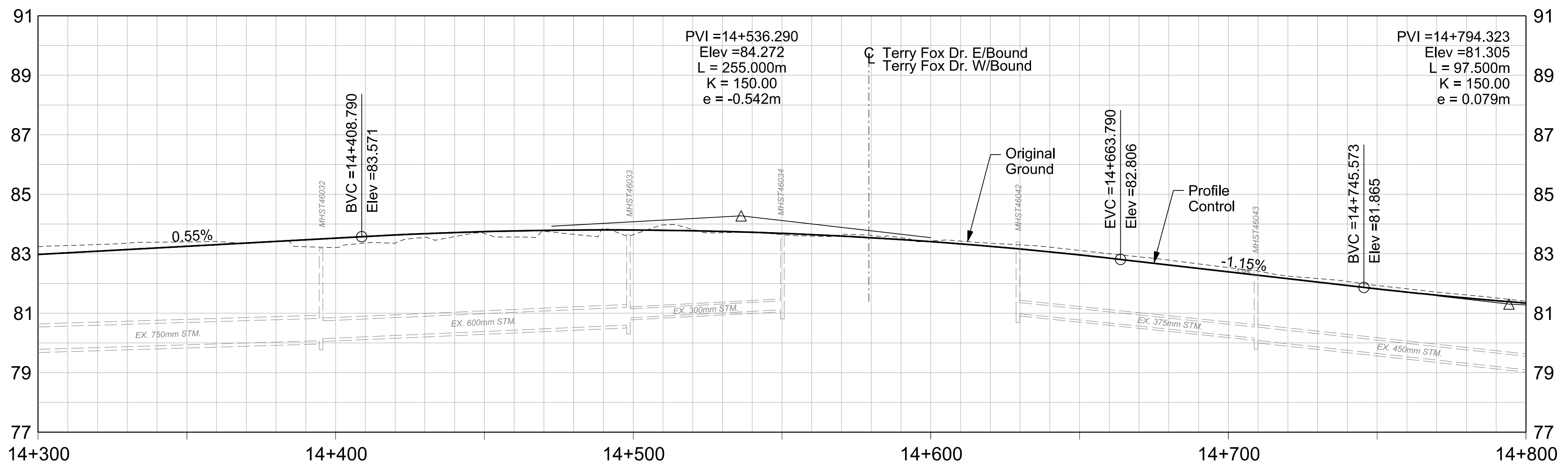
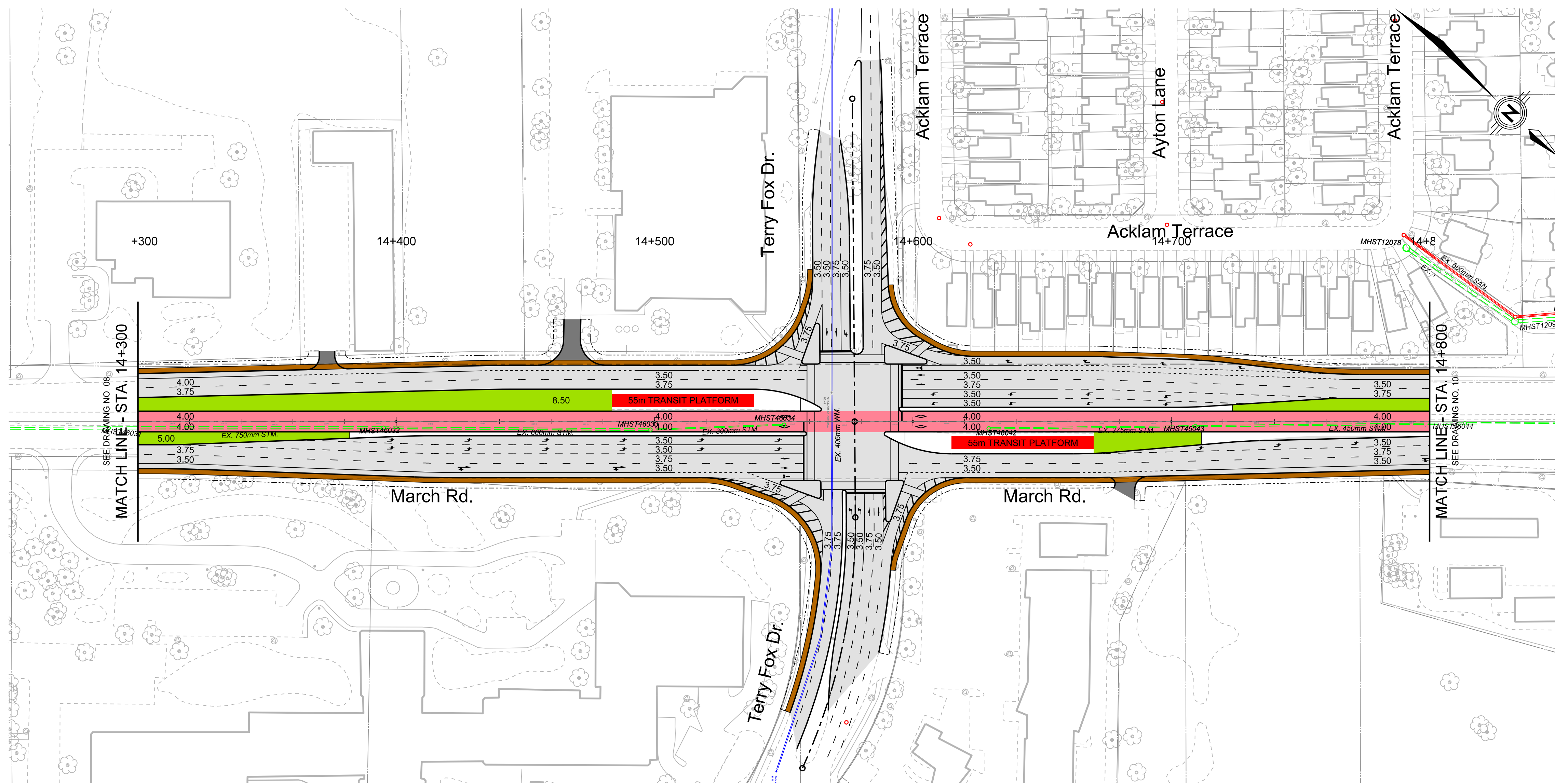
Scale:

CAD File Name: T03065TOD-2-0-008.DGN Plot Date: 30/09/2013

**Ottawa**

**Kanata North Transitway**  
 (Hwy 417/Eagleson-March Road to North of Maxwell Bridge Road)

Drawings No.: Revision 01 Sheet No. 08



**NOTES:**  
 1. DURING DETAILED DESIGN STAGE SEGREGATED BICYCLE FACILITY WILL BE DESIGNED ALONG THE CORRIDOR AND THROUGH THE INTERSECTION.  
 2. METHODOLOGY FOR DETERMINING THE RIGHT OF WAY (ROW): MARCH ROAD - CORKSTOWN ROAD TO OLD CARP ROAD  
 -PROPERTY FOR THE TRANSITWAY FOR THE MOST PART IS INCLUDED WITHIN THE EXISTING MARCH ROAD ROW.  
 -PROPERTY ACQUISITION REQUIRED ON BOTH SIDES OF WIDENING.  
 -ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m.  
 -THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.  
 SOUTH OF CORKSTOWN ROAD/MARCH ROAD STATION/WEST TRANSITWAY CONNECTION  
 -ROW SET TO FOOTPRINT OF TRANSITWAY PLUS 4.0m.  
 -THE EXACT OWNERSHIP WILL BE DETERMINED DURING DETAILED DESIGN.



**LEGEND:**

	TRANSIT STATION		TRANSIT CENTRELINE
	TRANSIT LANES		PROPOSED RIGHT-OF-WAY
	TRAFFIC LANES		STRUCTURE OUTLINE
	SIDEWALK		PEDESTRIAN BRIDGE
	EDGE OF PAVEMENT		BRIDGE ACCESS POINT SEE SHEET 13

**Delcan**

Date: SEPTEMBER 26 2012  
 Project Manager: DAH  
 Scale: 1" = 40' HORIZONTAL, 1" = 4' VERTICAL

Designed By: MDR / RRG  
 Discipline Engineer: DAH  
 Drawn By: MB / RRG  
 Checked By: RRG

CAD File Name: TO3065TOD-2.0-009.DGN  
 Plot Date: 30/09/2013

**Ottawa**

**Kanata North Transitway**  
 (Hwy 417/Egleson-March Road to North of Maxwell Bridge Road)

Drawings No.:  
 Revision 01 | Sheet No. 09

## **APPENDIX J**

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### Signal Timing Plans

# Traffic Signal Timing

City of Ottawa, Transportation Services Department

## Traffic Signal Operations Unit

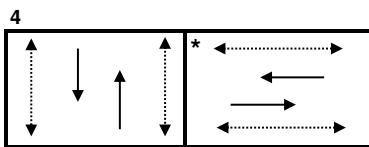
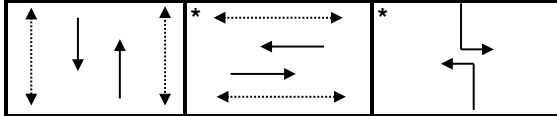
<b>Intersection:</b>	<i>Main:</i> March	<i>Side:</i> Morgans Grant/Shirleys Brook
<b>Controller:</b>	ATC3	<b>TSD:</b> 5767
<b>Author:</b>	Ahmed Abdullah	<b>Date:</b> 28-Nov-2019

### Existing Timing Plans†

	Plan					Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	PM Heavy 13	Walk	DW	A+R
<b>Cycle</b>	130	110	120	85	130			
<b>Offset</b>	95	90	89	X	105			
NB Thru	75	58	63	46	73	7	11	4.6+1.5
SB Thru	75	58	63	46	73	7	11	4.6+1.5
EB Thru	39	39	39	39	39	7	24	3.0+4.5
WB Thru	39	39	39	39	39	7	24	3.0+4.5
NB Left	16	13	18	-	18	-	-	4.6+1.8
SB Left	16	13	18	-	18	-	-	4.6+1.8

### Phasing Sequence‡

Plan: 1, 2, 3, 13



### Schedule

#### Weekday

Time	Plan
0:10	4
6:30	1
9:30	2
15:00	3
16:30	13
18:00	3
18:30	2
23:00	4

#### Saturday

Time	Plan
0:10	4
8:00	2
22:30	4

#### Sunday

Time	Plan
0:10	4
8:00	2
22:30	4

### Notes

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

Cost is \$57.63 (\$51 + HST)

# Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

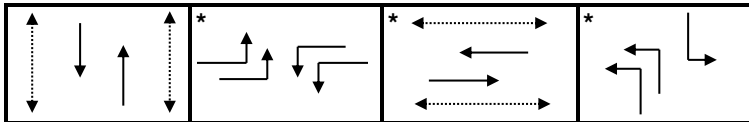
<b>Intersection:</b>	<i>Main:</i> March	<i>Side:</i> Terry Fox
<b>Controller:</b>	<b>MS 3200</b>	<b>TSD: 5920</b>
<b>Author:</b>	Matthew Anderson	<b>Date:</b> 27-Jul-2021

## Existing Timing Plans†

	Plan					Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	PM Heavy 13	Walk	DW	A+R
<b>Cycle</b>	130	110	120	105	130			
<b>Offset</b>	114	80	72	X	96			
NB Thru	47	38	38	38	41	7	19	4.6+2.1
SB Thru	47	38	38	38	41	7	19	4.6+2.1
EB Left (fp)	16	15	19	13	24	-	-	3.7+3.1
WB Left (fp)	16	15	19	13	24	-	-	3.7+3.1
EB Thru	42	42	42	42	42	7	28	3.7+3.3
WB Thru	42	42	42	42	42	7	28	3.7+3.3
NB Left (fp)	25	15	21	12	23	-	-	4.6+2.3
SB Left (fp)	25	15	21	12	23	-	-	4.6+2.3

## Phasing Sequence‡

Plan: All



**Notes:** 1) If the EW Pedestrian phase is not actuated, the EW Thru phases will force off after 30s

## Schedule

### Weekday

Time	Plan
0:10	4
6:30	1
9:30	2
15:00	3
16:30	13
18:00	3
18:30	2
22:00	4

### Weekend

Time	Plan
0:10	4
8:00	2
22:00	4

## Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (\*) Indicates actuated phase

(fp): Fully Protected Left Turn

←.....→ Pedestrian signal

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

# Traffic Signal Timing

City of Ottawa, Transportation Services Department

Traffic Signal Operations Unit

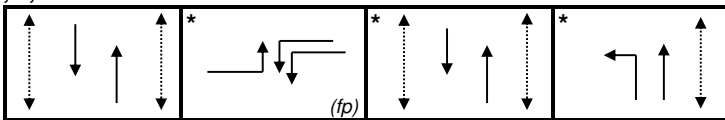
<b>Intersection:</b>	<u>Main: March</u>	<b>Side:</b>	<u>Solandt</u>
<b>Controller:</b>	<u>MS-3200</u>	<b>TSD:</b>	<u>5359</u>
<b>Author:</b>	<u>Jean Nabolle</u>	<b>Date:</b>	<u>08-Jul-2019</u>

## Existing Timing Plans†

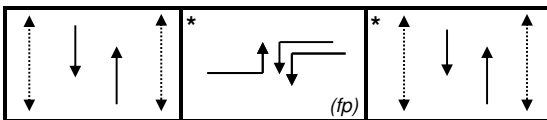
	Plan					Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	PM Heavy 13	Walk	DW	A+R
<b>Cycle</b>	130	110	120	85	130			
<b>Offset</b>	15	16	21	X	30			
NB Thru	85	60	59	38	64	7	12	4.6 + 1.7
SB Thru	46	47	47	38	52	7	12	4.6 + 1.7
EB Left (fp)	13	18	29	16	34	-	-	3.3 + 2.6
WB Left (fp)	13	18	29	16	34	-	-	3.3 + 2.6
EB Thru	32	32	32	31	32	7	18	3.3 + 3.2
WB Thru	32	32	32	31	32	7	18	3.3 + 3.2
NB Left	39	13	12	-	12	-	-	4.6 + 1.7

## Phasing Sequence‡

**Plan: 1, 2, 3, 13**



**Plan: 4**



Notes: 1) For plan 1, if the pedestrian phase is not actuated then the EW thru movements will be forced off after 10 seconds green. In addition, all extra time for plan 1 will be added to the NS thru movements

### Weekday

Time	Plan
0:10	4
6:30	1
9:30	2
15:00	3
16:30	13
18:00	3
18:30	2
23:00	4

### Weekend

Time	Plan
0:10	4
8:00	2
22:30	4

## Notes

†: Time for each direction includes amber and all red intervals  
 ‡: Start of first phase should be used as reference point for offset

Asterisk (\*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄.....► Pedestrian signal

Cost is \$57.63 (\$51 + HST)

# Traffic Signal Timing

City of Ottawa, Transportation Services Department

## Traffic Signal Operations Unit

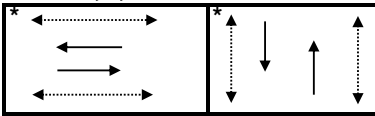
<b>Intersection:</b>	<u>          Main: Legget          </u>	<u>          Side: Solandt          </u>	
<b>Controller:</b>	<u>          MS-3200          </u>	<b>TSD:</b>	<u>          6537          </u>
<b>Author:</b>	<u>          Jean Nabolle          </u>	<b>Date:</b>	<u>          08-Jul-2019          </u>

### Existing Timing Plans†

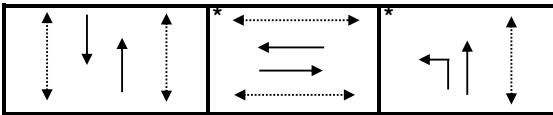
	Plan				Ped Minimum Time		
	AM Peak 1	Off Peak 2	PM Peak 3	Night 4	Walk	DW	A+R
<b>Cycle</b>	FREE	FREE	FREE	FREE			
<b>Offset</b>	X	X	X	X			
NB Thru	max 46.2	max 46.2	max 71.2	max 25.2	7	12	3.3+2.9
SB Thru	max 46.2	max 46.2	max 46.2	max 25.2	7	12	3.3+2.9
EB Thru	max 66.2	max 46.2	max 41.2	max 25.2	7	12	3.3+2.9
WB Thru	max 66.2	max 46.2	max 41.2	max 25.2	7	12	3.3+2.9
NB Left	-	-	max 31.2	-	-	-	3.3+2.9

### Phasing Sequence‡

#### Plans: 1, 2, 4



#### Plans: 3



#### NOTE:

- 1) Plans 1, 2, & 4 have a min recall on the EB and WB movements of 15 seconds green.
- 2) Plan 3 has a ped recall on the NB and SB movement

### Schedule

#### Weekday

Time	Plan
0:10	4
6:00	1
9:50	2
15:00	3
19:00	4

#### Weekend

Time	Plan
0:10	4

### Notes

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

Cost is \$57.63 (\$51 + HST)

## **APPENDIX K**

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Existing Synchro Analysis





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↕↕	↗	↖↖	↕↕	↗	↖↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	89	511	244	69	133	40	274	365	169	324	969	145
Future Volume (vph)	89	511	244	69	133	40	274	365	169	324	969	145
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99		0.96	0.98		0.98	0.99		0.97	0.99		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3216	3349	1483	3095	3283	1469	3185	4584	1483	1658	4764	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3190	3349	1417	3019	3283	1437	3148	4584	1437	1639	4764	1419
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			271			146			188			161
Link Speed (k/h)		50			60			80			80	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			41.4			14.0	
Confl. Peds. (#/hr)	9		29	29		9	21		13	13		21
Confl. Bikes (#/hr)			1									1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	1%	2%	6%	3%	3%	3%	6%	2%	2%	2%	2%
Adj. Flow (vph)	99	568	271	77	148	44	304	406	188	360	1077	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	568	271	77	148	44	304	406	188	360	1077	161
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6



2: March & Solandt  
AM Peak Hour

525 Legget Drive  
Existing Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	103	128	53	120	31	607	731	675	115	1078	113
Future Volume (vph)	29	103	128	53	120	31	607	731	675	115	1078	113
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		0.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.98	1.00				0.97			0.98
Frt			0.850		0.969				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1537	1745	1441	3216	1654	0	1674	3252	1498	1658	3283	1483
Flt Permitted	0.950			0.950			0.092			0.345		
Satd. Flow (perm)	1524	1745	1404	3159	1654	0	162	3252	1457	602	3283	1447
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			142		9				601			132
Link Speed (k/h)		50			50			80				80
Link Distance (m)		117.9			242.3			405.0				919.4
Travel Time (s)		8.5			17.4			18.2				41.4
Confl. Peds. (#/hr)	7		8	8		7	6					6
Confl. Bikes (#/hr)			1			1			12			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	10%	2%	5%	2%	4%	3%	1%	4%	1%	2%	3%	2%
Adj. Flow (vph)	32	114	142	59	133	34	674	812	750	128	1198	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	114	142	59	167	0	674	812	750	128	1198	126
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			10.5			7.0				7.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4				2		2	6		6
Detector Phase	7	4	4	3	8		5	2	2	6	6	6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	10.9	31.5	31.5	10.9	31.5		11.3	26.3	26.3	26.3	26.3	26.3
Total Split (s)	13.0	32.0	32.0	13.0	32.0		39.0	85.0	85.0	46.0	46.0	46.0
Total Split (%)	10.0%	24.6%	24.6%	10.0%	24.6%		30.0%	65.4%	65.4%	35.4%	35.4%	35.4%
Maximum Green (s)	7.1	25.5	25.5	7.1	25.5		32.7	78.7	78.7	39.7	39.7	39.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.6	3.2	3.2	2.6	3.2		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	6.5	6.5	5.9	6.5		6.3	6.3	6.3	6.3	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		18.0			12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		8	8		7			6	6	0	0	0
Act Effct Green (s)	6.7	17.2	17.2	6.8	19.8		89.6	89.6	89.6	39.7	39.7	39.7
Actuated g/C Ratio	0.05	0.13	0.13	0.05	0.15		0.69	0.69	0.69	0.31	0.31	0.31
v/c Ratio	0.41	0.50	0.46	0.35	0.64		1.09	0.36	0.63	0.70	1.20	0.24
Control Delay	74.9	58.4	12.2	65.3	60.3		97.6	10.1	5.1	38.4	121.7	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.9	58.4	12.2	65.3	60.3		97.6	10.1	5.1	38.4	121.7	2.3
LOS	E	E	B	E	E		F	B	A	D	F	A
Approach Delay		37.5			61.6			34.8			104.0	
Approach LOS		D			E			C			F	
Queue Length 50th (m)	7.4	25.2	0.0	7.0	36.2		~174.8	41.5	12.1	8.2	~181.7	0.0
Queue Length 95th (m)	17.4	39.8	16.1	13.7	54.8		#265.7	61.7	46.2	#52.4	#209.8	4.3
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0			165.0			155.0		75.0
Base Capacity (vph)	83	342	389	175	331		619	2242	1191	183	1002	533
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.33	0.37	0.34	0.50		1.09	0.36	0.63	0.70	1.20	0.24

**Intersection Summary**

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 15 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.20  
 Intersection Signal Delay: 60.3  
 Intersection LOS: E  
 Intersection Capacity Utilization 103.3%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	525	536	44	130	39	38
Future Volume (vph)	525	536	44	130	39	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932			0.933		
Flt Protected				0.987	0.975	
Satd. Flow (prot)	1643	0	0	1634	1557	0
Flt Permitted				0.987	0.975	
Satd. Flow (perm)	1643	0	0	1634	1557	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)	17		17			
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	9%	7%	3%	5%
Adj. Flow (vph)	583	596	49	144	43	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1179	0	0	193	85	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other





















Control Type: Unsignalized

Intersection Capacity Utilization 76.0% ICU Level of Service D

Analysis Period (min) 15

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
Existing Traffic

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	429	143	238	2	10	6	99	179	49	32	184	53
Future Volume (vph)	429	143	238	2	10	6	99	179	49	32	184	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		1.00	0.99			0.99		0.98		
Frt		0.906			0.942			0.968			0.966	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1574	0	1674	1334	0	1566	1660	0	1537	1689	0
Flt Permitted	0.746			0.469			0.560			0.577		
Satd. Flow (perm)	1300	1574	0	826	1334	0	923	1660	0	915	1689	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		114			7			13			14	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	4		1	1		4			11	11		
Confl. Bikes (#/hr)									3			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	30%	15%	8%	3%	1%	10%	2%	1%
Adj. Flow (vph)	477	159	264	2	11	7	110	199	54	36	204	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	477	423	0	2	18	0	110	253	0	36	263	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
Existing Traffic

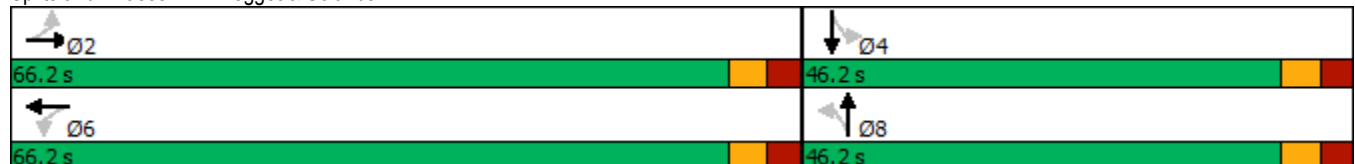


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		25.2	25.2		25.2	25.2	
Total Split (s)	66.2	66.2		66.2	66.2		46.2	46.2		46.2	46.2	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	
Maximum Green (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	1	1		4	4		11	11		0	0	
Act Effct Green (s)	29.8	29.8		29.8	29.8		16.7	16.7		16.7	16.7	
Actuated g/C Ratio	0.50	0.50		0.50	0.50		0.28	0.28		0.28	0.28	
v/c Ratio	0.74	0.51		0.00	0.03		0.43	0.54		0.14	0.55	
Control Delay	20.2	9.5		8.0	6.7		27.4	24.9		21.9	24.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.2	9.5		8.0	6.7		27.4	24.9		21.9	24.9	
LOS	C	A		A	A		C	C		C	C	
Approach Delay		15.1			6.8			25.6			24.6	
Approach LOS		B			A			C			C	
Queue Length 50th (m)	31.5	16.1		0.1	0.5		8.3	18.6		2.5	19.4	
Queue Length 95th (m)	81.8	45.8		1.0	3.3		28.8	54.0		11.2	55.7	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		
Base Capacity (vph)	1175	1433		746	1206		665	1200		659	1221	
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	0.41	0.30		0.00	0.01		0.17	0.21		0.05	0.22	

Intersection Summary

Area Type: Other  
 Cycle Length: 112.4  
 Actuated Cycle Length: 60.2  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.74  
 Intersection Signal Delay: 19.2  
 Intersection Capacity Utilization 69.7%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
AM Peak Hour

525 Legget Drive  
Existing Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	243	19	6	214	38	18	0	6	132	3	69
Future Volume (vph)	40	243	19	6	214	38	18	0	6	132	3	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.980			0.965			0.954	
Flt Protected		0.993			0.999			0.964			0.969	
Satd. Flow (prot)	0	1667	0	0	1689	0	0	1593	0	0	1608	0
Flt Permitted		0.993			0.999			0.964			0.969	
Satd. Flow (perm)	0	1667	0	0	1689	0	0	1593	0	0	1608	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)			8	8			5					5
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	25%	2%	5%	1%	2%	10%	5%	1%	1%	2%	1%	3%
Adj. Flow (vph)	44	270	21	7	238	42	20	0	7	147	3	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	335	0	0	287	0	0	27	0	0	227	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 55.2% ICU Level of Service B

Analysis Period (min) 15





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	521	42	11	166	8	2
Future Volume (vph)	521	42	11	166	8	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.990				0.975	
Flt Protected				0.997	0.961	
Satd. Flow (prot)	1728	0	0	1663	1635	0
Flt Permitted				0.997	0.961	
Satd. Flow (perm)	1728	0	0	1663	1635	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	169.3	
Travel Time (s)	14.8			18.7	12.2	
Confl. Peds. (#/hr)		15	15			
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	7%	2%	2%
Adj. Flow (vph)	579	47	12	184	9	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	626	0	0	196	11	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 41.7%

ICU Level of Service A

Analysis Period (min) 15

7: March & Morgan's Grant/Shirley's Brook  
AM Peak Hour

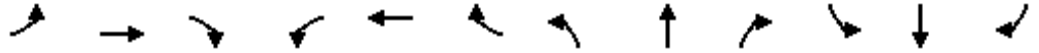
525 Legget Drive  
Existing Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	11	17	142	102	9	19	35	407	28	81	1204	8
Future Volume (vph)	11	17	142	102	9	19	35	407	28	81	1204	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	1.00		0.98	1.00		0.96	0.99		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.981		0.950			0.950			0.950		
Satd. Flow (prot)	0	1729	1498	1674	1618	1441	1642	4584	1498	1674	4764	1498
Flt Permitted		0.894		0.737			0.174			0.469		
Satd. Flow (perm)	0	1573	1470	1294	1618	1418	300	4584	1435	817	4764	1433
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			158			80			91			91
Link Speed (k/h)		40			40			80			80	
Link Distance (m)		373.3			363.7			310.4			372.3	
Travel Time (s)		33.6			32.7			14.0			16.8	
Confl. Peds. (#/hr)	3		3	3		3	5		6	6		5
Confl. Bikes (#/hr)			3						1			8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	10%	5%	3%	6%	1%	1%	2%	1%
Adj. Flow (vph)	12	19	158	113	10	21	39	452	31	90	1338	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	31	158	113	10	21	39	452	31	90	1338	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

7: March & Morgan's Grant/Shirley's Brook  
AM Peak Hour

525 Legget Drive  
Existing Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	26.1	26.1	11.4	26.1	26.1
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	16.0	75.0	75.0	16.0	75.0	75.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	12.3%	57.7%	57.7%	12.3%	57.7%	57.7%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	9.6	68.9	68.9	9.6	68.9	68.9
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	1.8	1.5	1.5	1.8	1.5	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.1	6.1	6.4	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	3	3	3	3	3	3		6	6		6	6
Act Effct Green (s)		18.2	18.2	18.2	18.2	18.2	90.4	84.3	84.3	93.8	87.8	87.8
Actuated g/C Ratio		0.14	0.14	0.14	0.14	0.14	0.70	0.65	0.65	0.72	0.68	0.68
v/c Ratio		0.14	0.46	0.62	0.04	0.08	0.14	0.15	0.03	0.14	0.42	0.01
Control Delay		46.6	10.9	66.0	43.7	0.6	17.1	20.5	3.8	6.0	11.6	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		46.6	10.9	66.0	43.7	0.6	17.1	20.5	3.8	6.0	11.6	0.0
LOS		D	B	E	D	A	B	C	A	A	B	A
Approach Delay		16.8			54.9			19.3			11.1	
Approach LOS		B			D			B			B	
Queue Length 50th (m)		6.6	0.0	25.8	2.1	0.0	4.5	32.2	0.2	4.6	48.9	0.0
Queue Length 95th (m)		13.4	15.7	39.1	6.1	0.0	13.8	21.5	0.2	12.9	81.5	0.0
Internal Link Dist (m)		349.3			339.7			286.4			348.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		381	475	313	392	404	314	2972	962	662	3216	997
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.08	0.33	0.36	0.03	0.05	0.12	0.15	0.03	0.14	0.42	0.01

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 95 (73%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 16.2 Intersection LOS: B  
 Intersection Capacity Utilization 63.3% ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook



1: March & Terry Fox  
PM Peak Hour

525 Legget Drive  
Existing Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗↗	↘	↖↖	↗↗	↘	↖↖	↗↗↗	↘	↖	↗↗↗	↘
Traffic Volume (vph)	233	149	402	202	364	319	283	1322	107	53	527	106
Future Volume (vph)	233	149	402	202	364	319	283	1322	107	53	527	106
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.98		0.96	0.96		0.95	0.98		0.96	1.00		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3248	3283	1498	3248	3349	1498	3185	4811	1498	1658	4811	1498
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3186	3283	1436	3124	3349	1427	3118	4811	1436	1652	4811	1437
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			312			280			149			149
Link Speed (k/h)		50			60			80			80	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			41.4			14.0	
Confl. Peds. (#/hr)	30		26	26		30	19		19	19		19
Confl. Bikes (#/hr)			1			3			2			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	1%	1%	1%	1%	3%	1%	1%	2%	1%	1%
Adj. Flow (vph)	259	166	447	224	404	354	314	1469	119	59	586	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	259	166	447	224	404	354	314	1469	119	59	586	118
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6

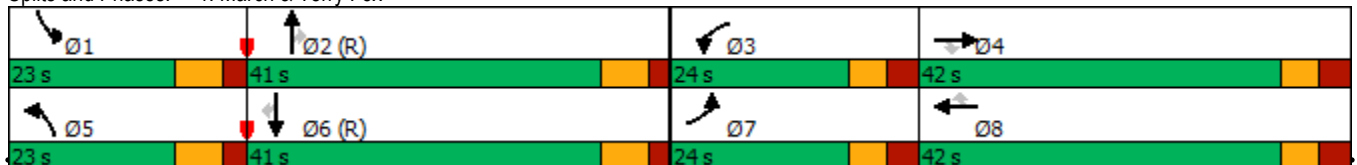


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	11.8	42.0	42.0	11.8	42.0	42.0	11.9	32.7	32.7	11.9	32.7	32.7
Total Split (s)	24.0	42.0	42.0	24.0	42.0	42.0	23.0	41.0	41.0	23.0	41.0	41.0
Total Split (%)	18.5%	32.3%	32.3%	18.5%	32.3%	32.3%	17.7%	31.5%	31.5%	17.7%	31.5%	31.5%
Maximum Green (s)	17.2	35.0	35.0	17.2	35.0	35.0	16.1	34.3	34.3	16.1	34.3	34.3
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	3.1	3.3	3.3	3.1	3.3	3.3	2.3	2.1	2.1	2.3	2.1	2.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	7.0	7.0	6.8	7.0	7.0	6.9	6.7	6.7	6.9	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		19.0	19.0		19.0	19.0
Pedestrian Calls (#/hr)		26	26		30	30		19	19		19	19
Act Effct Green (s)	15.0	29.1	29.1	14.0	28.1	28.1	16.0	52.0	52.0	10.0	43.5	43.5
Actuated g/C Ratio	0.12	0.22	0.22	0.11	0.22	0.22	0.12	0.40	0.40	0.08	0.33	0.33
v/c Ratio	0.69	0.23	0.79	0.64	0.56	0.67	0.80	0.76	0.18	0.46	0.36	0.20
Control Delay	65.0	40.2	24.2	63.9	47.4	16.4	64.0	21.7	3.7	76.8	32.1	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	40.2	24.2	63.9	47.4	16.4	64.0	21.7	3.7	76.8	32.1	6.0
LOS	E	D	C	E	D	B	E	C	A	E	C	A
Approach Delay		39.4			40.0			27.6			31.5	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	30.6	15.6	28.1	26.4	41.8	13.5	32.6	129.6	4.0	9.8	44.1	2.3
Queue Length 95th (m)	43.0	24.6	66.9	37.8	56.0	42.6	m31.5	m120.0	m4.6	28.1	39.1	5.8
Internal Link Dist (m)		335.1			125.7			895.4			286.4	
Turn Bay Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Base Capacity (vph)	429	897	619	429	901	588	403	1925	663	205	1608	579
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.19	0.72	0.52	0.45	0.60	0.78	0.76	0.18	0.29	0.36	0.20

**Intersection Summary**

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 96 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.80  
 Intersection Signal Delay: 33.2      Intersection LOS: C  
 Intersection Capacity Utilization 83.3%      ICU Level of Service E  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: March & Terry Fox



2: March & Solandt  
PM Peak Hour

525 Legget Drive  
Existing Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	41	645	613	68	178	121	1533	66	37	863	68
Future Volume (vph)	87	41	645	613	68	178	121	1533	66	37	863	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		0.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.98	0.98				0.97			0.96
Fr			0.850		0.892				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1695	1498	3248	1547	0	1626	3349	1469	1674	3316	1441
Flt Permitted	0.950			0.950			0.110			0.088		
Satd. Flow (perm)	1649	1695	1455	3185	1547	0	188	3349	1432	155	3316	1387
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130		90				79			132
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		117.9			242.3			405.0			919.4	
Travel Time (s)		8.5			17.4			18.2			41.4	
Confl. Peds. (#/hr)	5		8	8		5	11		1	1		11
Confl. Bikes (#/hr)			4			2			2			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	1%	1%	1%	1%	4%	1%	3%	1%	2%	5%
Adj. Flow (vph)	97	46	717	681	76	198	134	1703	73	41	959	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	97	46	717	681	274	0	134	1703	73	41	959	76
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			10.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4				2		2	6		6
Detector Phase	7	4	4	3	8		5	2	2	6	6	6

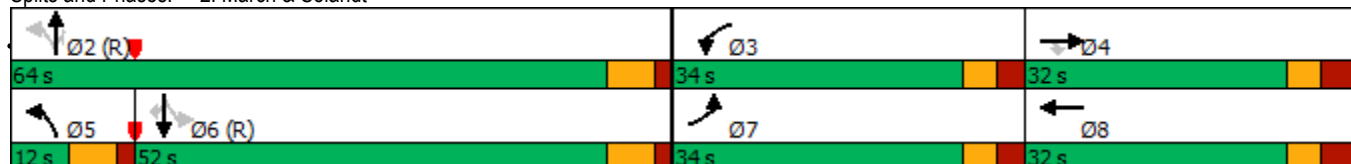


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	10.9	31.5	31.5	10.9	31.5		11.3	26.3	26.3	26.3	26.3	26.3
Total Split (s)	34.0	32.0	32.0	34.0	32.0		12.0	64.0	64.0	52.0	52.0	52.0
Total Split (%)	26.2%	24.6%	24.6%	26.2%	24.6%		9.2%	49.2%	49.2%	40.0%	40.0%	40.0%
Maximum Green (s)	28.1	25.5	25.5	28.1	25.5		5.7	57.7	57.7	45.7	45.7	45.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.6	3.2	3.2	2.6	3.2		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	6.5	6.5	5.9	6.5		6.3	6.3	6.3	6.3	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		18.0			12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		5	5		8			1	1	11	11	11
Act Effct Green (s)	12.9	25.5	25.5	28.1	40.7		57.7	57.7	57.7	45.7	45.7	45.7
Actuated g/C Ratio	0.10	0.20	0.20	0.22	0.31		0.44	0.44	0.44	0.35	0.35	0.35
v/c Ratio	0.59	0.14	1.84	0.97	0.50		0.92	1.15	0.11	0.76	0.82	0.13
Control Delay	69.8	44.6	414.4	77.9	28.5		83.3	108.3	4.3	96.2	38.5	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	44.6	414.4	77.9	28.5		83.3	108.3	4.3	96.2	38.5	3.6
LOS	E	D	F	E	C		F	F	A	F	D	A
Approach Delay		355.8			63.7			102.6			38.2	
Approach LOS		F			E			F			D	
Queue Length 50th (m)	22.3	9.1	~232.0	82.8	35.0		18.8	~247.6	0.0	8.1	117.2	3.0
Queue Length 95th (m)	37.5	19.3	#300.2	#117.4	63.3		#48.5	#286.5	7.1	m#23.2	142.5	m3.8
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0			165.0			155.0		75.0
Base Capacity (vph)	358	332	389	702	545		146	1486	679	54	1165	573
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.14	1.84	0.97	0.50		0.92	1.15	0.11	0.76	0.82	0.13

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 30 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.84  
 Intersection Signal Delay: 125.8 Intersection LOS: F  
 Intersection Capacity Utilization 111.9% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	119	78	24	611	288	40
Future Volume (vph)	119	78	24	611	288	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.946			0.984		
Flt Protected				0.998	0.958	
Satd. Flow (prot)	1648	0	0	1759	1644	0
Flt Permitted				0.998	0.958	
Satd. Flow (perm)	1648	0	0	1759	1644	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)	13		13			
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	1%	1%	1%	10%
Adj. Flow (vph)	132	87	27	679	320	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	219	0	0	706	364	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 77.3% ICU Level of Service D

Analysis Period (min) 15



4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
Existing Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	10	54	44	146	9	290	106	3	3	246	446
Future Volume (vph)	56	10	54	44	146	9	290	106	3	3	246	446
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97		0.98	1.00			1.00		0.97	0.98	
Frt		0.873			0.991			0.996			0.903	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1372	0	1642	1725	0	1674	1753	0	1674	1559	0
Flt Permitted	0.558			0.711			0.087			0.679		
Satd. Flow (perm)	922	1372	0	1208	1725	0	153	1753	0	1156	1559	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60			3			2				83
Link Speed (k/h)		50			50			50				50
Link Distance (m)		242.3			435.5			352.8				403.8
Travel Time (s)		17.4			31.4			25.4				29.1
Confl. Peds. (#/hr)	3		6	6		3	2		13	13		2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	40%	4%	3%	1%	20%	1%	1%	1%	1%	2%	1%
Adj. Flow (vph)	62	11	60	49	162	10	322	118	3	3	273	496
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	71	0	49	172	0	322	121	0	3	769	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			10.0				10.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
Existing Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		11.0	25.2		25.2	25.2	
Total Split (s)	41.2	41.2		41.2	41.2		31.2	77.4		46.2	46.2	
Total Split (%)	34.7%	34.7%		34.7%	34.7%		26.3%	65.3%		39.0%	39.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		25.2	71.2		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.2		6.2	6.2	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	6	6		3	3			13		2	2	
Act Effct Green (s)	16.6	16.6		16.6	16.6		68.3	68.1		40.1	40.1	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.70	0.70		0.41	0.41	
v/c Ratio	0.39	0.25		0.24	0.58		0.71	0.10		0.01	1.11	
Control Delay	45.1	14.5		39.0	45.6		30.7	5.0		19.3	95.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.1	14.5		39.0	45.6		30.7	5.0		19.3	95.6	
LOS	D	B		D	D		C	A		B	F	
Approach Delay		28.8			44.2			23.7			95.3	
Approach LOS		C			D			C			F	
Queue Length 50th (m)	9.9	1.7		7.6	28.0		35.3	5.3		0.3	~146.4	
Queue Length 95th (m)	21.6	12.3		17.4	47.5		68.0	12.1		2.1	#229.9	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		
Base Capacity (vph)	333	534		436	625		503	1289		477	692	
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	0.19	0.13		0.11	0.28		0.64	0.09		0.01	1.11	

Intersection Summary

Area Type: Other  
 Cycle Length: 118.6  
 Actuated Cycle Length: 97.1  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.11  
 Intersection Signal Delay: 62.2  
 Intersection Capacity Utilization 105.8%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service G

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
PM Peak Hour

525 Legget Drive  
Existing Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	194	12	6	291	153	21	4	4	55	0	68
Future Volume (vph)	77	194	12	6	291	153	21	4	4	55	0	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.954			0.983			0.925	
Flt Protected		0.987			0.999			0.964			0.978	
Satd. Flow (prot)	0	1708	0	0	1680	0	0	1670	0	0	1527	0
Flt Permitted		0.987			0.999			0.964			0.978	
Satd. Flow (perm)	0	1708	0	0	1680	0	0	1670	0	0	1527	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)	3		1	1		3	20		1	1		20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	9%
Adj. Flow (vph)	86	216	13	7	323	170	23	4	4	61	0	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	315	0	0	500	0	0	31	0	0	137	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 63.5%

ICU Level of Service B

Analysis Period (min) 15



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	148	11	3	602	33	8
Future Volume (vph)	148	11	3	602	33	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.991			0.974		
Flt Protected				0.961		
Satd. Flow (prot)	1729	0	0	1745	1633	0
Flt Permitted				0.961		
Satd. Flow (perm)	1729	0	0	1745	1633	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	155.6	
Travel Time (s)	14.8			18.7	11.2	
Confl. Peds. (#/hr)	10		10			
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	164	12	3	669	37	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	176	0	0	672	46	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24		24	14
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 46.0%

ICU Level of Service A

Analysis Period (min) 15

7: March & Morgan's Grant/Shirley's Brook  
PM Peak Hour

525 Legget Drive  
Existing Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	12	21	74	76	34	102	286	1465	117	55	585	21
Future Volume (vph)	12	21	74	76	34	102	286	1465	117	55	585	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	0.99		0.98	0.99		0.96			0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.982		0.950			0.950			0.950		
Satd. Flow (prot)	0	1618	1498	1658	1762	1498	1674	4811	1498	1674	4718	1498
Flt Permitted		0.883		0.734			0.360			0.126		
Satd. Flow (perm)	0	1452	1468	1273	1762	1471	630	4811	1442	222	4718	1440
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			113			91			91
Link Speed (k/h)		40			40			80			80	
Link Distance (m)		371.9			363.4			310.4			373.3	
Travel Time (s)		33.5			32.7			14.0			16.8	
Confl. Peds. (#/hr)	5		5	5		5	5		4	4		5
Confl. Bikes (#/hr)			2						5			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	12%	1%	2%	1%	1%	1%	1%	1%	1%	3%	1%
Adj. Flow (vph)	13	23	82	84	38	113	318	1628	130	61	650	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	82	84	38	113	318	1628	130	61	650	23
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

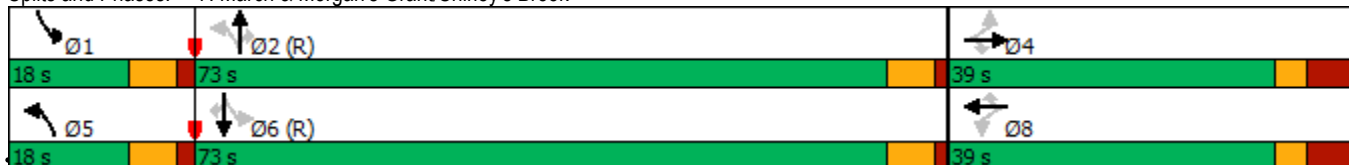


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	26.1	26.1	11.4	26.1	26.1
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	18.0	73.0	73.0	18.0	73.0	73.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	13.8%	56.2%	56.2%	13.8%	56.2%	56.2%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	11.6	66.9	66.9	11.6	66.9	66.9
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	1.8	1.5	1.5	1.8	1.5	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.1	6.1	6.4	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5		5	5		5	5
Act Effct Green (s)		16.6	16.6	16.6	16.6	16.6	98.8	88.9	88.9	88.1	81.4	81.4
Actuated g/C Ratio		0.13	0.13	0.13	0.13	0.13	0.76	0.68	0.68	0.68	0.63	0.63
v/c Ratio		0.19	0.32	0.52	0.17	0.40	0.55	0.50	0.13	0.27	0.22	0.02
Control Delay		49.6	12.2	62.3	48.7	11.7	16.1	5.5	1.1	8.9	12.0	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		49.6	12.2	62.3	48.7	11.7	16.1	5.5	1.1	8.9	12.0	0.0
LOS		D	B	E	D	B	B	A	A	A	B	A
Approach Delay		23.6			35.8			6.8			11.4	
Approach LOS		C			D			A			B	
Queue Length 50th (m)		7.9	0.0	19.3	8.3	0.0	23.8	31.4	1.1	2.7	21.4	0.0
Queue Length 95th (m)		15.1	11.7	30.1	15.6	13.7	m33.5	19.1	m0.0	9.4	40.1	0.0
Internal Link Dist (m)		347.9			339.4			286.4			349.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		351	417	308	426	442	583	3288	1014	287	2976	942
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.10	0.20	0.27	0.09	0.26	0.55	0.50	0.13	0.21	0.22	0.02

**Intersection Summary**

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 105 (81%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.55  
 Intersection Signal Delay: 10.7 Intersection LOS: B  
 Intersection Capacity Utilization 69.5% ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook



1: March & Terry Fox  
AM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	511	244	69	133	40	274	365	169	264	969	145
Future Volume (vph)	89	511	244	69	133	40	274	365	169	264	969	145
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99		0.96	0.98		0.98	0.99		0.97	0.99		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3216	3349	1483	3095	3283	1469	3185	4584	1483	1658	4764	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3190	3349	1417	3019	3283	1437	3148	4584	1437	1639	4764	1419
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			271			146			188			161
Link Speed (k/h)		50			60			80			80	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			41.4			14.0	
Confl. Peds. (#/hr)	9		29	29		9	21		13	13		21
Confl. Bikes (#/hr)			1									1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	1%	2%	6%	3%	3%	3%	6%	2%	2%	2%	2%
Adj. Flow (vph)	99	568	271	77	148	44	304	406	188	293	1077	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	568	271	77	148	44	304	406	188	293	1077	161
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6





2: March & Solandt  
AM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	103	128	53	120	31	497	731	675	115	808	113
Future Volume (vph)	29	103	128	53	120	31	497	731	675	115	808	113
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		0.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.98	1.00				0.97			0.98
Frt			0.850		0.969				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1537	1745	1441	3216	1654	0	1674	3252	1498	1658	3283	1483
Flt Permitted	0.950			0.950			0.092			0.345		
Satd. Flow (perm)	1524	1745	1404	3159	1654	0	162	3252	1457	602	3283	1447
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			142		9				601			132
Link Speed (k/h)		50			50			80				80
Link Distance (m)		117.9			242.3			405.0				919.4
Travel Time (s)		8.5			17.4			18.2				41.4
Confl. Peds. (#/hr)	7		8	8		7	6					6
Confl. Bikes (#/hr)			1			1			12			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	10%	2%	5%	2%	4%	3%	1%	4%	1%	2%	3%	2%
Adj. Flow (vph)	32	114	142	59	133	34	552	812	750	128	898	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	114	142	59	167	0	552	812	750	128	898	126
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			10.5			7.0				7.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4				2		2	6		6
Detector Phase	7	4	4	3	8		5	2	2	6	6	6

2: March & Solandt  
AM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	10.9	31.5	31.5	10.9	31.5		11.3	26.3	26.3	26.3	26.3	26.3
Total Split (s)	13.0	32.0	32.0	13.0	32.0		39.0	85.0	85.0	46.0	46.0	46.0
Total Split (%)	10.0%	24.6%	24.6%	10.0%	24.6%		30.0%	65.4%	65.4%	35.4%	35.4%	35.4%
Maximum Green (s)	7.1	25.5	25.5	7.1	25.5		32.7	78.7	78.7	39.7	39.7	39.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.6	3.2	3.2	2.6	3.2		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	6.5	6.5	5.9	6.5		6.3	6.3	6.3	6.3	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		18.0			12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		8	8		7			6	6	0	0	0
Act Effct Green (s)	6.7	17.2	17.2	6.8	19.8		89.6	89.6	89.6	39.7	39.7	39.7
Actuated g/C Ratio	0.05	0.13	0.13	0.05	0.15		0.69	0.69	0.69	0.31	0.31	0.31
v/c Ratio	0.41	0.50	0.46	0.35	0.64		0.89	0.36	0.63	0.70	0.90	0.24
Control Delay	74.9	58.4	12.2	65.3	60.3		51.9	10.1	5.1	37.8	32.7	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.9	58.4	12.2	65.3	60.3		51.9	10.1	5.1	37.8	32.7	2.3
LOS	E	E	B	E	E		D	B	A	D	C	A
Approach Delay		37.5			61.6			19.2			30.0	
Approach LOS		D			E			B			C	
Queue Length 50th (m)	7.4	25.2	0.0	7.0	36.2		112.1	41.5	12.1	7.9	29.6	0.0
Queue Length 95th (m)	17.4	39.8	16.1	13.7	54.8		#201.5	61.7	46.2	#51.6	#52.9	4.3
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0			165.0			155.0		75.0
Base Capacity (vph)	83	342	389	175	331		619	2242	1191	183	1002	533
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.33	0.37	0.34	0.50		0.89	0.36	0.63	0.70	0.90	0.24

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 15 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 26.4 Intersection LOS: C  
 Intersection Capacity Utilization 89.0% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	525	536	44	130	39	38
Future Volume (vph)	525	536	44	130	39	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932				0.933	
Flt Protected			0.987		0.975	
Satd. Flow (prot)	1643	0	0	1634	1557	0
Flt Permitted			0.987		0.975	
Satd. Flow (perm)	1643	0	0	1634	1557	0
Link Speed (k/h)	60		60		50	
Link Distance (m)	181.0		246.1		202.8	
Travel Time (s)	10.9		14.8		14.6	
Confl. Peds. (#/hr)	17		17			
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	9%	7%	3%	5%
Adj. Flow (vph)	583	596	49	144	43	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1179	0	0	193	85	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5		3.5		3.5	
Link Offset(m)	0.0		0.0		0.0	
Crosswalk Width(m)	5.0		5.0		5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24		24	
Sign Control	Free		Free		Stop	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 76.0%

ICU Level of Service D

Analysis Period (min) 15

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	429	143	238	2	10	6	99	179	49	32	184	53
Future Volume (vph)	429	143	238	2	10	6	99	179	49	32	184	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99		1.00	0.99			0.99		0.98		
Frt		0.906			0.942			0.968			0.966	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1574	0	1674	1334	0	1566	1660	0	1537	1689	0
Flt Permitted	0.746			0.469			0.560			0.577		
Satd. Flow (perm)	1300	1574	0	826	1334	0	923	1660	0	915	1689	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		114			7			13			14	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	4		1	1		4			11	11		
Confl. Bikes (#/hr)									3			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	30%	15%	8%	3%	1%	10%	2%	1%
Adj. Flow (vph)	477	159	264	2	11	7	110	199	54	36	204	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	477	423	0	2	18	0	110	253	0	36	263	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)

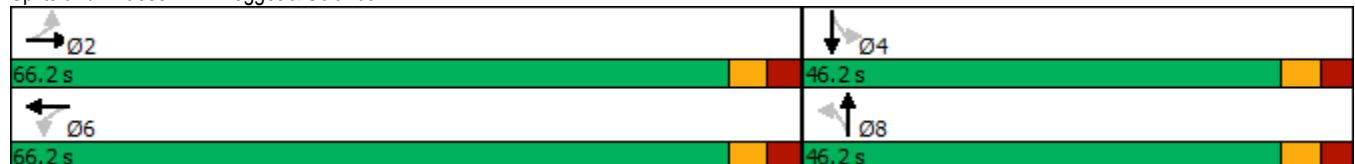


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		25.2	25.2		25.2	25.2	
Total Split (s)	66.2	66.2		66.2	66.2		46.2	46.2		46.2	46.2	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	
Maximum Green (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	1	1		4	4		11	11		0	0	
Act Effct Green (s)	29.8	29.8		29.8	29.8		16.7	16.7		16.7	16.7	
Actuated g/C Ratio	0.50	0.50		0.50	0.50		0.28	0.28		0.28	0.28	
v/c Ratio	0.74	0.51		0.00	0.03		0.43	0.54		0.14	0.55	
Control Delay	20.2	9.5		8.0	6.7		27.4	24.9		21.9	24.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.2	9.5		8.0	6.7		27.4	24.9		21.9	24.9	
LOS	C	A		A	A		C	C		C	C	
Approach Delay		15.1			6.8			25.6			24.6	
Approach LOS		B			A			C			C	
Queue Length 50th (m)	31.5	16.1		0.1	0.5		8.3	18.6		2.5	19.4	
Queue Length 95th (m)	81.8	45.8		1.0	3.3		28.8	54.0		11.2	55.7	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		
Base Capacity (vph)	1175	1433		746	1206		665	1200		659	1221	
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	0.41	0.30		0.00	0.01		0.17	0.21		0.05	0.22	

Intersection Summary

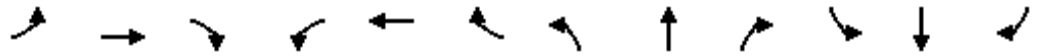
Area Type: Other  
 Cycle Length: 112.4  
 Actuated Cycle Length: 60.2  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.74  
 Intersection Signal Delay: 19.2  
 Intersection Capacity Utilization 69.7%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
AM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	40	243	19	6	214	38	18	0	6	132	3	69
Future Volume (vph)	40	243	19	6	214	38	18	0	6	132	3	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.980			0.965			0.954	
Flt Protected		0.993			0.999			0.964			0.969	
Satd. Flow (prot)	0	1667	0	0	1689	0	0	1593	0	0	1608	0
Flt Permitted		0.993			0.999			0.964			0.969	
Satd. Flow (perm)	0	1667	0	0	1689	0	0	1593	0	0	1608	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)			8	8			5					5
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	25%	2%	5%	1%	2%	10%	5%	1%	1%	2%	1%	3%
Adj. Flow (vph)	44	270	21	7	238	42	20	0	7	147	3	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	335	0	0	287	0	0	27	0	0	227	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 55.2%

ICU Level of Service B

Analysis Period (min) 15

6: Site Access & Terry Fox  
AM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)


























Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	521	42	11	166	8	2
Future Volume (vph)	521	42	11	166	8	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.990				0.975	
Flt Protected				0.997	0.961	
Satd. Flow (prot)	1728	0	0	1663	1635	0
Flt Permitted				0.997	0.961	
Satd. Flow (perm)	1728	0	0	1663	1635	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	169.3	
Travel Time (s)	14.8			18.7	12.2	
Confl. Peds. (#/hr)		15	15			
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	7%	2%	2%
Adj. Flow (vph)	579	47	12	184	9	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	626	0	0	196	11	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.7%
	ICU Level of Service A
Analysis Period (min)	15

7: March & Morgan's Grant/Shirley's Brook  
AM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	17	142	102	9	19	35	407	28	81	1204	8
Future Volume (vph)	11	17	142	102	9	19	35	407	28	81	1204	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	1.00		0.98	1.00		0.96	0.99		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.981		0.950			0.950			0.950		
Satd. Flow (prot)	0	1729	1498	1674	1618	1441	1642	4584	1498	1674	4764	1498
Flt Permitted		0.894		0.737			0.174			0.469		
Satd. Flow (perm)	0	1573	1470	1294	1618	1418	300	4584	1435	817	4764	1433
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			158			80			91			91
Link Speed (k/h)		40			40			80			80	
Link Distance (m)		373.3			363.7			310.4			372.3	
Travel Time (s)		33.6			32.7			14.0			16.8	
Confl. Peds. (#/hr)	3		3	3		3	5		6	6		5
Confl. Bikes (#/hr)			3						1			8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	10%	5%	3%	6%	1%	1%	2%	1%
Adj. Flow (vph)	12	19	158	113	10	21	39	452	31	90	1338	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	31	158	113	10	21	39	452	31	90	1338	9
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6



7: March & Morgan's Grant/Shirley's Brook  
AM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	26.1	26.1	11.4	26.1	26.1
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	16.0	75.0	75.0	16.0	75.0	75.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	12.3%	57.7%	57.7%	12.3%	57.7%	57.7%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	9.6	68.9	68.9	9.6	68.9	68.9
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	1.8	1.5	1.5	1.8	1.5	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.1	6.1	6.4	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	3	3	3	3	3	3		6	6		6	6
Act Effct Green (s)		18.2	18.2	18.2	18.2	18.2	90.4	84.3	84.3	93.8	87.8	87.8
Actuated g/C Ratio		0.14	0.14	0.14	0.14	0.14	0.70	0.65	0.65	0.72	0.68	0.68
v/c Ratio		0.14	0.46	0.62	0.04	0.08	0.14	0.15	0.03	0.14	0.42	0.01
Control Delay		46.6	10.9	66.0	43.7	0.6	17.1	20.5	3.8	6.0	11.6	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		46.6	10.9	66.0	43.7	0.6	17.1	20.5	3.8	6.0	11.6	0.0
LOS		D	B	E	D	A	B	C	A	A	B	A
Approach Delay		16.8			54.9			19.3			11.1	
Approach LOS		B			D			B			B	
Queue Length 50th (m)		6.6	0.0	25.8	2.1	0.0	4.5	32.2	0.2	4.6	48.9	0.0
Queue Length 95th (m)		13.4	15.7	39.1	6.1	0.0	13.8	21.5	0.2	12.9	81.5	0.0
Internal Link Dist (m)		349.3			339.7			286.4			348.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		381	475	313	392	404	314	2972	962	662	3216	997
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.08	0.33	0.36	0.03	0.05	0.12	0.15	0.03	0.14	0.42	0.01

**Intersection Summary**

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 95 (73%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 16.2      Intersection LOS: B

Intersection Capacity Utilization 63.3%      ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook



1: March & Terry Fox  
PM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	233	149	402	202	364	319	283	1322	107	53	527	106
Future Volume (vph)	233	149	402	202	364	319	283	1322	107	53	527	106
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.98		0.96	0.96		0.95	0.98		0.96	1.00		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3248	3283	1498	3248	3349	1498	3185	4811	1498	1658	4811	1498
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3186	3283	1436	3124	3349	1427	3118	4811	1436	1652	4811	1437
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			312			280			149			149
Link Speed (k/h)		50			60			80			80	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			41.4			14.0	
Confl. Peds. (#/hr)	30		26	26		30	19		19	19		19
Confl. Bikes (#/hr)			1			3			2			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	1%	1%	1%	1%	3%	1%	1%	2%	1%	1%
Adj. Flow (vph)	259	166	447	224	404	354	314	1469	119	59	586	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	259	166	447	224	404	354	314	1469	119	59	586	118
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6

1: March & Terry Fox  
PM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)

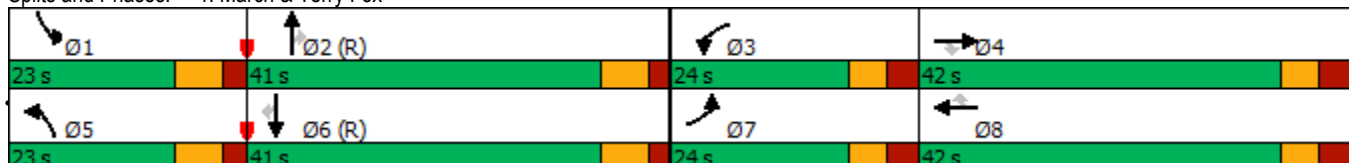


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	11.8	42.0	42.0	11.8	42.0	42.0	11.9	32.7	32.7	11.9	32.7	32.7
Total Split (s)	24.0	42.0	42.0	24.0	42.0	42.0	23.0	41.0	41.0	23.0	41.0	41.0
Total Split (%)	18.5%	32.3%	32.3%	18.5%	32.3%	32.3%	17.7%	31.5%	31.5%	17.7%	31.5%	31.5%
Maximum Green (s)	17.2	35.0	35.0	17.2	35.0	35.0	16.1	34.3	34.3	16.1	34.3	34.3
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	3.1	3.3	3.3	3.1	3.3	3.3	2.3	2.1	2.1	2.3	2.1	2.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	7.0	7.0	6.8	7.0	7.0	6.9	6.7	6.7	6.9	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		19.0	19.0		19.0	19.0
Pedestrian Calls (#/hr)		26	26		30	30		19	19		19	19
Act Effct Green (s)	15.0	29.1	29.1	14.0	28.1	28.1	16.0	52.0	52.0	10.0	43.5	43.5
Actuated g/C Ratio	0.12	0.22	0.22	0.11	0.22	0.22	0.12	0.40	0.40	0.08	0.33	0.33
v/c Ratio	0.69	0.23	0.79	0.64	0.56	0.67	0.80	0.76	0.18	0.46	0.36	0.20
Control Delay	65.0	40.2	24.2	63.9	47.4	16.4	67.6	26.3	3.7	76.8	32.1	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	40.2	24.2	63.9	47.4	16.4	67.6	26.3	3.7	76.8	32.1	6.0
LOS	E	D	C	E	D	B	E	C	A	E	C	A
Approach Delay		39.4			40.0			31.7			31.5	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	30.6	15.6	28.1	26.4	41.8	13.5	33.0	128.4	3.6	9.8	44.1	2.3
Queue Length 95th (m)	43.0	24.6	66.9	37.8	56.0	42.6	m41.3	#172.6	m7.2	28.1	39.1	5.8
Internal Link Dist (m)		335.1			125.7			895.4			286.4	
Turn Bay Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Base Capacity (vph)	429	897	619	429	901	588	403	1925	663	205	1608	579
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.19	0.72	0.52	0.45	0.60	0.78	0.76	0.18	0.29	0.36	0.20

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 96 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.80  
 Intersection Signal Delay: 35.0 Intersection LOS: C  
 Intersection Capacity Utilization 83.3% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: March & Terry Fox



2: March & Solandt  
PM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	41	285	543	68	178	111	1313	66	37	863	68
Future Volume (vph)	87	41	285	543	68	178	111	1313	66	37	863	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		0.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.98	0.98				0.97			0.96
Frt			0.850		0.892				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1695	1498	3248	1547	0	1626	3349	1469	1674	3316	1441
Flt Permitted	0.950			0.950			0.127			0.082		
Satd. Flow (perm)	1649	1695	1455	3185	1547	0	217	3349	1432	145	3316	1387
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130		90				79			132
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		117.9			242.3			405.0			919.4	
Travel Time (s)		8.5			17.4			18.2			41.4	
Confl. Peds. (#/hr)	5		8	8		5	11		1	1		11
Confl. Bikes (#/hr)			4			2			2			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	1%	1%	1%	1%	4%	1%	3%	1%	2%	5%
Adj. Flow (vph)	97	46	317	603	76	198	123	1459	73	41	959	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	97	46	317	603	274	0	123	1459	73	41	959	76
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			10.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4				2		2	6		6
Detector Phase	7	4	4	3	8		5	2	2	6	6	6

2: March & Solandt  
PM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)

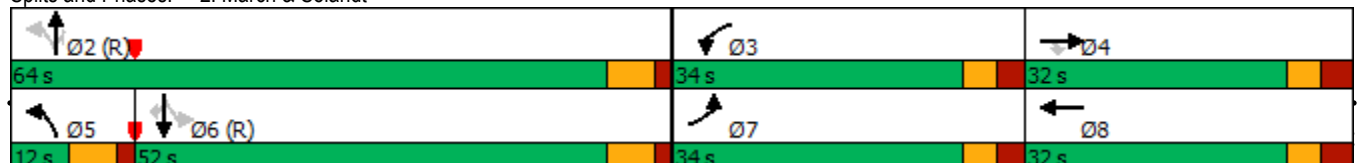


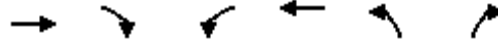
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	10.9	31.5	31.5	10.9	31.5		11.3	26.3	26.3	26.3	26.3	26.3
Total Split (s)	34.0	32.0	32.0	34.0	32.0		12.0	64.0	64.0	52.0	52.0	52.0
Total Split (%)	26.2%	24.6%	24.6%	26.2%	24.6%		9.2%	49.2%	49.2%	40.0%	40.0%	40.0%
Maximum Green (s)	28.1	25.5	25.5	28.1	25.5		5.7	57.7	57.7	45.7	45.7	45.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.6	3.2	3.2	2.6	3.2		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	6.5	6.5	5.9	6.5		6.3	6.3	6.3	6.3	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		18.0			12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		5	5		8			1	1	11	11	11
Act Effct Green (s)	12.9	21.7	21.7	26.9	35.7		62.6	62.6	62.6	48.8	48.8	48.8
Actuated g/C Ratio	0.10	0.17	0.17	0.21	0.27		0.48	0.48	0.48	0.38	0.38	0.38
v/c Ratio	0.59	0.16	0.90	0.90	0.56		0.66	0.90	0.10	0.76	0.77	0.13
Control Delay	69.8	45.7	59.7	67.1	31.0		41.5	41.1	4.3	98.5	34.8	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	45.7	59.7	67.1	31.0		41.5	41.1	4.3	98.5	34.8	3.6
LOS	E	D	E	E	C		D	D	A	F	C	A
Approach Delay		60.4			55.8			39.5			35.0	
Approach LOS		E			E			D			D	
Queue Length 50th (m)	22.3	9.1	44.3	71.1	35.3		16.9	173.1	0.0	9.5	117.2	3.0
Queue Length 95th (m)	37.5	19.3	#86.1	#96.7	63.3		#39.2	#223.8	7.1	m#24.1	142.5	m3.8
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0			165.0			155.0		75.0
Base Capacity (vph)	358	332	389	702	490		186	1613	730	54	1243	602
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.14	0.81	0.86	0.56		0.66	0.90	0.10	0.76	0.77	0.13

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 30 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 44.2 Intersection LOS: D  
 Intersection Capacity Utilization 103.4% ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	119	78	24	611	158	40
Future Volume (vph)	119	78	24	611	158	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.946				0.973	
Flt Protected				0.998	0.962	
Satd. Flow (prot)	1648	0	0	1759	1621	0
Flt Permitted				0.998	0.962	
Satd. Flow (perm)	1648	0	0	1759	1621	0
Link Speed (k/h)	60				60	50
Link Distance (m)	181.0				246.1	202.8
Travel Time (s)	10.9				14.8	14.6
Confl. Peds. (#/hr)	13		13			
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	1%	1%	1%	10%
Adj. Flow (vph)	132	87	27	679	176	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	219	0	0	706	220	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5				3.5	3.5
Link Offset(m)	0.0				0.0	0.0
Crosswalk Width(m)	5.0				5.0	5.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		
Sign Control	Free				Free	Stop

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 69.7% ICU Level of Service C

Analysis Period (min) 15

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	10	54	44	146	9	290	106	3	3	246	306
Future Volume (vph)	56	10	54	44	146	9	290	106	3	3	246	306
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97		0.98	1.00			1.00		0.97	0.99	
Frt		0.873			0.991			0.996			0.917	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1372	0	1642	1725	0	1674	1753	0	1674	1586	0
Flt Permitted	0.558			0.711			0.158			0.679		
Satd. Flow (perm)	922	1372	0	1208	1725	0	278	1753	0	1156	1586	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60			3			2				57
Link Speed (k/h)		50			50			50				50
Link Distance (m)		242.3			435.5			352.8				403.8
Travel Time (s)		17.4			31.4			25.4				29.1
Confl. Peds. (#/hr)	3		6	6		3	2		13	13		2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	40%	4%	3%	1%	20%	1%	1%	1%	1%	2%	1%
Adj. Flow (vph)	62	11	60	49	162	10	322	118	3	3	273	340
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	71	0	49	172	0	322	121	0	3	613	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			10.0				10.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		11.0	25.2		25.2	25.2	
Total Split (s)	41.2	41.2		41.2	41.2		31.2	77.4		46.2	46.2	
Total Split (%)	34.7%	34.7%		34.7%	34.7%		26.3%	65.3%		39.0%	39.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		25.2	71.2		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.2		6.2	6.2	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	6	6		3	3			13		2	2	
Act Effct Green (s)	16.6	16.6		16.6	16.6		68.3	68.1		40.1	40.1	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.70	0.70		0.41	0.41	
v/c Ratio	0.39	0.25		0.24	0.58		0.63	0.10		0.01	0.89	
Control Delay	45.1	14.5		39.0	45.6		17.5	5.0		19.3	42.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.1	14.5		39.0	45.6		17.5	5.0		19.3	42.3	
LOS	D	B		D	D		B	A		B	D	
Approach Delay		28.8			44.2			14.1			42.2	
Approach LOS		C			D			B			D	
Queue Length 50th (m)	9.9	1.7		7.6	28.0		21.3	5.3		0.3	90.1	
Queue Length 95th (m)	21.6	12.3		17.4	47.5		52.7	12.1		2.1	#168.2	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		
Base Capacity (vph)	333	534		436	625		558	1289		477	688	
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	0.19	0.13		0.11	0.28		0.58	0.09		0.01	0.89	

Intersection Summary

Area Type: Other  
 Cycle Length: 118.6  
 Actuated Cycle Length: 97.1  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay: 32.5  
 Intersection Capacity Utilization 96.6%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service F  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

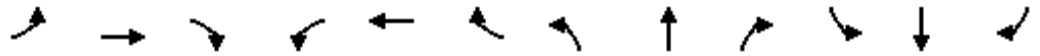
Splits and Phases: 4: Legget & Solandt



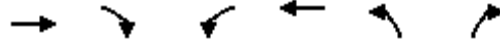


5: Terry Fox & Helmsdale  
PM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	194	12	6	291	153	21	4	4	55	0	68
Future Volume (vph)	77	194	12	6	291	153	21	4	4	55	0	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.954			0.983			0.925	
Flt Protected		0.987			0.999			0.964			0.978	
Satd. Flow (prot)	0	1708	0	0	1680	0	0	1670	0	0	1527	0
Flt Permitted		0.987			0.999			0.964			0.978	
Satd. Flow (perm)	0	1708	0	0	1680	0	0	1670	0	0	1527	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)	3		1	1		3	20		1	1		20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	9%
Adj. Flow (vph)	86	216	13	7	323	170	23	4	4	61	0	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	315	0	0	500	0	0	31	0	0	137	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	63.5%											
ICU Level of Service	B											
Analysis Period (min)	15											



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	148	11	3	602	33	8
Future Volume (vph)	148	11	3	602	33	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.991			0.974		
Flt Protected				0.961		
Satd. Flow (prot)	1729	0	0	1745	1633	0
Flt Permitted				0.961		
Satd. Flow (perm)	1729	0	0	1745	1633	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	155.6	
Travel Time (s)	14.8			18.7	11.2	
Confl. Peds. (#/hr)	10		10			
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	164	12	3	669	37	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	176	0	0	672	46	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24		14	
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized
























Intersection Capacity Utilization 46.0%

ICU Level of Service A

Analysis Period (min) 15

7: March & Morgan's Grant/Shirley's Brook  
PM Peak Hour

525 Legget Drive  
Existing Traffic (rationalized demand)

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	21	74	76	34	102	286	1465	117	55	585	21
Future Volume (vph)	12	21	74	76	34	102	286	1465	117	55	585	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	0.99		0.98	0.99		0.96			0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.982		0.950			0.950			0.950		
Satd. Flow (prot)	0	1618	1498	1658	1762	1498	1674	4811	1498	1674	4718	1498
Flt Permitted		0.883		0.734			0.360			0.126		
Satd. Flow (perm)	0	1452	1468	1273	1762	1471	630	4811	1442	222	4718	1440
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			113			91			91
Link Speed (k/h)		40			40			80			80	
Link Distance (m)		371.9			363.4			310.4			373.3	
Travel Time (s)		33.5			32.7			14.0			16.8	
Confl. Peds. (#/hr)	5		5	5		5	5		4	4		5
Confl. Bikes (#/hr)			2						5			1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	12%	1%	2%	1%	1%	1%	1%	1%	1%	3%	1%
Adj. Flow (vph)	13	23	82	84	38	113	318	1628	130	61	650	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	82	84	38	113	318	1628	130	61	650	23
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

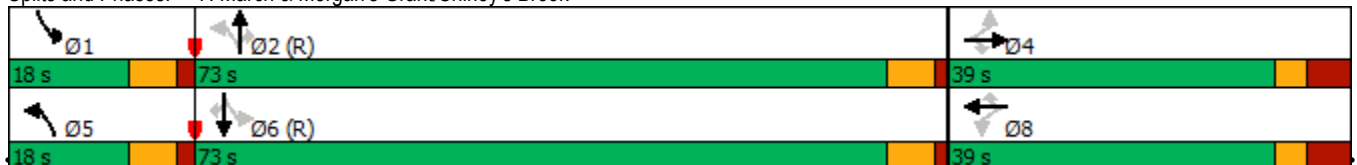


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	26.1	26.1	11.4	26.1	26.1
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	18.0	73.0	73.0	18.0	73.0	73.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	13.8%	56.2%	56.2%	13.8%	56.2%	56.2%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	11.6	66.9	66.9	11.6	66.9	66.9
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	1.8	1.5	1.5	1.8	1.5	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.1	6.1	6.4	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5		5	5		5	5
Act Effct Green (s)		16.6	16.6	16.6	16.6	16.6	98.8	88.9	88.9	88.1	81.4	81.4
Actuated g/C Ratio		0.13	0.13	0.13	0.13	0.13	0.76	0.68	0.68	0.68	0.63	0.63
v/c Ratio		0.19	0.32	0.52	0.17	0.40	0.55	0.50	0.13	0.27	0.22	0.02
Control Delay		49.6	12.2	62.3	48.7	11.7	16.2	5.6	1.1	8.9	12.0	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		49.6	12.2	62.3	48.7	11.7	16.2	5.6	1.1	8.9	12.0	0.0
LOS		D	B	E	D	B	B	A	A	A	B	A
Approach Delay		23.6			35.8			6.9			11.4	
Approach LOS		C			D			A			B	
Queue Length 50th (m)		7.9	0.0	19.3	8.3	0.0	23.8	31.6	1.1	2.7	21.4	0.0
Queue Length 95th (m)		15.1	11.7	30.1	15.6	13.7	m33.6	19.1	m0.0	9.4	40.1	0.0
Internal Link Dist (m)		347.9			339.4			286.4			349.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		351	417	308	426	442	583	3288	1014	287	2976	942
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.10	0.20	0.27	0.09	0.26	0.55	0.50	0.13	0.21	0.22	0.02

**Intersection Summary**

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 105 (81%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.55  
 Intersection Signal Delay: 10.7      Intersection LOS: B  
 Intersection Capacity Utilization 69.5%      ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook

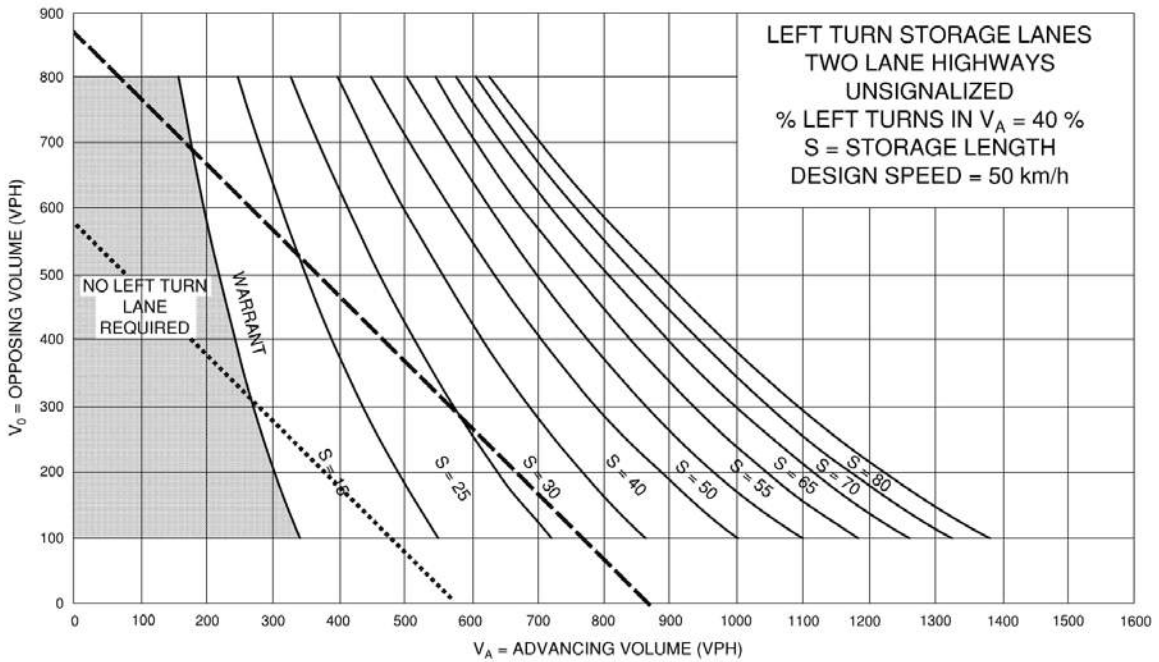
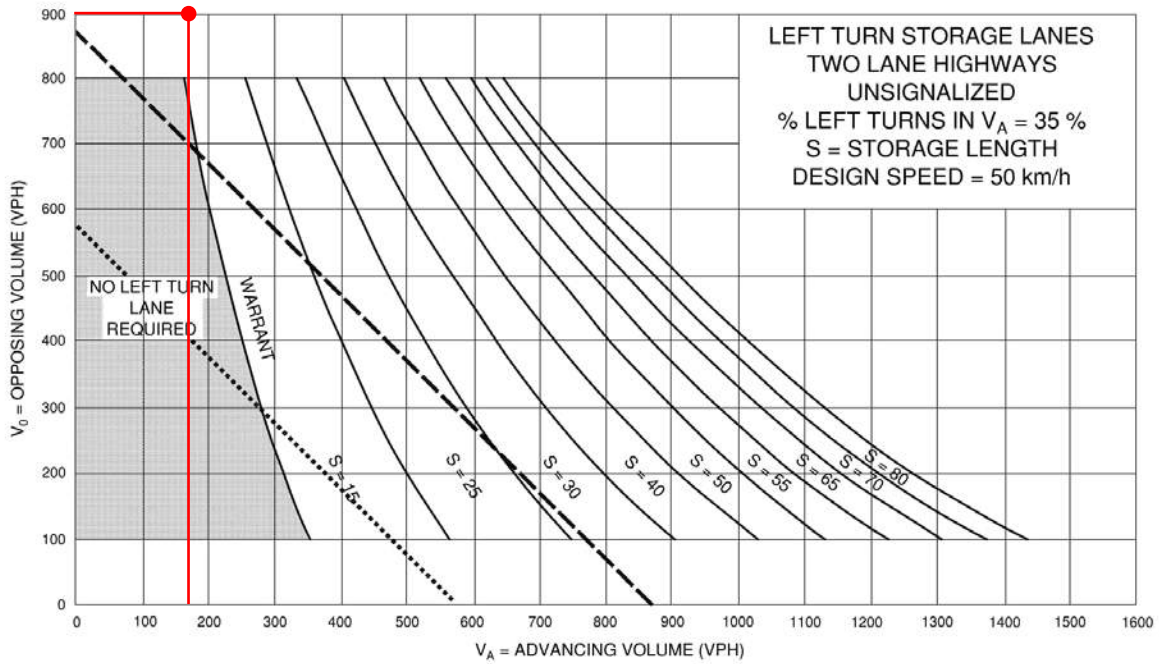


## **APPENDIX L**

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Left Turn Lane and Traffic Signal Warrants

**Exhibit 9A-5**





Engineers, Planners & Landscape Architects

### TRAFFIC SIGNAL JUSTIFICATION

LOCATION: LEGGET DR at TERRY FOX DR

DATE: FEBRUARY 20, 2019

#### JUSTIFICATION 1 – Minimum Vehicular Volume

APPROACH LANES	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				PERCENTAGE WARRANT								TOTAL ACROSS
	①		2 or MORE		HOUR ENDING								
FLOW CONDITION	FREE FLOW	RESTR FLOW	FREE FLOW	RESTR FLOW	8:00	9:00	10:00	12:30	13:30	16:00	17:00	18:00	
A.	480 (385)	720 (575)	600 (480)	900 (720)	857	1,268	991	816	738	648	1,092	1,046	
ALL APPROACHES	100% FULFILLED				100%	100%	100%	100%	100%		100%	100%	700%
	80% FULFILLED									80%			80%
	ACTUAL % IF BELOW 80% VALUE												
TOTAL DOWN:												780%	
AVERAGE (TOTAL/8):												98%	

**T Intersection Add 50%**

180      255      180      255  
143      203      143      203

B.	120 (95)	170 (135)	120 (95)	170 (135)	48	80	89	237	136	215	346	293	TOTAL ACROSS
MINOR STREET BOTH APPROACHES	100% FULFILLED										100%	100%	200%
	80% FULFILLED							80%	80%				160%
	ACTUAL % IF BELOW 80% VALUE				19%	31%	35%		53%				138%
TOTAL DOWN:												498%	
AVERAGE (TOTAL/8):												62%	

#### JUSTIFICATION 2 – Delay To Cross Traffic

APPROACH LANES	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				PERCENTAGE WARRANT								TOTAL ACROSS
	①		2 or MORE		HOUR ENDING								
FLOW CONDITION	FREE FLOW	RESTR FLOW	FREE FLOW	RESTR FLOW	8:00	9:00	10:00	12:30	13:30	16:00	17:00	18:00	
A.	480 (385)	720 (575)	600 (480)	900 (720)	809	1,188	902	579	602	433	746	753	
MAJOR STREET BOTH APPROACHES	100% FULFILLED				100%	100%	100%				100%	100%	500%
	80% FULFILLED							80%	80%				160%
	ACTUAL % IF BELOW 80% VALUE									60%			60%
TOTAL DOWN:												720%	
AVERAGE (TOTAL/8):												90%	

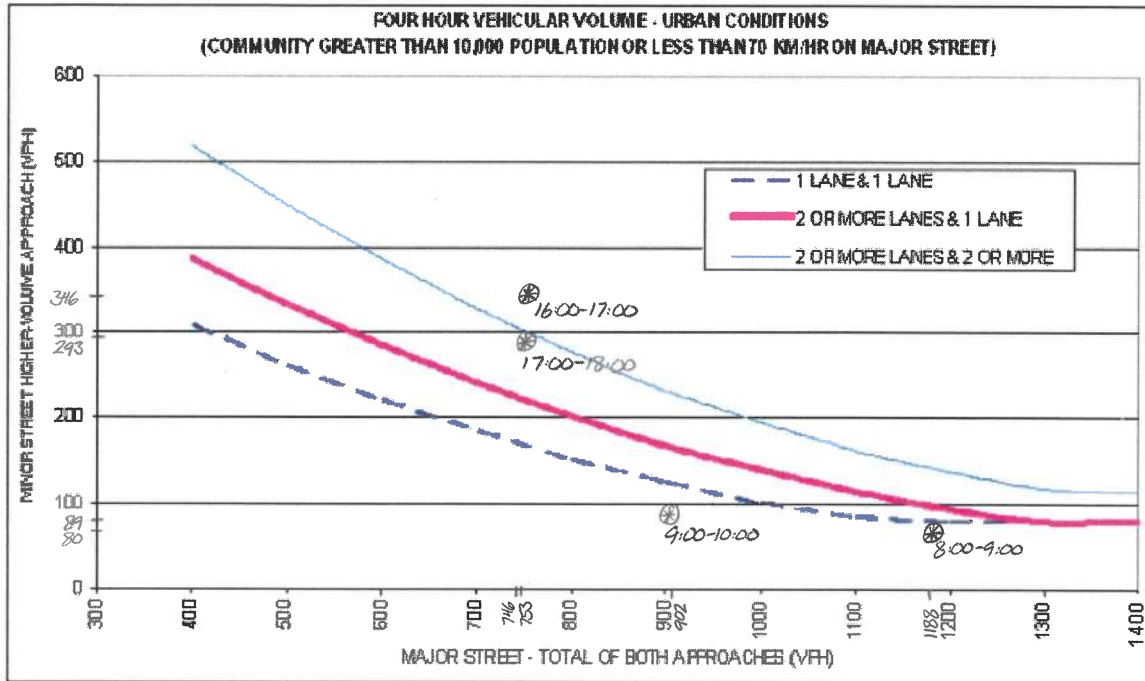
B.	50 (40)	75 (60)	50 (40)	75 (60)	27	41	61	208	115	188	301	256	TOTAL ACROSS
TRAFFIC CROSSING MAJOR STREET	100% FULFILLED							100%	100%	100%	100%	100%	500%
	80% FULFILLED						80%						80%
	ACTUAL % IF BELOW 80% VALUE				36%	55%							91%
TOTAL DOWN:												671%	
AVERAGE (TOTAL/8):												84%	

LOCATION: LEGGET DR at TERRY FOX DR

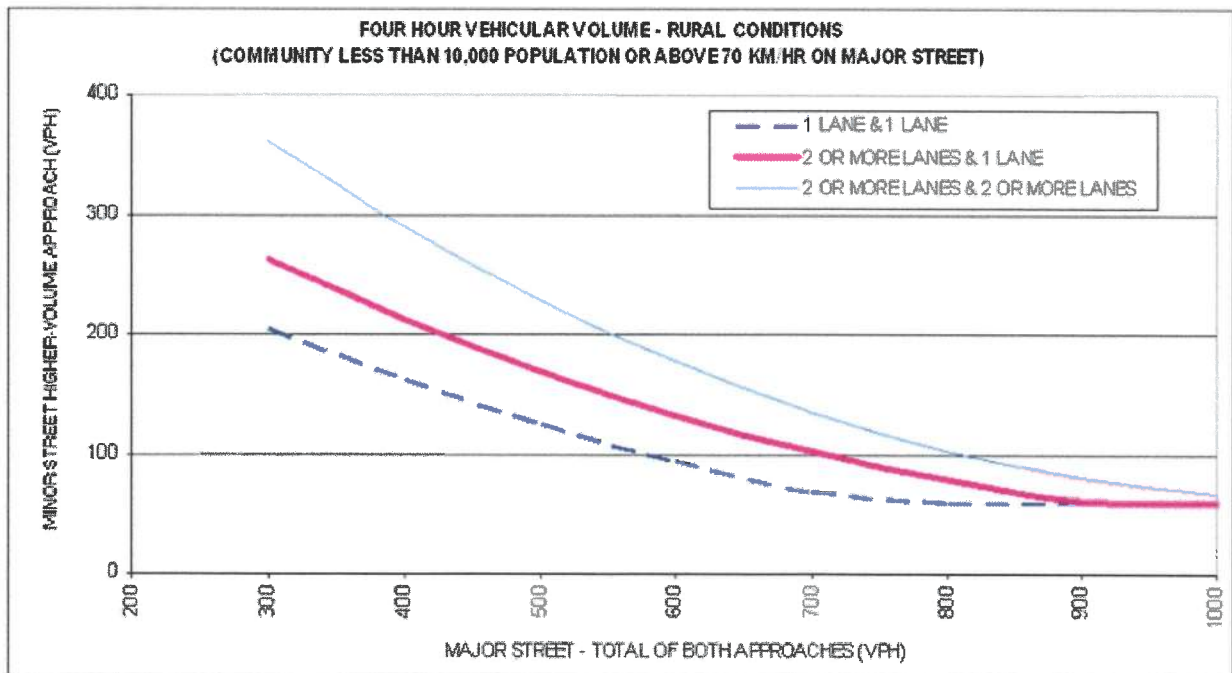
DATE: FEBRUARY 20, 2019

**JUSTIFICATION 4 – Minimum Four-Hour Vehicle Volume**

**A. Restricted Flow**



**B. Free Flow**







Engineers, Planners & Landscape Architects

## TRAFFIC SIGNAL JUSTIFICATION SUMMARY TABLE

LOCATION: LEGGET DR at TERRY FOX DR

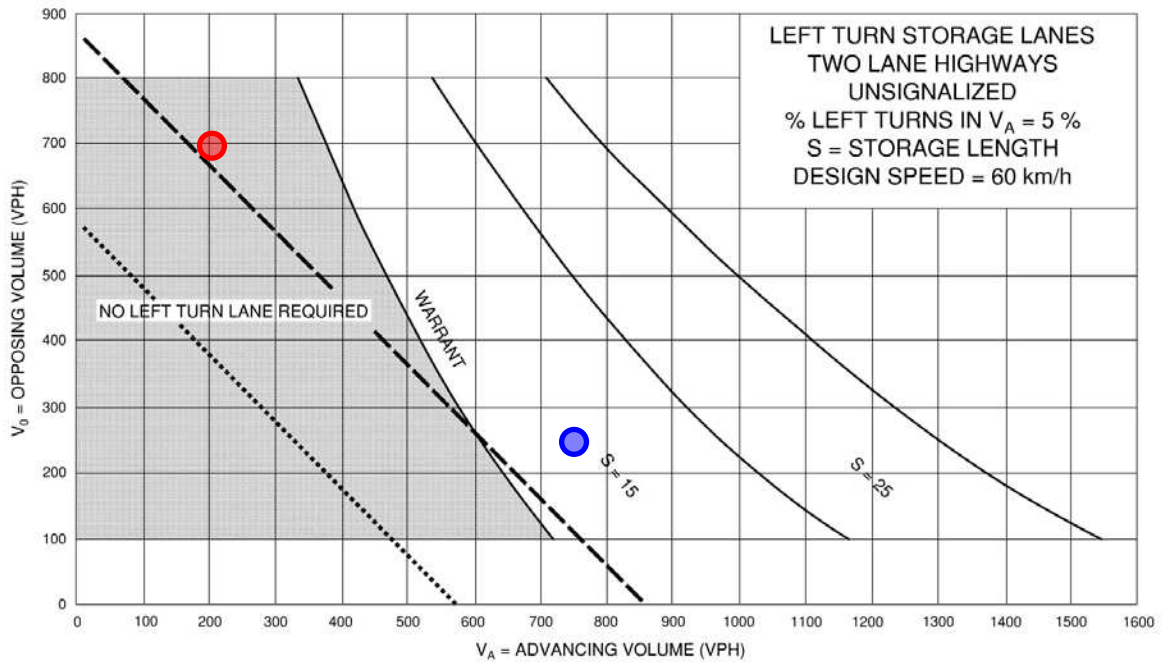
DATE: FEBRUARY 20, 2019

JUSTIFICATION	DESCRIPTION	MINIMUM REQUIREMENT		COMPLIANCE	
		FREE FLOW	RESTRICTED FLOW	SECTIONAL %	ENTIRE % <sup>(2)</sup>
		OPERATING SPEED ≥ 70KM/H	OPERATING SPEED < 70 KM/H		
<b>1. MINIMUM VEHICULAR WARRANT</b>	A. Vehicle volume, all approaches for each of the heaviest 8 hours of an average day, and	480 600 (2 or more lane approach)	720 900 (2 or more lane approach)	98%	62%
	B. Vehicle volume, along minor street, for each of the same 8 hours.	120 180 (tee intersection)	170 255 (tee intersection)	62%	
<b>2. DELAY TO CROSS TRAFFIC</b>	A. Vehicle volume, along major street for each for the heaviest 8 hours of an average day, and	480 600 (2 or more lane approach)	720 900 (2 or more lane approach)	90%	84%
	B <sup>(1)</sup> . Combined vehicle and pedestrian volume <u>crossing</u> the major street for each of the same 8 hours	50	75	84%	
<b>3. VOLUME/DELAY COMBINATION</b>	The above Justifications (1 and 2) both satisfied to the extent of 80% or more	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
<b>4. MINIMUM FOUR HOUR VEHICLE VOLUME</b>	Plotted point representing hourly volume for minor approach vs. major approach for four highest hours of an average day fall above the applicable curve	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
<b>5. COLLISION EXPERIENCE</b>	A. Total reported accidents of types susceptible to correction by a traffic signal, per 12 month period averaged over a 36 month period, and	5			
	B. Adequate trial of less restrictive remedies, where satisfactory observance and enforcement have failed to reduce the number of accidents	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
<b>6. PEDESTRIAN VOLUME AND DELAY</b>	A. Plotted point representing 8 hour pedestrian volume vs. 8 hour vehicular volume fall in justified zone, and	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
	B. Plotted point representing 8 hour volume of pedestrian experiencing delays of 10 s or more vs. 8 hour pedestrian volume fall in justified zone	Yes <input type="checkbox"/>	No <input type="checkbox"/>		

**NOTES**

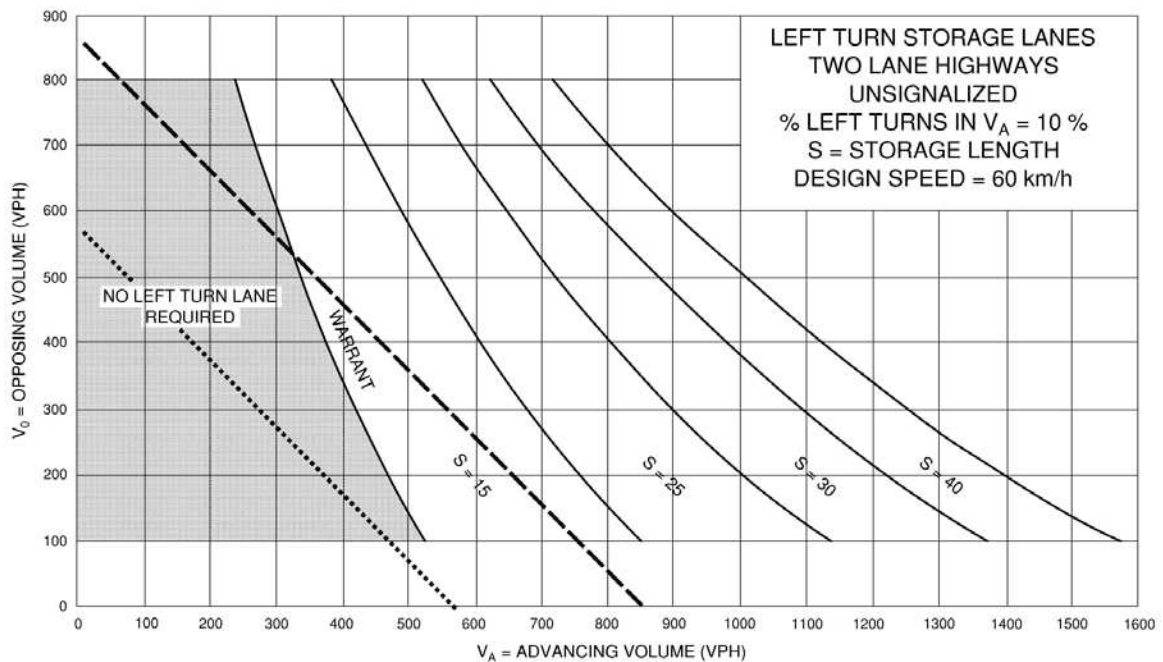
- 1) For definition of crossing volume refer to the Ontario Traffic Manual Book 12, Section 4.5 (Nov. 2007).
- 2) The lowest sectional percentage governs the entire Justification.

**Exhibit 9A-6**



**AM Peak:  $V_a = 205$  vph, 13 WBL (~6% lefts);  $V_o = 697$  vph**

**PM Peak:  $V_a = 742$  vph, 10 WBL (~1% lefts);  $V_o = 256$  vph**



## **APPENDIX M**

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### Background Synchro Analysis



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↕	↗	↔↔	↕↕	↗	↔↔	↕↕↕	↗	↗	↕↕↕	↗
Traffic Volume (vph)	102	540	248	79	139	53	279	564	172	393	1507	199
Future Volume (vph)	102	540	248	79	139	53	279	564	172	393	1507	199
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99		0.95	0.97		0.98	0.99		0.97	0.99		0.95
Fr			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3216	3349	1483	3095	3283	1469	3185	4584	1483	1658	4764	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3187	3349	1416	3013	3283	1435	3160	4584	1433	1641	4764	1410
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			248			146			172			199
Link Speed (k/h)		50			60			80			80	
Link Distance (m)		359.1			149.7			919.4			306.4	
Travel Time (s)		25.9			9.0			41.4			13.8	
Confl. Peds. (#/hr)	10		30	30		10	25		15	15		25
Confl. Bikes (#/hr)			1									1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	2%	6%	3%	3%	3%	6%	2%	2%	2%	2%
Adj. Flow (vph)	102	540	248	79	139	53	279	564	172	393	1507	199
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	540	248	79	139	53	279	564	172	393	1507	199
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6



2: March & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	113	130	75	125	39	616	929	818	169	1574	115
Future Volume (vph)	29	113	130	75	125	39	616	929	818	169	1574	115
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		0.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.98	0.99				0.96	1.00		0.97
Frt			0.850		0.964				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1537	1745	1441	3216	1643	0	1674	3252	1498	1658	3283	1483
Flt Permitted	0.950			0.950			0.092			0.308		
Satd. Flow (perm)	1518	1745	1400	3145	1643	0	162	3252	1432	535	3283	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130		11				594			132
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		117.9			242.3			405.0			919.4	
Travel Time (s)		8.5			17.4			18.2			41.4	
Confl. Peds. (#/hr)	10		10	10		10	10		5	5		10
Confl. Bikes (#/hr)			1			1			12			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	2%	5%	2%	4%	3%	1%	4%	1%	2%	3%	2%
Adj. Flow (vph)	29	113	130	75	125	39	616	929	818	169	1574	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	113	130	75	164	0	616	929	818	169	1574	115
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			10.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4				2		2	6		6
Detector Phase	7	4	4	3	8		5	2	2	6	6	6



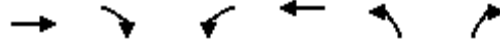
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	10.9	31.5	31.5	10.9	31.5		11.3	26.3	26.3	26.3	26.3	26.3
Total Split (s)	13.0	32.0	32.0	13.0	32.0		39.0	85.0	85.0	46.0	46.0	46.0
Total Split (%)	10.0%	24.6%	24.6%	10.0%	24.6%		30.0%	65.4%	65.4%	35.4%	35.4%	35.4%
Maximum Green (s)	7.1	25.5	25.5	7.1	25.5		32.7	78.7	78.7	39.7	39.7	39.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.6	3.2	3.2	2.6	3.2		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	6.5	6.5	5.9	6.5		6.3	6.3	6.3	6.3	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		18.0			12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		8	8		7			6	6	0	0	0
Act Effct Green (s)	6.7	17.0	17.0	6.9	19.6		89.8	89.8	89.8	39.7	39.7	39.7
Actuated g/C Ratio	0.05	0.13	0.13	0.05	0.15		0.69	0.69	0.69	0.31	0.31	0.31
v/c Ratio	0.37	0.50	0.44	0.44	0.64		0.99	0.41	0.70	1.04	1.57	0.22
Control Delay	72.9	58.6	12.3	68.0	59.4		70.4	10.6	7.2	97.9	285.3	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.9	58.6	12.3	68.0	59.4		70.4	10.6	7.2	97.9	285.3	4.0
LOS	E	E	B	E	E		E	B	A	F	F	A
Approach Delay		38.0			62.1			25.0			250.8	
Approach LOS		D			E			C			F	
Queue Length 50th (m)	6.7	25.0	0.0	9.0	35.0		~145.2	49.6	22.0	~25.4	~268.2	1.4
Queue Length 95th (m)	16.2	39.8	15.5	16.4	53.6		#235.4	73.5	75.3	m#63.0	#306.4	m3.3
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0			165.0			155.0		75.0
Base Capacity (vph)	83	342	379	175	331		621	2246	1172	163	1002	529
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.33	0.34	0.43	0.50		0.99	0.41	0.70	1.04	1.57	0.22

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 15 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.57  
 Intersection Signal Delay: 116.3 Intersection LOS: F  
 Intersection Capacity Utilization 119.8% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	605	565	46	146	43	40
Future Volume (vph)	605	565	46	146	43	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.935			0.935		
Flt Protected				0.988	0.975	
Satd. Flow (prot)	1648	0	0	1636	1561	0
Flt Permitted				0.988	0.975	
Satd. Flow (perm)	1648	0	0	1636	1561	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)	25		25	2		
Confl. Bikes (#/hr)	1					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	9%	7%	3%	5%
Adj. Flow (vph)	605	565	46	146	43	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1170	0	0	192	83	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 83.6% ICU Level of Service E

Analysis Period (min) 15



4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	443	261	247	3	28	9	106	184	57	54	190	59
Future Volume (vph)	443	261	247	3	28	9	106	184	57	54	190	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		1.00	0.99		0.99	0.98		0.97	0.99	
Frt		0.927			0.964			0.965			0.964	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1606	0	1674	1347	0	1566	1649	0	1537	1672	0
Flt Permitted	0.733			0.395			0.591			0.604		
Satd. Flow (perm)	1274	1606	0	693	1347	0	965	1649	0	950	1672	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65			9			15			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		5	5		5	5		15	15		5
Confl. Bikes (#/hr)									3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	30%	15%	8%	3%	1%	10%	2%	1%
Adj. Flow (vph)	443	261	247	3	28	9	106	184	57	54	190	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	443	508	0	3	37	0	106	241	0	54	249	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic

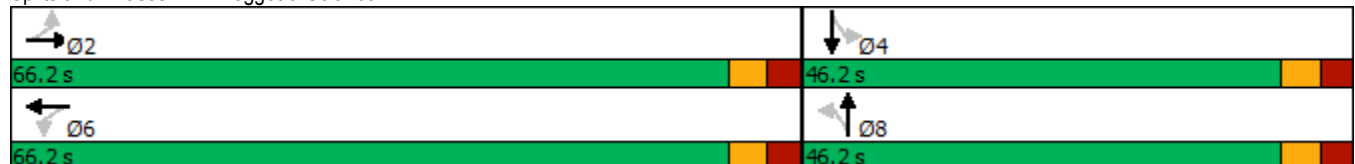


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		25.2	25.2		25.2	25.2	
Total Split (s)	66.2	66.2		66.2	66.2		46.2	46.2		46.2	46.2	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	
Maximum Green (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	1	1		4	4		11	11		0	0	
Act Effct Green (s)	28.5	28.5		28.5	28.5		15.8	15.8		15.8	15.8	
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.27	0.27		0.27	0.27	
v/c Ratio	0.71	0.62		0.01	0.06		0.40	0.52		0.21	0.53	
Control Delay	18.7	12.9		8.0	6.8		25.5	23.6		21.8	23.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.7	12.9		8.0	6.8		25.5	23.6		21.8	23.7	
LOS	B	B		A	A		C	C		C	C	
Approach Delay		15.6			6.9			24.2			23.4	
Approach LOS		B			A			C			C	
Queue Length 50th (m)	27.4	25.0		0.1	1.2		7.7	17.0		3.7	17.6	
Queue Length 95th (m)	72.0	65.4		1.3	5.6		26.4	48.8		14.8	50.2	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		
Base Capacity (vph)	1174	1485		638	1242		715	1226		704	1243	
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	0.38	0.34		0.00	0.03		0.15	0.20		0.08	0.20	

Intersection Summary

Area Type: Other  
 Cycle Length: 112.4  
 Actuated Cycle Length: 57.8  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.71  
 Intersection Signal Delay: 18.6  
 Intersection Capacity Utilization 71.3%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	315	19	6	233	38	18	0	6	132	3	69
Future Volume (vph)	40	315	19	6	233	38	18	0	6	132	3	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.981			0.966			0.954	
Flt Protected		0.995			0.999			0.964			0.969	
Satd. Flow (prot)	0	1681	0	0	1692	0	0	1594	0	0	1608	0
Flt Permitted		0.995			0.999			0.964			0.969	
Satd. Flow (perm)	0	1681	0	0	1692	0	0	1594	0	0	1608	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)			8	8			5					5
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	2%	5%	1%	2%	10%	5%	1%	1%	2%	1%	3%
Adj. Flow (vph)	40	315	19	6	233	38	18	0	6	132	3	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	374	0	0	277	0	0	24	0	0	204	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

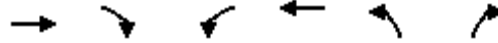
Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 60.2%

ICU Level of Service B

Analysis Period (min) 15



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	645	42	11	192	8	2
Future Volume (vph)	645	42	11	192	8	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.992			0.973		
Fl <sub>t</sub> Protected				0.997	0.962	
Satd. Flow (prot)	1731	0	0	1740	1633	0
Fl <sub>t</sub> Permitted				0.997	0.962	
Satd. Flow (perm)	1731	0	0	1740	1633	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	169.3	
Travel Time (s)	14.8			18.7	12.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	645	42	11	192	8	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	687	0	0	203	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	48.5%			ICU Level of Service A		
Analysis Period (min)	15					

7: March & Morgan's Grant/Shirley's Brook  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	11	48	144	112	17	25	44	661	28	166	1853	8
Future Volume (vph)	11	48	144	112	17	25	44	661	28	166	1853	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	1.00		0.98			0.96	0.99		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.991		0.950			0.950			0.950		
Satd. Flow (prot)	0	1747	1498	1674	1618	1441	1642	4584	1498	1674	4764	1498
Flt Permitted		0.945		0.719			0.088			0.369		
Satd. Flow (perm)	0	1664	1470	1263	1618	1418	152	4584	1435	645	4764	1433
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			80			91			91
Link Speed (k/h)		40			40			80			80	
Link Distance (m)		374.6			363.0			306.4			376.3	
Travel Time (s)		33.7			32.7			13.8			16.9	
Confl. Peds. (#/hr)	3		3	3		3	5		6	6		5
Confl. Bikes (#/hr)			3						1			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	10%	5%	3%	6%	1%	1%	2%	1%
Adj. Flow (vph)	11	48	144	112	17	25	44	661	28	166	1853	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	144	112	17	25	44	661	28	166	1853	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

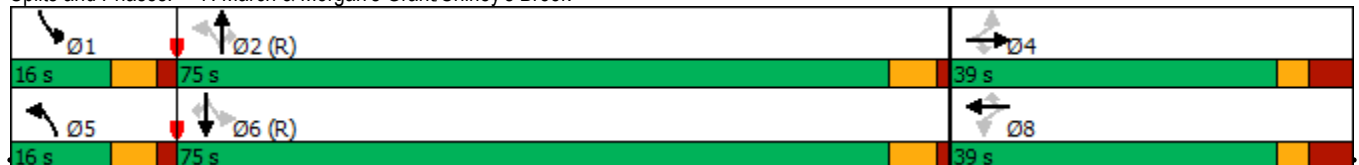


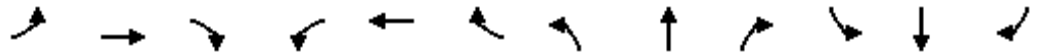
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	26.1	26.1	11.4	26.1	26.1
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	16.0	75.0	75.0	16.0	75.0	75.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	12.3%	57.7%	57.7%	12.3%	57.7%	57.7%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	9.6	68.9	68.9	9.6	68.9	68.9
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	1.8	1.5	1.5	1.8	1.5	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.1	6.1	6.4	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	3	3	3	3	3	3		6	6		6	6
Act Effct Green (s)		18.3	18.3	18.3	18.3	18.3	89.2	83.0	83.0	94.6	87.6	87.6
Actuated g/C Ratio		0.14	0.14	0.14	0.14	0.14	0.69	0.64	0.64	0.73	0.67	0.67
v/c Ratio		0.25	0.44	0.63	0.07	0.09	0.25	0.23	0.03	0.31	0.58	0.01
Control Delay		49.4	11.5	66.6	44.7	0.7	23.0	14.4	0.4	7.1	14.1	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		49.4	11.5	66.6	44.7	0.7	23.0	14.4	0.4	7.1	14.1	0.0
LOS		D	B	E	D	A	C	B	A	A	B	A
Approach Delay		22.5			53.5			14.4			13.5	
Approach LOS		C			D			B			B	
Queue Length 50th (m)		12.7	0.6	25.6	3.6	0.0	4.8	28.3	0.0	8.9	80.3	0.0
Queue Length 95th (m)		22.0	15.7	39.0	9.0	0.0	11.9	18.2	m0.1	22.3	130.6	0.0
Internal Link Dist (m)		350.6			339.0			282.4			352.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		403	463	306	392	404	218	2926	949	549	3208	994
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.15	0.31	0.37	0.04	0.06	0.20	0.23	0.03	0.30	0.58	0.01

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 95 (73%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 16.3 Intersection LOS: B  
 Intersection Capacity Utilization 76.6% ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗	↔↔	↑↑	↗	↔↔	↑↑↑	↗	↘	↑↑↑	↗
Traffic Volume (vph)	304	155	408	216	394	399	295	1879	109	101	849	148
Future Volume (vph)	304	155	408	216	394	399	295	1879	109	101	849	148
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.98		0.95	0.96		0.95	0.98		0.95	1.00		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3248	3283	1498	3248	3349	1498	3185	4811	1498	1658	4811	1498
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3175	3283	1430	3102	3349	1419	3124	4811	1423	1653	4811	1424
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			297			272			149			149
Link Speed (k/h)		50			60			80			80	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			41.4			14.0	
Confl. Peds. (#/hr)	35		30	30		35	25		25	25		25
Confl. Bikes (#/hr)			1			3			2			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	1%	1%	1%	1%	3%	1%	1%	2%	1%	1%
Adj. Flow (vph)	304	155	408	216	394	399	295	1879	109	101	849	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	304	155	408	216	394	399	295	1879	109	101	849	148
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6





2: March & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	44	655	742	77	232	123	2050	91	47	1192	69
Future Volume (vph)	88	44	655	742	77	232	123	2050	91	47	1192	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		0.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.98	0.98				0.96			0.95
Frt			0.850		0.887				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1695	1498	3248	1529	0	1626	3349	1469	1674	3316	1441
Flt Permitted	0.950			0.950			0.077			0.088		
Satd. Flow (perm)	1641	1695	1451	3169	1529	0	132	3349	1413	155	3316	1376
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130		104				79			132
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		117.9			242.3			405.0			919.4	
Travel Time (s)		8.5			17.4			18.2			41.4	
Confl. Peds. (#/hr)	10		10	10		10	15		5	5		15
Confl. Bikes (#/hr)			4			2			2			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	5%	1%	1%	1%	1%	4%	1%	3%	1%	2%	5%
Adj. Flow (vph)	88	44	655	742	77	232	123	2050	91	47	1192	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	44	655	742	309	0	123	2050	91	47	1192	69
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			10.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4				2		2	6		6
Detector Phase	7	4	4	3	8		5	2	2	6	6	6

2: March & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic

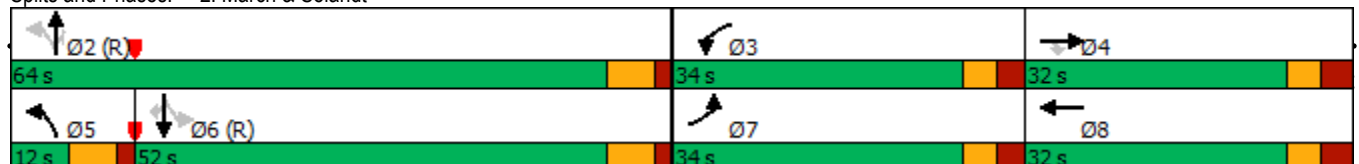


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	10.9	31.5	31.5	10.9	31.5		11.3	26.3	26.3	26.3	26.3	26.3
Total Split (s)	34.0	32.0	32.0	34.0	32.0		12.0	64.0	64.0	52.0	52.0	52.0
Total Split (%)	26.2%	24.6%	24.6%	26.2%	24.6%		9.2%	49.2%	49.2%	40.0%	40.0%	40.0%
Maximum Green (s)	28.1	25.5	25.5	28.1	25.5		5.7	57.7	57.7	45.7	45.7	45.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.6	3.2	3.2	2.6	3.2		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	6.5	6.5	5.9	6.5		6.3	6.3	6.3	6.3	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		18.0			12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		5	5		8			1	1	11	11	11
Act Effct Green (s)	12.2	25.5	25.5	28.1	41.4		57.7	57.7	57.7	45.7	45.7	45.7
Actuated g/C Ratio	0.09	0.20	0.20	0.22	0.32		0.44	0.44	0.44	0.35	0.35	0.35
v/c Ratio	0.56	0.13	1.68	1.06	0.55		0.99	1.38	0.14	0.87	1.02	0.12
Control Delay	69.5	44.5	345.4	98.6	28.9		107.1	206.0	6.2	116.3	65.3	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	44.5	345.4	98.6	28.9		107.1	206.0	6.2	116.3	65.3	3.4
LOS	E	D	F	F	C		F	F	A	F	E	A
Approach Delay		297.8			78.1			192.6			63.9	
Approach LOS		F			E			F			E	
Queue Length 50th (m)	20.2	8.6	~201.3	~98.8	39.7		17.2	~337.1	1.6	11.2	~157.7	3.4
Queue Length 95th (m)	34.8	18.4	#268.1	#133.6	71.0		#53.4	#375.3	10.7	m#28.4	#199.1	m6.6
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0			165.0			155.0		75.0
Base Capacity (vph)	358	332	389	702	557		124	1486	671	54	1165	569
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.13	1.68	1.06	0.55		0.99	1.38	0.14	0.87	1.02	0.12

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 30 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.68  
 Intersection Signal Delay: 154.6  
 Intersection LOS: F  
 Intersection Capacity Utilization 131.5%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	170	83	28	704	313	45
Future Volume (vph)	170	83	28	704	313	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.956				0.983	
Flt Protected				0.998	0.958	
Satd. Flow (prot)	1669	0	0	1759	1641	0
Flt Permitted				0.998	0.958	
Satd. Flow (perm)	1669	0	0	1759	1641	0
Link Speed (k/h)	60				60	50
Link Distance (m)	181.0				246.1	202.8
Travel Time (s)	10.9				14.8	14.6
Confl. Peds. (#/hr)	20		20			
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	1%	1%	10%
Adj. Flow (vph)	170	83	28	704	313	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	253	0	0	732	358	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5				3.5	3.5
Link Offset(m)	0.0				0.0	0.0
Crosswalk Width(m)	5.0				5.0	5.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		
Sign Control	Free				Free	Stop

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 87.4%

ICU Level of Service E

Analysis Period (min) 15

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	32	68	52	264	30	300	109	4	7	253	460
Future Volume (vph)	62	32	68	52	264	30	300	109	4	7	253	460
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97		0.97	1.00			1.00		0.96	0.98	
Frt		0.898			0.985			0.995			0.903	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1336	0	1642	1697	0	1674	1749	0	1674	1550	0
Flt Permitted	0.341			0.692			0.086			0.684		
Satd. Flow (perm)	563	1336	0	1163	1697	0	152	1749	0	1157	1550	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68			5			3			83	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		10	10		5	5		15	15		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	40%	4%	3%	1%	20%	1%	1%	1%	1%	2%	1%
Adj. Flow (vph)	62	32	68	52	264	30	300	109	4	7	253	460
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	100	0	52	294	0	300	113	0	7	713	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		11.0	25.2		25.2	25.2	
Total Split (s)	41.2	41.2		41.2	41.2		31.2	77.4		46.2	46.2	
Total Split (%)	34.7%	34.7%		34.7%	34.7%		26.3%	65.3%		39.0%	39.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		25.2	71.2		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.2		6.2	6.2	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	6	6		3	3			13		2	2	
Act Effct Green (s)	22.9	22.9		22.9	22.9		67.9	67.7		40.4	40.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.66	0.66		0.39	0.39	
v/c Ratio	0.50	0.29		0.20	0.77		0.73	0.10		0.02	1.08	
Control Delay	50.2	15.3		34.9	51.7		34.9	7.7		24.3	89.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	50.2	15.3		34.9	51.7		34.9	7.7		24.3	89.3	
LOS	D	B		C	D		C	A		C	F	
Approach Delay		28.7			49.1			27.4			88.7	
Approach LOS		C			D			C			F	
Queue Length 50th (m)	10.3	4.9		8.1	51.8		36.5	6.6		0.8	~143.2	
Queue Length 95th (m)	23.3	17.1		17.6	79.2		73.8	16.4		4.0	#241.1	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		
Base Capacity (vph)	193	503		399	585		476	1222		453	658	
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	0.32	0.20		0.13	0.50		0.63	0.09		0.02	1.08	

Intersection Summary

Area Type: Other  
 Cycle Length: 118.6  
 Actuated Cycle Length: 103.1  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.08  
 Intersection Signal Delay: 59.0  
 Intersection Capacity Utilization 111.4%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service H

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Legget & Solandt



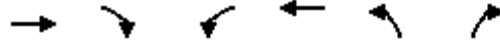
5: Terry Fox & Helmsdale  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	251	12	6	379	153	21	4	4	55	0	68
Future Volume (vph)	77	251	12	6	379	153	21	4	4	55	0	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.962			0.981			0.925	
Flt Protected		0.989			0.999			0.965			0.978	
Satd. Flow (prot)	0	1714	0	0	1694	0	0	1668	0	0	1527	0
Flt Permitted		0.989			0.999			0.965			0.978	
Satd. Flow (perm)	0	1714	0	0	1694	0	0	1668	0	0	1527	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)	5		5	5		5	20		5	5		20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	9%
Adj. Flow (vph)	77	251	12	6	379	153	21	4	4	55	0	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	340	0	0	538	0	0	29	0	0	123	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization 71.6%	ICU Level of Service C
Analysis Period (min)	15



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	215	11	3	732	33	8
Future Volume (vph)	215	11	3	732	33	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.993				0.974	
Flt Protected					0.961	
Satd. Flow (prot)	1733	0	0	1745	1633	0
Flt Permitted					0.961	
Satd. Flow (perm)	1733	0	0	1745	1633	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	155.6	
Travel Time (s)	14.8			18.7	11.2	
Confl. Peds. (#/hr)		10	10			
Confl. Bikes (#/hr)		1				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	215	11	3	732	33	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	226	0	0	735	41	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization 53.2%	ICU Level of Service A
Analysis Period (min)	15

7: March & Morgan's Grant/Shirley's Brook  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	12	59	75	93	68	235	290	2107	119	166	979	21
Future Volume (vph)	12	59	75	93	68	235	290	2107	119	166	979	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	0.99		0.98	1.00		0.96			0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.992		0.950			0.950			0.950		
Satd. Flow (prot)	0	1603	1498	1658	1762	1498	1674	4811	1498	1674	4718	1498
Flt Permitted		0.938		0.711			0.265			0.050		
Satd. Flow (perm)	0	1514	1468	1234	1762	1471	465	4811	1442	88	4718	1440
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80			164			91			91
Link Speed (k/h)		40			40			80				80
Link Distance (m)		374.2			364.0			310.4				372.3
Travel Time (s)		33.7			32.8			14.0				16.8
Confl. Peds. (#/hr)	5		5	5		5	5		4	4		5
Confl. Bikes (#/hr)			2						5			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	12%	1%	2%	1%	1%	1%	1%	1%	1%	3%	1%
Adj. Flow (vph)	12	59	75	93	68	235	290	2107	119	166	979	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	75	93	68	235	290	2107	119	166	979	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6



7: March & Morgan's Grant/Shirley's Brook  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic








































Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	26.1	26.1	11.4	26.1	26.1
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	18.0	73.0	73.0	18.0	73.0	73.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	13.8%	56.2%	56.2%	13.8%	56.2%	56.2%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	11.6	66.9	66.9	11.6	66.9	66.9
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	1.8	1.5	1.5	1.8	1.5	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.1	6.1	6.4	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5		5	5		5	5
Act Effct Green (s)		17.5	17.5	17.5	17.5	17.5	90.5	78.9	78.9	94.0	80.7	80.7
Actuated g/C Ratio		0.13	0.13	0.13	0.13	0.13	0.70	0.61	0.61	0.72	0.62	0.62
v/c Ratio		0.35	0.28	0.56	0.29	0.69	0.67	0.72	0.13	0.72	0.33	0.02
Control Delay		53.2	10.6	63.8	51.0	27.1	22.6	7.7	0.1	49.5	13.3	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		53.2	10.6	63.8	51.0	27.1	22.6	7.7	0.1	49.5	13.3	0.0
LOS		D	B	E	D	C	C	A	A	D	B	A
Approach Delay		31.3			39.8			9.1			18.2	
Approach LOS		C			D			A			B	
Queue Length 50th (m)		15.8	0.0	21.3	15.0	15.8	22.0	20.4	0.0	23.4	36.6	0.0
Queue Length 95th (m)		25.7	10.4	32.8	24.3	36.6	m25.3	m160.0	m0.0	#62.3	60.0	0.0
Internal Link Dist (m)		350.2			340.0			286.4			348.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		366	416	299	426	480	442	2921	911	233	2928	928
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.19	0.18	0.31	0.16	0.49	0.66	0.72	0.13	0.71	0.33	0.02

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 105 (81%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 15.2 Intersection LOS: B  
 Intersection Capacity Utilization 89.0% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 	 	 	 	 	 	  	 	 	  	
Traffic Volume (vph)	102	540	248	79	139	53	279	564	172	293	1507	199
Future Volume (vph)	102	540	248	79	139	53	279	564	172	293	1507	199
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99		0.95	0.97		0.98	0.99		0.97	0.99		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3216	3349	1483	3095	3283	1469	3185	4584	1483	1658	4764	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3187	3349	1416	3013	3283	1435	3160	4584	1433	1641	4764	1410
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			248			146			172			199
Link Speed (k/h)		50			60			80			80	
Link Distance (m)		359.1			149.7			919.4			306.4	
Travel Time (s)		25.9			9.0			41.4			13.8	
Confl. Peds. (#/hr)	10		30	30		10	25		15	15		25
Confl. Bikes (#/hr)			1									1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	2%	6%	3%	3%	3%	6%	2%	2%	2%	2%
Adj. Flow (vph)	102	540	248	79	139	53	279	564	172	293	1507	199
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	540	248	79	139	53	279	564	172	293	1507	199
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6



2: March & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	113	130	75	125	39	556	929	818	139	904	115
Future Volume (vph)	29	113	130	75	125	39	556	929	818	139	904	115
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		0.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.98	0.99				0.96	1.00		0.97
Frt			0.850		0.964				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1537	1745	1441	3216	1643	0	1674	3252	1498	1658	3283	1483
Flt Permitted	0.950			0.950			0.092			0.308		
Satd. Flow (perm)	1518	1745	1400	3145	1643	0	162	3252	1432	535	3283	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130		11				594			132
Link Speed (k/h)		50			50			80				80
Link Distance (m)		117.9			242.3			405.0				919.4
Travel Time (s)		8.5			17.4			18.2				41.4
Confl. Peds. (#/hr)	10		10	10		10	10		5	5		10
Confl. Bikes (#/hr)			1			1			12			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	2%	5%	2%	4%	3%	1%	4%	1%	2%	3%	2%
Adj. Flow (vph)	29	113	130	75	125	39	556	929	818	139	904	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	113	130	75	164	0	556	929	818	139	904	115
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			10.5			7.0				7.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4				2		2	6		6
Detector Phase	7	4	4	3	8		5	2	2	6	6	6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	10.9	31.5	31.5	10.9	31.5		11.3	26.3	26.3	26.3	26.3	26.3
Total Split (s)	13.0	32.0	32.0	13.0	32.0		39.0	85.0	85.0	46.0	46.0	46.0
Total Split (%)	10.0%	24.6%	24.6%	10.0%	24.6%		30.0%	65.4%	65.4%	35.4%	35.4%	35.4%
Maximum Green (s)	7.1	25.5	25.5	7.1	25.5		32.7	78.7	78.7	39.7	39.7	39.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.6	3.2	3.2	2.6	3.2		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	6.5	6.5	5.9	6.5		6.3	6.3	6.3	6.3	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		18.0			12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		8	8		7			6	6	0	0	0
Act Effct Green (s)	6.7	17.0	17.0	6.9	19.6		89.8	89.8	89.8	39.7	39.7	39.7
Actuated g/C Ratio	0.05	0.13	0.13	0.05	0.15		0.69	0.69	0.69	0.31	0.31	0.31
v/c Ratio	0.37	0.50	0.44	0.44	0.64		0.90	0.41	0.70	0.85	0.90	0.22
Control Delay	72.9	58.6	12.3	68.0	59.4		52.3	10.6	7.2	57.8	35.7	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.9	58.6	12.3	68.0	59.4		52.3	10.6	7.2	57.8	35.7	4.1
LOS	E	E	B	E	E		D	B	A	E	D	A
Approach Delay		38.0			62.1			19.5			35.2	
Approach LOS		D			E			B			D	
Queue Length 50th (m)	6.7	25.0	0.0	9.0	35.0		113.1	49.6	22.0	12.0	40.8	1.4
Queue Length 95th (m)	16.2	39.8	15.5	16.4	53.6		#203.5	73.5	75.3	m#44.9	#134.0	m3.4
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0			165.0			155.0		75.0
Base Capacity (vph)	83	342	379	175	331		621	2246	1172	163	1002	529
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.33	0.34	0.43	0.50		0.90	0.41	0.70	0.85	0.90	0.22

**Intersection Summary**

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 15 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 27.9      Intersection LOS: C

Intersection Capacity Utilization 98.5%      ICU Level of Service F

Analysis Period (min) 15

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

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





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	605	565	46	146	43	40
Future Volume (vph)	605	565	46	146	43	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.935			0.935		
Flt Protected				0.988	0.975	
Satd. Flow (prot)	1648	0	0	1636	1561	0
Flt Permitted				0.988	0.975	
Satd. Flow (perm)	1648	0	0	1636	1561	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)	25		25	2		
Confl. Bikes (#/hr)	1					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	9%	7%	3%	5%
Adj. Flow (vph)	605	565	46	146	43	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1170	0	0	192	83	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 83.6% ICU Level of Service E

Analysis Period (min) 15

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	443	261	247	3	28	9	106	184	57	54	190	59
Future Volume (vph)	443	261	247	3	28	9	106	184	57	54	190	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		1.00	0.99		0.99	0.98		0.97	0.99	
Frt		0.927			0.964			0.965			0.964	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1606	0	1674	1347	0	1566	1649	0	1537	1672	0
Flt Permitted	0.733			0.395			0.591			0.604		
Satd. Flow (perm)	1274	1606	0	693	1347	0	965	1649	0	950	1672	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65			9			15			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		5	5		5	5		15	15		5
Confl. Bikes (#/hr)									3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	30%	15%	8%	3%	1%	10%	2%	1%
Adj. Flow (vph)	443	261	247	3	28	9	106	184	57	54	190	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	443	508	0	3	37	0	106	241	0	54	249	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic (rationalized demand)

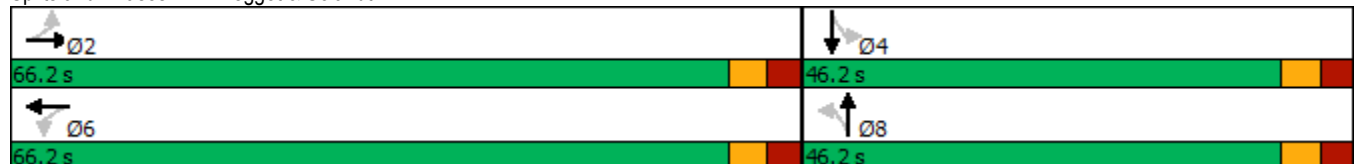


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		25.2	25.2		25.2	25.2	
Total Split (s)	66.2	66.2		66.2	66.2		46.2	46.2		46.2	46.2	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	
Maximum Green (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	1	1		4	4		11	11		0	0	
Act Effct Green (s)	28.5	28.5		28.5	28.5		15.8	15.8		15.8	15.8	
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.27	0.27		0.27	0.27	
v/c Ratio	0.71	0.62		0.01	0.06		0.40	0.52		0.21	0.53	
Control Delay	18.7	12.9		8.0	6.8		25.5	23.6		21.8	23.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.7	12.9		8.0	6.8		25.5	23.6		21.8	23.7	
LOS	B	B		A	A		C	C		C	C	
Approach Delay		15.6			6.9			24.2			23.4	
Approach LOS		B			A			C			C	
Queue Length 50th (m)	27.4	25.0		0.1	1.2		7.7	17.0		3.7	17.6	
Queue Length 95th (m)	72.0	65.4		1.3	5.6		26.4	48.8		14.8	50.2	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		
Base Capacity (vph)	1174	1485		638	1242		715	1226		704	1243	
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	0.38	0.34		0.00	0.03		0.15	0.20		0.08	0.20	

Intersection Summary

Area Type: Other  
 Cycle Length: 112.4  
 Actuated Cycle Length: 57.8  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.71  
 Intersection Signal Delay: 18.6  
 Intersection Capacity Utilization 71.3%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

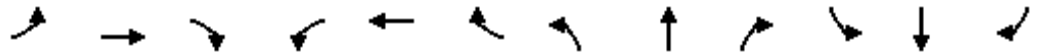
Splits and Phases: 4: Legget & Solandt





5: Terry Fox & Helmsdale  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	315	19	6	233	38	18	0	6	132	3	69
Future Volume (vph)	40	315	19	6	233	38	18	0	6	132	3	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.981			0.966			0.954	
Flt Protected		0.995			0.999			0.964			0.969	
Satd. Flow (prot)	0	1681	0	0	1692	0	0	1594	0	0	1608	0
Flt Permitted		0.995			0.999			0.964			0.969	
Satd. Flow (perm)	0	1681	0	0	1692	0	0	1594	0	0	1608	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)			8	8			5					5
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	2%	5%	1%	2%	10%	5%	1%	1%	2%	1%	3%
Adj. Flow (vph)	40	315	19	6	233	38	18	0	6	132	3	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	374	0	0	277	0	0	24	0	0	204	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 60.2%

ICU Level of Service B

Analysis Period (min) 15



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	645	42	11	192	8	2
Future Volume (vph)	645	42	11	192	8	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.992			0.973		
Flt Protected				0.997	0.962	
Satd. Flow (prot)	1731	0	0	1740	1633	0
Flt Permitted				0.997	0.962	
Satd. Flow (perm)	1731	0	0	1740	1633	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	169.3	
Travel Time (s)	14.8			18.7	12.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	645	42	11	192	8	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	687	0	0	203	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	48.5%			ICU Level of Service A		
Analysis Period (min)	15					

7: March & Morgan's Grant/Shirley's Brook  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	11	48	144	112	17	25	44	661	28	166	1853	8
Future Volume (vph)	11	48	144	112	17	25	44	661	28	166	1853	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	1.00		0.98			0.96	0.99		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.991		0.950			0.950			0.950		
Satd. Flow (prot)	0	1747	1498	1674	1618	1441	1642	4584	1498	1674	4764	1498
Flt Permitted		0.945		0.719			0.088			0.369		
Satd. Flow (perm)	0	1664	1470	1263	1618	1418	152	4584	1435	645	4764	1433
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			80			91			91
Link Speed (k/h)		40			40			80			80	
Link Distance (m)		374.6			363.0			306.4			376.3	
Travel Time (s)		33.7			32.7			13.8			16.9	
Confl. Peds. (#/hr)	3		3	3		3	5		6	6		5
Confl. Bikes (#/hr)			3						1			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	10%	5%	3%	6%	1%	1%	2%	1%
Adj. Flow (vph)	11	48	144	112	17	25	44	661	28	166	1853	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	144	112	17	25	44	661	28	166	1853	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

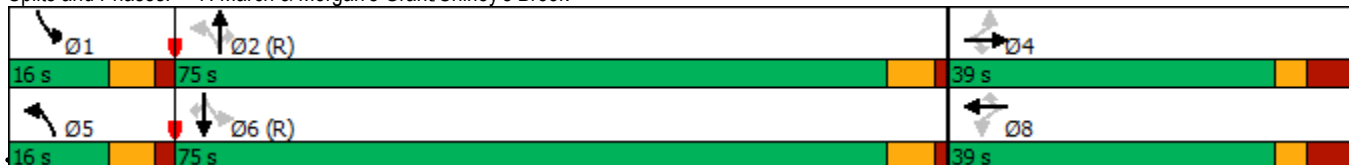


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	26.1	26.1	11.4	26.1	26.1
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	16.0	75.0	75.0	16.0	75.0	75.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	12.3%	57.7%	57.7%	12.3%	57.7%	57.7%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	9.6	68.9	68.9	9.6	68.9	68.9
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	1.8	1.5	1.5	1.8	1.5	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.1	6.1	6.4	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	3	3	3	3	3	3		6	6		6	6
Act Effct Green (s)		18.3	18.3	18.3	18.3	18.3	89.2	83.0	83.0	94.6	87.6	87.6
Actuated g/C Ratio		0.14	0.14	0.14	0.14	0.14	0.69	0.64	0.64	0.73	0.67	0.67
v/c Ratio		0.25	0.44	0.63	0.07	0.09	0.25	0.23	0.03	0.31	0.58	0.01
Control Delay		49.4	11.5	66.6	44.7	0.7	23.0	14.4	0.4	7.1	14.1	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		49.4	11.5	66.6	44.7	0.7	23.0	14.4	0.4	7.1	14.1	0.0
LOS		D	B	E	D	A	C	B	A	A	B	A
Approach Delay		22.5			53.5			14.4			13.5	
Approach LOS		C			D			B			B	
Queue Length 50th (m)		12.7	0.6	25.6	3.6	0.0	4.8	28.3	0.0	8.9	80.3	0.0
Queue Length 95th (m)		22.0	15.7	39.0	9.0	0.0	11.9	18.2	m0.1	22.3	130.6	0.0
Internal Link Dist (m)		350.6			339.0			282.4			352.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		403	463	306	392	404	218	2926	949	549	3208	994
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.15	0.31	0.37	0.04	0.06	0.20	0.23	0.03	0.30	0.58	0.01

**Intersection Summary**

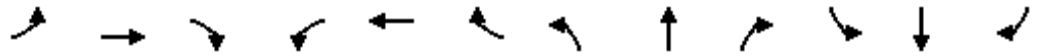
Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 95 (73%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 16.3      Intersection LOS: B  
 Intersection Capacity Utilization 76.6%      ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↕	↗	↔↔	↕↕	↗	↔↔	↕↕↕	↗	↗	↕↕↕	↗
Traffic Volume (vph)	304	155	408	216	394	399	295	1529	109	101	849	148
Future Volume (vph)	304	155	408	216	394	399	295	1529	109	101	849	148
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.98		0.95	0.96		0.95	0.98		0.95	1.00		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3248	3283	1498	3248	3349	1498	3185	4811	1498	1658	4811	1498
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3175	3283	1430	3102	3349	1419	3124	4811	1423	1650	4811	1424
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			297			273			149			149
Link Speed (k/h)		50			60			80			80	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			41.4			14.0	
Confl. Peds. (#/hr)	35		30	30		35	25		25	25		25
Confl. Bikes (#/hr)			1			3			2			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	1%	1%	1%	1%	3%	1%	1%	2%	1%	1%
Adj. Flow (vph)	304	155	408	216	394	399	295	1529	109	101	849	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	304	155	408	216	394	399	295	1529	109	101	849	148
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6

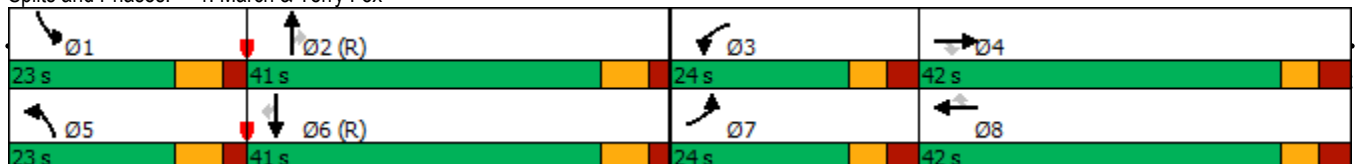


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	11.8	42.0	42.0	11.8	42.0	42.0	11.9	32.7	32.7	11.9	32.7	32.7
Total Split (s)	24.0	42.0	42.0	24.0	42.0	42.0	23.0	41.0	41.0	23.0	41.0	41.0
Total Split (%)	18.5%	32.3%	32.3%	18.5%	32.3%	32.3%	17.7%	31.5%	31.5%	17.7%	31.5%	31.5%
Maximum Green (s)	17.2	35.0	35.0	17.2	35.0	35.0	16.1	34.3	34.3	16.1	34.3	34.3
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	3.1	3.3	3.3	3.1	3.3	3.3	2.3	2.1	2.1	2.3	2.1	2.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	7.0	7.0	6.8	7.0	7.0	6.9	6.7	6.7	6.9	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		19.0	19.0		19.0	19.0
Pedestrian Calls (#/hr)		26	26		30	30		19	19		19	19
Act Effct Green (s)	16.0	30.3	30.3	13.8	28.2	28.2	15.3	45.7	45.7	12.7	43.2	43.2
Actuated g/C Ratio	0.12	0.23	0.23	0.11	0.22	0.22	0.12	0.35	0.35	0.10	0.33	0.33
v/c Ratio	0.76	0.20	0.73	0.63	0.54	0.77	0.79	0.90	0.18	0.62	0.53	0.26
Control Delay	68.2	39.2	19.8	63.7	47.1	24.2	67.0	36.3	3.8	81.6	34.6	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.2	39.2	19.8	63.7	47.1	24.2	67.0	36.3	3.8	81.6	34.6	9.0
LOS	E	D	B	E	D	C	E	D	A	F	C	A
Approach Delay		40.3			41.6			39.1			35.5	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	35.9	14.2	21.0	25.5	40.6	26.0	31.8	~151.8	3.1	25.4	39.0	0.1
Queue Length 95th (m)	50.2	23.2	56.9	36.5	54.6	60.8	m38.9	#190.8	m6.0	42.4	64.2	17.1
Internal Link Dist (m)		335.1			125.7			895.4			286.4	
Turn Bay Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Base Capacity (vph)	429	908	610	429	901	581	394	1692	597	205	1597	572
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.17	0.67	0.50	0.44	0.69	0.75	0.90	0.18	0.49	0.53	0.26

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 96 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 39.0 Intersection LOS: D  
 Intersection Capacity Utilization 92.7% ICU Level of Service F  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: March & Terry Fox



2: March & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	44	315	612	77	232	113	1450	91	47	1052	69
Future Volume (vph)	88	44	315	612	77	232	113	1450	91	47	1052	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		0.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.98	0.98				0.96			0.95
Frt			0.850		0.887				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1695	1498	3248	1529	0	1626	3349	1469	1674	3316	1441
Flt Permitted	0.950			0.950			0.091			0.083		
Satd. Flow (perm)	1641	1695	1451	3169	1529	0	156	3349	1413	146	3316	1376
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130		104				79			132
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		117.9			242.3			405.0			919.4	
Travel Time (s)		8.5			17.4			18.2			41.4	
Confl. Peds. (#/hr)	10		10	10		10	15		5	5		15
Confl. Bikes (#/hr)			4			2			2			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	5%	1%	1%	1%	1%	4%	1%	3%	1%	2%	5%
Adj. Flow (vph)	88	44	315	612	77	232	113	1450	91	47	1052	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	44	315	612	309	0	113	1450	91	47	1052	69
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			10.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4				2		2	6		6
Detector Phase	7	4	4	3	8		5	2	2	6	6	6

2: March & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic (rationalized demand)

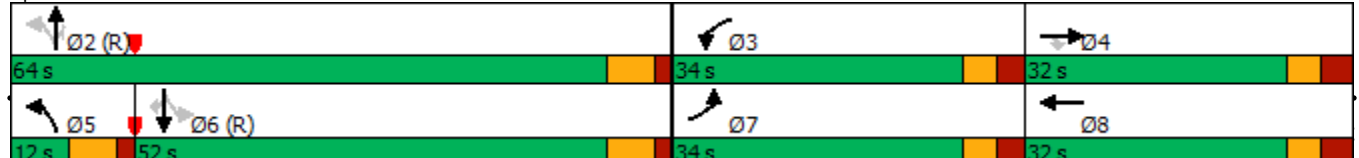


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	10.9	31.5	31.5	10.9	31.5		11.3	26.3	26.3	26.3	26.3	26.3
Total Split (s)	34.0	32.0	32.0	34.0	32.0		12.0	64.0	64.0	52.0	52.0	52.0
Total Split (%)	26.2%	24.6%	24.6%	26.2%	24.6%		9.2%	49.2%	49.2%	40.0%	40.0%	40.0%
Maximum Green (s)	28.1	25.5	25.5	28.1	25.5		5.7	57.7	57.7	45.7	45.7	45.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.6	3.2	3.2	2.6	3.2		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	6.5	6.5	5.9	6.5		6.3	6.3	6.3	6.3	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		18.0			12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		5	5		8			1	1	11	11	11
Act Effct Green (s)	12.2	21.6	21.6	27.1	36.5		62.6	62.6	62.6	48.3	48.3	48.3
Actuated g/C Ratio	0.09	0.17	0.17	0.21	0.28		0.48	0.48	0.48	0.37	0.37	0.37
v/c Ratio	0.56	0.16	0.90	0.90	0.61		0.68	0.90	0.13	0.87	0.85	0.12
Control Delay	69.5	45.6	59.3	67.9	31.8		46.0	40.7	6.2	118.2	38.0	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	45.6	59.3	67.9	31.8		46.0	40.7	6.2	118.2	38.0	3.3
LOS	E	D	E	E	C		D	D	A	F	D	A
Approach Delay		60.0			55.8			39.1			39.2	
Approach LOS		E			E			D			D	
Queue Length 50th (m)	20.2	8.7	43.9	72.4	40.3		15.4	170.7	1.6	11.3	131.8	3.4
Queue Length 95th (m)	34.8	18.4	#85.3	#99.0	71.0		#42.5	#221.5	10.7	m#29.2	#161.4	m6.6
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0			165.0			155.0		75.0
Base Capacity (vph)	358	332	389	702	503		165	1612	721	54	1232	594
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.13	0.81	0.87	0.61		0.68	0.90	0.13	0.87	0.85	0.12

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 30 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 45.0 Intersection LOS: D  
 Intersection Capacity Utilization 110.1% ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt







Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	170	83	28	704	143	45
Future Volume (vph)	170	83	28	704	143	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.956				0.968	
Flt Protected				0.998	0.963	
Satd. Flow (prot)	1669	0	0	1759	1609	0
Flt Permitted				0.998	0.963	
Satd. Flow (perm)	1669	0	0	1759	1609	0
Link Speed (k/h)	60				60	50
Link Distance (m)	181.0				246.1	202.8
Travel Time (s)	10.9				14.8	14.6
Confl. Peds. (#/hr)	20		20			
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	1%	1%	10%
Adj. Flow (vph)	170	83	28	704	143	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	253	0	0	732	188	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5				3.5	3.5
Link Offset(m)	0.0				0.0	0.0
Crosswalk Width(m)	5.0				5.0	5.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free				Free	Stop

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 77.4%

ICU Level of Service D

Analysis Period (min) 15

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	32	68	52	264	30	300	109	4	7	253	330
Future Volume (vph)	62	32	68	52	264	30	300	109	4	7	253	330
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97		0.97	1.00			1.00		0.96	0.98	
Frt		0.898			0.985			0.995			0.915	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1336	0	1642	1697	0	1674	1749	0	1674	1574	0
Flt Permitted	0.341			0.692			0.160			0.684		
Satd. Flow (perm)	563	1336	0	1163	1697	0	282	1749	0	1157	1574	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68			5			3			60	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		10	10		5	5		15	15		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	40%	4%	3%	1%	20%	1%	1%	1%	1%	2%	1%
Adj. Flow (vph)	62	32	68	52	264	30	300	109	4	7	253	330
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	100	0	52	294	0	300	113	0	7	583	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		11.0	25.2		25.2	25.2	
Total Split (s)	41.2	41.2		41.2	41.2		31.2	77.4		46.2	46.2	
Total Split (%)	34.7%	34.7%		34.7%	34.7%		26.3%	65.3%		39.0%	39.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		25.2	71.2		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.2		6.2	6.2	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	6	6		3	3			13		2	2	
Act Effct Green (s)	22.9	22.9		22.9	22.9		67.9	67.7		40.4	40.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.66	0.66		0.39	0.39	
v/c Ratio	0.50	0.29		0.20	0.77		0.64	0.10		0.02	0.89	
Control Delay	50.2	15.3		34.9	51.7		19.9	7.7		24.3	46.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	50.2	15.3		34.9	51.7		19.9	7.7		24.3	46.2	
LOS	D	B		C	D		B	A		C	D	
Approach Delay		28.7			49.1			16.6			45.9	
Approach LOS		C			D			B			D	
Queue Length 50th (m)	10.3	4.9		8.1	51.8		22.2	6.6		0.8	93.5	
Queue Length 95th (m)	23.3	17.1		17.6	79.2		58.3	16.4		4.0	#184.6	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		
Base Capacity (vph)	193	503		399	585		529	1222		453	653	
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	0.32	0.20		0.13	0.50		0.57	0.09		0.02	0.89	

Intersection Summary

Area Type: Other  
 Cycle Length: 118.6  
 Actuated Cycle Length: 103.1  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay: 36.8  
 Intersection Capacity Utilization 102.9%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service G  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	251	12	6	379	153	21	4	4	55	0	68
Future Volume (vph)	77	251	12	6	379	153	21	4	4	55	0	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.962			0.981			0.925	
Flt Protected		0.989			0.999			0.965			0.978	
Satd. Flow (prot)	0	1714	0	0	1694	0	0	1668	0	0	1527	0
Flt Permitted		0.989			0.999			0.965			0.978	
Satd. Flow (perm)	0	1714	0	0	1694	0	0	1668	0	0	1527	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)	5		5	5		5	20		5	5		20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	9%
Adj. Flow (vph)	77	251	12	6	379	153	21	4	4	55	0	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	340	0	0	538	0	0	29	0	0	123	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 71.6%

ICU Level of Service C

Analysis Period (min) 15

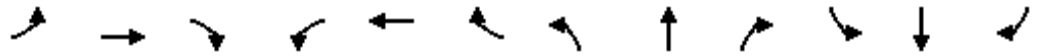


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	215	11	3	732	33	8
Future Volume (vph)	215	11	3	732	33	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.993			0.974		
Flt Protected				0.961		
Satd. Flow (prot)	1733	0	0	1745	1633	0
Flt Permitted				0.961		
Satd. Flow (perm)	1733	0	0	1745	1633	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	155.6	
Travel Time (s)	14.8			18.7	11.2	
Confl. Peds. (#/hr)	10		10			
Confl. Bikes (#/hr)	1					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	215	11	3	732	33	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	226	0	0	735	41	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization 53.2%	ICU Level of Service A
Analysis Period (min)	15

7: March & Morgan's Grant/Shirley's Brook  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	12	59	75	93	68	235	290	2107	119	166	979	21
Future Volume (vph)	12	59	75	93	68	235	290	2107	119	166	979	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	0.99		0.98	1.00		0.96			0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.992		0.950			0.950			0.950		
Satd. Flow (prot)	0	1603	1498	1658	1762	1498	1674	4811	1498	1674	4718	1498
Flt Permitted		0.938		0.711			0.265			0.050		
Satd. Flow (perm)	0	1514	1468	1234	1762	1471	465	4811	1442	88	4718	1440
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80			164			91			91
Link Speed (k/h)		40			40			80				80
Link Distance (m)		374.2			364.0			310.4				372.3
Travel Time (s)		33.7			32.8			14.0				16.8
Confl. Peds. (#/hr)	5		5	5		5	5		4	4		5
Confl. Bikes (#/hr)			2						5			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	12%	1%	2%	1%	1%	1%	1%	1%	1%	3%	1%
Adj. Flow (vph)	12	59	75	93	68	235	290	2107	119	166	979	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	75	93	68	235	290	2107	119	166	979	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0				9.0
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			10.0				10.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1		6
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	26.1	26.1	11.4	26.1	26.1
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	18.0	73.0	73.0	18.0	73.0	73.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	13.8%	56.2%	56.2%	13.8%	56.2%	56.2%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	11.6	66.9	66.9	11.6	66.9	66.9
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	1.8	1.5	1.5	1.8	1.5	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.1	6.1	6.4	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5		5	5		5	5
Act Effct Green (s)		17.5	17.5	17.5	17.5	17.5	90.5	78.9	78.9	94.0	80.7	80.7
Actuated g/C Ratio		0.13	0.13	0.13	0.13	0.13	0.70	0.61	0.61	0.72	0.62	0.62
v/c Ratio		0.35	0.28	0.56	0.29	0.69	0.67	0.72	0.13	0.72	0.33	0.02
Control Delay		53.2	10.6	63.8	51.0	27.1	22.3	9.2	0.3	49.5	13.3	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		53.2	10.6	63.8	51.0	27.1	22.3	9.2	0.3	49.5	13.3	0.0
LOS		D	B	E	D	C	C	A	A	D	B	A
Approach Delay		31.3			39.8			10.3			18.2	
Approach LOS		C			D			B			B	
Queue Length 50th (m)		15.8	0.0	21.3	15.0	15.8	15.0	27.1	0.0	23.4	36.6	0.0
Queue Length 95th (m)		25.7	10.4	32.8	24.3	36.6	m29.5	176.8	m0.0	#62.3	60.0	0.0
Internal Link Dist (m)		350.2			340.0			286.4			348.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		366	416	299	426	480	442	2921	911	233	2928	928
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.19	0.18	0.31	0.16	0.49	0.66	0.72	0.13	0.71	0.33	0.02

**Intersection Summary**

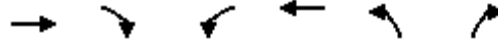
Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 105 (81%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 16.0 Intersection LOS: B  
 Intersection Capacity Utilization 89.0% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook



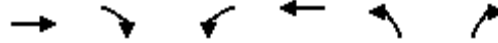
3: Legget & Terry Fox  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic (mitigated)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↙
Traffic Volume (vph)	605	565	46	146	43	40
Future Volume (vph)	605	565	46	146	43	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		125.0	15.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			20.0		10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94	0.99		0.99	
Frt		0.850			0.935	
Flt Protected			0.950		0.975	
Satd. Flow (prot)	1762	1498	1551	1664	1544	0
Flt Permitted			0.379		0.975	
Satd. Flow (perm)	1762	1412	611	1664	1544	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		565			40	
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)		25	25			2
Confl. Bikes (#/hr)		1				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	9%	7%	3%	5%
Adj. Flow (vph)	605	565	46	146	43	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	605	565	46	146	83	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	



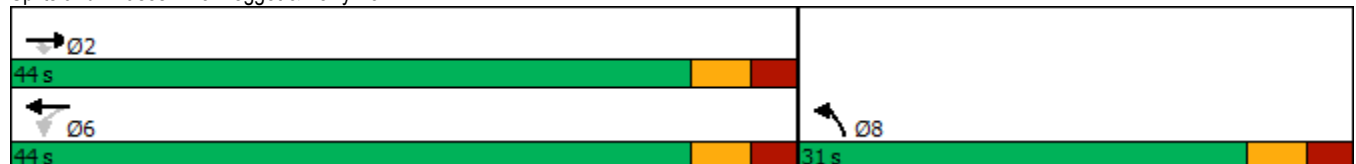


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	
Total Split (s)	44.0	44.0	44.0	44.0	31.0	
Total Split (%)	58.7%	58.7%	58.7%	58.7%	41.3%	
Maximum Green (s)	38.0	38.0	38.0	38.0	25.0	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	
Pedestrian Calls (#/hr)	1	1	1	1	1	
Act Effct Green (s)	30.5	30.5	30.5	30.5	15.0	
Actuated g/C Ratio	0.72	0.72	0.72	0.72	0.35	
v/c Ratio	0.48	0.48	0.11	0.12	0.15	
Control Delay	9.8	2.6	8.2	7.0	11.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.8	2.6	8.2	7.0	11.0	
LOS	A	A	A	A	B	
Approach Delay	6.3			7.3	11.0	
Approach LOS	A			A	B	
Queue Length 50th (m)	28.8	0.0	1.6	5.0	2.5	
Queue Length 95th (m)	87.8	13.0	8.2	18.3	11.9	
Internal Link Dist (m)	157.0			222.1	178.8	
Turn Bay Length (m)		125.0	15.0			
Base Capacity (vph)	1444	1259	501	1364	1050	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.42	0.45	0.09	0.11	0.08	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 42.5  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.48  
 Intersection Signal Delay: 6.7  
 Intersection Capacity Utilization 59.5%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service B

Splits and Phases: 3: Legget & Terry Fox



4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic (mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	443	261	247	3	28	9	106	184	57	54	190	59
Future Volume (vph)	443	261	247	3	28	9	106	184	57	54	190	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		105.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		1.00	0.99		0.99	0.98		0.97		0.97
Fr <sub>t</sub>		0.927			0.964			0.965				0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1606	0	1674	1347	0	1566	1649	0	1537	1745	1498
Fl <sub>t</sub> Permitted	0.733			0.396			0.638			0.605		
Satd. Flow (perm)	1274	1606	0	695	1347	0	1040	1649	0	952	1745	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65			9			15				59
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		5	5		5	5		15	15		5
Confl. Bikes (#/hr)									3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	30%	15%	8%	3%	1%	10%	2%	1%
Adj. Flow (vph)	443	261	247	3	28	9	106	184	57	54	190	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	443	508	0	3	37	0	106	241	0	54	190	59
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Background Traffic (mitigated)

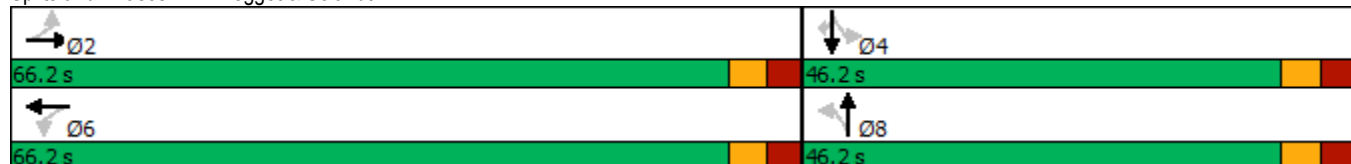


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2		25.2	25.2		25.2	25.2	25.2
Total Split (s)	66.2	66.2		66.2	66.2		46.2	46.2		46.2	46.2	46.2
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	41.1%
Maximum Green (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	40.0
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9		2.9	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	6.2
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Pedestrian Calls (#/hr)	1	1		4	4		11	11		0	0	0
Act Effct Green (s)	28.3	28.3		28.3	28.3		15.6	15.6		15.6	15.6	15.6
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.27	0.27		0.27	0.27	0.27
v/c Ratio	0.71	0.62		0.01	0.06		0.38	0.53		0.21	0.40	0.14
Control Delay	18.5	12.8		8.0	6.7		24.5	23.6		21.8	22.5	7.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	18.5	12.8		8.0	6.7		24.5	23.6		21.8	22.5	7.3
LOS	B	B		A	A		C	C		C	C	A
Approach Delay		15.5			6.8			23.9			19.4	
Approach LOS		B			A			C			B	
Queue Length 50th (m)	27.1	24.8		0.1	1.1		7.6	16.9		3.7	13.7	0.0
Queue Length 95th (m)	71.2	64.5		1.2	5.5		25.8	48.5		14.7	39.7	7.7
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		105.0
Base Capacity (vph)	1178	1489		642	1246		775	1234		710	1302	1093
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.38	0.34		0.00	0.03		0.14	0.20		0.08	0.15	0.05

Intersection Summary

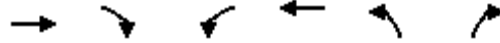
Area Type: Other  
 Cycle Length: 112.4  
 Actuated Cycle Length: 57.4  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.71  
 Intersection Signal Delay: 17.8  
 Intersection Capacity Utilization 71.3%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 4: Legget & Solandt

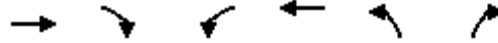


3: Legget & Terry Fox  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic (mitigated)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↙
Traffic Volume (vph)	170	83	28	704	313	45
Future Volume (vph)	170	83	28	704	313	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		125.0	15.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			20.0		10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95	0.98		1.00	
Fr <sub>t</sub>		0.850			0.983	
Fl <sub>t</sub> Protected			0.950		0.958	
Satd. Flow (prot)	1762	1455	1674	1762	1637	0
Fl <sub>t</sub> Permitted			0.650		0.958	
Satd. Flow (perm)	1762	1383	1118	1762	1637	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		83			10	
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)		20	20			
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	1%	1%	10%
Adj. Flow (vph)	170	83	28	704	313	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	170	83	28	704	358	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	
Total Split (s)	44.0	44.0	44.0	44.0	31.0	
Total Split (%)	58.7%	58.7%	58.7%	58.7%	41.3%	
Maximum Green (s)	38.0	38.0	38.0	38.0	25.0	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	
Pedestrian Calls (#/hr)	1	1	1	1	1	
Act Effct Green (s)	28.7	28.7	28.7	28.7	17.9	
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.30	
v/c Ratio	0.20	0.12	0.05	0.83	0.72	
Control Delay	10.0	3.0	9.3	23.8	28.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.0	3.0	9.3	23.8	28.4	
LOS	B	A	A	C	C	
Approach Delay	7.7			23.2	28.4	
Approach LOS	A			C	C	
Queue Length 50th (m)	9.1	0.0	1.4	56.5	32.0	
Queue Length 95th (m)	20.6	5.5	5.1	#115.5	63.3	
Internal Link Dist (m)	157.0			222.1	178.8	
Turn Bay Length (m)		125.0	15.0			
Base Capacity (vph)	1199	968	761	1199	740	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.09	0.04	0.59	0.48	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 59.5  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 21.7      Intersection LOS: C  
 Intersection Capacity Utilization 70.3%      ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Legget & Terry Fox



4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Background Traffic (mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	32	68	52	264	30	300	109	4	7	253	460
Future Volume (vph)	62	32	68	52	264	30	300	109	4	7	253	460
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		105.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97		0.97	1.00		0.99	1.00		0.96		0.96
Frt		0.898			0.985			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1336	0	1642	1697	0	1674	1749	0	1674	1745	1498
Flt Permitted	0.422			0.692			0.412			0.684		
Satd. Flow (perm)	697	1336	0	1163	1697	0	721	1749	0	1157	1745	1445
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68			5			3				355
Link Speed (k/h)		50			50			50				50
Link Distance (m)		242.3			435.5			352.8				403.8
Travel Time (s)		17.4			31.4			25.4				29.1
Confl. Peds. (#/hr)	5		10	10		5	5		15	15		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	40%	4%	3%	1%	20%	1%	1%	1%	1%	2%	1%
Adj. Flow (vph)	62	32	68	52	264	30	300	109	4	7	253	460
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	100	0	52	294	0	300	113	0	7	253	460
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			10.0				10.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												

4: Legget & Solandt  
PM Peak Hour

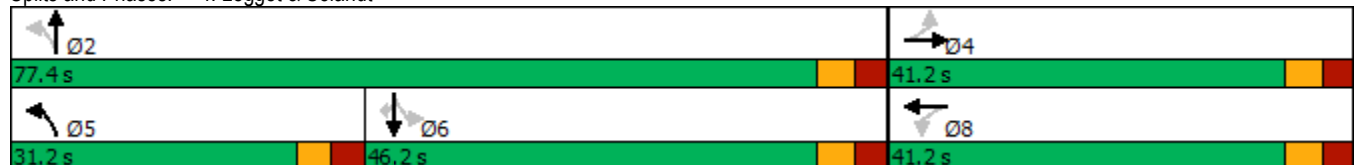
525 Legget Drive  
2024 Background Traffic (mitigated)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2		11.0	25.2		25.2	25.2	25.2
Total Split (s)	41.2	41.2		41.2	41.2		31.2	77.4		46.2	46.2	46.2
Total Split (%)	34.7%	34.7%		34.7%	34.7%		26.3%	65.3%		39.0%	39.0%	39.0%
Maximum Green (s)	35.0	35.0		35.0	35.0		25.2	71.2		40.0	40.0	40.0
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.3		3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.2		6.2	6.2	6.2
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Ped		Ped	Ped	Ped
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			12.0		12.0	12.0	12.0
Pedestrian Calls (#/hr)	6	6		3	3			13		2	2	2
Act Effct Green (s)	19.6	19.6		19.6	19.6		46.9	46.7		22.3	22.3	22.3
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.59	0.59		0.28	0.28	0.28
v/c Ratio	0.36	0.26		0.18	0.69		0.46	0.11		0.02	0.52	0.70
Control Delay	33.9	13.3		27.6	37.4		11.0	7.8		24.9	30.2	13.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	33.9	13.3		27.6	37.4		11.0	7.8		24.9	30.2	13.5
LOS	C	B		C	D		B	A		C	C	B
Approach Delay		21.2			36.0			10.1			19.5	
Approach LOS		C			D			B			B	
Queue Length 50th (m)	6.6	3.2		5.3	33.8		16.8	5.5		0.7	27.7	10.6
Queue Length 95th (m)	20.4	16.0		16.4	73.2		40.3	15.5		4.0	61.5	48.5
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		105.0
Base Capacity (vph)	319	649		533	780		741	1563		605	913	925
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.19	0.15		0.10	0.38		0.40	0.07		0.01	0.28	0.50

**Intersection Summary**  
 Area Type: Other  
 Cycle Length: 118.6  
 Actuated Cycle Length: 79.2  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.70  
 Intersection Signal Delay: 20.8  
 Intersection Capacity Utilization 83.0%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service E

Splits and Phases: 4: Legget & Solandt





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↕	↗	↖↖	↕	↗	↖↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	99	475	217	71	122	55	245	610	151	381	1602	207
Future Volume (vph)	99	475	217	71	122	55	245	610	151	381	1602	207
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99		0.95	0.97		0.98	0.99		0.96	0.99		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3216	3349	1483	3095	3283	1469	3185	4584	1483	1658	4764	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3181	3349	1408	2992	3283	1433	3160	4584	1428	1639	4764	1402
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			217			167			172			207
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			55.2			18.6	
Confl. Peds. (#/hr)	10		30	30		10	25		15	15		25
Confl. Bikes (#/hr)			1									1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	2%	6%	3%	3%	3%	6%	2%	2%	2%	2%
Adj. Flow (vph)	99	475	217	71	122	55	245	610	151	381	1602	207
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	475	217	71	122	55	245	610	151	381	1602	207
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6





2: March & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	102	114	68	113	35	540	928	733	155	1656	101
Future Volume (vph)	26	102	114	68	113	35	540	928	733	155	1656	101
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		55.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99		0.97	0.99		0.97	1.00	0.99		1.00	1.00	
Fr <sub>t</sub>			0.850			0.850		0.934			0.991	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1537	1745	1441	1658	1712	1469	1674	3040	0	1658	3249	0
Fl <sub>t</sub> Permitted	0.588			0.631			0.950			0.950		
Satd. Flow (perm)	940	1745	1401	1087	1712	1428	1671	3040	0	1656	3249	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			122			122		220				5
Link Speed (k/h)		50			50			60				60
Link Distance (m)		117.9			242.3			405.0				919.4
Travel Time (s)		8.5			17.4			24.3				55.2
Confl. Peds. (#/hr)	10		10	10		10	10		5	5		10
Confl. Bikes (#/hr)			1			1			12			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	2%	5%	2%	4%	3%	1%	4%	1%	2%	3%	2%
Adj. Flow (vph)	26	102	114	68	113	35	540	928	733	155	1656	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	102	114	68	113	35	540	1661	0	155	1757	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			10.5			17.5				17.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	2		1	6	

2: March & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	36.5	36.5	36.5	36.5	36.5	36.5	12.0	26.8		12.0	26.8	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	44.0	91.0		22.0	69.0	
Total Split (%)	24.7%	24.7%	24.7%	24.7%	24.7%	24.7%	29.3%	60.7%		14.7%	46.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5	30.5	37.0	85.2		15.0	63.2	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.3	2.1		3.3	2.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	7.0	5.8		7.0	5.8	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	23.0	23.0	23.0	23.0	23.0	23.0		14.0			14.0	
Pedestrian Calls (#/hr)	8	8	8	7	7	7		6			0	
Act Effct Green (s)	17.1	17.1	17.1	17.1	17.1	17.1	50.4	94.3		19.3	63.2	
Actuated g/C Ratio	0.11	0.11	0.11	0.11	0.11	0.11	0.34	0.63		0.13	0.42	
v/c Ratio	0.24	0.51	0.43	0.55	0.58	0.13	0.96	0.83		0.73	1.28	
Control Delay	62.6	69.8	12.1	77.2	73.2	1.0	78.0	24.4		86.8	152.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	62.6	69.8	12.1	77.2	73.2	1.0	78.0	24.4		86.8	152.4	
LOS	E	E	B	E	E	A	E	C		F	F	
Approach Delay		41.8			62.8			37.6			147.1	
Approach LOS		D			E			D			F	
Queue Length 50th (m)	6.7	27.1	0.0	18.2	30.3	0.0	142.2	160.6		44.8	~322.5	
Queue Length 95th (m)	14.2	40.4	13.4	30.2	44.3	0.0	#252.6	226.5		m#74.9	#356.6	
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0		55.0	165.0			155.0		
Base Capacity (vph)	191	354	382	221	348	387	561	1992		213	1371	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.14	0.29	0.30	0.31	0.32	0.09	0.96	0.83		0.73	1.28	

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 113 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.28  
 Intersection Signal Delay: 84.8  
 Intersection LOS: F  
 Intersection Capacity Utilization 114.1%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	581	497	40	139	38	35
Future Volume (vph)	581	497	40	139	38	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.938				0.935	
Flt Protected				0.989	0.975	
Satd. Flow (prot)	1653	0	0	1638	1561	0
Flt Permitted				0.989	0.975	
Satd. Flow (perm)	1653	0	0	1638	1561	0
Link Speed (k/h)	60				60	50
Link Distance (m)	181.0				246.1	202.8
Travel Time (s)	10.9				14.8	14.6
Confl. Peds. (#/hr)	25		25	2		
Confl. Bikes (#/hr)	1					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	9%	7%	3%	5%
Adj. Flow (vph)	581	497	40	139	38	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1078	0	0	179	73	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5				3.5	3.5
Link Offset(m)	0.0				0.0	0.0
Crosswalk Width(m)	5.0				5.0	5.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		
Sign Control	Free				Free	Stop

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 77.2%

ICU Level of Service D

Analysis Period (min) 15

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	399	246	223	3	27	8	96	166	53	51	171	53
Future Volume (vph)	399	246	223	3	27	8	96	166	53	51	171	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		0.99	0.99		0.99	0.98		0.97	0.99	
Frt		0.929			0.966			0.964			0.965	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1610	0	1674	1348	0	1566	1647	0	1537	1674	0
Flt Permitted	0.734			0.432			0.619			0.621		
Satd. Flow (perm)	1275	1610	0	757	1348	0	1010	1647	0	975	1674	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62			8			16			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		5	5		5	5		15	15		5
Confl. Bikes (#/hr)									3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	30%	15%	8%	3%	1%	10%	2%	1%
Adj. Flow (vph)	399	246	223	3	27	8	96	166	53	51	171	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	399	469	0	3	35	0	96	219	0	51	224	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic

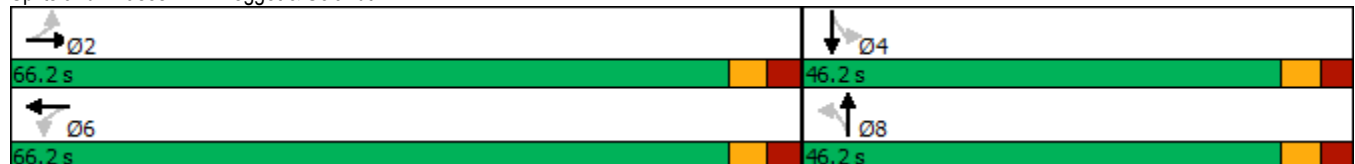


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		25.2	25.2		25.2	25.2	
Total Split (s)	66.2	66.2		66.2	66.2		46.2	46.2		46.2	46.2	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	
Maximum Green (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	1	1		4	4		11	11		0	0	
Act Effct Green (s)	24.3	24.3		24.3	24.3		13.8	13.8		13.8	13.8	
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.27	0.27		0.27	0.27	
v/c Ratio	0.66	0.59		0.01	0.05		0.35	0.48		0.19	0.48	
Control Delay	16.7	12.0		7.7	6.7		21.8	20.3		19.1	20.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.7	12.0		7.7	6.7		21.8	20.3		19.1	20.4	
LOS	B	B		A	A		C	C		B	C	
Approach Delay		14.2			6.7			20.8			20.2	
Approach LOS		B			A			C			C	
Queue Length 50th (m)	21.2	20.0		0.1	1.0		6.0	13.1		3.1	13.5	
Queue Length 95th (m)	56.3	52.8		1.2	5.0		20.9	38.2		12.3	39.2	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)				40.0			50.0			30.0		
Base Capacity (vph)	1224	1548		727	1294		824	1346		795	1368	
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	0.33	0.30		0.00	0.03		0.12	0.16		0.06	0.16	

Intersection Summary

Area Type:	Other
Cycle Length:	112.4
Actuated Cycle Length:	51.3
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	16.5
Intersection Capacity Utilization:	67.9%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	C

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	319	16	5	219	32	15	0	5	112	3	59
Future Volume (vph)	34	319	16	5	219	32	15	0	5	112	3	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.983			0.966			0.954	
Flt Protected		0.995			0.999			0.964			0.969	
Satd. Flow (prot)	0	1689	0	0	1697	0	0	1594	0	0	1608	0
Flt Permitted		0.995			0.999			0.964			0.969	
Satd. Flow (perm)	0	1689	0	0	1697	0	0	1594	0	0	1608	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)			8	8			5					5
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	2%	5%	1%	2%	10%	5%	1%	1%	2%	1%	3%
Adj. Flow (vph)	34	319	16	5	219	32	15	0	5	112	3	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	0	256	0	0	20	0	0	174	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 56.7% ICU Level of Service B

Analysis Period (min) 15



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	623	42	11	181	8	2
Future Volume (vph)	623	42	11	181	8	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.991			0.973		
Flt Protected				0.997	0.962	
Satd. Flow (prot)	1729	0	0	1740	1633	0
Flt Permitted				0.997	0.962	
Satd. Flow (perm)	1729	0	0	1740	1633	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	169.3	
Travel Time (s)	14.8			18.7	12.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	623	42	11	181	8	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	665	0	0	192	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	47.3%			ICU Level of Service A		
Analysis Period (min)	15					



7: March & Morgan's Grant/Shirley's Brook  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕	↕	↕	↕↕↕	↕	↕	↕↕↕	↕
Traffic Volume (vph)	9	46	127	99	16	23	39	715	25	156	1974	7
Future Volume (vph)	9	46	127	99	16	23	39	715	25	156	1974	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	1.00		0.98			0.95	0.99		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.992		0.950			0.950			0.950		
Satd. Flow (prot)	0	1748	1498	1674	1618	1441	1642	4584	1498	1674	4764	1498
Flt Permitted		0.952		0.721			0.079			0.351		
Satd. Flow (perm)	0	1677	1469	1266	1618	1418	137	4584	1430	614	4764	1430
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			116			71			79			79
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		371.3			364.3			310.4			371.3	
Travel Time (s)		33.4			32.8			18.6			22.3	
Confl. Peds. (#/hr)	3		3	3		3	5		6	6		5
Confl. Bikes (#/hr)			3						1			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	10%	5%	3%	6%	1%	1%	2%	1%
Adj. Flow (vph)	9	46	127	99	16	23	39	715	25	156	1974	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	127	99	16	23	39	715	25	156	1974	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

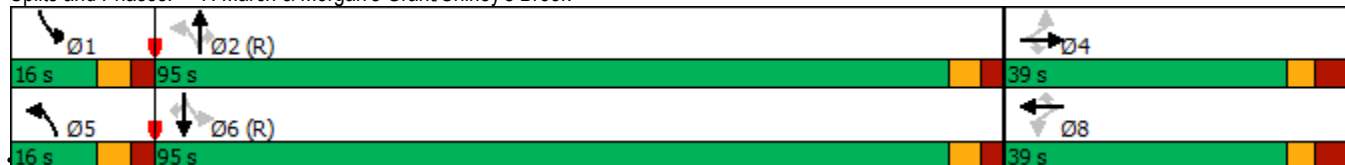


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	24.4	24.4	11.4	24.4	24.4
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	16.0	95.0	95.0	16.0	95.0	95.0
Total Split (%)	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	10.7%	63.3%	63.3%	10.7%	63.3%	63.3%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	9.6	88.6	88.6	9.6	88.6	88.6
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	3	3	3	3	3	3		6	6		6	6
Act Effct Green (s)		18.4	18.4	18.4	18.4	18.4	109.1	102.7	102.7	114.5	107.3	107.3
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.12	0.73	0.68	0.68	0.76	0.72	0.72
v/c Ratio		0.27	0.45	0.64	0.08	0.10	0.24	0.23	0.02	0.29	0.58	0.01
Control Delay		60.0	16.3	79.2	54.6	0.8	24.7	4.1	0.2	6.2	12.8	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		60.0	16.3	79.2	54.6	0.8	24.7	4.1	0.2	6.2	12.8	0.0
LOS		E	B	E	D	A	C	A	A	A	B	A
Approach Delay		29.5			63.3			5.0			12.3	
Approach LOS		C			E			A			B	
Queue Length 50th (m)		14.1	2.7	26.5	4.0	0.0	3.9	13.4	0.2	8.4	90.3	0.0
Queue Length 95th (m)		24.4	18.7	40.5	9.7	0.0	m10.7	9.9	m0.0	20.3	141.6	0.0
Internal Link Dist (m)		347.3			340.3			286.4			347.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		352	400	265	339	353	199	3138	1003	539	3407	1045
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.16	0.32	0.37	0.05	0.07	0.20	0.23	0.02	0.29	0.58	0.01

**Intersection Summary**

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 60 (40%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.64  
 Intersection Signal Delay: 13.7      Intersection LOS: B  
 Intersection Capacity Utilization 78.4%      ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗↗	↘	↖↖	↗↗	↘	↖↖	↗↗↗	↘	↖	↗↗↗	↘
Traffic Volume (vph)	303	134	350	187	343	388	254	1913	93	116	921	151
Future Volume (vph)	303	134	350	187	343	388	254	1913	93	116	921	151
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.97		0.95	0.95		0.94	0.98		0.94	1.00		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3248	3283	1498	3248	3349	1498	3185	4811	1498	1658	4811	1498
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3157	3283	1422	3075	3349	1410	3121	4811	1415	1653	4811	1416
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			197			167			125			172
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			55.2			18.6	
Confl. Peds. (#/hr)	35		30	30		35	25		25	25		25
Confl. Bikes (#/hr)			1			3			2			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	1%	1%	1%	1%	3%	1%	1%	2%	1%	1%
Adj. Flow (vph)	303	134	350	187	343	388	254	1913	93	116	921	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	303	134	350	187	343	388	254	1913	93	116	921	151
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6



2: March & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	39	562	655	69	206	106	2054	82	41	1217	60
Future Volume (vph)	75	39	562	655	69	206	106	2054	82	41	1217	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		55.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99		0.97	0.99		0.97	0.99	1.00		1.00	1.00	
Fr <sub>t</sub>			0.850			0.850		0.994			0.993	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1695	1498	1674	1762	1498	1626	3323	0	1674	3281	0
Fl <sub>t</sub> Permitted	0.712			0.624			0.950			0.950		
Satd. Flow (perm)	1226	1695	1453	1086	1762	1456	1617	3323	0	1673	3281	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119			85		3			4	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		117.9			242.3			405.0			919.4	
Travel Time (s)		8.5			17.4			24.3			55.2	
Confl. Peds. (#/hr)	10		10	10		10	15		5	5		15
Confl. Bikes (#/hr)			4			2			2			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	5%	1%	1%	1%	1%	4%	1%	3%	1%	2%	5%
Adj. Flow (vph)	75	39	562	655	69	206	106	2054	82	41	1217	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	39	562	655	69	206	106	2136	0	41	1277	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			10.5			17.5			17.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	3	8	8	5	2		1	6	

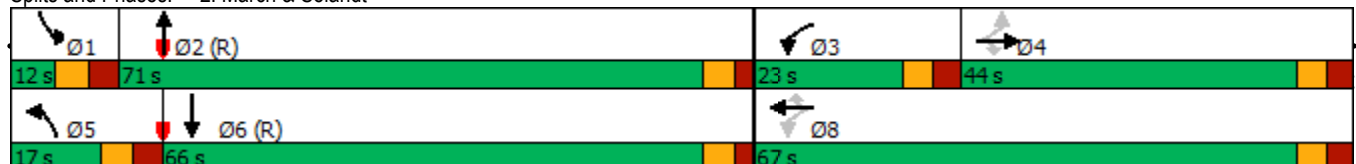


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	36.5	36.5	36.5	11.5	36.5	36.5	12.0	26.8		12.0	26.8	
Total Split (s)	44.0	44.0	44.0	23.0	67.0	67.0	17.0	71.0		12.0	66.0	
Total Split (%)	29.3%	29.3%	29.3%	15.3%	44.7%	44.7%	11.3%	47.3%		8.0%	44.0%	
Maximum Green (s)	37.5	37.5	37.5	16.5	60.5	60.5	10.0	65.2		5.0	60.2	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.3	2.1		3.3	2.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	7.0	5.8		7.0	5.8	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	23.0	23.0	23.0		23.0	23.0		14.0			14.0	
Pedestrian Calls (#/hr)	5	5	5		8	8		1			11	
Act Effct Green (s)	37.5	37.5	37.5	60.5	60.5	60.5	10.0	67.6		5.0	60.2	
Actuated g/C Ratio	0.25	0.25	0.25	0.40	0.40	0.40	0.07	0.45		0.03	0.40	
v/c Ratio	0.25	0.09	1.24	1.30	0.10	0.32	0.98	1.42		0.75	0.97	
Control Delay	47.6	44.1	163.1	186.4	28.3	19.0	149.6	227.9		120.0	54.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	47.6	44.1	163.1	186.4	28.3	19.0	149.6	227.9		120.0	54.6	
LOS	D	D	F	F	C	B	F	F		F	D	
Approach Delay		143.5			137.6			224.2			56.6	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	16.6	8.3	~165.5	~229.3	11.7	21.7	29.6	~424.8		10.0	179.5	
Queue Length 95th (m)	30.4	17.4	#232.3	#297.4	21.3	40.3	#65.8	#461.5		m#27.6	#225.9	
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0		55.0	165.0			155.0		
Base Capacity (vph)	306	423	452	502	710	637	108	1499		55	1319	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.25	0.09	1.24	1.30	0.10	0.32	0.98	1.42		0.75	0.97	

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 20 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.42  
 Intersection Signal Delay: 155.3 Intersection LOS: F  
 Intersection Capacity Utilization 129.3% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	179	72	25	667	272	39
Future Volume (vph)	179	72	25	667	272	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.961				0.983	
Flt Protected				0.998	0.958	
Satd. Flow (prot)	1679	0	0	1759	1641	0
Flt Permitted				0.998	0.958	
Satd. Flow (perm)	1679	0	0	1759	1641	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)		20	20			
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	1%	1%	10%
Adj. Flow (vph)	179	72	25	667	272	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	251	0	0	692	311	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 82.1%

ICU Level of Service E

Analysis Period (min) 15

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	31	61	48	247	29	265	96	3	6	225	408
Future Volume (vph)	55	31	61	48	247	29	265	96	3	6	225	408
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97		0.97	1.00			1.00		0.96	0.98	
Frt		0.901			0.984			0.995			0.903	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1335	0	1642	1694	0	1674	1750	0	1674	1550	0
Flt Permitted	0.370			0.697			0.132			0.693		
Satd. Flow (perm)	611	1335	0	1171	1694	0	233	1750	0	1171	1550	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			5			2			83	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		10	10		5	5		15	15		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	40%	4%	3%	1%	20%	1%	1%	1%	1%	2%	1%
Adj. Flow (vph)	55	31	61	48	247	29	265	96	3	6	225	408
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	92	0	48	276	0	265	99	0	6	633	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												



4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		11.0	25.2		25.2	25.2	
Total Split (s)	41.2	41.2		41.2	41.2		31.2	77.4		46.2	46.2	
Total Split (%)	34.7%	34.7%		34.7%	34.7%		26.3%	65.3%		39.0%	39.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		25.2	71.2		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.2		6.2	6.2	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	6	6		3	3			13		2	2	
Act Effct Green (s)	21.5	21.5		21.5	21.5		66.3	66.1		40.5	40.5	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.66	0.66		0.40	0.40	
v/c Ratio	0.42	0.28		0.19	0.75		0.61	0.09		0.01	0.94	
Control Delay	45.4	16.2		34.8	50.1		20.3	7.2		23.2	50.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.4	16.2		34.8	50.1		20.3	7.2		23.2	50.1	
LOS	D	B		C	D		C	A		C	D	
Approach Delay		27.1			47.9			16.7			49.8	
Approach LOS		C			D			B			D	
Queue Length 50th (m)	8.6	4.5		7.1	45.9		19.9	5.4		0.6	95.3	
Queue Length 95th (m)	20.5	16.5		16.7	74.2		51.9	14.0		3.5	#199.1	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)				40.0			50.0			30.0		
Base Capacity (vph)	215	511		414	602		521	1259		473	676	
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	0.26	0.18		0.12	0.46		0.51	0.08		0.01	0.94	

Intersection Summary

Area Type: Other  
 Cycle Length: 118.6  
 Actuated Cycle Length: 100.1  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 39.0  
 Intersection Capacity Utilization 103.4%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service G  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	251	10	5	379	127	17	3	3	46	0	57
Future Volume (vph)	64	251	10	5	379	127	17	3	3	46	0	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.966			0.982			0.925	
Flt Protected		0.990						0.964			0.978	
Satd. Flow (prot)	0	1718	0	0	1702	0	0	1668	0	0	1527	0
Flt Permitted		0.990						0.964			0.978	
Satd. Flow (perm)	0	1718	0	0	1702	0	0	1668	0	0	1527	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)	5		5	5		5	20		5	5		20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	9%
Adj. Flow (vph)	64	251	10	5	379	127	17	3	3	46	0	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	325	0	0	511	0	0	23	0	0	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 68.3%

ICU Level of Service C

Analysis Period (min) 15



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	220	11	3	698	33	8
Future Volume (vph)	220	11	3	698	33	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994			0.974		
Flt Protected				0.961		
Satd. Flow (prot)	1735	0	0	1745	1633	0
Flt Permitted				0.961		
Satd. Flow (perm)	1735	0	0	1745	1633	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	155.6	
Travel Time (s)	14.8			18.7	11.2	
Confl. Peds. (#/hr)	10		10			
Confl. Bikes (#/hr)	1					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	220	11	3	698	33	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	231	0	0	701	41	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24		14	
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization 51.3%	ICU Level of Service A
Analysis Period (min)	15

7: March & Morgan's Grant/Shirley's Brook  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	10	56	65	82	62	220	249	2188	102	158	1084	18
Future Volume (vph)	10	56	65	82	62	220	249	2188	102	158	1084	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	0.99		0.98	1.00		0.96			0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.992		0.950			0.950			0.950		
Satd. Flow (prot)	0	1600	1498	1658	1762	1498	1674	4811	1498	1674	4718	1498
Flt Permitted		0.946		0.714			0.242			0.047		
Satd. Flow (perm)	0	1525	1466	1238	1762	1469	425	4811	1439	83	4718	1437
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71			166			79			79
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		371.3			363.9			310.4			370.3	
Travel Time (s)		33.4			32.8			18.6			22.2	
Confl. Peds. (#/hr)	5		5	5		5	5		4	4		5
Confl. Bikes (#/hr)			2						5			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	12%	1%	2%	1%	1%	1%	1%	1%	1%	3%	1%
Adj. Flow (vph)	10	56	65	82	62	220	249	2188	102	158	1084	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	66	65	82	62	220	249	2188	102	158	1084	18
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

7: March & Morgan's Grant/Shirley's Brook  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	24.4	24.4	11.4	24.4	24.4
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	21.0	90.0	90.0	21.0	90.0	90.0
Total Split (%)	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	14.0%	60.0%	60.0%	14.0%	60.0%	60.0%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	14.6	83.6	83.6	14.6	83.6	83.6
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5		5	5		5	5
Act Effct Green (s)		17.5	17.5	17.5	17.5	17.5	108.4	97.4	97.4	115.9	101.2	101.2
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.12	0.72	0.65	0.65	0.77	0.67	0.67
v/c Ratio		0.37	0.28	0.57	0.30	0.69	0.63	0.70	0.11	0.72	0.34	0.02
Control Delay		64.5	12.4	75.8	61.7	28.0	14.0	7.8	0.1	52.5	11.8	0.1
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		64.5	12.4	75.8	61.7	28.0	14.0	7.8	0.1	52.5	11.8	0.1
LOS		E	B	E	E	C	B	A	A	D	B	A
Approach Delay		38.6			44.5			8.1			16.8	
Approach LOS		D			D			A			B	
Queue Length 50th (m)		17.3	0.0	22.0	16.1	14.0	5.9	31.6	0.0	25.0	40.2	0.0
Queue Length 95th (m)		28.1	10.4	34.7	26.5	36.4	m9.6	100.4	m0.1	#58.0	70.3	0.0
Internal Link Dist (m)		347.3			339.9			286.4			346.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		320	363	259	370	439	440	3124	962	231	3181	994
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.21	0.18	0.32	0.17	0.50	0.57	0.70	0.11	0.68	0.34	0.02

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 92 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 14.7 Intersection LOS: B  
 Intersection Capacity Utilization 90.1% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook



1: March & Terry Fox  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	475	217	71	122	55	245	610	151	321	1602	207
Future Volume (vph)	99	475	217	71	122	55	245	610	151	321	1602	207
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99		0.95	0.97		0.98	0.99		0.96	0.99		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3216	3349	1483	3095	3283	1469	3185	4584	1483	1658	4764	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3181	3349	1408	2992	3283	1433	3160	4584	1428	1639	4764	1402
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			217			167			172			207
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			55.2			18.6	
Confl. Peds. (#/hr)	10		30	30		10	25		15	15		25
Confl. Bikes (#/hr)			1									1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	2%	6%	3%	3%	3%	6%	2%	2%	2%	2%
Adj. Flow (vph)	99	475	217	71	122	55	245	610	151	321	1602	207
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	475	217	71	122	55	245	610	151	321	1602	207
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6



2: March & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	102	114	68	113	35	500	928	733	155	1136	101
Future Volume (vph)	26	102	114	68	113	35	500	928	733	155	1136	101
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		55.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99		0.97	0.99		0.97	1.00	0.99		1.00	1.00	
Fr <sub>t</sub>			0.850			0.850		0.934			0.988	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1537	1745	1441	1658	1712	1469	1674	3040	0	1658	3238	0
Fl <sub>t</sub> Permitted	0.588			0.631			0.950			0.950		
Satd. Flow (perm)	940	1745	1401	1087	1712	1428	1668	3040	0	1656	3238	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			122			122		220				8
Link Speed (k/h)		50			50			60				60
Link Distance (m)		117.9			242.3			405.0				919.4
Travel Time (s)		8.5			17.4			24.3				55.2
Confl. Peds. (#/hr)	10		10	10		10	10		5	5		10
Confl. Bikes (#/hr)			1			1			12			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	2%	5%	2%	4%	3%	1%	4%	1%	2%	3%	2%
Adj. Flow (vph)	26	102	114	68	113	35	500	928	733	155	1136	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	102	114	68	113	35	500	1661	0	155	1237	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			10.5			17.5				17.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8			5	2		1	6
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	2		1	6	



2: March & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	36.5	36.5	36.5	36.5	36.5	36.5	12.0	26.8		12.0	26.8	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	44.0	91.0		22.0	69.0	
Total Split (%)	24.7%	24.7%	24.7%	24.7%	24.7%	24.7%	29.3%	60.7%		14.7%	46.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5	30.5	37.0	85.2		15.0	63.2	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.3	2.1		3.3	2.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	7.0	5.8		7.0	5.8	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	23.0	23.0	23.0	23.0	23.0	23.0		14.0			14.0	
Pedestrian Calls (#/hr)	8	8	8	7	7	7		6			0	
Act Effct Green (s)	17.1	17.1	17.1	17.1	17.1	17.1	50.4	94.3		19.3	63.2	
Actuated g/C Ratio	0.11	0.11	0.11	0.11	0.11	0.11	0.34	0.63		0.13	0.42	
v/c Ratio	0.24	0.51	0.43	0.55	0.58	0.13	0.89	0.83		0.73	0.90	
Control Delay	62.6	69.8	12.1	77.2	73.2	1.0	66.4	24.4		86.6	22.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	62.6	69.8	12.1	77.2	73.2	1.0	66.4	24.4		86.6	22.6	
LOS	E	E	B	E	E	A	E	C		F	C	
Approach Delay		41.8			62.8			34.1			29.7	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	6.7	27.1	0.0	18.2	30.3	0.0	127.2	160.6		44.8	168.3	
Queue Length 95th (m)	14.2	40.4	13.4	30.2	44.3	0.0	#228.8	226.5		m#74.8	#24.4	
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0		55.0	165.0			155.0		
Base Capacity (vph)	191	354	382	221	348	387	561	1992		213	1368	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.14	0.29	0.30	0.31	0.32	0.09	0.89	0.83		0.73	0.90	

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 113 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 34.6      Intersection LOS: C  
 Intersection Capacity Utilization 96.7%      ICU Level of Service F  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	581	497	40	139	38	35
Future Volume (vph)	581	497	40	139	38	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.938			0.935		
Flt Protected				0.989	0.975	
Satd. Flow (prot)	1653	0	0	1638	1561	0
Flt Permitted				0.989	0.975	
Satd. Flow (perm)	1653	0	0	1638	1561	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)	25		25	2		
Confl. Bikes (#/hr)	1					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	9%	7%	3%	5%
Adj. Flow (vph)	581	497	40	139	38	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1078	0	0	179	73	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 77.2%

ICU Level of Service D

Analysis Period (min) 15

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	399	246	223	3	27	8	96	166	53	51	171	53
Future Volume (vph)	399	246	223	3	27	8	96	166	53	51	171	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		0.99	0.99		0.99	0.98		0.97	0.99	
Frt		0.929			0.966			0.964			0.965	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1610	0	1674	1348	0	1566	1647	0	1537	1674	0
Flt Permitted	0.734			0.432			0.619			0.621		
Satd. Flow (perm)	1275	1610	0	757	1348	0	1010	1647	0	975	1674	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62			8			16			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		5	5		5	5		15	15		5
Confl. Bikes (#/hr)									3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	30%	15%	8%	3%	1%	10%	2%	1%
Adj. Flow (vph)	399	246	223	3	27	8	96	166	53	51	171	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	399	469	0	3	35	0	96	219	0	51	224	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)

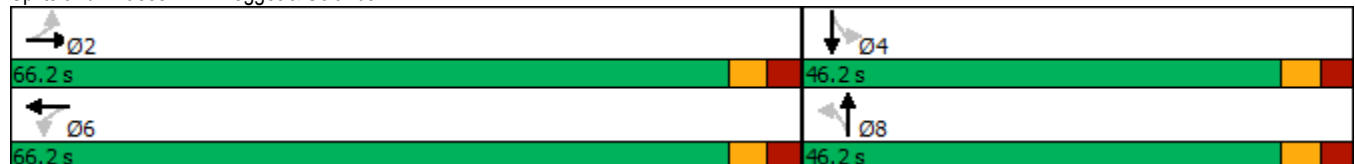


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		25.2	25.2		25.2	25.2	
Total Split (s)	66.2	66.2		66.2	66.2		46.2	46.2		46.2	46.2	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	
Maximum Green (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	1	1		4	4		11	11		0	0	
Act Effct Green (s)	24.3	24.3		24.3	24.3		13.8	13.8		13.8	13.8	
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.27	0.27		0.27	0.27	
v/c Ratio	0.66	0.59		0.01	0.05		0.35	0.48		0.19	0.48	
Control Delay	16.7	12.0		7.7	6.7		21.8	20.3		19.1	20.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.7	12.0		7.7	6.7		21.8	20.3		19.1	20.4	
LOS	B	B		A	A		C	C		B	C	
Approach Delay		14.2			6.7			20.8			20.2	
Approach LOS		B			A			C			C	
Queue Length 50th (m)	21.2	20.0		0.1	1.0		6.0	13.1		3.1	13.5	
Queue Length 95th (m)	56.3	52.8		1.2	5.0		20.9	38.2		12.3	39.2	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)				40.0			50.0			30.0		
Base Capacity (vph)	1224	1548		727	1294		824	1346		795	1368	
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	0.33	0.30		0.00	0.03		0.12	0.16		0.06	0.16	

Intersection Summary

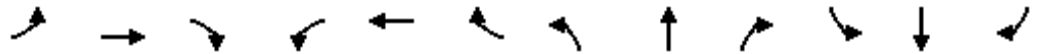
Area Type: Other  
 Cycle Length: 112.4  
 Actuated Cycle Length: 51.3  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 16.5  
 Intersection Capacity Utilization 67.9%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	319	16	5	219	32	15	0	5	112	3	59
Future Volume (vph)	34	319	16	5	219	32	15	0	5	112	3	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.983			0.966			0.954	
Flt Protected		0.995			0.999			0.964			0.969	
Satd. Flow (prot)	0	1689	0	0	1697	0	0	1594	0	0	1608	0
Flt Permitted		0.995			0.999			0.964			0.969	
Satd. Flow (perm)	0	1689	0	0	1697	0	0	1594	0	0	1608	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)			8	8			5					5
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	2%	5%	1%	2%	10%	5%	1%	1%	2%	1%	3%
Adj. Flow (vph)	34	319	16	5	219	32	15	0	5	112	3	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	369	0	0	256	0	0	20	0	0	174	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 56.7% ICU Level of Service B

Analysis Period (min) 15



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	623	42	11	181	8	2
Future Volume (vph)	623	42	11	181	8	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.991			0.973		
Flt Protected				0.997	0.962	
Satd. Flow (prot)	1729	0	0	1740	1633	0
Flt Permitted				0.997	0.962	
Satd. Flow (perm)	1729	0	0	1740	1633	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	169.3	
Travel Time (s)	14.8			18.7	12.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	623	42	11	181	8	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	665	0	0	192	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	47.3%			ICU Level of Service A		
Analysis Period (min)	15					

7: March & Morgan's Grant/Shirley's Brook  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	9	46	127	99	16	23	39	715	25	156	1974	7
Future Volume (vph)	9	46	127	99	16	23	39	715	25	156	1974	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	1.00		0.98			0.95	0.99		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.992		0.950			0.950			0.950		
Satd. Flow (prot)	0	1748	1498	1674	1618	1441	1642	4584	1498	1674	4764	1498
Flt Permitted		0.952		0.721			0.079			0.351		
Satd. Flow (perm)	0	1677	1469	1266	1618	1418	137	4584	1430	614	4764	1430
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			116			71			79			79
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		371.3			364.3			310.4			371.3	
Travel Time (s)		33.4			32.8			18.6			22.3	
Confl. Peds. (#/hr)	3		3	3		3	5		6	6		5
Confl. Bikes (#/hr)			3						1			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	10%	5%	3%	6%	1%	1%	2%	1%
Adj. Flow (vph)	9	46	127	99	16	23	39	715	25	156	1974	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	127	99	16	23	39	715	25	156	1974	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

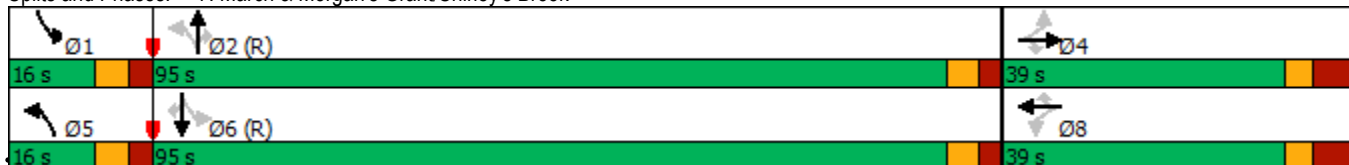


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	24.4	24.4	11.4	24.4	24.4
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	16.0	95.0	95.0	16.0	95.0	95.0
Total Split (%)	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	10.7%	63.3%	63.3%	10.7%	63.3%	63.3%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	9.6	88.6	88.6	9.6	88.6	88.6
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	3	3	3	3	3	3		6	6		6	6
Act Effct Green (s)		18.4	18.4	18.4	18.4	18.4	109.1	102.7	102.7	114.5	107.3	107.3
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.12	0.73	0.68	0.68	0.76	0.72	0.72
v/c Ratio		0.27	0.45	0.64	0.08	0.10	0.24	0.23	0.02	0.29	0.58	0.01
Control Delay		60.0	16.3	79.2	54.6	0.8	24.5	4.1	0.2	6.2	12.8	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		60.0	16.3	79.2	54.6	0.8	24.5	4.1	0.2	6.2	12.8	0.0
LOS		E	B	E	D	A	C	A	A	A	B	A
Approach Delay		29.5			63.3			5.0			12.3	
Approach LOS		C			E			A			B	
Queue Length 50th (m)		14.1	2.7	26.5	4.0	0.0	3.6	13.4	0.2	8.4	90.3	0.0
Queue Length 95th (m)		24.4	18.7	40.5	9.7	0.0	m10.7	9.9	m0.0	20.3	141.6	0.0
Internal Link Dist (m)		347.3			340.3			286.4			347.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		352	400	265	339	353	199	3138	1003	539	3407	1045
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.16	0.32	0.37	0.05	0.07	0.20	0.23	0.02	0.29	0.58	0.01

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 60 (40%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.64  
 Intersection Signal Delay: 13.7 Intersection LOS: B  
 Intersection Capacity Utilization 78.4% ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

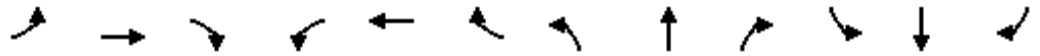
Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook





1: March & Terry Fox  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↕	↗	↔↔	↕↕	↗	↔↔	↕↕↕	↗	↗	↕↕↕	↗
Traffic Volume (vph)	293	134	350	187	343	368	254	1883	93	116	921	151
Future Volume (vph)	293	134	350	187	343	368	254	1883	93	116	921	151
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.97		0.95	0.95		0.94	0.98		0.94	1.00		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3248	3283	1498	3248	3349	1498	3185	4811	1498	1658	4811	1498
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3157	3283	1422	3075	3349	1410	3121	4811	1415	1653	4811	1416
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			197			167			125			172
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			55.2			18.6	
Confl. Peds. (#/hr)	35		30	30		35	25		25	25		25
Confl. Bikes (#/hr)			1			3			2			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	1%	1%	1%	1%	3%	1%	1%	2%	1%	1%
Adj. Flow (vph)	293	134	350	187	343	368	254	1883	93	116	921	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	293	134	350	187	343	368	254	1883	93	116	921	151
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6



2: March & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	39	352	395	69	206	96	1374	82	41	1197	60
Future Volume (vph)	75	39	352	395	69	206	96	1374	82	41	1197	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		55.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99		0.97	0.99		0.97	0.99	1.00		1.00	1.00	
Fr <sub>t</sub>			0.850			0.850		0.992			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1695	1498	1674	1762	1498	1626	3314	0	1674	3281	0
Flt Permitted	0.712			0.603			0.950			0.950		
Satd. Flow (perm)	1226	1695	1453	1049	1762	1456	1617	3314	0	1672	3281	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119			97		5			4	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		117.9			242.3			405.0			919.4	
Travel Time (s)		8.5			17.4			24.3			55.2	
Confl. Peds. (#/hr)	10		10	10		10	15		5	5		15
Confl. Bikes (#/hr)			4			2			2			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	5%	1%	1%	1%	1%	4%	1%	3%	1%	2%	5%
Adj. Flow (vph)	75	39	352	395	69	206	96	1374	82	41	1197	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	39	352	395	69	206	96	1456	0	41	1257	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			10.5			17.5			17.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	3	8	8	5	2		1	6	

2: March & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)

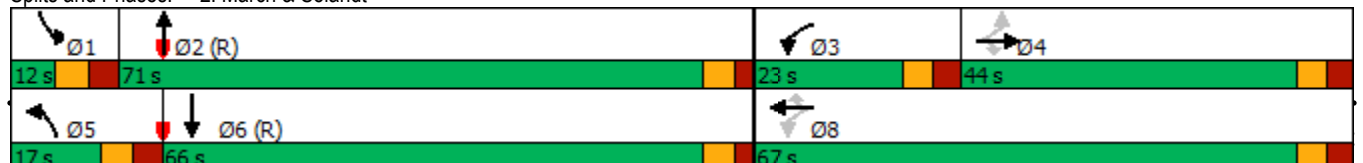


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	36.5	36.5	36.5	11.5	36.5	36.5	12.0	26.8		12.0	26.8	
Total Split (s)	44.0	44.0	44.0	23.0	67.0	67.0	17.0	71.0		12.0	66.0	
Total Split (%)	29.3%	29.3%	29.3%	15.3%	44.7%	44.7%	11.3%	47.3%		8.0%	44.0%	
Maximum Green (s)	37.5	37.5	37.5	16.5	60.5	60.5	10.0	65.2		5.0	60.2	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.3	2.1		3.3	2.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	7.0	5.8		7.0	5.8	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	23.0	23.0	23.0		23.0	23.0		14.0			14.0	
Pedestrian Calls (#/hr)	5	5	5		8	8		1			11	
Act Effct Green (s)	30.5	30.5	30.5	53.5	53.5	53.5	12.1	73.0		7.0	65.1	
Actuated g/C Ratio	0.20	0.20	0.20	0.36	0.36	0.36	0.08	0.49		0.05	0.43	
v/c Ratio	0.30	0.11	0.90	0.89	0.11	0.35	0.73	0.90		0.53	0.88	
Control Delay	51.8	46.2	64.4	65.2	30.8	18.6	96.3	45.5		84.6	41.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	51.8	46.2	64.4	65.2	30.8	18.6	96.3	45.5		84.6	41.6	
LOS	D	D	E	E	C	B	F	D		F	D	
Approach Delay		60.8			47.4			48.7			42.9	
Approach LOS		E			D			D			D	
Queue Length 50th (m)	17.4	8.7	65.2	89.6	12.5	20.7	25.5	206.8		8.4	175.2	
Queue Length 95th (m)	30.4	17.4	#98.8	#118.9	21.3	37.7	#59.0	#259.1		m#27.6	#219.5	
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0		55.0	165.0			155.0		
Base Capacity (vph)	306	423	452	442	710	645	131	1614		77	1426	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.25	0.09	0.78	0.89	0.10	0.32	0.73	0.90		0.53	0.88	

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 20 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 130  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 48.0 Intersection LOS: D  
 Intersection Capacity Utilization 100.1% ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	179	72	25	667	162	39
Future Volume (vph)	179	72	25	667	162	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.961				0.974	
Flt Protected				0.998	0.961	
Satd. Flow (prot)	1679	0	0	1759	1622	0
Flt Permitted				0.998	0.961	
Satd. Flow (perm)	1679	0	0	1759	1622	0
Link Speed (k/h)	60				60	50
Link Distance (m)	181.0				246.1	202.8
Travel Time (s)	10.9				14.8	14.6
Confl. Peds. (#/hr)	20		20			
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	1%	1%	10%
Adj. Flow (vph)	179	72	25	667	162	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	251	0	0	692	201	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5				3.5	3.5
Link Offset(m)	0.0				0.0	0.0
Crosswalk Width(m)	5.0				5.0	5.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free				Free	Stop

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 75.6%

ICU Level of Service D

Analysis Period (min) 15

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	31	61	48	247	29	265	96	3	6	225	378
Future Volume (vph)	55	31	61	48	247	29	265	96	3	6	225	378
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97		0.97	1.00			1.00		0.96	0.98	
Frt		0.901			0.984			0.995			0.906	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1335	0	1642	1694	0	1674	1750	0	1674	1556	0
Flt Permitted	0.370			0.697			0.157			0.693		
Satd. Flow (perm)	611	1335	0	1171	1694	0	277	1750	0	1171	1556	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			5			2			77	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		10	10		5	5		15	15		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	40%	4%	3%	1%	20%	1%	1%	1%	1%	2%	1%
Adj. Flow (vph)	55	31	61	48	247	29	265	96	3	6	225	378
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	92	0	48	276	0	265	99	0	6	603	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		11.0	25.2		25.2	25.2	
Total Split (s)	41.2	41.2		41.2	41.2		31.2	77.4		46.2	46.2	
Total Split (%)	34.7%	34.7%		34.7%	34.7%		26.3%	65.3%		39.0%	39.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		25.2	71.2		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.2		6.2	6.2	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	6	6		3	3			13		2	2	
Act Effct Green (s)	21.5	21.5		21.5	21.5		66.3	66.1		40.5	40.5	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.66	0.66		0.40	0.40	
v/c Ratio	0.42	0.28		0.19	0.75		0.58	0.09		0.01	0.89	
Control Delay	45.4	16.2		34.8	50.1		16.5	7.2		23.2	44.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	45.4	16.2		34.8	50.1		16.5	7.2		23.2	44.0	
LOS	D	B		C	D		B	A		C	D	
Approach Delay		27.1			47.9			14.0			43.8	
Approach LOS		C			D			B			D	
Queue Length 50th (m)	8.6	4.5		7.1	45.9		16.4	5.4		0.6	88.0	
Queue Length 95th (m)	20.5	16.5		16.7	74.2		46.9	14.0		3.5	#185.8	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)				40.0			50.0			30.0		
Base Capacity (vph)	215	511		414	602		539	1259		473	674	
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	0.26	0.18		0.12	0.46		0.49	0.08		0.01	0.89	

Intersection Summary

Area Type: Other  
 Cycle Length: 118.6  
 Actuated Cycle Length: 100.1  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay: 35.5  
 Intersection Capacity Utilization 101.5%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service G  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	251	10	5	379	127	17	3	3	46	0	57
Future Volume (vph)	64	251	10	5	379	127	17	3	3	46	0	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.966			0.982			0.925	
Flt Protected		0.990						0.964			0.978	
Satd. Flow (prot)	0	1718	0	0	1702	0	0	1668	0	0	1527	0
Flt Permitted		0.990						0.964			0.978	
Satd. Flow (perm)	0	1718	0	0	1702	0	0	1668	0	0	1527	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)	5		5	5		5	20		5	5		20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	9%
Adj. Flow (vph)	64	251	10	5	379	127	17	3	3	46	0	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	325	0	0	511	0	0	23	0	0	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 68.3%

ICU Level of Service C

Analysis Period (min) 15





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	220	11	3	698	33	8
Future Volume (vph)	220	11	3	698	33	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994			0.974		
Flt Protected				0.961		
Satd. Flow (prot)	1735	0	0	1745	1633	0
Flt Permitted				0.961		
Satd. Flow (perm)	1735	0	0	1745	1633	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	155.6	
Travel Time (s)	14.8			18.7	11.2	
Confl. Peds. (#/hr)	10		10			
Confl. Bikes (#/hr)	1					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	220	11	3	698	33	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	231	0	0	701	41	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24		14	
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization 51.3%	ICU Level of Service A
Analysis Period (min)	15

7: March & Morgan's Grant/Shirley's Brook  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic (rationalized demand)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	10	56	65	82	62	220	249	2188	102	158	1084	18
Future Volume (vph)	10	56	65	82	62	220	249	2188	102	158	1084	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	0.99		0.98	1.00		0.96			0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.992		0.950			0.950			0.950		
Satd. Flow (prot)	0	1600	1498	1658	1762	1498	1674	4811	1498	1674	4718	1498
Flt Permitted		0.946		0.714			0.242			0.047		
Satd. Flow (perm)	0	1525	1466	1238	1762	1469	425	4811	1439	83	4718	1437
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71			166			79			79
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		371.3			363.9			310.4			370.3	
Travel Time (s)		33.4			32.8			18.6			22.2	
Confl. Peds. (#/hr)	5		5	5		5	5		4	4		5
Confl. Bikes (#/hr)			2						5			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	12%	1%	2%	1%	1%	1%	1%	1%	1%	3%	1%
Adj. Flow (vph)	10	56	65	82	62	220	249	2188	102	158	1084	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	66	65	82	62	220	249	2188	102	158	1084	18
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

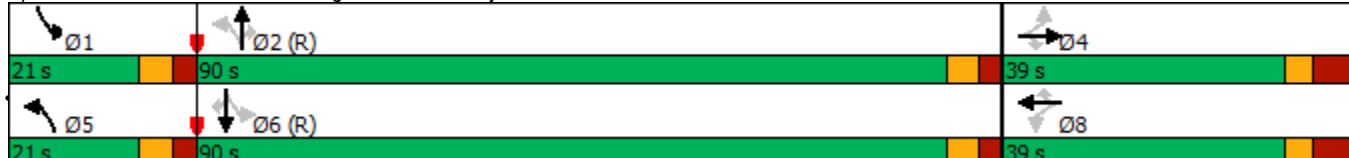


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	24.4	24.4	11.4	24.4	24.4
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	21.0	90.0	90.0	21.0	90.0	90.0
Total Split (%)	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	14.0%	60.0%	60.0%	14.0%	60.0%	60.0%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	14.6	83.6	83.6	14.6	83.6	83.6
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5		5	5		5	5
Act Effct Green (s)		17.5	17.5	17.5	17.5	17.5	108.4	97.4	97.4	115.9	101.2	101.2
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.12	0.72	0.65	0.65	0.77	0.67	0.67
v/c Ratio		0.37	0.28	0.57	0.30	0.69	0.63	0.70	0.11	0.72	0.34	0.02
Control Delay		64.5	12.4	75.8	61.7	28.0	14.6	7.3	0.2	52.5	11.8	0.1
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		64.5	12.4	75.8	61.7	28.0	14.6	7.3	0.2	52.5	11.8	0.1
LOS		E	B	E	E	C	B	A	A	D	B	A
Approach Delay		38.6			44.5			7.8			16.8	
Approach LOS		D			D			A			B	
Queue Length 50th (m)		17.3	0.0	22.0	16.1	14.0	5.8	29.5	0.0	25.0	40.2	0.0
Queue Length 95th (m)		28.1	10.4	34.7	26.5	36.4	m12.5	98.3	m0.1	#58.0	70.3	0.0
Internal Link Dist (m)		347.3			339.9			286.4			346.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		320	363	259	370	439	440	3124	962	231	3181	994
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.21	0.18	0.32	0.17	0.50	0.57	0.70	0.11	0.68	0.34	0.02

**Intersection Summary**

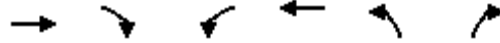
Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 92 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 14.5 Intersection LOS: B  
 Intersection Capacity Utilization 90.1% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook

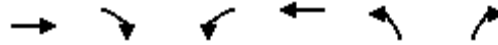


3: Legget & Terry Fox  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic (mitigated)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↙
Traffic Volume (vph)	581	497	40	139	38	35
Future Volume (vph)	581	497	40	139	38	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		125.0	15.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			20.0		10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94	0.99		0.99	
Frt		0.850			0.935	
Flt Protected			0.950		0.975	
Satd. Flow (prot)	1762	1498	1551	1664	1544	0
Flt Permitted			0.393		0.975	
Satd. Flow (perm)	1762	1412	634	1664	1544	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		497			35	
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)		25	25			2
Confl. Bikes (#/hr)		1				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	9%	7%	3%	5%
Adj. Flow (vph)	581	497	40	139	38	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	581	497	40	139	73	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	

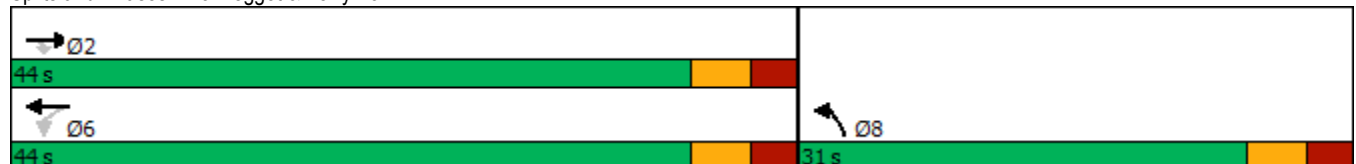


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	
Total Split (s)	44.0	44.0	44.0	44.0	31.0	
Total Split (%)	58.7%	58.7%	58.7%	58.7%	41.3%	
Maximum Green (s)	38.0	38.0	38.0	38.0	25.0	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	
Pedestrian Calls (#/hr)	1	1	1	1	1	
Act Effct Green (s)	28.5	28.5	28.5	28.5	18.7	
Actuated g/C Ratio	0.71	0.71	0.71	0.71	0.47	
v/c Ratio	0.47	0.43	0.09	0.12	0.10	
Control Delay	9.7	2.4	8.1	7.1	10.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.7	2.4	8.1	7.1	10.7	
LOS	A	A	A	A	B	
Approach Delay	6.3			7.3	10.7	
Approach LOS	A			A	B	
Queue Length 50th (m)	27.1	0.0	1.3	4.8	2.1	
Queue Length 95th (m)	82.4	12.4	7.3	17.5	11.0	
Internal Link Dist (m)	157.0			222.1	178.8	
Turn Bay Length (m)		125.0	15.0			
Base Capacity (vph)	1468	1259	528	1386	1068	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.40	0.39	0.08	0.10	0.07	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 40.2  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.47  
 Intersection Signal Delay: 6.7  
 Intersection Capacity Utilization 54.2%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 3: Legget & Terry Fox



4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic (mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	399	246	223	3	27	8	96	166	53	51	171	53
Future Volume (vph)	399	246	223	3	27	8	96	166	53	51	171	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	40.0		0.0	50.0		0.0	30.0		105.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		0.99	0.99		0.99	0.98		0.97		0.97
Frt		0.929			0.966			0.964				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1610	0	1674	1348	0	1566	1647	0	1537	1745	1498
Flt Permitted	0.734			0.432			0.649			0.621		
Satd. Flow (perm)	1275	1610	0	757	1348	0	1058	1647	0	975	1745	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62			8			16				53
Link Speed (k/h)		50			50			50				50
Link Distance (m)		242.3			435.5			352.8				403.8
Travel Time (s)		17.4			31.4			25.4				29.1
Confl. Peds. (#/hr)	5		5	5		5	5		15	15		5
Confl. Bikes (#/hr)									3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	30%	15%	8%	3%	1%	10%	2%	1%
Adj. Flow (vph)	399	246	223	3	27	8	96	166	53	51	171	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	399	469	0	3	35	0	96	219	0	51	171	53
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			10.0				10.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8				4
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Background Traffic (mitigated)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2		25.2	25.2		25.2	25.2	25.2
Total Split (s)	66.2	66.2		66.2	66.2		46.2	46.2		46.2	46.2	46.2
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	41.1%
Maximum Green (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	40.0
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9		2.9	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	6.2
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Pedestrian Calls (#/hr)	1	1		4	4		11	11		0	0	0
Act Effct Green (s)	24.2	24.2		24.2	24.2		13.8	13.8		13.8	13.8	13.8
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.27	0.27		0.27	0.27	0.27
v/c Ratio	0.66	0.59		0.01	0.05		0.34	0.48		0.19	0.36	0.12
Control Delay	16.6	12.0		7.7	6.7		21.2	20.3		19.1	19.7	7.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	16.6	12.0		7.7	6.7		21.2	20.3		19.1	19.7	7.0
LOS	B	B		A	A		C	C		B	B	A
Approach Delay		14.1			6.7			20.6			17.2	
Approach LOS		B			A			C			B	
Queue Length 50th (m)	21.1	19.9		0.1	1.0		6.0	13.1		3.1	10.7	0.0
Queue Length 95th (m)	56.3	52.8		1.2	5.0		20.7	38.2		12.3	31.4	6.6
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)				40.0			50.0			30.0		105.0
Base Capacity (vph)	1224	1548		727	1294		865	1349		797	1426	1192
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.33	0.30		0.00	0.03		0.11	0.16		0.06	0.12	0.04

Intersection Summary

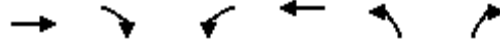
Area Type: Other  
 Cycle Length: 112.4  
 Actuated Cycle Length: 51.2  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 15.9  
 Intersection Capacity Utilization 67.9%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 4: Legget & Solandt



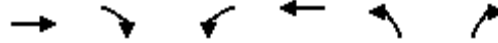
3: Legget & Terry Fox  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic (mitigated)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↙
Traffic Volume (vph)	179	72	25	667	272	39
Future Volume (vph)	179	72	25	667	272	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		125.0	15.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			20.0		10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95	0.98		1.00	
Frt		0.850			0.983	
Flt Protected			0.950		0.958	
Satd. Flow (prot)	1762	1455	1674	1762	1637	0
Flt Permitted			0.644		0.958	
Satd. Flow (perm)	1762	1383	1108	1762	1637	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		72			10	
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)		20	20			
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	1%	1%	10%
Adj. Flow (vph)	179	72	25	667	272	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	179	72	25	667	311	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	



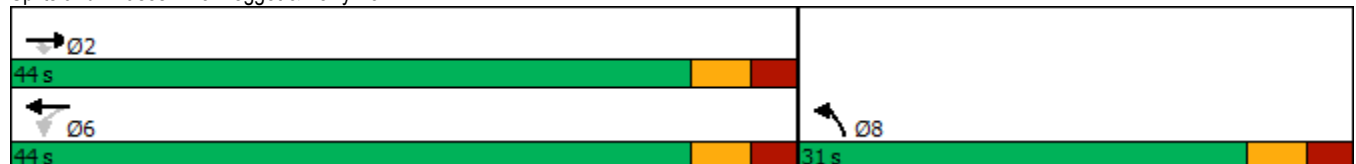


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	
Total Split (s)	44.0	44.0	44.0	44.0	31.0	
Total Split (%)	58.7%	58.7%	58.7%	58.7%	41.3%	
Maximum Green (s)	38.0	38.0	38.0	38.0	25.0	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	
Pedestrian Calls (#/hr)	1	1	1	1	1	
Act Effct Green (s)	25.9	25.9	25.9	25.9	16.4	
Actuated g/C Ratio	0.47	0.47	0.47	0.47	0.30	
v/c Ratio	0.22	0.10	0.05	0.81	0.63	
Control Delay	9.8	3.1	9.0	21.8	24.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.8	3.1	9.0	21.8	24.2	
LOS	A	A	A	C	C	
Approach Delay	7.9			21.3	24.2	
Approach LOS	A			C	C	
Queue Length 50th (m)	8.4	0.0	1.1	45.3	22.9	
Queue Length 95th (m)	21.6	5.1	4.8	102.5	53.6	
Internal Link Dist (m)	157.0			222.1	178.8	
Turn Bay Length (m)		125.0	15.0			
Base Capacity (vph)	1281	1025	805	1281	801	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.07	0.03	0.52	0.39	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 55.2  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 19.3  
 Intersection Capacity Utilization 65.5%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 3: Legget & Terry Fox



4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic (mitigated)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	31	61	48	247	29	265	96	3	6	225	408
Future Volume (vph)	55	31	61	48	247	29	265	96	3	6	225	408
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	40.0		0.0	50.0		0.0	30.0		105.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97		0.97	1.00		0.99	1.00		0.96		0.96
Frt		0.901			0.984			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1335	0	1642	1694	0	1674	1750	0	1674	1745	1498
Flt Permitted	0.466			0.697			0.447			0.693		
Satd. Flow (perm)	769	1335	0	1171	1694	0	781	1750	0	1171	1745	1445
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			5			2				397
Link Speed (k/h)		50			50			50				50
Link Distance (m)		242.3			435.5			352.8				403.8
Travel Time (s)		17.4			31.4			25.4				29.1
Confl. Peds. (#/hr)	5		10	10		5	5		15	15		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	40%	4%	3%	1%	20%	1%	1%	1%	1%	2%	1%
Adj. Flow (vph)	55	31	61	48	247	29	265	96	3	6	225	408
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	92	0	48	276	0	265	99	0	6	225	408
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			10.0				10.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Background Traffic (mitigated)

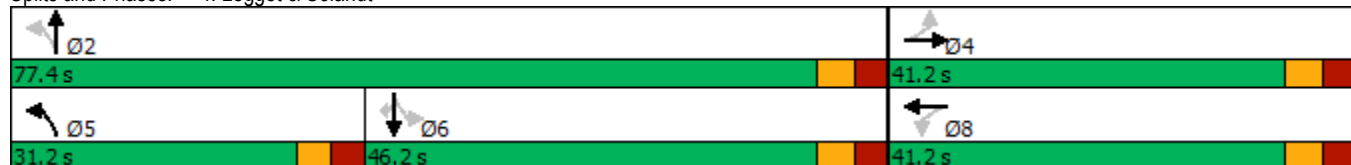


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2		11.0	25.2		25.2	25.2	25.2
Total Split (s)	41.2	41.2		41.2	41.2		31.2	77.4		46.2	46.2	46.2
Total Split (%)	34.7%	34.7%		34.7%	34.7%		26.3%	65.3%		39.0%	39.0%	39.0%
Maximum Green (s)	35.0	35.0		35.0	35.0		25.2	71.2		40.0	40.0	40.0
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.3		3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.2		6.2	6.2	6.2
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Ped		Ped	Ped	Ped
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			12.0		12.0	12.0	12.0
Pedestrian Calls (#/hr)	6	6		3	3			13		2	2	2
Act Effct Green (s)	18.1	18.1		18.1	18.1		43.1	42.9		20.4	20.4	20.4
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.58	0.58		0.28	0.28	0.28
v/c Ratio	0.29	0.25		0.17	0.66		0.41	0.10		0.02	0.47	0.59
Control Delay	29.2	12.9		25.4	34.0		9.9	7.4		24.0	28.0	7.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	29.2	12.9		25.4	34.0		9.9	7.4		24.0	28.0	7.5
LOS	C	B		C	C		A	A		C	C	A
Approach Delay		19.0			32.7			9.3			14.8	
Approach LOS		B			C			A			B	
Queue Length 50th (m)	5.4	2.9		4.6	29.6		13.5	4.5		0.5	22.0	1.0
Queue Length 95th (m)	16.9	14.6		14.3	63.3		32.0	12.6		3.6	52.4	23.6
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)				40.0			50.0			30.0		105.0
Base Capacity (vph)	373	680		569	826		769	1636		650	969	979
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.15	0.14		0.08	0.33		0.34	0.06		0.01	0.23	0.42

Intersection Summary

Area Type: Other  
 Cycle Length: 118.6  
 Actuated Cycle Length: 73.7  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 17.8  
 Intersection Capacity Utilization 80.0%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service D

Splits and Phases: 4: Legget & Solandt



## **APPENDIX N**

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### Transportation Demand Management

# **TRANSPORTATION DEMAND MANAGEMENT**

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## TDM-Supportive Design and Infrastructure Checklist

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

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

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

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

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



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

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

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

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

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

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

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

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>4. RIDESHARING</b>		
<b>4.1 Pick-up &amp; drop-off facilities</b>		
<b>BASIC</b>	4.1.1 Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	<input checked="" type="checkbox"/>
<b>5. CARSHARING &amp; BIKESHARING</b>		
<b>5.1 Carshare parking spaces</b>		
<b>BETTER</b>	5.1.1 Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses ( <i>see Zoning By-law Section 94</i> )	<input type="checkbox"/>
<b>5.2 Bikeshare station location</b>		
<b>BETTER</b>	5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	<input type="checkbox"/>
<b>6. PARKING</b>		
<b>6.1 Number of parking spaces</b>		
<b>REQUIRED</b>	6.1.1 Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	<input checked="" type="checkbox"/>
<b>BASIC</b>	6.1.2 Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	<input type="checkbox"/>
<b>BASIC</b>	6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly ( <i>see Zoning By-law Section 104</i> )	<input type="checkbox"/>
<b>BETTER</b>	6.1.4 Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking ( <i>see Zoning By-law Section 111</i> )	<input type="checkbox"/>
<b>6.2 Separate long-term &amp; short-term parking areas</b>		
<b>BETTER</b>	6.2.1 Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	<input type="checkbox"/>

# **TRANSPORTATION DEMAND MANAGEMENT**

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## TDM Measures Checklist

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

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

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



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

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

## **APPENDIX O**

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MMLOS Analysis

## Segment MMLOS Analysis

This section provides a review of the boundary streets Terry Fox Drive and Legget Drive, using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines*, produced by IBI Group in October 2015, were used to evaluate the levels of service for each alternative mode of transportation on the boundary streets, based on the targets for the 'Employment Area' land use designation.

Exhibit 4 of the MMLOS Guidelines has been used to evaluate the segment pedestrian level of service (PLOS) of the boundary streets. Exhibit 22 of the MMLOS Guidelines suggest a target PLOS C for all roadways in the Employment Area. The results of the segment PLOS analysis are summarized in **Table 1**.

Exhibit 11 of the MMLOS Guidelines has been used to evaluate the segment bicycle level of service (BLOS) of the boundary streets. In the Employment Area, Exhibit 22 of the MMLOS Guidelines suggest a target BLOS C for collector/major collector roadways with a Spine Cycling or Local Cycling Route designation. The results of the segment BLOS analysis are summarized in **Table 2**.

Exhibit 15 of the MMLOS Guidelines has been used to evaluate the segment transit level of service (TLOS) of the boundary streets. While Terry Fox Drive and Legget Drive do not have TLOS targets along the site's frontage, they have still been evaluated for TLOS since transit service is currently provided on both roadways. The results of the segment TLOS analysis are summarized in **Table 3**.

Exhibit 20 of the MMLOS Guidelines has been used to evaluate the segment truck level of service (TkLOS) of the boundary streets. In the Employment Area, Exhibit 22 of the MMLOS Guidelines suggest a target TkLOS D for collector/major collector roadways with no truck route designation. The results of the segment TkLOS analysis are summarized in **Table 4**.

Table 1: PLOS Segment Analysis

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed <sup>(1)</sup>	PLOS
<b>Terry Fox Drive (north side, Legget Drive to Helmsdale Drive)</b>					
No sidewalk		> 3,000 vpd	No	60 km/h	F
<b>Terry Fox Drive (south side, Legget Drive to Helmsdale Drive)</b>					
1.8m	0.5 to 2.0m	> 3,000 vpd	No	60 km/h	E
<b>Legget Drive (east side, Terry Fox Drive to Solandt Road)</b>					
1.8m	> 2.0m	≤ 3,000 vpd	No	60 km/h	A
<b>Legget Drive (west side, Terry Fox Drive to Solandt Road)</b>					
No sidewalk		> 3,000 vpd	No	60 km/h	F

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

Table 2: BLOS Segment Analysis

Road Class	Bike Route	Type of Bikeway	Bike Lane Width	Bike Lane Blockage	Travel Lanes	Operating Speed	BLOS
<b>Terry Fox Drive (Legget Drive to Helmsdale Drive)</b>							
Major Collector	Spine Route	Curbside Bike Lane	1.5 to 1.8m	Rare	1 per direction	60 km/h	C
<b>Legget Drive (Terry Fox Drive to Solandt Road)</b>							
Collector	Local Route	Curbside Bike Lane	1.5 to 1.8m	Rare	1 per direction	60 km/h	C

Table 3: TLOS Segment Analysis

Facility Type	Exposure to Congestion Delay, Friction, and Incidents			TLOS
	Congestion	Friction	Incident Potential	
<b>Terry Fox Drive (Legget Drive to Helmsdale Drive)</b>				
Mixed Traffic – Moderate Parking/Driveway Friction	Yes	Medium	Medium	E
<b>Legget Drive (Terry Fox Drive to Solandt Road)</b>				
Mixed Traffic – Moderate Parking/Driveway Friction	Yes	Medium	Medium	E

Table 4: TkLOS Segment Analysis

Curb Lane Width	Number of Travel Lanes Per Direction	TkLOS
<b>Terry Fox Drive (Legget Drive to Helmsdale Drive)</b>		
> 3.7m	1	B
<b>Legget Drive (Terry Fox Drive to Solandt Road)</b>		
> 3.7m	1	B

## Intersection MMLOS Analysis

The following is a review of the MMLOS of the signalized intersections within the study area, using complete streets principles. The MMLOS targets associated with the 'General Urban Area' designation have been used to evaluate March Road/Morgan's Grant Way/Shirley's Brook Drive, and the targets associated with the 'Employment Area' designation have been used to evaluate March Road/Solandt Road and Legget Drive/Solandt Road. Since March Road/Terry Fox Drive is located in both land use designations, whichever target is stricter has been used in evaluation of this intersection.

Exhibit 5 of the Addendum to the MMLOS Guidelines has been used to evaluate the existing PLOS at the intersections listed above. Exhibit 22 of the MMLOS Guidelines suggests a target PLOS C for all roadways within the General Urban or Employment Areas. The results of the intersection PLOS analysis are summarized in **Table 5** through **Table 8**.

Exhibit 12 of the MMLOS Guidelines has been used to evaluate the existing BLOS at the intersections listed above. Exhibit 22 of the MMLOS Guidelines suggests a target BLOS B for Local Routes in the General Urban Area (Morgan's Grant Way and Shirley's Brook Drive), and a target BLOS C for Spine Routes in the General Urban and Employment Areas (March Road and Terry Fox Drive) and Local Routes in the Employment Area (Solandt Road and Legget Drive). The results of the intersection BLOS analysis are summarized in **Table 9**.

Exhibit 16 of the MMLOS Guidelines has been used to evaluate the existing TLOS at the intersections listed above. Exhibit 22 of the MMLOS Guidelines identifies a target TLOS B for Rapid Transit Corridors (March Road south of Solandt Road), a target TLOS D for Transit Priority Corridors with Isolated Measures (March Road north of Solandt Road), and does not identify a target TLOS for roadways without a Rapid Transit or Transit Priority designation (Terry Fox Drive, Morgan's Grant Way/Shirley's Brook Drive, Solandt Road, Legget Drive). The TLOS has been evaluated for every approach that is currently used by transit. The results of the intersection TLOS analysis are summarized in **Table 10**.

Exhibit 21 of the MMLOS Guidelines has been used to evaluate the existing TkLOS at the intersections listed above. Exhibit 22 of the MMLOS Guidelines identifies a target TkLOS B for arterial truck routes in the Employment Area (March Road south of Terry Fox Drive, Terry Fox Drive west of March Road), and a target TkLOS D for arterial truck routes in the General Urban Area (March Road north of Terry Fox Drive) and collector roadways without a truck route designation in the Employment Area (Terry Fox Drive east of March Road, Legget Drive, and Solandt Road). No target is identified for collector roadways without a truck route designation in the General Urban Area (Morgan's Grant Way, Shirley's Brook Drive). The results of the intersection TkLOS analysis are summarized in **Table 11**.

**Table 5: PLOS Intersection Analysis – March Road/Morgan’s Grant Way/Shirley’s Brook Drive**

CRITERIA	North Approach		South Approach		East Approach		West Approach	
<b>PETSI SCORE</b>								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	-10	No	-10	No	-10	No	-10
Lanes Crossed (3.5m Lane Width)	10 +		10 +		10 +			
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Permissive	-8	Permissive	-8	Perm + Prot	-8	Perm + Prot	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	N/A	0	N/A	0	N/A	0	N/A	0
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8
Parallel Right Turn Channel	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0
Perpendicular Radius	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8
Perpendicular Right Turn Channel	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0
<i>CROSSING TREATMENT</i>								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
	<b>PETSI SCORE</b>	<b>-48</b>		<b>-48</b>		<b>-48</b>		<b>-48</b>
	<b>LOS</b>	<b>F</b>		<b>F</b>		<b>F</b>		<b>F</b>
<b>DELAY SCORE</b>								
Cycle Length		130		130		130		130
Pedestrian Walk Time		7.5		7.5		55.9		55.9
	<b>DELAY SCORE</b>	<b>57.7</b>		<b>57.7</b>		<b>21.1</b>		<b>21.1</b>
	<b>LOS</b>	<b>E</b>		<b>E</b>		<b>C</b>		<b>C</b>
<b>OVERALL</b>		<b>F</b>	<b>F</b>		<b>F</b>		<b>F</b>	

**Table 6: PLOS Intersection Analysis – March Road/Terry Fox Drive**

CRITERIA	North Approach		South Approach		East Approach		West Approach	
<b>PETSI SCORE</b>								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	-10	No	-10	No	-10	No	-10
Lanes Crossed (3.5m Lane Width)	10 +		10 +		10 +			
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Protected	0	Protected	0	Protected	0	Protected	0
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	N/A	0	N/A	0	N/A	0	N/A	0
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8
Parallel Right Turn Channel	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0
Perpendicular Radius	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8
Perpendicular Right Turn Channel	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0
<i>CROSSING TREATMENT</i>								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
	<b>PETSI SCORE</b>	<b>-40</b>		<b>-40</b>		<b>-40</b>		<b>-40</b>
	<b>LOS</b>	<b>F</b>		<b>F</b>		<b>F</b>		<b>F</b>
<b>DELAY SCORE</b>								
Cycle Length		130		130		130		130
Pedestrian Walk Time		7.0		7.0		15.3		15.3
	<b>DELAY SCORE</b>	<b>58.2</b>		<b>58.2</b>		<b>50.6</b>		<b>50.6</b>
	<b>LOS</b>	<b>E</b>		<b>E</b>		<b>E</b>		<b>E</b>
<b>OVERALL</b>		<b>F</b>	<b>F</b>		<b>F</b>		<b>F</b>	

**Table 7: PLOS Intersection Analysis – March Road/Solandt Road**

CRITERIA	North Approach		South Approach		East Approach		West Approach	
<b>PETSI SCORE</b>								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	-10	No	-10	No	-10	No	-10
Lanes Crossed (3.5m Lane Width)	10 +		10 +		10 +			
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Protected	0	Protected	0	Permissive	-8	Perm + Prot	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	N/A	0	N/A	0	N/A	0	N/A	0
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8
Parallel Right Turn Channel	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0
Perpendicular Radius	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8
Perpendicular Right Turn Channel	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0	Conventional without Receiving	0
<i>CROSSING TREATMENT</i>								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
	<b>PETSI SCORE</b>	<b>-40</b>		<b>-40</b>		<b>-48</b>		<b>-48</b>
	<b>LOS</b>	<b>F</b>		<b>F</b>		<b>F</b>		<b>F</b>
<b>DELAY SCORE</b>								
Cycle Length		130		130		130		130
Pedestrian Walk Time		7.5		7.5		45.7		27.7
	<b>DELAY SCORE</b>	<b>57.7</b>		<b>57.7</b>		<b>27.3</b>		<b>40.3</b>
	<b>LOS</b>	<b>E</b>		<b>E</b>		<b>C</b>		<b>E</b>
<b>OVERALL</b>		<b>F</b>		<b>F</b>		<b>F</b>		<b>F</b>

**Table 8: PLOS Intersection Analysis – Legget Drive/Solandt Road**

CRITERIA	North Approach		South Approach		East Approach		West Approach	
<b>PETSI SCORE</b>								
<i>CROSSING DISTANCE CONDITIONS</i>								
Median > 2.4m in Width	No	55	No	55	No	55	No	55
Lanes Crossed (3.5m Lane Width)	6		6		6			
<i>SIGNAL PHASING AND TIMING</i>								
Left Turn Conflict	Permissive	-8	Permissive	-8	Permissive	-8	Perm + Prot	-8
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
<i>CORNER RADIUS</i>								
Parallel Radius	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	N/A	0	N/A	0
Perpendicular Right Turn Channel	N/A	0	N/A	0	N/A	0	N/A	0
<i>CROSSING TREATMENT</i>								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
	<b>PETSI SCORE</b>	<b>18</b>		<b>18</b>		<b>18</b>		<b>18</b>
	<b>LOS</b>	<b>F</b>		<b>F</b>		<b>F</b>		<b>F</b>
<b>DELAY SCORE</b>								
Cycle Length		118.6		118.6		112.4		112.4
Pedestrian Walk Time		23.0		23.0		28.0		28.0
	<b>DELAY SCORE</b>	<b>38.5</b>		<b>38.5</b>		<b>31.7</b>		<b>31.7</b>
	<b>LOS</b>	<b>D</b>		<b>D</b>		<b>D</b>		<b>D</b>
<b>OVERALL</b>		<b>F</b>		<b>F</b>		<b>F</b>		<b>F</b>



Table 9: BLOS Intersection Analysis

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
<b>March Road/Morgan's Grant Way/Shirley's Brook Drive</b>				
North Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane $\leq$ 50m and introduced to the right	<b>B</b>
		Left Turn Accommodation	3 lanes crossed, $\geq$ 60 km/h	<b>F</b>
South Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane $\leq$ 50m and introduced to the right	<b>B</b>
		Left Turn Accommodation	3 lanes crossed, $\geq$ 60 km/h	<b>F</b>
East Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane $\leq$ 50m and introduced to the right	<b>B</b>
		Left Turn Accommodation	1 lane crossed, 50 km/h	<b>C</b>
West Approach	Curbside Bike Lane	Right Turn Lane Characteristics	No impact to level of traffic stress	<b>A</b>
		Left Turn Accommodation	No lanes crossed, $\leq$ 50 km/h	<b>B</b>
<b>March Road/Terry Fox Drive</b>				
North Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane $>$ 50m and introduced to the right	<b>D</b>
		Left Turn Accommodation	3 lanes crossed, $\geq$ 50 km/h	<b>F</b>
South Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane $>$ 50m and introduced to the right	<b>D</b>
		Left Turn Accommodation	Dual left turn lanes	<b>F</b>
East Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane $>$ 50m and introduced to the right	<b>D</b>
		Left Turn Accommodation	Dual left turn lanes	<b>F</b>
West Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane $>$ 50m and introduced to the right	<b>D</b>
		Left Turn Accommodation	Dual left turn lanes	<b>F</b>
<b>March Road/Solandt Road</b>				
North Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right turn lane $>$ 50m and introduced to the right	<b>D</b>
		Left Turn Accommodation	2 lanes crossed, $\geq$ 50 km/h	<b>F</b>
South Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Bike lane shifts to the left of the right turn lane	<b>D</b>
		Left Turn Accommodation	2 lanes crossed, $\geq$ 50 km/h	<b>F</b>
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	<b>A</b>
		Left Turn Accommodation	Dual left turn lanes	<b>F</b>
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Right turn lane $>$ 50m	<b>F</b>
		Left Turn Accommodation	1 lane crossed, $\geq$ 60 km/h	<b>F</b>

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
<b>Legget Drive/Solandt Road</b>				
North Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	1 lane crossed, $\geq 60$ km/h	F
South Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	1 lane crossed, $\geq 60$ km/h	F
East Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	1 lane crossed, $\geq 60$ km/h	F
West Approach	Mixed Traffic	Right Turn Lane Characteristics	Shared through/right turn lane	A
		Left Turn Accommodation	1 lane crossed, $\geq 60$ km/h	F

**Table 10: TLOS Intersection Analysis**

Approach	Delay <sup>(1)</sup>		TLOS
	AM Peak	PM Peak	
<b>March Road/Morgan's Grant Way/Shirley's Brook Drive</b>			
North Approach	11 sec	11 sec	C
South Approach	19 sec	7 sec	C
East Approach	55 sec	36 sec	F
West Approach	17 sec	24 sec	D
<b>March Road/Terry Fox Drive</b>			
North Approach	53 sec	32 sec	F
South Approach	42 sec	28 sec	F
East Approach	41 sec	40 sec	F
West Approach	40 sec	39 sec	F
<b>March Road/Solandt Road</b>			
North Approach	104 sec	38 sec	F
South Approach	35 sec	103 sec	F
East Approach	62 sec	64 sec	F
West Approach	38 sec	356 sec	F
<b>Legget Drive/Solandt Road</b>			
North Approach	25 sec	95 sec	F
South Approach	26 sec	24 sec	D
East Approach	7 sec	44 sec	F
West Approach	15 sec	29 sec	D

1. Delay based on outputs from Synchro analysis of existing conditions

Table 11: TkLOS Intersection Analysis

Approach	Effective Corner Radius	Number of Receiving Lanes Departing Intersection	TkLOS
<b>March Road/Morgan's Grant Way/Shirley's Brook Drive</b>			
North Approach	> 15m	2	A
South Approach	> 15m	2	A
East Approach	> 15m	3	A
West Approach	> 15m	3	A
<b>March Road/Terry Fox Drive</b>			
North Approach	> 15m	2	A
South Approach	> 15m	2	A
East Approach	> 15m	3	A
West Approach	> 15m	3	A
<b>March Road/Solandt Road</b>			
North Approach	> 15m	2	A
South Approach	> 15m	2	A
East Approach	> 15m	3	A
West Approach	> 15m	3	A
<b>Legget Drive/Solandt Road</b>			
North Approach	> 15m	1	C
South Approach	> 15m	1	C
East Approach	> 15m	1	C
West Approach	> 15m	1	C

## **APPENDIX P**

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Total Synchro Analysis



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↖↖	↖	↖↖	↖↖	↖	↖↖	↖↖↖	↖	↖	↖↖↖	↖
Traffic Volume (vph)	102	542	248	86	143	57	279	564	175	395	1507	199
Future Volume (vph)	102	542	248	86	143	57	279	564	175	395	1507	199
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99		0.95	0.97		0.98	0.99		0.97	0.99		0.95
Fr <sub>t</sub>			0.850			0.850			0.850			0.850
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3216	3349	1483	3095	3283	1469	3185	4584	1483	1658	4764	1483
Fl <sub>t</sub> Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3187	3349	1416	3014	3283	1435	3160	4584	1433	1641	4764	1410
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			248			146			175			199
Link Speed (k/h)		50			60			80			80	
Link Distance (m)		359.1			149.7			919.4			306.4	
Travel Time (s)		25.9			9.0			41.4			13.8	
Confl. Peds. (#/hr)	10		30	30		10	25		15	15		25
Confl. Bikes (#/hr)			1									1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	2%	6%	3%	3%	3%	6%	2%	2%	2%	2%
Adj. Flow (vph)	102	542	248	86	143	57	279	564	175	395	1507	199
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	542	248	86	143	57	279	564	175	395	1507	199
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6



2: March & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	115	130	75	129	39	616	932	818	169	1581	115
Future Volume (vph)	29	115	130	75	129	39	616	932	818	169	1581	115
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		0.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.98	0.99				0.96	1.00		0.97
Frt			0.850		0.965				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1537	1745	1441	3216	1644	0	1674	3252	1498	1658	3283	1483
Flt Permitted	0.950			0.950			0.092			0.307		
Satd. Flow (perm)	1518	1745	1400	3145	1644	0	162	3252	1432	533	3283	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130		10				589			132
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		117.9			242.3			405.0			919.4	
Travel Time (s)		8.5			17.4			18.2			41.4	
Confl. Peds. (#/hr)	10		10	10		10	10		5	5		10
Confl. Bikes (#/hr)			1			1			12			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	2%	5%	2%	4%	3%	1%	4%	1%	2%	3%	2%
Adj. Flow (vph)	29	115	130	75	129	39	616	932	818	169	1581	115
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	115	130	75	168	0	616	932	818	169	1581	115
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			10.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4				2		2	6		6
Detector Phase	7	4	4	3	8		5	2	2	6	6	6

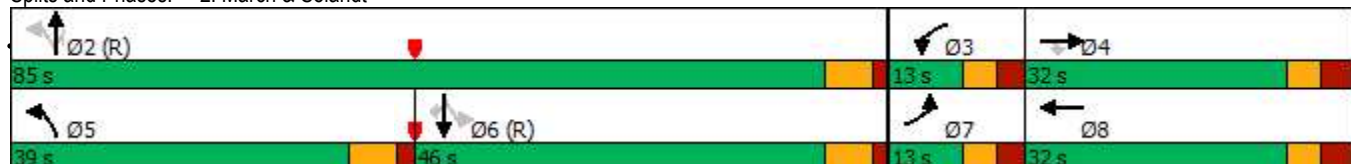


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	10.9	31.5	31.5	10.9	31.5		11.3	26.3	26.3	26.3	26.3	26.3
Total Split (s)	13.0	32.0	32.0	13.0	32.0		39.0	85.0	85.0	46.0	46.0	46.0
Total Split (%)	10.0%	24.6%	24.6%	10.0%	24.6%		30.0%	65.4%	65.4%	35.4%	35.4%	35.4%
Maximum Green (s)	7.1	25.5	25.5	7.1	25.5		32.7	78.7	78.7	39.7	39.7	39.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.6	3.2	3.2	2.6	3.2		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	6.5	6.5	5.9	6.5		6.3	6.3	6.3	6.3	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		18.0			12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		8	8		7			6	6	0	0	0
Act Effct Green (s)	6.7	17.2	17.2	6.9	19.8		89.6	89.6	89.6	39.7	39.7	39.7
Actuated g/C Ratio	0.05	0.13	0.13	0.05	0.15		0.69	0.69	0.69	0.31	0.31	0.31
v/c Ratio	0.37	0.50	0.44	0.44	0.65		1.00	0.42	0.70	1.04	1.58	0.22
Control Delay	72.9	58.5	12.2	68.0	60.2		71.7	10.7	7.3	97.6	287.8	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.9	58.5	12.2	68.0	60.2		71.7	10.7	7.3	97.6	287.8	4.1
LOS	E	E	B	E	E		E	B	A	F	F	A
Approach Delay		38.1			62.6			25.4			253.0	
Approach LOS		D			E			C			F	
Queue Length 50th (m)	6.7	25.4	0.0	9.0	36.2		~146.2	50.3	23.3	~24.3	~270.1	1.5
Queue Length 95th (m)	16.2	40.3	15.5	16.4	54.9		#235.4	73.7	77.1	m#59.7	#308.7	m3.1
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0			165.0			155.0		75.0
Base Capacity (vph)	83	342	379	175	330		618	2240	1169	162	1002	529
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.34	0.34	0.43	0.51		1.00	0.42	0.70	1.04	1.58	0.22

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 15 (12%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.58  
 Intersection Signal Delay: 117.5 Intersection LOS: F  
 Intersection Capacity Utilization 120.2% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt







Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	612	565	53	161	43	43
Future Volume (vph)	612	565	53	161	43	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.935				0.932	
Flt Protected				0.988	0.976	
Satd. Flow (prot)	1648	0	0	1636	1557	0
Flt Permitted				0.988	0.976	
Satd. Flow (perm)	1648	0	0	1636	1557	0
Link Speed (k/h)	60				60	50
Link Distance (m)	181.0				246.1	202.8
Travel Time (s)	10.9				14.8	14.6
Confl. Peds. (#/hr)	25		25	2		
Confl. Bikes (#/hr)	1					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	9%	7%	3%	5%
Adj. Flow (vph)	612	565	53	161	43	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1177	0	0	214	86	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5				3.5	3.5
Link Offset(m)	0.0				0.0	0.0
Crosswalk Width(m)	5.0				5.0	5.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		
Sign Control	Free				Free	Stop

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 84.2%

ICU Level of Service E

Analysis Period (min) 15

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	445	261	247	3	28	9	106	185	57	54	193	63
Future Volume (vph)	445	261	247	3	28	9	106	185	57	54	193	63
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		1.00	0.99		0.99	0.98		0.97	0.99	
Frt		0.927			0.964			0.965			0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1606	0	1674	1347	0	1566	1649	0	1537	1670	0
Flt Permitted	0.733			0.394			0.577			0.601		
Satd. Flow (perm)	1274	1606	0	691	1347	0	943	1649	0	946	1670	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65			9			15			16	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		5	5		5	5		15	15		5
Confl. Bikes (#/hr)									3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	30%	15%	8%	3%	1%	10%	2%	1%
Adj. Flow (vph)	445	261	247	3	28	9	106	185	57	54	193	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	445	508	0	3	37	0	106	242	0	54	256	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		25.2	25.2		25.2	25.2	
Total Split (s)	66.2	66.2		66.2	66.2		46.2	46.2		46.2	46.2	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	
Maximum Green (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	1	1		4	4		11	11		0	0	
Act Effct Green (s)	28.8	28.8		28.8	28.8		16.1	16.1		16.1	16.1	
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.28	0.28		0.28	0.28	
v/c Ratio	0.71	0.62		0.01	0.06		0.41	0.52		0.21	0.54	
Control Delay	18.9	13.0		8.3	6.9		26.0	23.6		22.0	24.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.9	13.0		8.3	6.9		26.0	23.6		22.0	24.0	
LOS	B	B		A	A		C	C		C	C	
Approach Delay		15.7			7.0			24.3			23.7	
Approach LOS		B			A			C			C	
Queue Length 50th (m)	27.9	25.4		0.1	1.2		7.8	17.2		3.8	18.3	
Queue Length 95th (m)	73.5	66.0		1.3	5.6		26.7	49.3		14.8	52.1	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		
Base Capacity (vph)	1168	1478		634	1236		693	1216		695	1232	
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	0.38	0.34		0.00	0.03		0.15	0.20		0.08	0.21	

Intersection Summary

Area Type: Other

Cycle Length: 112.4

Actuated Cycle Length: 58.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 18.8

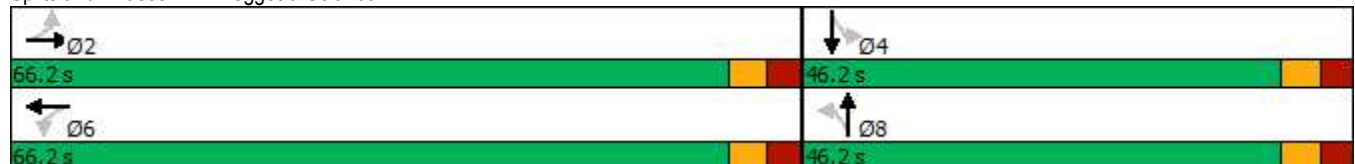
Intersection LOS: B

Intersection Capacity Utilization 71.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
AM Peak Hour

525 Legget Drive  
2024 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	320	19	6	235	38	18	0	6	132	3	69
Future Volume (vph)	40	320	19	6	235	38	18	0	6	132	3	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.982			0.966			0.954	
Flt Protected		0.995			0.999			0.964			0.969	
Satd. Flow (prot)	0	1682	0	0	1694	0	0	1594	0	0	1608	0
Flt Permitted		0.995			0.999			0.964			0.969	
Satd. Flow (perm)	0	1682	0	0	1694	0	0	1594	0	0	1608	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)			8	8			5					5
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	2%	5%	1%	2%	10%	5%	1%	1%	2%	1%	3%
Adj. Flow (vph)	40	320	19	6	235	38	18	0	6	132	3	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	379	0	0	279	0	0	24	0	0	204	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 60.6%

ICU Level of Service B

Analysis Period (min) 15



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	645	52	13	192	30	7
Future Volume (vph)	645	52	13	192	30	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990			0.974		
Flt Protected				0.997	0.961	
Satd. Flow (prot)	1728	0	0	1740	1633	0
Flt Permitted				0.997	0.961	
Satd. Flow (perm)	1728	0	0	1740	1633	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	169.3	
Travel Time (s)	14.8			18.7	12.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	645	52	13	192	30	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	697	0	0	205	37	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	49.2%			ICU Level of Service A		
Analysis Period (min)	15					

7: March & Morgan's Grant/Shirley's Brook  
AM Peak Hour

525 Legget Drive  
2024 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	11	48	144	112	17	25	44	665	28	166	1855	8
Future Volume (vph)	11	48	144	112	17	25	44	665	28	166	1855	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	1.00		0.98			0.96	0.99		0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.991		0.950			0.950			0.950		
Satd. Flow (prot)	0	1747	1498	1674	1618	1441	1642	4584	1498	1674	4764	1498
Flt Permitted		0.945		0.719			0.088			0.367		
Satd. Flow (perm)	0	1664	1470	1263	1618	1418	152	4584	1435	642	4764	1433
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			80			91			91
Link Speed (k/h)		40			40			80			80	
Link Distance (m)		374.6			363.0			306.4			376.3	
Travel Time (s)		33.7			32.7			13.8			16.9	
Confl. Peds. (#/hr)	3		3	3		3	5		6	6		5
Confl. Bikes (#/hr)			3						1			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	10%	5%	3%	6%	1%	1%	2%	1%
Adj. Flow (vph)	11	48	144	112	17	25	44	665	28	166	1855	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	144	112	17	25	44	665	28	166	1855	8
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

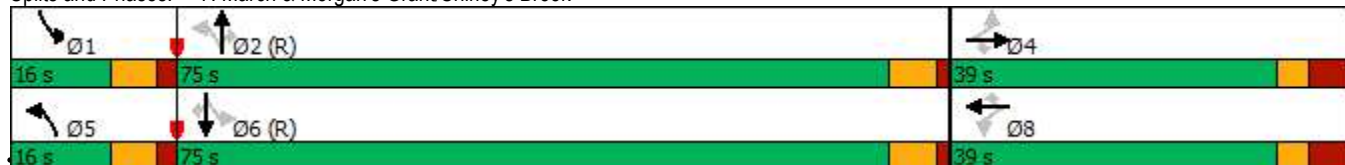


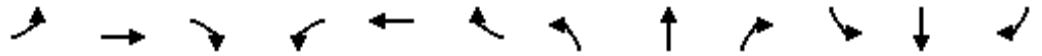
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	26.1	26.1	11.4	26.1	26.1
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	16.0	75.0	75.0	16.0	75.0	75.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	12.3%	57.7%	57.7%	12.3%	57.7%	57.7%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	9.6	68.9	68.9	9.6	68.9	68.9
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	1.8	1.5	1.5	1.8	1.5	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.1	6.1	6.4	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	3	3	3	3	3	3		6	6		6	6
Act Effct Green (s)		18.3	18.3	18.3	18.3	18.3	89.2	83.0	83.0	94.6	87.6	87.6
Actuated g/C Ratio		0.14	0.14	0.14	0.14	0.14	0.69	0.64	0.64	0.73	0.67	0.67
v/c Ratio		0.25	0.44	0.63	0.07	0.09	0.25	0.23	0.03	0.31	0.58	0.01
Control Delay		49.4	11.5	66.6	44.7	0.7	22.9	14.2	0.4	7.1	14.1	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		49.4	11.5	66.6	44.7	0.7	22.9	14.2	0.4	7.1	14.1	0.0
LOS		D	B	E	D	A	C	B	A	A	B	A
Approach Delay		22.5			53.5			14.2			13.5	
Approach LOS		C			D			B			B	
Queue Length 50th (m)		12.7	0.6	25.6	3.6	0.0	4.7	27.9	0.0	8.9	80.5	0.0
Queue Length 95th (m)		22.0	15.7	39.0	9.0	0.0	11.8	18.4	m0.1	22.3	130.7	0.0
Internal Link Dist (m)		350.6			339.0			282.4			352.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		403	463	306	392	404	218	2926	949	547	3208	994
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.15	0.31	0.37	0.04	0.06	0.20	0.23	0.03	0.30	0.58	0.01

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 95 (73%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 16.2 Intersection LOS: B  
 Intersection Capacity Utilization 76.7% ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↕	↗	↖↖	↕	↗	↖↖	↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	304	161	408	222	398	402	295	1879	118	108	849	148
Future Volume (vph)	304	161	408	222	398	402	295	1879	118	108	849	148
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.98		0.95	0.96		0.95	0.98		0.95	1.00		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3248	3283	1498	3248	3349	1498	3185	4811	1498	1658	4811	1498
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3175	3283	1430	3103	3349	1419	3124	4811	1423	1653	4811	1424
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			295			272			149			149
Link Speed (k/h)		50			60			80			80	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			41.4			14.0	
Confl. Peds. (#/hr)	35		30	30		35	25		25	25		25
Confl. Bikes (#/hr)			1			3			2			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	1%	1%	1%	1%	3%	1%	1%	2%	1%	1%
Adj. Flow (vph)	304	161	408	222	398	402	295	1879	118	108	849	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	304	161	408	222	398	402	295	1879	118	108	849	148
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6



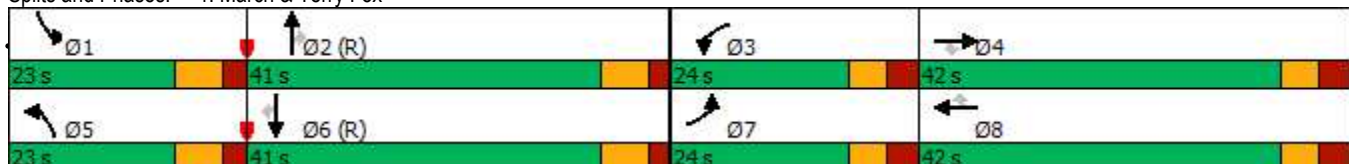


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	11.8	42.0	42.0	11.8	42.0	42.0	11.9	32.7	32.7	11.9	32.7	32.7
Total Split (s)	24.0	42.0	42.0	24.0	42.0	42.0	23.0	41.0	41.0	23.0	41.0	41.0
Total Split (%)	18.5%	32.3%	32.3%	18.5%	32.3%	32.3%	17.7%	31.5%	31.5%	17.7%	31.5%	31.5%
Maximum Green (s)	17.2	35.0	35.0	17.2	35.0	35.0	16.1	34.3	34.3	16.1	34.3	34.3
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	3.1	3.3	3.3	3.1	3.3	3.3	2.3	2.1	2.1	2.3	2.1	2.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	7.0	7.0	6.8	7.0	7.0	6.9	6.7	6.7	6.9	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		19.0	19.0		19.0	19.0
Pedestrian Calls (#/hr)		26	26		30	30		19	19		19	19
Act Effct Green (s)	16.0	30.2	30.2	14.0	28.2	28.2	15.3	45.3	45.3	13.1	43.1	43.1
Actuated g/C Ratio	0.12	0.23	0.23	0.11	0.22	0.22	0.12	0.35	0.35	0.10	0.33	0.33
v/c Ratio	0.76	0.21	0.73	0.64	0.55	0.77	0.79	1.12	0.20	0.65	0.53	0.26
Control Delay	68.2	39.4	20.2	63.9	47.1	24.8	63.6	81.6	4.6	83.0	34.7	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.2	39.4	20.2	63.9	47.1	24.8	63.6	81.6	4.6	83.0	34.7	9.1
LOS	E	D	C	E	D	C	E	F	A	F	C	A
Approach Delay		40.5			42.0			75.3			36.0	
Approach LOS		D			D			E			D	
Queue Length 50th (m)	35.9	14.8	21.6	26.2	41.1	27.0	31.2	~218.8	5.0	27.2	39.1	0.1
Queue Length 95th (m)	50.2	24.0	57.4	37.4	55.3	62.1	m24.2	m#148.6	m3.0	44.6	64.3	17.2
Internal Link Dist (m)		335.1			125.7			895.4			286.4	
Turn Bay Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Base Capacity (vph)	429	906	608	429	901	580	394	1675	592	205	1595	571
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.18	0.67	0.52	0.44	0.69	0.75	1.12	0.20	0.53	0.53	0.26

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 96 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 140  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.12  
 Intersection Signal Delay: 54.9  
 Intersection LOS: D  
 Intersection Capacity Utilization 100.3%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: March & Terry Fox



2: March & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	49	655	742	81	232	123	2059	91	47	1198	69
Future Volume (vph)	88	49	655	742	81	232	123	2059	91	47	1198	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		0.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	2		0	1		1	1		1
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.97	0.98	0.98				0.96			0.95
Frt			0.850		0.889				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1695	1498	3248	1533	0	1626	3349	1469	1674	3316	1441
Flt Permitted	0.950			0.950			0.077			0.088		
Satd. Flow (perm)	1641	1695	1451	3169	1533	0	132	3349	1413	155	3316	1376
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130		99				79			132
Link Speed (k/h)		50			50			80			80	
Link Distance (m)		117.9			242.3			405.0			919.4	
Travel Time (s)		8.5			17.4			18.2			41.4	
Confl. Peds. (#/hr)	10		10	10		10	15		5	5		15
Confl. Bikes (#/hr)			4			2			2			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	5%	1%	1%	1%	1%	4%	1%	3%	1%	2%	5%
Adj. Flow (vph)	88	49	655	742	81	232	123	2059	91	47	1198	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	49	655	742	313	0	123	2059	91	47	1198	69
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		7.0			10.5			7.0			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5		6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8		6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			4				2		2	6		6
Detector Phase	7	4	4	3	8		5	2	2	6	6	6

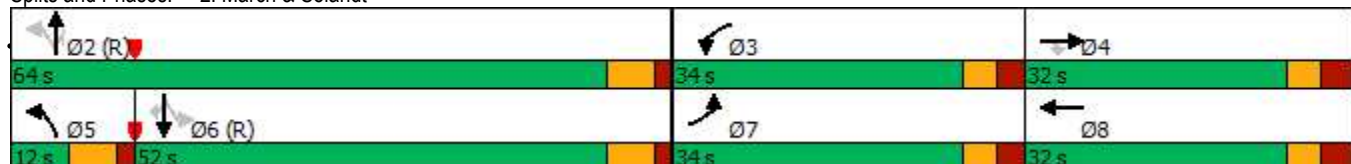


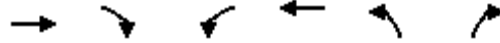
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	20.0	20.0	20.0	20.0	20.0
Minimum Split (s)	10.9	31.5	31.5	10.9	31.5		11.3	26.3	26.3	26.3	26.3	26.3
Total Split (s)	34.0	32.0	32.0	34.0	32.0		12.0	64.0	64.0	52.0	52.0	52.0
Total Split (%)	26.2%	24.6%	24.6%	26.2%	24.6%		9.2%	49.2%	49.2%	40.0%	40.0%	40.0%
Maximum Green (s)	28.1	25.5	25.5	28.1	25.5		5.7	57.7	57.7	45.7	45.7	45.7
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3		4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.6	3.2	3.2	2.6	3.2		1.7	1.7	1.7	1.7	1.7	1.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.9	6.5	6.5	5.9	6.5		6.3	6.3	6.3	6.3	6.3	6.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead			Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	C-Max	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0			7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		18.0	18.0		18.0			12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		5	5		8			1	1	11	11	11
Act Effct Green (s)	12.2	25.5	25.5	28.1	41.4		57.7	57.7	57.7	45.7	45.7	45.7
Actuated g/C Ratio	0.09	0.20	0.20	0.22	0.32		0.44	0.44	0.44	0.35	0.35	0.35
v/c Ratio	0.56	0.15	1.68	1.06	0.56		0.99	1.39	0.14	0.87	1.03	0.12
Control Delay	69.5	44.7	345.4	98.6	30.0		107.1	208.6	6.2	116.3	66.6	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.5	44.7	345.4	98.6	30.0		107.1	208.6	6.2	116.3	66.6	3.3
LOS	E	D	F	F	C		F	F	A	F	E	A
Approach Delay		296.2			78.2			195.0			65.1	
Approach LOS		F			E			F			E	
Queue Length 50th (m)	20.2	9.7	~201.3	~98.8	41.8		17.2	~339.4	1.6	11.1	~159.5	3.3
Queue Length 95th (m)	34.8	20.1	#268.1	#133.6	73.4		#53.4	#377.6	10.7	m#28.5	#200.4	m6.5
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0			165.0			155.0		75.0
Base Capacity (vph)	358	332	389	702	555		124	1486	671	54	1165	569
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.15	1.68	1.06	0.56		0.99	1.39	0.14	0.87	1.03	0.12

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 30 (23%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.68  
 Intersection Signal Delay: 155.7  
 Intersection LOS: F  
 Intersection Capacity Utilization 131.8%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	192	83	34	717	313	53
Future Volume (vph)	192	83	34	717	313	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.959				0.980	
Flt Protected				0.998	0.959	
Satd. Flow (prot)	1675	0	0	1759	1635	0
Flt Permitted				0.998	0.959	
Satd. Flow (perm)	1675	0	0	1759	1635	0
Link Speed (k/h)	60				60	50
Link Distance (m)	181.0				246.1	202.8
Travel Time (s)	10.9				14.8	14.6
Confl. Peds. (#/hr)	20		20			
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	1%	1%	10%
Adj. Flow (vph)	192	83	34	717	313	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	275	0	0	751	366	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5				3.5	3.5
Link Offset(m)	0.0				0.0	0.0
Crosswalk Width(m)	5.0				5.0	5.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free				Free	Stop

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 90.1%

ICU Level of Service E

Analysis Period (min) 15

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	32	68	52	264	30	300	112	4	7	255	464
Future Volume (vph)	67	32	68	52	264	30	300	112	4	7	255	464
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97		0.97	1.00			1.00		0.96	0.98	
Frt		0.898			0.985			0.995			0.903	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1336	0	1642	1697	0	1674	1750	0	1674	1550	0
Flt Permitted	0.341			0.692			0.086			0.682		
Satd. Flow (perm)	563	1336	0	1163	1697	0	152	1750	0	1154	1550	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68			5			3			83	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		10	10		5	5		15	15		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	40%	4%	3%	1%	20%	1%	1%	1%	1%	2%	1%
Adj. Flow (vph)	67	32	68	52	264	30	300	112	4	7	255	464
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	100	0	52	294	0	300	116	0	7	719	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Total Traffic



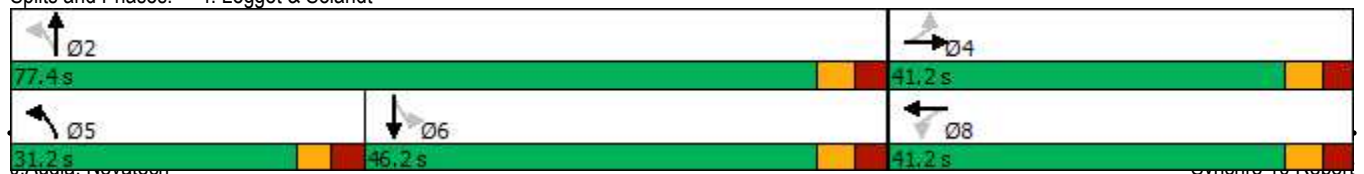
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		11.0	25.2		25.2	25.2	
Total Split (s)	41.2	41.2		41.2	41.2		31.2	77.4		46.2	46.2	
Total Split (%)	34.7%	34.7%		34.7%	34.7%		26.3%	65.3%		39.0%	39.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		25.2	71.2		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.2		6.2	6.2	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			12.0		12.0	12.0	
Pedestrian Calls (#/hr)	6	6		3	3			13		2	2	
Act Effct Green (s)	22.9	22.9		22.9	22.9		67.9	67.7		40.4	40.4	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.66	0.66		0.39	0.39	
v/c Ratio	0.54	0.29		0.20	0.77		0.73	0.10		0.02	1.09	
Control Delay	52.9	15.3		34.9	51.7		34.9	7.7		24.3	92.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	52.9	15.3		34.9	51.7		34.9	7.7		24.3	92.4	
LOS	D	B		C	D		C	A		C	F	
Approach Delay		30.4			49.1			27.3			91.7	
Approach LOS		C			D			C			F	
Queue Length 50th (m)	11.3	4.9		8.1	51.8		36.5	6.7		0.8	~145.5	
Queue Length 95th (m)	24.8	17.1		17.6	79.2		73.8	16.8		4.0	#244.3	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		
Base Capacity (vph)	193	503		399	585		476	1222		452	658	
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	0.35	0.20		0.13	0.50		0.63	0.09		0.02	1.09	

Intersection Summary

Area Type: Other  
 Cycle Length: 118.6  
 Actuated Cycle Length: 103.1  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.09  
 Intersection Signal Delay: 60.4  
 Intersection Capacity Utilization 111.8%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service H

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

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
PM Peak Hour

525 Legget Drive  
2024 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	255	12	6	386	153	21	4	4	55	0	68
Future Volume (vph)	77	255	12	6	386	153	21	4	4	55	0	68
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.962			0.981			0.925	
Flt Protected		0.989			0.999			0.965			0.978	
Satd. Flow (prot)	0	1714	0	0	1694	0	0	1668	0	0	1527	0
Flt Permitted		0.989			0.999			0.965			0.978	
Satd. Flow (perm)	0	1714	0	0	1694	0	0	1668	0	0	1527	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)	5		5	5		5	20		5	5		20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	9%
Adj. Flow (vph)	77	255	12	6	386	153	21	4	4	55	0	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	344	0	0	545	0	0	29	0	0	123	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 72.2%

ICU Level of Service C

Analysis Period (min) 15



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	215	41	10	732	52	12
Future Volume (vph)	215	41	10	732	52	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.978			0.975		
Flt Protected				0.999	0.961	
Satd. Flow (prot)	1707	0	0	1743	1635	0
Flt Permitted				0.999	0.961	
Satd. Flow (perm)	1707	0	0	1743	1635	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	155.6	
Travel Time (s)	14.8			18.7	11.2	
Confl. Peds. (#/hr)	10		10			
Confl. Bikes (#/hr)	1					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	215	41	10	732	52	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	256	0	0	742	64	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 59.6%

ICU Level of Service B

Analysis Period (min) 15



7: March & Morgan's Grant/Shirley's Brook  
PM Peak Hour

525 Legget Drive  
2024 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	12	59	75	93	68	235	290	2110	119	166	986	21
Future Volume (vph)	12	59	75	93	68	235	290	2110	119	166	986	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	0.99		0.98	1.00		0.96			0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.992		0.950			0.950			0.950		
Satd. Flow (prot)	0	1603	1498	1658	1762	1498	1674	4811	1498	1674	4718	1498
Flt Permitted		0.938		0.711			0.262			0.050		
Satd. Flow (perm)	0	1514	1468	1234	1762	1471	460	4811	1442	88	4718	1440
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			80			164			91			91
Link Speed (k/h)		40			40			80				80
Link Distance (m)		374.2			364.0			310.4				372.3
Travel Time (s)		33.7			32.8			14.0				16.8
Confl. Peds. (#/hr)	5		5	5		5	5		4	4		5
Confl. Bikes (#/hr)			2						5			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	12%	1%	2%	1%	1%	1%	1%	1%	1%	3%	1%
Adj. Flow (vph)	12	59	75	93	68	235	290	2110	119	166	986	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	75	93	68	235	290	2110	119	166	986	21
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

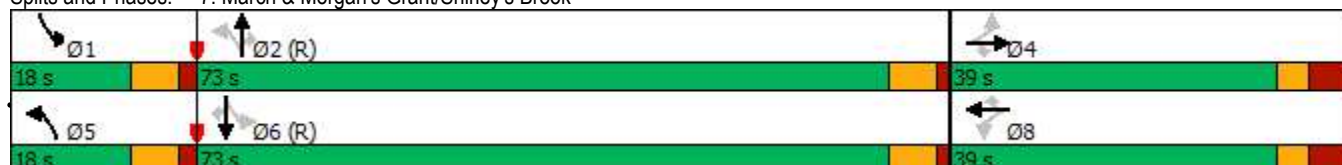


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	20.0	20.0	5.0	20.0	20.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	26.1	26.1	11.4	26.1	26.1
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	18.0	73.0	73.0	18.0	73.0	73.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	13.8%	56.2%	56.2%	13.8%	56.2%	56.2%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	11.6	66.9	66.9	11.6	66.9	66.9
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	1.8	1.5	1.5	1.8	1.5	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.1	6.1	6.4	6.1	6.1
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5		5	5		5	5
Act Effct Green (s)		17.5	17.5	17.5	17.5	17.5	90.5	78.9	78.9	94.0	80.7	80.7
Actuated g/C Ratio		0.13	0.13	0.13	0.13	0.13	0.70	0.61	0.61	0.72	0.62	0.62
v/c Ratio		0.35	0.28	0.56	0.29	0.69	0.67	0.72	0.13	0.72	0.34	0.02
Control Delay		53.2	10.6	63.8	51.0	27.1	21.9	7.7	0.0	49.5	13.3	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		53.2	10.6	63.8	51.0	27.1	21.9	7.7	0.0	49.5	13.3	0.0
LOS		D	B	E	D	C	C	A	A	D	B	A
Approach Delay		31.3			39.8			8.9			18.2	
Approach LOS		C			D			A			B	
Queue Length 50th (m)		15.8	0.0	21.3	15.0	15.8	22.9	22.5	0.0	23.4	36.9	0.0
Queue Length 95th (m)		25.7	10.4	32.8	24.3	36.6	m25.2	m159.2	m0.0	#62.3	60.5	0.0
Internal Link Dist (m)		350.2			340.0			286.4			348.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		366	416	299	426	480	439	2921	911	233	2927	928
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.19	0.18	0.31	0.16	0.49	0.66	0.72	0.13	0.71	0.34	0.02

**Intersection Summary**

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 105 (81%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 15.2 Intersection LOS: B  
 Intersection Capacity Utilization 89.1% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook**

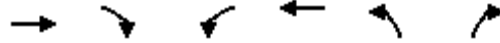


3: Legget & Terry Fox  
AM Peak Hour

525 Legget Drive  
2024 Total Traffic (mitigated)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↙
Traffic Volume (vph)	612	565	53	161	43	43
Future Volume (vph)	612	565	53	161	43	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		125.0	15.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			20.0		10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94	0.99		0.99	
Frt		0.850			0.932	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	1762	1498	1551	1664	1539	0
Flt Permitted			0.374		0.976	
Satd. Flow (perm)	1762	1412	604	1664	1539	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		565			43	
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)		25	25			2
Confl. Bikes (#/hr)		1				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	9%	7%	3%	5%
Adj. Flow (vph)	612	565	53	161	43	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	612	565	53	161	86	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	

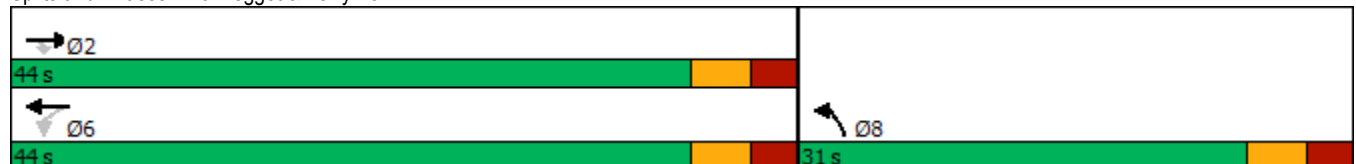


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	
Total Split (s)	44.0	44.0	44.0	44.0	31.0	
Total Split (%)	58.7%	58.7%	58.7%	58.7%	41.3%	
Maximum Green (s)	38.0	38.0	38.0	38.0	25.0	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	
Pedestrian Calls (#/hr)	1	1	1	1	1	
Act Effct Green (s)	30.6	30.6	30.6	30.6	15.0	
Actuated g/C Ratio	0.72	0.72	0.72	0.72	0.35	
v/c Ratio	0.48	0.48	0.12	0.13	0.15	
Control Delay	9.8	2.6	8.3	7.0	10.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.8	2.6	8.3	7.0	10.9	
LOS	A	A	A	A	B	
Approach Delay	6.3			7.3	10.9	
Approach LOS	A			A	B	
Queue Length 50th (m)	29.3	0.0	1.8	5.6	2.6	
Queue Length 95th (m)	89.5	13.0	9.2	19.9	12.2	
Internal Link Dist (m)	157.0			222.1	178.8	
Turn Bay Length (m)		125.0	15.0			
Base Capacity (vph)	1441	1258	494	1361	1043	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.42	0.45	0.11	0.12	0.08	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 42.6  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.48  
 Intersection Signal Delay: 6.7  
 Intersection Capacity Utilization 65.6%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service C

Splits and Phases: 3: Legget & Terry Fox



4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Total Traffic (mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	445	261	247	3	28	9	106	185	57	54	193	63
Future Volume (vph)	445	261	247	3	28	9	106	185	57	54	193	63
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		105.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		1.00	0.99		0.99	0.98		0.97		0.97
Frt		0.927			0.964			0.965				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1606	0	1674	1347	0	1566	1649	0	1537	1745	1498
Flt Permitted	0.733			0.396			0.636			0.603		
Satd. Flow (perm)	1274	1606	0	695	1347	0	1037	1649	0	949	1745	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65			9			15				63
Link Speed (k/h)		50			50			50				50
Link Distance (m)		242.3			435.5			352.8				403.8
Travel Time (s)		17.4			31.4			25.4				29.1
Confl. Peds. (#/hr)	5		5	5		5	5		15	15		5
Confl. Bikes (#/hr)									3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	30%	15%	8%	3%	1%	10%	2%	1%
Adj. Flow (vph)	445	261	247	3	28	9	106	185	57	54	193	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	445	508	0	3	37	0	106	242	0	54	193	63
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			10.0				10.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8				4
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2024 Total Traffic (mitigated)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2		25.2	25.2		25.2	25.2	25.2
Total Split (s)	66.2	66.2		66.2	66.2		46.2	46.2		46.2	46.2	46.2
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	41.1%
Maximum Green (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	40.0
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9		2.9	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	6.2
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Pedestrian Calls (#/hr)	1	1		4	4		11	11		0	0	0
Act Effct Green (s)	28.4	28.4		28.4	28.4		15.6	15.6		15.6	15.6	15.6
Actuated g/C Ratio	0.49	0.49		0.49	0.49		0.27	0.27		0.27	0.27	0.27
v/c Ratio	0.71	0.62		0.01	0.06		0.38	0.53		0.21	0.41	0.14
Control Delay	18.6	12.8		8.0	6.7		24.6	23.7		21.9	22.7	7.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	18.6	12.8		8.0	6.7		24.6	23.7		21.9	22.7	7.2
LOS	B	B		A	A		C	C		C	C	A
Approach Delay		15.5			6.8			24.0			19.4	
Approach LOS		B			A			C			B	
Queue Length 50th (m)	27.3	24.8		0.1	1.1		7.6	17.0		3.7	14.0	0.0
Queue Length 95th (m)	71.7	64.5		1.2	5.5		25.9	48.8		14.7	40.3	7.8
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		105.0
Base Capacity (vph)	1176	1488		641	1244		771	1230		706	1297	1091
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.38	0.34		0.00	0.03		0.14	0.20		0.08	0.15	0.06

**Intersection Summary**

Area Type: Other

Cycle Length: 112.4

Actuated Cycle Length: 57.6

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 17.8

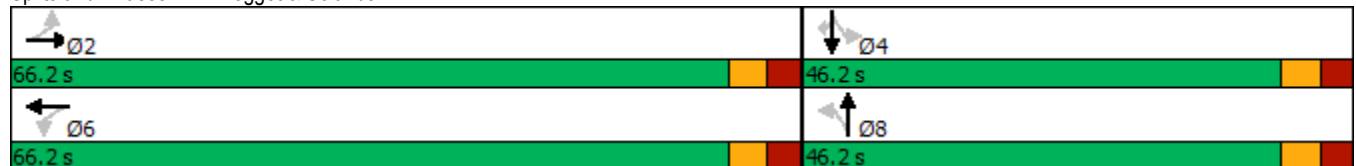
Intersection Capacity Utilization 71.4%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

Splits and Phases: 4: Legget & Solandt



3: Legget & Terry Fox  
PM Peak Hour

525 Legget Drive  
2024 Total Traffic (mitigated)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↙
Traffic Volume (vph)	192	83	34	717	313	53
Future Volume (vph)	192	83	34	717	313	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		125.0	15.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			20.0		10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95	0.98		1.00	
Frt		0.850			0.980	
Flt Protected			0.950		0.959	
Satd. Flow (prot)	1762	1455	1674	1762	1630	0
Flt Permitted			0.637		0.959	
Satd. Flow (perm)	1762	1383	1097	1762	1630	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		83			12	
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)		20	20			
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	1%	1%	10%
Adj. Flow (vph)	192	83	34	717	313	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	192	83	34	717	366	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	

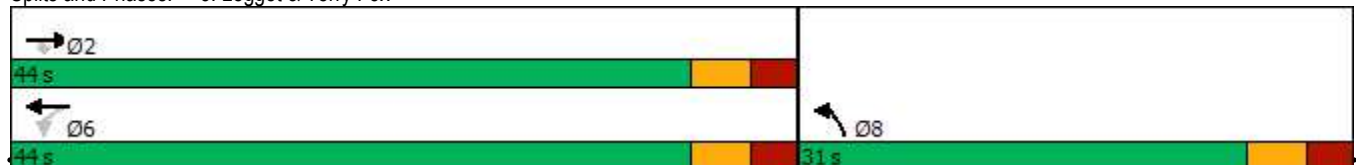


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	
Total Split (s)	44.0	44.0	44.0	44.0	31.0	
Total Split (%)	58.7%	58.7%	58.7%	58.7%	41.3%	
Maximum Green (s)	38.0	38.0	38.0	38.0	25.0	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	
Pedestrian Calls (#/hr)	1	1	1	1	1	
Act Effct Green (s)	29.4	29.4	29.4	29.4	18.3	
Actuated g/C Ratio	0.49	0.49	0.49	0.49	0.30	
v/c Ratio	0.22	0.12	0.06	0.84	0.73	
Control Delay	10.3	3.0	9.4	24.7	29.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.3	3.0	9.4	24.7	29.1	
LOS	B	A	A	C	C	
Approach Delay	8.1			24.0	29.1	
Approach LOS	A			C	C	
Queue Length 50th (m)	10.7	0.0	1.8	60.0	34.0	
Queue Length 95th (m)	23.1	5.5	5.9	#130.9	64.8	
Internal Link Dist (m)	157.0			222.1	178.8	
Turn Bay Length (m)		125.0	15.0			
Base Capacity (vph)	1180	953	734	1180	725	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.09	0.05	0.61	0.50	

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 60.5  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay: 22.2  
 Intersection LOS: C  
 Intersection Capacity Utilization 71.5%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Legget & Terry Fox





4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2024 Total Traffic (mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	32	68	52	264	30	300	112	4	7	255	464
Future Volume (vph)	67	32	68	52	264	30	300	112	4	7	255	464
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	110.0		0.0	40.0		0.0	50.0		0.0	30.0		105.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97		0.97	1.00		0.99	1.00		0.96		0.96
Frt		0.898			0.985			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1336	0	1642	1697	0	1674	1750	0	1674	1745	1498
Flt Permitted	0.422			0.692			0.410			0.682		
Satd. Flow (perm)	697	1336	0	1163	1697	0	717	1750	0	1154	1745	1445
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68			5			3				354
Link Speed (k/h)		50			50			50				50
Link Distance (m)		242.3			435.5			352.8				403.8
Travel Time (s)		17.4			31.4			25.4				29.1
Confl. Peds. (#/hr)	5		10	10		5	5		15	15		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	40%	4%	3%	1%	20%	1%	1%	1%	1%	2%	1%
Adj. Flow (vph)	67	32	68	52	264	30	300	112	4	7	255	464
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	100	0	52	294	0	300	116	0	7	255	464
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			10.0				10.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												

4: Legget & Solandt  
PM Peak Hour

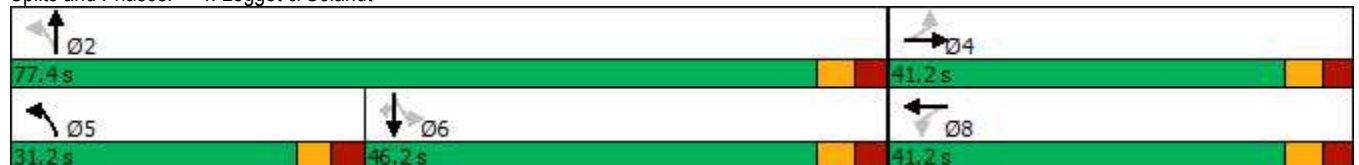
525 Legget Drive  
2024 Total Traffic (mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2		11.0	25.2		25.2	25.2	25.2
Total Split (s)	41.2	41.2		41.2	41.2		31.2	77.4		46.2	46.2	46.2
Total Split (%)	34.7%	34.7%		34.7%	34.7%		26.3%	65.3%		39.0%	39.0%	39.0%
Maximum Green (s)	35.0	35.0		35.0	35.0		25.2	71.2		40.0	40.0	40.0
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.3		3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.2		6.2	6.2	6.2
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Ped		Ped	Ped	Ped
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Pedestrian Calls (#/hr)	6	6		3	3		13	13		2	2	2
Act Effct Green (s)	19.7	19.7		19.7	19.7		47.1	46.9		22.4	22.4	22.4
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.59	0.59		0.28	0.28	0.28
v/c Ratio	0.39	0.26		0.18	0.69		0.47	0.11		0.02	0.52	0.70
Control Delay	35.0	13.4		27.7	37.6		11.0	7.8		24.9	30.3	13.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	35.0	13.4		27.7	37.6		11.0	7.8		24.9	30.3	13.8
LOS	C	B		C	D		B	A		C	C	B
Approach Delay		22.1			36.1			10.1			19.7	
Approach LOS		C			D			B			B	
Queue Length 50th (m)	7.2	3.2		5.3	33.8		16.8	5.6		0.7	28.0	11.2
Queue Length 95th (m)	22.2	16.2		16.5	73.6		40.5	15.8		4.0	61.7	49.6
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)	110.0			40.0			50.0			30.0		105.0
Base Capacity (vph)	318	648		532	779		740	1562		603	912	924
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.21	0.15		0.10	0.38		0.41	0.07		0.01	0.28	0.50

Intersection Summary

Area Type: Other  
 Cycle Length: 118.6  
 Actuated Cycle Length: 79.4  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.70  
 Intersection Signal Delay: 21.0  
 Intersection Capacity Utilization 83.0%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service E

Splits and Phases: 4: Legget & Solandt





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↕	↗	↖↖	↕	↗	↖↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	99	477	217	78	126	59	245	610	154	383	1602	207
Future Volume (vph)	99	477	217	78	126	59	245	610	154	383	1602	207
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99		0.95	0.97		0.98	0.99		0.96	0.99		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3216	3349	1483	3095	3283	1469	3185	4584	1483	1658	4764	1483
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3182	3349	1408	2992	3283	1433	3160	4584	1428	1639	4764	1402
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			217			167			172			207
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			55.2			18.6	
Confl. Peds. (#/hr)	10		30	30		10	25		15	15		25
Confl. Bikes (#/hr)			1									1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	1%	2%	6%	3%	3%	3%	6%	2%	2%	2%	2%
Adj. Flow (vph)	99	477	217	78	126	59	245	610	154	383	1602	207
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	477	217	78	126	59	245	610	154	383	1602	207
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6



2: March & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	104	114	68	117	35	540	931	733	155	1663	101
Future Volume (vph)	26	104	114	68	117	35	540	931	733	155	1663	101
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		55.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99		0.97	0.99		0.97	1.00	0.99		1.00	1.00	
Fr <sub>t</sub>			0.850			0.850		0.934			0.991	
Fl <sub>t</sub> Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1537	1745	1441	1658	1712	1469	1674	3040	0	1658	3250	0
Fl <sub>t</sub> Permitted	0.574			0.625			0.950			0.950		
Satd. Flow (perm)	917	1745	1401	1077	1712	1428	1671	3040	0	1656	3250	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			122			122		219				5
Link Speed (k/h)		50			50			60				60
Link Distance (m)		117.9			242.3			405.0				919.4
Travel Time (s)		8.5			17.4			24.3				55.2
Confl. Peds. (#/hr)	10		10	10		10	10		5	5		10
Confl. Bikes (#/hr)			1			1			12			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	10%	2%	5%	2%	4%	3%	1%	4%	1%	2%	3%	2%
Adj. Flow (vph)	26	104	114	68	117	35	540	931	733	155	1663	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	104	114	68	117	35	540	1664	0	155	1764	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			10.5			17.5				17.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		5.0			5.0			5.0				5.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	8	8	8	5	2		1	6	

2: March & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Total Traffic

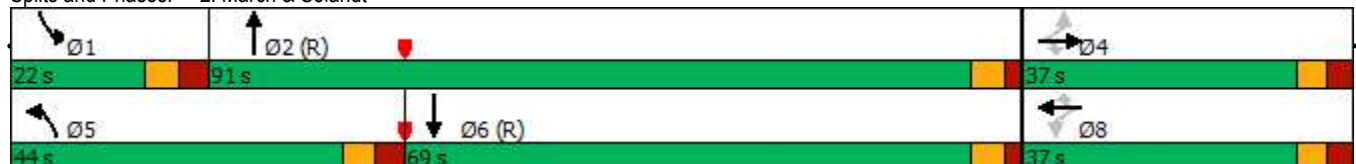


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	36.5	36.5	36.5	36.5	36.5	36.5	12.0	26.8		12.0	26.8	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	44.0	91.0		22.0	69.0	
Total Split (%)	24.7%	24.7%	24.7%	24.7%	24.7%	24.7%	29.3%	60.7%		14.7%	46.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5	30.5	37.0	85.2		15.0	63.2	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.3	2.1		3.3	2.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	7.0	5.8		7.0	5.8	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	23.0	23.0	23.0	23.0	23.0	23.0		14.0			14.0	
Pedestrian Calls (#/hr)	8	8	8	7	7	7		6			0	
Act Effct Green (s)	17.3	17.3	17.3	17.3	17.3	17.3	50.2	94.1		19.3	63.2	
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.12	0.12	0.33	0.63		0.13	0.42	
v/c Ratio	0.25	0.52	0.42	0.55	0.59	0.13	0.97	0.84		0.73	1.29	
Control Delay	62.6	69.8	12.0	76.9	73.7	1.0	78.9	24.7		86.6	154.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	62.6	69.8	12.0	76.9	73.7	1.0	78.9	24.7		86.6	154.3	
LOS	E	E	B	E	E	A	E	C		F	F	
Approach Delay		42.0			63.1			38.0			148.9	
Approach LOS		D			E			D			F	
Queue Length 50th (m)	6.7	27.6	0.0	18.1	31.4	0.0	142.9	162.7		44.9	~324.7	
Queue Length 95th (m)	14.2	40.9	13.4	30.2	45.7	0.0	#252.6	228.1		m#74.5	#358.4	
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0		55.0	165.0			155.0		
Base Capacity (vph)	186	354	382	218	348	387	559	1987		213	1372	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.14	0.29	0.30	0.31	0.34	0.09	0.97	0.84		0.73	1.29	

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 113 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.29  
 Intersection Signal Delay: 85.8  
 Intersection LOS: F  
 Intersection Capacity Utilization 114.4%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	588	497	47	154	38	38
Future Volume (vph)	588	497	47	154	38	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.938				0.932	
Flt Protected				0.988	0.976	
Satd. Flow (prot)	1653	0	0	1636	1557	0
Flt Permitted				0.988	0.976	
Satd. Flow (perm)	1653	0	0	1636	1557	0
Link Speed (k/h)	60				60	50
Link Distance (m)	181.0				246.1	202.8
Travel Time (s)	10.9				14.8	14.6
Confl. Peds. (#/hr)	25		25	2		
Confl. Bikes (#/hr)	1					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	9%	7%	3%	5%
Adj. Flow (vph)	588	497	47	154	38	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1085	0	0	201	76	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5				3.5	3.5
Link Offset(m)	0.0				0.0	0.0
Crosswalk Width(m)	5.0				5.0	5.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		
Sign Control	Free				Free	Stop

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 77.8% ICU Level of Service D

Analysis Period (min) 15

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	401	246	223	3	27	8	96	167	53	51	174	57
Future Volume (vph)	401	246	223	3	27	8	96	167	53	51	174	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		0.99	0.99		0.99	0.98		0.97	0.99	
Frt		0.929			0.966			0.964			0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1610	0	1674	1348	0	1566	1647	0	1537	1670	0
Flt Permitted	0.734			0.431			0.615			0.621		
Satd. Flow (perm)	1275	1610	0	756	1348	0	1004	1647	0	975	1670	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62			8			16			16	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		5	5		5	5		15	15		5
Confl. Bikes (#/hr)									3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	30%	15%	8%	3%	1%	10%	2%	1%
Adj. Flow (vph)	401	246	223	3	27	8	96	167	53	51	174	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	401	469	0	3	35	0	96	220	0	51	231	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	



4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		25.2	25.2		25.2	25.2	
Total Split (s)	66.2	66.2		66.2	66.2		46.2	46.2		46.2	46.2	
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	
Maximum Green (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		2.9	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	1	1		4	4		11	11		0	0	
Act Effct Green (s)	24.5	24.5		24.5	24.5		14.1	14.1		14.1	14.1	
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.27	0.27		0.27	0.27	
v/c Ratio	0.67	0.59		0.01	0.05		0.35	0.48		0.19	0.50	
Control Delay	16.9	12.1		7.7	6.7		21.8	20.4		19.2	20.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.9	12.1		7.7	6.7		21.8	20.4		19.2	20.7	
LOS	B	B		A	A		C	C		B	C	
Approach Delay		14.3			6.8			20.8			20.4	
Approach LOS		B			A			C			C	
Queue Length 50th (m)	21.8	20.4		0.1	1.0		6.1	13.3		3.1	14.1	
Queue Length 95th (m)	56.9	53.1		1.2	5.0		20.9	38.5		12.4	40.6	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)				40.0			50.0			30.0		
Base Capacity (vph)	1223	1546		725	1293		812	1336		789	1355	
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	0.33	0.30		0.00	0.03		0.12	0.16		0.06	0.17	

Intersection Summary

Area Type: Other

Cycle Length: 112.4

Actuated Cycle Length: 51.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 16.6

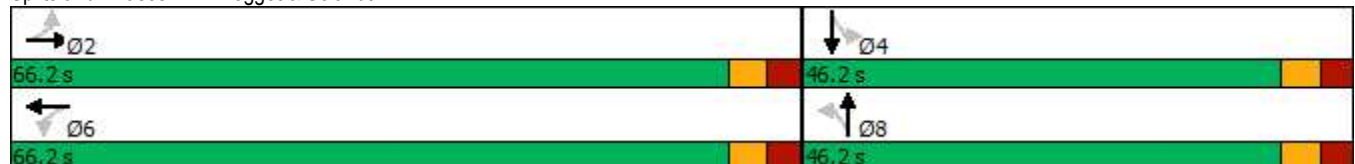
Intersection LOS: B

Intersection Capacity Utilization 68.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
AM Peak Hour

525 Legget Drive  
2029 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	324	16	5	221	32	15	0	5	112	3	59
Future Volume (vph)	34	324	16	5	221	32	15	0	5	112	3	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.983			0.966			0.954	
Flt Protected		0.995			0.999			0.964			0.969	
Satd. Flow (prot)	0	1689	0	0	1698	0	0	1594	0	0	1608	0
Flt Permitted		0.995			0.999			0.964			0.969	
Satd. Flow (perm)	0	1689	0	0	1698	0	0	1594	0	0	1608	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)			8	8			5					5
Confl. Bikes (#/hr)												1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	25%	2%	5%	1%	2%	10%	5%	1%	1%	2%	1%	3%
Adj. Flow (vph)	34	324	16	5	221	32	15	0	5	112	3	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	374	0	0	258	0	0	20	0	0	174	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 57.1%

ICU Level of Service B

Analysis Period (min) 15



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	623	52	13	181	30	7
Future Volume (vph)	623	52	13	181	30	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.990			0.974		
Fl <sub>t</sub> Protected				0.997	0.961	
Satd. Flow (prot)	1728	0	0	1740	1633	0
Fl <sub>t</sub> Permitted				0.997	0.961	
Satd. Flow (perm)	1728	0	0	1740	1633	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	169.3	
Travel Time (s)	14.8			18.7	12.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	623	52	13	181	30	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	675	0	0	194	37	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	47.9%			ICU Level of Service A		
Analysis Period (min)	15					

7: March & Morgan's Grant/Shirley's Brook  
AM Peak Hour

525 Legget Drive  
2029 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	9	46	127	99	16	23	39	719	25	156	1976	7
Future Volume (vph)	9	46	127	99	16	23	39	719	25	156	1976	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	1.00		0.98			0.95	0.99		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.992		0.950			0.950			0.950		
Satd. Flow (prot)	0	1748	1498	1674	1618	1441	1642	4584	1498	1674	4764	1498
Flt Permitted		0.952		0.721			0.078			0.349		
Satd. Flow (perm)	0	1677	1469	1266	1618	1418	135	4584	1430	610	4764	1430
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			116			71			79			79
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		371.3			364.3			310.4			371.3	
Travel Time (s)		33.4			32.8			18.6			22.3	
Confl. Peds. (#/hr)	3		3	3		3	5		6	6		5
Confl. Bikes (#/hr)			3						1			8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	10%	5%	3%	6%	1%	1%	2%	1%
Adj. Flow (vph)	9	46	127	99	16	23	39	719	25	156	1976	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	127	99	16	23	39	719	25	156	1976	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

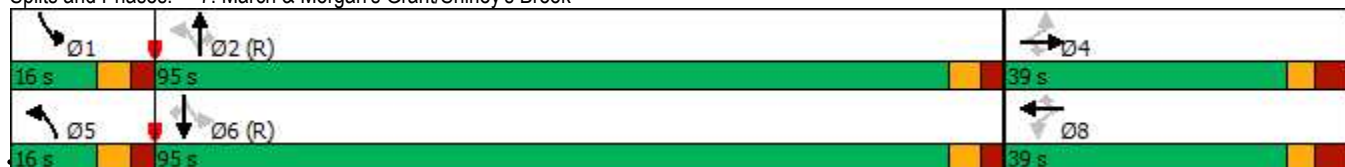


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	24.4	24.4	11.4	24.4	24.4
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	16.0	95.0	95.0	16.0	95.0	95.0
Total Split (%)	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	10.7%	63.3%	63.3%	10.7%	63.3%	63.3%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	9.6	88.6	88.6	9.6	88.6	88.6
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	3	3	3	3	3	3		6	6		6	6
Act Effct Green (s)		18.4	18.4	18.4	18.4	18.4	109.1	102.7	102.7	114.5	107.3	107.3
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.12	0.73	0.68	0.68	0.76	0.72	0.72
v/c Ratio		0.27	0.45	0.64	0.08	0.10	0.24	0.23	0.02	0.30	0.58	0.01
Control Delay		60.0	16.3	79.2	54.6	0.8	25.2	4.2	0.2	6.2	12.9	0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		60.0	16.3	79.2	54.6	0.8	25.2	4.2	0.2	6.2	12.9	0.0
LOS		E	B	E	D	A	C	A	A	A	B	A
Approach Delay		29.5			63.3			5.1			12.3	
Approach LOS		C			E			A			B	
Queue Length 50th (m)		14.1	2.7	26.5	4.0	0.0	3.9	13.5	0.2	8.4	90.5	0.0
Queue Length 95th (m)		24.4	18.7	40.5	9.7	0.0	m10.4	10.1	m0.0	20.3	141.9	0.0
Internal Link Dist (m)		347.3			340.3			286.4			347.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		352	400	265	339	353	197	3138	1003	537	3407	1045
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.16	0.32	0.37	0.05	0.07	0.20	0.23	0.02	0.29	0.58	0.01

**Intersection Summary**

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 60 (40%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.64  
 Intersection Signal Delay: 13.7      Intersection LOS: B  
 Intersection Capacity Utilization 78.4%      ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗↗	↘	↖↖	↗↗	↘	↖↖	↗↗↗	↘	↖	↗↗↗	↘
Traffic Volume (vph)	303	140	350	193	347	391	254	1913	102	123	921	151
Future Volume (vph)	303	140	350	193	347	391	254	1913	102	123	921	151
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	100.0		60.0	75.0		75.0	130.0		85.0	110.0		100.0
Storage Lanes	2		2	2		1	2		1	1		1
Taper Length (m)	50.0			20.0			90.0			40.0		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor	0.97		0.95	0.95		0.94	0.98		0.94	1.00		0.95
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3248	3283	1498	3248	3349	1498	3185	4811	1498	1658	4811	1498
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3158	3283	1422	3076	3349	1410	3121	4811	1415	1653	4811	1416
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			197			167			125			172
Link Speed (k/h)		50			60			60			60	
Link Distance (m)		359.1			149.7			919.4			310.4	
Travel Time (s)		25.9			9.0			55.2			18.6	
Confl. Peds. (#/hr)	35		30	30		35	25		25	25		25
Confl. Bikes (#/hr)			1			3			2			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	3%	1%	1%	1%	1%	3%	1%	1%	2%	1%	1%
Adj. Flow (vph)	303	140	350	193	347	391	254	1913	102	123	921	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	303	140	350	193	347	391	254	1913	102	123	921	151
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		10.5			10.5			10.5			7.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6



2: March & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	44	562	655	73	206	106	2063	82	41	1223	60
Future Volume (vph)	75	44	562	655	73	206	106	2063	82	41	1223	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	35.0		60.0	85.0		55.0	165.0		0.0	155.0		75.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	50.0			95.0			40.0			25.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99		0.97	0.99		0.97	0.99	1.00		1.00	1.00	
Fr			0.850			0.850		0.994			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1658	1695	1498	1674	1762	1498	1626	3323	0	1674	3281	0
Flt Permitted	0.709			0.621			0.950			0.950		
Satd. Flow (perm)	1221	1695	1453	1081	1762	1456	1617	3323	0	1673	3281	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119			85		3			4	
Link Speed (k/h)		50			50			60			60	
Link Distance (m)		117.9			242.3			405.0			919.4	
Travel Time (s)		8.5			17.4			24.3			55.2	
Confl. Peds. (#/hr)	10		10	10		10	15		5	5		15
Confl. Bikes (#/hr)			4			2			2			5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	2%	5%	1%	1%	1%	1%	4%	1%	3%	1%	2%	5%
Adj. Flow (vph)	75	44	562	655	73	206	106	2063	82	41	1223	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	75	44	562	655	73	206	106	2145	0	41	1283	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA	L NA	Left	R NA
Median Width(m)		3.5			10.5			17.5			17.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8						
Detector Phase	4	4	4	3	8	8	5	2		1	6	



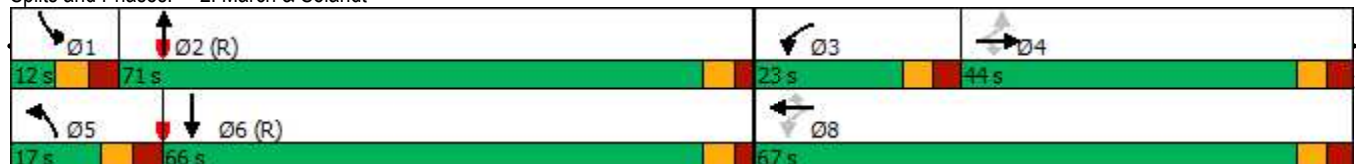


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0		5.0	10.0	
Minimum Split (s)	36.5	36.5	36.5	11.5	36.5	36.5	12.0	26.8		12.0	26.8	
Total Split (s)	44.0	44.0	44.0	23.0	67.0	67.0	17.0	71.0		12.0	66.0	
Total Split (%)	29.3%	29.3%	29.3%	15.3%	44.7%	44.7%	11.3%	47.3%		8.0%	44.0%	
Maximum Green (s)	37.5	37.5	37.5	16.5	60.5	60.5	10.0	65.2		5.0	60.2	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.7		3.7	3.7	
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2	3.2	3.3	2.1		3.3	2.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	7.0	5.8		7.0	5.8	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	23.0	23.0	23.0		23.0	23.0		14.0			14.0	
Pedestrian Calls (#/hr)	5	5	5		8	8		1			11	
Act Effct Green (s)	37.5	37.5	37.5	60.5	60.5	60.5	10.0	67.6		5.0	60.2	
Actuated g/C Ratio	0.25	0.25	0.25	0.40	0.40	0.40	0.07	0.45		0.03	0.40	
v/c Ratio	0.25	0.10	1.24	1.31	0.10	0.32	0.98	1.43		0.75	0.97	
Control Delay	47.6	44.3	163.1	187.5	28.5	19.0	149.6	230.4		120.0	55.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	47.6	44.3	163.1	187.5	28.5	19.0	149.6	230.4		120.0	55.2	
LOS	D	D	F	F	C	B	F	F		F	E	
Approach Delay		142.7			137.9			226.6			57.2	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	16.6	9.3	~165.5	~229.7	12.4	21.7	29.6	~427.6		10.0	181.1	
Queue Length 95th (m)	30.4	19.0	#232.3	#297.8	22.4	40.3	#65.8	#464.3		m#27.7	#227.3	
Internal Link Dist (m)		93.9			218.3			381.0			895.4	
Turn Bay Length (m)	35.0		60.0	85.0		55.0	165.0			155.0		
Base Capacity (vph)	305	423	452	501	710	637	108	1499		55	1319	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.25	0.10	1.24	1.31	0.10	0.32	0.98	1.43		0.75	0.97	

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 20 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.43  
 Intersection Signal Delay: 156.4 Intersection LOS: F  
 Intersection Capacity Utilization 129.5% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: March & Solandt





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	201	72	31	680	272	47
Future Volume (vph)	201	72	31	680	272	47
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.964				0.980	
Flt Protected				0.998	0.959	
Satd. Flow (prot)	1686	0	0	1759	1635	0
Flt Permitted				0.998	0.959	
Satd. Flow (perm)	1686	0	0	1759	1635	0
Link Speed (k/h)	60				60	50
Link Distance (m)	181.0				246.1	202.8
Travel Time (s)	10.9				14.8	14.6
Confl. Peds. (#/hr)	20		20			
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	1%	1%	10%
Adj. Flow (vph)	201	72	31	680	272	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	273	0	0	711	319	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5				3.5	3.5
Link Offset(m)	0.0				0.0	0.0
Crosswalk Width(m)	5.0				5.0	5.0
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free				Free	Stop

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 84.8%

ICU Level of Service E

Analysis Period (min) 15

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Total Traffic

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	31	61	48	247	29	265	99	3	6	227	412
Future Volume (vph)	60	31	61	48	247	29	265	99	3	6	227	412
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	40.0		0.0	50.0		0.0	30.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97		0.97	1.00			1.00		0.96	0.98	
Frt		0.901			0.984			0.996			0.903	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1335	0	1642	1694	0	1674	1752	0	1674	1550	0
Flt Permitted	0.370			0.697			0.127			0.691		
Satd. Flow (perm)	611	1335	0	1171	1694	0	224	1752	0	1168	1550	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			5			2			83	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		242.3			435.5			352.8			403.8	
Travel Time (s)		17.4			31.4			25.4			29.1	
Confl. Peds. (#/hr)	5		10	10		5	5		15	15		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	40%	4%	3%	1%	20%	1%	1%	1%	1%	2%	1%
Adj. Flow (vph)	60	31	61	48	247	29	265	99	3	6	227	412
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	92	0	48	276	0	265	102	0	6	639	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5			3.5	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		10.0			10.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		6	6	
Switch Phase												

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Total Traffic

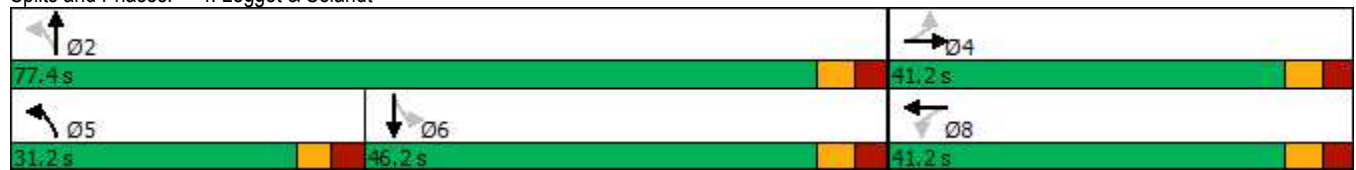


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	10.0		10.0	10.0	
Minimum Split (s)	25.2	25.2		25.2	25.2		11.0	25.2		25.2	25.2	
Total Split (s)	41.2	41.2		41.2	41.2		31.2	77.4		46.2	46.2	
Total Split (%)	34.7%	34.7%		34.7%	34.7%		26.3%	65.3%		39.0%	39.0%	
Maximum Green (s)	35.0	35.0		35.0	35.0		25.2	71.2		40.0	40.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.3		3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	2.9		2.9	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.2		6.2	6.2	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	6	6		3	3			13		2	2	
Act Effct Green (s)	21.5	21.5		21.5	21.5		66.3	66.1		40.5	40.5	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.66	0.66		0.40	0.40	
v/c Ratio	0.46	0.28		0.19	0.75		0.61	0.09		0.01	0.95	
Control Delay	47.4	16.2		34.8	50.1		21.1	7.2		23.2	51.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	47.4	16.2		34.8	50.1		21.1	7.2		23.2	51.6	
LOS	D	B		C	D		C	A		C	D	
Approach Delay		28.5			47.9			17.3			51.4	
Approach LOS		C			D			B			D	
Queue Length 50th (m)	9.5	4.5		7.1	45.9		20.8	5.6		0.6	96.9	
Queue Length 95th (m)	22.1	16.5		16.7	74.2		53.0	14.5		3.5	#201.8	
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)				40.0			50.0			30.0		
Base Capacity (vph)	215	511		414	602		517	1261		472	676	
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	0.28	0.18		0.12	0.46		0.51	0.08		0.01	0.95	

Intersection Summary

Area Type: Other  
 Cycle Length: 118.6  
 Actuated Cycle Length: 100.1  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.95  
 Intersection Signal Delay: 39.9  
 Intersection Capacity Utilization 103.8%  
 Intersection LOS: D  
 ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Legget & Solandt



5: Terry Fox & Helmsdale  
PM Peak Hour

525 Legget Drive  
2029 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	255	10	5	386	127	17	3	3	46	0	57
Future Volume (vph)	64	255	10	5	386	127	17	3	3	46	0	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.967			0.982			0.925	
Flt Protected		0.990						0.964			0.978	
Satd. Flow (prot)	0	1718	0	0	1704	0	0	1668	0	0	1527	0
Flt Permitted		0.990						0.964			0.978	
Satd. Flow (perm)	0	1718	0	0	1704	0	0	1668	0	0	1527	0
Link Speed (k/h)		60			60			30			40	
Link Distance (m)		312.1			404.2			56.8			225.2	
Travel Time (s)		18.7			24.3			6.8			20.3	
Confl. Peds. (#/hr)	5		5	5		5	20		5	5		20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	3%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	9%
Adj. Flow (vph)	64	255	10	5	386	127	17	3	3	46	0	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	329	0	0	518	0	0	23	0	0	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			3.5			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			5.0			5.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 68.9%

ICU Level of Service C

Analysis Period (min) 15



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	220	41	10	698	52	12
Future Volume (vph)	220	41	10	698	52	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.979			0.975		
Flt Protected				0.999	0.961	
Satd. Flow (prot)	1708	0	0	1743	1635	0
Flt Permitted				0.999	0.961	
Satd. Flow (perm)	1708	0	0	1743	1635	0
Link Speed (k/h)	60			60	50	
Link Distance (m)	246.1			312.1	155.6	
Travel Time (s)	14.8			18.7	11.2	
Confl. Peds. (#/hr)	10		10			
Confl. Bikes (#/hr)	1					
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	220	41	10	698	52	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	261	0	0	708	64	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	2.0			2.0	0.0	
Crosswalk Width(m)	3.0			3.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 57.7%

ICU Level of Service B

Analysis Period (min) 15

7: March & Morgan's Grant/Shirley's Brook  
PM Peak Hour

525 Legget Drive  
2029 Total Traffic



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↕	↗	↖	↕↕↕	↗	↖	↕↕↕	↗
Traffic Volume (vph)	10	56	65	82	62	220	249	2191	102	158	1091	18
Future Volume (vph)	10	56	65	82	62	220	249	2191	102	158	1091	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		20.0	45.0		35.0	130.0		30.0	65.0		25.0
Storage Lanes	0		1	1		1	1		1	1		1
Taper Length (m)	10.0			30.0			40.0			35.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Ped Bike Factor		1.00	0.98	0.99		0.98	1.00		0.96			0.96
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.992		0.950			0.950			0.950		
Satd. Flow (prot)	0	1600	1498	1658	1762	1498	1674	4811	1498	1674	4718	1498
Flt Permitted		0.946		0.714			0.240			0.047		
Satd. Flow (perm)	0	1525	1466	1238	1762	1469	422	4811	1439	83	4718	1437
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71			166			79			79
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		371.3			363.9			310.4			370.3	
Travel Time (s)		33.4			32.8			18.6			22.2	
Confl. Peds. (#/hr)	5		5	5		5	5		4	4		5
Confl. Bikes (#/hr)			2						5			1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	12%	1%	2%	1%	1%	1%	1%	1%	1%	3%	1%
Adj. Flow (vph)	10	56	65	82	62	220	249	2191	102	158	1091	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	66	65	82	62	220	249	2191	102	158	1091	18
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	L NA	Left	R NA	L NA	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(m)		3.5			5.0			9.0			9.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		5.0			5.0			10.0			10.0	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6

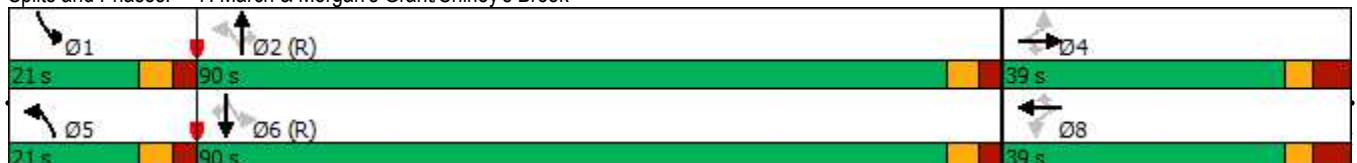


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	38.5	38.5	38.5	38.5	38.5	38.5	11.4	24.4	24.4	11.4	24.4	24.4
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	21.0	90.0	90.0	21.0	90.0	90.0
Total Split (%)	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%	14.0%	60.0%	60.0%	14.0%	60.0%	60.0%
Maximum Green (s)	31.5	31.5	31.5	31.5	31.5	31.5	14.6	83.6	83.6	14.6	83.6	83.6
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.7	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		7.5	7.5	7.5	7.5	7.5	6.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)	24.0	24.0	24.0	24.0	24.0	24.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	5	5	5	5	5	5		5	5		5	5
Act Effct Green (s)		17.5	17.5	17.5	17.5	17.5	108.4	97.4	97.4	115.9	101.2	101.2
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.12	0.72	0.65	0.65	0.77	0.67	0.67
v/c Ratio		0.37	0.28	0.57	0.30	0.69	0.63	0.70	0.11	0.72	0.34	0.02
Control Delay		64.5	12.4	75.8	61.7	28.0	14.1	7.8	0.1	52.5	11.8	0.1
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		64.5	12.4	75.8	61.7	28.0	14.1	7.8	0.1	52.5	11.8	0.1
LOS		E	B	E	E	C	B	A	A	D	B	A
Approach Delay		38.6			44.5			8.1			16.7	
Approach LOS		D			D			A			B	
Queue Length 50th (m)		17.3	0.0	22.0	16.1	14.0	5.9	31.7	0.0	25.0	40.6	0.0
Queue Length 95th (m)		28.1	10.4	34.7	26.5	36.4	m9.3	104.1	m0.1	#58.0	70.8	0.0
Internal Link Dist (m)		347.3			339.9			286.4			346.3	
Turn Bay Length (m)			20.0	45.0		35.0	130.0		30.0	65.0		25.0
Base Capacity (vph)		320	363	259	370	439	438	3124	962	231	3181	994
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.21	0.18	0.32	0.17	0.50	0.57	0.70	0.11	0.68	0.34	0.02

Intersection Summary

Area Type: Other  
 Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 92 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 14.7 Intersection LOS: B  
 Intersection Capacity Utilization 90.1% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: March & Morgan's Grant/Shirley's Brook



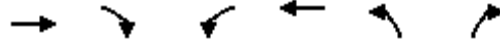


3: Legget & Terry Fox  
AM Peak Hour

525 Legget Drive  
2029 Total Traffic (mitigated)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Traffic Volume (vph)	588	497	47	154	38	38
Future Volume (vph)	588	497	47	154	38	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		125.0	15.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			20.0		10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94	0.99		0.99	
Frt		0.850			0.932	
Flt Protected			0.950		0.976	
Satd. Flow (prot)	1762	1498	1551	1664	1539	0
Flt Permitted			0.388		0.976	
Satd. Flow (perm)	1762	1412	626	1664	1539	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		497			38	
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)		25	25			2
Confl. Bikes (#/hr)		1				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	9%	7%	3%	5%
Adj. Flow (vph)	588	497	47	154	38	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	588	497	47	154	76	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	

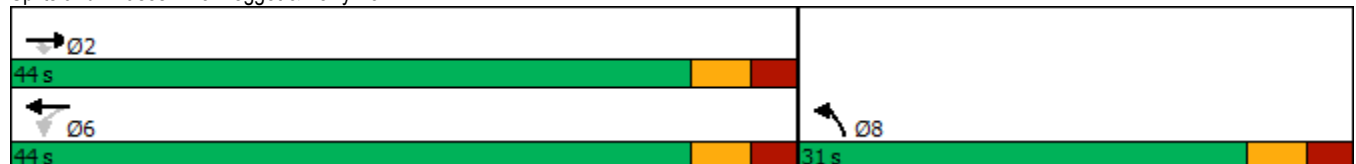


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	
Total Split (s)	44.0	44.0	44.0	44.0	31.0	
Total Split (%)	58.7%	58.7%	58.7%	58.7%	41.3%	
Maximum Green (s)	38.0	38.0	38.0	38.0	25.0	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	
Pedestrian Calls (#/hr)	1	1	1	1	1	
Act Effct Green (s)	28.6	28.6	28.6	28.6	18.7	
Actuated g/C Ratio	0.71	0.71	0.71	0.71	0.46	
v/c Ratio	0.47	0.43	0.11	0.13	0.10	
Control Delay	9.7	2.4	8.3	7.1	10.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.7	2.4	8.3	7.1	10.4	
LOS	A	A	A	A	B	
Approach Delay	6.4			7.4	10.4	
Approach LOS	A			A	B	
Queue Length 50th (m)	27.5	0.0	1.6	5.3	2.1	
Queue Length 95th (m)	84.0	12.4	8.3	19.1	11.2	
Internal Link Dist (m)	157.0			222.1	178.8	
Turn Bay Length (m)		125.0	15.0			
Base Capacity (vph)	1464	1257	520	1383	1064	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.40	0.40	0.09	0.11	0.07	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 40.3  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.47  
 Intersection Signal Delay: 6.7  
 Intersection Capacity Utilization 60.4%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service B

Splits and Phases: 3: Legget & Terry Fox



4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Total Traffic (mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	401	246	223	3	27	8	96	167	53	51	174	57
Future Volume (vph)	401	246	223	3	27	8	96	167	53	51	174	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	40.0		0.0	50.0		0.0	30.0		105.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.98		0.99	0.99		0.99	0.98		0.97		0.97
Frt		0.929			0.966			0.964				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1674	1610	0	1674	1348	0	1566	1647	0	1537	1745	1498
Flt Permitted	0.734			0.432			0.647			0.621		
Satd. Flow (perm)	1275	1610	0	757	1348	0	1054	1647	0	975	1745	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62			8			16				57
Link Speed (k/h)		50			50			50				50
Link Distance (m)		242.3			435.5			352.8				403.8
Travel Time (s)		17.4			31.4			25.4				29.1
Confl. Peds. (#/hr)	5		5	5		5	5		15	15		5
Confl. Bikes (#/hr)									3			
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	1%	1%	1%	30%	15%	8%	3%	1%	10%	2%	1%
Adj. Flow (vph)	401	246	223	3	27	8	96	167	53	51	174	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	401	469	0	3	35	0	96	220	0	51	174	57
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			10.0				10.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8				4
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4

4: Legget & Solandt  
AM Peak Hour

525 Legget Drive  
2029 Total Traffic (mitigated)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		10.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2		25.2	25.2		25.2	25.2	25.2
Total Split (s)	66.2	66.2		66.2	66.2		46.2	46.2		46.2	46.2	46.2
Total Split (%)	58.9%	58.9%		58.9%	58.9%		41.1%	41.1%		41.1%	41.1%	41.1%
Maximum Green (s)	60.0	60.0		60.0	60.0		40.0	40.0		40.0	40.0	40.0
Yellow Time (s)	3.3	3.3		3.3	3.3		3.3	3.3		3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9		2.9	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.2	6.2		6.2	6.2	6.2
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Pedestrian Calls (#/hr)	1	1		4	4		11	11		0	0	0
Act Effct Green (s)	24.3	24.3		24.3	24.3		13.9	13.9		13.9	13.9	13.9
Actuated g/C Ratio	0.47	0.47		0.47	0.47		0.27	0.27		0.27	0.27	0.27
v/c Ratio	0.67	0.59		0.01	0.05		0.34	0.48		0.19	0.37	0.13
Control Delay	16.8	12.0		7.7	6.7		21.3	20.4		19.2	19.8	6.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	16.8	12.0		7.7	6.7		21.3	20.4		19.2	19.8	6.8
LOS	B	B		A	A		C	C		B	B	A
Approach Delay		14.2			6.7			20.7			17.1	
Approach LOS		B			A			C			B	
Queue Length 50th (m)	21.4	20.0		0.1	1.0		6.0	13.2		3.1	11.0	0.0
Queue Length 95th (m)	56.9	53.1		1.2	5.0		20.7	38.5		12.4	32.1	7.0
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)				40.0			50.0			30.0		105.0
Base Capacity (vph)	1223	1546		726	1293		858	1344		794	1421	1188
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.33	0.30		0.00	0.03		0.11	0.16		0.06	0.12	0.05

**Intersection Summary**

Area Type: Other

Cycle Length: 112.4

Actuated Cycle Length: 51.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 15.9

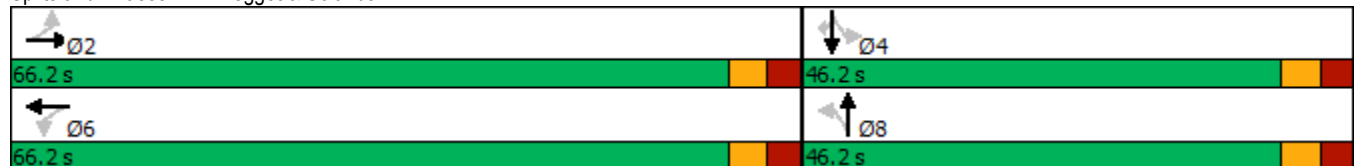
Intersection Capacity Utilization 68.1%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

Splits and Phases: 4: Legget & Solandt

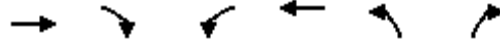


3: Legget & Terry Fox  
PM Peak Hour

525 Legget Drive  
2029 Total Traffic (mitigated)



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↙
Traffic Volume (vph)	201	72	31	680	272	47
Future Volume (vph)	201	72	31	680	272	47
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)		125.0	15.0		0.0	0.0
Storage Lanes		1	1		1	0
Taper Length (m)			20.0		10.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95	0.98		1.00	
Frt		0.850			0.980	
Flt Protected			0.950		0.959	
Satd. Flow (prot)	1762	1455	1674	1762	1629	0
Flt Permitted			0.632		0.959	
Satd. Flow (perm)	1762	1383	1089	1762	1629	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		72			12	
Link Speed (k/h)	60			60	50	
Link Distance (m)	181.0			246.1	202.8	
Travel Time (s)	10.9			14.8	14.6	
Confl. Peds. (#/hr)		20	20			
Confl. Bikes (#/hr)						2
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	1%	4%	1%	1%	1%	10%
Adj. Flow (vph)	201	72	31	680	272	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	201	72	31	680	319	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.5			3.5	3.5	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	5.0			5.0	5.0	
Two way Left Turn Lane						
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	
Detector Template	Thru	Right	Left	Thru	Left	
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	Perm	Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Detector Phase	2	2	6	6	8	

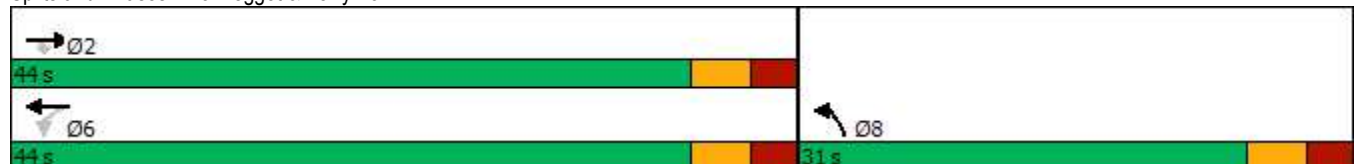


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	31.0	31.0	31.0	31.0	31.0	
Total Split (s)	44.0	44.0	44.0	44.0	31.0	
Total Split (%)	58.7%	58.7%	58.7%	58.7%	41.3%	
Maximum Green (s)	38.0	38.0	38.0	38.0	25.0	
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.7	2.7	2.7	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	
Pedestrian Calls (#/hr)	1	1	1	1	1	
Act Effct Green (s)	26.9	26.9	26.9	26.9	16.7	
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.30	
v/c Ratio	0.24	0.10	0.06	0.81	0.65	
Control Delay	10.0	3.1	9.0	22.1	25.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.0	3.1	9.0	22.1	25.2	
LOS	A	A	A	C	C	
Approach Delay	8.2			21.5	25.2	
Approach LOS	A			C	C	
Queue Length 50th (m)	9.9	0.0	1.4	48.6	25.2	
Queue Length 95th (m)	24.2	5.1	5.6	105.9	55.1	
Internal Link Dist (m)	157.0			222.1	178.8	
Turn Bay Length (m)		125.0	15.0			
Base Capacity (vph)	1253	1005	774	1253	778	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.16	0.07	0.04	0.54	0.41	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 56.5  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 19.6  
 Intersection Capacity Utilization 66.7%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 3: Legget & Terry Fox



4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Total Traffic (mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	31	61	48	247	29	265	99	3	6	227	412
Future Volume (vph)	60	31	61	48	247	29	265	99	3	6	227	412
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	40.0		0.0	50.0		0.0	30.0		105.0
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (m)	70.0			30.0			60.0			30.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97		0.97	1.00		0.99	1.00		0.96		0.96
Frt		0.901			0.984			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1335	0	1642	1694	0	1674	1752	0	1674	1745	1498
Flt Permitted	0.466			0.697			0.444			0.691		
Satd. Flow (perm)	769	1335	0	1171	1694	0	776	1752	0	1168	1745	1445
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		61			5			2				396
Link Speed (k/h)		50			50			50				50
Link Distance (m)		242.3			435.5			352.8				403.8
Travel Time (s)		17.4			31.4			25.4				29.1
Confl. Peds. (#/hr)	5		10	10		5	5		15	15		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	7%	40%	4%	3%	1%	20%	1%	1%	1%	1%	2%	1%
Adj. Flow (vph)	60	31	61	48	247	29	265	99	3	6	227	412
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	92	0	48	276	0	265	102	0	6	227	412
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.0			3.5			3.5				3.5
Link Offset(m)		0.0			0.0			0.0				0.0
Crosswalk Width(m)		10.0			10.0			10.0				10.0
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	30.5		6.1	30.5		6.1	30.5		6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8		6.1	1.8		6.1	1.8		6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7				28.7
Detector 2 Size(m)		1.8			1.8			1.8				1.8
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		6
Detector Phase	4	4		8	8		5	2		6	6	6
Switch Phase												

4: Legget & Solandt  
PM Peak Hour

525 Legget Drive  
2029 Total Traffic (mitigated)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	10.0		10.0	10.0	10.0
Minimum Split (s)	25.2	25.2		25.2	25.2		11.0	25.2		25.2	25.2	25.2
Total Split (s)	41.2	41.2		41.2	41.2		31.2	77.4		46.2	46.2	46.2
Total Split (%)	34.7%	34.7%		34.7%	34.7%		26.3%	65.3%		39.0%	39.0%	39.0%
Maximum Green (s)	35.0	35.0		35.0	35.0		25.2	71.2		40.0	40.0	40.0
Yellow Time (s)	3.3	3.3		3.3	3.3		3.0	3.3		3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9		3.0	2.9		2.9	2.9	2.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.2	6.2		6.2	6.2		6.0	6.2		6.2	6.2	6.2
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?							Yes			Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Ped		Ped	Ped	Ped
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
Pedestrian Calls (#/hr)	6	6		3	3			13		2	2	2
Act Effct Green (s)	18.1	18.1		18.1	18.1		43.1	42.9		20.4	20.4	20.4
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.58	0.58		0.28	0.28	0.28
v/c Ratio	0.32	0.25		0.17	0.66		0.41	0.10		0.02	0.47	0.60
Control Delay	29.9	12.9		25.4	34.0		10.0	7.5		24.0	28.1	7.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	29.9	12.9		25.4	34.0		10.0	7.5		24.0	28.1	7.8
LOS	C	B		C	C		A	A		C	C	A
Approach Delay		19.6			32.7			9.3			15.1	
Approach LOS		B			C			A			B	
Queue Length 50th (m)	6.0	2.9		4.6	29.6		13.5	4.6		0.5	22.3	1.4
Queue Length 95th (m)	18.1	14.6		14.3	63.4		32.1	13.1		3.6	53.0	24.8
Internal Link Dist (m)		218.3			411.5			328.8			379.8	
Turn Bay Length (m)				40.0			50.0			30.0		105.0
Base Capacity (vph)	373	680		568	825		767	1637		648	969	978
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.16	0.14		0.08	0.33		0.35	0.06		0.01	0.23	0.42

**Intersection Summary**  
 Area Type: Other  
 Cycle Length: 118.6  
 Actuated Cycle Length: 73.7  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 17.9  
 Intersection Capacity Utilization 80.0%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service D

Splits and Phases: 4: Legget & Solandt

